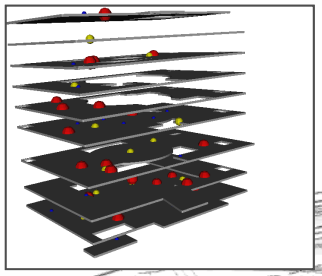
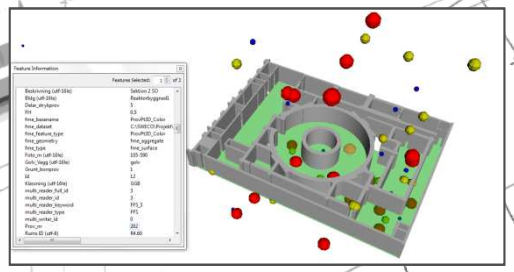




Rapid 3D benefits

- connect your building information and geodata!

SWECO

Ulf Månsson
ulf.mansson@sweco.se

Abstract

A recent project has shown that it is possible, with existing original data, to quickly generate three-dimensional building models of sufficient quality to create an early advantage.

An effective process of transformation turns floors and rooms into 3D data. By using the same coordinate system, in- and outdoor analysis becomes possible.

A geospatial dashboard in FME serves as the engine for:

• Comparison of different data sources.
• Planning, acquisition and visualization of sampling data.
• Quality insurance of input data. By visualizing the input data used to create a model, it is easy to detect errors.
• Effective presentation. Interactive reports makes it possible for all to understand and experience 3D.

The project also addressed the problem with indoor positioning. Location aware paper prints are generated from the 3D-model. The prints can be used while conducting both in- and outdoor surveying. Notes on the prints are scanned and automatically positioned in the 3D datastore to keep track of important points as boreholes, samples etc.

A case study from Sweden will be used in the process:

Decommissioning a nuclear power plant requires a well thought-out decommissioning plan. Sweco develops IT support for the actions taken and planned. IT support includes production lines with map support for handling sampling activities and 3D modeling of all the facilities including the surrounding land and environment.

Before dismantling work is carried out an extensive in- and outdoor sampling program is in progress. All the samples are identified and tracked in the 3D model. The samples contains information about the level of radioactivity and different chemicals.

The 3D models facilitate the planning and will primarily be used to visualize performed tests and results. The models can also be used for logistics planning of dismantling and estimate of demolition volumes.

The goal has from the start been to quickly gain benefits from the 3D models. This means that the 3D model is already used in support of the planning and documentation of the project.

The model can be used as a basis for possible further tests and measures in connection with dismantling. Using the 3D model it is possible to estimate the volume of material that must be dealt with in different ways depending on how much and what type of contamination it contains.

ulf.mansson@sweco.se

Sustainable engineering and design

- the continuation of a longstanding tradition within Sweco

6.000 employees
Established in 11 countries

Flood protection in Poland

A modern flood protection system for the area around the Nysa Klodzka River in Poland will protect from future flooding catastrophes.

Ignalina nuclear power station

Sweco has prepared design works for several disassembly and decontamination projects at the Ignalina nuclear power station in Lithuania.

A new hydroelectric power station in Bulgaria

Sweco's assignment comprises geological surveys, design, production of drawings and other technical services.

ulf.mansson@sweco.se

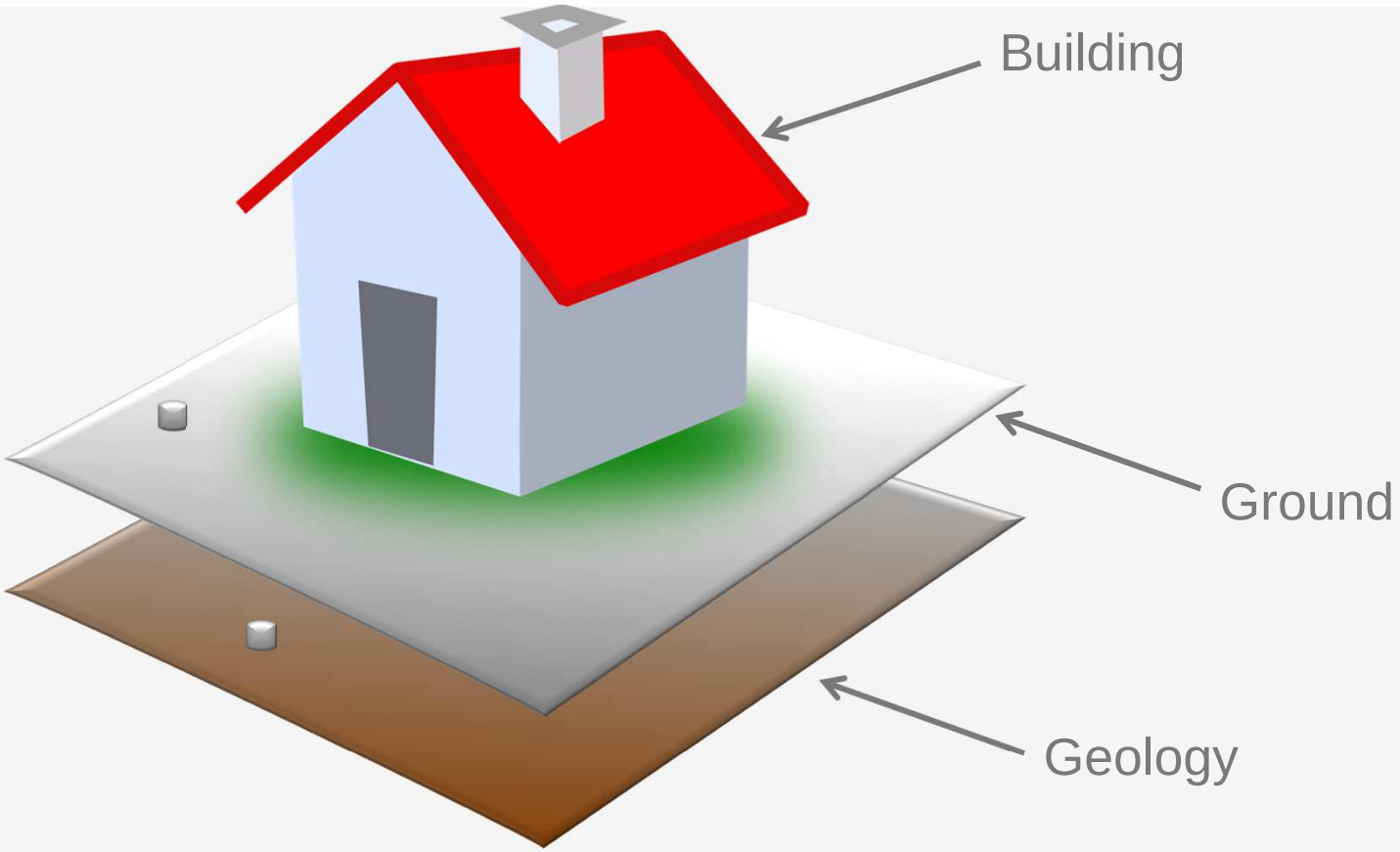
Geospatial IT

SWECO

Theory: A digital 3D model could facilitate

- Planning, acquisition and visualization of sampling data
- Comparison of data sources
- Quality assurance

