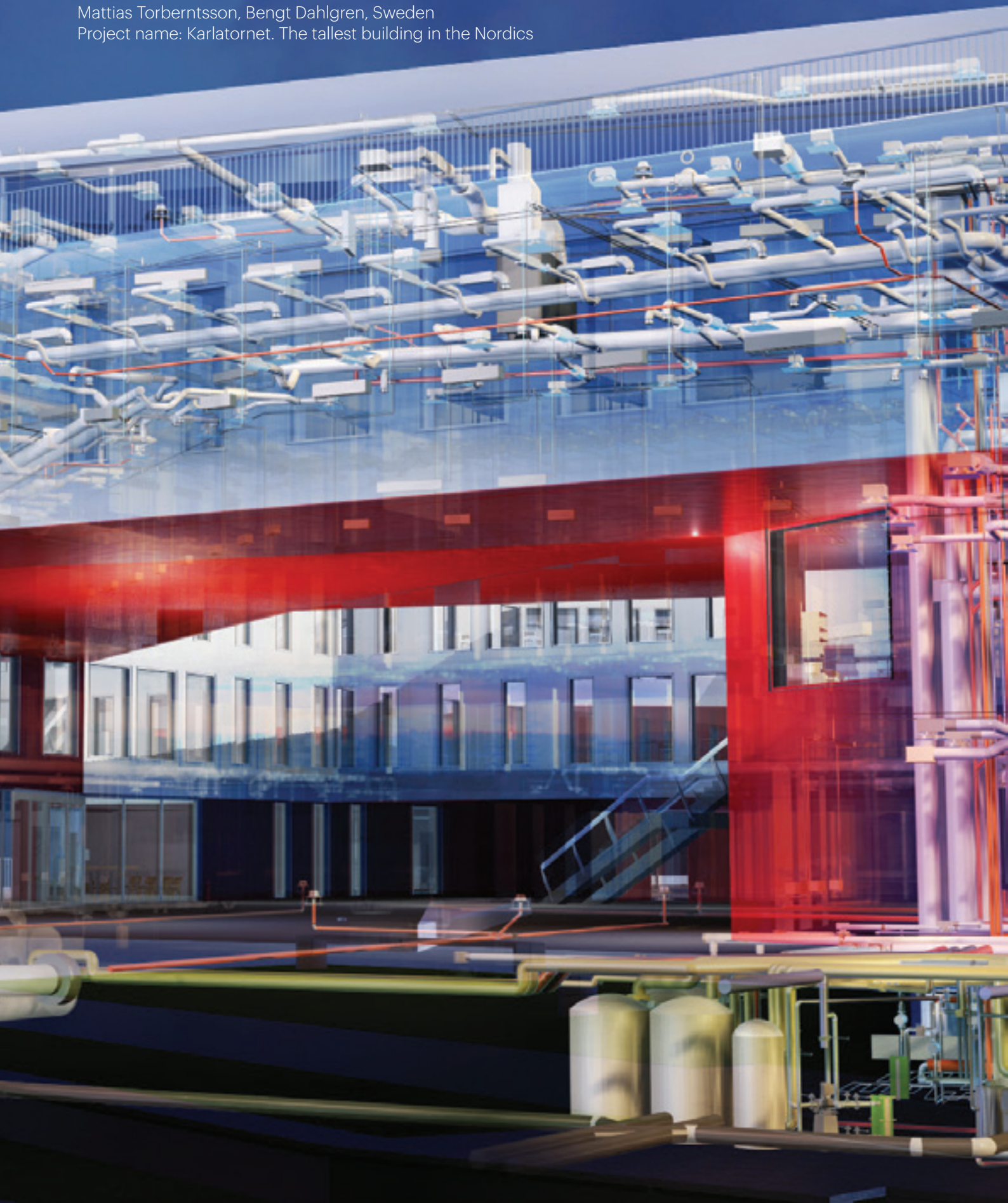MagiCAD

For Powerful
MEP Design
with Revit

"MagiCAD is the best in the market. Other available software packages from the United States don't have the same standard of quality as this Finnish software. MagiCAD is easy to use and it has a low threshold for getting started. Above all, we are very pleased to be able to accomplish all of our calculations directly in MagiCAD instead of performing them separately."

Mattias Torberntsson, Bengt Dahlgren, Sweden
Project name: Karlatornet. The tallest building in the Nordics

The leading BIM software for MEP design within Revit

MagiCAD is the leading Building Information Modelling (BIM) software for Mechanical, Electrical and Plumbing (MEP) design. It has a proven track record from tens of thousands of projects and it is used by engineering design firms of all sizes, in more than 80 countries.

MagiCAD enables MEP design using a library of over 1,000,000 verified BIM objects from 270 globally renowned manufacturers. It offers powerful modelling tools and integrated engineering calculations with localisation for different country-specific standards. MagiCAD enables MEP designers to create accurate and reliable BIM models faster and easier.

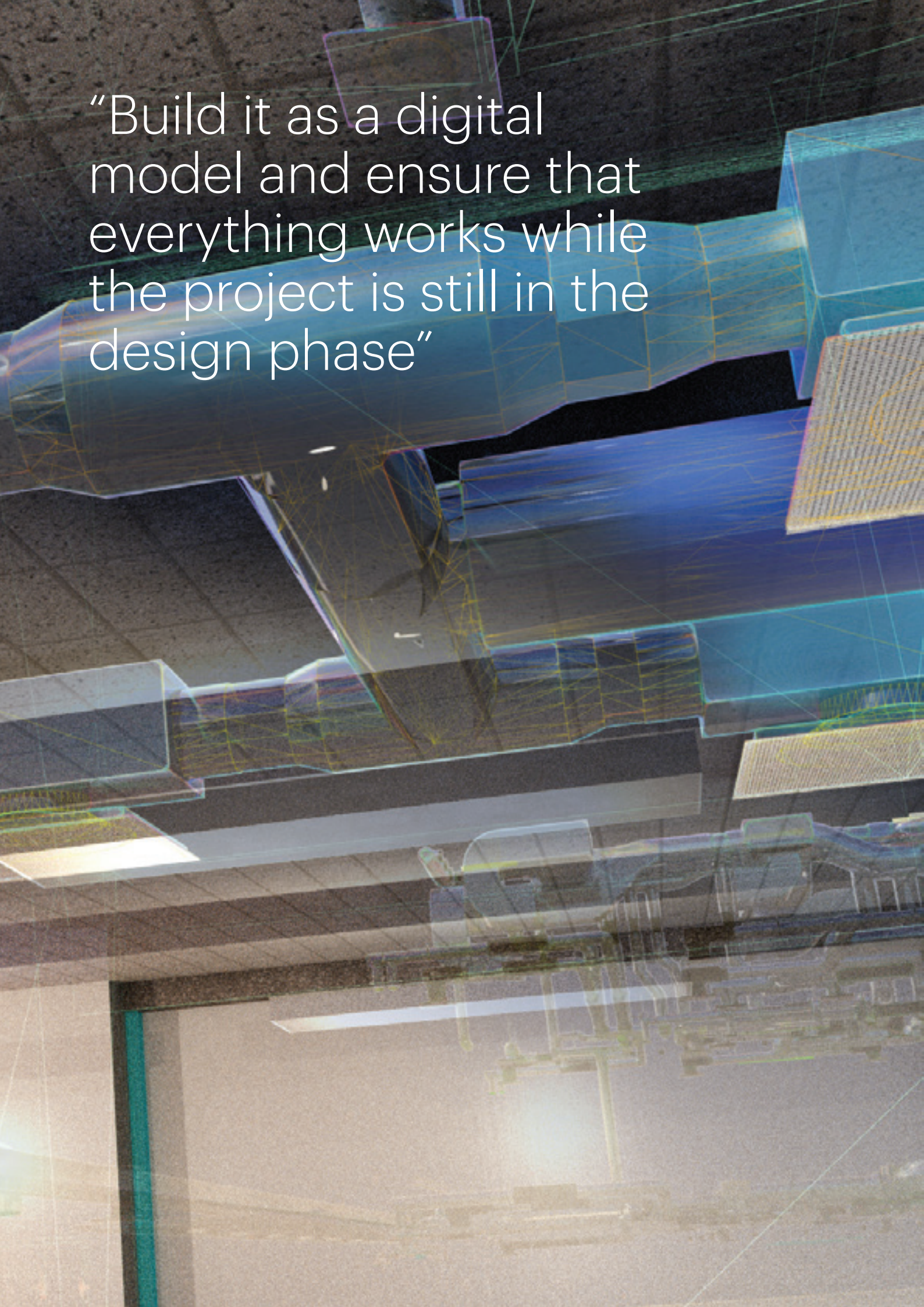MagiCAD is available for both Revit and AutoCAD Autodesk platforms.

