

# BIM Specification with Revit



---

# About Us:

## **Johansen Geir**

Norconsult Informasjonssystemer AS

Department Head

Project Management



## **Marius Jablonskis**

Norconsult AS

Technology Manager

Concept development

Workflow optimization



---

# What is the AEC Excellence awards?

- International competition with 162 contributions proposed from 29 countries.
- Norconsults winning contribution, Vamma 12, was in the field Infrastructure, Energy and Natural Resources.
- The award was presented November 17th at the international conference Autodesk University in Las Vegas, USA



---

# The Vamma Project

Norconsult uses reality capture for dynamic visualization of aging hydropower plant in Norway

Old structure. New technologies.



---

# Award description part 1

The Vamma hydropower plant is an impressive structure. Located on the River Glomma in Østfold, Norway, it's the largest river hydropower plant in the country. It's also old, built originally in 1915. But a century later—when it came time to add a new turbine, generator, and the associated control system and switchgear—the multidisciplinary consultancy firm

Norconsult relied on some of the newest technologies in Building Information Modeling (BIM) to ensure complete foreknowledge of the finished product, due in 2019.



---

# Award description part 2

## Instant insights

One of the most innovative aspects of using BIM on the Vamma 12 project was the use of reality capture technology, which uses photographs and real-world context and integrates them into 3D conceptual models, given them photorealistic qualities and extremely accurate detail. This process enabled Norconsult to improve their analysis and uncover potential problem areas that, if modeled in the traditional ways, would have been discovered only during the construction phase.

The ability to anticipate issues instantly through BIM simulations was essential to a project as complex as the comprehensive upgrading and expansion of the power plant. Since existing constructions and infrastructure had to be considered while building new ones in close proximity, the technology's ability to show consequences of geometric changes—and in a fraction of the time taken by older methods—was crucial.



# History of Drafting



Plans of a six-room building,  
a sanctuary or a private house.  
Clay, late 3rd millennium BC.