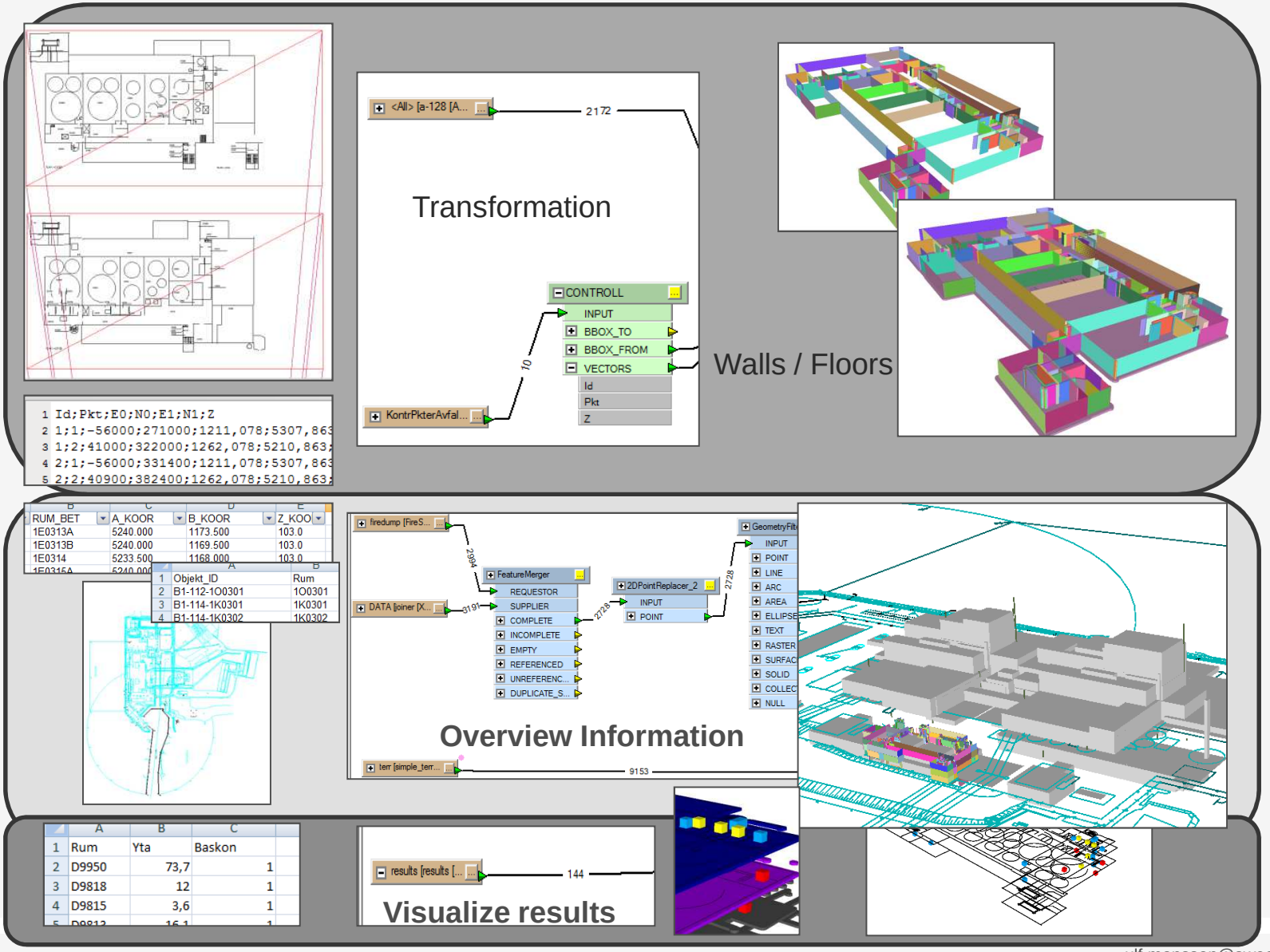
Geospatial IT - fundamentals



Geospatial IT – current documentation

ulf.mansson@sweco.se

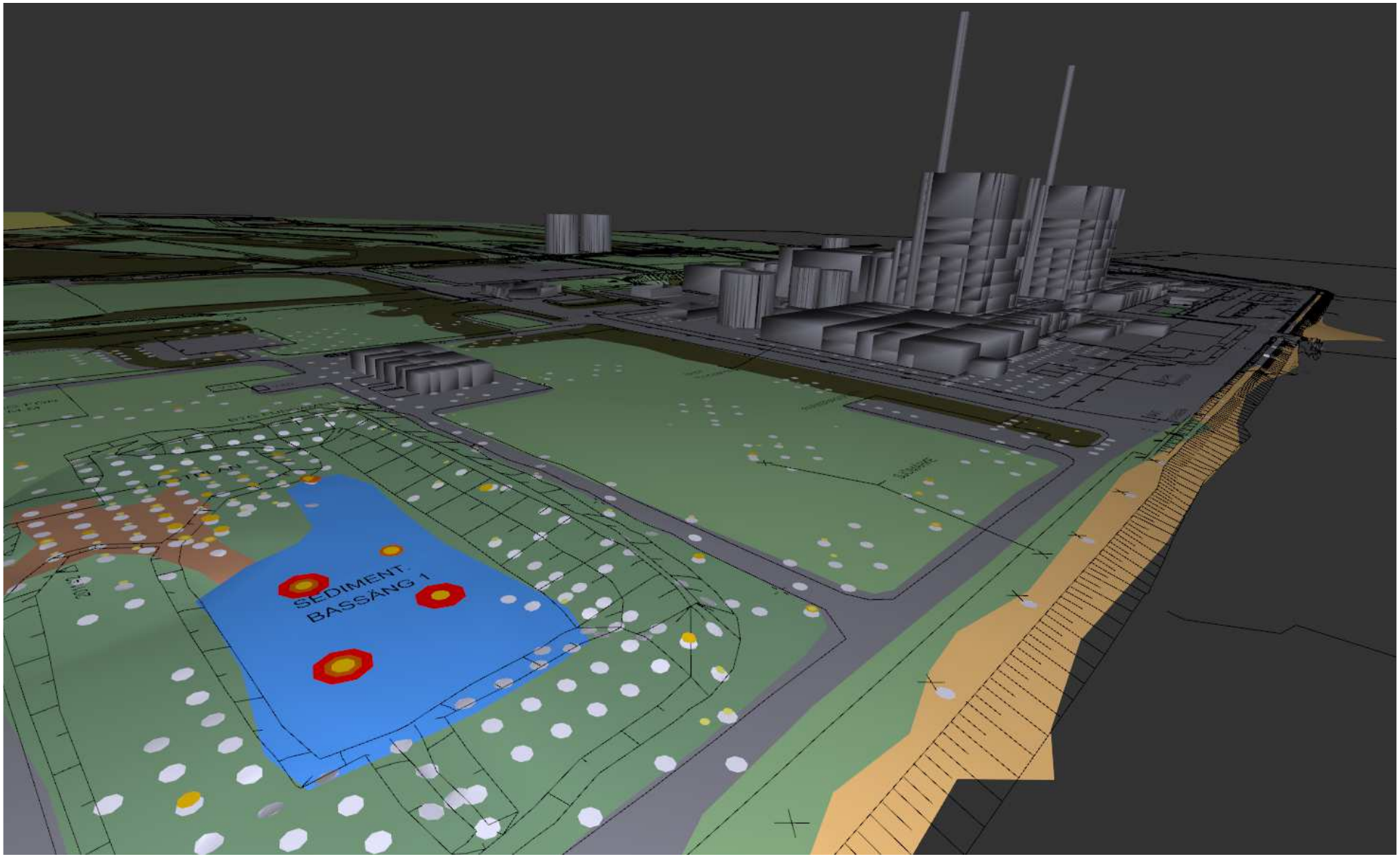
Concept: 2D to 3D



ulf.mansson@sweco.se

Use cases:

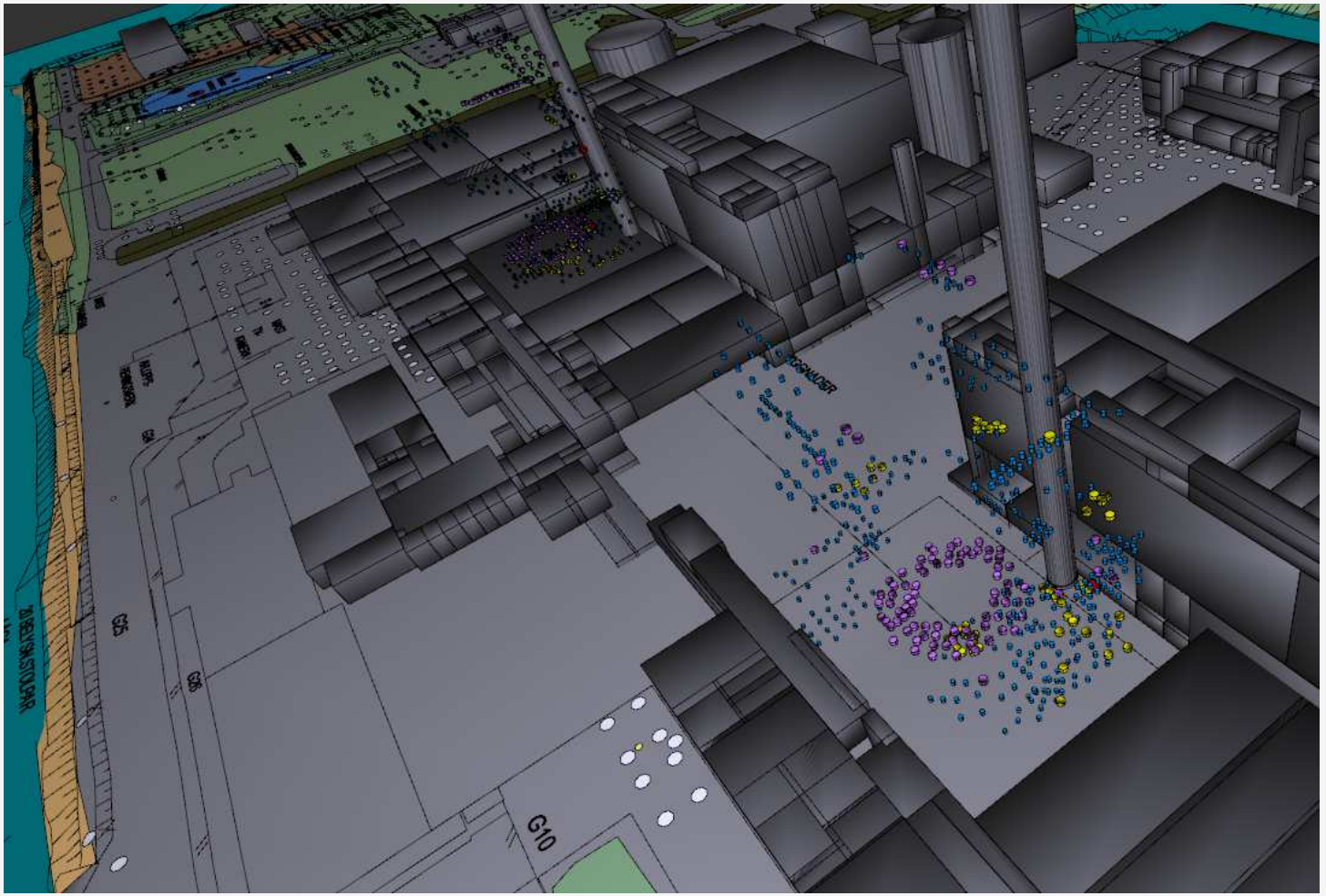
- Planning and preliminary results



ulf.mansson@sweco.se

Use cases:

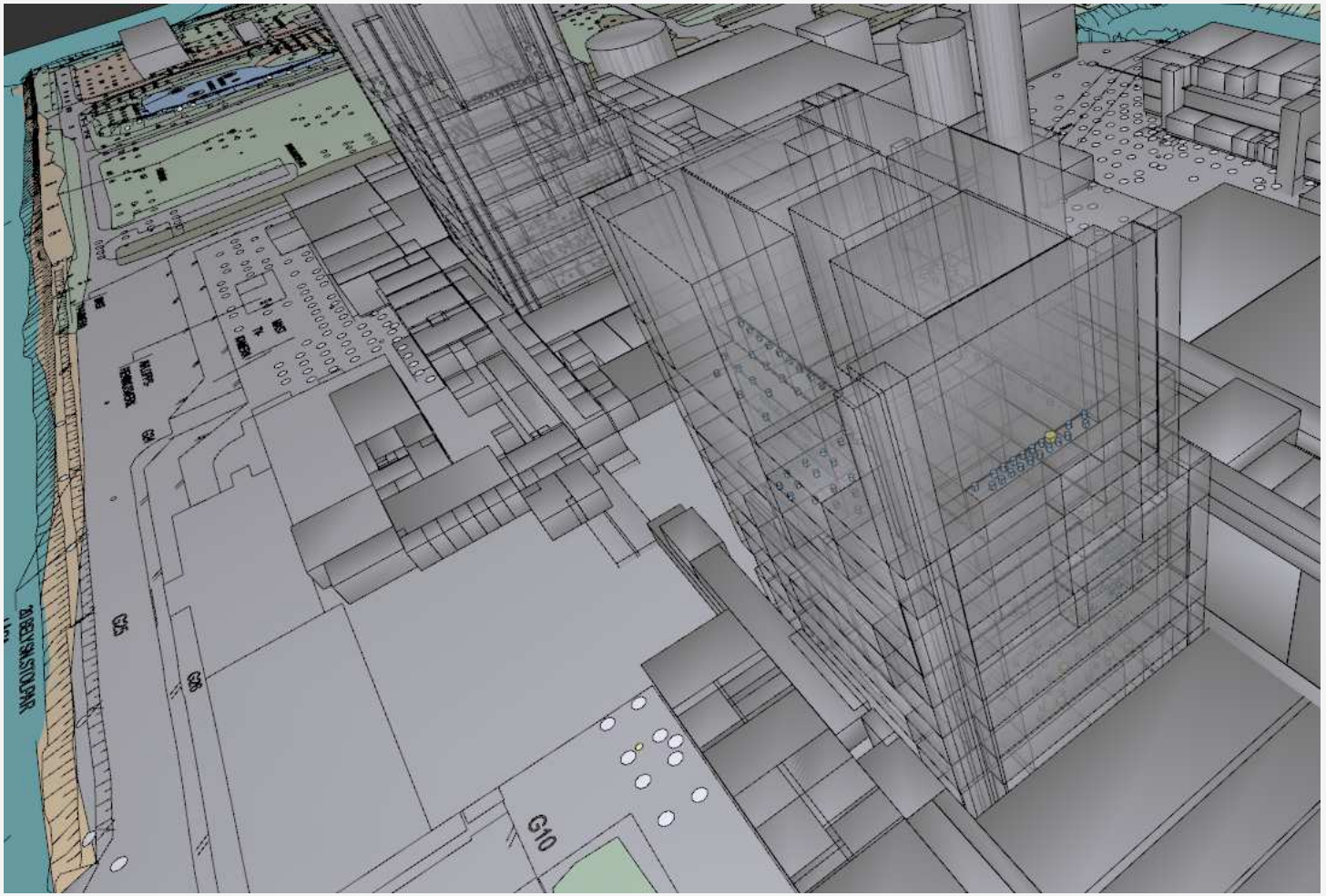
- Planning and preliminary results



ulf.mansson@sweco.se

Use cases:

