





Introduction to Wavin Quickstream Siphonic Roof Drainage System and Software

Date: 18 November 2021,
Thursday

Welcome

THANG TIEN ENGINEERING JSC

 <http://thangtien.vn>  info@thangtien.vn

HA NOI OFFICE:

21st Floor, IDMC My Dinh Building, No.15 Pham Hung Str.,
My Dinh 2 Ward., Nam Tu Liem Dist., Ha Noi City.

Tel: (+84) 243.787.0930 Fax: (+84) 243.768.8954

HAI PHONG OFFICE:

4th Floor, Thanh Dat 1 Building, No.3 Le Thanh Tong Str.,
Ngo Quyen Dist., Hai Phong City.

Tel: (+84) 225.883.0784 Fax: (+84) 225.883.0783



HO CHI MINH OFFICE:

Unit 7.07, 7th Floor, St.Moritz Building, No.1014 Pham Van Dong Str.,
Hiep Binh Chanh Ward., Thu Duc City - Ho Chi Minh City.

Tel: (+84) 286.258.3288 Fax: (+84) 286.299.7360

DA NANG OFFICE:

K108/H3/16 Nguyen Chanh Str., Hoa Minh Ward., Lien Chieu Dist.,
Da Nang City.

Tel: (+84) 813.220.150

Wavin at a glance



Production in

40+

Countries



12,000

Employees



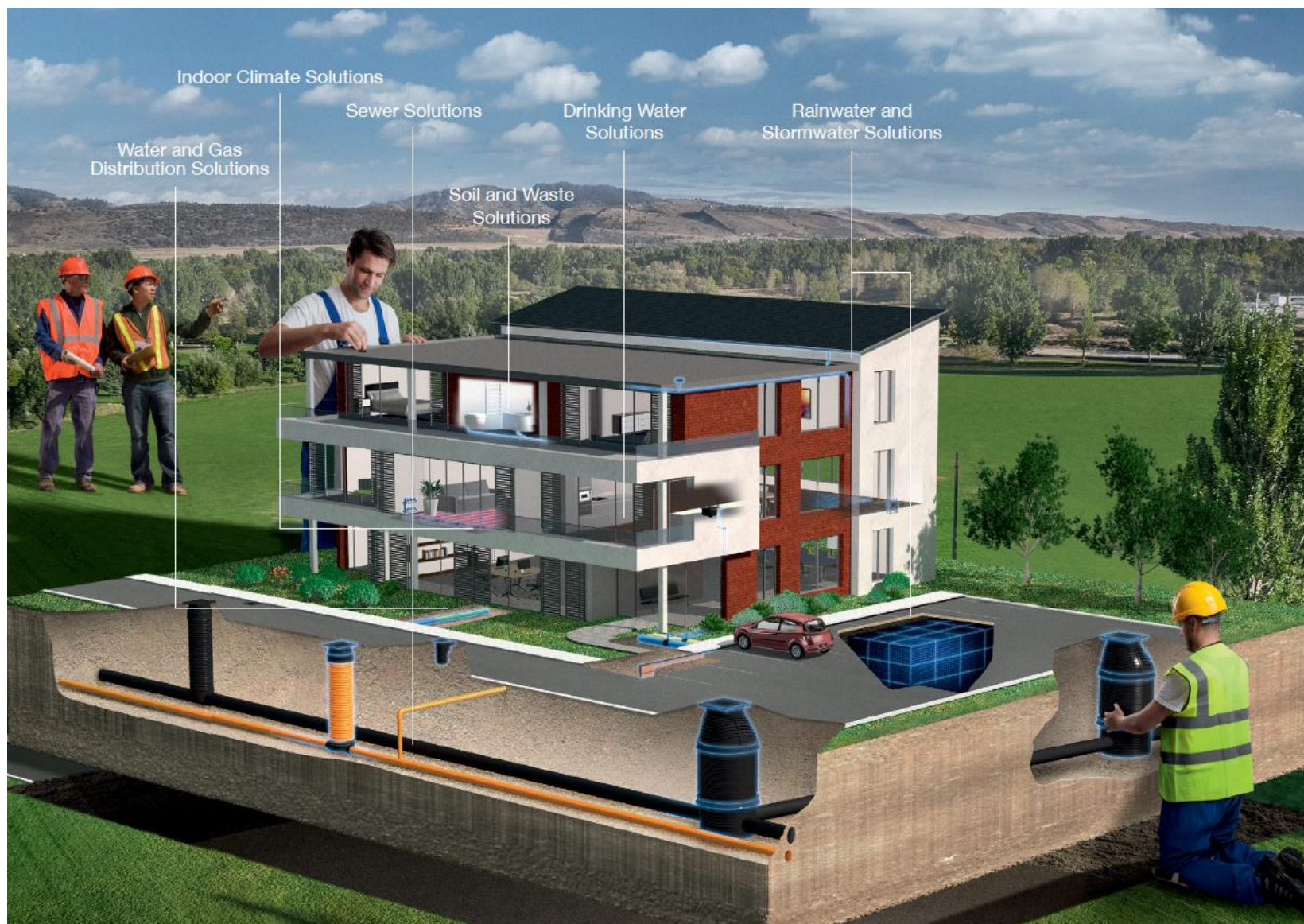
4 regions

- EMEA
- LATAM
- APAC
- USA & Canada

let's build long-lasting cities



Complete portfolio of Above and Below Ground Application





The best engineered siphonic roof drainage system

-

Wavin Quickstream

Agenda

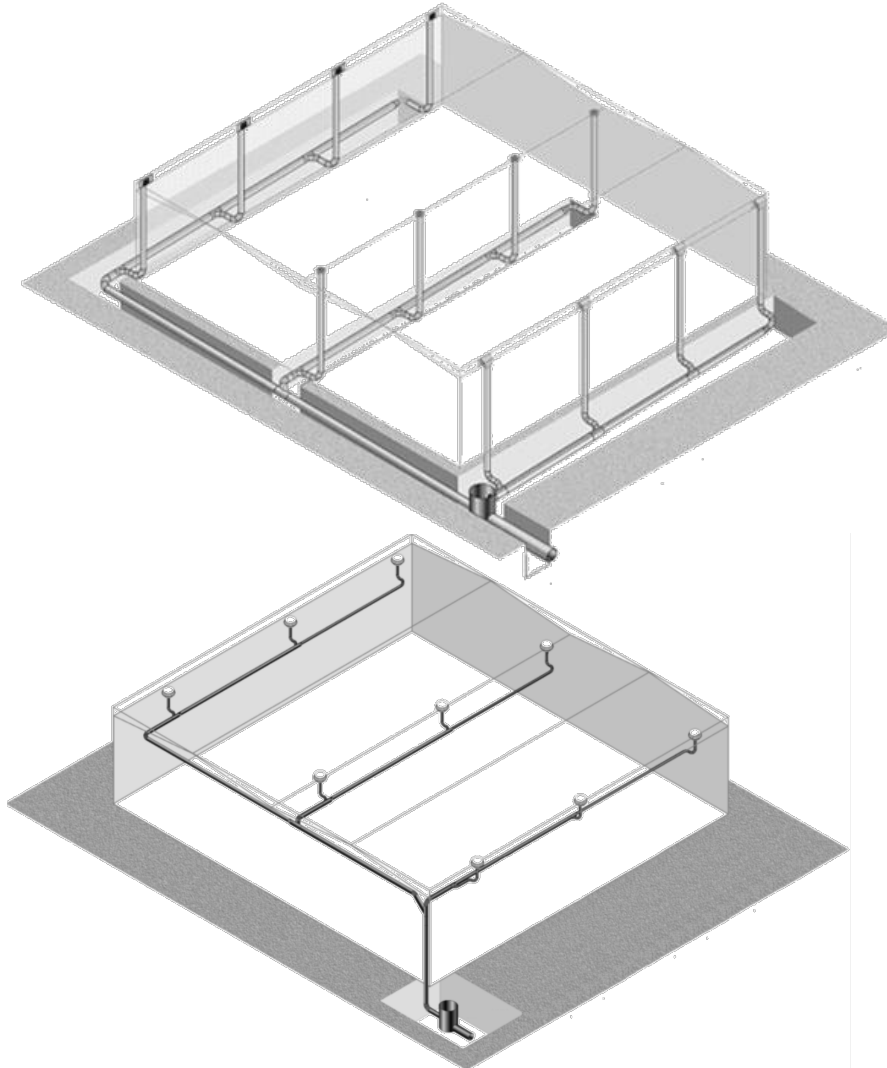
- 1 Conventional vs. siphonic roof drainage systems
- 2 Advantages of working with Wavin
- 3 Wavin QuickStream reference projects
- 4 Summary
- 5 Calculation & Design of Wavin QS

