

BIM Specification with Revit



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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

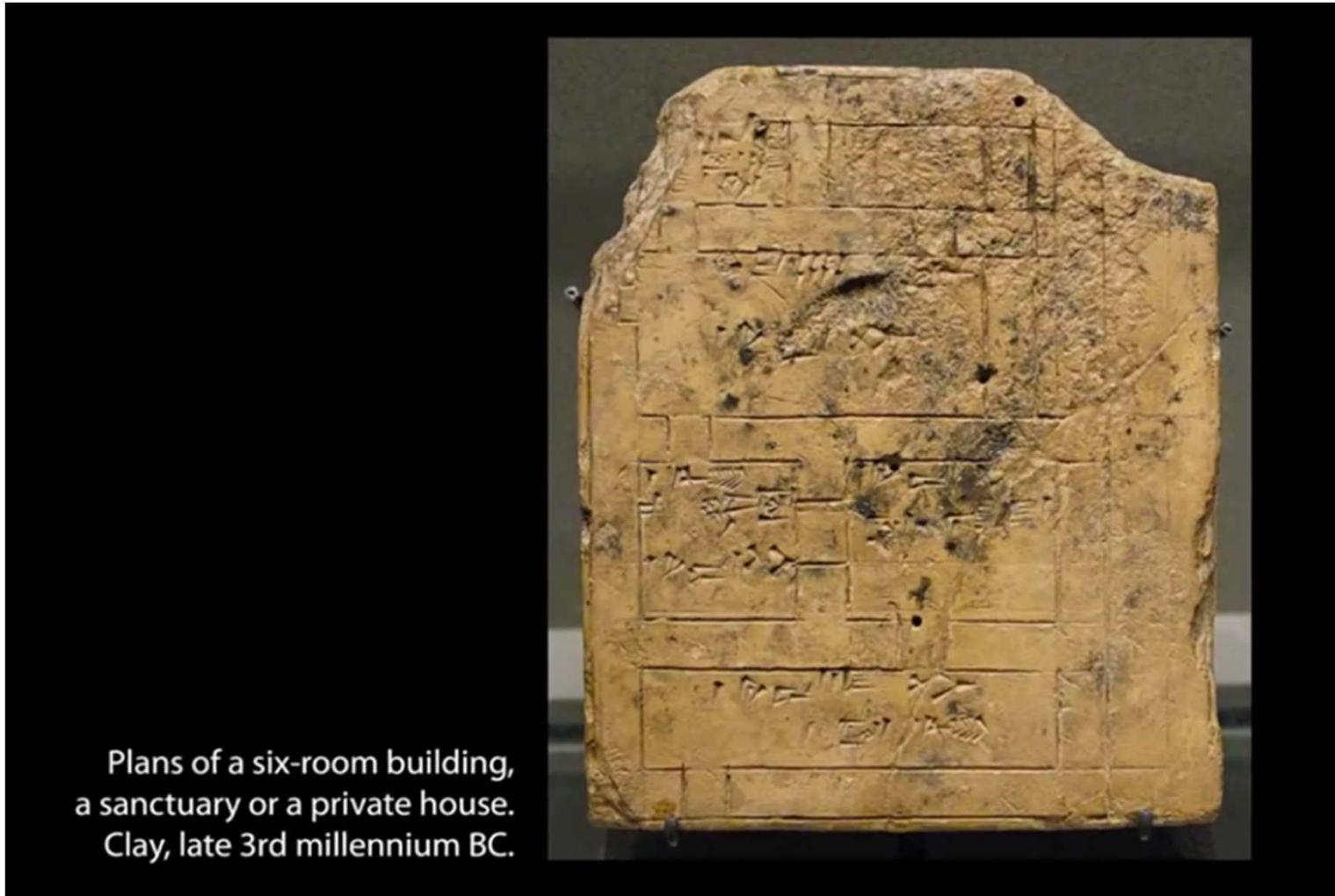
Instant insights