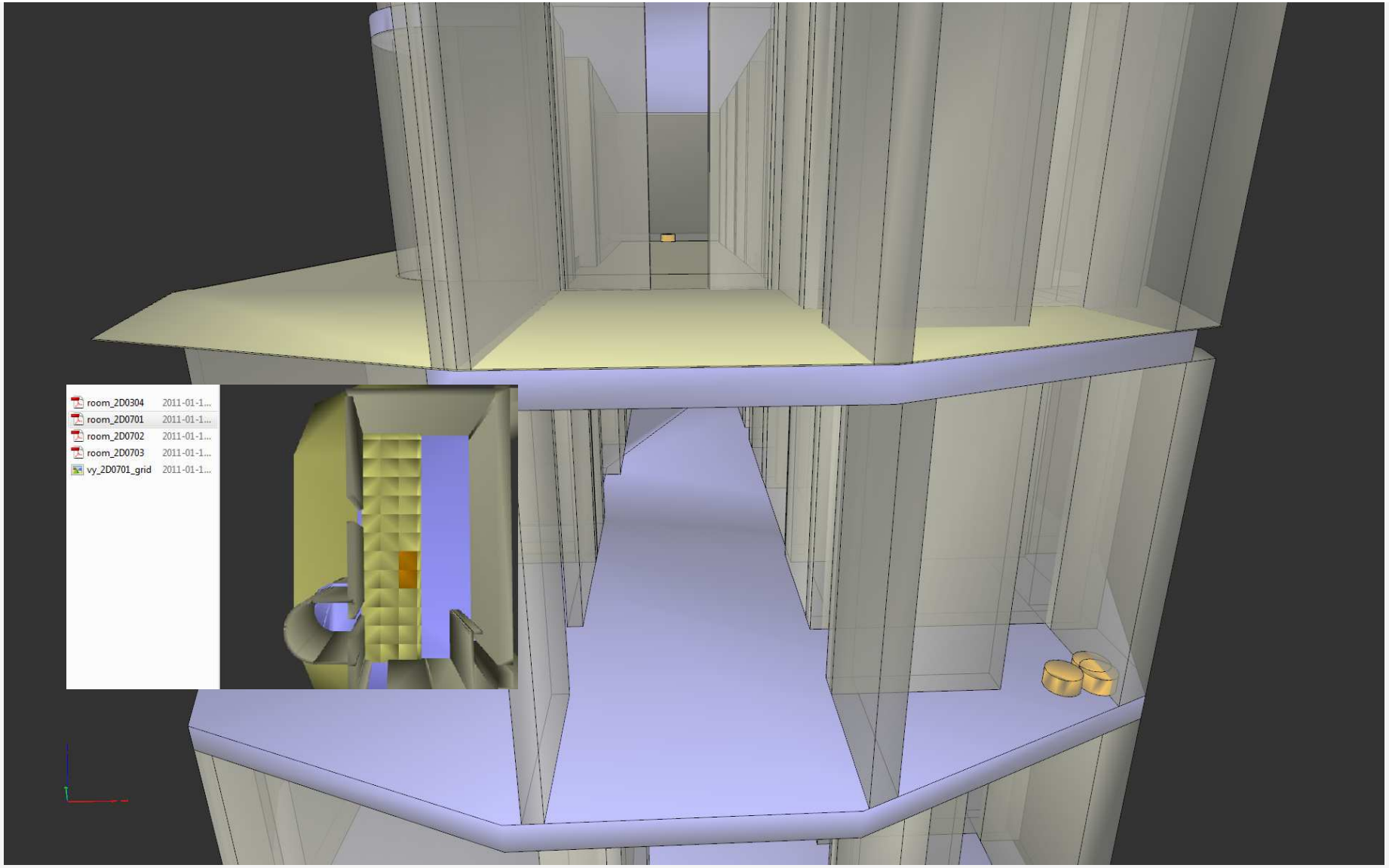
- Planning and preliminary results



ulf.mansson@sweco.se

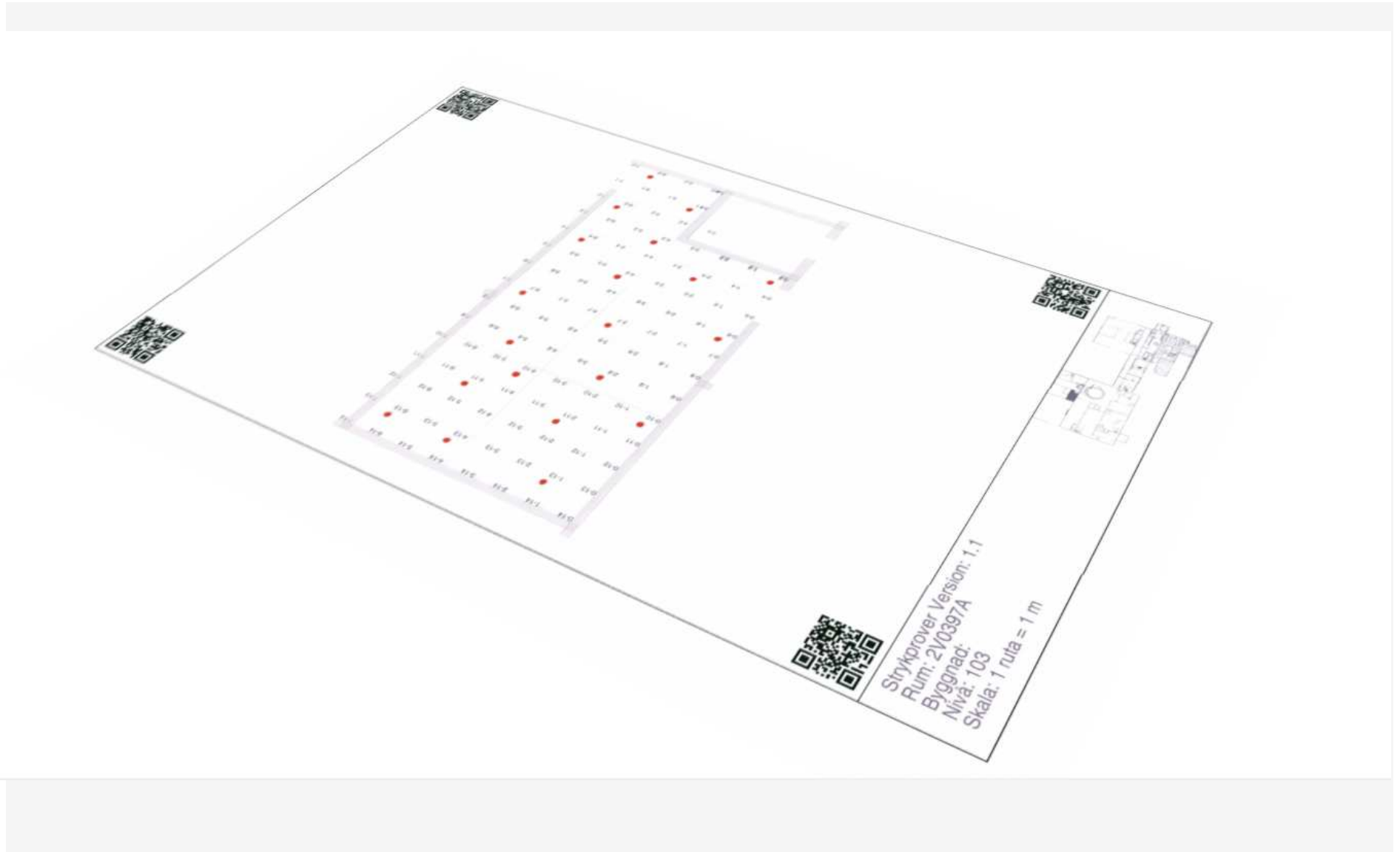
Use cases:

- Cross section of floors & rooms



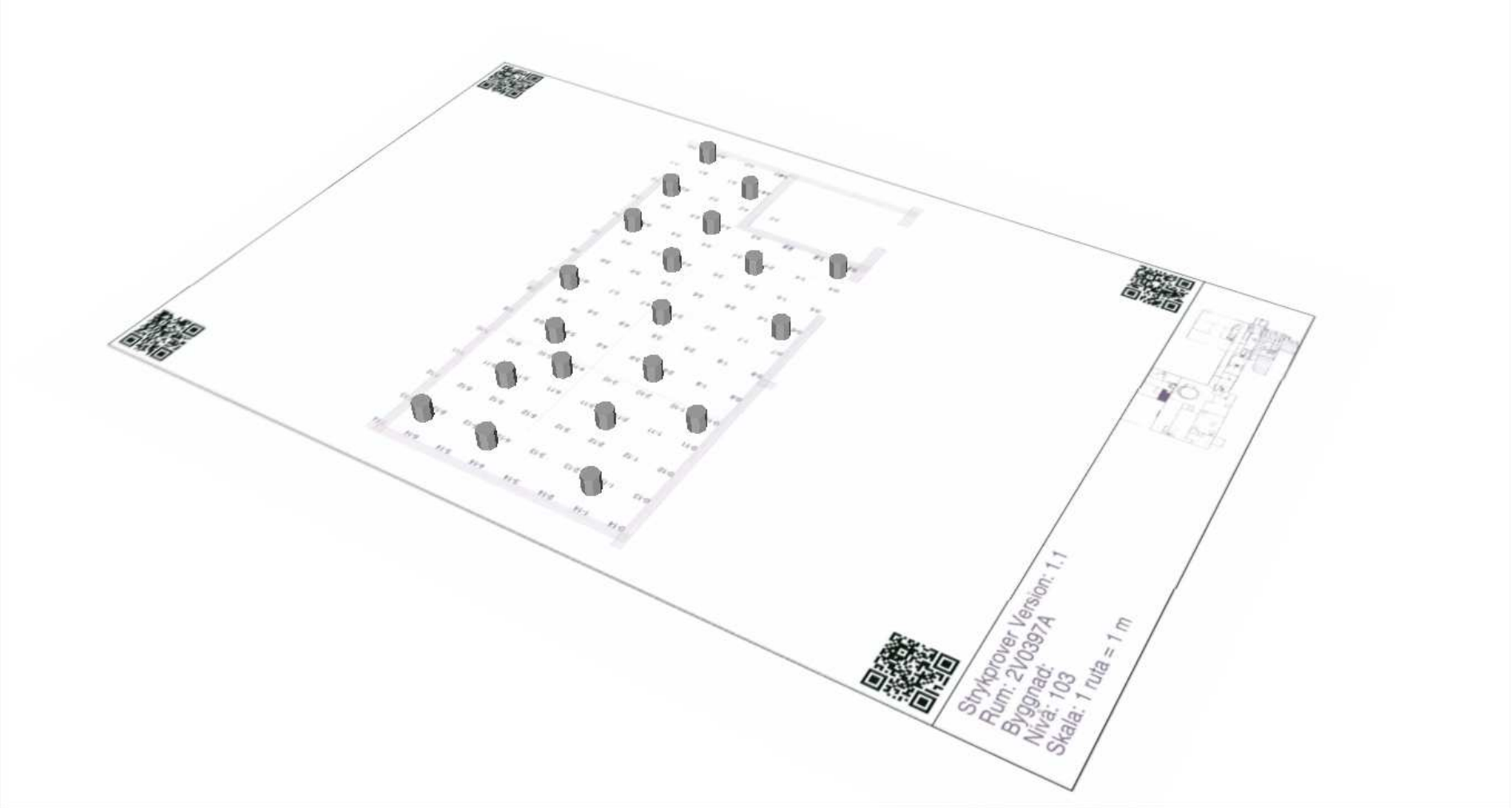
ulf.mansson@sweco.se

Intelligent papers – indoor positioning



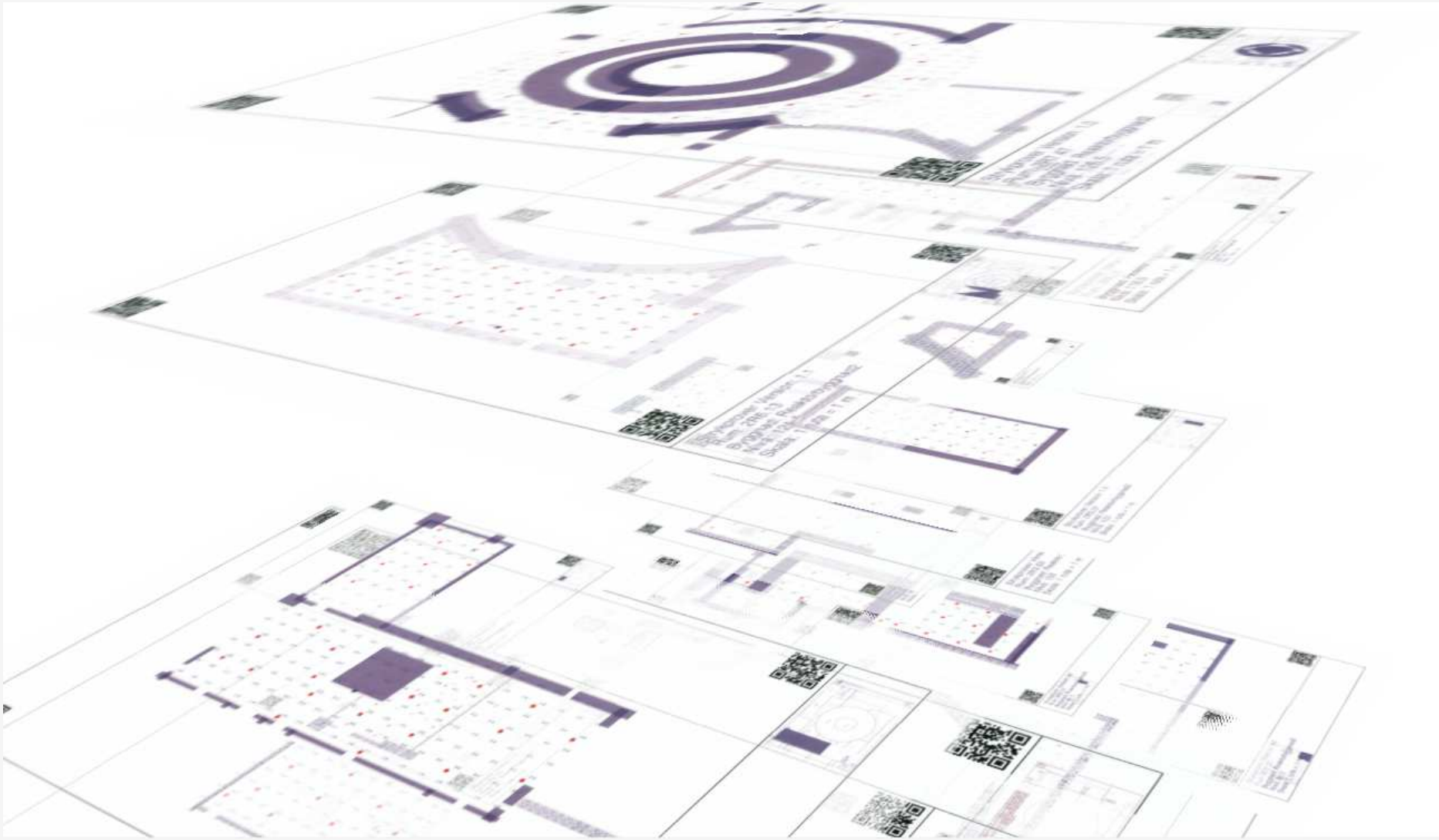
ulf.mansson@sweco.se