Conventional versus siphonic rainwater systems

**Conventional
rainwater systems**

versus

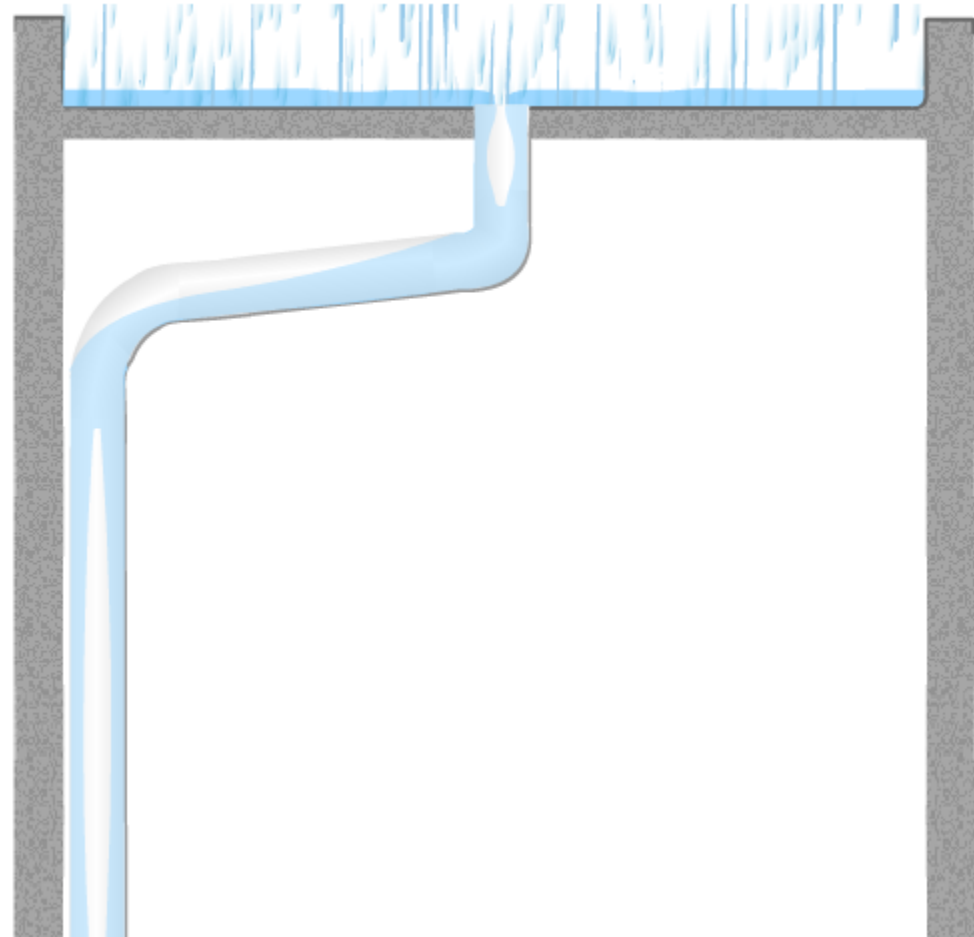
Siphonic systems



From Conventional to siphonic rainwater systems

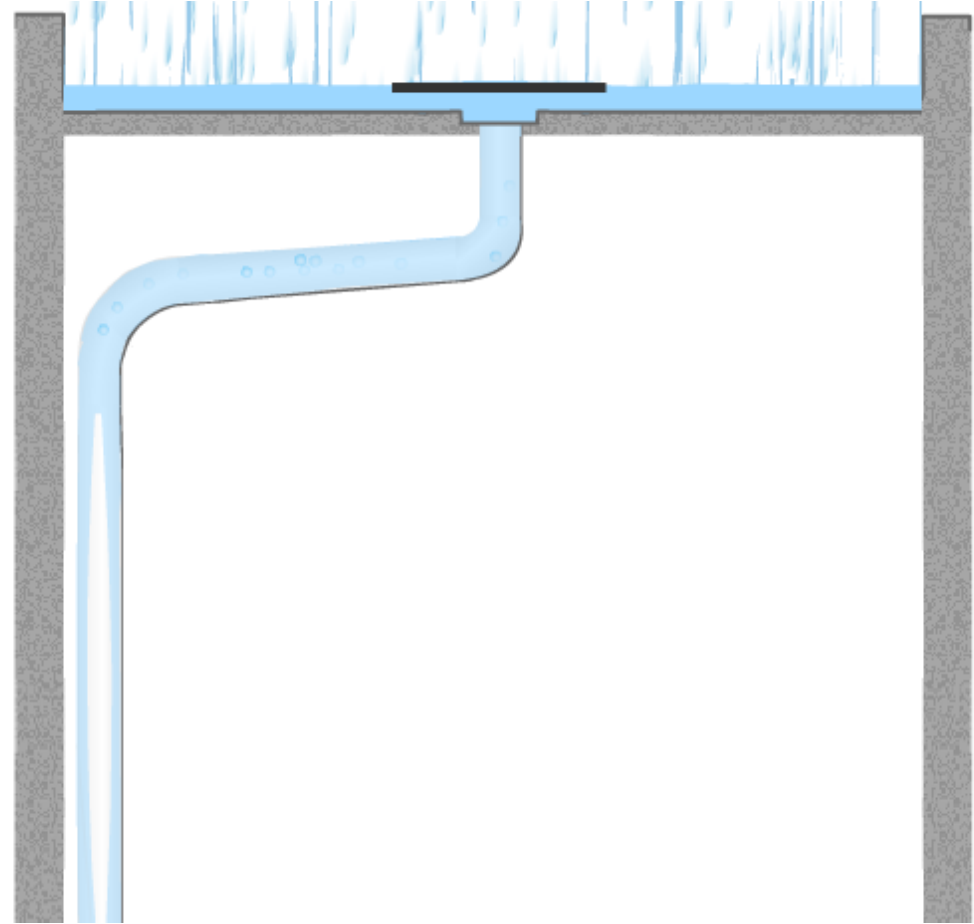
Conventional system

- Combination water and air.
- Slope in horizontal pipes (in building or around the building).



From Conventional to siphonic rainwater systems

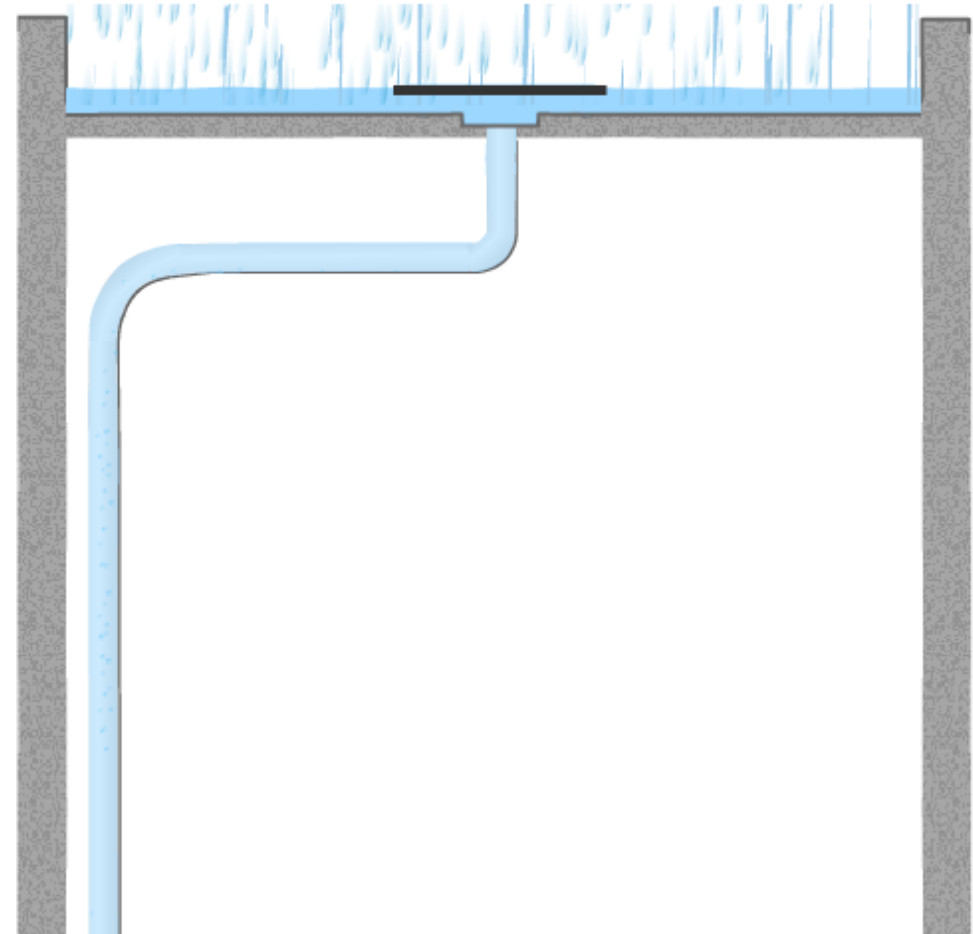
- Air baffle to secure only water will enter into the roof outlets.
- No air in system
⇒ reduction of pipe diameter.



