

Siaqua

sikla

Siaqua Flat Roof Drainage

for the safeguarding of buildings and property!



Times have changed – and so has flat roof drainage!

As flat roof construction developed rapidly around 50 years ago, drains leading inward were problematic. Solutions for increasing structural and engineering demands were often only insufficient, custom designs. Today, state-of-the-art industrially manufactured roof gullies planned as drainage systems purposefully

discharge the accumulating amounts of rain from flat roofs. Siphonic drainage plays an important role in this connection. It guarantees proper and safe functionality based on the widest range of requirements and influential factors. And it provides perfect protection of people, property, and buildings!



Climate as an influential factor

Weather in recent decades and climate models have demonstrated that precipitation conditions are undergoing significant change. Statistically speaking, overall summer precipitation is decreasing. However, individual occurrences of heavy rain are all the more intense. Amounts of rain in the winter have increased by 20 - 30 % in the western and southern regions of Germany due to the heat development. This means *increasingly larger amounts of rain* must be quickly and purposefully discharged from flat roofs in order to prevent damage to roof structures and buildings.



Structural engineering as an influential factor

Construction has changed. In commercial and industrial building engineering, in particular, efficient solutions are required for the time-saving construction of large halls and production buildings. For example, for more than 30 years non-ventilated flat roofs have been produced in lightweight construction. Large-scale filigree roof structures are normally built with steel trapezoidal profiles. That means they must be protected from *extraordinary static loads* during heavy rainfall in order to prevent damage to the structure.



Standards and regulations as influential factors

Previously, the layout of flat roof drainage was essentially based on the size of the flat roofs. Today, a variety of standards, regulations, and requirements which ensure the *proper functionality of individually designed roof drainage systems* must be taken into account. Fastening plans for the pipeline network, integrated emergency drainage systems, and static calculations and fire safety aspects are a part of this.



The ideal solution – Sikla Drain flat roof drainage systems

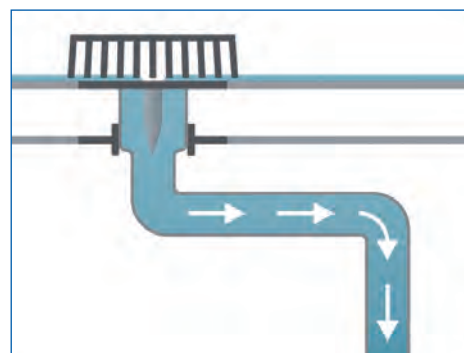
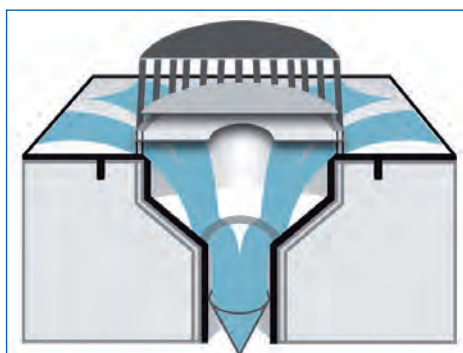
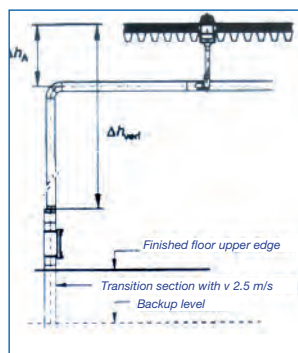
Sikla Drain flat roof drainage systems meet all requirements and demands established by standards and regulations, as well as those of modern structural engineering and changing climatic conditions. From location-based planning to functional acceptance, every flat roof is in good hands with Sikla Drain. The drainage is realised with Siqua siphonic systems, which means *permanently fault-free function*, the highest measure of *safety and efficiency*, and *economically optimised solutions*!



Siaqua flat roof drainage – compelling principle, perfected system, efficiency in use!

Sikla Drain developed the Siaqua drainage system specifically for the drainage of water from large clear span flat roofs. With a variety of excellent features, it has won over experts in the areas of design and implementation. This is partly because the function of the system perfectly harmonises all the physical

and technical demands of a flat roof drainage system. This is also due to the fact that it takes into account the widest range of aspects of individually planned and used buildings. The result is flat roof drainage with a cost/benefit framework which stands up to any comparison!