Intelligent papers – indoor positioning



ulf.mansson@sweco.se

Intelligent papers – indoor positioning

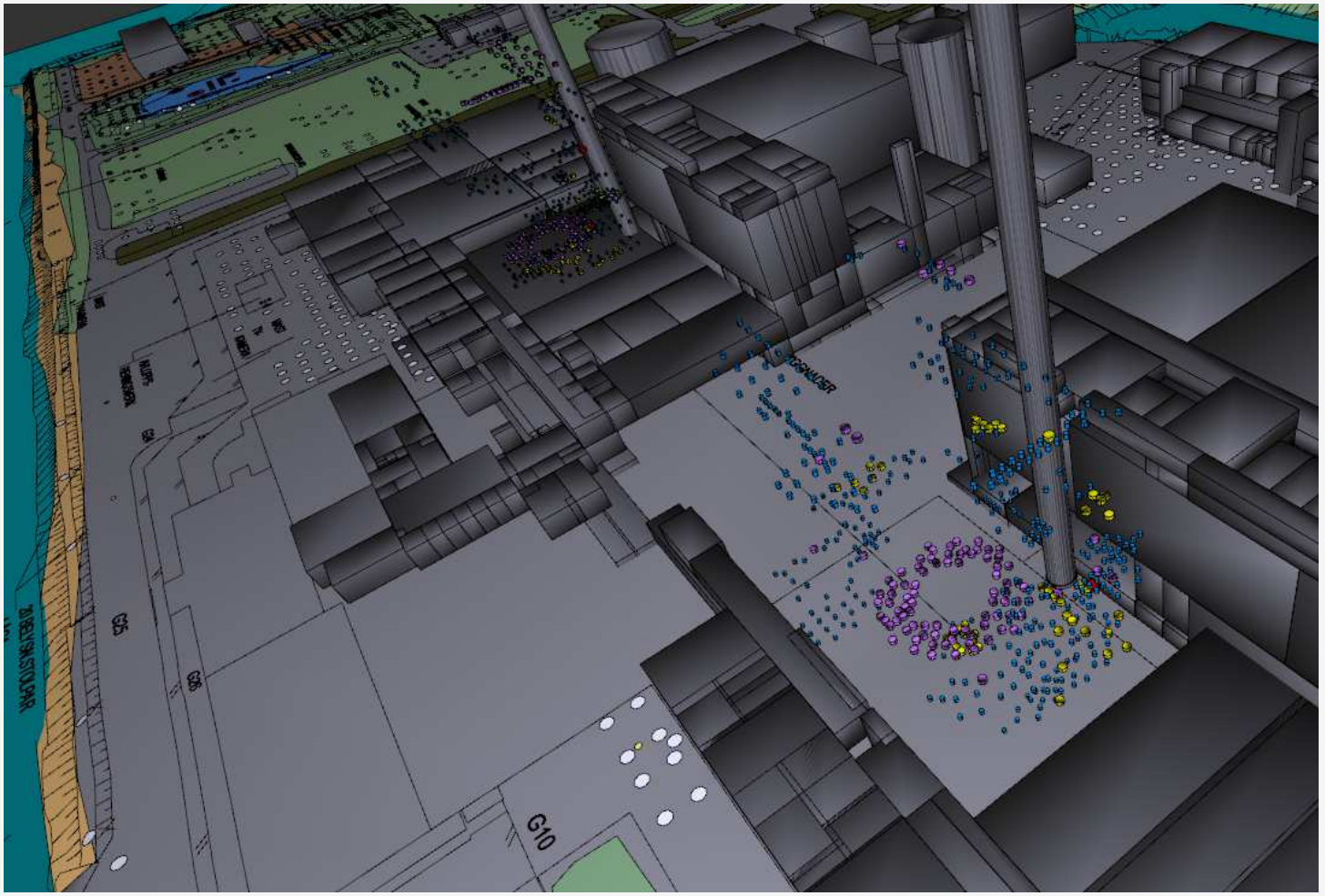


ulf.mansson@sweco.se

Intelligent papers – indoor positioning

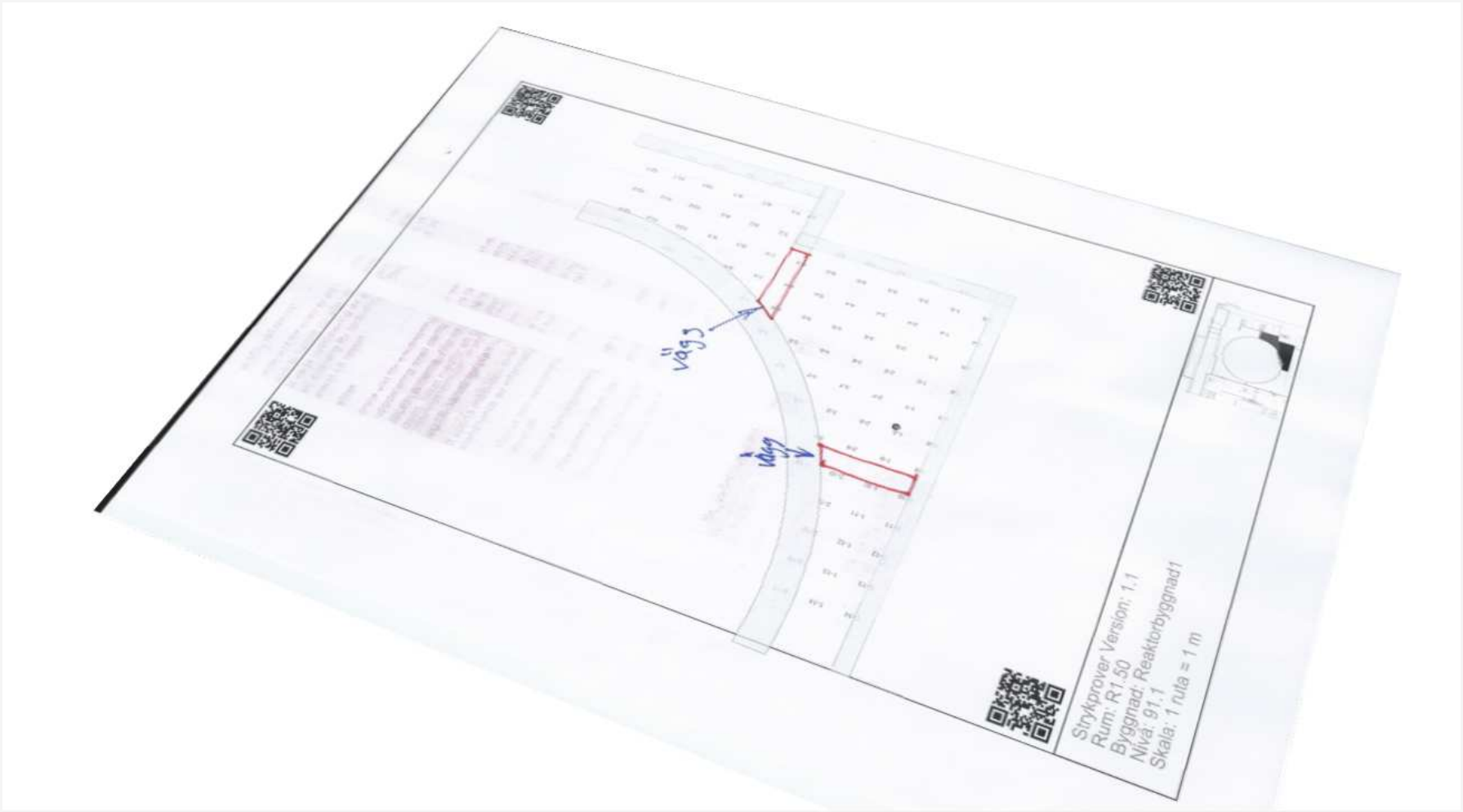