MAGICAD MODULES

MagiCAD for Revit is available as six separate modular solutions:

- MagiCAD Ventilation
- MagiCAD Piping
- MagiCAD Electrical
- MagiCAD Schematics
- MagiCAD Sprinkler Designer
- MagiCAD Supports & Hangers

"Build it as a digital model and ensure that everything works while the project is still in the design phase"

Maximise the benefits of BIM with MagiCAD

Digitalisation has enabled productivity gains in every area of business. While the construction industry may be behind in this area, it also leaves many gains to be realised.

To imagine an ideal BIM world would be to imagine every construction project being completed on-time and on-budget. The various stakeholders involved in the project would have collaborated and communicated seamlessly regardless of their physical location. Completed buildings would be handed over with advanced maintenance plans, asset registers as well as energy and system information. Following the hand-over to the client, the building would fulfil the exact purpose for which it was created.

This is not a futuristic model. We do have these tools today. Armed with the right understanding of what BIM can achieve, professionals the world over are making the right investments towards these outcomes.

LEADING THE WAY IN BIM

MagiCAD enables rapid modelling and fully integrated engineering calculations making the design of accurate BIM models easier, more flexible and less time-consuming.

When designing with MagiCAD, you have all it takes to carry out even the most demanding BIM projects. A functional 3D information model of the entire system offers a more accurate and more comprehensive basis for your work than 2D drawings, which lack incorporated data. BIM makes it possible to check beforehand, whether particular real-life components are suitable for the planned installation, both from the perspective of geometrical space requirements as well as from the technical, operational perspective. MagiCAD also enables thorough integrated calculations and new levels of collaboration between project partners.

MagiCAD creates a complete, easy-to-manage information model that can be used as a highly valuable storage of information throughout the building's lifecycle, from the early conceptual phase, through construction and MEP installation, to facility management and maintenance.

Powerful design capabilities with MagiCAD

EXTENSIVE LIBRARY OF MANUFACTURER CONTENT

With MagiCAD, you design with real products from the start. When you need a valve, a radiator, a diffuser or any other installation product, you can select it from Europe's largest library of manufacturer-verified BIM objects and insert it directly into the live model.

MagiCAD enables immediate access to over 1,000,000 data-rich MEP objects from over 270 leading international manufacturers. If you need to use specific products which are not part of our extensive selection of ready-made BIM objects, you can download and install our easy-to-use modelling tool MagiCAD Create. With MagiCAD Create you can quickly create the required objects by editing generic objects in our library.

LOCALISED STANDARDS FOR INTEGRATED ENGINEERING CALCULATIONS

MagiCAD's BIM objects are modelled from physical products to a high level of detail, with correct dimensions and technical data provided by the manufacturer. Values for pressure loss, sound levels, heating and cooling capacity as well as other data are always present in the model, enabling accurate calculations during design. The combination of MagiCAD functions and BIM objects ensures that the final design will perform as intended.

Furthermore, MagiCAD is localised to meet the calculation, presentation and work-flow requirements of some of the major European markets. This enables customers to perform fully integrated pressure drop calculations, domestic water and drainage diversity calculations, and sprinkler calculations to local standards.

TIME SAVING PRODUCTIVITY TOOLS

MagiCAD for Revit includes a set of smart and effective productivity functions available in all MagiCAD modules. These include a Split Segment Tool used for cutting ducts, pipes or cable trays into standard lengths; a Running Index Tool to number components and equipment with unique configurable numbering formats; a Find and Replace tool for replacing any product type with another similar one and more.

AUTOMATED MODELLING FUNCTIONS

MagiCAD automates many time-consuming routine tasks in MEP design, including the creation and editing of standard connections, duct and pipe crossings, elevation changes, as well as various more demanding connections and adjustments. These include, for example, advanced coordination of distribution services, pipe-to-radiator, pipe-to-sanitary outlet, other piping connections and eccentric reductions.

MagiCAD enables the drawing of ducts and pipes directly with user-definable and flexibly resizeable insulation series.

ADVANCED COORDINATION TOOLS
MagiCAD enables **builderswork** to be generated automatically based on space requirements around and between ducts, pipes, cable trays, fire dampers, etc., including insulation.

In addition, the software offers integrated tools for producing a **Bill Of Materials** (BOM), resulting in improved cost management and a more efficient ordering process.

MagiCAD is also fully compatible with the latest **IFC** standard enabling users to export project models in IFC format one by one or in a batch with all selected property sets defined.

LOCALISED CONTENT
Project templates enable important elements of the project to be defined beforehand. For example, product models and families can be pre-selected for use and particular calculation methods can be made available.

You can use MagiCAD's ready-made, market-specific and localised Revit project templates or pre-configure them yourself. Using templates saves time during the design phase by enabling a more logical design process and helps to avoid mistakes.

In addition, MagiCAD offers the possibility to add local 2D symbols to selected 3D models plus a dynamic installation interface that adopts to the selected product.

PLUGINS AND SELECTION TOOLS
We provide a wide range of plugins for connecting manufacturers' own product selection, configuration and sizing software directly into MagiCAD. When a product, such as an Air Handling Unit, is configured using a plugin, it can be imported into the project in RFA format together with its dimensions, symbols, connection points and technical data.

Fully integrated into Revit

MagiCAD integrates seamlessly within the Revit software. If you are experienced in using Revit, it will be quick and straightforward to begin gaining the benefits of the features and functions that MagiCAD brings to the Revit environment.

MagiCAD for Revit populates your design with data about product dimensions, air flow, pressure drops, cable sizing, sound levels and other information necessary for a true BIM work-flow.

With all this information at hand you can perform calculations and rely on the results. You will know if your design will perform as planned.

Using MagiCAD's real-time Clash Detection tool, you can receive immediate feedback of products fitting into the positions you allocate within the model. Contractors can install the systems according to your accurate design, reducing cost and time-consuming mistakes at the building site.

DATABASES INSTEAD OF DRAWINGS
Working with Revit technology means that project data is stored in a database instead of having separate plan drawings for each floor. This database can be accessed by all project partners – architects, structural designers, building services designers, contractors and facility managers.

When updates can be made to a shared project model, the project stays up-to-date and project coordination is faster and more efficient. Projects can be kept together with all disciplines in one database or divided into separate databases for structural design, ventilation, heating and electrical installations.

MagiCAD Common Tools

All MagiCAD modules include the Common Tools - a shared layer of functions for enhancing the productivity of design work.

MagiCAD Ventilation, Piping, Electrical, Schematics, Sprinkler Designer and Supports & Hangers each provide a wide range of discipline-specific modelling and calculation functions combined with the following set of Common Tools.

