JAY R. SMITH MFG. CO.®

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Jay R. Smith Mfg. Co.® Siphonic Roof Drainage System installation in the IKEA store in Atlanta, Georgia

Figure #1005 Siphonic Roof Drain and Figure #1605 Siphonic Gutter Drain.

The IKEA store in Atlanta, Georgia is located in the 138 acre Atlantic Station redevelopment site. This site was once the home to the Atlantic Steel Hoop Company.

The construction of the IKEA Atlanta store on this site posed two challenges. First, the placement of over 230,000 square feet of roof surface on the site would have increased the site runoff rate and quantity to the culvert, which by current standards is aged and non-compliant with environmental regulations. Second, the connection to the culvert was awkward from a civil engineering perspective. The engineering solutions included underground detention tanks and pumps that were reportedly estimated at almost one million dollars in excess of initial construction estimates.

However, there was a regional storm water retention pond near the site. Unfortunately, the configuration of the site and position of the building made access to this storm drainage system impossible by traditional gravity methods. The implementation of siphonic roof drainage, on the other hand, did make it possible to drain the roof to the rear of the building where storm drainage piping could be installed below the delivery access road and off the site towards the retention pond.

Not only did IKEA realize savings with the use of siphonic roof drainage inside the building, but the company saved significantly in site infrastructure costs, avoided a lengthy permitting process and contributed to the overall environmental revitalization of the area.

Demographics of IKEA Atlanta	
Roof Area (square feet)	226,000 roof, 61,270 parking deck
Height (feet)	35
Design Rainfall Intensity (in/hr)	3.7
Number of Discharge Points	5 from roof, 1 from parking deck
Total Discharge (cfs)	19.4 from roof, 5.25 from parking deck
Number of Drains	33 on roof, 10 on parking deck
Pipe Material	ASTM A888 No-Hub Cast Iron with MG Couplings

Siphonic Roof Drains

In keeping with the commitment to innovative products, Jay R. Smith Mfg. Co. is pleased to provide owners and the plumbing engineering community patent-pending, specified roof drain products for siphonic roof drainage systems. A siphonic roof drain looks much like a traditional roof drain. The distinguishing feature of a siphonic roof drain is the air baffle. This air baffle is engineered and tested to prevent air from entering the piping system at peak flows. Other than the baffle, a siphonic roof drain has the same features as a traditional roof drain including a drain body, flashing ring, dome strainer, and fastening hardware.

Benefits of Using a Siphonic Roof Drainage System

- Smaller pipe diameters can be used reducing material cost
- Level pipe installations allowing fewer vertical stacks, saving ground work and building costs
- Driving head is greater which further reduces pipe size and promotes self-cleaning
- Vertical stack and horizontal pipe locations are highly flexible
- Maximum use of open space without intrusion of drainage piping
- Can be used as a retrofit, which helps to achieve LEED credits for reuse of existing buildings

These benefits provide significant savings in terms of time and money. Large roof construction similar to those found in factories, warehouses, airports, convention centers, stadiums, and retailers will realize the benefits of siphonic roof drainage.

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