From Conventional to siphonic rainwater systems

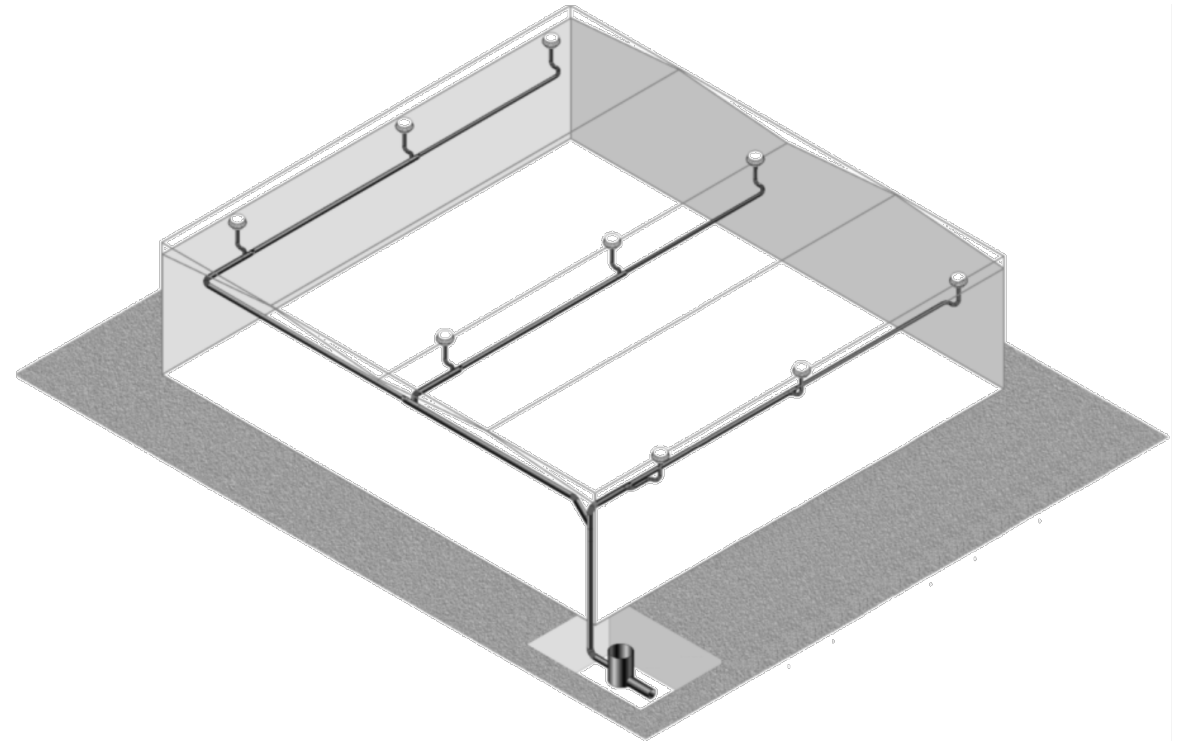
Siphonic system

- Down pipe fully filled with water.
- Energy difference between inflow (roof) and outflow (inspection chamber) is utilised to increase flow velocities of water.
- Further reduction of diameters.
- No slopes required:
 - ⇒ high flow velocities,
 - ⇒ self cleaning.



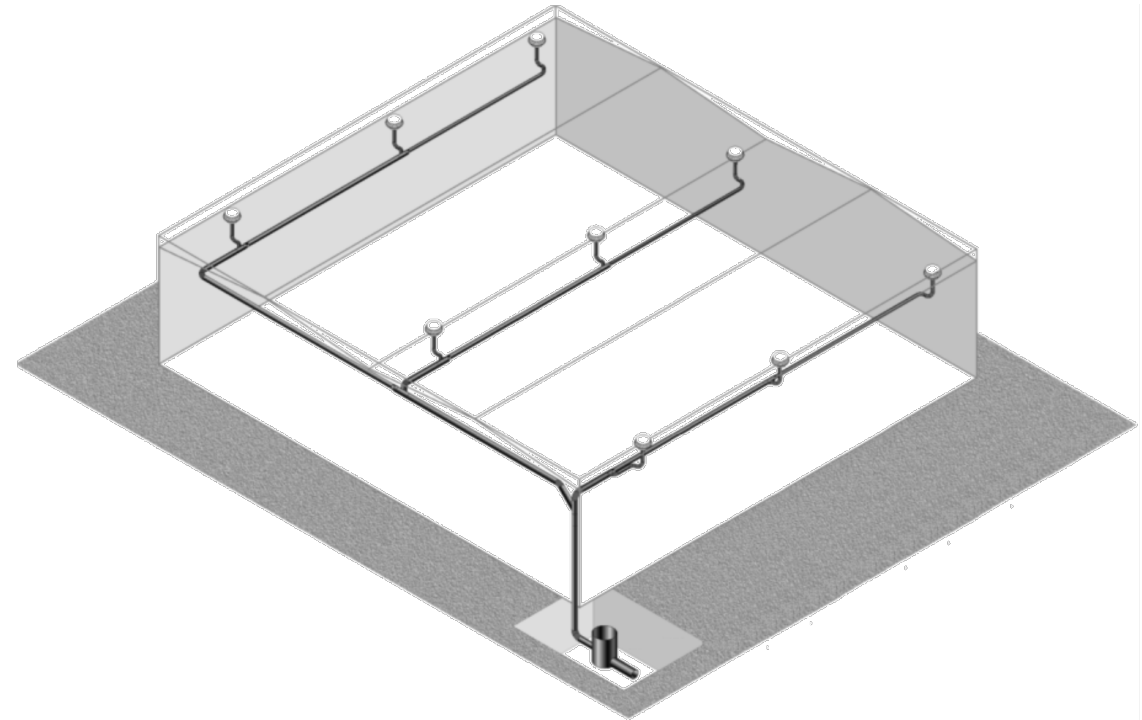
Advantages of Siphonic Systems

- Smaller pipe dimensions and a reduction on the total pipe length:
 1. Lower material costs.
 2. Lower installation costs.
 3. Considerable reduction of the total installed cost of the rainwater system.
- All pipes are installed in the building:
 4. No exposure to sunlight / UV radiation.
 5. Less problems with freezing.
 6. No damages due to vandalism.
- Lateral pipe work is installed without a gradient:
 7. Maximum use of the height in the building.