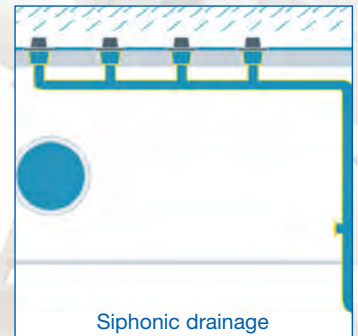
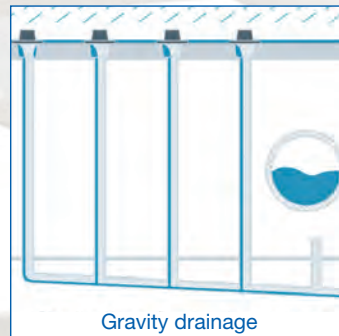
Physical functionality

Siaqua flat roof drains utilise physical laws which ensure rapid drainage of rainwater. Unlike gravity drainage where the rain is discharged through partially full pipelines, the Siaqua System is operated with completely filled pipes. Specially designed Siaqua roof gullies prevent air intake into the pipe system due to

the "Coriolis force". As a result, a water plug can form in the down pipe, which creates a negative pressure in the collector pipe. In this manner, the roof surface is efficiently drained as a result of the "suction-lift" effect, even with small amounts of rain.

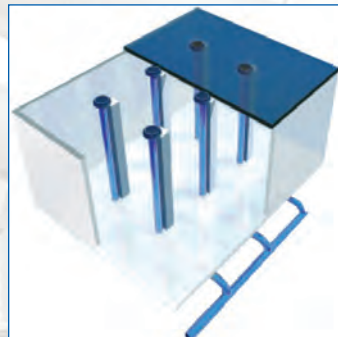
First-class drainage

The Siaqua System is distinguished by outstanding drainage capacities. The rainwater is collected under the roof structure and released to the underground line with just a few down pipes. The high flow speed also ensures that the pipe system is self-cleaning.



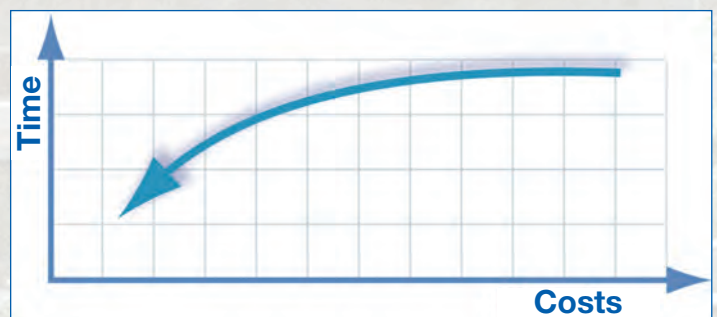
Highly efficient

There are a number of benefits with Siaqua drainage. The slope-free installation of the collector pipe under the hall ceiling guarantees optimal concepts for spatial and hall planning. Few down pipes, small pipe diameters, minimal work with underground lines, and impact protection all attest to the efficiency of Siaqua.



Superior in comparison

Siaqua roof drainage systems are the sum of many outstanding features. They have impressive drainage capacity, unlimited spatial utilisation, low material and installation costs, reduced construction costs and construction time, and, and, and! And convincing in comparison. Technical and economical!



Siaqua drainage systems – perfected as a whole, convincing in detail!

Siaqua roof drainage systems are based on three essential system components: On roof gullies which collect the rain water. On pipe lines for collecting pipes and down pipes with corresponding connectors that lead the rainwater to the underground line or sewer system; on fixtures which fasten the pipeline network securely on the ceiling and wall. Sikla Drain taken these products with heterogeneous materials and application techniques and created a system – the Siaqua system,

which impressively fulfils the extraordinary mechanical and physical demands on the performance of modern roof drainage systems. A comprehensive service package completes the perfection of the Siaqua system. From the planning to acceptance of the system. It is ensured that all structural engineering and efficiency benefits of Siaqua are utilised for roofs and buildings.



Meeting every requirement

Siaqua roof drainage systems are always planned specifically for the individual property and location. Down to the last detail. Based on the local rainfall, the drain capacity of gullies and pipe lines, with static verification, with possible inclusion of emergency drainage systems and instructions for the necessary fire protection.

