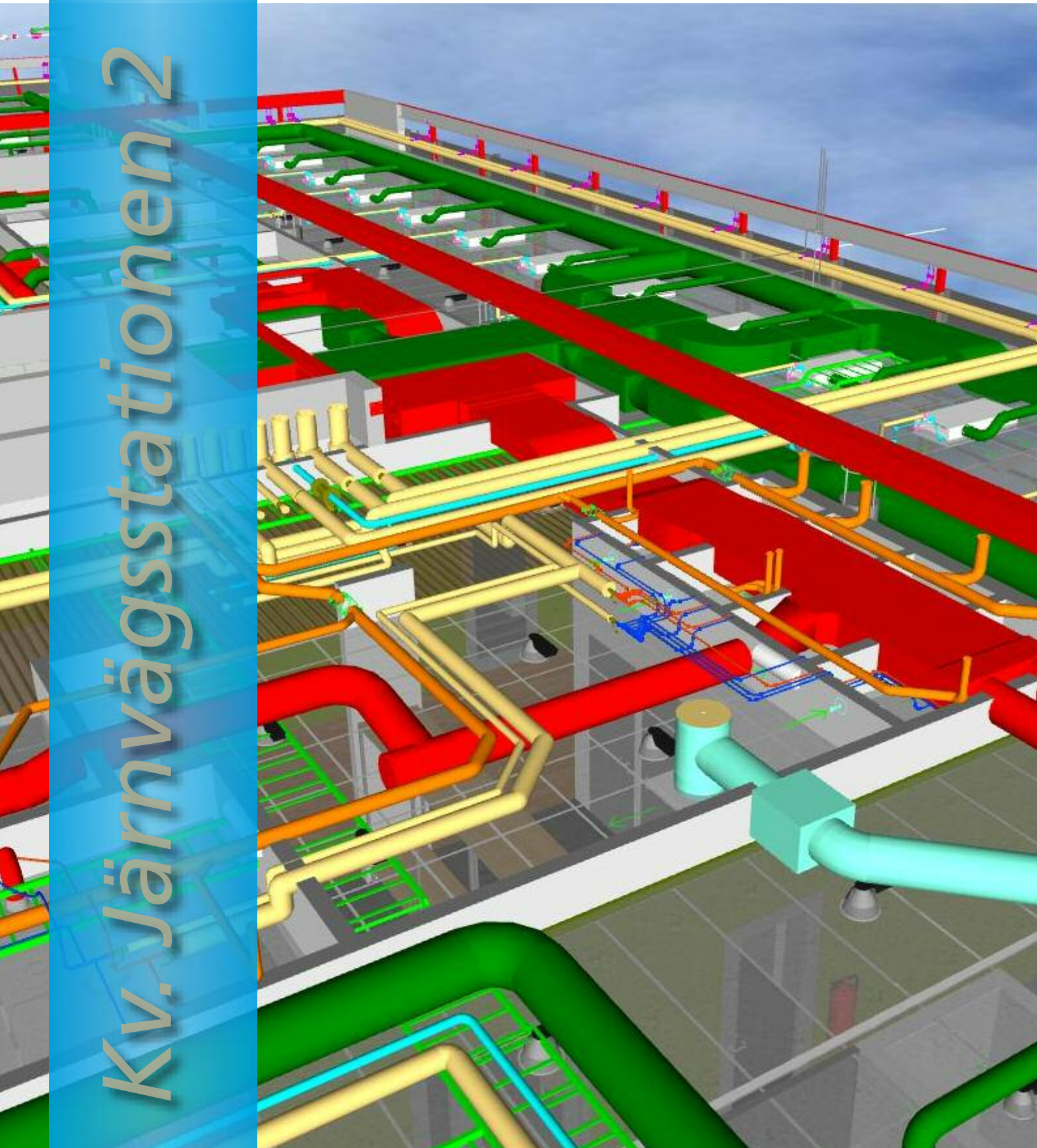


MagiCAD at work:

Sweco Systems saves time – and energy

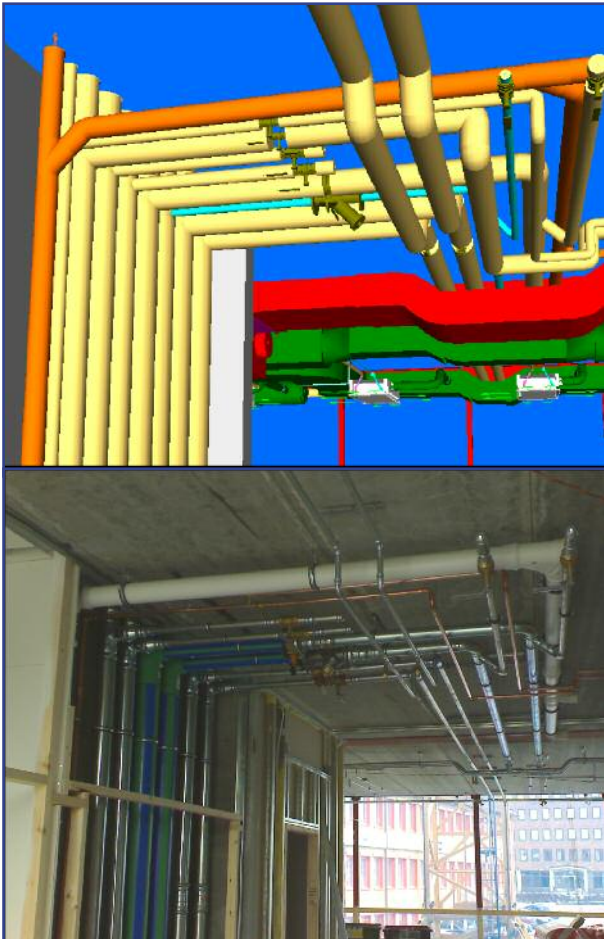
Kv. Järnvägsstationen 2



“If it is not in the model, then it doesn’t exist”

The design of Kv. Järnvägsstationen 2 in Sundsvall, Sweden is groundbreaking, with the model predicting the future reality.

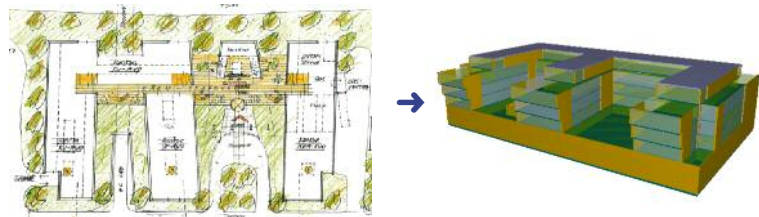
“If it is not in the model, then it doesn’t exist,” says Anders Lindblad of Sweco Systems, head of heating, ventilation and sanitation system designs. Anders and his colleagues know that they can rely on the virtual reality developed on the computer screens. Deviations from the model must be avoided at all costs, because they inevitably lead to problems, delays and increased costs during the build.



What would happen if the model is not followed? It can be compared with a car factory which suddenly discovers that a door does not fit and therefore begins to rebuild the car there on the assembly line. For the car industry, this is a completely unrealistic example. The goal of BIM is that such events should become similarly unrealistic within the construction industry.

Model begins in MagiCAD Room

Integrated designs help Sweco’s consultants to see into the future. By starting out with the architect’s plans and transferring the measurements to MagiCAD Room, it is possible to create an accurate digital model of the building’s geometry – dimensions, floor plans, wall thicknesses, etc.. The model is then followed throughout the entire design process.



Sweco uses data from the MagiCAD Room model as input values in a climate simulation program. Positioning the building on the correct compass bearing and using climate data for Sundsvall, they can predict the building’s interior climate and energy consumption, the degree to which it is sealed against the elements and other parameters with excellent reliability. Even when the house is at the planning stage, it’s clear if it meets the requirements.

MagiCAD for all building services

Sweco’s designers produce both 2D and 3D drawings with MagiCAD for all HVAC and piping installations. Calculations of noise levels and pressure drops in the ventilation system are made directly in MagiCAD, removing the need for some external calculation programs.

Electrical installations are designed as 3D models in MagiCAD Electrical by consulting firm Teldako. The electrical installations are among the most advanced ever produced, with intelligent control modules and a router system where each fitting has a unique identity.

More effective logistics and installation

The designers use the MagiCAD models to compile bills of quantities and parts lists, enabling the flow of materials at the workplace to be directed to the right area, even to individual rooms. By reducing the time required to move materials around, additional time can be released for more efficient installation work. This is a decisive factor in enabling consultants and contractors to meet clients’ demands for faster, better and cheaper builds.