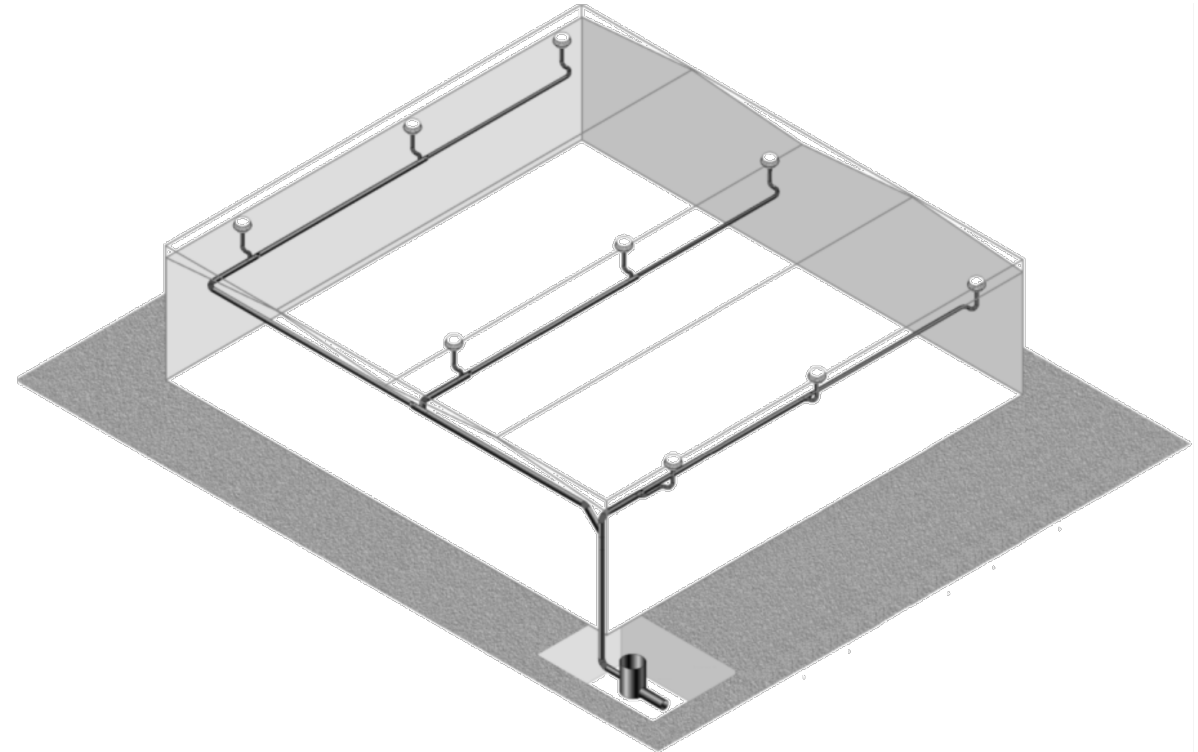
Advantages of Siphonic Systems

- No or limited pipe trenches next to the building are required:
 - 8. Considerable savings in ground work.
 - 9. During the construction works the building can be entered from almost each side due to the absence of pipe trenches.
- Less roof outlets:
 - 10. Less roof penetrations.
 - 11. Less chance of potential leakage.
 - 12. Lower installation costs.

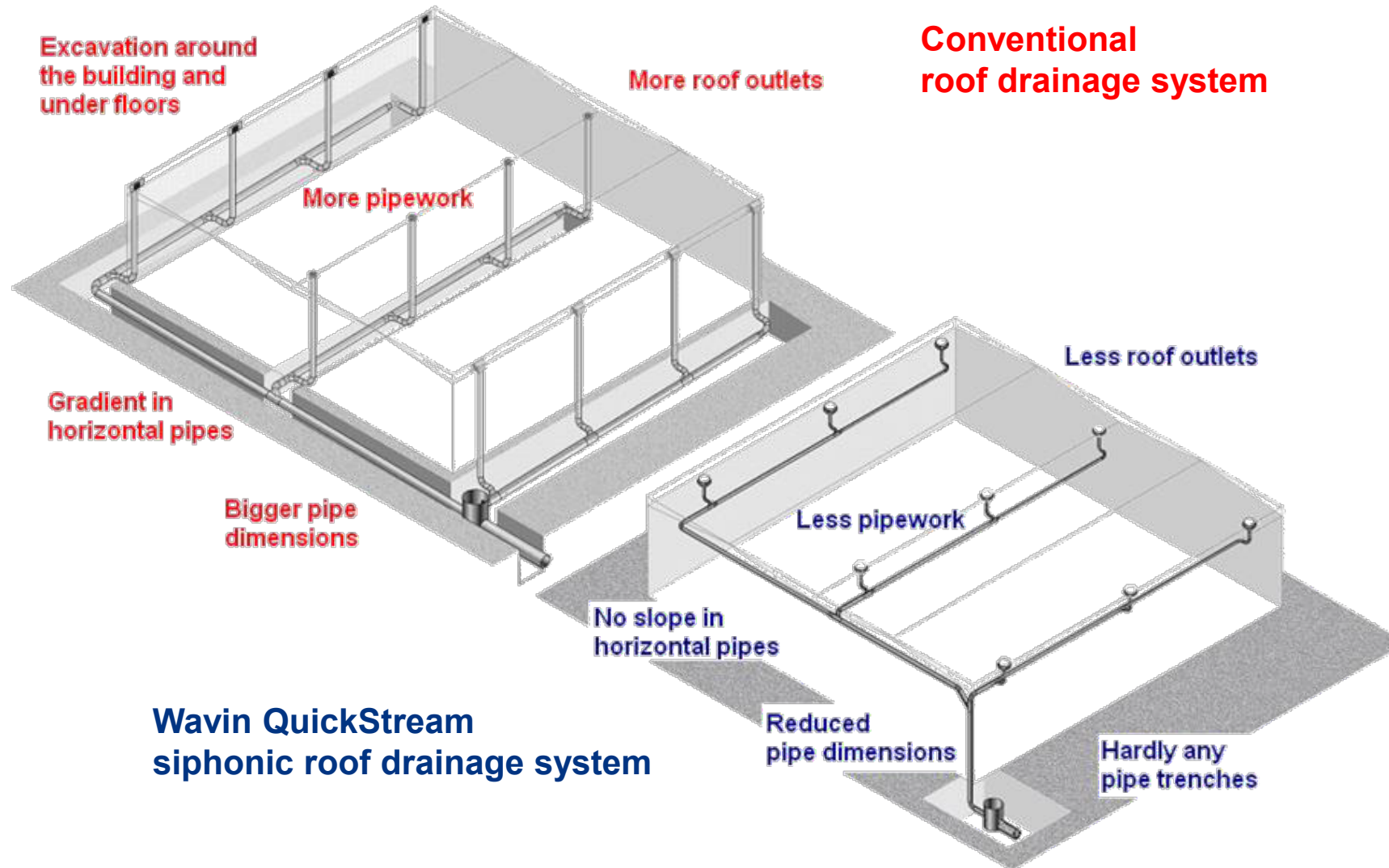


Advantages of Siphonic Systems

- Flexible location of roof outlets:
 - 13. More flexibility for architect / building owner.
- Less down pipes / smaller dimensions of the down pipes:
 - 14. Less obstructions.
 - 15. Easier to incorporate in the building design.
- High flow velocities of the rainwater:
 - 16. Self cleaning of the system.
 - 17. No silt build up in the pipes results in cost savings due to less maintenance.

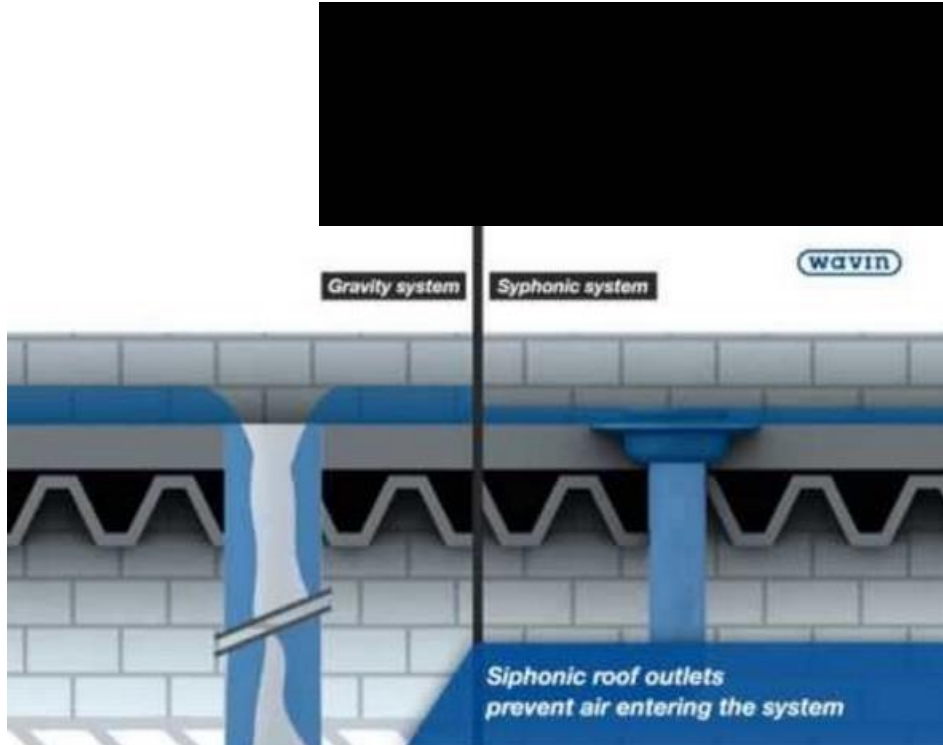


Summary advantages of Siphonic Systems



Introduction of Siphonic system

Siphonic vs Gravity



Advantages of working with Wavin



Track record of successful siphonic installations.

