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

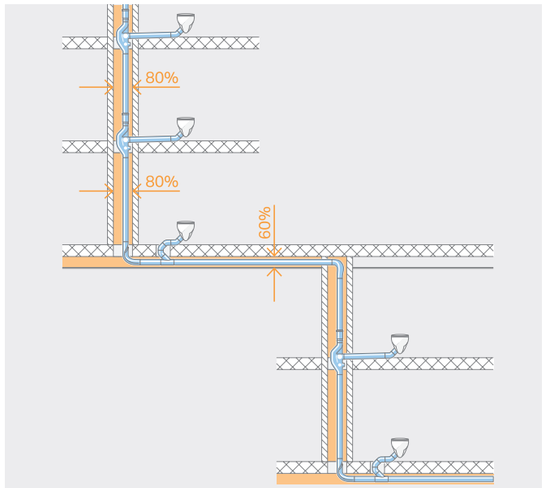
With its maximum discharge capacity of 12 l/s and a consistent pipe diameter of d110, Geberit SuperTube offers a comparable performance to a conventional system with considerable reductions in space and material requirements.

TAKING THE GENBERIT PE 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 the SuperTube has now made this surplus to requirements.

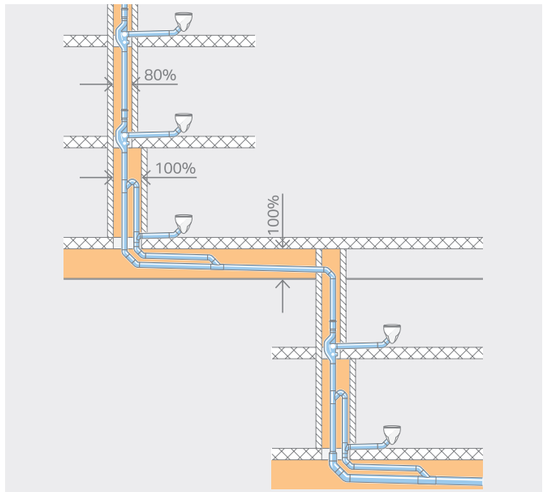
SPACE SAVING INSTALLATION

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.



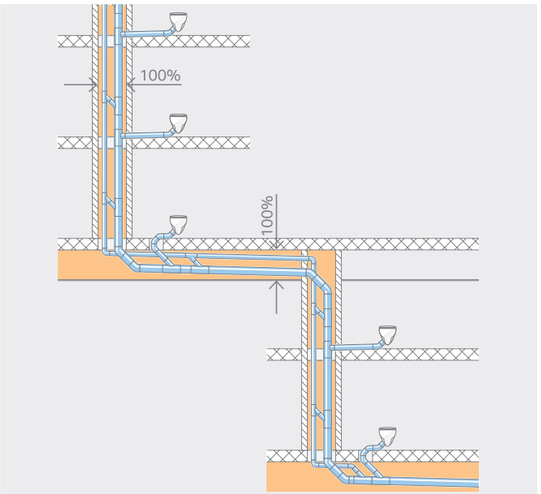
GEBERIT SUPERTUBE

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 PE 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 PE Sovent fitting.
2. The annular flow becomes a layered flow in the Geberit PE BottomTurn bend.
3. The layered flow becomes an annular flow once again in the Geberit PE 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 PE 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 PE SOVENT FITTING D110

The optimised product geometry of the Geberit PE 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 PE BOTTOMTURN BEND

With the Geberit PE 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 PE BACKFLIP BEND

The twisted Geberit PE 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 sound initial advice, planning support, help with invitations to tender, or building site support, the Geberit team is always by your side when you need it.

1 ADVICE & PLANNING → **2 QUOTE CALCULATION** → **3 PROJECT MANAGEMANT**

1 GOOD ADVICE AND 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.geberit.xy**

2 EASY, RELIABLE CALCULATION

- 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

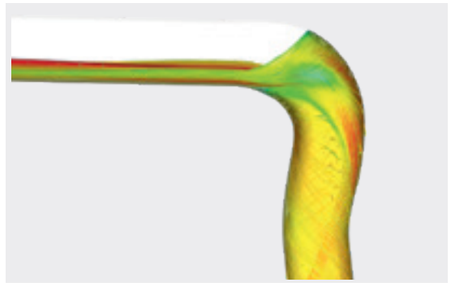
GEBERIT TOOL FOR SUPERTUBE PLANUNG

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 rainwater and 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 PE 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 PE 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 PE BottomTurn bend and Geberit PE 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.