FEATURES AND FUNCTIONS

Builderswork openings
Automatically creates and manages provisions for Builderswork openings using customisable rule sets

Split Segment
Used for splitting ducts, pipes, conduits and cable trays into standard manufacturer cut lengths

Running Index
Enables creation and management of customisable automated numbering systems to simplify component identification

Parameter Configuration and Merge
Merges multiple parameters into a new parameter using configurable templates and formula

Spreadsheet Link
Enables the transfer of data for any parameter in the project to and from a spreadsheet

Find and Replace
Enables replacing any product type with another of a similar type

BIM Collaboration Format (BCF) Manager
Enables cross-platform collaboration in a BIM project

IFC Export and Property Set Manager
Exports files according to IFC 2x3 v.2 or IFC 4

Legend
Automatically creates and updates legends for components based on a user customisable template configuration

Clean-up and Deliver
Enables removal of manufacturer specific information, views, sheets and other data from the project prior to issuing a detached model to other parties

MagiCAD Ventilation

MagiCAD Ventilation is a complete BIM solution for ventilation design and calculations.

Ensuring clean healthy air indoors is one of the most challenging tasks in modern buildings. Requirements on energy conservation and air quality tend to contradict one another. MagiCAD enables you to create the optimal ventilation solution for each building and provides many clever functions that cut down on routine work.

With MagiCAD's automated design tools, even demanding duct routing solutions are easy to make. MagiCAD Ventilation also offers a large selection of built-in calculations, such as flow summation, sizing, balancing and sound calculations. MagiCAD Ventilation fully integrates within the Revit software platform.

FEATURES AND FUNCTIONS

ADVANCED MODELLING TOOLS

Localised Dataset Templates
Enables market area standardising and makes it easy to create templates for Revit projects

Duct Drawing Setup Tool
Offers a fast configuration of your routing preferences for duct work modelling

Specifically developed routing tools
Dramatically improves the productivity of modelling work with functions including the crossing tools, angle to horizontal, standard connection and multi-device connection tools

INTEGRATED ENGINEERING CALCULATIONS AND LOCALISATION

Integrated engineering calculations
Easily utilise integrated and localised calculation tools including sizing, balancing, system sound calculations, space sound calculation and more
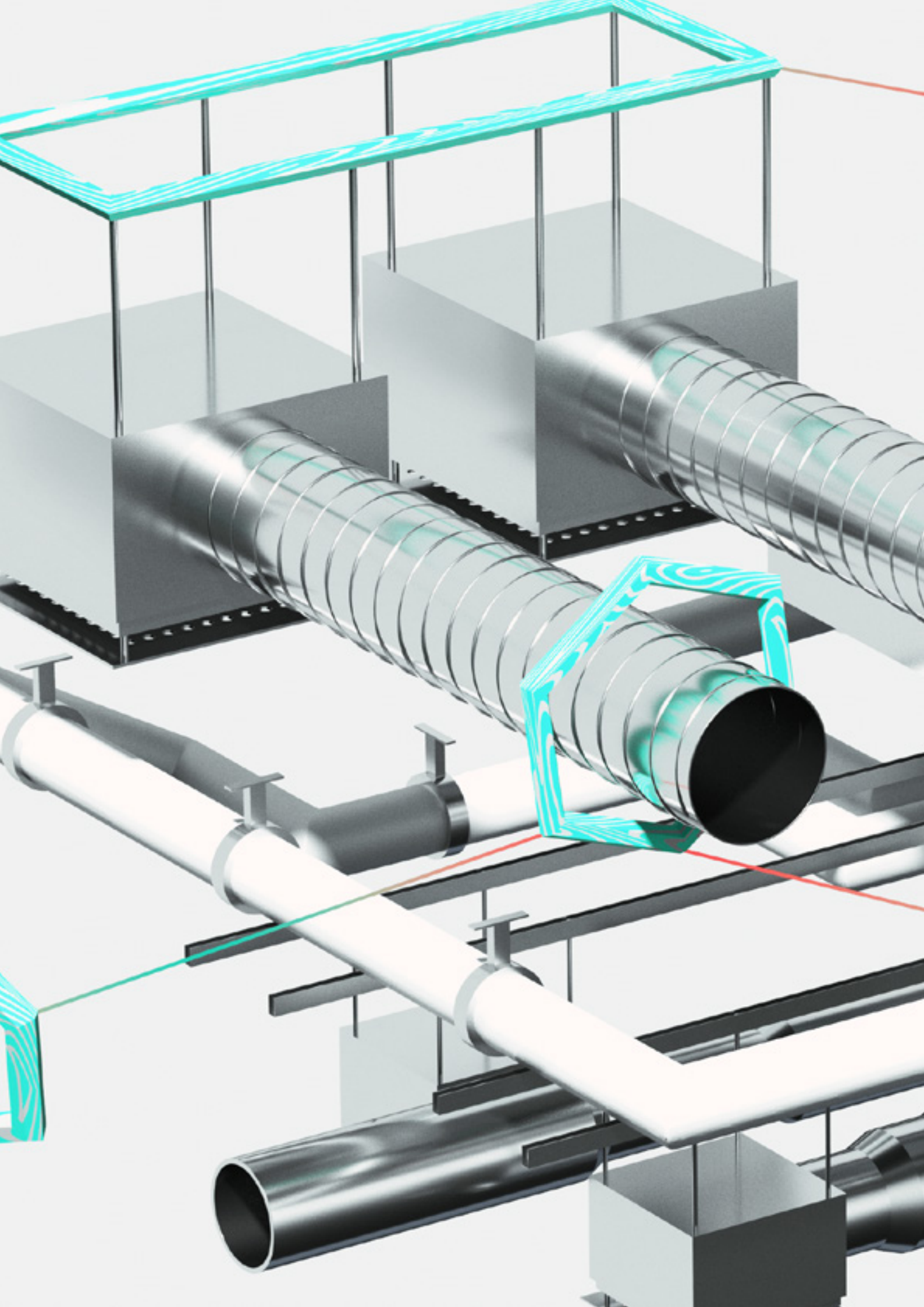
Local symbols
Possibility to add local 2D symbols to selected 3D models and a dynamic installation interface that adapts to the selected product

Wide support for European standards
Support for European standards includes language, templates, MEP Symbols and calculations.

MagiCAD Piping

MagiCAD Piping offers a complete BIM solution for the design and calculation of heating, cooling and domestic water systems, including drainage, sprinkler and specialist systems.

MagiCAD Piping contains a number of functions which save you time when you design. With MagiCAD, you do not need to model every piece of pipe yourself. MagiCAD enables automatic connection to devices, such as radiators, fan coil units, water devices and drainage points.

MagiCAD also provides comprehensive sizing and balancing calculations so that with a few mouse clicks, you can select suitable radiators, add sanitary outlets and then calculate system sizing and balancing for heating, cooling and DWS systems. In addition, you can also use sanitary outlets to calculate diversified drainage flow rates. MagiCAD Piping is fully integrated within the Revit platform.

FEATURES AND FUNCTIONS

ADVANCED MODELLING TOOLS

Localised Dataset Templates
Enables market area standardising and makes it easy to create templates for Revit projects

Pipe Drawing Setup Tool
Offers a fast configuration of your routing preferences for pipe work modelling

Specifically developed routing tools
Dramatically improves the productivity of modelling work with functions including the crossing tools, angle-to-horizontal, standard connection and multi-device connection tools

