

GEBERIT SUPERTUBE

# THE SPACE GAINING SYSTEM

**KNOW  
HOW**  
INSTALLED



- More living and floor space
- Simple planning and installation
- Smaller, consistent pipe diameter
- No additional ventilation pipes
- Horizontal pipelines without slope\*

\* Up to 6 metres

## **MORE SPACE** AFFORDED BY OPTIMISED HYDRAULICS

The ingenious, flow-optimised Geberit SuperTube technology creates a continuous column of air in the discharge pipe, meaning a parallel ventilation pipe installation is no longer required.

The pipelines with smaller dimensions, which cope entirely without ventilation pipes, require significantly smaller pipe ducts. What's more, the horizontal pipelines can be laid to a length of up to 6 metres without a slope to save on space. As a result, the Geberit SuperTube creates more usable living space.

SOPHISTICATED HYDRAULICS

# EVERYTHING AN EFFICIENT DRAINAGE SYSTEM NEEDS

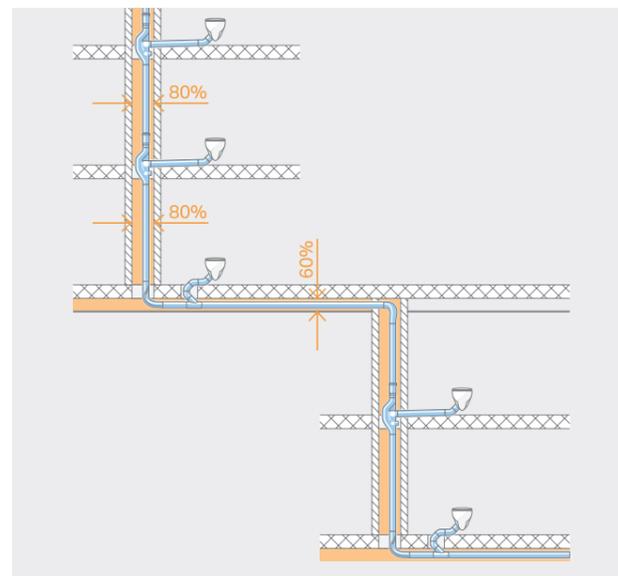
With its maximum discharge capacity of 12 l/s and a consistent pipe diameter of d110, Geberit SuperTube offers a comparable performance to a conventional system with considerable reductions in space and material requirements.

## TAKING THE GEBERIT HDPE SOVENT FITTING TO THE NEXT LEVEL

The Sovent fitting has already allowed Geberit to succeed in offering a space-saving solution for high-rise buildings by making it possible to do away with a parallel ventilation pipe. The Geberit SuperTube technology is now taking this concept one step further. Changes in direction have always required an additional ventilation pipe in the past, but Geberit SuperTube has now made this surplus to requirements.

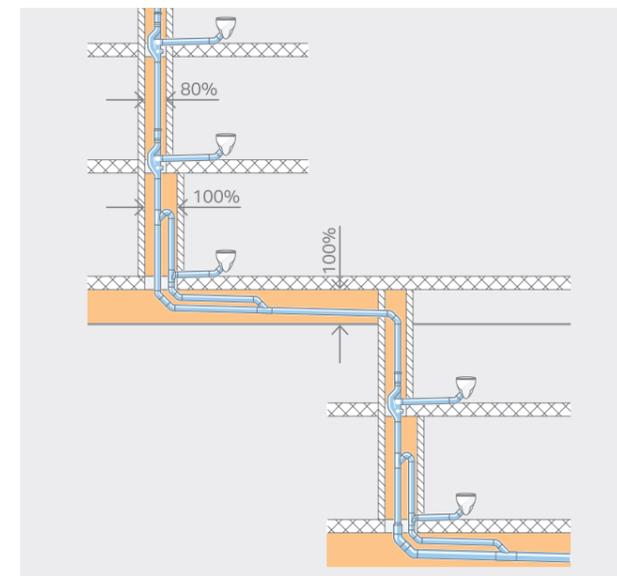
## SPACE-SAVING INSTALLATION

Geberit SuperTube saves space in every direction. The ability to do without the additional ventilation pipe reduces spatial requirements in both the vertical stack and in horizontal pipelines, for example with an offset or collector pipe. What's more, there is also no need for a slope any more in horizontal pipelines of up to 6 metres in length. This makes it possible, for example, to install ceiling suspensions extremely close to the concrete ceiling at an offset.



