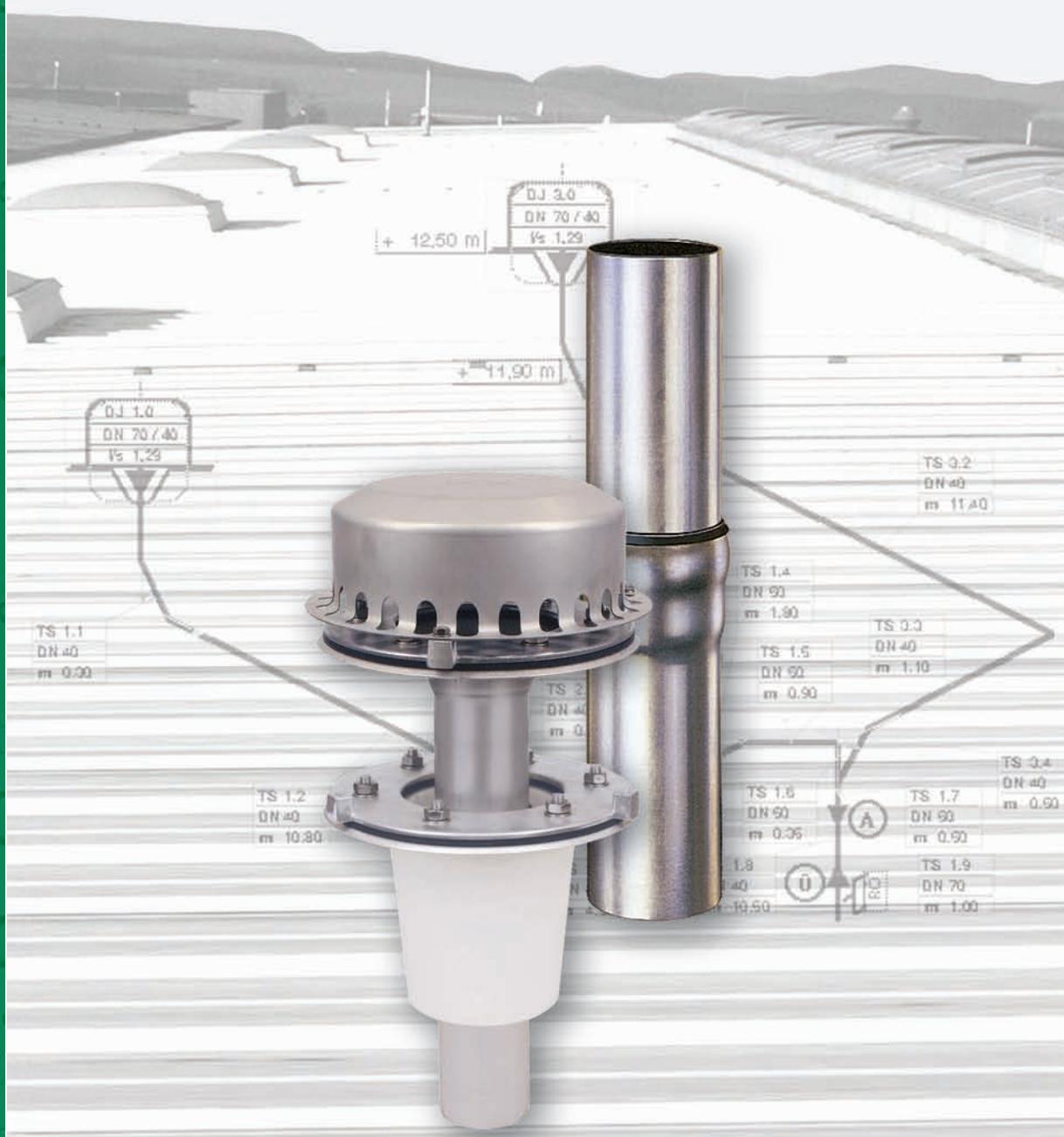


LORO-JOSAM SIPHONIC ROOF DRAINAGE SYSTEMS



# A Complete Siphonic Roof Drainage System



 **WARNING:** Cancer and Reproductive Harm - [www.p65warnings.ca.gov](http://www.p65warnings.ca.gov)



*Josam Company, Michigan City, Indiana*

## JOSAM COMPANY

Josam's long history in the plumbing drainage industry offers a wealth of experience and knowledge of traditional roof drainage solutions. Josam roof drains have long been the standard for specifying engineers and contractors who depend on installing reliable solutions for any and all roof types. Josam has become synonymous with quality and dependability and is known as the leader in innovation; paving the way in both technology and engineering advances.