INTEGRATED ENGINEERING CALCULATIONS AND LOCALISATION

Integrated engineering calculations
Easily utilise integrated and localised calculation tools including sizing and balancing with minimum pressure, pump pressure, power calculations and more
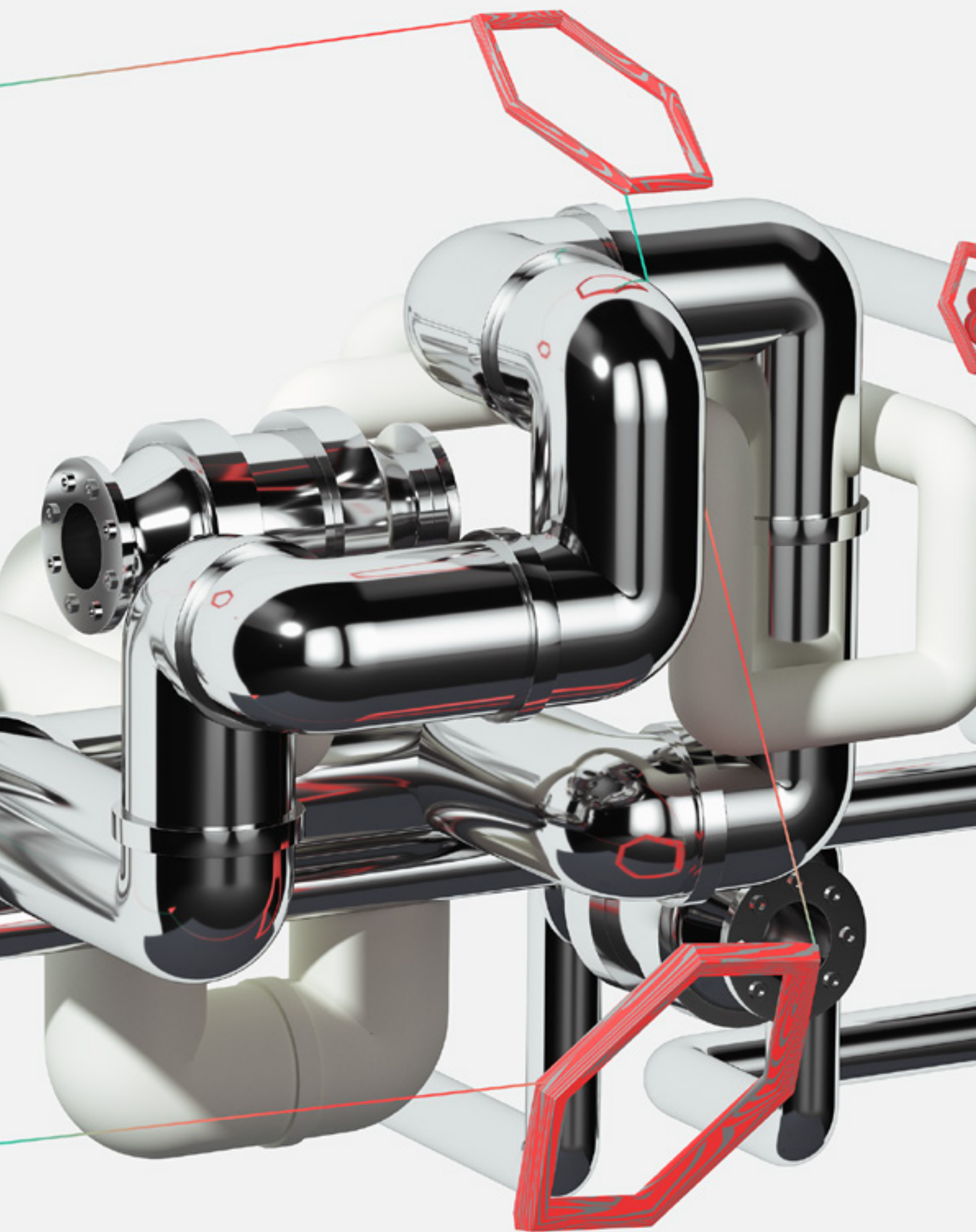
Local symbols
Possibility to add local 2D symbols to selected 3D models plus a dynamic installation interface that adapts to the selected product

Wide support for European standards
Support for European standards includes language, templates, MEP Symbols and calculations.

MagiCAD Electrical

MagiCAD Electrical offers a comprehensive BIM solution for the design and calculation of electrical, lighting, telecommunication and data systems.

MagiCAD Electrical provides access to MagiCAD's product libraries containing a wide range of electrical products with correct geometries and technical data. MagiCAD includes tools which assist with electrical calculations, a wiring tool for simplified drafting of electrical circuiting detail, switchboard schematics, and advanced circuiting functions in synchronisation with drawings. MagiCAD Electrical fully integrates within the Revit software platform.

FEATURES AND FUNCTIONS

ADVANCED MODELLING TOOLS

Localised Dataset Templates
Enables market area standardising and makes it easy to create templates for Revit projects

Cable Tray and Conduit Drawing Setup
All-in-one tools for fast configuration of routing preferences for containment modelling

Product Selection and Installation
For quickly and accurately selecting the correct product

DIALux Import and Export
Enables the export of room geometry from Revit into DIALux and the import of luminaires from DIALux into Revit

Wire Drawing
Offers enhanced functionality for the configuration and accurate drawing of wires, enabling wires to be presented according to the local standard

Power Cable Distribution
A cable routing tool that enables the definition of cable routes in order to calculate accurate cable lengths from the switchboard to the final circuits

Symbol Organizer
Automatically arranges overlapping 2D symbols on the floor plans without moving the 3D elements of the model

Switchboard Schematics
Makes generation of switchboard schematics possible based on circuit arrangements within a selected switchboard, panel board or distribution board

INTEGRATED ENGINEERING CALCULATIONS AND LOCALISATION

Integrated engineering calculations
Includes a wide range of electrical calculations, such as cable sizing, voltage drop, and short-circuit calculations, as well as the use of protective devices directly via the Revit project
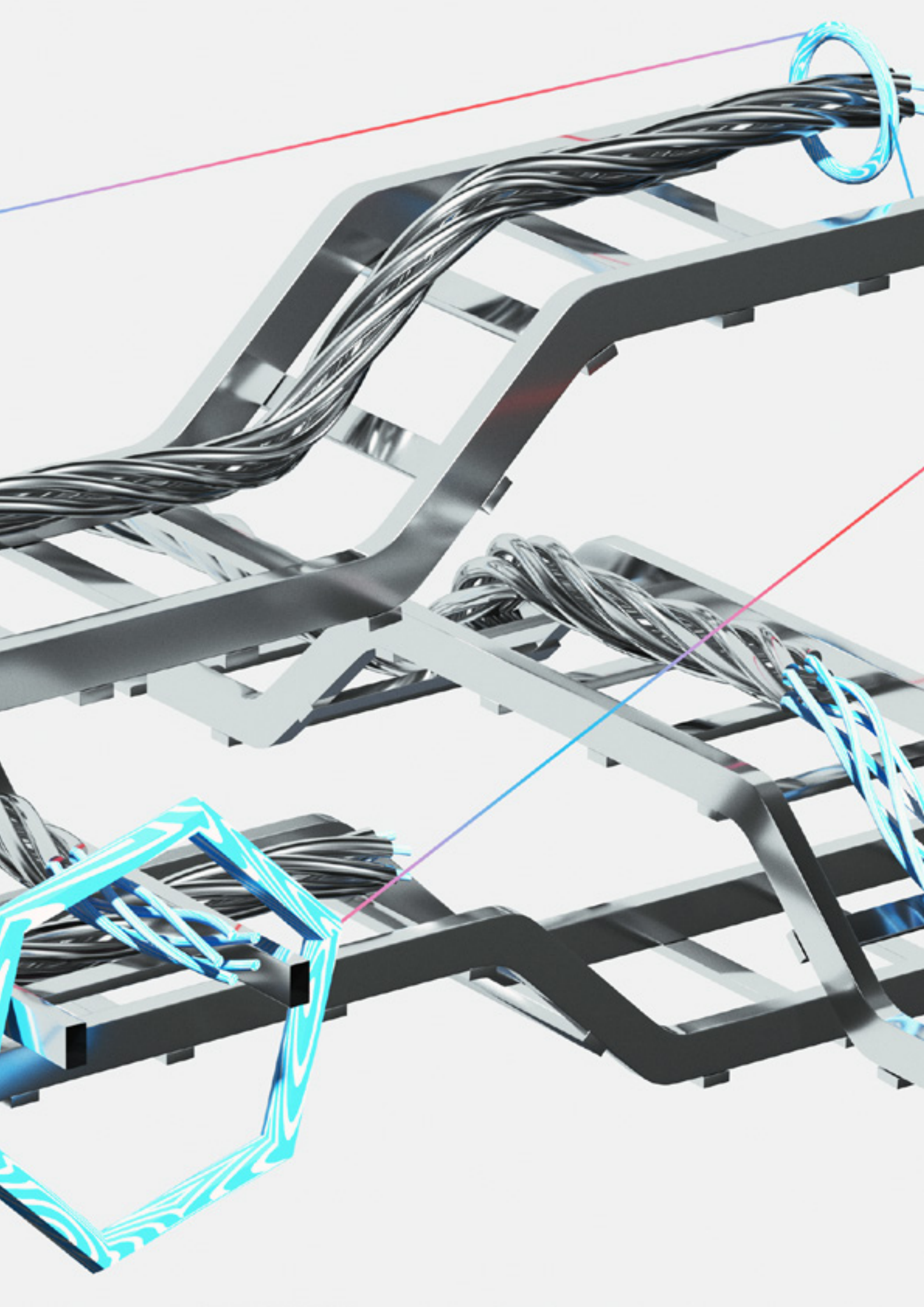
Local symbols
Possibility to add local 2D symbols to selected 3D models plus a dynamic installation interface that adapts to the selected product

Wide support for European standards
Support for European standards includes language, templates, MEP symbols and calculations.