AMANORA GATEWAY TOWERS 100, PUNE, INDIA

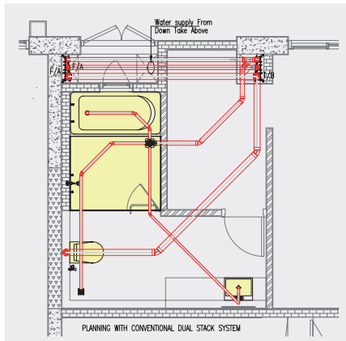
STATE-OF-THE-ART HIGH-RISE BUILDING DRAINAGE

"We were looking for a practical yet cost-effective solution to handle the drainage for the building complex. As soon as Technical Services told us about Geberit SuperTube, we knew that this technology would be just what we were looking for to handle the complex drainage requirements of the high-rise building."

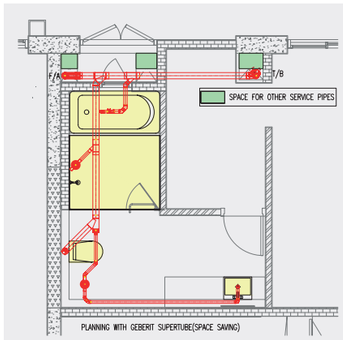
Rajendra Kenjalkar
Chief Operating Officer der City Corporation Limited

PROJECT OVERVIEW

- **Project developer:** City Corporation Ltd
- **Architect:** P&T Consultants, Singapore
- **Interior designer:** Total Design Solutions, Bangkok
- **Owner:** City Corporation Ltd
- **Plumber:** Venkatesh Sanitation
- **Height:** 150 m
- **Floors:** 45
- **Completion:** 2020



Complicated: Planning with a conventional drainage and ventilation system



Simple: Planning with Geberit SuperTube

THE CHALLENGE

The schedule for laying the pipes was incredibly tight, which is why the support from Geberit was so crucial to the sanitary engineers and plumbers. Geberit technical advisors held various workshops to ensure the SuperTube was installed both correctly and in good time. They showed the plumbers how to handle PE pipes properly and gave them the opportunity to weld pipes together. The technical advisors also offered extra support on the building site.

THE SOLUTION

The SuperTube technology is ideal for the Indian construction market, where high-rise buildings are becoming ever taller and more complex. In addition to offering significant space savings, the installation requires considerably less material. It is aspects such as these, along with its straightforward installation, that allows SuperTube to have such a positive impact on the installation time.

RESULTS

- Space savings in the installation duct and in terms of room heigh
- Simple, time-saving installation
- Reduction in raw material

ROYA NOVA RESIDENCE, TURKEY

DRAINAGE SYSTEM **FOR SMALL DUCTS**

"Thanks to the space-saving Geberit SuperTube solutions, we were able to fit the drainage system in the narrow ducts in our building. At the same time, this system has allowed us to make real savings in terms of both materials and workmanship"

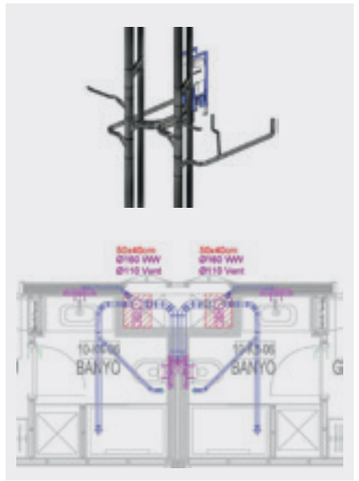
Kerem Durasi
Chairman of the Executive Board of Roya Construction

THE CHALLENGE

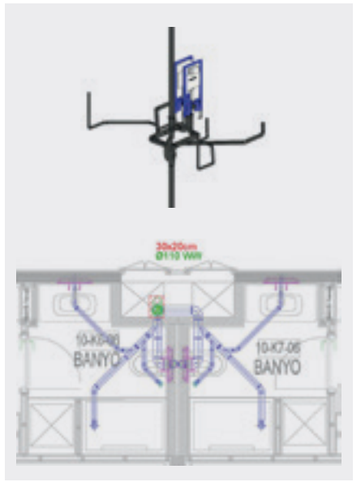
The main challenge posed by this project is that the ducts are very narrow. It was already almost impossible to fit just the plug-in PVC drainage system with ventilation pipes in the ducts, so installing other systems such as ventilation pipes in the same duct made the situation unbearable.