Perfection in each element

A Siaqua system drains and always works as well as the sum of all individual elements. For this reason, all production components of the Siaqua system are optimally attuned to the respective property requirements and then implemented as an overall technical concept. For the benefit of a safe and efficient roof drainage system.

Siaqua complete solutions – all inclusive, with:

- ◆ Roof drain
- ◆ Pipe system
- ◆ Fire protection in accordance with DIN 18234
- ◆ Fastening technology
- ◆ Fastening point
- ◆ Pipe holders
- ◆ Down pipe connection
- ◆ Fastening materials



And much more

Technical, economical, and environmental aspects from the planning to the construction phase, and of course optimally coordinated in the implementation. In this case, the Sikla Drain Team is available to advise all project participants and is ready to provide assistance. With responsible contact persons for each project and quick reaction times for enquiries, requests, and required action.

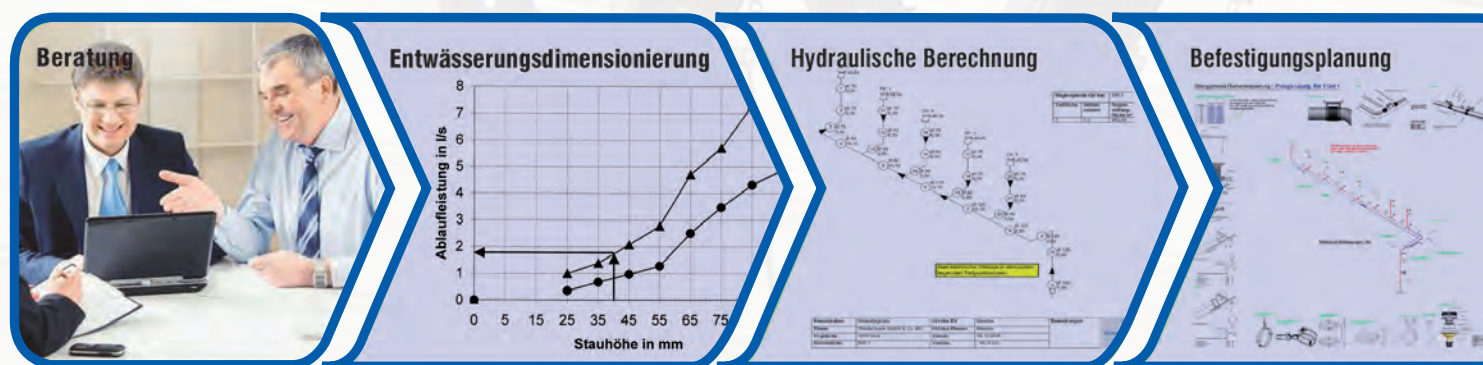
The sum of good features

Functioning flat roof drainage systems are comprised of numerous design and technical details. Sikla Drain knows them! And assists designers, building owners, and tradesmen from the planning to the delivery of a ready-to-install Siaqua drainage system – with product expertise and service orientation.

The systematic path to safety and efficiency – planned by Sikla Drain, realised with Siaqua!

Siaqua siphonic drainage systems from Sikla Drain and innovative complete solutions. For this reason, and based on the property and location-specific layout, the planning and implementation proceed in systematic phases. Factors such as local rainfall, statistical centuries of rain, characteristics of the drainage system, geometry of the roof surface, and structural details are incorporated in the drainage dimensioning. Then the number of required roof drains is determined on the basis of this calculation. The hydraulic calculation is necessary to ensure the

permanently safe function of the system with incorporation of the dimensioning of pipes and fittings. Since Siaqua systems work based on pressure, the planning of supports will determine the positioning of the support points and fastening points for pipes and fittings. Ultimately, the static verification assures perfect implementation of the system. Sikla Drain thereby develops optimal and individually planned flat roof drainage systems in consideration of the applicable directives and standards. With high efficiency and guaranteed safety!



Step-by-step for the best result

Sikla Drain creates drainage concepts planned with Siaqua systems on the basis of on property specifications*. These are carefully coordinated with building owners and planners. When it is time for implementation, installation is coordinated with the contractor and installation plans are created on request. This extends to the prefabrication of assemblies.