---

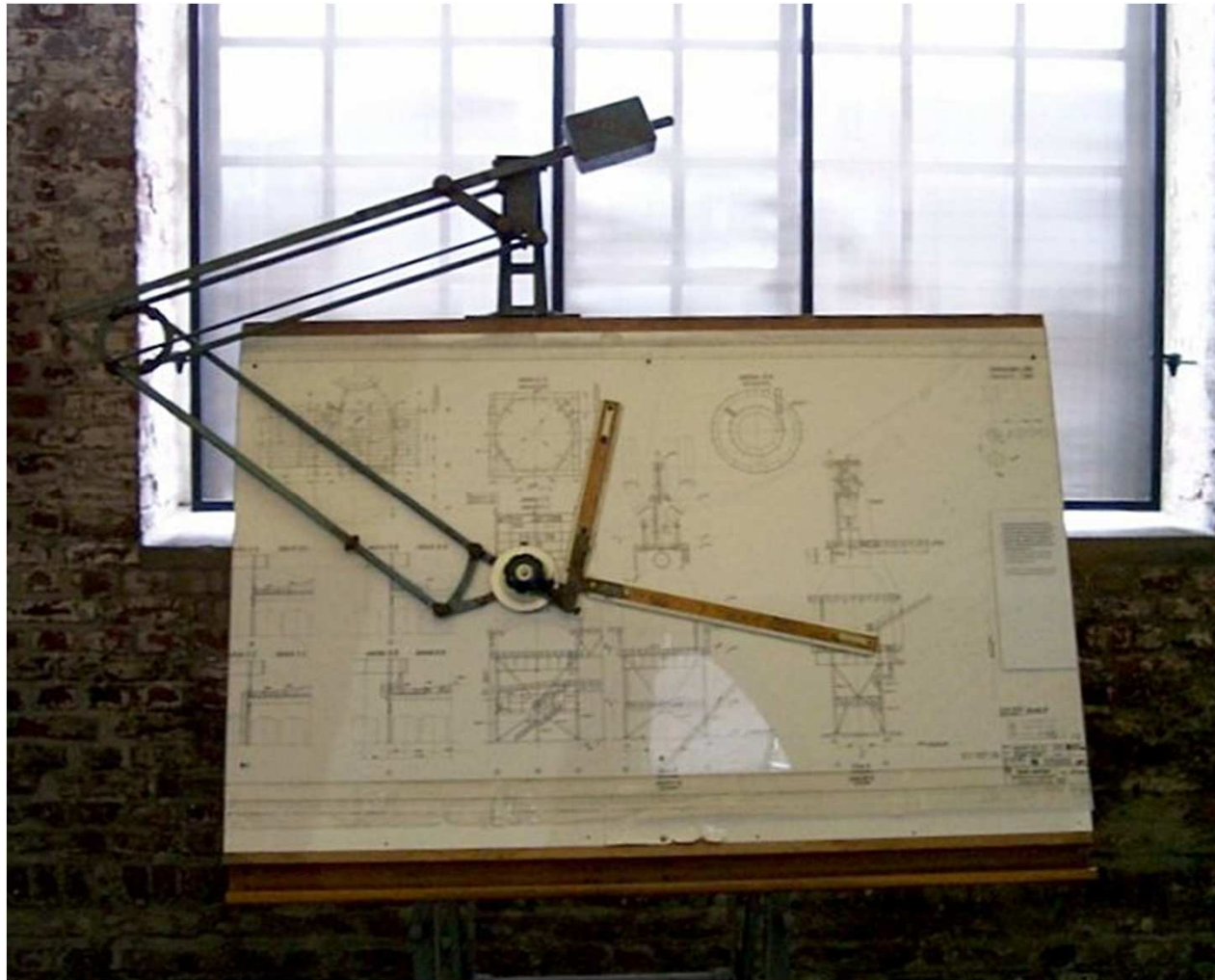
# History of Drafting





---

# History of Drafting



# History of Drafting



# Standardization

Line Group	Narrow Line	Graphic Symbols	Wide Line	Extra Wide Line
0.25mm	0.13 mm	0.18 mm	0.25 mm	0.50 mm
0.35mm	0.18 mm	0.25 mm	0.35 mm	0.70 mm
0.50mm	0.25 mm	0.35 mm	0.50 mm	
0.70mm	0.35 mm	0.50 mm	0.70 mm	
1.00mm	0.50 mm	0.70 mm	1.00 mm	

BUTT WELDS							
SQUARE	SCARF	V	BEVEL	U	J	FLARE	FLARE BEVEL

# Standardization

The screenshot shows the ISO Standards catalogue website. The top navigation bar includes the ISO logo, menu items for Standards, About us, Standards Development, News, and Store, and a search bar for ISO. Below the navigation bar, there are links for Standards catalogue, Online collections, and Graphical symbols. The breadcrumb trail indicates the current location: Store > Standards catalogue > By ICS > 01 Generalities, Terminology, Standardization, Documentation > 01.100 Technical drawings.

## Standards catalogue

Browse by [ICS](#) | Browse by [TC](#) [Subscribe to updates](#)

### 01.100: Technical drawings

*Computer-aided design, see [35.240.10](#)*  
*Graphical symbols for use on technical drawings, see [01.080.30](#)*

Items to be displayed:

Published standards      Standards under development      Withdrawn standards      Projects deleted (last 12 months)

◆ ICS	◆ Field
01.100.01	Technical drawings in general
01.100.20	Mechanical engineering drawings
01.100.25	Electrical and electronics engineering drawings <i>Including electrical tables, diagrams and charts</i>
01.100.27	Technical drawings for telecommunications and information technology fields
01.100.30	Construction drawings <i>Including civil engineering drawings</i>
01.100.40	Drawing equipment
01.100.99	Other standards related to technical drawings