MagiCAD Sprinkler Designer

MagiCAD Sprinkler Designer combines powerful drawing capabilities with the intelligence of a built-in sprinkler calculation engine.

With MagiCAD Sprinkler Designer, you can perform standards-compliant sprinkler system design and calculations faster, easier and with higher accuracy and quality. MagiCAD Sprinkler Designer fully integrates within the Revit software platform.

MagiCAD Sprinkler Designer enables you to design a complete sprinkler network: you can draw sprinkler pipes and components, install sprinkler heads, define sprinkler coverage areas and perform functional calculations on the entire sprinkler network.

FEATURES AND FUNCTIONS

Integrated data
All data for calculations, quality control and design approvals available in the model

Average density for weakest sprinkler heads
Average density for the 4 weakest sprinkler heads is calculated with the heads automatically identified

Actual flow density for each sprinkler head
Calculation of actual flow density for each sprinkler head

Required system pressure
Calculation of required system pressure based on the hydraulically most remote area

Support for fire hydrants
Calculations also in systems where fire hydrants are connected directly to the sprinkler network

Display sprinkler network operating points
Displays both the operating point on the pump curve and the theoretical operating point on the system curve

Time-saving functions
Easy and fast bills of materials, collision control and section tools

Use equivalent lengths
Equivalent length tables for CPVC, copper and steel in accordance with BS 9251:2014

Metric system
Design directly using the metric system. No need to convert values from the US measurement units separately

Connect multiple sprinkler heads
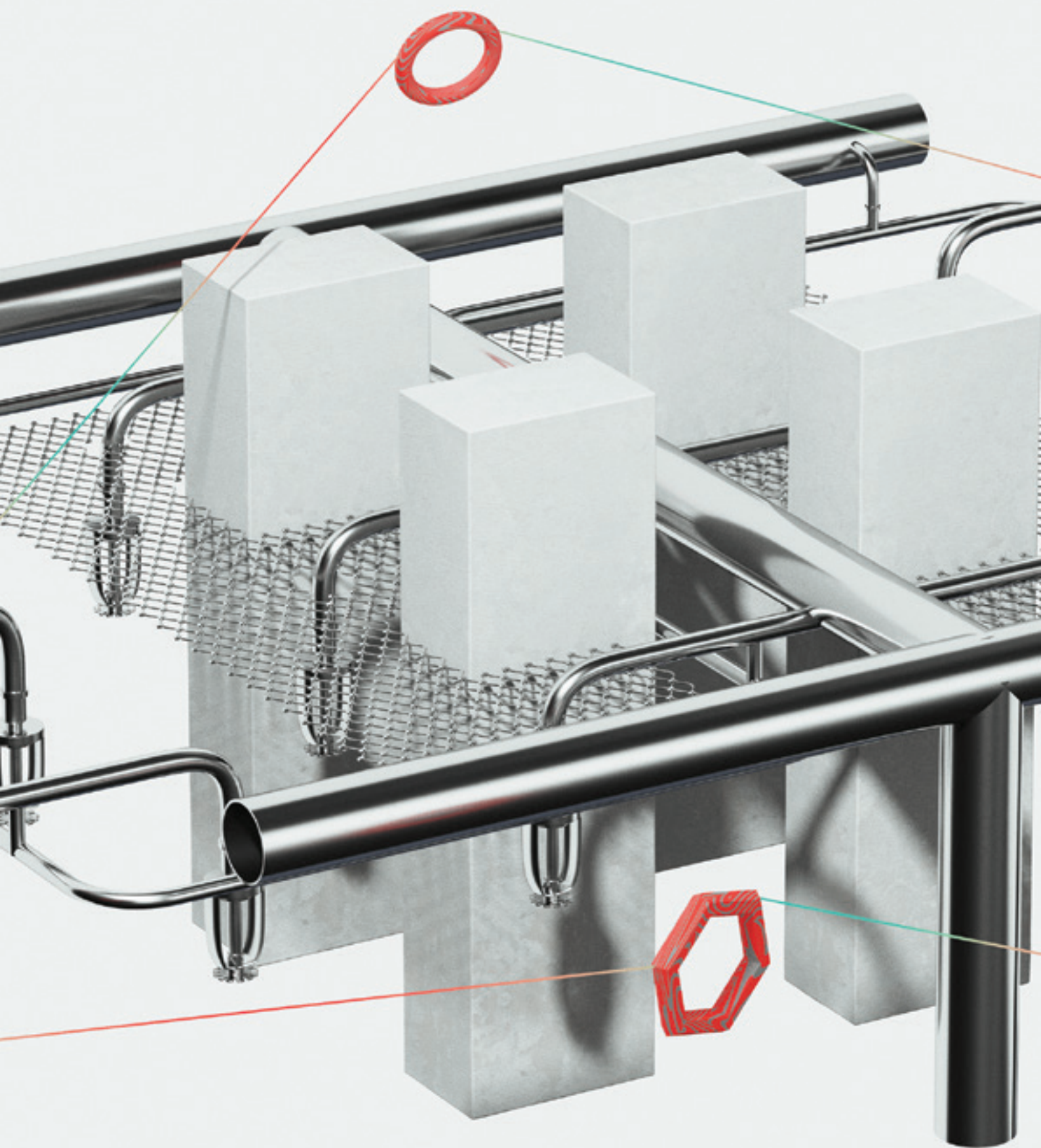Routing tool for connecting multiple sprinkler heads to the system simultaneously using automated routing

Support for sprinkler standards
Support for BS 9251:2014, EN 12845, UNI 10779, NFPA 13, CEA 4001, MS 1910:2006, CP 52:2004 and AS2118 standards

Identifying the weakest sprinkler head
Weakest sprinkler head automatically identified.

MagiCAD Supports & Hangers

MagiCAD Supports & Hangers enables easy and efficient design of hanger and support systems for ducts, pipes and cable trays.

With MagiCAD Supports & Hangers, suspension systems can be designed using either generic or manufacturer-specific support and hanger components. Each hanger or support solution can be configured and optimised based on the requirements of each particular circumstance, for example, based on the need for support from the available structural objects.

When supports and hangers are modelled in a BIM environment together with MEP systems and structural design, it is then possible to perform cost-estimations based on the model and simultaneously save money and time by detecting and eliminating potential problem points already in the design phase. Interference issues can be discovered through clash detection and analysis of space allocation, improving also the coordination of additional space needs.

MagiCAD Supports & Hangers provides an integrated BIM solution which makes coordination between designers, contractors and building owners seamless and efficient. By integrating supports and hangers to the BIM project work-flow and by enabling the selected suspension options to be verified already before the construction phase, it will be possible to greatly reduce the total project delivery time.

MagiCAD Supports & Hangers fully integrates within the Revit software platform.

