

Viptool Engineering Software

Professional, precise,
engineered design.



INSTALLING LIFELINES FOR THE BUILDINGS OF TOMORROW.



Viega. CONNECTED IN QUALITY.

Viega is convinced: Quality is everything. Without quality, everything means nothing. That is why the company strives to exceed itself each and every day. By means of regular dialogue with its customers, by developing better products and service features and by an approach to the future that does not lose sight of its past.

Viega has been connected in quality for over 120 years. It all began with the vision of revolutionising installation technology. With over 4,700 employees and 10 locations, we have progressed to become a global market leader in the installation technology sector while still remaining true to our principles and setting our own high standards.

It is of importance to Viega to support its customers in their daily work. To this end, it shares its knowledge with customers all over the world, matches materials, technology and comfort, takes time for quality management and invests in research and development. The result: a perfectly coordinated system providing customers fast and reliable access to over 17,000 products.

Quality is everything. Without quality, everything means nothing.





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Viega Australia DELIVERING QUALITY PLUMBING TECHNOLOGY IN AUSTRALIA SINCE 2006.

<p>2006 Introduction of Viega Propress Press technology and PT3 Pressgun to Australia</p> 	<p>2009 Viega Pressgun 4</p> 	<p>2012 Viega Sanpress Inox</p> 	<p>2014 Viega Test Plugs</p> 
<p>2014 Viega In-wall Cisterns</p> 	<p>2015 Viega Pressgun 5</p> 	<p>2016 Viega Pressgun Picco Gen3</p> 	<p>2019 Viega Geopress K</p> 
<p>2020 Viega Raxofix</p> 	<p>2021 Viptool Engineering Software</p> 	<p>2022 Viega Pressgun 6 Plus and Picco 6 Plus</p> 	<p>2022 Viega New Seminar Centre</p> 

Viega is the pioneer of copper press-fit technology and first to market in Australia, with comprehensive research conducted prior to launching.

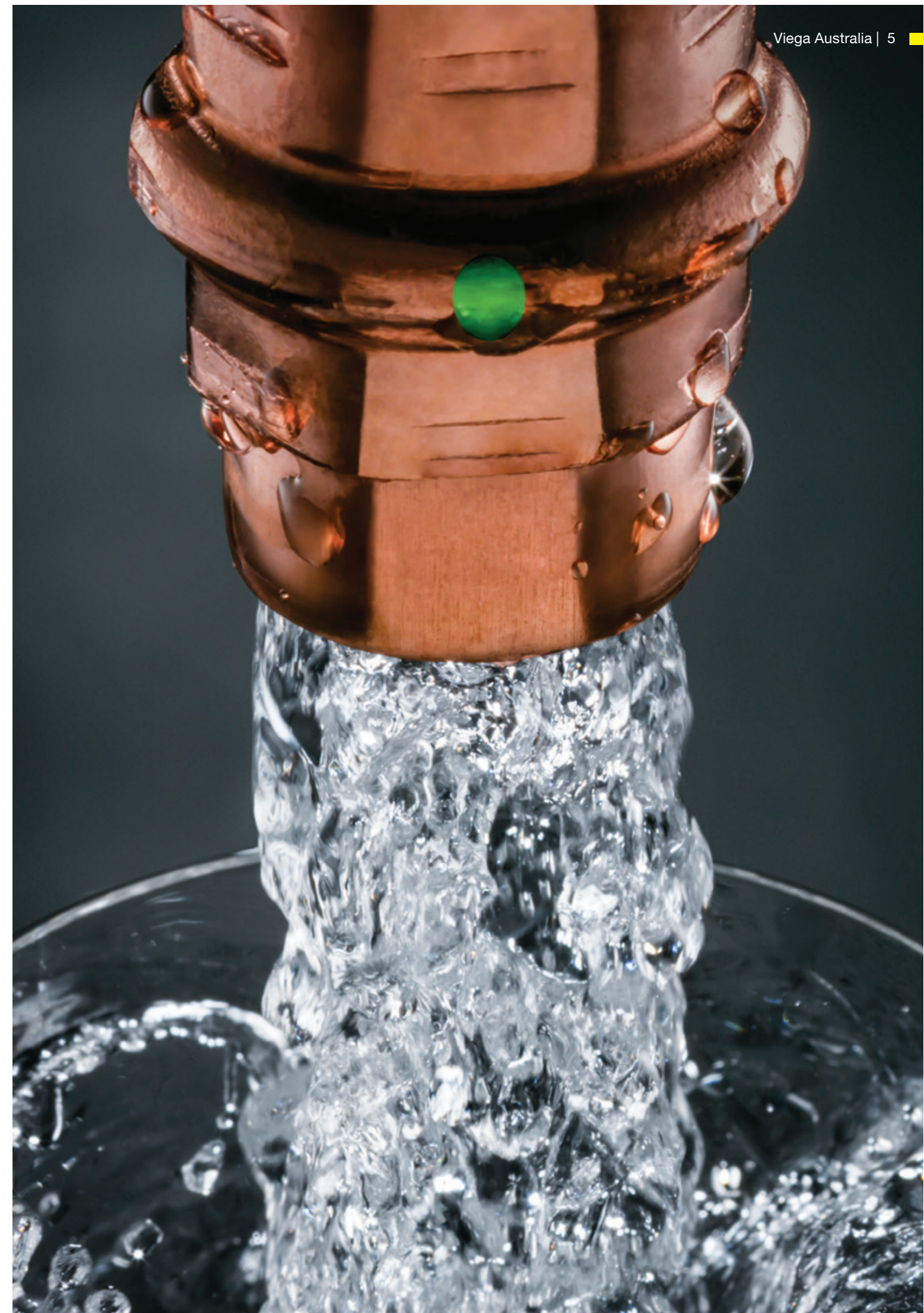
Since launching in 2006, Viega has established a steadfast reputation for quality, innovation and efficiency and provides an extensive range of products and solutions suitable for a diverse range of projects. No matter the

scale of project, Viega has a solution. For example, Viega systems have been used for marquee projects such as Barangaroo in Sydney and the Royal Children's Hospital in Melbourne, through to prisons, defence bases and residential dwellings.

Viega also offers a purpose designed seminar and training centre at Viega's Sydney head office, where the Viega

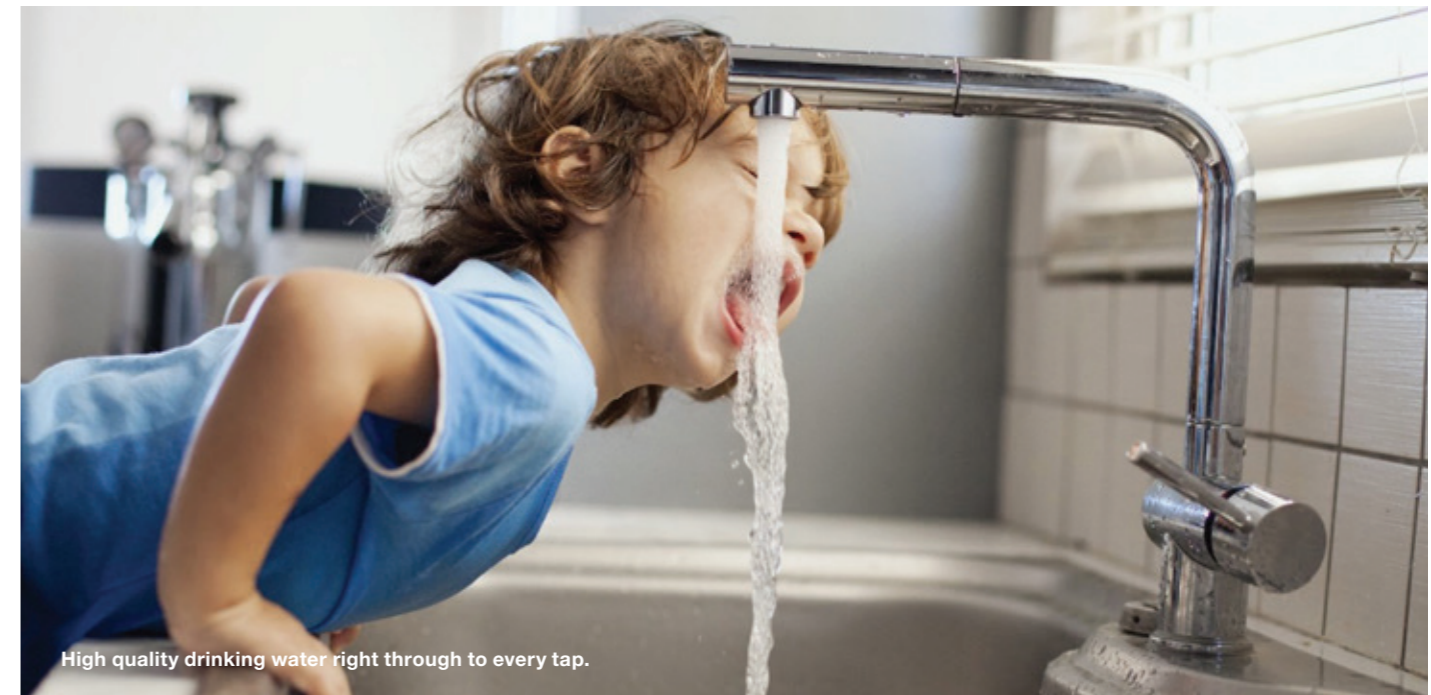
team welcomes industry consultants and contractors to provide training and education on Viega products and solutions, as well as other important issues like maintaining drinking water quality.

Quality and innovation are the key drivers behind the solutions Viega has brought to market in the past and will continue to drive all future solutions.



Drinking Water Quality

EVERY DROP OF DRINKING WATER IS PRECIOUS, WHICH IS WHY WE DO EVERYTHING WE CAN TO KEEP IT THAT WAY.