THE SOLUTION

It was easy to convince the customer of the benefits of Geberit SuperTube technology when we were able to decrease the planned eleven d160 stacks and additional ventilation pipes to just five d110 stacks, which the planned duct sizes can easily accommodate. Gaining 0.3 m² in each duct made it possible to install the drainage system within the building, plus we made huge savings in terms of money and time by doing without 1632 metres of pipe.



The planned drainage system that takes up 50x40 cm in each case with d160 waste water pipes and d110 ventilation pipes for eleven stacks
→



The Geberit SuperTube solution only takes up 30x20 cm with a single d110 pipe for five stacks
←

THE PROJECT AT A GLANCE

- Architects: Tago Architects
- Owner: Roya Yapi
- Plumber: ABC Mekanik
- Height: 107 m
- Floors: 30
- Bathrooms: 255
- Completed: 2021

THE RESULTS

- Total of 48 m² more space for all 30 floors
- Number of necessary stacks decreased from 11 to 5

LIGHTHOUSE 2.0, AARHUS, DENMARK

DENMARK'S HIGHEST **RESIDENTIAL BUILDING**

"It has been fantastic to work with Geberit on this project because the support has been great and the entire delivery ran perfectly."

Søren Dørr
Project manager, Wicotec Kirkebjerg

THE PROJECT AT A GLANCE

- **Architects:** 3XN A/S & Schønherr A/S
- **Owner:** APS Lighthouse United
- **Plumber:** Wicotec Kirkebjerg A/S: Søren Dørr
- **Height:** 142 m
- **Floors:** 45
- **Bathrooms:** 425
- **Planned to be completed:** 2022

THE CHALLENGE

The planners were looking for a waste water solution that offered greater performance than 5.2 l/s without the need for an additional ventilation system for both the stacks and the multiple offsets they planned within the building.

THE SOLUTION

Geberit SuperTube offered a solution that promised greater performance with pipe dimensions of just d110 and without the need for an additional ventilation system in the vertical and horizontal pipe lines. Geberit provided support throughout the planning phase of the pipelines, going through several rounds of corrections and approvals for the slopes. Geberit was also present on site during the installation phase.

THE RESULTS

- Lower installation costs due to the prefabrication of the pipe system for all floors
- Use of smaller d110 diameter instead of d160.

NEW ALAMEIN TOWERS, ALAMEIN CITY, EGYPT

BUILDING WITH A **RELIABLE PARTNER**

«We were the ones who recommended this solution to the developer and got them on board and it didn't take much convincing! But since SuperTube offers nothing but benefits for the entire construction team as it takes up less space, uses less material and the fact that it is easy to install, speeds up the whole process. To put it simply, SuperTube is a real treat for everyone on site. It is worth every penny for the resulting gains in time, space and material."

Hany Fouad
Project Director ORASCOM

THE PROJECT AT A GLANCE

- **Developer:** New Urban Communities Authority
- **Architects:** Pavillion, Concord, Yasser Beltagy, ECG Consultants
- **Interior designers:** Pavillion, Concord, Yasser Beltagy, ECG Consultants
- **MEP consultants:** Shaker, Mito Consultants
- **Contractors:** Orascom, Hassan Allam, CCC; Redcon; Dorra, Emco, Arb. contractors and Siac
- **Towers:** 18
- **Height:** 224m
- **Floors:** 32-44
- **Bathrooms:** 15,000
- **Completed:** 2023

THE CHALLENGE

Comprising no fewer than 18 high-rise buildings, the New Alamein Towers project is one of epic proportions. Time was of the essence in every aspect of this fast-track project by the Egyptian government, so a rapid installation time was high on the priority list. The ducts for the towers were planned to be extremely narrow, which meant that it was almost impossible to install a conventional drainage system in eight of the towers. The client also wanted great quality at a reasonable price from a single reliable partner that would handle every stage of this demanding project.