FEATURES AND FUNCTIONS

DESIGN FUNCTIONS FOR MEP SYSTEMS

Integrated calculations and automatic adjustment to changes in MEP systems
Automatically calculates the required dimensions for the hangers and supports based on the MEP objects to be mounted. In case of changes, MagiCAD recalculates the required measurements

Generic and manufacturer-specific support and hanger elements
Provides automated tools for selecting generic and manufacturer-specific support and hanger components
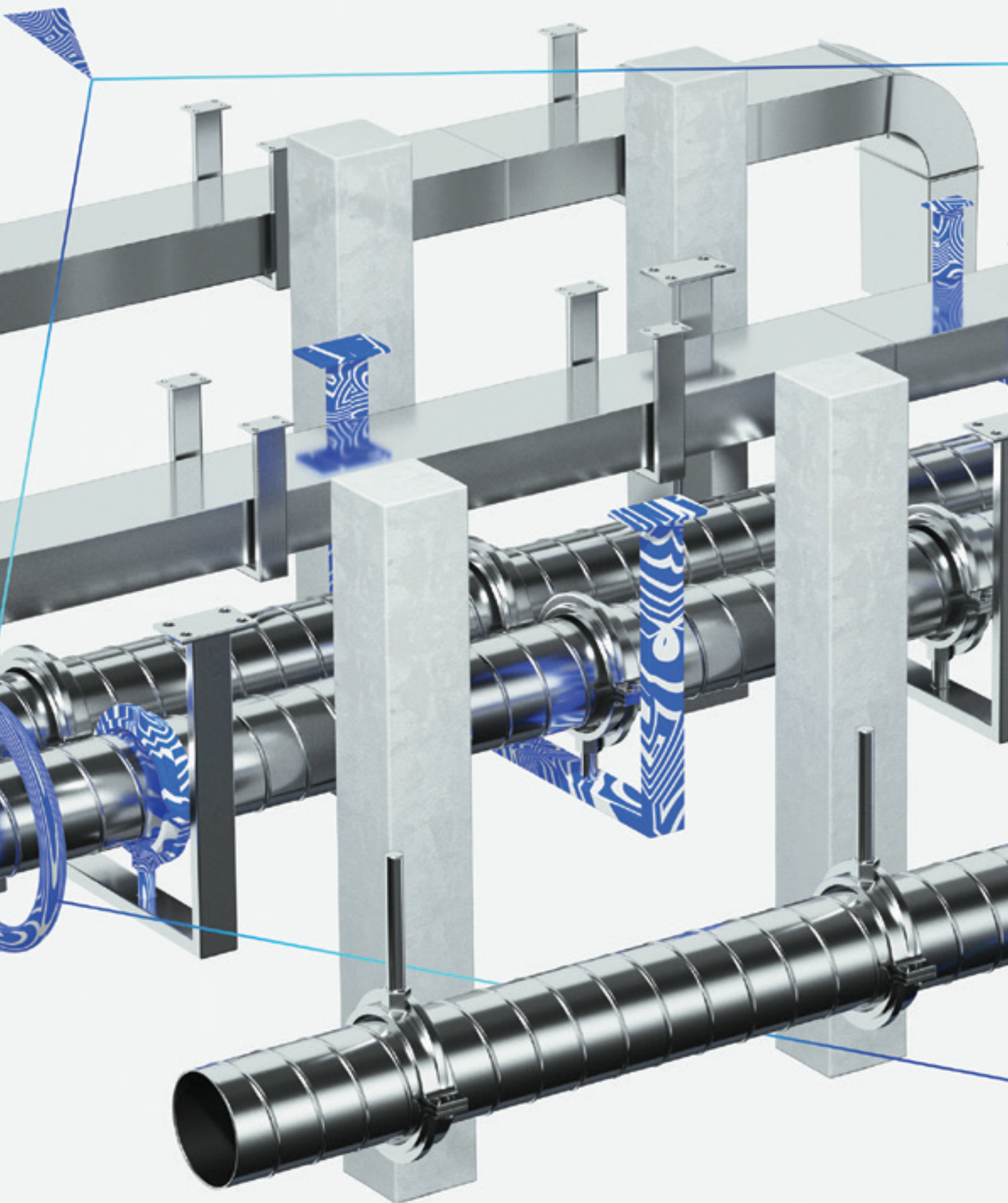
Powerful reporting functions and configurable bills of materials
Offers several types of reports and bills of materials to be configured and exported to MS Excel

Adjustable level of detail
Enables level of detail adjustments in the model depending on the needs.

MagiCAD Schematics

MagiCAD Schematics is the first comprehensive solution for creating schematic diagrams within Revit. It offers full synchronisation of data with the products and systems within your Revit model. Parameters can be linked between the schematic elements and their corresponding elements in the project model which significantly reduces the risk of inconsistent data.

MagiCAD Schematics comes complete with intuitive drawing tools, a wide range of ready made schematic symbols and the ability to customise both symbols and parameters. It fully integrates within the Revit software platform.

FEATURES AND FUNCTIONS

Adding symbols and defining symbol definitions with parameters
Enables creating and placing symbols easily into schematic drawings as well as storing symbol definitions that enable to define parameters with default values within the dataset

Easy to use tool palette
Symbol installation and line drawings made easy with drag-and-drop tool palette

Localised symbol libraries
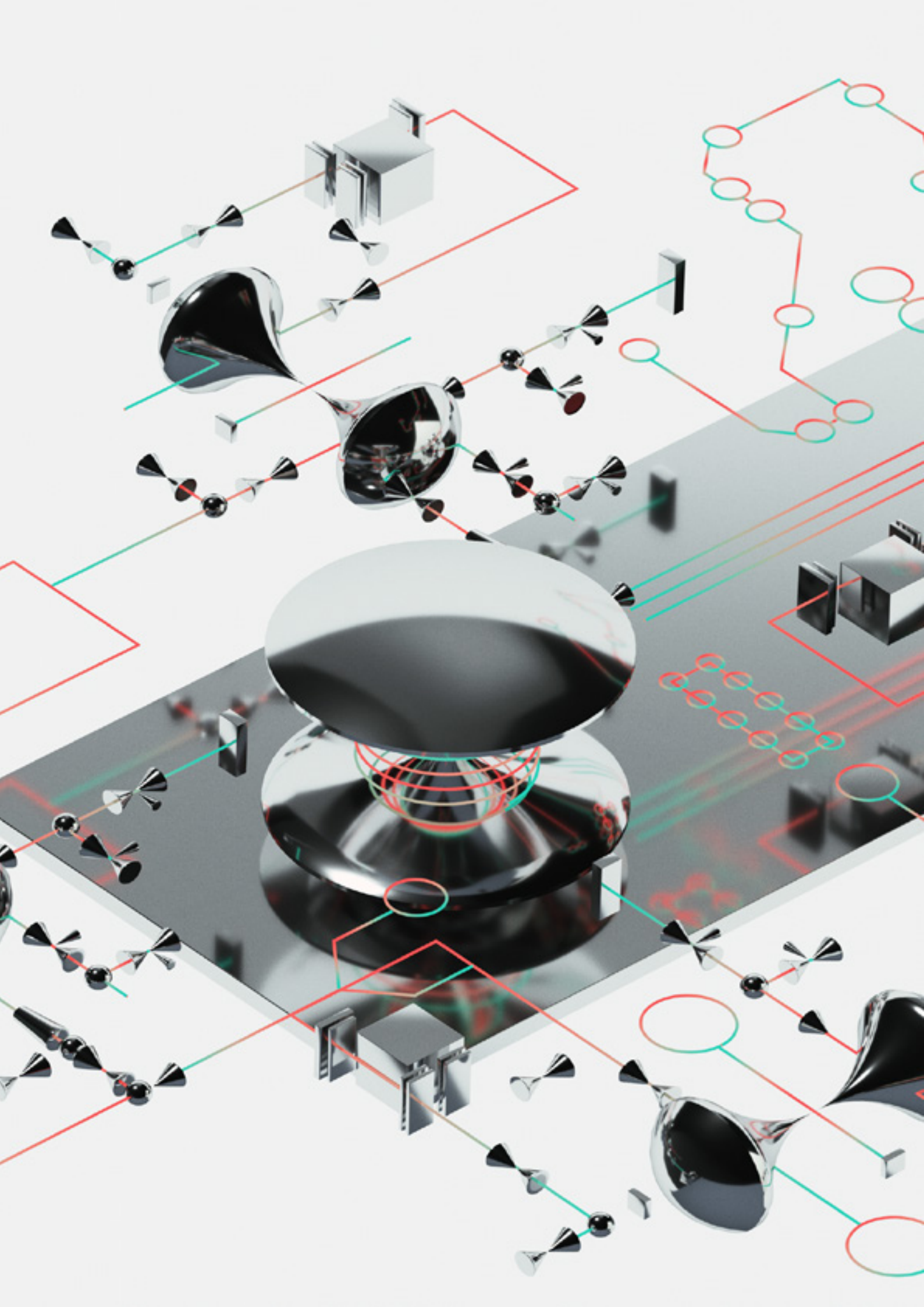Tools for creating your own customised symbols