High quality drinking water right through to every tap.

Germany has some of the cleanest tap water in the world so as a German company, we are committed to the preservation of drinking water quality and protecting the most important source of life. Our commitment to hygiene and safe drinking water means we are constantly focused on innovation, improving our technology and striving to do better.

In addition to high-quality system components, a sound hygienic design

is also important for providing a safe, long term drinking water system. In order to provide hygienic drinking water systems for buildings, we offer a complete end to end solution with the aim of guaranteeing the highest quality drinking water, right from the planning stage.

That's why we are not only committed to constantly improving the quality systems we make in Germany, we offer comprehensive research studies and

information as well as the highest level of training, through to a complete design solution, Viptool Engineering Software. Our team of professionals are experts in dealing with regulations and installation technology.

This means our water is just as pure when it leaves the tap as it is when it enters the building.



Viega expertise in drinking water

Drinking water is key to life. It is so important that we use this resource responsibly. Viega drinking-water systems have long been doing just that. They have been issued the WaterMark Certification, are food-safe, hygienic and meet all legal requirements.

PURE, UNCONTAMINATED DRINKING WATER IS ESSENTIAL FOR PRESERVING OUR HEALTH.

Drinking water is often exposed to risks of contamination by external factors. Unfortunately, cases of bacterial water infections are on the rise. For this reason, Viega emphasises the critical issues with regard to drinking water systems as recommended in the WHO Guidelines for drinking water quality and defined more explicitly in the Australian Guidelines for Legionella Control.

The characteristics of water can change due to certain chemical or microbiological substances such as pesticides and bacteria. The latter are in fact one of the main causes of danger, especially since they are caused by regularly overlooked and underestimated aspects of the system, such as the choice of materials, the exchange of water in the system or the operating temperatures of the system.

Hospitals, nursing homes, tourist accommodation and sports centres are the most critical facilities due to their complexity and risk factors such as usage patterns, whether by the usual residents or seasonality. For this reason, a hygiene-oriented design and a targeted choice of specific technical solutions can enable the system operator to maintain consistently safe water quality over the long term.

The preservation of drinking water quality is best achieved when the different parties collaborate responsibly and professionally, from the designer and the installer, to the maintainer and operator of the system.



In sterile patient environments, potable water must be free from any bacteria.

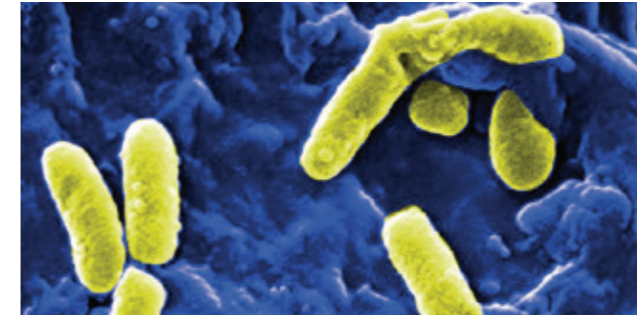
DRINKING WATER HYGIENE: NOT ALWAYS A CLEAR CASE.

As the complexity of drinking water systems increase, so too do the risks of negative effects on hygiene. This applies particularly to densely branched pipe networks, where the designer's aim was for maximum convenience. As a result, there are often adverse effects on the quality of drinking water:

- Insufficient flow through the pipes
- Hot and cold temperatures in drinking exchange
- Stagnation due to insufficient water exchange

All of these points are conducive to the growth of pathogens. The most well-known are pseudomonas in cold drinking water and Legionella, until now mainly found in warm drinking water. However, due to cold drinking water being heated unintentionally, they are increasingly found in these pipes too.

These risks are perfectly avoidable however with a considered approach to the planning, construction and proper functioning of drinking water systems.



Pseudomonas aeruginosa is considered to be the main cause of infections spread through buildings via drinking water.

Pseudomonas aeruginosa

This drinking waterborne bacterium is one of the most significant causes of infections in hospitals. Its optimum growth temperature is between 25°C and 30°C. There should be no trace of *Pseudomonas aeruginosa* in a 100ml water sample, because according to the Robert Koch Institute, even the smallest concentration is "bad for health".

Infections are difficult to treat and in humans, they can lead to serious organ diseases, even resulting in death. When this bacterium is present in drinking water systems, it can lead to entire buildings being shut down for sanitisation.



Legionella pneumophila is the cause of Legionnaires' disease (an atypical pneumonia).

Legionella pneumophila

This bacterium claimed 30 lives in 1976 in the first known Legionella epidemic in a hotel in the United States. Since then, several similar cases have occurred, including those in Bovenkarspel in West Frisia (Netherlands) in 1999.

In Europe, the number of Legionella-related illnesses is estimated at 30,000 a year – with a mortality rate of 10 to 15%, i.e. 3,000 deaths per year. Good temperature conditions for the propagation of Legionella bacteria are between 25°C and 45°C.



Viega drinking water systems guarantee optimal water flow; important for maintaining water quality.

Prevention: the best tool available

In the past, it was customary to intervene in such installations only after contamination and to apply remediation systems that were more or less effective. It has now been established that the best method is prevention, by designing intelligent hygienic drinking water systems from the very beginning.

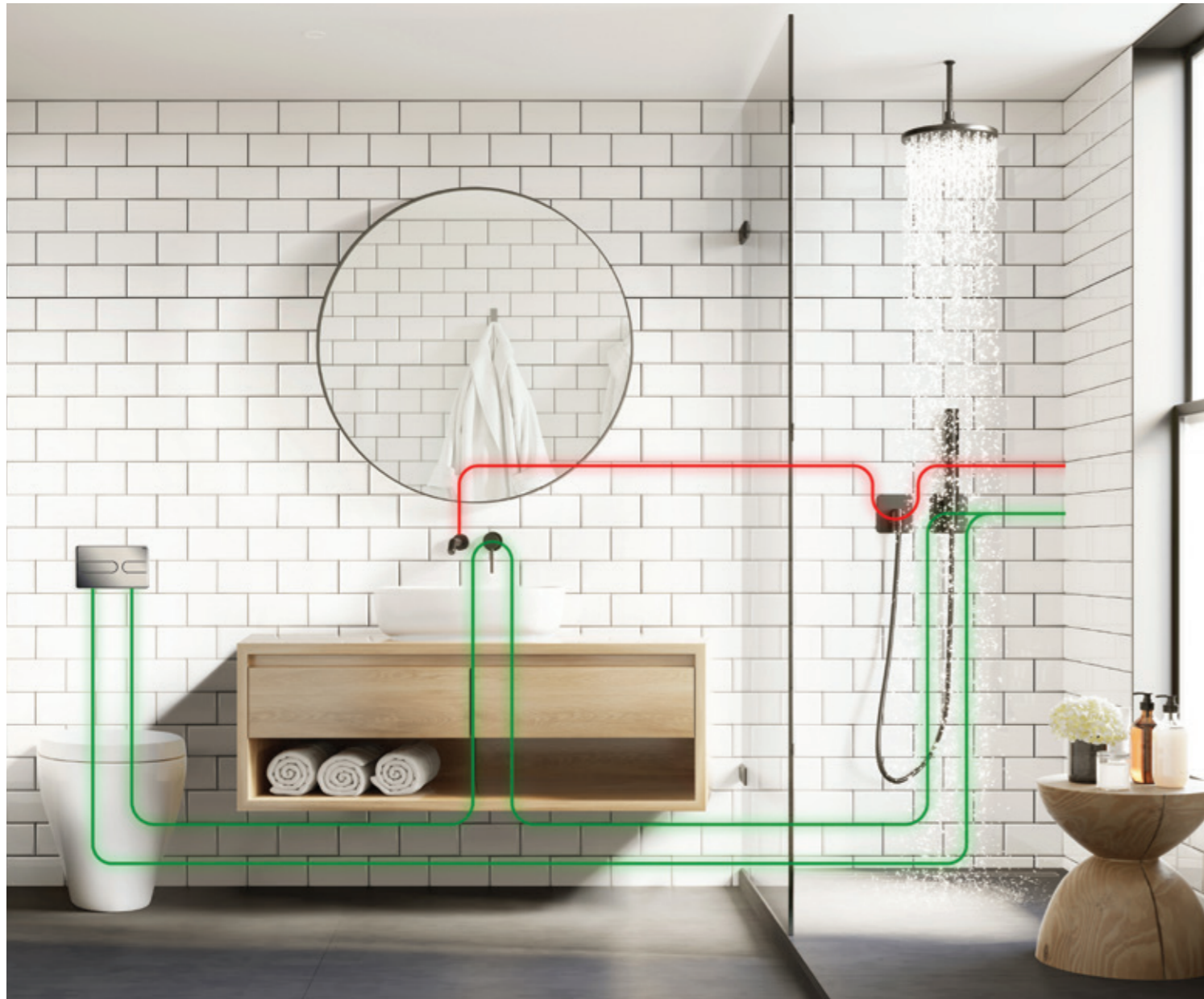
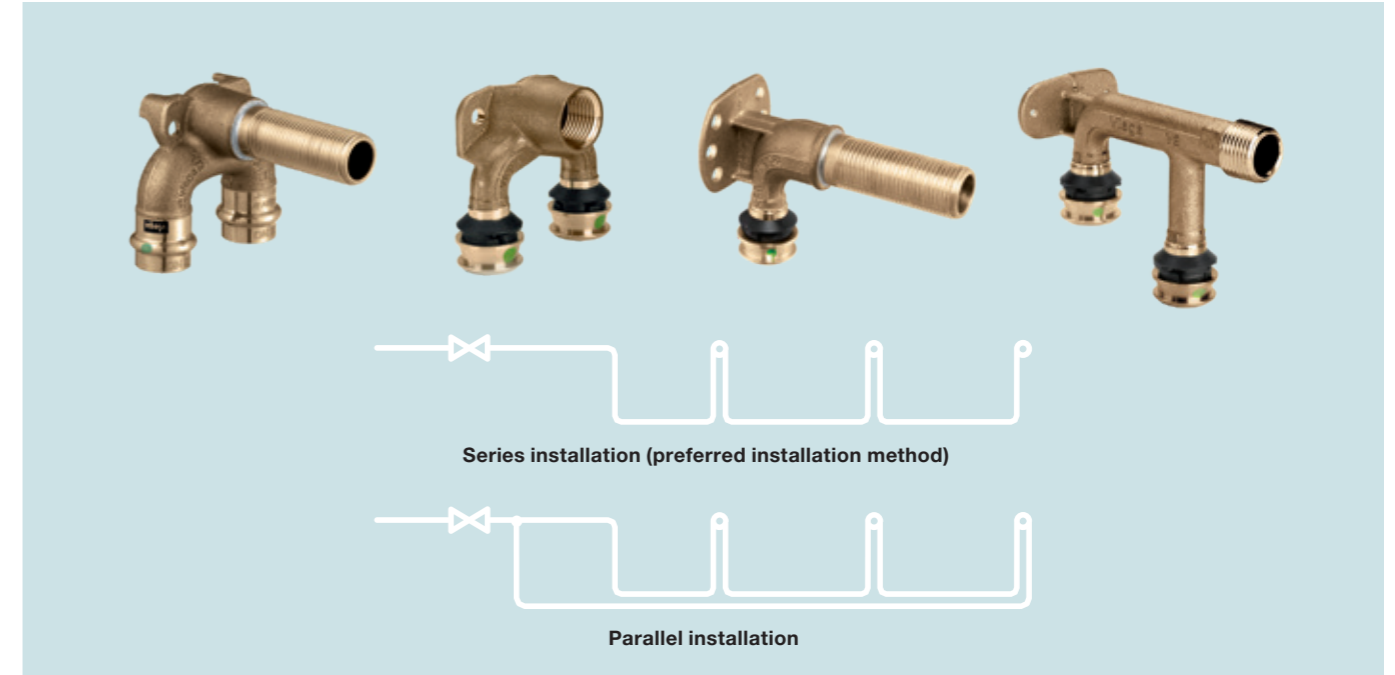
WATER MUST FLOW, ESPECIALLY IN DRINKING WATER PIPES.