THE SOLUTION

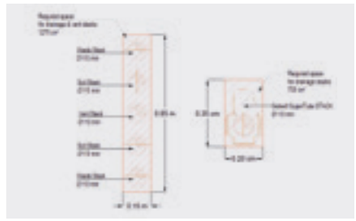
The answer to these high demands came in the form of Geberit SuperTube, which made it possible to switch from a conventional triple stack to a single stack system, thereby saving on materials, costs and taking up less space in the ducts. Not only did this make it easier to work in the ducts, but it will also facilitate maintenance in future. The Geberit SuperTube system was a more cost effective solution for the client due to the reduced stack number and duct size. The client also benefited from the full Geberit support package, which includes everything from design support and on-site assistance through to aftersales services.

RESULTS

- Reduction from 162 stacks to 54
- Approx. 50 % saving on stack installation time
- Overall space saving of 210 m^2 (4760 USD/m^2)
- Up to 34 % saving on material costs compared to a conventional system

ORIGINAL PLAN WITH PVC PIPES
The original plans featured extremely narrow ducts, which made it virtually impossible to install a conventional drainage system in eight of the towers.

CONSTRUCTION WITH GEBERIT SUPERTUBE
With Geberit SuperTube, they only used one third of the originally planned stacks and the gained space brought additional square metres per floor.



COMPARISON OF DUCT SPACE
The original plan featured three d110 pipes for waste, ventilation and soil that would have taken up 0.1275 m^2 of space (left), while the stack with Geberit SuperTube only requires a single d110 pipe covering 0.07 m^2 (right). That results to space saving amount of nearly 45 %.

QUALITY AND COST SAVINGS **IN THE LONG RUN**

The Geberit SuperTube system is the ideal choice whenever the situation calls for a durable and space-saving solution. What's more, the system offers a whole host of additional benefits in applications where the focus is on the entire life cycle of the building process. Geberit SuperTube also presents real cost savings in the long run, as this system is faster to install and requires less maintenance than its conventional counterparts.

PROJECT INFORMATION

Typical residential upper mid segment project in the UAE:

- 24 floors
- 33 bathrooms per floor
- Apartment sizes from 69 to 275 m² (742 to 2960 ft²)

PROJECT SUMMARY

- Cutting down the number of stacks from 3 to 1
- Original duct size: 100%
- Duct with optimal Geberit Sovent planning: 35%
- Space gained per floor: 8 m² (86 ft²)

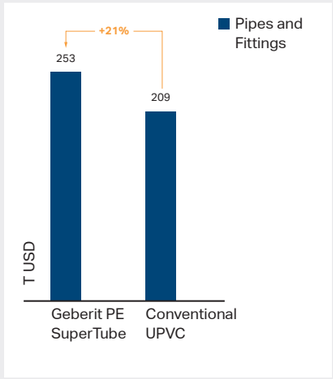
EXAMPLE OF STACK WITHIN THE PROJECT

Conventional

Geberit SuperTube

COMPARISON OF COSTS

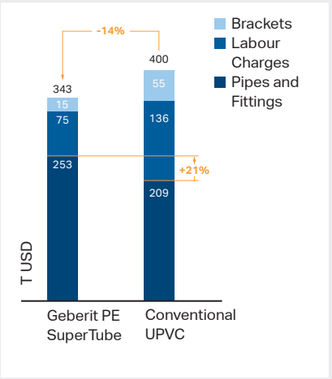
Material costs



Higher material costs because of

- High-quality HDPE
- Innovative system
- Fully welded system

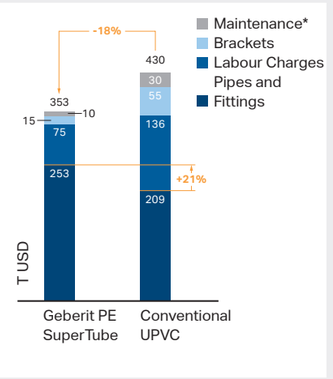
Material costs and labour charges



Lower material costs because of

- Fewer and smaller brackets
- Faster installation
- Shorter construction time

Lifetime cycle



Lower lifetime costs because of

- Permanently leakproof system
- Durable material
- Low maintenance

* Estimated costs based on several projects

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