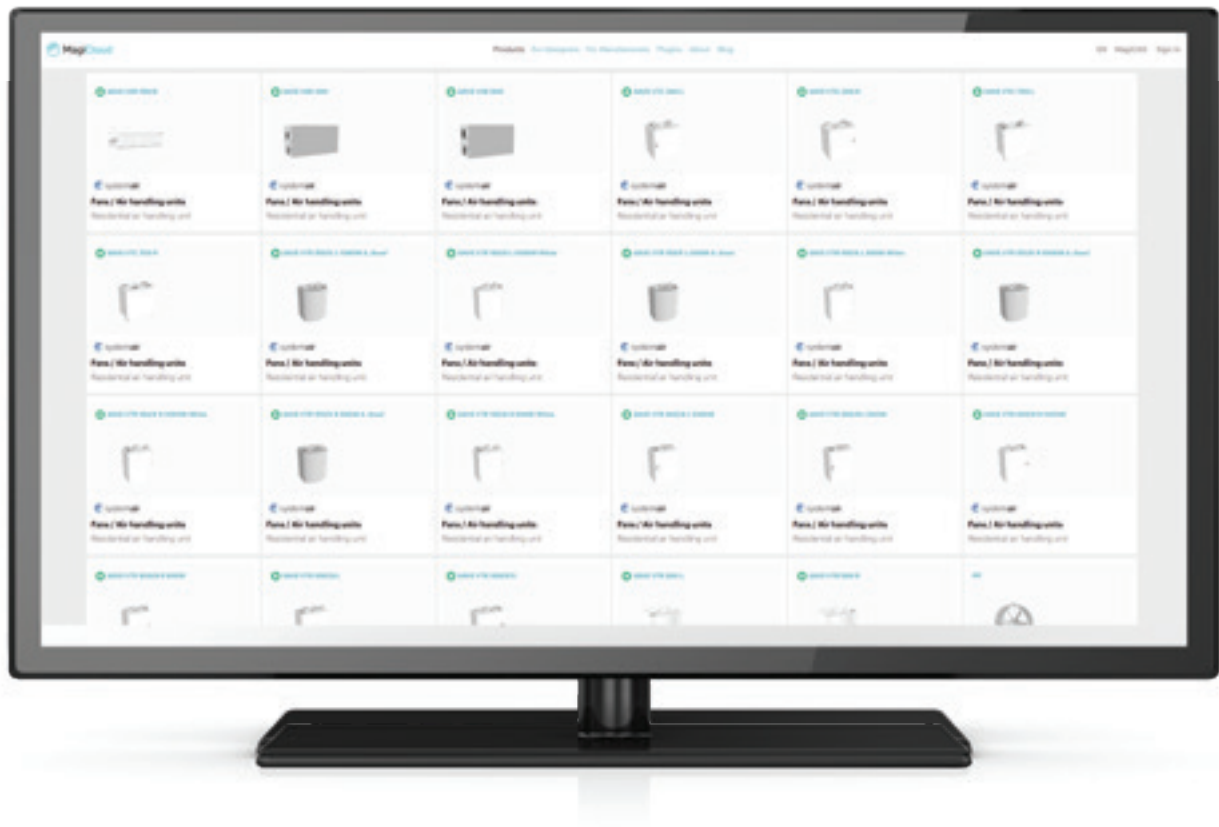**Synchronising symbols in the schematic drawing with the devices in the model**
Links symbols or lines in the schematic drawing with corresponding devices in the model, enabling synchronisation of parameter values between the schematics and the model

Two way data transfer
Data can be transferred either from the model to the schematic, or vice versa, offering the flexibility to make changes to the project either in the schematic or the model itself.

Product modelling

MagiCAD Group is a pioneer in creating data-rich 3D objects based on manufacturers' real products and technical data. MagiCAD's BIM objects are parametric, very small in size and, at the same time, provide a realistic image of the product. These intelligent objects include 3D geometry and comprehensive technical information for each product.

Once the BIM objects are created, they are published as MagiCAD libraries and made immediately available to all MagiCAD users in over 80 countries.

PLUGINS
When the manufacturer has highly customisable products, a large number of product variants, or they want to help their customers in selecting and installing the most suitable product in each situation, a product selection plugin is specifically developed. Over 50 MagiCAD Plugins connect manufacturers' product selection and calculation software directly to MagiCAD, making product selection faster, easier and more accurate.

Once you have selected a product, you can import and place the product from the plug-in into your MagiCAD model just as any other intelligent MagiCAD object. Information about the dimensions and technical data is included in the product model.

You will also get direct access to a wider range of more complex and more configurable products, for example Air Handling Units.

"The most useful aspects of MagiCAD Cloud are the wide variety of 3D models that are available. Also, the fact that it's linked with Revit makes it easier to download and insert models in my drawing. It is crucial to know your designs are done with the correct equipment and they fit in the designated spaces."

Anita Du Plooy, at Royal HaskoningDHV

MAGICAD CLOUD

MagiCAD Cloud, Europe's largest BIM library of manufacturer-verified MEP products, enables online browsing of MagiCAD's full product model catalogue. For the manufacturer, the Cloud offers an easy and accessible way of presenting their products to their customers. In MagiCAD Cloud, the manufacturer's MEP products are visualised as data-rich 3D models, with accurate dimensions and comprehensive technical data for full BIM implementation.

The Cloud enables designers, contractors and engineers involved in preparing the specifications for the construction project to access models directly in Revit and AutoCAD formats. It also offers the version independent DXF format for AutoCAD as well as RFA formats for Revit. MagiCAD Cloud is available to all MagiCAD users directly from the MagiCAD for Revit and AutoCAD user interface. The content is also accessible via magicad.cloud for registered users.

MagiCAD
Support & Services

We pair our software with the best support and services. Our professional training and support services' team will show you how to get the full benefits out of MagiCAD.

TRAINING
Over the years, thousands of MagiCAD users have attended our training sessions to learn and become even more productive. Training courses are held regularly for beginners as well as for experienced MagiCAD users. Customised company training can be arranged for small or large groups upon request. For more information on the availability of training within your country, please contact our international support team.

TECHNICAL SUPPORT SERVICES
Our experienced technical support team is happy to help you get the most out of your MagiCAD for Revit and AutoCAD software.