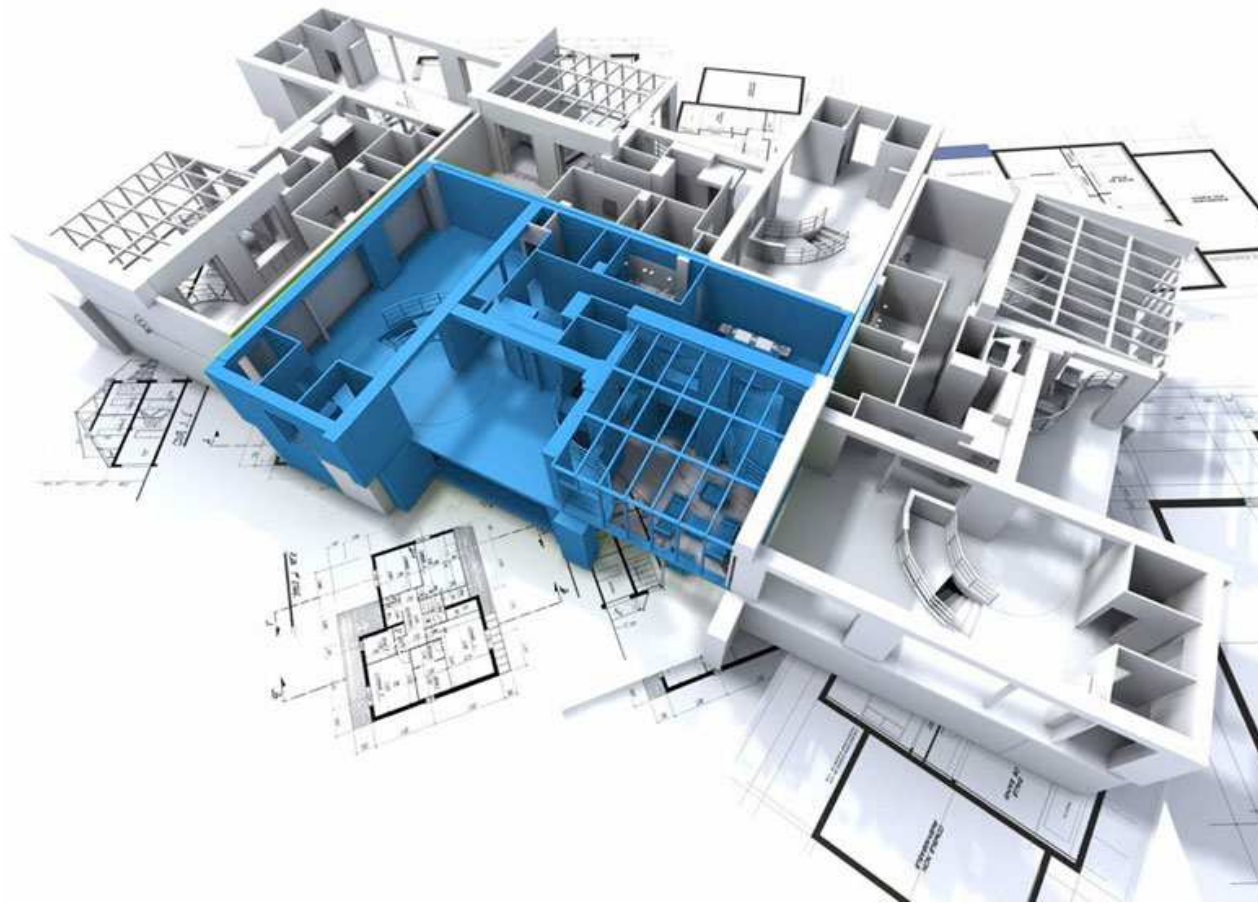
---

# Computer Aided Drafting (CAD)



---

# Building Information Modeling (BIM)



---

# It's not enough using the right tools



---

# It's not enough using the right tools





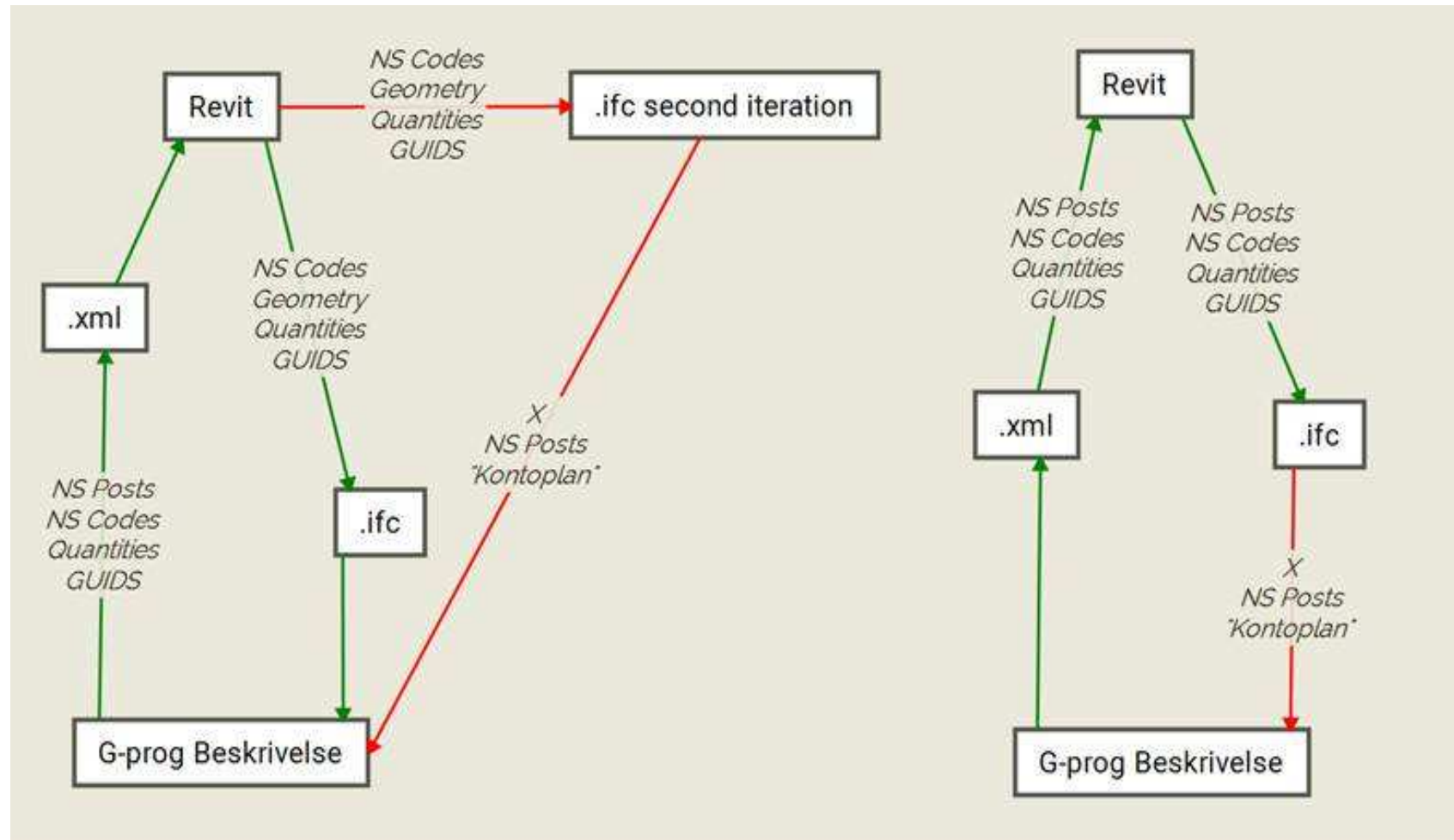
---

# It's not enough using the right tools

To fully utilize BIM potential, instead of adapting new technologies to current processes, we need to focus on adapting current processes to new technologies.