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

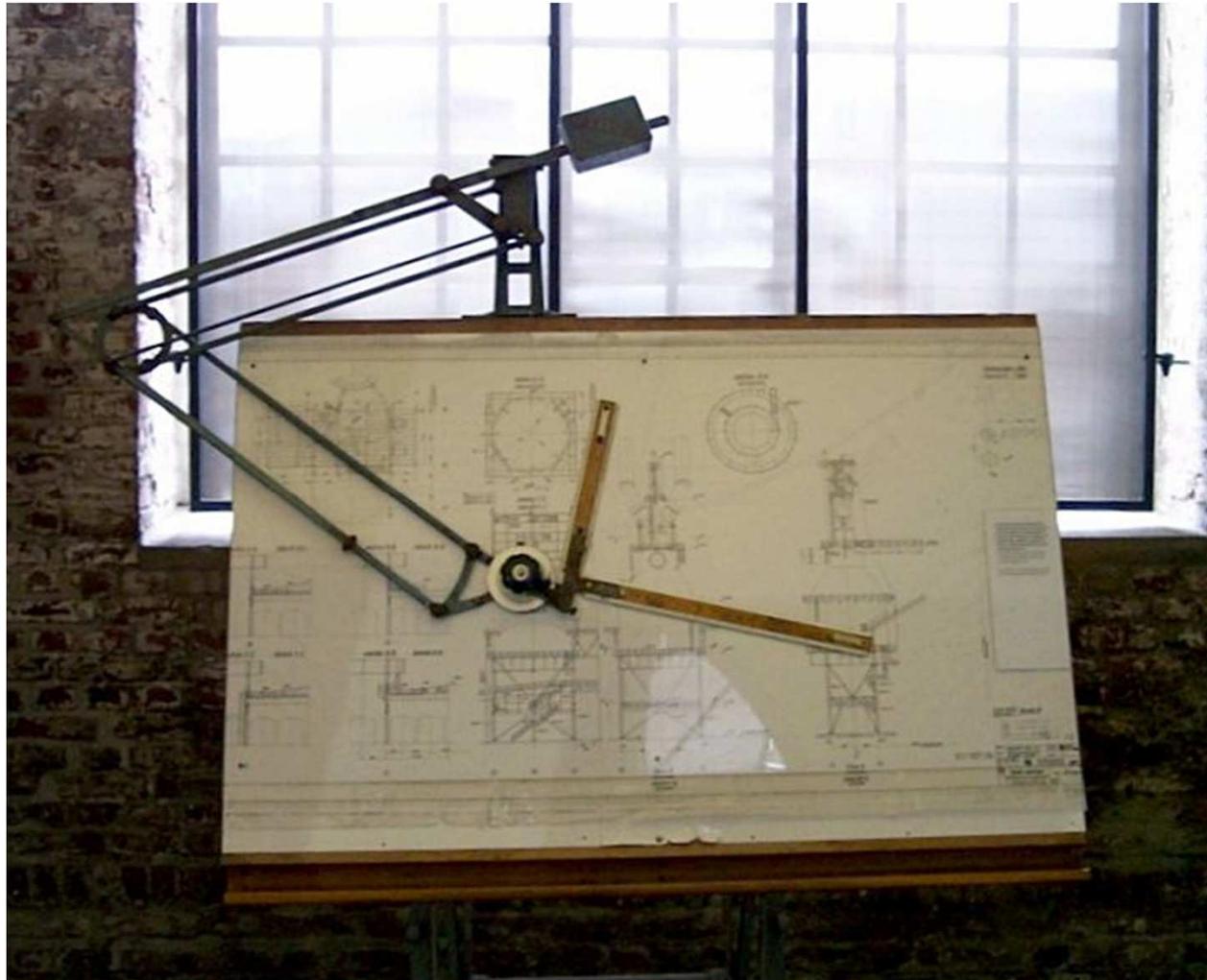


Plans of a six-room building,
a sanctuary or a private house.
Clay, late 3rd millennium BC.

