SERVICE WORKS INTERNATIONAL
ADDNODE GROUP

CASE STUDY

BIM Case Studies

We are a global provider of FM and building information modelling (BIM) software and services, including laser scanning, 3D modelling and CAFM integration. Below are outlines of how we have helped just a small selection of our clients in creating 3D models of existing buildings to increase the quality of information across their whole building lifecycle.

Uppsala Kommuns Fastighets AB

SWI was commissioned to by the Uppsala Municipality to 3D scan the Gottsunda Shopping Centre. The solution providesUppsala Kommuns Fastighets AB searchable, readable, scalable and measurable data in the form of 3D models and drawings. With all 3D laser scanning done with the Leica RTC 360 - currently the world's fastest 3D laser scanner - the project costs are kept down as the scanning is both accurate and very efficient. In order not to interfere with the operation of the mall's leased premises, model and drawing documents for these premises are generated via 3D modelling from existing drawings.

"SWI products and services are well developed and we believe that they are the right partners in this work. SWI's scanning of the Centre will, among other things, help us to build a digital twin, which is one of several steps we take to develop the properties", says Manne Johansson, technical manager at Uppsala Municipality's Real Estate Company.

Benefits of BIM

- Increase the quality of information across the building lifecycle for design, build and operational stages
- Securely plan, manage and co-ordinate BIM data from any web browser
- Gain 3D BIM models of existing buildings through 3D laser scanning services
- View and update models without specialist IT or CAD knowledge
- Access information on assets for easy maintenance and FM planning
- Faster and more responsive FM services due to more accurate, detailed and accessible data

Ports of Stockholm

In order to develop supporting documents that can be used in an improved and more cost-effective operation and management, Ports of Stockholm asked SWI to laser scan buildings and cargo docks as well as creating 3D models. Modelled components included interior walls, doors, windows, fixed furnishings, stairs, the docks and more. The assignment also included ensuring that the Port's buildings have correct and available decision-making documents for redevelopment and future renovations.

NCC & Botkyrkabyggen

When housing construction under the 'Million Programme' was completed in the 1960s, there were major shortcomings in the management of documentation and information for operations and management. In connection with the fact that it is now relevant to implement renovation reconstruction and extension projects for these homes, previous mistakes should not be repeated.

Together with Botkyrkabyggen, NCC has a major renovation project underway where they will work with SWI to create an uninterrupted flow of information throughout the building's lifecycle to ensure that the information needed at every stage from design, production to operation and management becomes available and contributes to a more cost effective design building and management process.

Higab, Postgatan 16

Higab, a property agent owned by the City of Gothenburg, chose SWI to visualise part of a historic building at Postgatan 16 in central Gothenburg.

Built in 1902, the house is an innovative project for Higab. The top three floors have been converted to modern offices, but the visualisation showcases an alternative design to inspire potential clients.

"By visualising the office premises, we can create a clear and attractive picture of what we offer future tenants and describe what does not yet exist. Stakeholders can make a digital tour of the premises themselves and get inspiration on how the premises can be designed. This saves time and money for both us and our customers," says Maritha Enström, Quality and Digitization Manager at Higab.

The project included:

- Premium visualisation of office premises based on BIM (building information modelling).
- Interior furniture proposal in continental style in burgundy, green and yellow by an interior designer with a good understanding of how to highlight the architecture in the best way.
- 3D floor plan that gives an overview of how the premises are arranged. A good complement to the 3D visualisation.
- Publishing 3D visualisations so that they are easily accessible via the web and QR codes.

Higab, which is 100 percent owned by the City of Gothenburg through Göteborgs Stadshus AB, will contribute to the city's development, nurturing and culturally developing historically valuable buildings.

Postgatan 16 contains 900 sqm of office space over three floors, with a kitchen and dining room. Floors 2 and 3 are 320 sqm each and floor 4 is a converted attic of 260 sqm. On the ground floor of the house there will be a restaurant.

A QR code can be used on site so that physical visitors have direct access to the 3D visualisation of the office premises in mobile devices. Simply launch the camera on your mobile, hold it against the code and click on the link for inspiring pictures and furniture suggestions.