To guarantee a consistently high quality of drinking water, stagnation in the pipes must be kept to a minimum.

This problem is of primary importance if there are systems, or parts of them, that are not used very often. Hotel rooms with limited occupation in the low season, infrequently used service bathrooms and facilities are examples of how a system that has not been well thought out can become a risk. However, water stagnation can easily be addressed

during the design phase. Limiting the so-called dead-leg pipes in a system as much as possible and removing all unused pipes are simple measures that can be put into practice.

To guarantee consistently high quality drinking water where there are infrequently used facilities, series or parallel installations are recommended as they provide continuous flow through the pipeline.



Series installation

Thanks to the classification of tapping points, an effective technical contribution can be made to maintain hygiene by placing the most frequently used supply points as the last element (e.g. cold-water toilet and hot-water tap).

By activating the last fixture, the water will flow through the previous supply points, thus replacing the water.

Parallel installation

If it is not possible to install a series distribution, an alternative is parallel distribution.

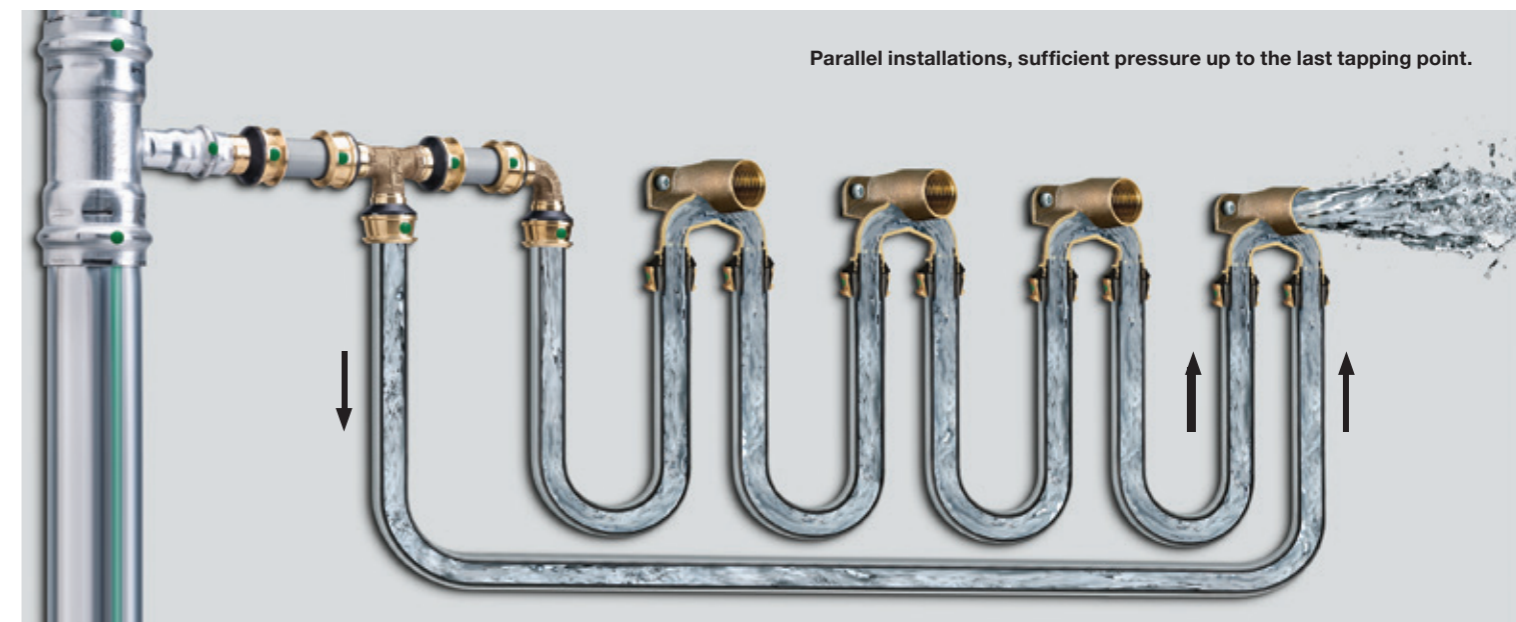
This is the ideal solution for systems where it is difficult to determine the most-used fixture. Water is fed from both sides of the parallel system, whereby the water in each section is replaced and pressure loss in the internal distribution can be optimised.

Due to the large amounts of water, this type of connection is normally recommended for cold-water pipes. In the presence of a hot-water recirculation pipe, it is not advisable to install a parallel distribution system, as too much heat may be transferred from the hot-water pipe to the cold-water pipe via the tap mixer.

Parallel and series distribution

In addition to the usual fittings, special Viega components also guarantee the quality of the drinking water in occasionally used systems:

- Daisy chain back-plated fittings for a parallel or series pipe, which connects the taps
- Standard back-plated elbows, for the last tapping point of a series distribution





DIN 1988-300

A SUPERIOR STANDARD FOR DRINKING WATER INSTALLATIONS.

With a comprehensive history of development, research and evolution stemming back to 1917, DIN 1988-300, the German standard for drinking water installation calculations, is an exceptional standard and has been built based on comprehensive field studies conducted in Europe to collect real usage data from different building types. As a result, it is highly relevant to new plumbing technologies and importantly, real time, modern building, lifestyle and environmental needs, having most recently been reviewed and updated in 2012.

It is widely recognised that water usage has changed over the years. Plumbing technology and consumer needs have evolved considerably and as a result current Australian standards deliver pipe sizing that is generally oversized due to a higher required flow rate for fixtures. As an example, the flow rates required to run a shower or toilet today is nowhere near what it was decades ago.

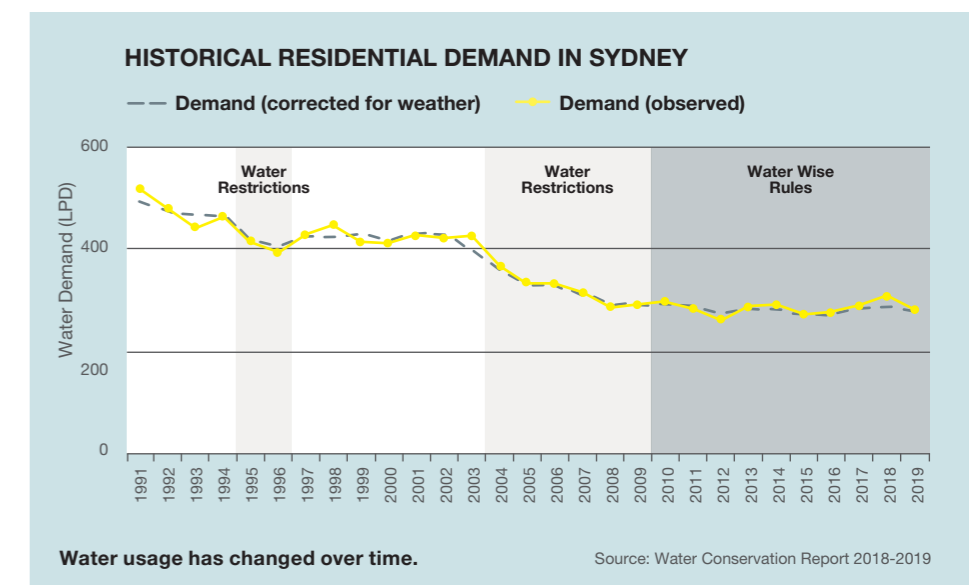
The DIN 1988-300 standard applies to the design, installation, modification,

maintenance and operation of drinking water installations and the detailed calculation method described in this standard is suitable for many types of buildings. DIN 1988-300 is a reliable basis for sizing pipes and for determining the size of components in circulation systems (circulation pipes, pumps, valves).