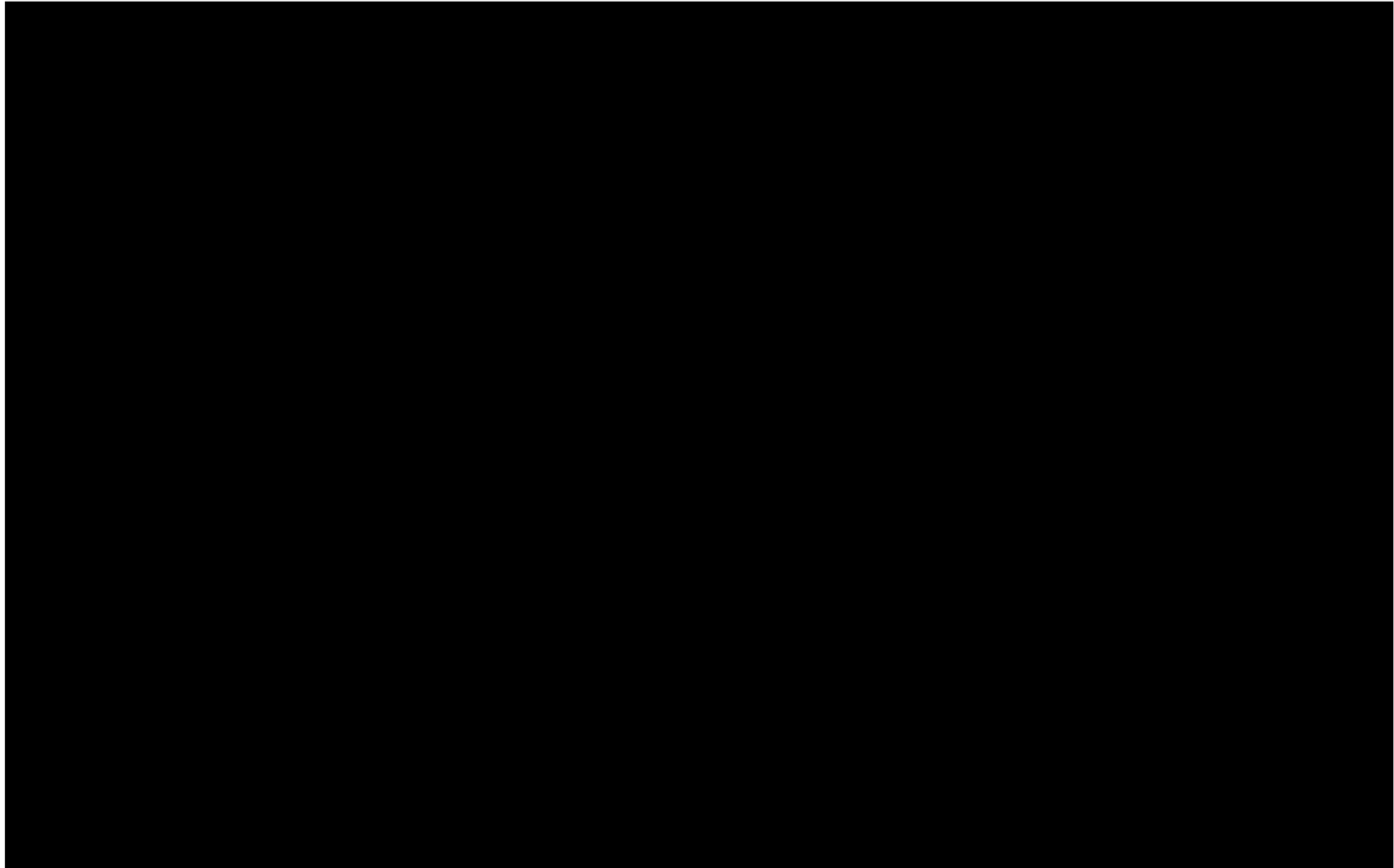


# Information flow between Specification and Revit

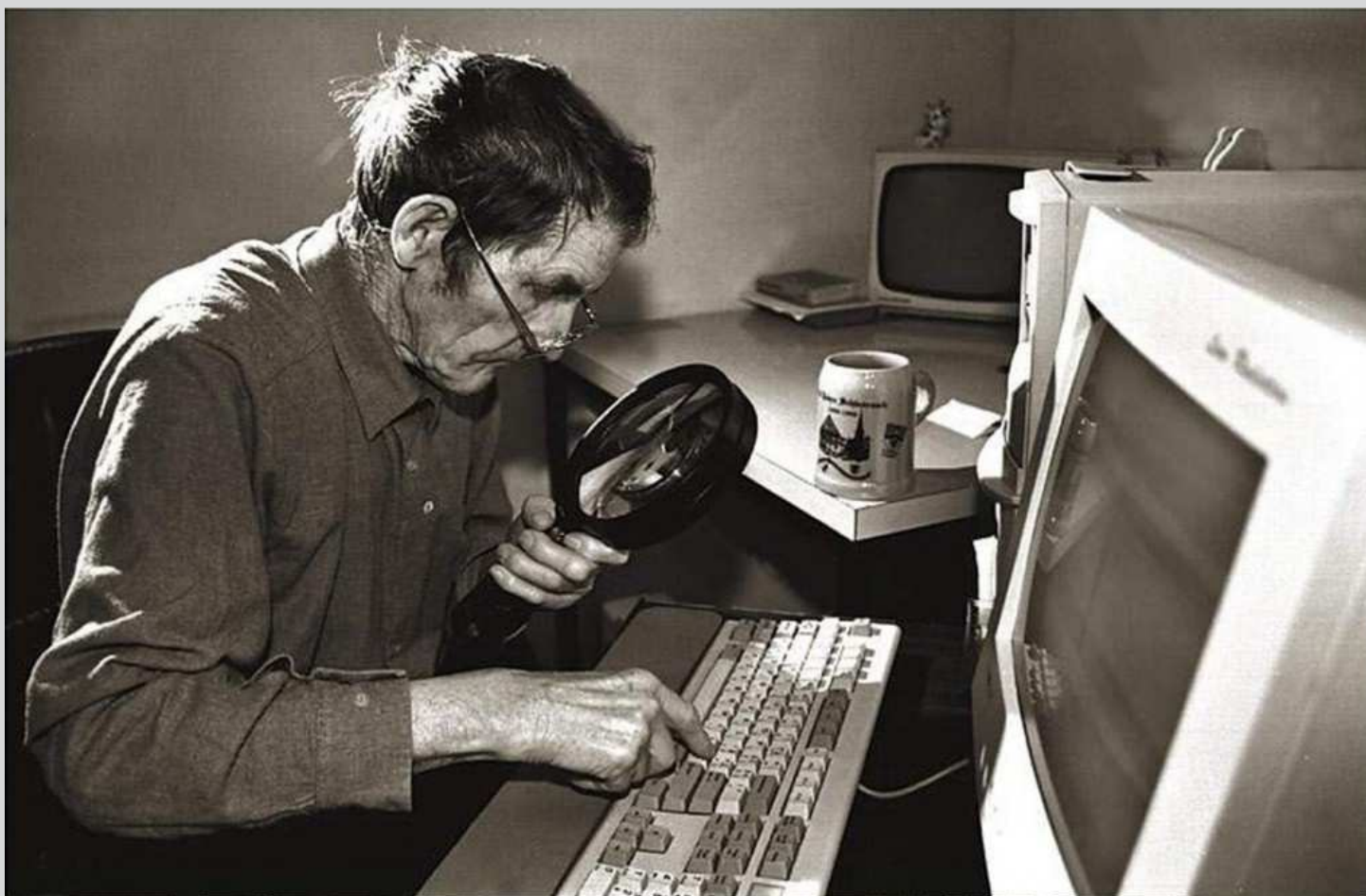


---

# Vamma 12



# Made in Norconsult



# Integration between Model and "Mengdeliste"

The screenshot displays a software interface for project management and modeling. On the left, a tree view shows a hierarchical structure of work items under 'Kontoplan'. The main window is divided into three sections:

- Top Section:** A table listing items with columns for 'Løpnr', 'Kode', 'Tekst', and 'Menge'. Item 17 is highlighted.
- Middle Section:** A detailed view of item 17, showing its name, unit, and quantity.
- Right Section:** A 3D CAD model of a dam structure with a red mesh overlay on a specific part.

Løpnr	Kode	Tekst	Menge	Flagg
14	LB8.1013	FORSKALING AV UTSPARVINGER Forskalingsoverflate: ...	1	stk
15	LML.1913	INNSTOPPINGSGODS Type: Sikksikre stigeletrinn Faststap...	40	stk
16	LML.1813A	INNSTOPPINGSGODS Type: Rør Faststapingsmetode: S...	80	stk