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
FILLET WELD	PLUG WELD or SLOT WELD	PLUG WELD or PROJECTION WELD	SEAM WELD	BACKING RUN or BACKING WELD	SURFACING	FLANGE	WELDS
						EDGE	CORNER
WELD ALT ROUND	SITE	WELD	COMPLETE PENETRATION from one side	BACKING or SPACER MATERIAL	FLUSH	CONTOUR	
						CONVEX	CONCAVE

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, a search bar for ISO, and links for Français | Русский and Members area. Below the navigation bar, the breadcrumb trail reads: Store > Standards catalogue > By ICS > 01 Generalities, Terminology, Standardization, Documentation > 01.100 Technical drawings. The main heading is 'Standards catalogue', with buttons for 'Browse by ICS' and 'Browse by TC', and a 'Subscribe to updates' button. The section title is '01.100: Technical drawings', with sub-sections for 'Computer-aided design, see 35.240.10' and 'Graphical symbols for use on technical drawings, see 01.080.30'. A filter bar shows 'Items to be displayed:' with checkboxes for 'Published standards' (checked), 'Standards under development' (checked), 'Withdrawn standards' (unchecked), and 'Projects deleted (last 12 months)' (unchecked). Below this is a table with columns for ICS and Field.

◆ 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

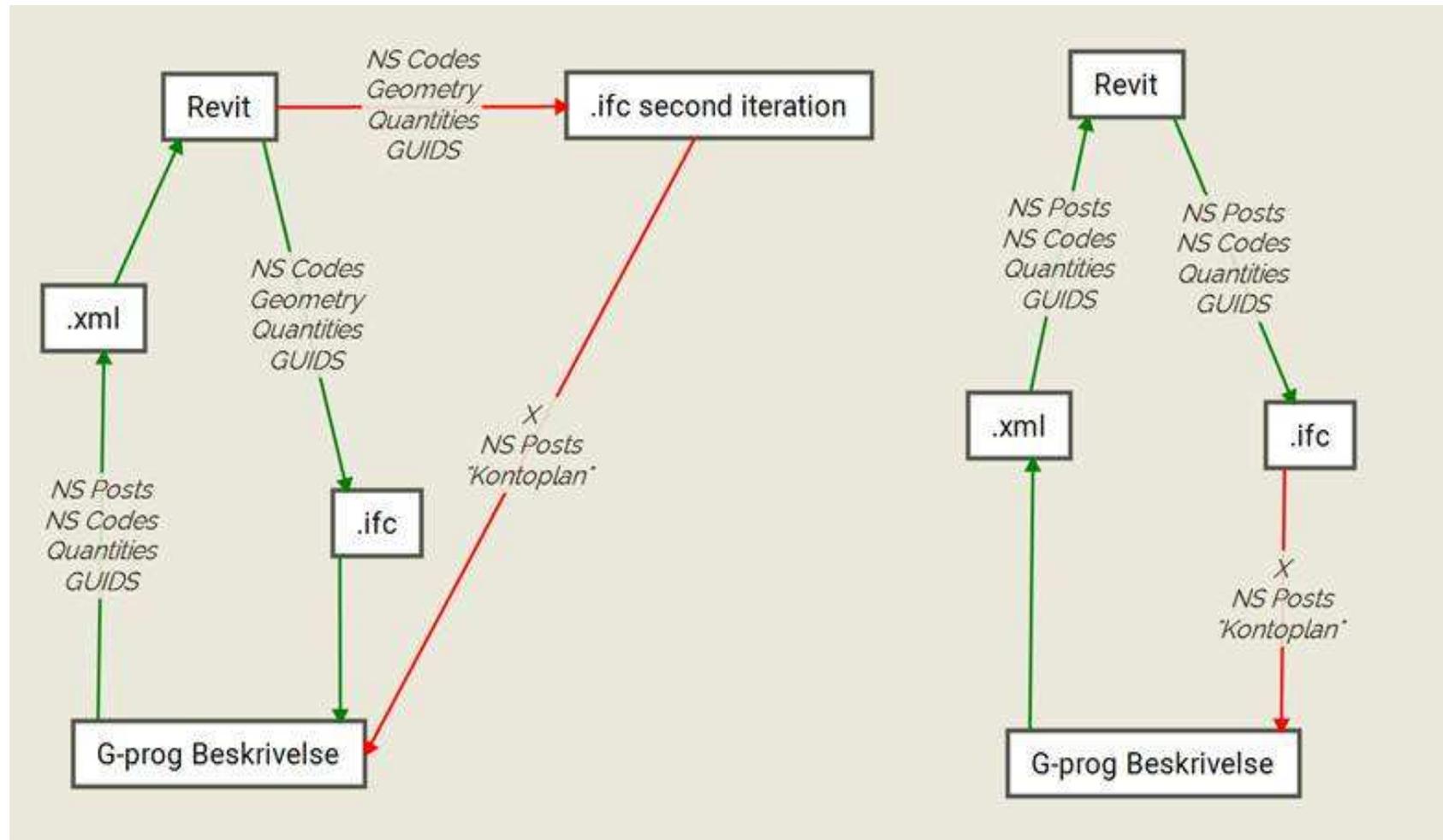


It's not enough using the right tools

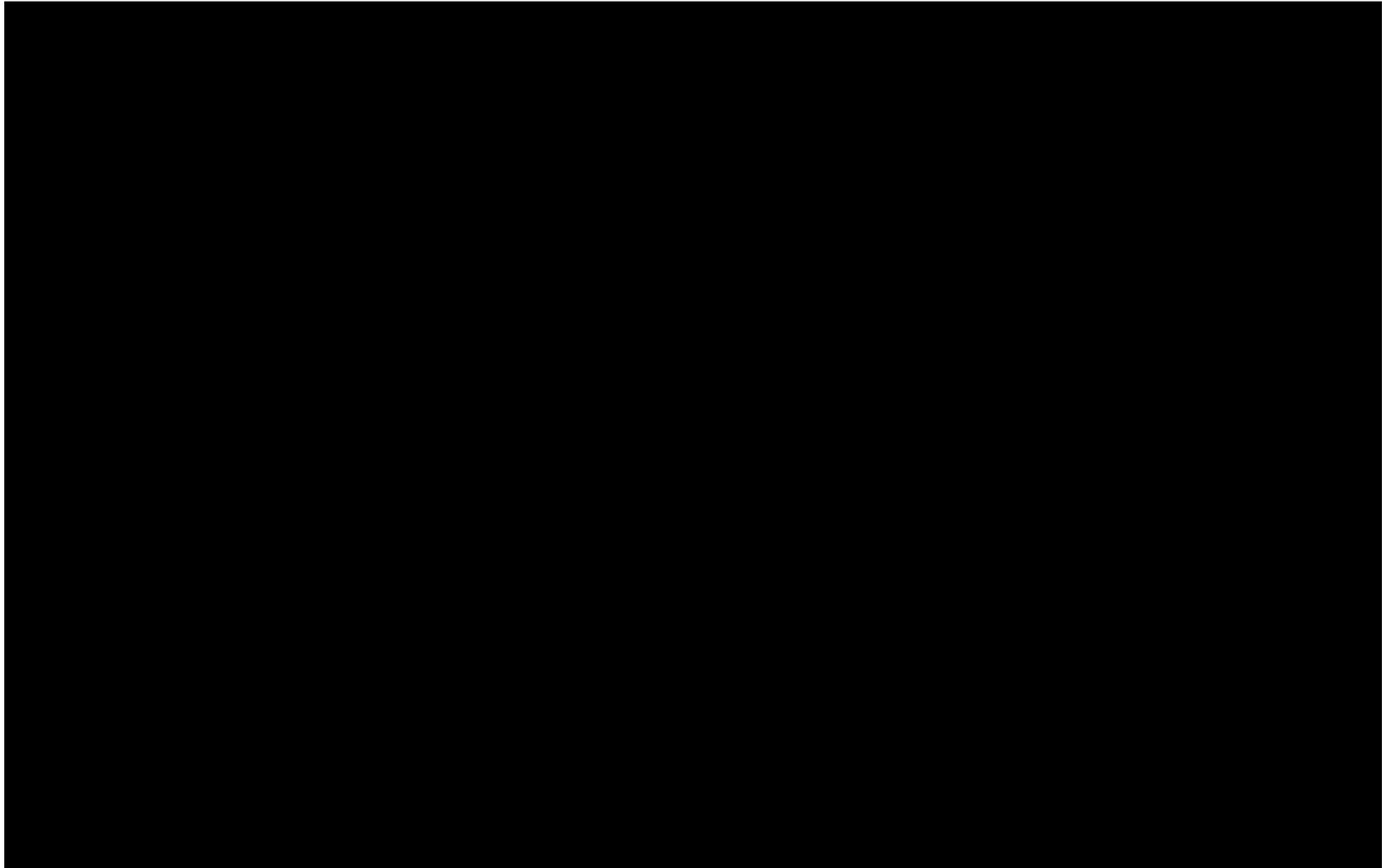
To fully utilize BIM potential, instead of adapting new technologies to current processes, we need to focus on adapting current processes to new technologies.