Click here, to experience the inspiring office, kitchen and social rooms.

Nordic Museum

With the support of reality capture technology, SWI has developed the basis for a digital twin of Sweden's Nordic Museum building, with a comprehensive level of detail. This comprises a complete 3D model with accurate interior and exterior measurements, in addition to relationship documents for remodelling and repairs. It ensures that this prestigious building, with its towers and pinnacles, sculptures and reliefs, spiers and high gables is documented digitally and can be preserved.

Kennet Blixt, Director of Properties for the Nordic Museum explains: "One of the reasons why we chose to digitise was that we lacked internal resources to manage our drawing archive. In addition, we did not have the tools to easily search, read, measure and comment on the drawings of our historic buildings".

"With the 3D laser scanning service supplied by SWI, we now have accurate digital models and drawings, something that we previously lacked. We have improved the quality of our building data and ensured that we have a strong basis for future maintenance and repairs."

"The catastrophic fire in Notre Dame in 2019 highlighted how important it is to have building information updated and available. I am pleased to say that we have that data now for the Nordic Museum".

Lejonfastigheter – Linköping Sports Centre

Property management company Lejonfastigheter has partnered with SWI to produce accurate building information to support redevelopment of the sports centre in Linköping, Sweden. A 3D BIM model was created of the building, and the whole project was completed in just 11 weeks.

Tim Andreassen, Technical Information Officer at Lejonfastigheter says: "We lacked a good foundation of accurate drawings, especially for the parts of the site that have been rebuilt several times over the years. By digitising the entire sports centre, we now have a geometrically correct BIM model, including renovations, that we can use and keep updated over time. We chose SWI as a partner because they deliver materials of very high quality and have good experience of this type of project."

The project included:

- 3D laser scanning part of the building, processing the point cloud and developing a BIM model
- Digitising existing drawings and adding these to the BIM model, at SWI's LoD 200
- All building information, including the correct relationship model, is made available in QFM BIM.

The client is able to access:

- A geometrically correct 3D BIM model, drawings, facades and sections as well as color-coded layouts on areas and spaces for all floors
- Point cloud with complete navigable 3D image and correct measurements
- Building information available for all employees to use around the clock.

Lejonfastigheter provides Linköping's municipal operations with properties and premises that include the sports centre. It is one of the city's most popular, where a large number of sports are practiced and concerts are held. The premises are 7,800 square meters. The large hall holds 2,200 spectators, of which 1,600 are seated.

SGS Studentbostäder

In Kålltorp, Sweden, SGS Studentbostäder (which translates as 'Student Housing', in English) is building 123 student apartments. SWI has been commissioned to deliver visualisation technology to the SGS student housing portal so that they can offer prospective tenants a digital preview and the opportunity to experience the apartment from the convenience of any location.

Users can walk from room to room and get a genuine feel for the atmosphere. At client request, for this project, a medium level of detail has been used; SWI can offer clients a low, medium or high level of detail as required.

"Thanks to the fact that prospective students themselves have the opportunity to go on a digital tour and get a complete overview of the apartment, both via the 3D floor plan and the 3D visualisation, we managed to rent out all the apartments in this project without the need for a single physical viewing. During the pandemic, it was a very successful solution for our prospective students and for our own staff," says Neshat Alizadeh head of administration at SGS Studentbostäder.

"The fact that there is also the capability to measure from the floor plan allows the students to obtain a good grasp of all the proportions and start planning how the apartment will be decorated", explains Alizadeh.

The visualisation service is created for browsers, which means it can be used on computer, tablet or smartphone without the need for an app being installed. The SGS Studentbostäder project also included creating three-dimensional floor plans enabling tenants to visualise all the rooms in an apartment.

Try for yourself: digital viewing of a two room apartment in Östra Kålltorp. Walk around by clicking on the white balloons or by swiping the screen. You can also start the camera in your smartphone, point it at the QR code and click the link that appears on the screen for a digital tour.