The principle of the DIN 1988-300 standard is the dimensioning of drinking water installations with the aim of ensuring acceptable flow rates at all tapping points with the smallest possible pipe diameters during peak loads on the systems.

Designing with DIN 1988-300 provides many advantages including calculations based on real usage of different building types, peak flow rates, optimal velocity and more hygienic installations to maintain high quality drinking water; a key focus for Viega.

Overall, planning and installation with DIN 1988-300 delivers superior comfort, hygiene and economic efficiency.





INCREASE WATER QUALITY AND EFFICIENCIES.

Determining the right amount of water to each fixture is an important part of hydraulic design to deliver high quality drinking water, as well as for environmental factors such as saving water. It is growing in importance, and many manufacturers have consequently reduced water consumption of their products. As an example, in new toilet cisterns, less water is required to flush. With that comes a need for less water volume travelling through piping to fixtures.

Velocity

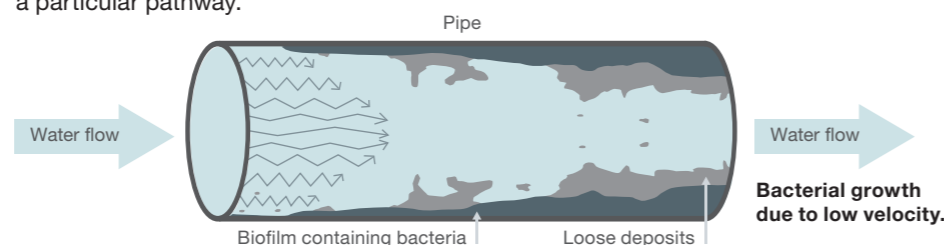
A key consideration in water calculation is the velocity of the water running through the pipes. Higher velocities are preferred to have a “self-cleaning” effect on the pipes, however too fast a delivery can cause noise issues. Low velocity is an issue within itself as water can remain stagnant at the outer areas and result in bacterial growth, and therefore poor water quality. Therefore, the ideal scenario is providing a velocity calculation solution that delivers balanced and optimal velocity to avoid both these and other issues.

DIN 1988-300 determines velocities based on proposed usage and installation, whereas the Australian

Standard dictates velocity limits up to 3 m/s, regardless of where the section of pipe is located within the piping system.

With DIN 1988-300, mains can go up to 2m/s and branch lines can even go to 5m/s. Also depending on the material settings, velocities can change. A critical consideration is the number of components such as valves in a particular pathway.

A multilayer pipe transfers less noise to the outside and therefore DIN 1988-300 allows velocities up to 5m/s. In areas where a permanent outlet (more than 15 min run time) is installed, velocities will be restricted to 2 m/s. Less components result in less pressure or head loss, and therefore a higher velocity is permitted.



Head Loss

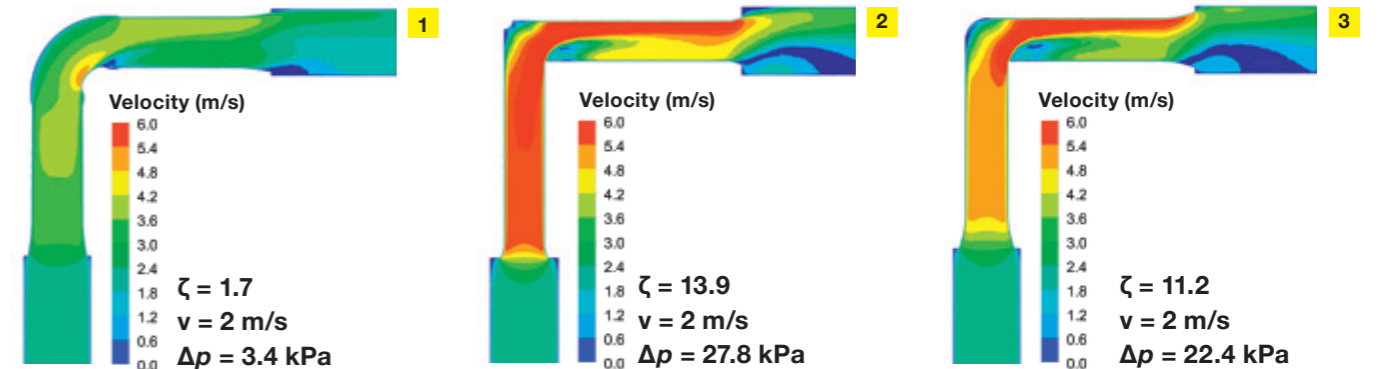
Current AU Standards focus on head loss for elevation and units, whereas DIN 1988-300 factors head loss for every fitting, metre of pipe and elevation. It factors it against the units and fixture requirements. Pressure or head losses exist in every area where there is movement.

Interestingly, if you double the velocities the pressure loss will in fact be four times higher.

Also, the key requirement when using DIN 1988-300 is to preferably use the manufacturer’s technical information for the material system (pipes, fittings and

valves) chosen. Only if there is no other option (because a neutral specification is required), DIN 1988-300 allows you to use the standard values available in the regulation.

Fittings with large pressure losses cause pipe upsizing, resulting in high stagnation volume.



Viega Raxofix provides a flow friendly radius with minimum restrictions.

Extreme pressure loss caused by irregular shape and greatly restricted cross sections.

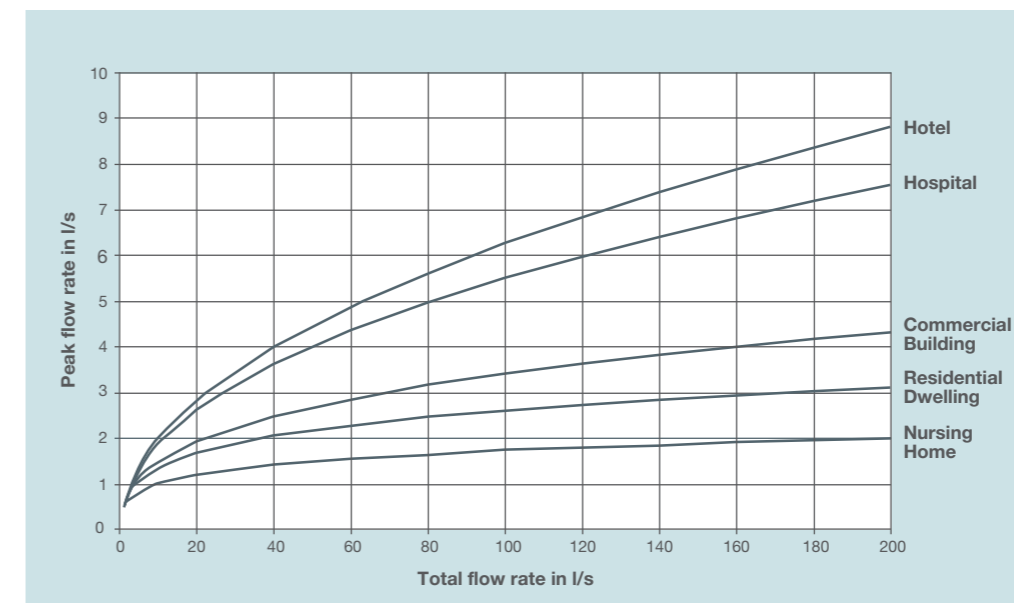
Slightly improving the inner diameter is not always enough on its own to prevent significant pressure loss.

Flow Simultaneous Rate

Different building types have different usage requirements, such as residential compared to commercial buildings. Likewise, there is often different usage in various areas of a building concurrently, such as in hotels and hospitals. In this instance, it is necessary to define a simultaneous rate for each one of them to determine the optimal peak flow rate, and the flow rates for single fixtures vary.

DIN 1988-300 states you determine the flow rates based on the manufacturers products you select for the installation (or if not available, standard values are available in DIN 1988-300), which in turn is based on the type of building occupancy, and therefore intended usage. Other standards do not differentiate between the building occupancy and provides a generalised calculation, which can result in less than ideal flow rates used for the calculation of some pipe diameters.

Likewise, some other standards divide hot and cold-water services as two separate publications. DIN 1988-300 does not, which in general, provides simpler calculations and avoids two calculations for the same design.