- 34 years of experience, first project in 1982.
- Wide range of projects: From small projects to big projects up to 265,000 m² roof area
- For world leading brands:



Advantages of working with Wavin

**Safety
matters!**

RELIABILITY

The most professional siphonic design software package in the industry.

- Check on system balancing.
- Check on cavitation.
- Check on priming of the downpipe.
- Check on self-cleaning of the pipe system.
- **All outputs are blocked if minimum requirements are not met.**
- **Easy verification of all important figures by designer / engineer.**

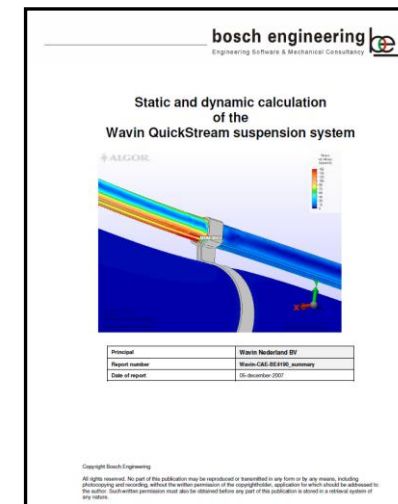
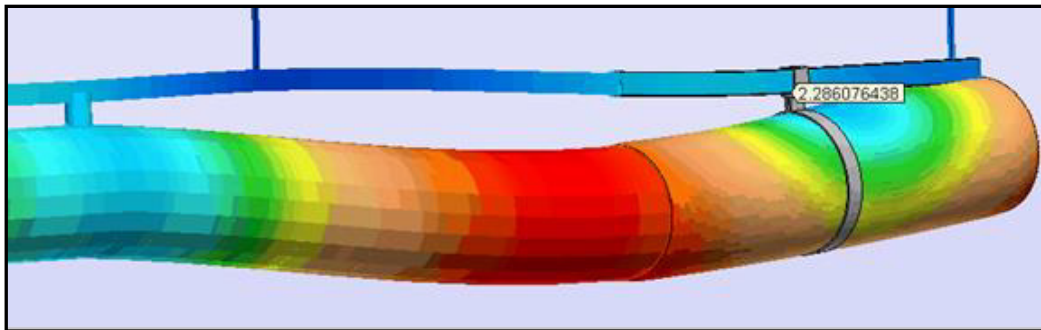


Maximum allowable system imbalance:	1000 mm
Maximum system imbalance:	684 mm
Maximum system imbalance < allowable imbalance:	OK
Maximum allowable negative pressure:	-9000 mm
Maximum negative system pressure:	-6448 mm
Negative pressure < allowable negative pressure:	OK
Maximum downpipe diameter for priming:	157,9 mm
Chosen internal downpipe diameter:	115,4 mm
Priming of vertical downpipes:	OK

Advantages of working with Wavin

Safest suspension system for siphonic systems.

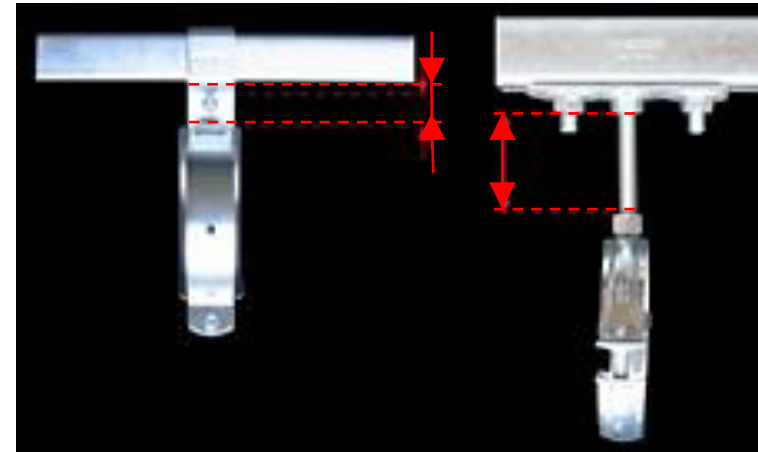
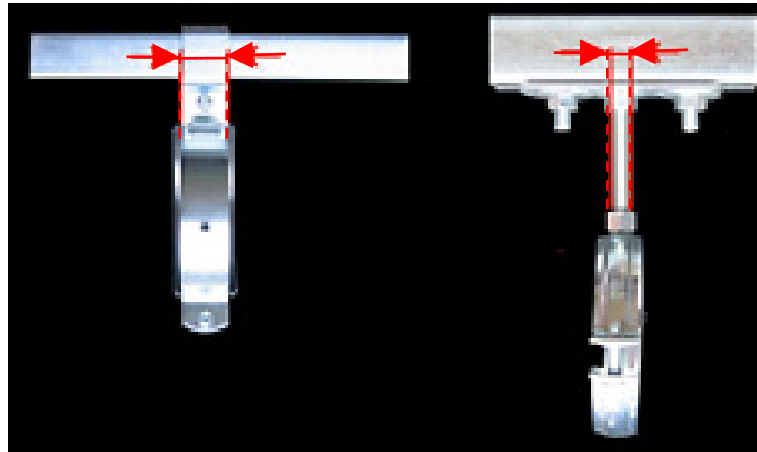
- A 100 metre long PE pipe will elongate or shorten 60 cm when the temperature changes 30°C. The suspension system must secure the PE-pipe will not change in length.
- Wavin is the only supplier which has proven via a finite element calculation that the specifically developed suspension system is able to incorporate 30°C temperature variations.



Advantages of working with Wavin

Safe fix of the PE pipe to the steel rails with the Wavin QuickStream bracketing system.

- Thick steel strip instead of a standard threaded rod fixation.
- Minimum distance between PE pipe and rails for optimal transition of the forces.



Advantages of working with Wavin



Metal roof outlets.

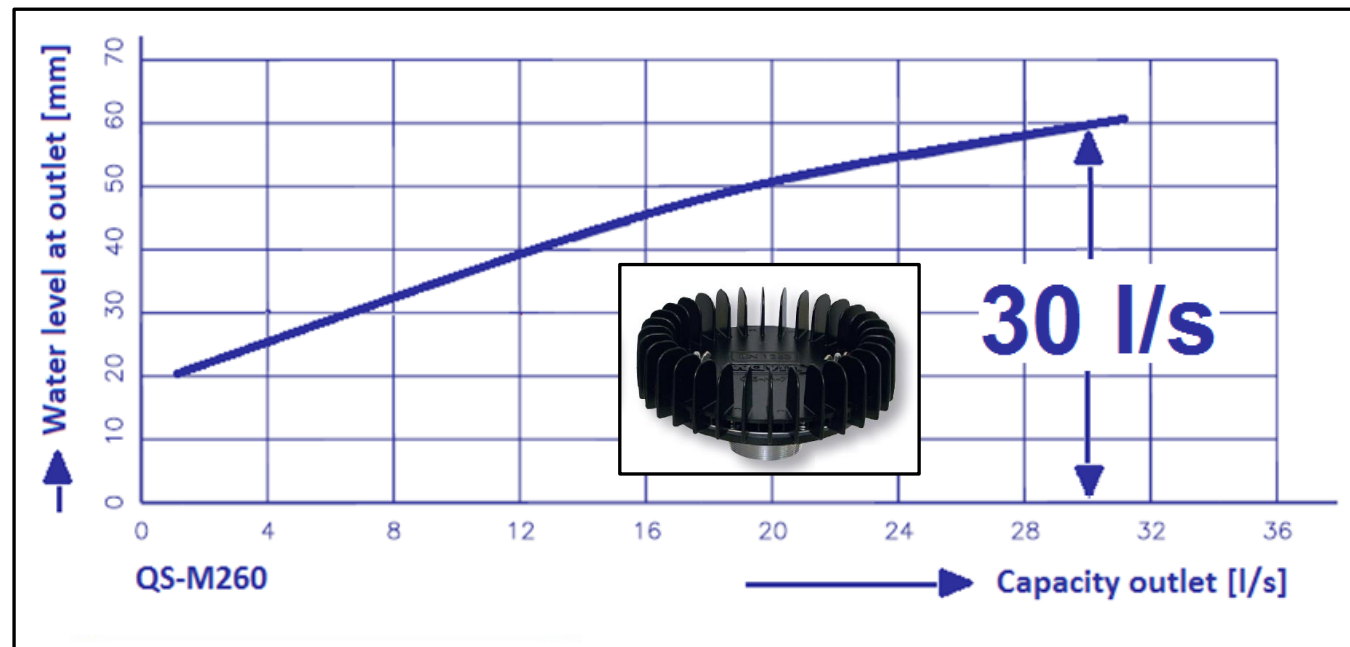
- Combination of stainless steel and aluminium gives maximum life time.
- Better UV resistance than plastic outlets.
- Will not get damaged easily when accidentally stepped on