ulf.mansson@sweco.se

Results are fed into the 3D model

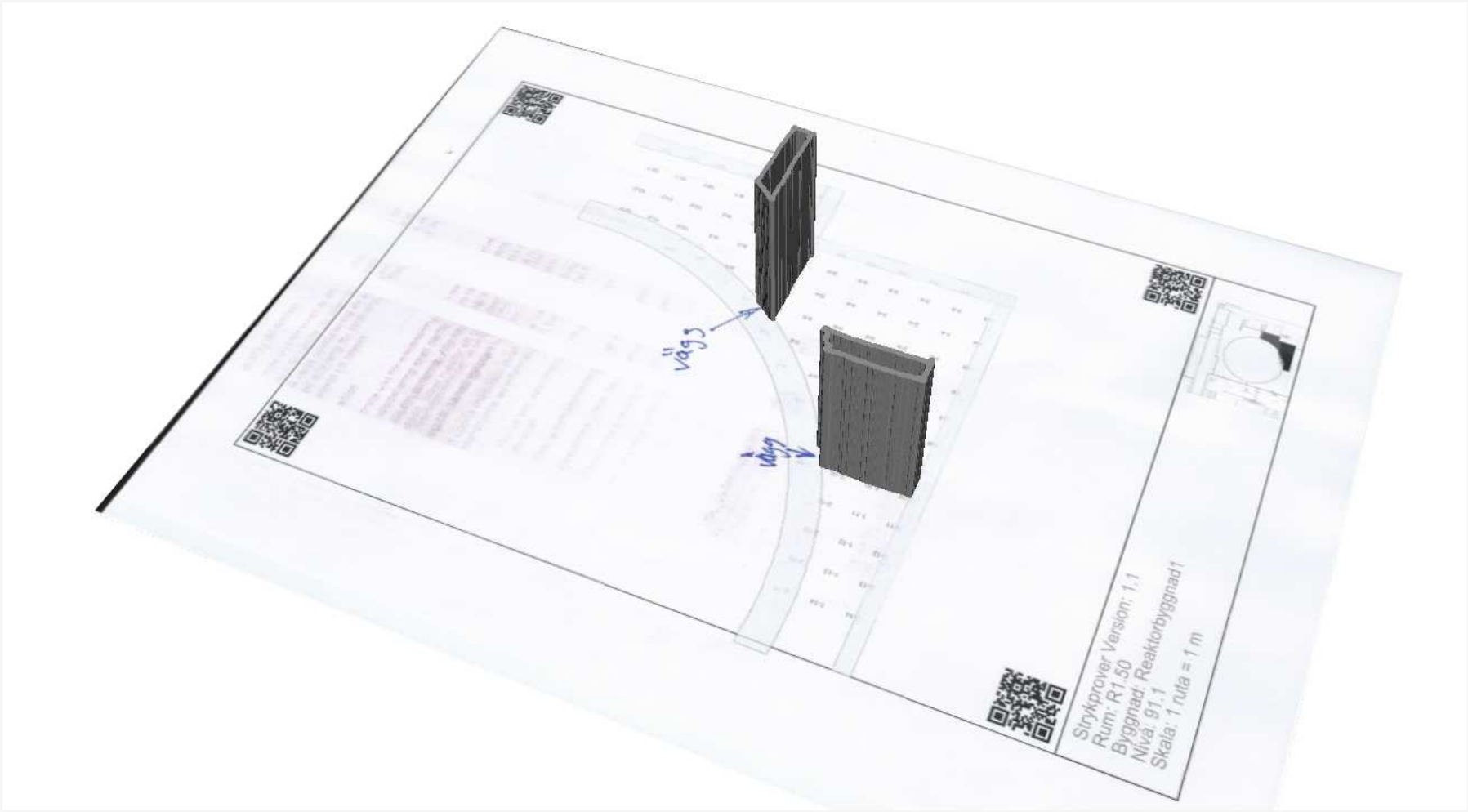


ulf.mansson@sweco.se

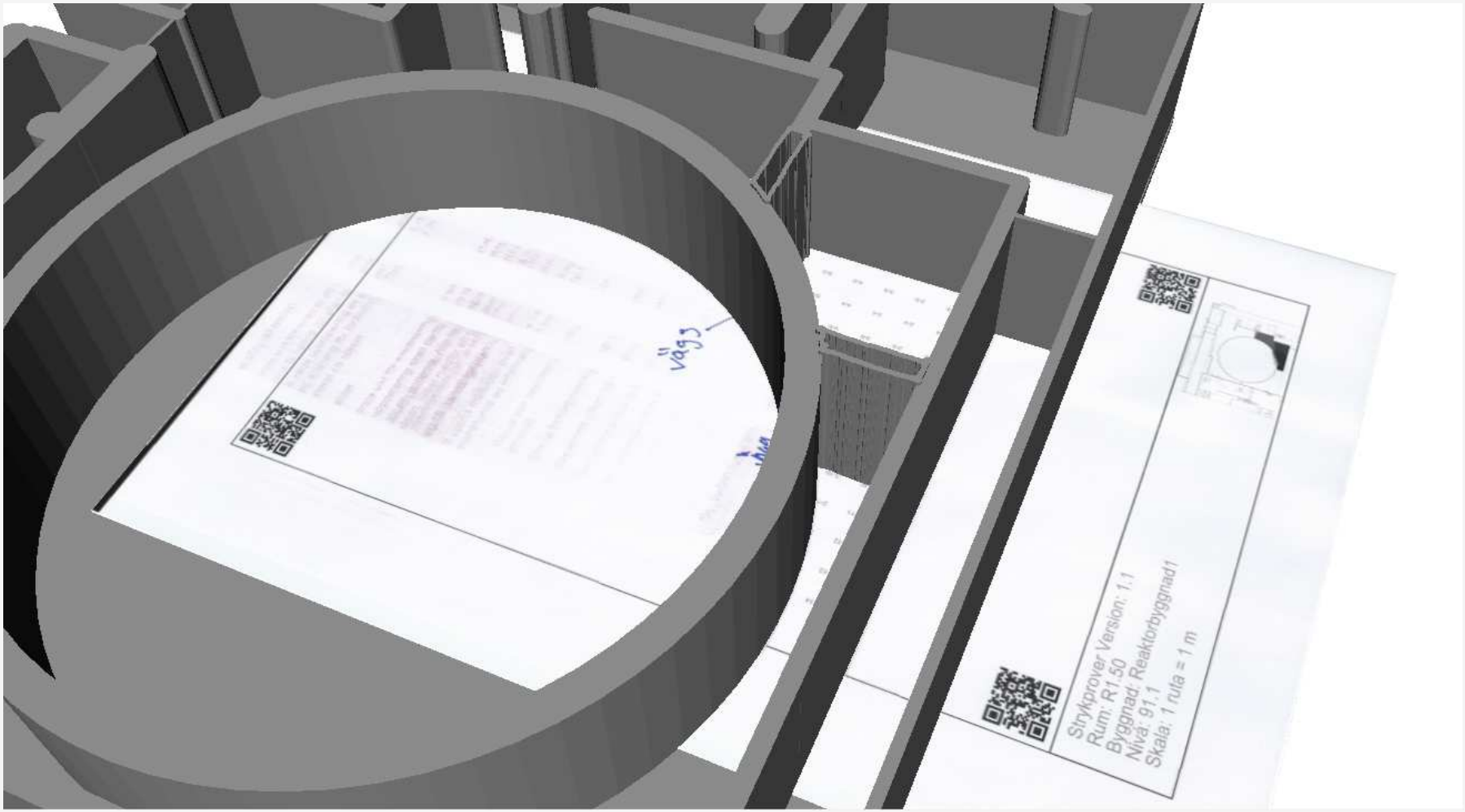
Intelligent papers – other uses

