References

# An easy and reliable storm water solution

**Uponor involvement**

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The new loading and parking area of Volvo's central warehouse in Vantaa was asphalted, which called for a solution to effectively and reliably channel storm water from the area. Uponor's new IQ infiltration pipes were selected as the solution to infiltrate and delay storm water on the plot.
Uponor IQ infiltration pipes were installed for the first time in Finland in the loading and parking area of Volvo's central warehouse – they provide a simple, cost-effective and reliable storm water solution. Storm water from a wide area can now be safely infiltrated and delayed before being channelled into a storm water basin built at the edge of the plot.

**Project Facts:**

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|---|---|
| Location | Completion |
| Vantaa, Finland | 2019 |
| Building Type | Product systems |
| Municipal | Storm water |
| Project Type | |
| New building | |

The new loading and parking area of Volvo's central warehouse in Vantaa was asphalted, which called for a solution to effectively and reliably channel storm water from the area. On this area, water accumulates on about 8,300m2 of asphalt and roof surfaces, and about 1,000m2 of lawn. Uponor's new IQ infiltration pipes were selected as the solution to infiltrate and delay storm water on the plot before it is channelled into the storm water basin at the edge of the plot.

"If these pipes hadn't been available on the market, we would have had to commission them," says the customer, Tapio Kalliola, Vice President of EKE-Rakennus Oy.

The designer of the site's storm water solution, Matti Mäntysalo from GeoUnion Oy, says that he first considered using storm water pipes that would be perforated before installation. ''Then I heard about the new IQ infiltration pipes and contacted Uponor right away,'' says Mäntysalo. Uponor IQ pipes had not been previously used in Finland, but had already been installed at numerous sites in Sweden. ''After a discussion with Uponor, I was convinced that IQ infiltration pipes would be an excellent fit for the property.''

Effective infiltration and delaying

IQ infiltration pipes are light, durable and easy to install. Thanks to the holes punched in them, water is infiltrated steadily through the sides and bottom. Due to their large useful capacity, these pipes infiltrate and delay storm water effectively.

Mäntysalo says that perforating similar pipes on site is more challenging.

''It requires quite a bit of work to determine how punching holes in pipe will impact its load bearing capacity. Storm water solutions are often required in parking and traffic areas with constant heavy traffic. This poses particular challenges for design.

''The load bearing capacity of IQ pipes was clear to us right from the start. It's easier to design the system when we know what load the pipes will withstand and how deep of a layer of earth we need on top of the pipes.

Many factors must be taken into consideration in the design of storm water solutions. What is the surface area of the roofs on the property? Is the plot surfaced with asphalt or lawn, for instance? From how large of an area must storm water be infiltrated or channelled? In which kind of soil conditions will the storm water solution be implemented?

''The soil also posed a challenge in the Volvo loading and parking area, as one edge is on bedrock, the other on soft soil,'' says Mäntysalo.

Light and easy to install

Hyvinkään Tieluiska Oy handled the installation of IQ infiltration pipes in Vantaa. A total of 50 metres of IQ infiltration pipes were installed at the site.

Kimmo Nyman, Supervisor at Hyvinkään Tieluiska, praises the pipes for their light weight, which made them easy to install. The work went smoothly: the pipes were lifted one at a time by the excavator and transferred to the trench, which was located close to the centre of the plot.

''It was also convenient that we didn't have to excavate the entire trench at once, unlike in the case of most storm water solutions. No geotextile is required around the pipes, and this also speeds up and simplifies the work. Hyvinkään Tieluiska had a three-person team on the site. ''We could've even done the job with two guys. We spent a total of two days on installation, including the excavation work,'' says Nyman.

Storm water management is increasingly important

Both Kalliola from EKE-Rakennus and Mäntysalo from GeoUnion intend to use IQ pipes in the future too, thanks to their ease of installation. ''The pipes are easy to install. The holes punched in the pipes result in steady water infiltration and delaying.

Mäntysalo says that even more attention must be paid to storm water management due to climate changes. ''Municipal building inspection authorities have already started demanding the installation of storm water solutions on detached house plots, too.''

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