Advantages of working with Wavin

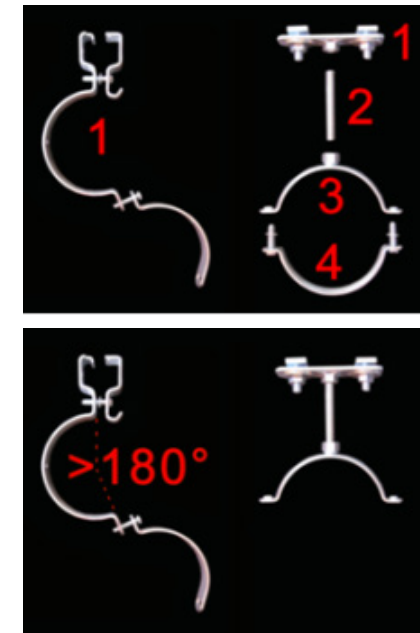
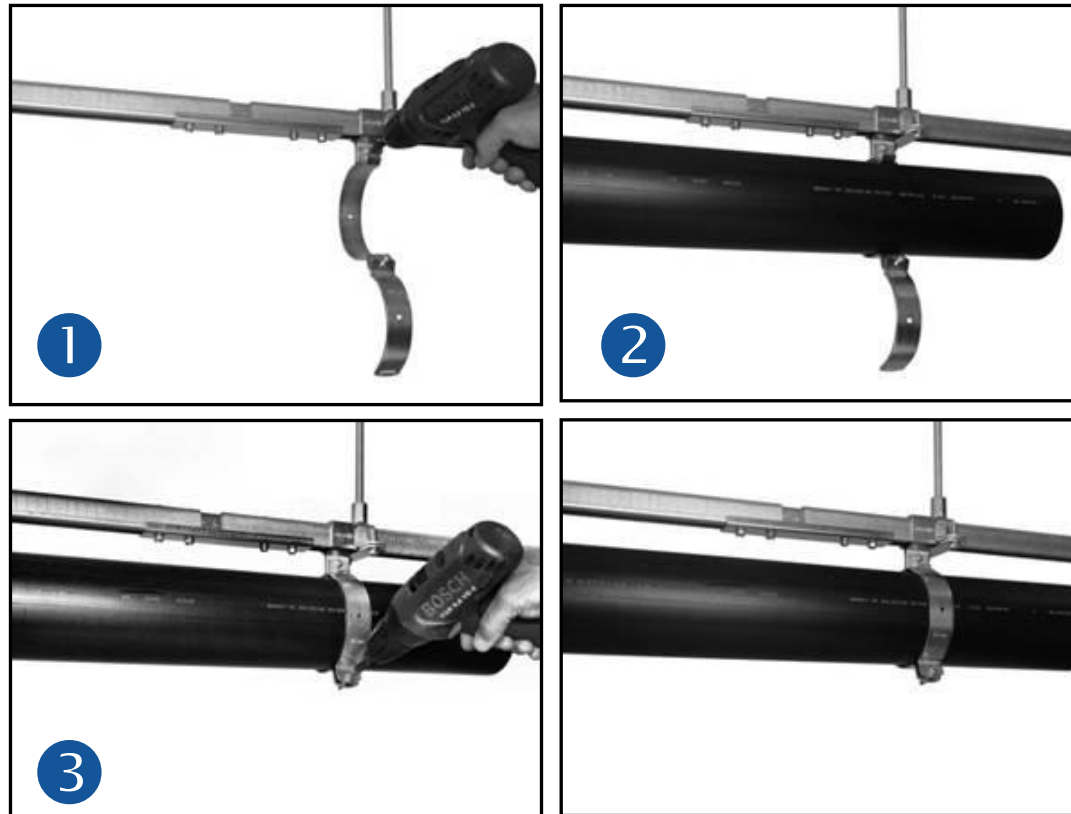
Roof outlets up to 30 l/s.

- Less roof outlets or more safety at higher water levels.

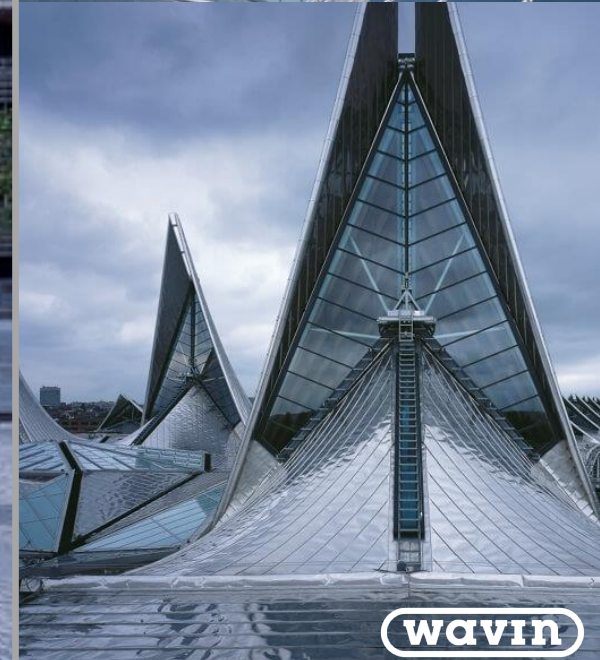


Advantages of working with Wavin

Special bracketing system to install in the most easiest way the horizontal pipework in a building in only 3 steps.



Court House
Antwerp, Belgium
Arquitecth: Richard Rogers (UK)



Amazon
Wroclaw, poland
Logistic hall



**Amazon
Poznan, Poland
Logistic hall**



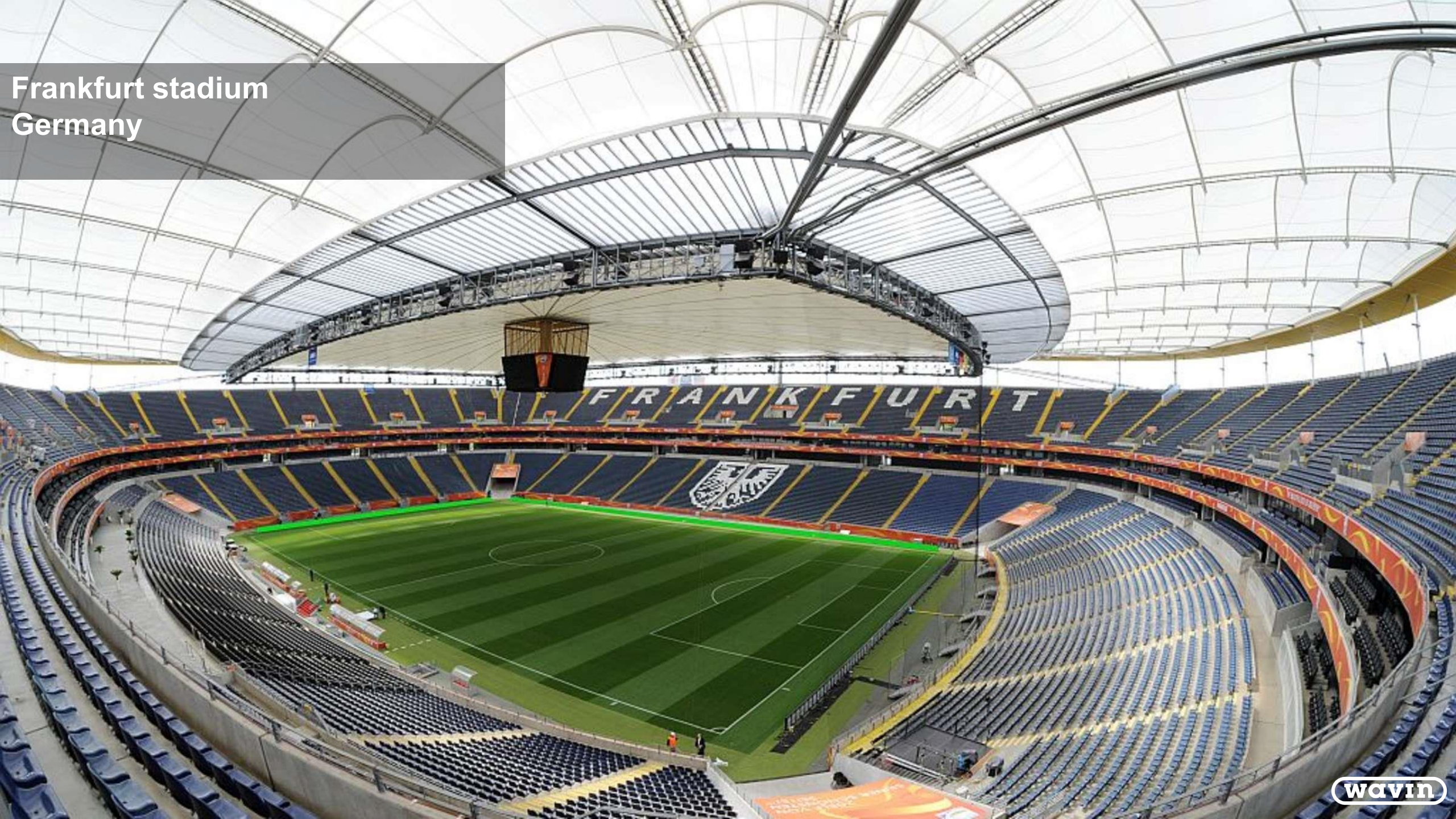
IKEA
Germany, Italy and Belgium
Distribution centre and Shops