CONSULTANCY
In selected markets, we provide consultancy services and can advise and assist in delivering company specific standards, presentation styles, product data, specifications and calculation methods to suit your own company standards and practices. We can also help you to adapt to a new way of designing, producing and delivering projects.
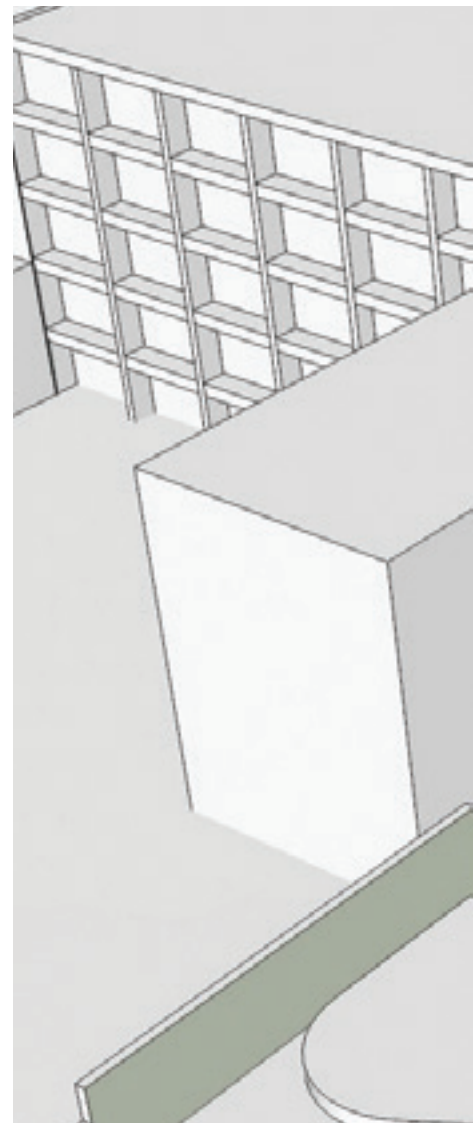
WEBINARS
MagiCAD expert webinars are a great way to get to know MagiCAD applications, features and benefits. You can join our webinars from anywhere around the world. Upcoming webinar dates are posted on the MagiCAD website. If you wish to receive updates on forthcoming webinars, then simply fill in and submit your details to one of the available contact forms on the MagiCAD website.

MAINTENANCE PLAN
With the MagiCAD Maintenance plan, you are the first to receive any new MagiCAD software updates to ensure that your design tools are always up-to-date. MagiCAD Maintenance makes budgeting easier, as there are no unexpected costs and it also costs less than ordering separate upgrades.
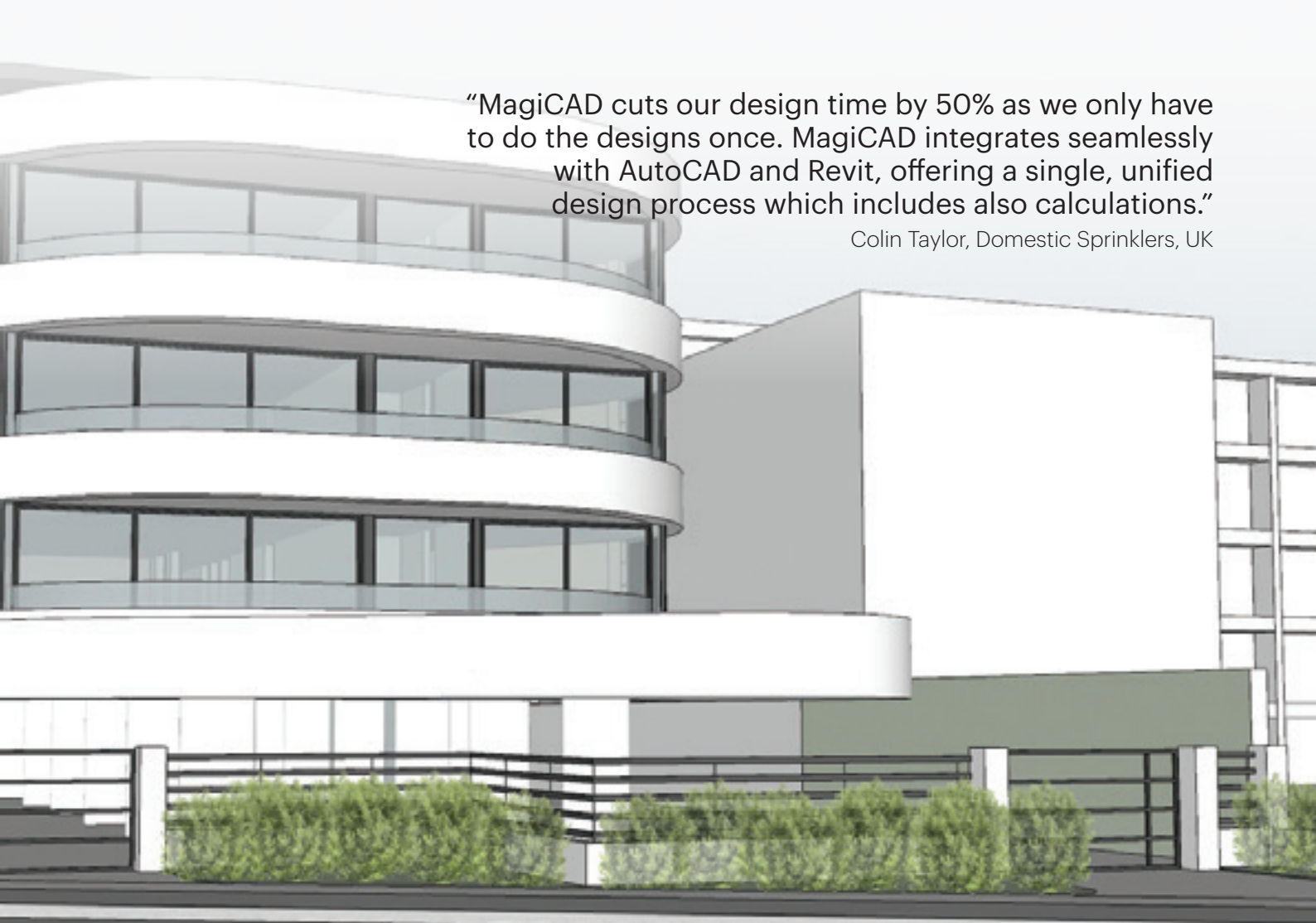
Our support and training staff are dedicated MagiCAD experts with backgrounds and strong experience in construction and building services design.

"MagiCAD cuts our design time by 50% as we only have to do the designs once. MagiCAD integrates seamlessly with AutoCAD and Revit, offering a single, unified design process which includes also calculations."

Colin Taylor, Domestic Sprinklers, UK

MagiCAD Suite covers it all

MagiCAD Suite includes MagiCAD for AutoCAD and MagiCAD for Revit in one package

As a MagiCAD for AutoCAD user, the move to MagiCAD for Revit will be easy since you are already familiar with MagiCAD's functions and product model databases. With MagiCAD Suite, you will receive two module licenses in one package: MagiCAD for AutoCAD and MagiCAD for Revit.

With MagiCAD Suite you have all it takes to successfully carry out any of your current and future MEP design and BIM projects. MagiCAD Suite enables you to make the transition to new technology at your own pace, depending on your workload and on the technology your projects require. At the same time, you can keep on using MagiCAD for AutoCAD for as long as you like.

"One of the major benefits of MagiCAD for Revit in the Johan Sverdrup project is MagiCAD's large database of Revit families which are verified and controlled by MagiCAD. This is very important to us because we have strict requirements for the product families to ensure that they do not weigh down our performance when working with large project models."

Mattias Jagefeldt, Apply Emtunga, Sweden
Project name: Johan Sverdrup Accommodation Module

ABOUT MAGICAD GROUP | We specialise in software and services for the building industry. Our popular Building Information Modelling (BIM) software, MagiCAD, offers powerful Mechanical, Electrical and Piping design functions and integrated engineering calculations for Revit and AutoCAD. It is used by thousands of companies from more than 80 countries around the world. In addition, our online BIM object library enables access to over 1,000,000 manufacturer-verified products from 300 globally renowned manufacturers. Each object is complete with accurate dimensions and comprehensive technical data.

With more than 35 years of experience in the industry, our team of passionate software professionals continues to provide our customers with intelligent solutions that make daily engineering and design easier, faster and more profitable. MagiCAD is a Glodon Group company.

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MagiCAD