Tested and approved before 'landing'



BIM builds on partnership

Kv. Järnvägsstationen 2 is an excellent example of how BIM is realised in a construction project. Integrated design and construction in accordance with BIM presuppose consensus between the project participants. Early in the project, those responsible for architecture, design, HVAC, piping and electrical installations agreed to draw up a partnership declaration. A partnership declaration is not a technical document but a value document which describes how the project shall be run in order to reach the goal. Good results are only achieved when territorial thinking is rejected and replaced by a working environment characterised by cooperation and teamwork. The partnership declaration accompanies the entire project and is followed up at regular project meetings.

"MagiCAD's development has been in line with our needs. As MagiCAD is IFC-compatible, this fits in well with our BIM philosophy. We are thoroughly committed to the sector's open and free IFC file format. We are also firm advocates of the development of the BuildingSMART methodology as we work with the Building Information Model – BIM. This means that everyone can share each other's information, processing, coordinating and visualising it in an effective manner in the build process."

**Hans Lif, responsible for CAD and IT,
SWECO Systems AB**

Kv. Järnvägsstationen 2

The design of the building began in 2006 and was completed in November 2008. The total area is 20,000 m² distributed over four floors with offices above ground and two garage levels below ground.

Design

HVAC and piping	Sweco Systems
Architect	Tirsén och Aili Arkitekter
Constr. engineering	Sweco Structures
Electrical inst.	Teldako
3D visualisations	Cadit
Contractor	Skanska
Client	Norrporten

Sweco

Sweco is an international consulting engineering company offering qualified consulting services with a high knowledge content, often in the early stages of client projects. The Group has an annual turnover of approximately SEK 4.6 billion and 5,400 employees in ten countries. Sweco is currently involved in projects in approximately 80 countries around the world.

Sweco's installation consultants offer services comprising everything from expert advice and design to control and inspection within HVAC, piping, electricity, telecoms, fire and system integration. Sweco has been using MagiCAD since 1999.

MagiCAD – quality software for building services

MagiCAD Heating & Piping, Ventilation, Electrical and Room is the Nordic region's leading program for the installation sector. It is used by 25 of the 30 largest companies in the Nordic region, with more than 6,000 licences being used every day. The program's functions are developed specially for the market where it is used, so that consultants can work in a way best suited to both them and their customers.

3D modelling

From the outset, MagiCAD has been developed for 3D modelling. Even if you choose to work in 2D, MagiCAD automatically creates a 3D model. Any changes made in 2D are updated directly in the 3D model.

Real products with full flexibility

MagiCAD contains Europe's largest database featuring hundreds of thousands of real products from at least 70 suppliers. You can choose the product which best suits your project without being restricted to a certain supplier or product type.

Interoperability and design collaboration

Operating a BIM project is easy with MagiCAD. Everything you design

with MagiCAD contains a great deal of useful information that can be shared with other participants in the project.

IFC certification

MagiCAD is fully compatible with the latest IFC standard, Step 2 of IFC 2x3. As a MagiCAD user, you can export IFC files of your project model, complete with design and technical data.

Coordination and collision detection

MagiCAD's integral collision detection helps you avoid costly errors at a later stage of the design project from the outset. You can coordinate and control all disciplines directly in MagiCAD. MagiCAD's installations can also be coordinated with other disciplines in the program such as Navisworks, Solibri, etc.

Integrated calculations

Since MagiCAD objects match real products, it is easy to make the correct calculations. MagiCAD has integrated calculation functions for sizing, balancing, sound calculations, energy consumption, cooling and heating requirements. MagiCAD can also export data to external calculation programs.

PROGMAN OY

Progman Oy is a software house specialising in the development of software for building services. One of its most successful products is the MagiCAD program, a market-leading AutoCAD application for heating, piping, ventilation, electrical design and 3D building models. The company employs 40 professionals who are all eager to meet your needs. Our subsidiary CADCOM AB represents our expertise in Sweden. In addition we have partners in Norway, Denmark, Iceland, Lithuania, Latvia, the Benelux, Russia, Ukraine and Turkey.

MagiCAD sales, training and support:

Progman Oy
Tel. +358 (0)2 8387 6000
Fax +358 (0)2 8387 6050
mail@progman.fi
www.progman.fi