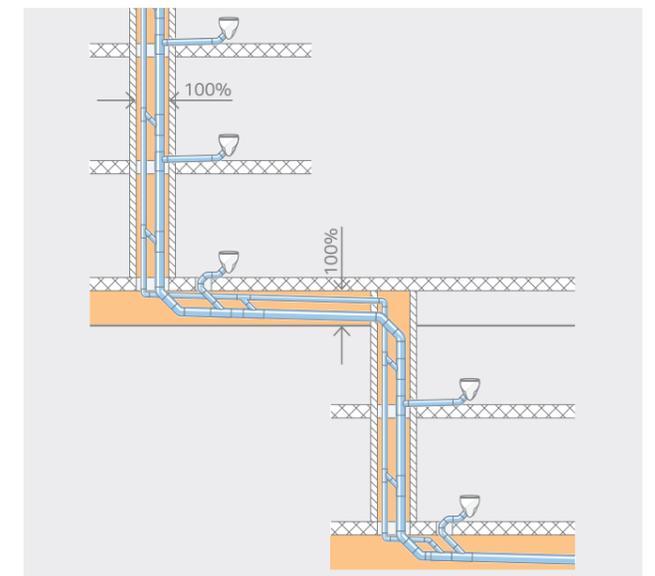
### GEBERIT SUPERTUBE

This technology facilitates a consistent discharge pipe with a single pipe dimension. There is no need for a ventilation pipe and, what's more, the horizontal pipeline can even be laid to a length of up to 6 metres without a slope.



### OPTIMISED SYSTEM WITH THE GEBERIT HDPE SOVENT FITTING

The solution featuring the Geberit Sovent does not require a parallel ventilation pipe. This achieves a maximum discharge capacity of 12 l/s with a pipe dimension of d110.



### CONVENTIONAL SYSTEM

A conventional drainage system achieves a discharge capacity of 12.4 l/s with pipe dimensions of d160 and an additional d90 ventilation pipe.



- 1 The outflowing water is set in rotation in the Geberit HDPE Sovent fitting.
- 2 The annular flow becomes a layered flow in the Geberit HDPE BottomTurn bend.
- 3 The layered flow becomes an annular flow once again in the Geberit HDPE BackFlip bend.

**The result:** A continuous column of air from the top floor to the collector branch pipe.

## COMPONENTS

# FITTINGS

## THAT PUT A WHOLE NEW SPIN ON THINGS

The Geberit SuperTube technology is based on the perfect interplay between four system components. Three clever fittings coupled with the tried-and-tested Geberit HDPE discharge pipe with its high load-bearing capacity combine to create an innovative hydraulic solution that also brings clear additional benefits. These components are permanently welded to ensure a tight connection in the long term.



### GEBERIT HDPE SOVENT FITTING D110

The optimised product geometry of the Geberit HDPE Sovent fitting guides the water into the stack and sets it in rotation, which causes it to press against the pipe wall. The resulting annular flow creates a stable, continuous column of air on the inside, which facilitates a discharge capacity of 12 l/s.



### GEBERIT HDPE BOTTOMTURN BEND

With the Geberit HDPE BottomTurn bend, a change in direction causes the wall of water to break and the annular flow to become a layered flow without disrupting the column of air. This change significantly reduces impulse losses compared with conventional solutions.



### GEBERIT HDPE BACKFLIP BEND

The twisted Geberit HDPE BackFlip bend causes the layered flow of water to swirl, which allows it to rotate through the vertical pipeline as it drains away in an annular flow. The inner air column in the subsequent stack is maintained.