Josam prides itself on the know-how and intense dedication of its customer service department. This team has been carefully comprised of the most experienced and industry immersed professionals. They are experts at providing custom solutions for each project and its specifications.



*Lorowerk, Bad Gandersheim, Germany*

## LOROWERK

The LOROWERK in Bad Gandersheim, Germany recently celebrated 50 years of company history on June 1, 2004. In this time, The LORO name has become synonymous with steel drainage pipes and has established itself as a leading manufacturer of siphonic roof and balcony drainage systems with its numerous new patents.

LORO launched industrial production of galvanized steel pipelines with the LORO-X inserted sleeve principle when it received its first building permit from the Lower Saxon Minister of Finances in 1954. They started at Loges Rohr OHG E. & K. Vahlbrauk in Alfeld an der Leine, Germany. Today the LOROWERK K.H. Vahlbrauk GmbH & Co.KG in Bad Gandersheim, Germany continues the Loro tradition of bringing the highest quality and most innovative roof drainage products to the world.

## LORO-JOSAM

**Loro-Josam** combines the talents and experience of Loro and Josam in all areas of roof drainage and introduces the most complete siphonic roof drainage solution available to the U.S. market. **Loro-Josam** siphonic systems are engineered and manufactured for high-performance. LORO-X balcony and roof drainage systems made of galvanized steel are combined with the LORO-X galvanized steel drainage pipe system and are offered complete with siphonic system calculations to ensure excellent results for every installation. The Loro-Josam siphonic drainage system offers facility owners, plumbing engineers and mechanical contractors a proven and complete siphonic roof drainage solution that they can rely on.

## LORO-JOSAM on the web - [www.josam.com](http://www.josam.com)

- **Library of technical drawings**
- **Locate local representative**
- **Get a quote**
- **Request a brochure**
- **Compare Products**
- **View additional product lines**
- **List Price Items**
- **Product Listings**

## LORO-JOSAM

# A Complete Siphonic Roof Drainage System

### A Full Line of "Push-Fit" Galvanized Pipes and Fittings for Siphonic Drainage

The Loro-X "Push-Fit" piping system is manufactured of hot dipped galvanized steel. Pipes and fittings are internally coated and come standard with the unique labor savings "Push-Fit" connection and are available in 2" nom. through 8" nom. sizes. Simply push the pipes together with the Loro-X "Push-Fit" socket and a joint testing up to 7.25 PSI or 232 PSI with the new pressure clamp.



### A wide range of siphonic roof drains and emergency overflow drains

Loro-Josam offers galvanized steel siphonic roof drains. The Loro-Drainjet® is the standard siphonic drain with vertical outlet. The Loro-Rainstar® is the standard siphonic parapet roof drain with horizontal outlet. Both models are available as primary drains or with a standpipe for emergency overflow drains. In addition, the Loro Attikastar® offers a solution that penetrates only the parapet and requires no penetration of the main roof deck. A complete range of features are available to suit various insulation requirements or other roof construction parameters.