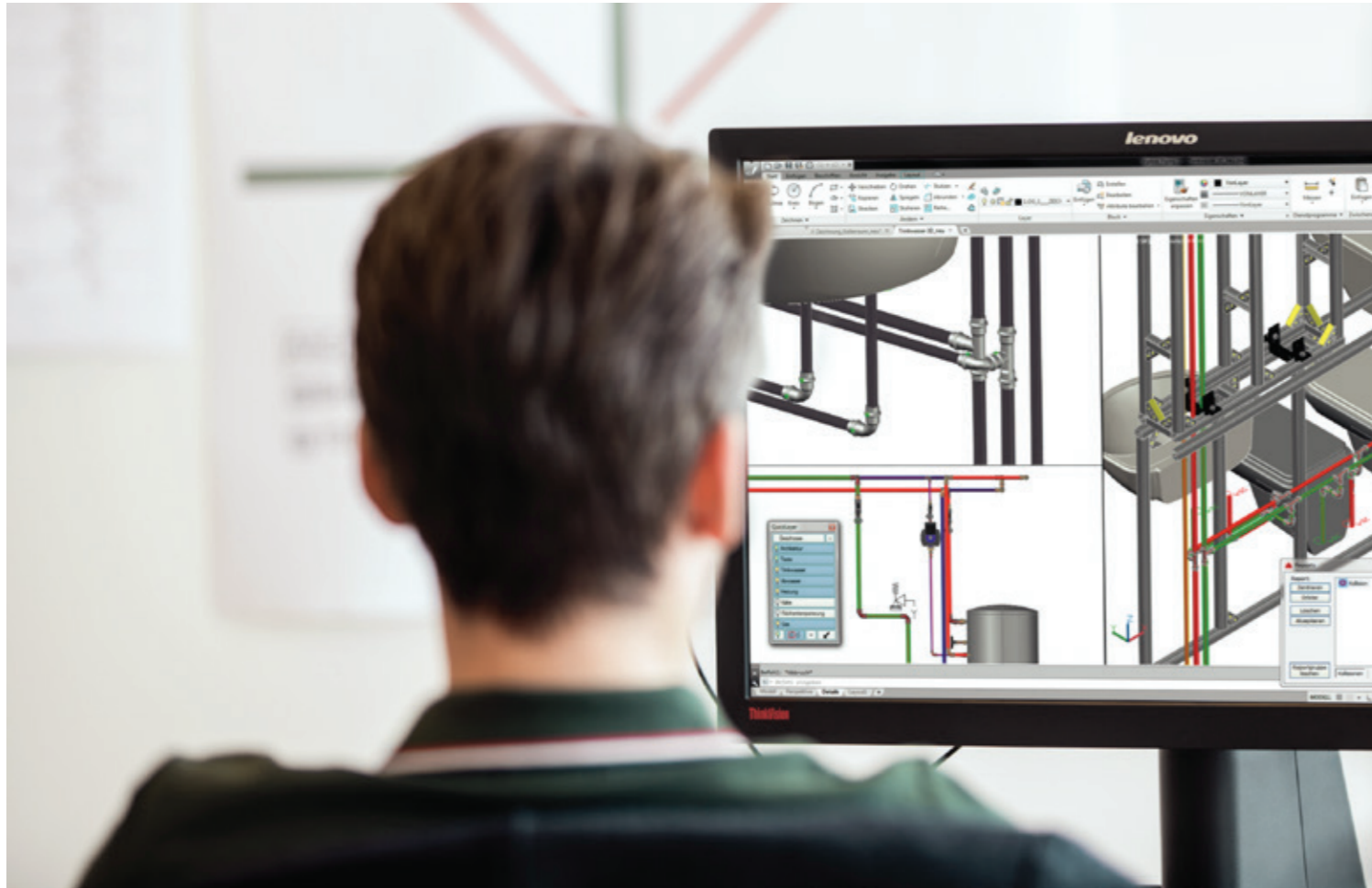


Different building types have different use requirements.



Viptool Engineering Software
DRINKING WATER QUALITY
EASILY PLANNED.

HOLISTICALLY AND ACCURATELY PLAN DRINKING WATER SYSTEMS.



At Viega, we believe the highest quality and best results start at the planning phase. However, we understand design can be a complex and overwhelming process.

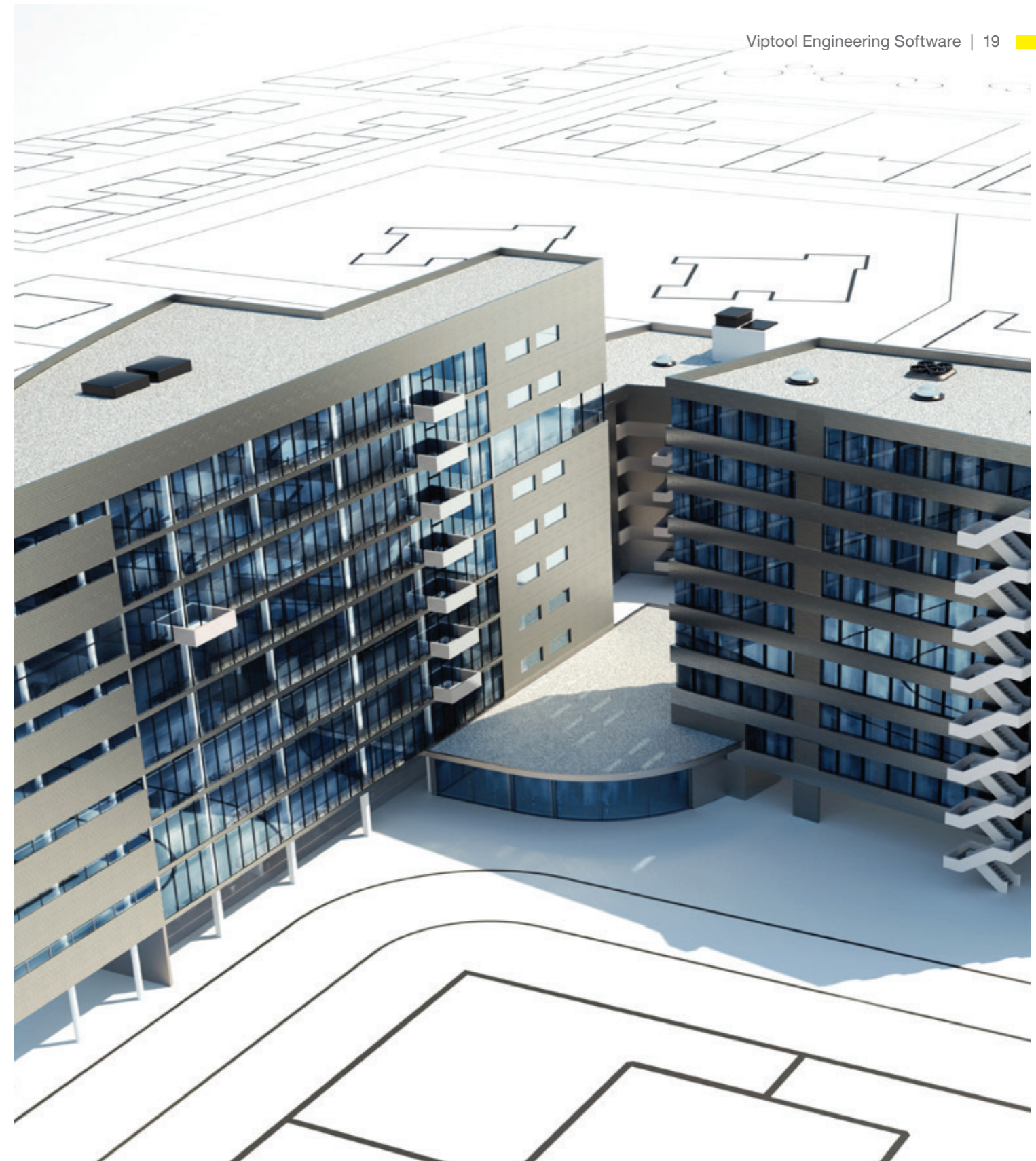
This has inspired us to introduce Viptool Engineering Software, an innovative design and planning solution.

Highly cost effective, Viptool Engineering Software provides a digital solution to manual calculations and storing flow rate data in spreadsheets and provides tools for automatic simulation and calculation of complex water distribution networks.

Hydraulic Engineers and Skilled Tradespeople can effectively and reliably design and plan building services

systems with Viptool Engineering Software using the German drinking water calculation standard, DIN 1988-300. Highly relevant to modern real-world needs, designing with DIN 1988-300 provides many advantages including calculations based on real usage of different building types, peak flow rates and optimal velocity. Plus, importantly, maintaining high quality water drinking; a key focus for Viega.

With Viptool Engineering Software, you can holistically and accurately plan hygienic drinking water installations down to the smallest detail, for any scale building, from a small house through to a large commercial building.



VIPTOOL ENGINEERING SOFTWARE AT A GLANCE:

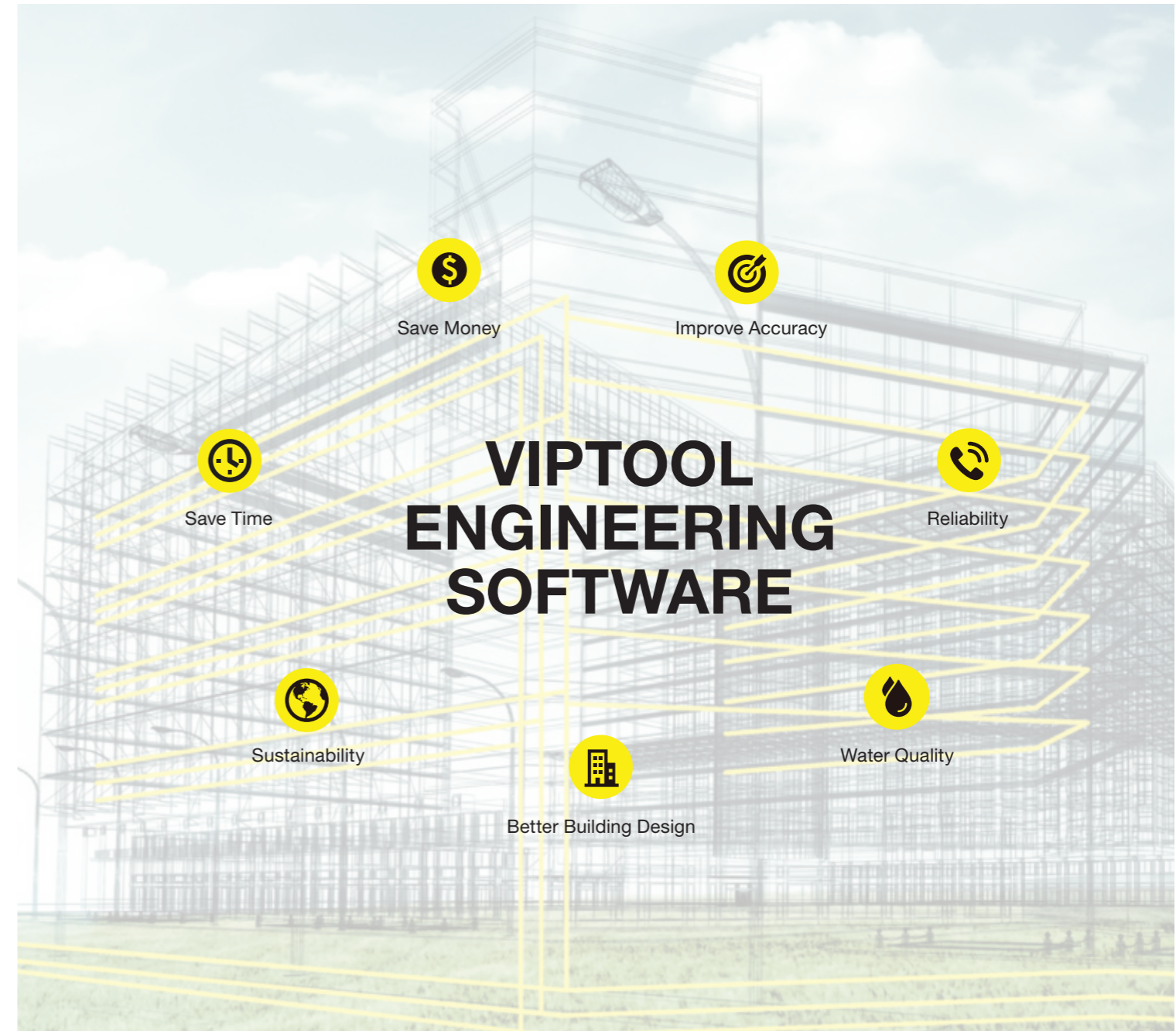
- Highly cost-effective design solution
- Design using German drinking water calculation standard, DIN 1988-300
- Design to maintain high quality water
- Personalised training and on-going software support provided by a Viega expert
- Comprehensive features such as 2D or 3D floor plan design, schematic generator, visualisation of results
- Drawing and calculation as an integrated solution
- Recalculation of existing buildings
- Determine fittings required for efficient design and installation outcomes
- Export detailed bill of materials and calculation results

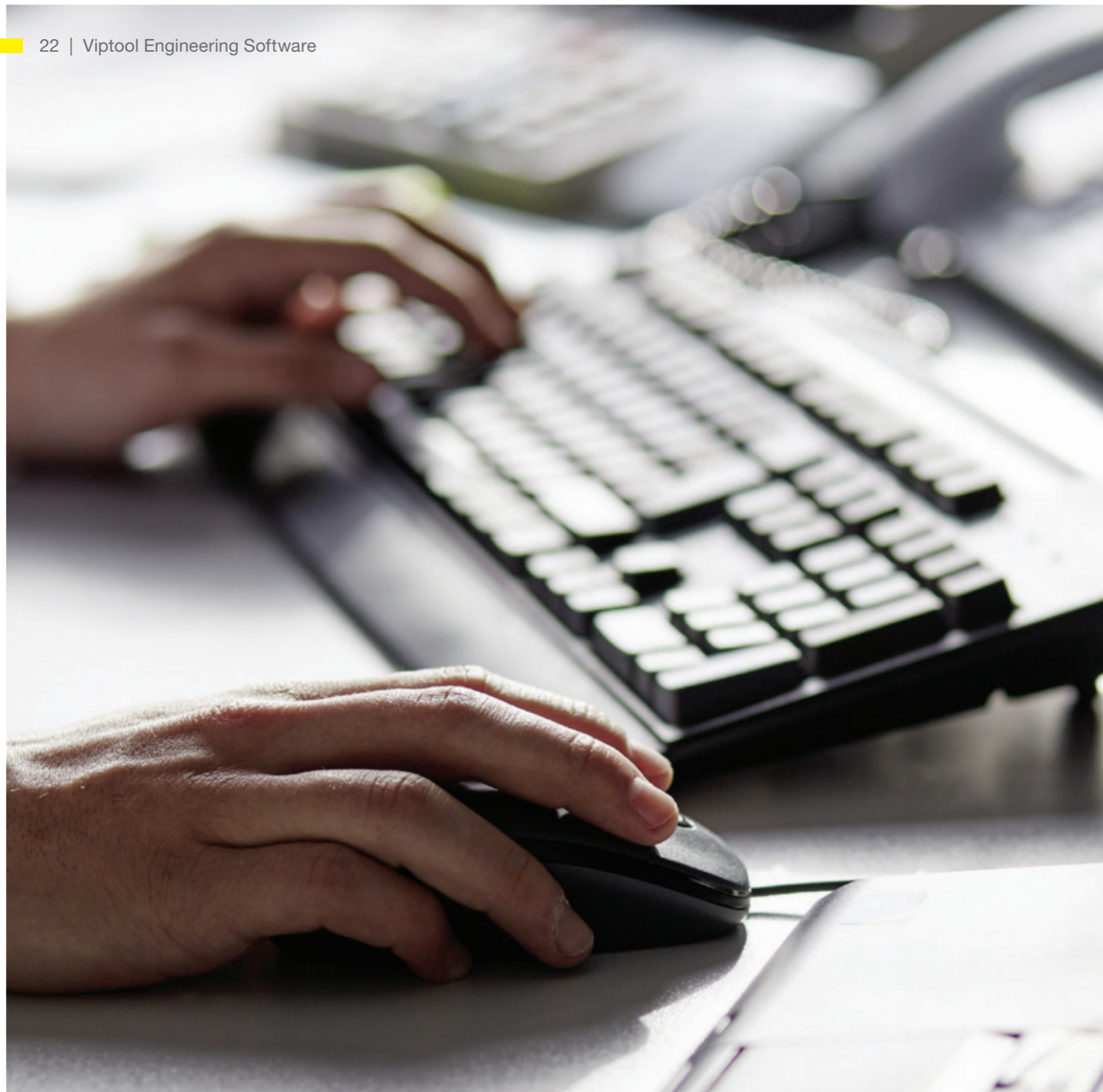


Viptool Engineering Software

BENEFITS THAT PROVIDE A COMPETITIVE ADVANTAGE.

The principles upon which Viptool Engineering Software is built, as well as the key features and modules it includes, deliver a range of benefits to help give you a competitive advantage when providing design services to clients.





Reliability

- Proven 20 year history
- Tried, tested and improved over time
- Strong and complimentary ongoing service support



Water Quality

- Avoid stagnation
- Viptool combined with Viega's innovative plumbing technology such as flow-optimised daisy chain fittings deliver high quality drinking water
- Convenience for end users such as faster delivery of hot water



Better Building Design

- Plan and view 3D piping design
- Develop detailed piping routing and connection situations
- Design based on real time usage for different types of buildings
- Reduce wait time for hot water
- Viega piping systems designed to assure the highest quality drinking water at all times



Sustainability

- Tools to design piping systems that deliver less water wastage
- Improve energy efficiency. For example, smaller pump sizes resulting in less ongoing power supply and therefore cost
- Viega designs and manufactures sustainable products that improve the environment



Save Time

- Replaces manual design with automatic functions
- Streamlined and digitised design process
- Save considerable time throughout the design process
- Deliver comprehensive and quality hydraulic design



Save Money

- Gain economic benefits
- Work more efficiently and accurately
- Less hours for the design process, therefore design resource costs can be reduced
- Low investment required for the software license; the software pays for itself in no time
- Deliver more efficient outcomes by designing with Viega's innovative smaller piping systems
- Achieve reduction in overall project investment and operating costs