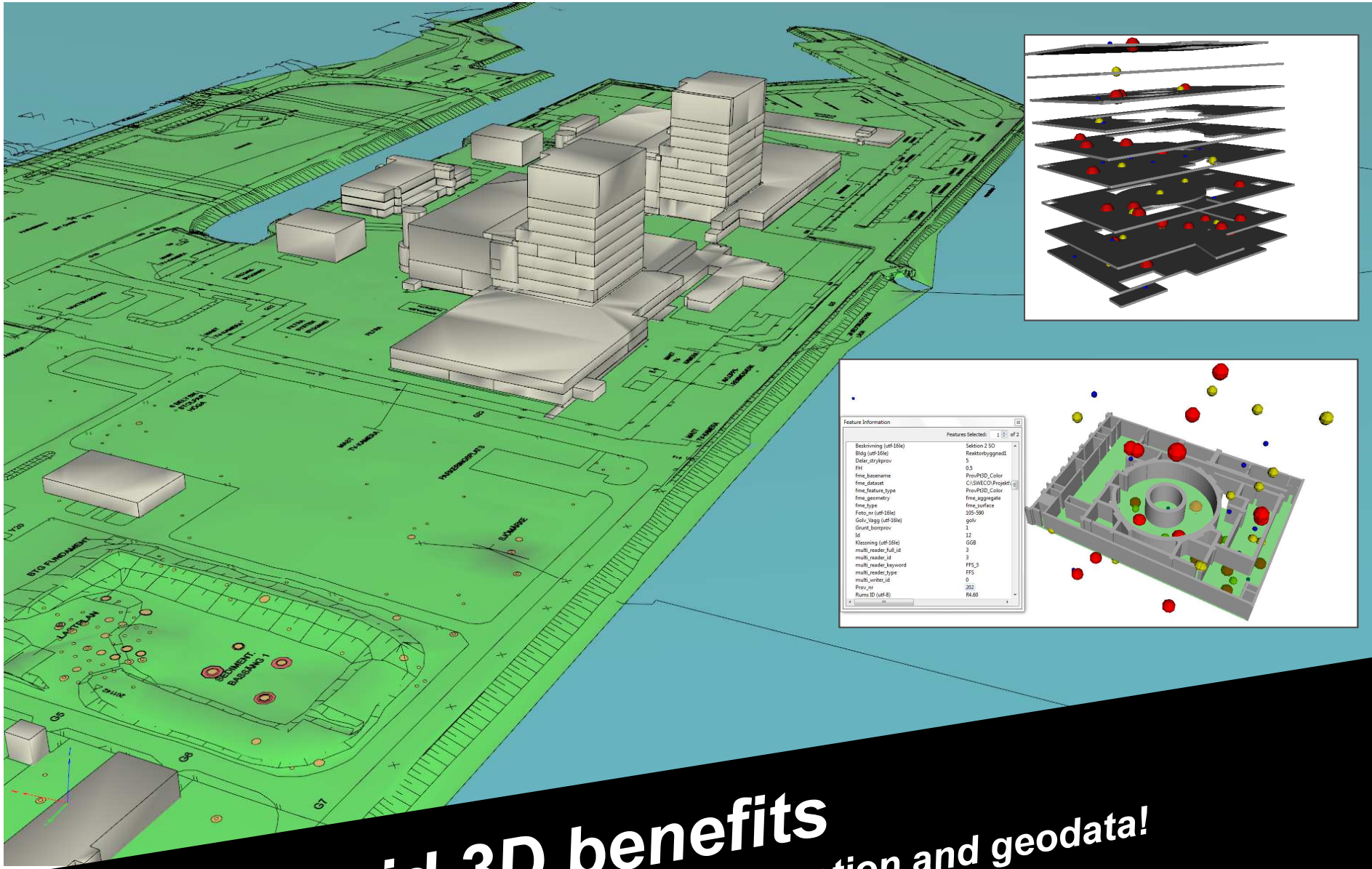


Intelligent papers – other uses



Intelligent papers – other uses





Rapid 3D benefits

- connect your building information and geodata!

SWECO

Ulf Månsson
ulf.mansson@sweco.se