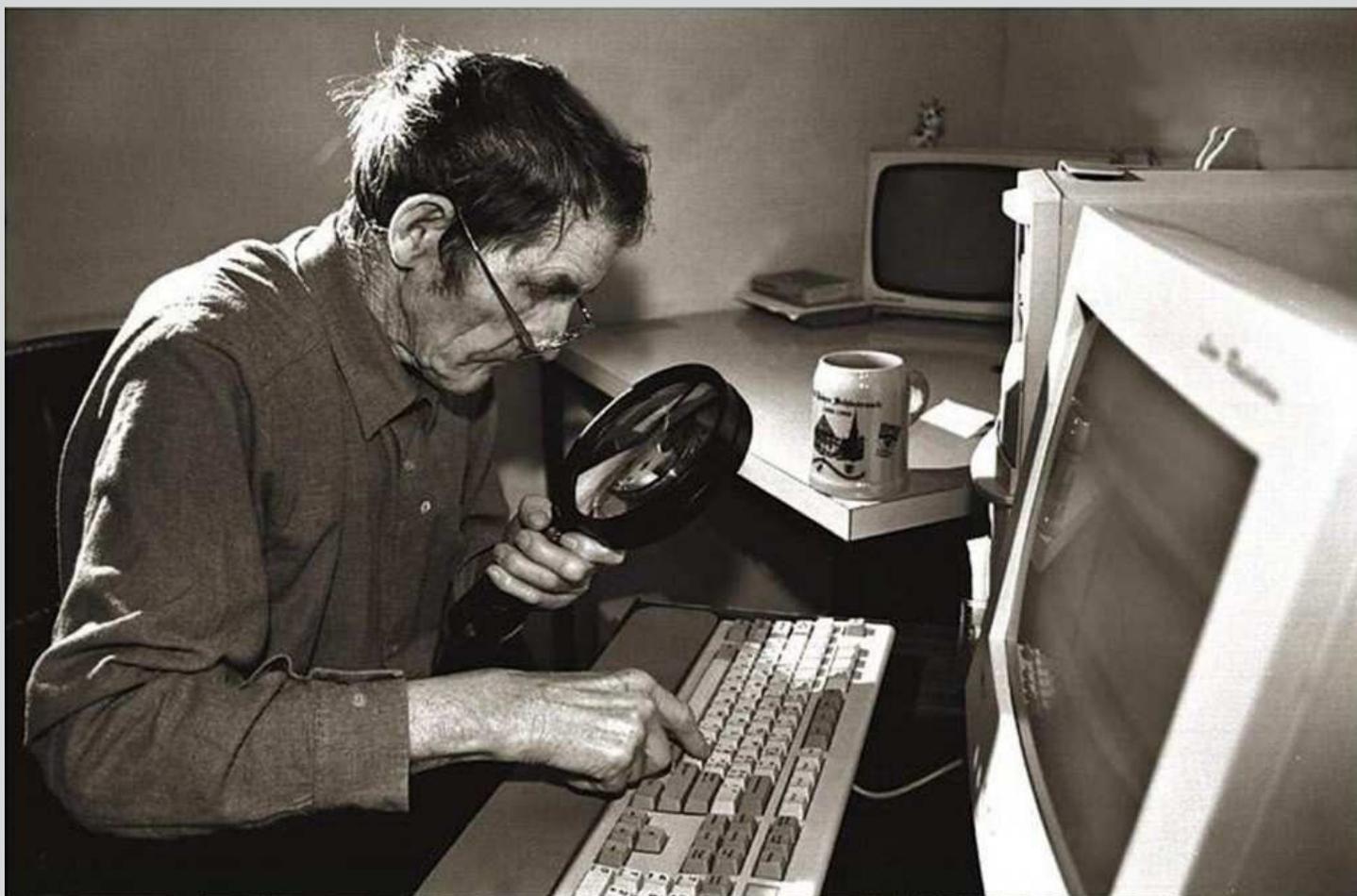
Information flow between Specification and Revit