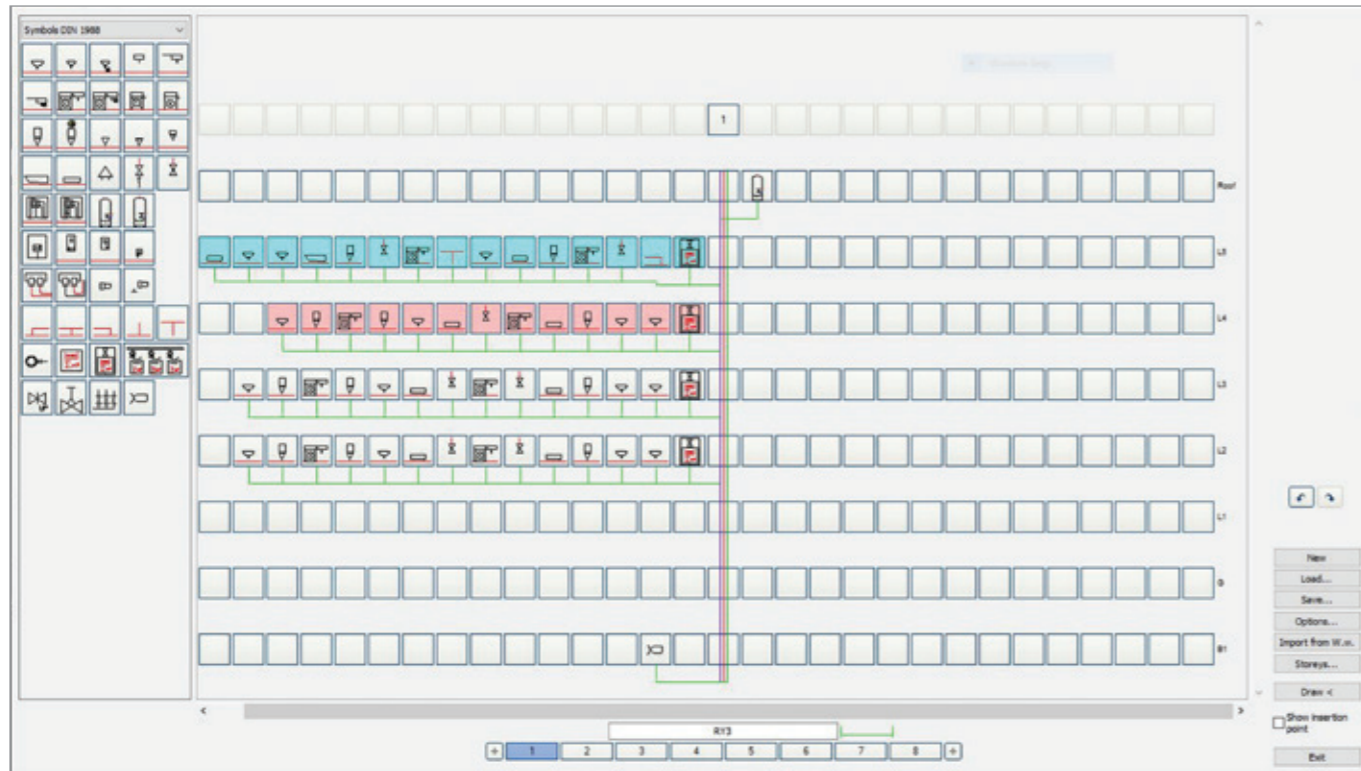
Improve Accuracy

- Automated and reliable calculation features
- Reduce risk of errors
- Save on potential resultant cost implications of mistakes
- Helps you deliver a better service to your clients



Flow-optimised daisy chain fittings help prevent water stagnation.

THE ULTIMATE DIGITAL PLANNING TOOLBOX TO SUIT YOUR DESIGN AND PLANNING NEEDS.



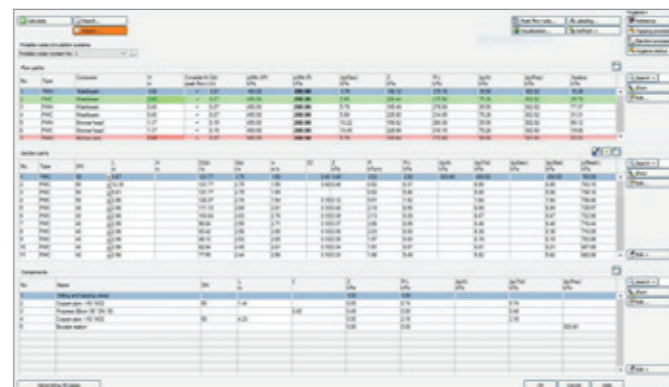
Schematic generator; provides a quick and easy schematic working design.

Schematic generator

A powerful and user-friendly inbuilt schematic generator; simply drag and drop fixtures into a smart surface, plus edit pipe sections and change installation types with one click.

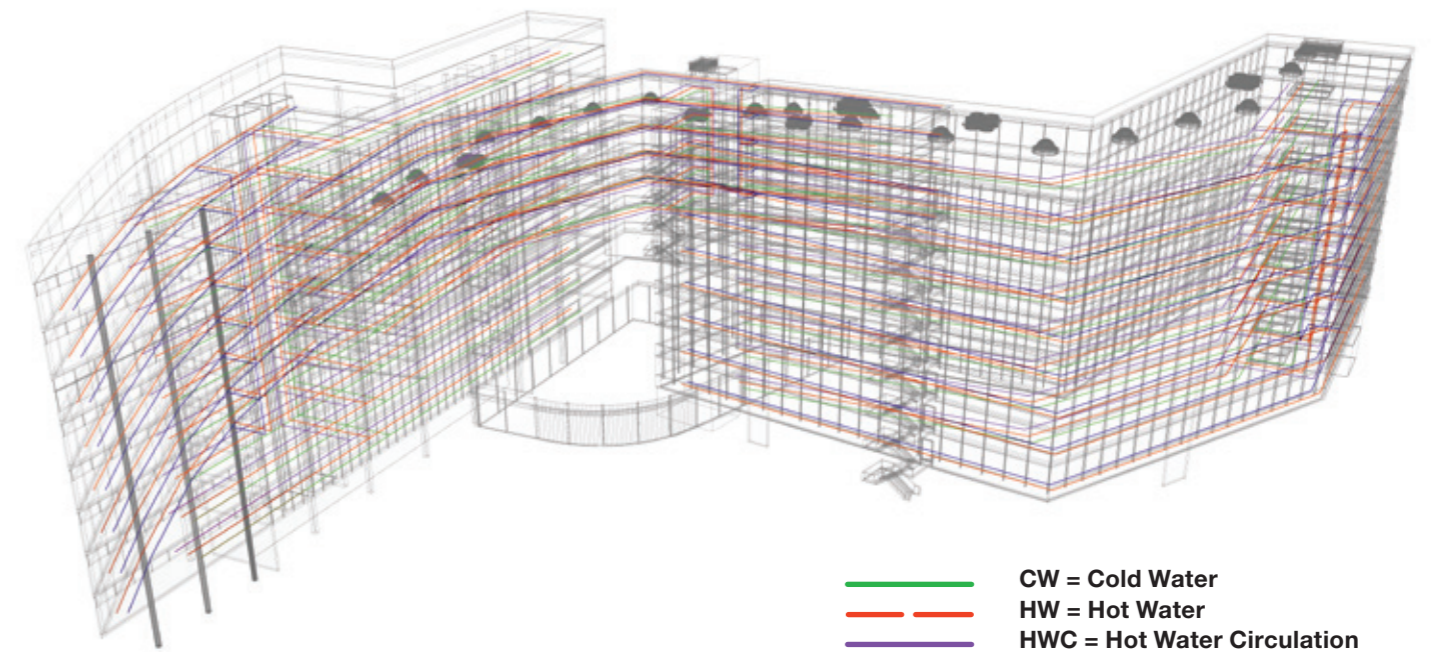
Visualisation of calculation results

Visually see calculation results to gain a better viewpoint and more easily analyse results. Control values like velocities and pressure losses, hot water output times and other features.



2D or 3D floor plan design

Plan and view 3D piping design in Viptool and design piping systems that deliver less wait for hot water, less water wastage and improved energy efficiency.



— CW = Cold Water
— HW = Hot Water
— HWC = Hot Water Circulation

Project No.:
Project:

viega
Viptool Analyse Potable Water
Parts list

Quantity	Unit	Short text	Item No.	Alt.
15.0	PC	Razelle Coupling ø1: 25; ø2: 20	646851	
8.0	PC	Razelle Coupling ø1: 32; ø2: 20	646875	
10.0	PC	Razelle Coupling ø1: 32; ø2: 25	646882	
1.0	PC	Razelle Coupling ø1: 50; ø2: 40	646929	
1403.0	PC	Razelle Elbow 90° ø: 16	647001	
52.0	PC	Razelle Elbow 90° ø: 20	647018	
118.0	PC	Razelle Elbow 90° ø: 25	647025	
39.0	PC	Razelle Elbow 90° ø: 32	647032	
10.0	PC	Razelle Elbow 90° ø: 40	647040	
2.0	PC	Razelle Elbow 90° ø: 50	647056	
655.0	PC	Razelle Tee-piece ø1: 16; ø2: 16; ø3: 16	647278	
1.0	PC	Razelle Tee-piece ø1: 16; ø2: 20; ø3: 16	647385	
14.0	PC	Razelle Tee-piece ø1: 20; ø2: 20; ø3: 20	647292	
80.0	PC	Razelle Tee-piece ø1: 25; ø2: 16; ø3: 16	647308	
112.0	PC	Razelle Tee-piece ø1: 20; ø2: 16; ø3: 20	647315	
53.0	PC	Razelle Tee-piece ø1: 20; ø2: 20; ø3: 16	647322	
56.0	PC	Razelle Tee-piece ø1: 25; ø2: 25; ø3: 25	647339	
2.0	PC	Razelle Tee-piece ø1: 25; ø2: 16; ø3: 16	647346	
17.0	PC	Razelle Tee-piece ø1: 25; ø2: 16; ø3: 20	647353	

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Drawing and calculation

An integrated solution within Viptool Engineering Software, delivering automated and reliable calculations every time. Review calculations in detail with the ability to change values like pipe length, flow rate and minimum pressure. Changes can easily and efficiently be made by just a couple of clicks.

