



MagiCAD®

HEATING & PIPING | VENTILATION | ELECTRICAL | ROOM

MagiCAD – playing a vital part in the largest construction project in the Nordic region

The new Akershus University Hospital just outside Oslo, Norway, is being designed entirely in 3D. The consulting company Sweco Grøner has 40 engineers working full-time to design all the HVAC systems, while the construction work is in full swing.

MagiCAD is the preferred design tool, ensuring pipes, ducts and components are placed correctly and don't collide during installation.

The use of 'concurrent engineering' – designing while building – has proved necessary in order to keep deadlines.

"We could have hired another 10-15 engineers, but the overheated building sector makes it impossible", says Runar Strømsvåg, HVAC project manager at SWECO Grøner.



When the new Akershus University Hospital is completed in 2008 it will be Europe's leading hospital of its kind. High demands on a sterile environment require out-of-the ordinary ventilation systems. Another challenge is the heat pump installation for heating and cooling. With 350 holes bored in the ground, it will be the largest installation in northern Europe.

Team behind the product

With more than 20 years of experience Progman Oy is the leading European player in the development of CAD software for building services. We employ more than 40 people in Finland and Sweden.

Our dedication to building services is our strength. Years of success have shown that this concentration is the right solution. We know the sector very well and can respond to future challenges in good time.

MagiCAD is the market leader in the Nordic countries. We have MagiCAD partners and resellers in several countries in Europe and Asia and the market is expanding all the time.

PROGMAN OY

Vanhankirkonkatu 6 • 26100 Rauma • 02 8387 6000 • www.progman.fi • info@progman.fi

“...there is no better program on the market today”

Trine Lise Folvik, CAD manager for HVAC installations at SWECO Grøner:

“We were awarded the contract back in 2000 and began designing in the summer of 2001. A project of this size must be future-proof. 3D modelling was a natural choice, as was the choice of MagiCAD for the HVAC design. With MagiCAD, which runs on AutoCAD, we can design all the HVAC installations faster and with a higher degree of quality.

We are very pleased with MagiCAD – there is no better program on the market today. It has high functionality and is very user-friendly.

We can work faster, smarter and with less errors. Much of the tedious routine work is eliminated, leaving more time for the actual design work. This Akershus project is a great learning experience, and we appreciate working with MagiCAD on a project of this magnitude. It will definitely also improve our performance for upcoming projects.

The benefits of collision control

To simplify the HVAC design process, SWECO Grøner has divided the building model into 75 DWG files, with 9 sections on each floor.

Runar Strømsvåg, HVAC project manager at SWECO Grøner:

“Of course it is easy to get conflicting installations with so many pipes and ducts in the same area. MagiCAD’s collision detection function is extremely useful. We easily find any collisions between pipes, walls, ceilings, etc. Every HVAC installation is checked against the building model. Even pipe insulation is included in the calculations. Discovering possible collisions and other design errors is a great time and money saver for us as well as for the contractor.

Installation according to plan

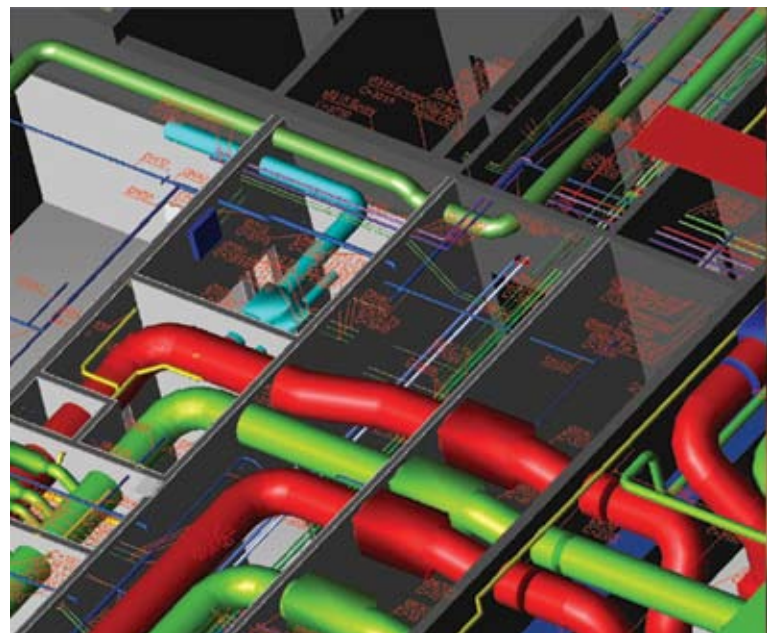
To achieve the desired result, every installation must be executed according to the design drawings. If one contractor cuts a corner, there is a risk of conflict with later installations. To minimise this risk and to optimise the overall installation, Sweco Grøner is careful to design all systems simultaneously.

X-refs in the 3D models

SWECO Grøner’s method of working is to import other installations as ‘X-refs’ into its HVAC 3D models. Even if the imported models are 2D, it’s easy to locate and adjust for rebars and other vital parts of the construction.

It takes a great deal of effort to keep track of individual designers, systems and drawings. SWECO Grøner has produced more than 2000 drawings for HVAC alone. This is where 3D modelling performs so well. The entire model is updated from one point. All the separate drawings for pipes, ventilation, sections, etc. are updated automatically.

It’s equally easy to create accurate bills of materials. Routine work is minimised, cost-efficiency maximised. To simplify installation work for subcontractors, Sweco Grøner’s designers supply them with isometric 3D drawings of HVAC systems.





Support and quality control

Included in Sweco Grøner's commission is support and quality control during the building process. The 3D models are used as a new tool on the construction site, in the shape of DWF files. The contractors make their own printouts, allowing for improved cost and quality control.

SWECO Grøner produces 3D DWF files of the models and 2D DWF files of the entire building. The DWF files are sent to contractors and project management every week. The 3D DWF models are ideal as a basis for discussions and decisions. DWF files are easy to access by everyone that needs to be updated on the progress, even if they don't have AutoCAD. A DWF reader is available as a free download.

Pilot project for IFC

The contractor for Akershus University Hospital has decided to carry out some parts of the project as an IFC-compatible pilot study.

Trine Lise Folvik comments:

"MagiCAD supports IFC, so we are not anticipating any extra work on our part. I'm sure IFC will eventually be used on a wider scale, since all parties involved are very committed. And a success for IFC is in everybody's best interest."

New contract for SWECO Grøner

SWECO Grøner has already been awarded a major new contract for a hospital. This time it's for the Rikshospitalet in Iceland, a project even larger than the Akershus University Hospital.