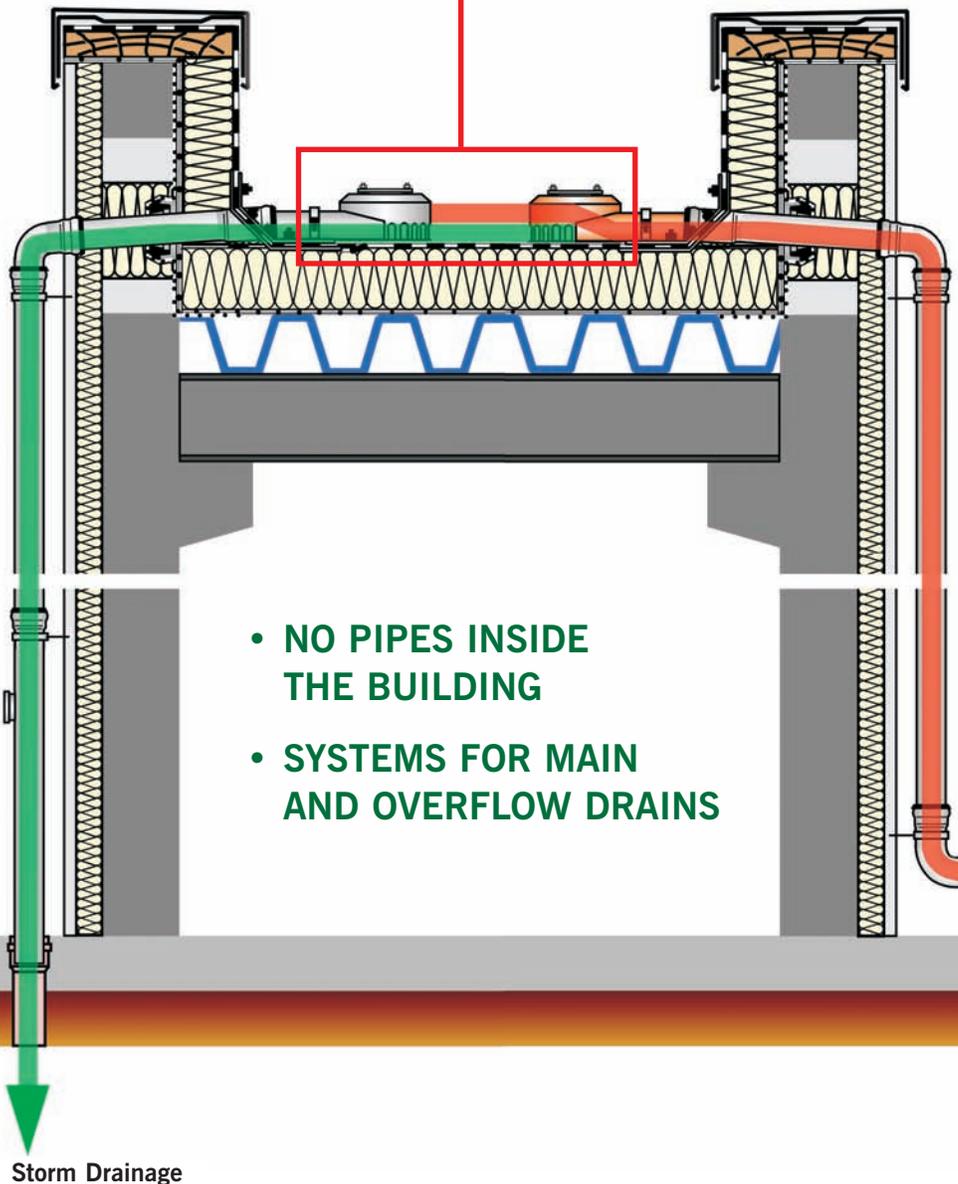
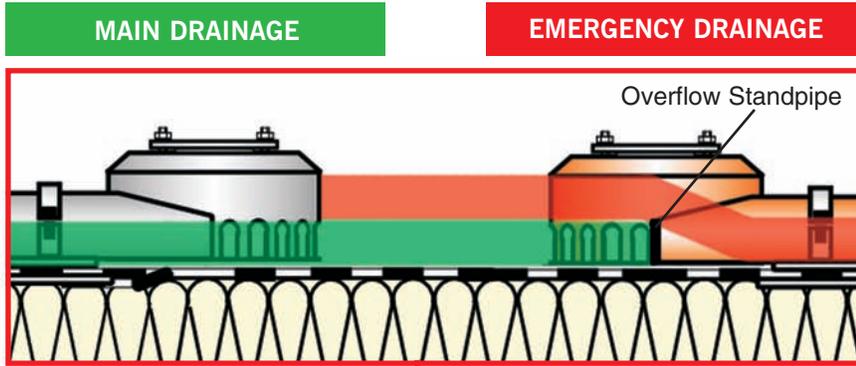
### Engineering tools and support for siphonic calculations

Loro-Josam offers full support for properly calculating the siphonic sizing requirements for your project. We will work closely with the design engineer and mechanical contractor to assist with properly sizing the drains and pipes for a balanced siphonic installation.