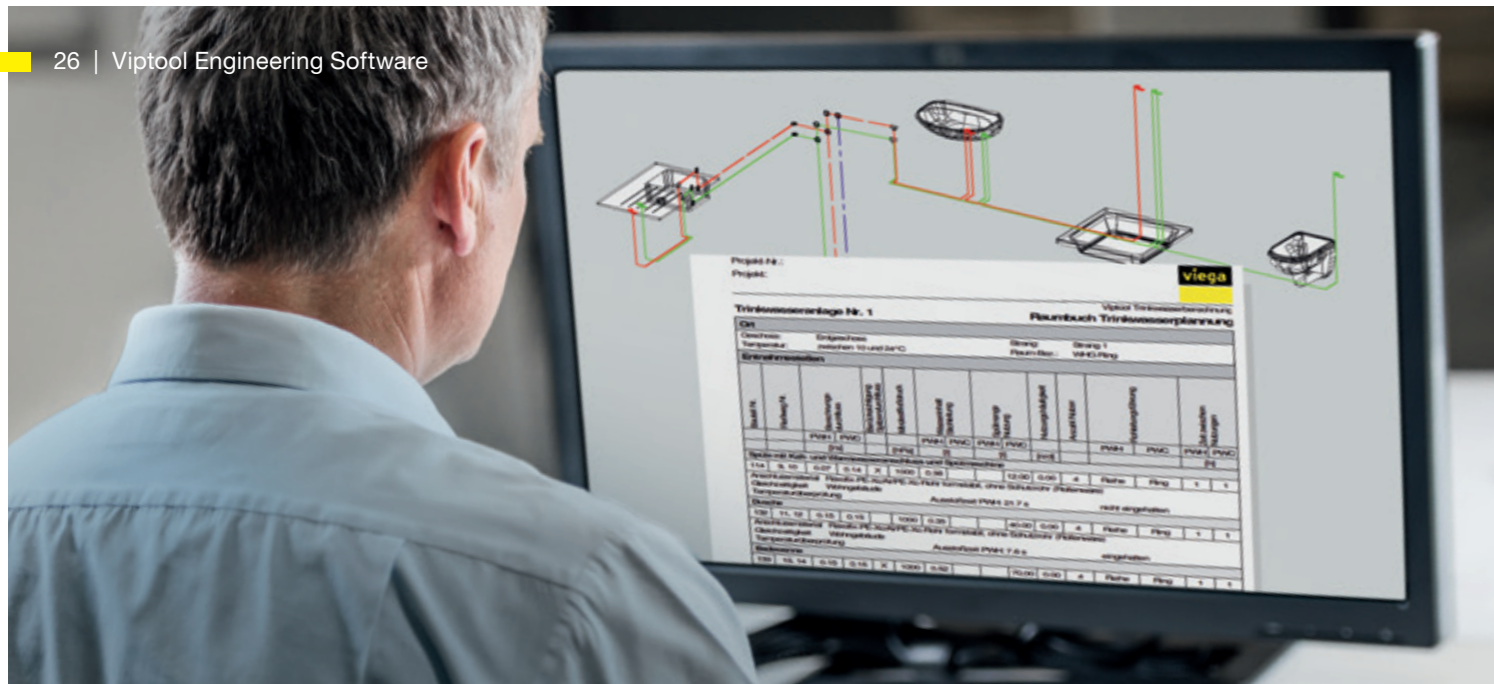
Recalculation of existing buildings

Tools to check existing designs, find problem zones requiring revisions, and generate recalculation of existing buildings.

Detailed bill of materials and calculation results

Viptool Engineering Software will also generate a detailed bill of materials and export your calculation results. This saves valuable time and provides exactly what is required for quotations, tenders and substantiation to support completed designs, if required.

Export bill of materials



TECHNICAL AND HYGIENIC DESIGN.

The modules within Viptool Engineering Software support you beginning with the initial design right through to the implementation planning stages. All modules are compatible with each other and share a uniform operating concept. Designed to be user friendly, no matter which module you are working in, you will find your way around easily.

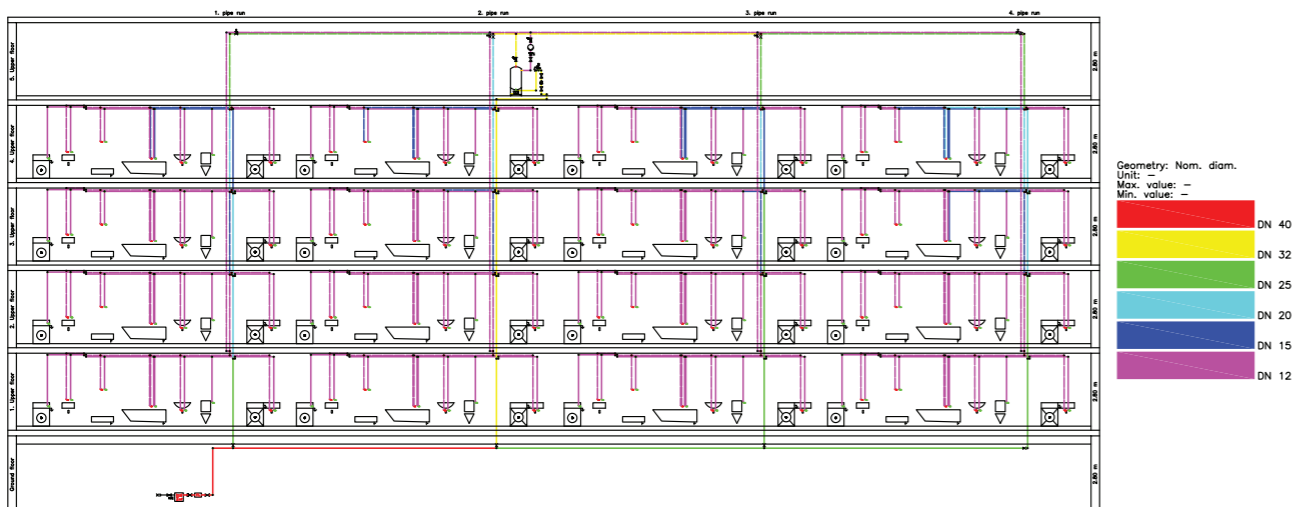


Viptool Hygiene+ Function

Viptool Hygiene+ function, a comprehensive drinking water calculation module in Viptool Engineering Software, brings a new dimension to your planning, and enables you to plan drinking water systems that are both technically and hygienically accurate by designing with DIN 1988-300 standards.

Viptool Hygiene+ Function gives you:

- Complete instructions for action and graphic evaluations
- Design recommendations
- Calculations for different types of pipelines such as series or parallel pipelines
- Takes into account real pressure losses for economic and hygienic dimensioning
- Calculations with or without pipe insulation
- Specification of the water volume maintenance of the water quality operating costs
- Display of the temperature curves
- Key data on the cost-effectiveness of the measures and on operating costs
- Allows you to visualise and analyse results
- Optimised output times for hot water



Visualise and analyse results; shown here using the example of nominal diameters in the drinking water scheme.

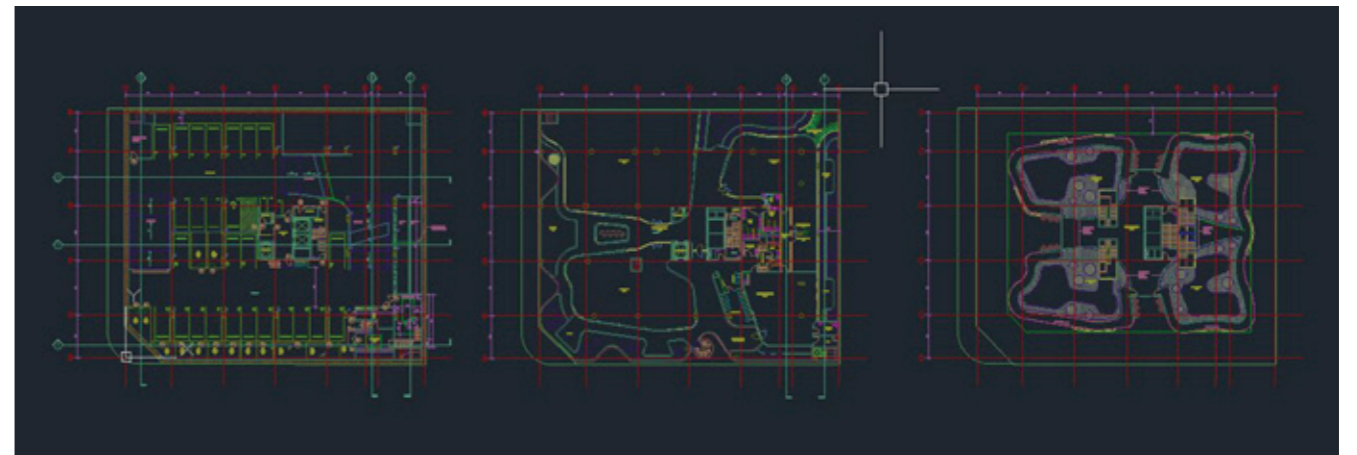


Viptool CADinside-Module

The Viptool CADinside-Module is specifically designed for building services planning and makes fast and efficient work of this complicated process. Based on the current Autodesk® CAD platform, it contains all of the important tools for the planning and construction of building service installations that you will need. Planning is simplified with extra options included specifically for technical building equipment such as an optimised user interface providing increased clarity.

In addition to this, Viptool Engineering Software:

- Includes full DWG and DXF file support
- Is a cost-effective alternative to AutoCAD® full versions
- Facilitates seamless data exchange between architects, hydraulic engineers and contractors
- Includes many useful drawing functions for technical building services



Viptool CADinside-Module includes many useful drawing functions for technical building services.



Viptool Piping

Viptool Piping is the optimal planning module from design to execution. The user interface is practice-oriented and optimally supports your planning processes. It has extensive symbol libraries, a schematic generator and

other powerful design tools that enable you to work efficiently, whilst creating detailed plans. The calculations always include up to date standards and regulations and you can export a detailed bill of materials at the click of a button.



A 3D floor plan directly takes into account all real pipe lengths and thus ensures maximum planning accuracy.



Local Viptool Specialist

PROVIDING YOU WITH THE SERVICE AND SUPPORT YOU NEED.

Constantly updated and maintained by Viega, when you design with Viptool Engineering Software, you can be confident you are always designing with the latest DIN 1988-300 regulations and calculation methods. Likewise, we're continually looking for ways to further optimise the software to introduce new features and functions, and further improve the user experience and efficient design.

At Viega, we not only provide high quality products and software, we also provide high quality support. Viega has a dedicated DIN 1988 and Viptool software expert in Australia, Sven Lemme. With extensive software, industry and regulation knowledge, Sven is here to provide information and support whenever you need it.

Contact Sven for a complimentary training session to learn more about the benefits Viptool Engineering Software and DIN 1988 can provide.

Visit viega.com.au for details of the latest computer system requirements to operate Viptool Engineering Software.



Sven Lemme
Phone: 02 8858 2660
Email: viptool@viega.com.au

We reserve the right to effect changes.



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