Vamma 12



Made in Norconsult



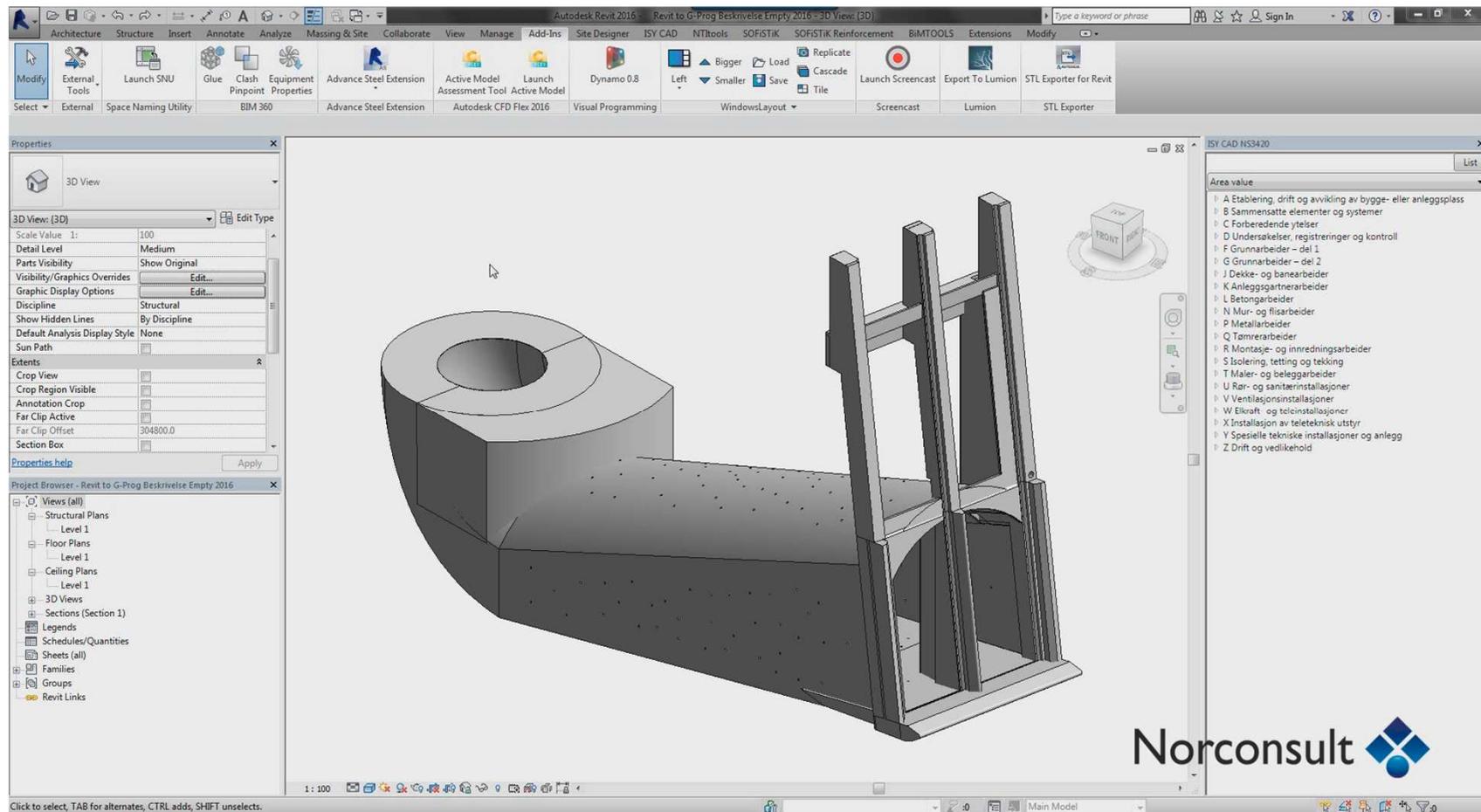
Integration between Model and "Mengdeliste"