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 - ◆ Building floor plan
 - ◆ Flat roof floor plan design
 - ◆ Sectional drawing of the roof construction
 - ◆ Specifications for the roof structure
 - ◆ Specifications for the static load of the roof
 - ◆ Specifications for the location of the building
 - ◆ Underground pipe planning



No two buildings are the same

Individual building projects require individual drainage solutions. With the Siaqua complete system, Sikla Drain offers a ready-to-install, fully functional drainage system. This takes place in consideration of all aspects and details for the respective building. And it is geared towards practical and efficient implementation down to the last detail.



Practical benefit

Sikla Drain also offers an extensive service package for the implementation of planned Siaqua drainage systems. On-site assistance, prefabrication of assemblies for the pipe line system, logistics coordinated with the construction progress, machine rental, and much more. And if it should be necessary to modify plans, Sikla Drain immediately factors in structural, hydraulic, and engineering aspects.

Optimal assistance

From the start of planning to the final acceptance, competent Sikla Drain consultants assist all contact persons and measures associated with the creation of a drainage system. And Sikla Drain is also available to look after Siaqua drainage systems after their completion. The same great service is offered for maintenance with a special Sikla Drain Guarantee!

Siaqua flat roof drainage system – meeting every requirement, in theory and in practice!

Everyone involved in the construction project can expect something extra from Sikla Drain – the fulfilment and implementation of their very specific requests, demands, and interests. This applies for investors, building owners, general contractors, and for planners and installers. This refers to both the product concept of the Siaqua complete system and the comprehensive integration and information of everyone with a stake in

the project. In theory and in practice. From the initial planning phase to the common acceptance of the Siaqua flat roof drainage system. The result of this philosophy and collaboration based on partnership is the Siaqua systems which always function safely and provide permanent protection for people, property, and buildings. To the delight of planners, the satisfaction of building owners, and for the benefit of installers!

In the interests of planners

Sikla Drain services for planning and design with Siaqua systems:

- ◆ Interdisciplinary planning with incorporation of standards, laws, and requirements
- ◆ Hydraulic layout of the system
- ◆ Static verification
- ◆ Representation of fixed point forces
- ◆ Recommendations for emergency drainage
- ◆ Individual consultation from the beginning of planning to the acceptance of the Siaqua flat roof drainage system

To the building owner's delight

Sikla Drain services for the efficiency and safety of buildings:

- ◆ Optimal spatial and hall utilisation
- ◆ Reduced construction costs thanks to:
 - Lower material costs
 - Quick installation
 - Elimination of underground lines and associated excavation work
 - Less impact protection
- ◆ Shorter construction times
- ◆ Reduced maintenance costs, system-based maintenance contracts, system-based guarantees
- ◆ Consultation of the building owner/investor

Helpful for the installer

Sikla Drain service for implementation of Siaqua flat roof drainage systems:

- ◆ Product and system training and technical assistance on site
- ◆ Creation of parts lists
- ◆ Assembly prefabrication
- ◆ Flexible logistics
- ◆ Calculation assurance
- ◆ Guarantee
- ◆ A single permanent contact persons during and after implementation



The idea behind Sikla Drain

The Siaqua system is based on expertise in planning and efficiency, as well as fastening technology know-how.

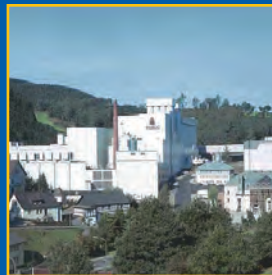
Sikla Drain has specialised for more than a decade in the qualified planning of system construction, building technology, and roof drainage technology, as well as

damage analyses and expert reports. The valuable knowledge gathered from this experience and work is incorporated into all Siaqua flat roof drainage systems. This is combined with system components designed in-house, perfect planning services, and a consultation and construction site service which leaves no wish unfulfilled.



Safe and systematic drainage

with Siaqua roof drainage systems from Sikla Drain!



Sikla Drain GmbH

Erinstraße 14
44575 Castrop-Rauxel
Telephone +49 (0) 2305 9778 0
Fax +49 (0) 2305 9778 13

info@sikladrain.com
www.sikladrain.com