17	LB1.7113A	FORSKALING AV HVELV/SKALL Forskalingsoverflate: G...	1 100,00	m <sup>2</sup>
18	LML.1813	INNSTOPPINGSGODS Type: Rør Faststapingsmetode: S...	100	stk
19	LB3.203A	FORSKALING AV SLISS Forskalingsoverflate: Valgfri Ulf...	18,00	m
20	LML.1113	INNSTOPPINGSGODS Type: Bolter Faststapingsmetode...	50	stk
21	LML.5913	INNSTOPPING AV INNSTOPPINGSGODS Type: Anleggs...	2	stk
22	LB3.203A	FORSKALING AV SLISS Forskalingsoverflate: Valgfri Ulf...	90,00	m
23	LML.1113	INNSTOPPINGSGODS Type: Bolter Faststapingsmetode...	340	stk
24	LML.5913A	INNSTOPPING AV INNSTOPPINGSGODS Type: Anleggs...	2	stk
25	LB1.4113A	FORSKALING AV VEGG Forskalingsoverflate: Glatt For...	230,00	m <sup>2</sup>
26	LB8.21903	FORSKALING AV STENG - LENGDE Type konstruksjon: ...	16,00	m
27	LB8.4033A	SPESELL FORSKALING AV STØPESKJØTER Forskalings...	45,00	m

Postnr	NS-kode/Firmakode/Spesifikasjon	Enh.	Menge	Pris	Sl
05.06.2.17	LB1.7113A FORSKALING AV HVELV/SKALL Areal forskaling Forskalingsoverflate: Glatt Forskalingsstype: Krum forskaling Utførelse og kontroll: Utførelsesklasse 3	m <sup>2</sup>	1100,00	0,00	