GEBERIT SERVICE

# HIGH AMBITIONS CALL FOR A STRONG PARTNER

Finding cost-effective and reliable drainage systems for high-rise buildings often presents a challenge for building owners, sanitary engineers and plumbers alike. With its consistent research into hydraulics and its own, in-house product development, Geberit is raising the bar not only on a technical level, but also when it comes to service.

Partnership and reliability are core values that our customers around the world can expect from us. Whether you are looking for planning support, help with invitations to tender, or building site support, the Geberit team is always by your side when you need it.



## 1 GOOD ADVICE & PLANNING

- Support with checking the possible applications of Geberit SuperTube
  - Complete planning service including construction plans
  - Geberit tool for SuperTube Planning
  - Material planning
  - Provision of BIM data for Autodesk® Revit® and CAD data
- [www.international.geberit.com](http://www.international.geberit.com)

## 2 EASY, RELIABLE CALCULATIONS

- Support with preparing a quotation
- Creation of a material list
- Creation of complete packages (pipelines, fittings, tools) for Geberit SuperTube

## 3 ON SITE SUPPORT

- Building site training for plumbers
- On-site inspections by Geberit specialists
- Support with change planning
- Final project acceptance

## GEBERIT TOOL FOR SUPERTUBE PLANNING

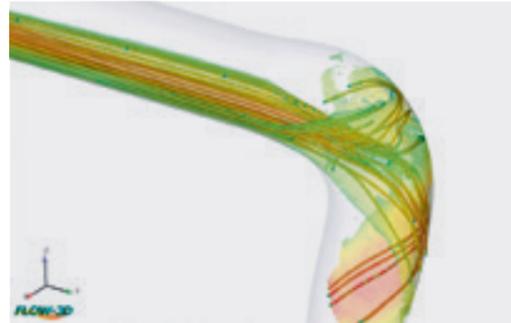
Straightforward planning thanks to the dimensioning tool. The web tool guides you through the process of planning a one-dimensional discharge pipe step by step. The values and information obtained can then be collated and downloaded as a PDF file.



GEBERIT HYDRAULIC COMPETENCE

# RELIABLE BUILDING DRAINAGE IS NO ACCIDENT

Contemporary buildings are setting ever-higher requirements, including for drainage systems. Large quantities of waste water have to be drained safely and reliably over long distances. The hydraulics specialists at Geberit develop and optimise product solutions and systems that can take on this task effortlessly. Our many years of experience in flow engineering, comprehensive physical know-how, and unparalleled simulation and testing opportunities also establish firm foundations in this regard.



## SIMULATIONS AND TESTS

The Geberit researchers start by using computational fluid dynamics (CFD) to establish potential development variations on a virtual basis in order to filter out optimal solutions for further development within the laboratory environment. The in-house drainage tower, which has been part of the test laboratory for over 50 years, then offers the opportunity to subject the new developments to all relevant hydraulic tests under real-life conditions in a subsequent step. It is only once the prototypes have successfully confirmed the simulation results in intensive laboratory tests that additional practical tests are conducted to develop them further for market.

## TAKING DEVELOPMENT TO THE NEXT LEVEL

With the Geberit HDPE Sovent fitting, which was first developed in Switzerland back in 1959, it was finally possible to create a drainage system that did not require an additional ventilation pipe. Countless private and national test installations throughout the world verified the capabilities of this revolutionary innovation before the product eventually made its way onto the market in 1970. Over the course of the continuous product development process, the familiar Geberit HDPE Sovent fitting with d110 dimensions was later relaunched on the market in a flow-optimised version. The basic physical concept behind this was constantly being redeveloped until the new Geberit HDPE BottomTurn bend and Geberit HDPE BackFlip bend fittings were finally created. These have now also made their way onto the market in the form of an optimal combination known as SuperTube technology.