Schiphol The Netherlands Airport



Frankfurt stadium
Germany



Tax department offices
The Netherlands



Hyundai factory Czech Republic




El Dorado airport
Bogota, Colombia



Exxenta Logistic Hall
Bogota, Colombia



The image shows a modern office building with a complex facade. The left side features a large glass curtain wall that reflects the sky and surrounding environment. The right side has a dark, geometric facade with vertical, angular elements. The building is situated in an urban environment with other buildings and greenery visible in the background.

Offices building, Icono 93 Terranvm
Bogota, Colombia

Movistar Arena Colombia



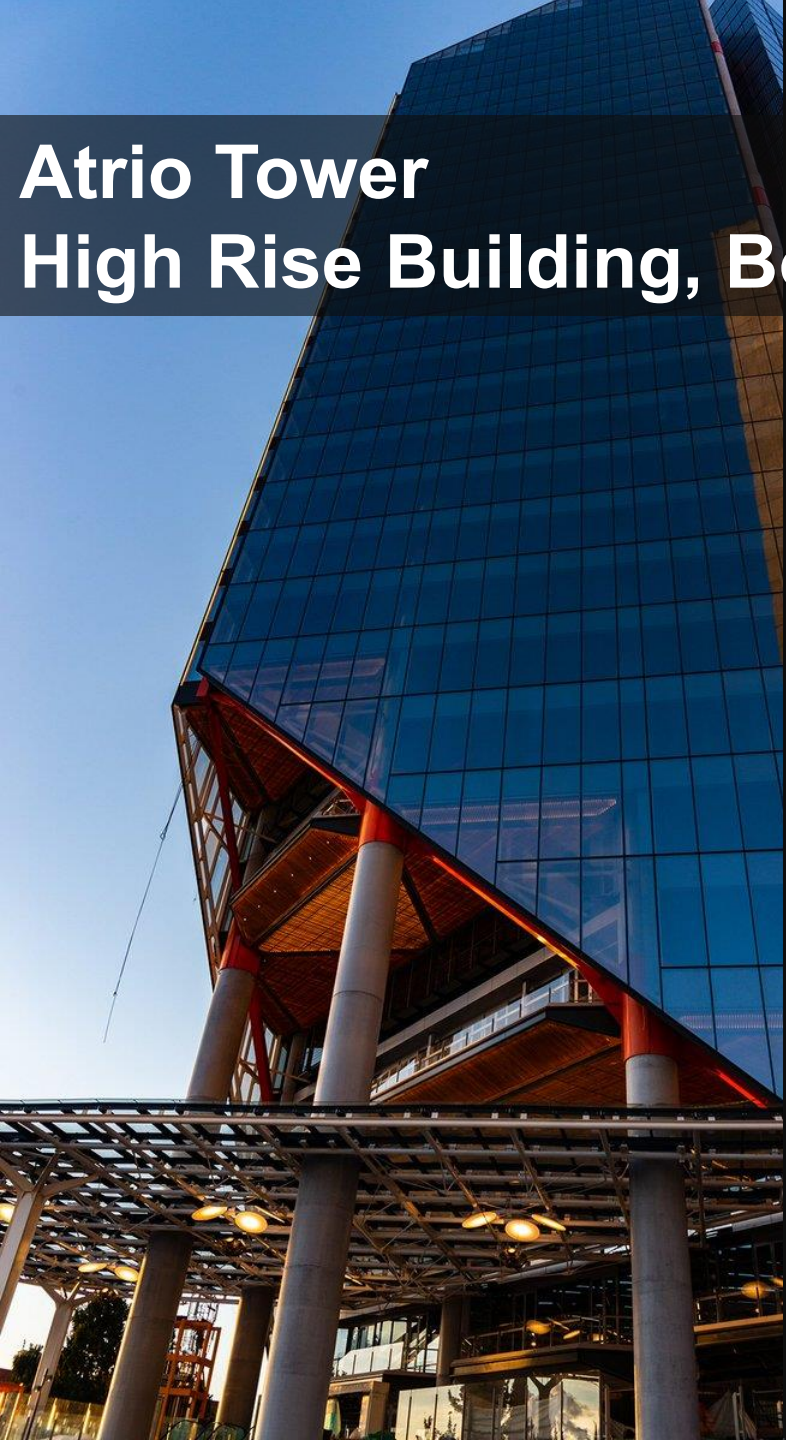
wavin



 movistar a

MOVISTAR ARENA

Atrio Tower High Rise Building, Bogota

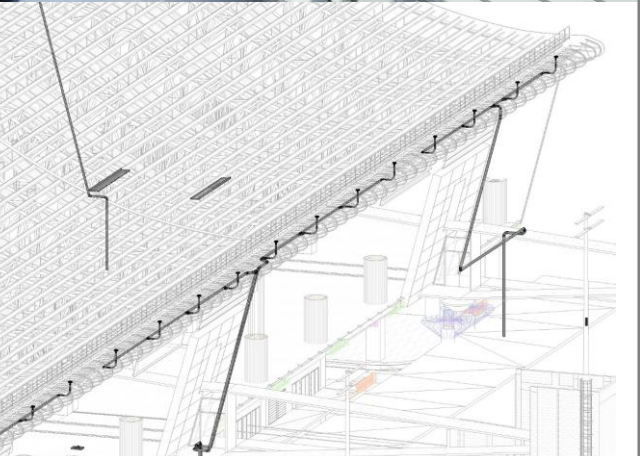




Shopping Center
Colombia

Palmerola Airport Honduras





El Salvador airport
El Salvador

QuickStream, ideal to use in:



Airports



Logistic halls
Warehouses



Shopping centers



Stadiums
Museums
Music Halls



Special roofs

QuickStream: Main advantages



**Easy
installation**



**Architectonic
flexibility**



Save time



Save money



**Guarantee safe
and resilient
buildings**

Our Services



Design



Hydraulic
calculations



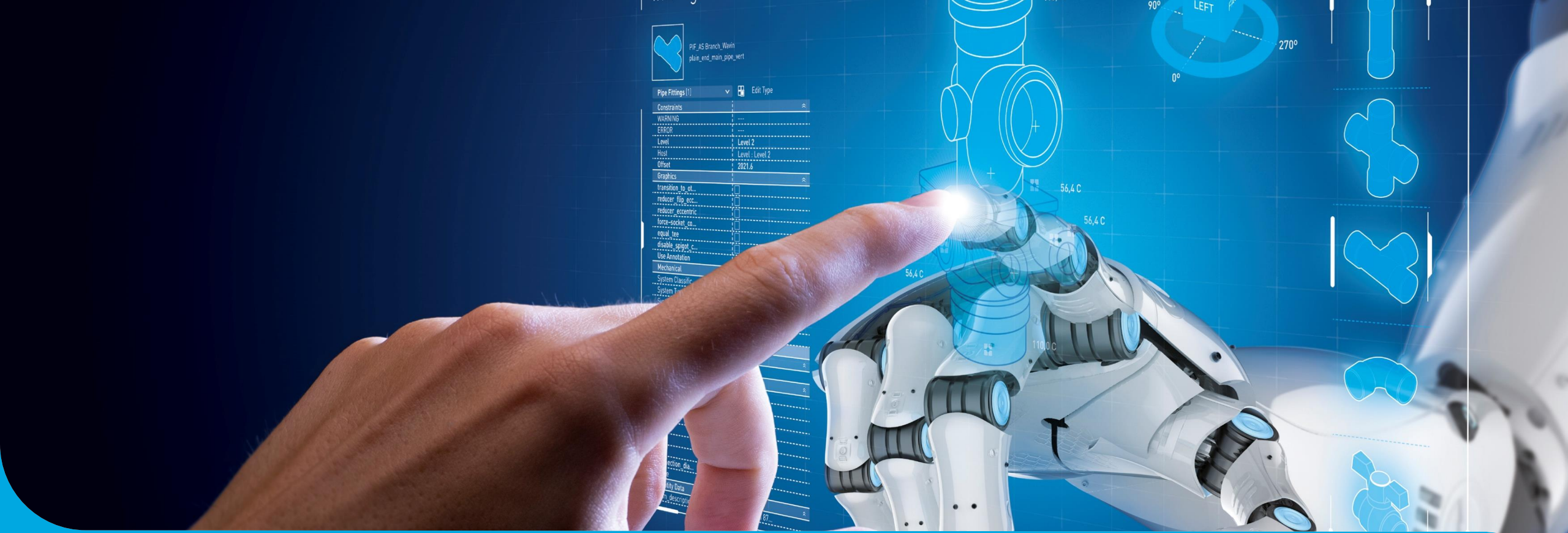
REVIT modeling



Training and
advise in all
project phases



Turnkey projects



Calculation & Design of Wavin Quickstream





Wavin Quickstream Software

AGENDA:

1. Designing process – Siphonic roof drainage and Quickstream software
2. Live Demo – Sample system calculation and output
3. Wavin Quickstream in BIM Revit

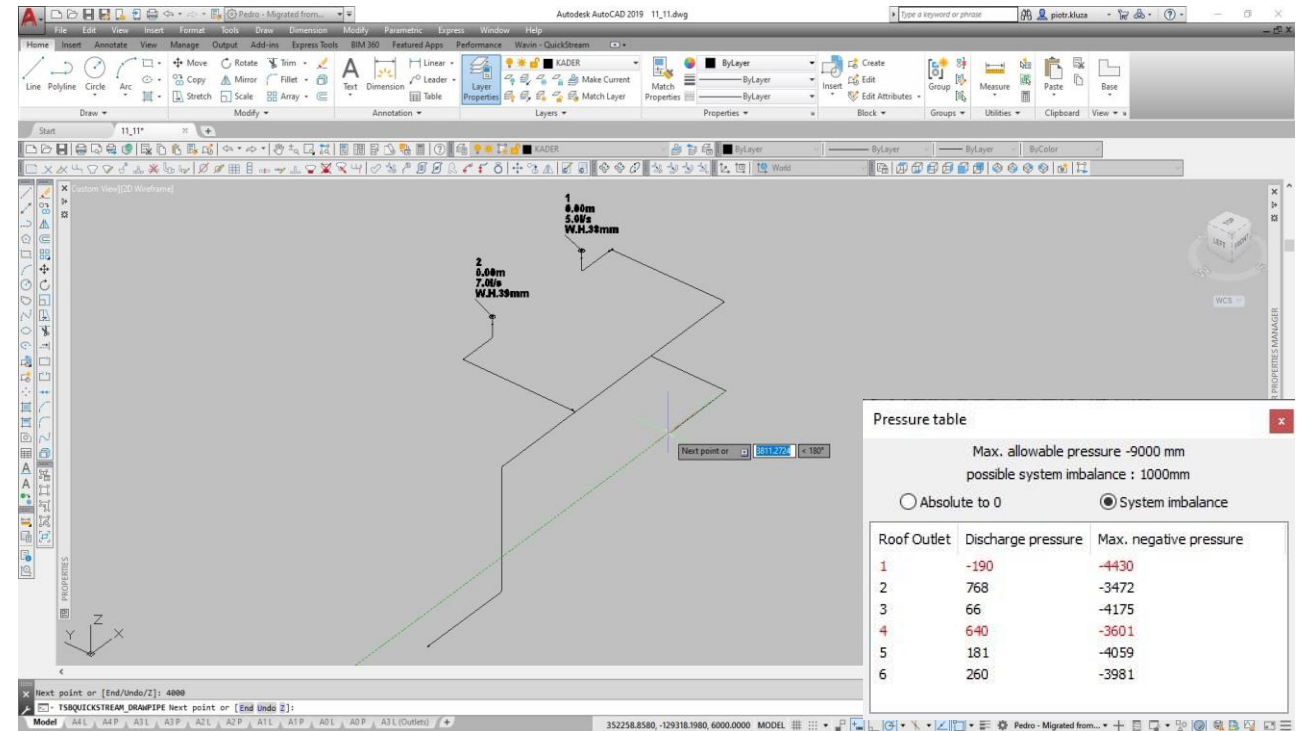
Calculation & Design software

Quickstream Software

Autocad 2020 with Quickstream Add-on

Key features

- Easy and advanced methods of correct operation checking
- Product database with local article numbers and in local language
- One software for all countries for Wavin
- Produce accurate report and bill of material



Design Process

- Local regulation and standards
- Local products catalogue (database)
- QS Software parameters setting and testing

Onboarding process



Designing Process



Output

- 2D Drawing
- Technical Report
- Bill of materials



General Data:

- Rain Intensity
- Project Location
- Overflow system
- Design roof range
- Vertical pipe location

Drawing:

- Plan drawing
- Elevation drawing
- Design description

Section roof outlet No. 1					Material take-off		
Section part no.	Items	DN diam. (mm)	Capacity (l/s)	Velo (m/s)	Outflow	Project data	
1	Discharge 110, Pipe Ø 110 0.3	110	30.5	3		Project name:	depo
2	Elbow 45°, Elbow 45°, Reducer 110 x 90, Pipe Ø 90 9.4, Reducer 110 x 90	110	30.5	3		Line name:	Line1 x 1
3	Elbow 45°, Elbow 45°, Pipe Ø 110 1.0	110	30.5	3			Line5 x 1
4	Elbow 45°, Pipe Ø 110 0.6	110	30.5	3			Line2 x 1
5	Elbow 45°, Pipe Ø 110 4.8	110	30.5	3			Line3 x 1
10	Tee 110 x 40	40	6.1	6			
7	Pipe Ø 40 0.5	40	6.1	6			
8	Elbow 45°, Elbow 45°, Pipe Ø 40 0.1, Outlet connector 2.5" Ø40 0.4	40	6.1	6			
9	QS-260-Gutter	72	6.1	1			
Section roof outlet No. 2					Material take-off		
Section part no.	Items	DN diam. (mm)	Capacity (l/s)	Velo (m/s)	Outflow	Project data	
1	Discharge 110, Pipe Ø 110 0.3	110	30.5	3		Project name:	depo
2	Elbow 45°, Elbow 45°, Reducer 110 x 90, Pipe Ø 90 9.4, Reducer 110 x 90	110	30.5	3		Line name:	Line1 x 1
3	Elbow 45°, Elbow 45°, Pipe Ø 110 1.0	110	30.5	3			Line5 x 1
4	Elbow 45°, Pipe Ø 110 0.6	110	30.5	3			Line2 x 1
5	Elbow 45°, Pipe Ø 110 4.8	110	30.5	3			Line3 x 1
10	Tee 110 x 40	40	6.1	6			
11	Pipe Ø 110 15.0	110	24.4	3			
16	Tee 110 x 50	50	5.1	4			
13	Pipe Ø 50 0.5	50	5.1	4			
14	Elbow 45°, Elbow 45°, Reducer 50 x 40, Pipe Ø 40 0.1, Outlet connector 2.5" Ø40	50	5.1	4			
15	QS-260-Gutter	72	6.1	1			



let's build
lasting cities

Thank you!

For more information visit us @ www.wavin.com/asia or
email us at wavinapac@wavin.com

Upcoming Wavin Webinars

Date: 2 Dec, Thursday
Time: 11am – 12pm (SGT)

Introduction to Wavin Water, Gas & Sewer solutions



**WAVIN
EXCLUSIVE
WEBINAR**

on Introduction to
Wavin Water,
Gas & Sewer Solution

(TS DOQ,
Compact Pipe,
Tegra Manhole and Chambers)

 2ND DEC. 2021

JOIN US TO
LEARN MORE

[REGISTER NOW](#)

wavin

Scan the QR code for all the
upcoming Wavin webinars