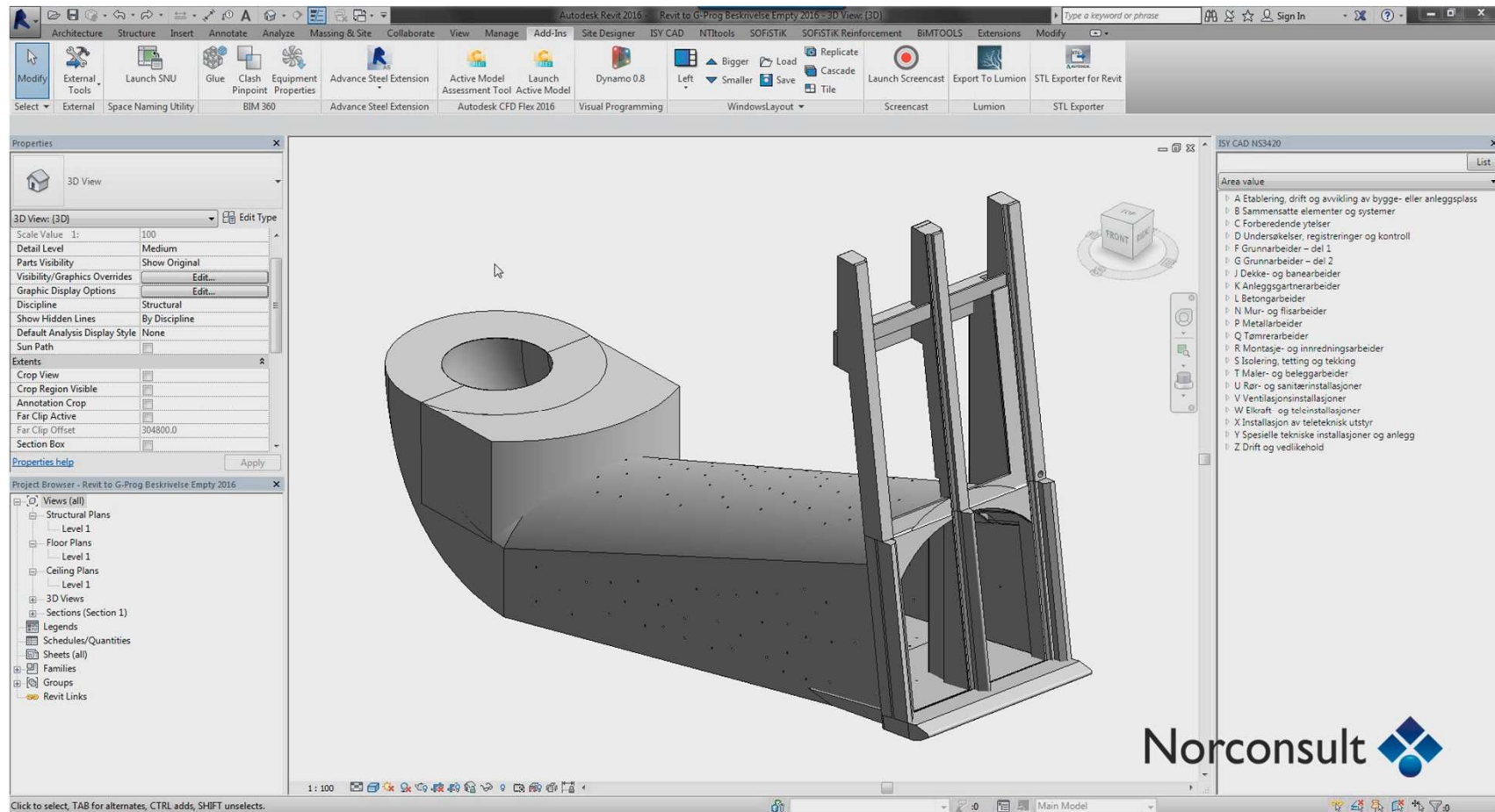
**Lokaliserings- i heng av sugerør**  
**Dimensjon:** Teoretisk tykkelse: 300 mm  
**Andre krav:**  Ja  Nei

**a) Omfang og prisgrunnlag**  
 Omfatter forskaling av heng i sugerør nedstrøms stålskjold.  
 Prisen inkluderer forskaling av ev. prosjekterte steng/forkanter.  
 Prisen gjelder også for all forskaling i heng i tilknytning til sugerørsluker.