## COMPREHENSIVE PRODUCT TESTS

The existing drainage tower was expanded considerably as part of the development process for the SuperTube technology in a bid to simulate real high-rise conditions in practice and create an offset at a length of up to 6 metres. The structures above the roof were designed to represent floors above the offset. The successful results – as well as all of the installations including the comprehensive measuring technology – were documented and confirmed by an external, accredited testing facility once the development process was complete.



# INNOVATIVE TECHNOLOGY FOR GREATER ENVIRONMENTAL AWARENESS



"Space savings are always a crucial consideration. As far as investors are concerned, maximising the usable selling space is paramount. Cost-effectiveness also has a role to play, although this is not always clear when comparing the material costs of different systems."

Aldo Reyes  
Artexa in Mexico

## PROJECT OVERVIEW

- Project Developer: Numel Constructora Integral
- Architect: Carlos Santoscoy
- Owner: Promodesa Habitat
- Plumber: Servi
- Height: 140 m
- Floors: 30
- Completion: 2018

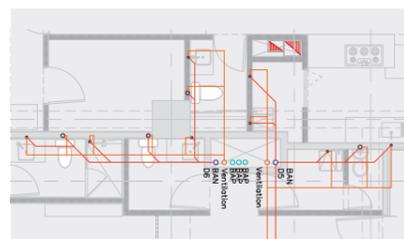
## THE CHALLENGE

The Lobby 33 architects were keen to establish a better balance between architecture and environmental friendliness through the use of innovative technologies. The concept behind the building was to create a sustainable oasis that would reduce waste and improve the CO<sub>2</sub> balance. Its use of the latest technologies is also contributing to a change in architectural mindset within Mexico.

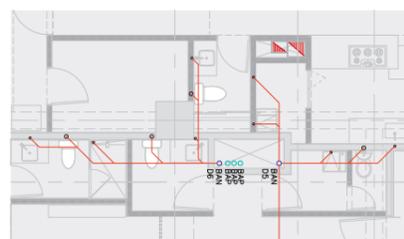
## THE SOLUTION

The Geberit HDPE Sovent fitting won out as the favourite solution for the building drainage systems, as it required no additional ventilation pipe and allowed for the use of smaller pipeline dimensions. This resulted in significant space savings as well as a more straightforward overall installation process, which not only saved time for all involved but also reduced the final costs for the customer. An equally positive factor with regard to timing was the possibility to prefabricate the parts in the Geberit HDPE pipe system.

Both the high quality standards and the time savings afforded by the Geberit HDPE Sovent fittings allowed the architects to achieve their objectives.



Planning with conventional ventilation system



Planning with Geberit Sovent

## RESULTS

- Reduction of stacks from four to two per duct
- Reduction of material by 40%
- Reduction of installation time by 40%



## SECON NILE TOWERS, CAIRO, EGYPT

# SAVING 1.1M EUR BY SAVING 50% SPACE



"Geberit Sovent was chosen because of its performance, technical solution, maintenance and the ways of installation. Moreover its price was moderate considering the necessary modifications in our project."

Hossam Abu Zeid,  
Head of Plumbing & Fire Department of EHAF

### PROJECT OVERVIEW (ALL FOUR TOWERS)

- Developer: Secon Real Estate
- Architects: EHAF
- Owner: Secon Real Estate
- Plumber: Siemens
- Height: 72 m
- Floors: 23
- Size of average bathroom: 5m<sup>2</sup>
- Year of completion: 2019

### THE CHALLENGE

The shafts were planned so narrow that a conventional drainage system was actually hard to place. The planners were looking for solutions and got convinced to go for the space-saving Geberit Sovent system. The hardest challenge was to convince the customers, who were used to the multi-stack vented systems with UPVC. Why trying out a new system that is not really tried and tested in Egypt? The consulting engineers of EHAF had to bring in their long-time experience with Geberit to convince the customers.

### THE SOLUTION

Due to the narrow shafts designed in this high-rise project it was not sufficient to use the ordinary solution for the plumbing work but the final decision for a new technique was taken. A single stack system is not the usual case in Egypt.