# Siphonic Scupper Roof Drainage Systems

Manufactured, Engineered, Calculated and Built by LORO-JOSAM



- NO PIPES INSIDE THE BUILDING
- SYSTEMS FOR MAIN AND OVERFLOW DRAINS

**LORO-DRAINJET<sup>®</sup>**  
Siphonic scupper drainage systems



**LORO-Attikastar<sup>®</sup>**  
Siphonic scupper drainage systems

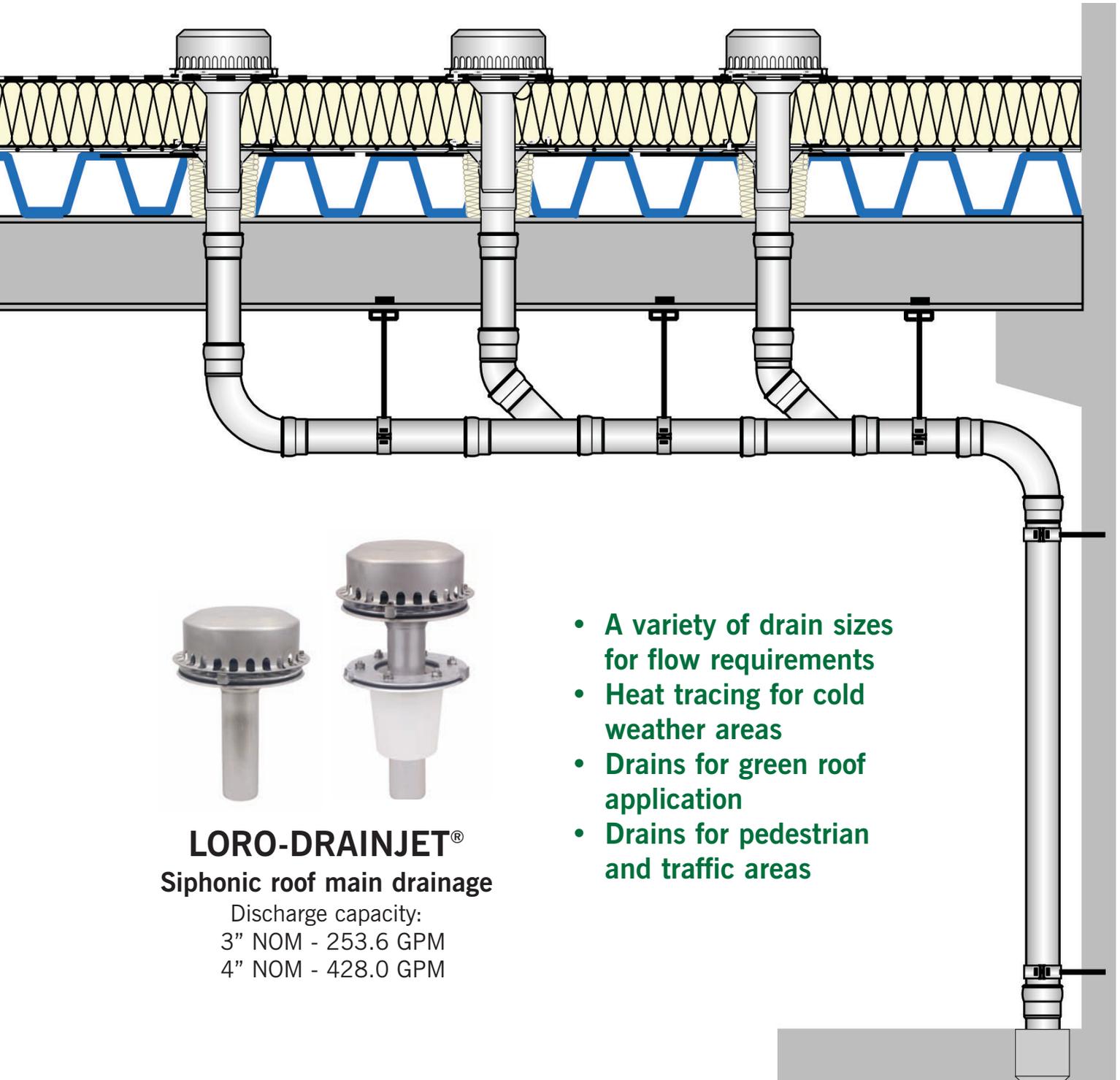


**LORO-RAINSTAR<sup>®</sup>**  
Scupper roof siphonic-drainage systems



# Siphonic Roof Drainage Systems

The Most Complete Range of Siphonic Drains



**LORO-DRAINJET®**  
Siphonic roof main drainage

Discharge capacity:  
3" NOM - 253.6 GPM  
4" NOM - 428.0 GPM

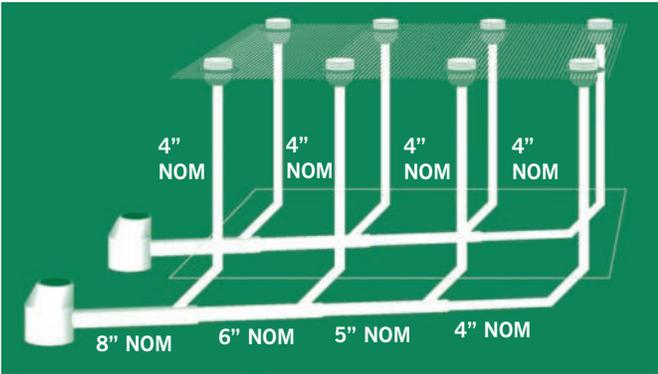
- A variety of drain sizes for flow requirements
- Heat tracing for cold weather areas
- Drains for green roof application
- Drains for pedestrian and traffic areas

# Siphonic Roof drainage vs. Gravity Roof drainage

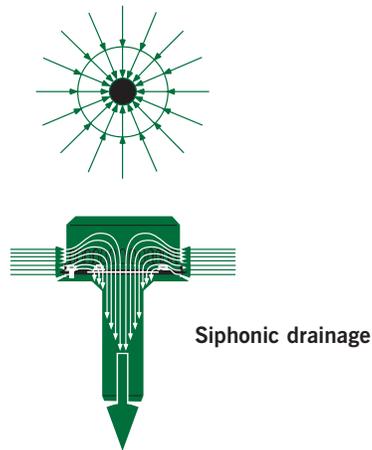
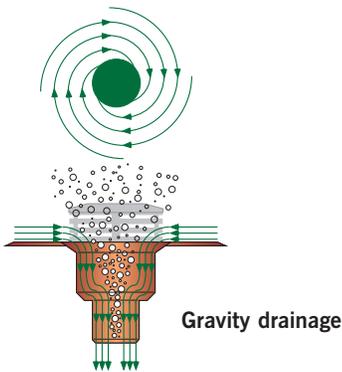
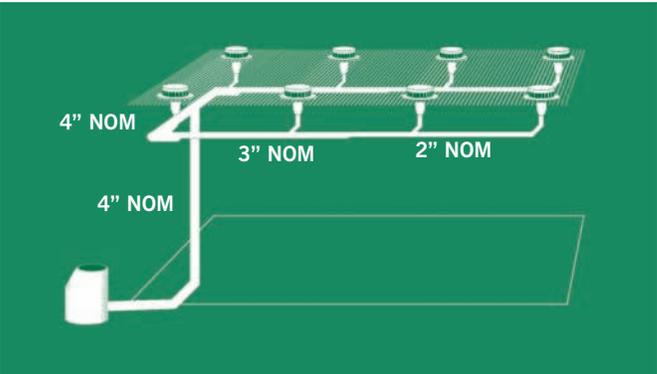
Roofs with a large surface can be drained on the basis of two different principles, either by means of gravity drainage or by means of siphonic drainage. Drainage by means of gravity typically utilizes only 70% or less of the pipes capacity since the remainder is necessary for ventilation.

In contrast, siphonic drainage utilizes 100% of the pipe capacity. This requirement is met by using specially developed drains which prevent the admission of air. Additionally, the siphonic system is optimized by hydraulic calculations which systematically fill the piping system up in cases of heavy precipitation. The total height difference between the roof drain and the backflow level can then be used for the pipe dimensioning.

## Gravity drainage



## Siphonic drainage



## Advantages of Siphonic drainage:

- **A higher discharge rate** as a result of a closed flow circuit allowing smaller pipe sizes.
- **Space gained** due to horizontal piping without slope below the roof deck.
- **Lower material cost** due to the use of smaller pipe sizes and shorter pipe lengths.
- **Less labor cost** due to fewer vertical pipes, less pipe penetrations through the foundation of the building and less excavation for underground piping.
- **Cleanliness of the system** due to higher flow velocities.

**PROJECT REFERENCES**



**Volkswagen Plant - Germany**



**Airport Athens - Greece**



**EXPO 2000 - Germany**



**Schalke Soccer Stadium - Germany**



**BMW Welt - Germany**



**Fusion Polis Hotel - Singapore**



**Mercedes Benz Plant - Germany**



**IKB Bank - Germany**



**Milan Fair - Italy**



**AWD Soccer Stadium - Germany**



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