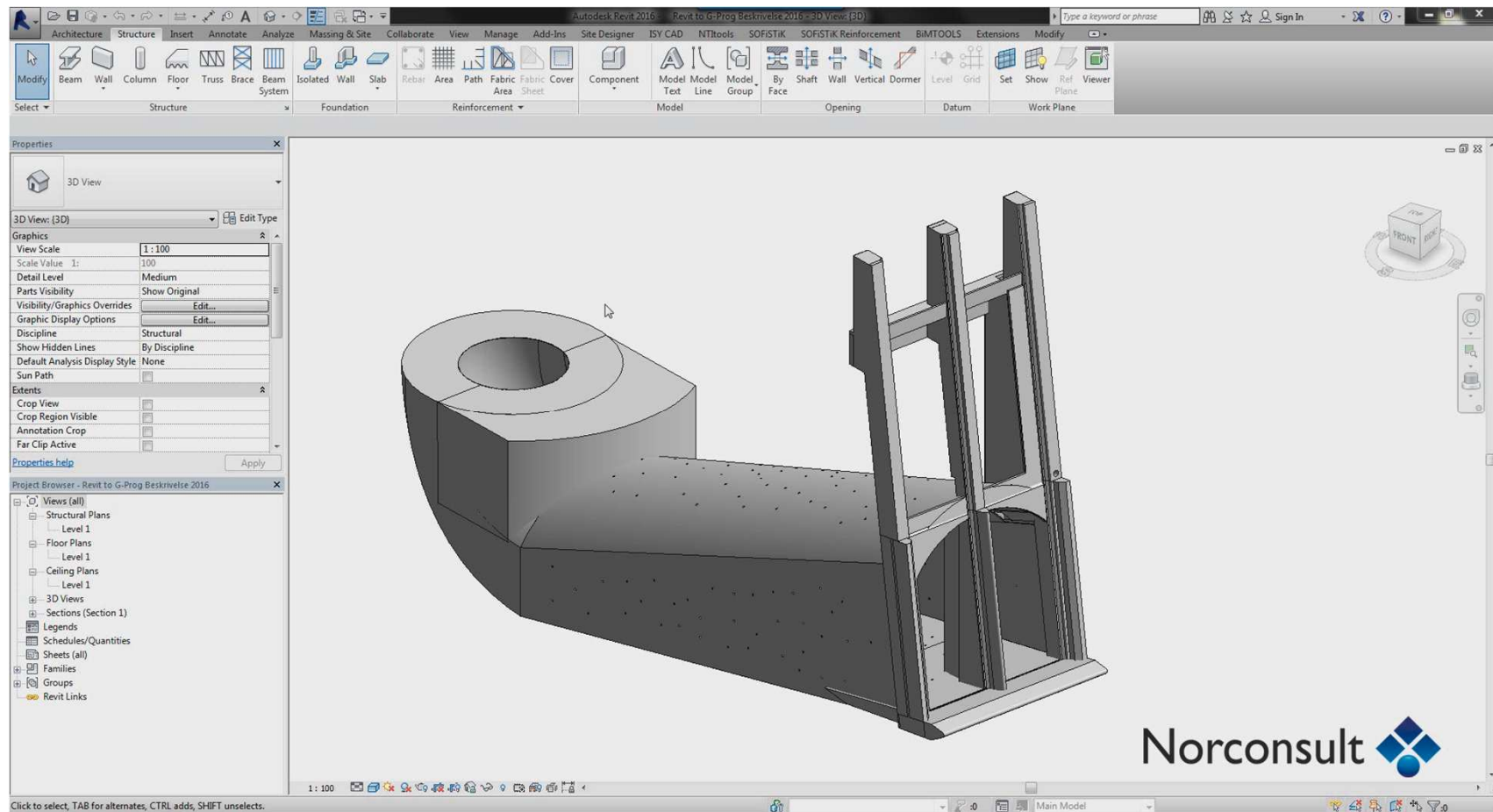
**c) Utførelse**  
 Krum forskaling i heng vil kunne ha ulik diameter i forskjellige snitt.

Aabb: 6.737 m3 0.875 m2(h) 7.700 m2(v) 3.750 m(perimeter)

# Quality Checked Data



# Let's Take a Look



---

# Thank you for your attention



[geir.johansen@norconsult.com](mailto:geir.johansen@norconsult.com)