The requirements to save space in the shaft was fully met and almost half of the originally planned space could be saved. The reliability of the Geberit products was also convincing and thus both towers (one a residential tower, the other one a Hilton hotel) were equipped with the Sovent system.

### TECHNICAL BACKGROUND

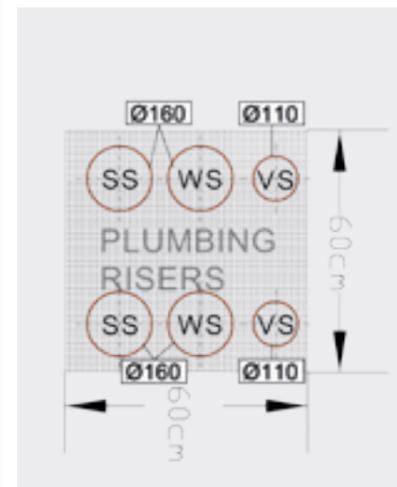
With the Geberit Sovent system they finally could save up to 50% of the originally needed space. The conventional planned triple stack system (soil, waste and ventilation) could be changed to a single stack system.

Saving space in that project was very important as to rent out as much space as possible, and in a hotel, especially in such a luxurious one, it is important to offer the guest as much space and comfort as possible. It is interesting when you start calculation with the square-metre-price: saving 50% of the space, means more return when renting out the place. In this case it is 4.8 sqm times 10'000 Euro (local sqm price), which is 48'000 Euro times 23 (floors): a total of 1'104'000 Euro.



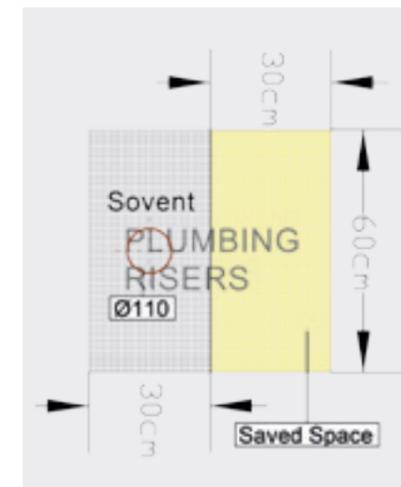
## PROJECT SUMMARY

- Cutting down the number of stacks from 162 to 27
- Original shaft size: 0.36 m<sup>2</sup>
- Shaft with optimal Sovent planning: 0.18 m<sup>2</sup>
- Optimal room extraction per bathroom 0.18 m<sup>2</sup>
- 54 bathrooms per floor: gaining 4.86 m<sup>2</sup>
- 23 floors: gaining 111,78 m<sup>2</sup>



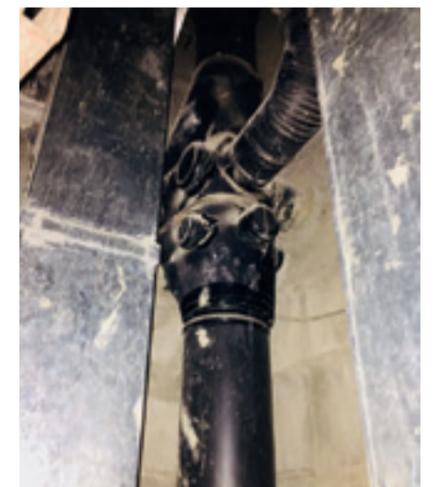
### ORIGINALLY PLANNED SHAFT

Initial shaft proposal with two triple stack systems (soil, waste, ventilation) connected to two bathrooms each floor.



### FINAL PLAN WITH GEBERIT SOVENT

Half of the space in the shaft could be saved with Geberit Sovent single stack system due to value engineering and because there was no water treatment plant setup planned.



### CONSTRUCTION WITH SOVENT

Saving space was a key factor in the Secon Nile Towers project. A conventional multi-stack system did not fit into the ideally sized shafts.

**Geberit International Sales AG**  
CH-8640 Rapperswil  
Switzerland

[sales@geberit.com](mailto:sales@geberit.com)

[www.international.geberit.com](http://www.international.geberit.com)