The screenshot displays a software application window titled "ISY G-prog Beskrivelse, Utvidet versjon - [Vamma 12 (N\514.33\5143332\5 Arbeidsdokumenter\Felle\Forespørselsdokumenter Bygge- og anleggsarbeider\Beskriv)". The interface is divided into several panes:

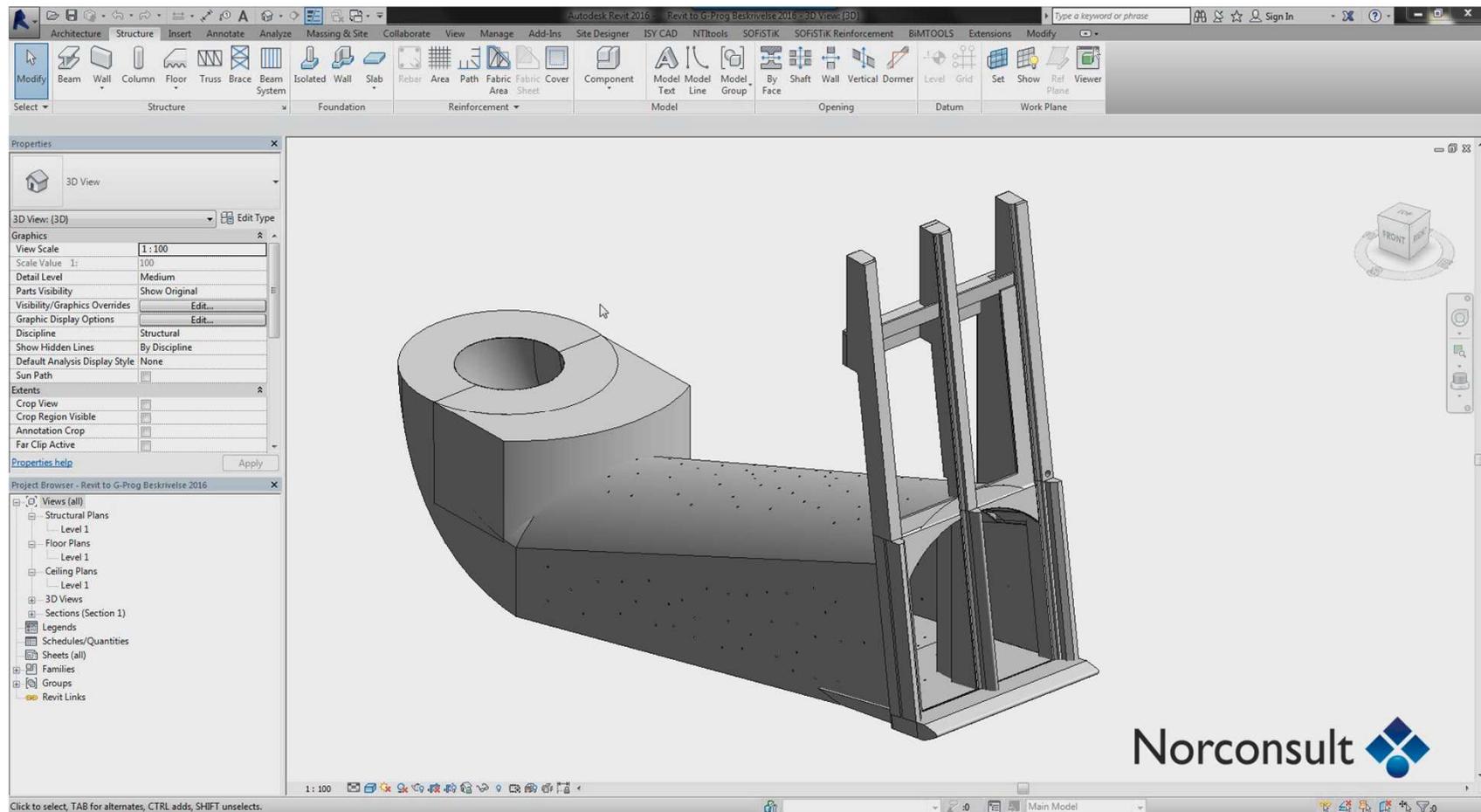
- Left Pane (Kontoplan):** A hierarchical tree structure showing project components. The selected item is "05 Betongarbeider" (Concrete work), which includes sub-items like "01 Alle anleggsgleder", "02 Oppstrøms fangdam", "03 Tillopskanal", "04 Inntak", "05 Tilloptunnel med tverslag", "06 Kraftstasjon med sugerør", "07 Avlopskanal", "08 Nedstrøms fangdam", "09 Murarbeider", "10 Flisarbeider", "11 Natursteinarbeider", "12 Tømmerarbeider", "14 Vindusarbeider", "15 Dørarbeider", "16 Låser og beslag", "17 Tekkearbeider", "18 Blikkenslagerarbeider", "19 Metallarbeider", "21 Malerarbeider", "25 Byggingim. arb. for tekniske installasjoner", "29 Diverse", and "71 Anleassoattnararbeider".
- Central Pane (Mengdeliste):** A table listing items with columns for "Løpnr" (Item No.), "Kode" (Code), "Tekst" (Text), and "Menge" (Quantity). The selected item is:

Løpnr	Kode	Tekst	Menge	Flagg
14	LB8.1013	FORSKALING AV UTSPARVINGER Forskalingsoverflate: ...	1	stk
15	LML.1913	INNSTOPPINGSGODS Type: Sikksikre stigebrunn 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 ²
18	LML.1813	INNSTOPPINGSGODS Type: Rør Faststapingsmetode: S...	100	stk
19	LB3.203A	FORSKALING AV SLISS Forskalingsoverflate: Valgfri Uf...	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 Uf...	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 ²
26	LB8.21903	FORSKALING AV STENG - LENGDE Type konstruksjon: ...	16,00	m
27	LB8.4033A	SPESELL FORSKALING AV STØPESKJØTER Forskalings...	45,00	m
- Right Pane (IFC plot):** A 3D model of a dam structure, showing a cross-section with various internal components and reinforcement. The model is rendered in a semi-transparent style, allowing internal structures to be visible.
- Bottom Pane (Description):** A detailed description for the selected item (LB1.7113A). It includes:
 - Postnr: 05.06.2.17
 - NS-kode/Firmakode/Spesifikasjon: LB1.7113A
 - Enh: m²
 - Menge: 1100,00
 - Pris: 0,00
 - Sl: (blank)
 - Text: "FORSKALING AV HVELV/SKALL", "Areal forskaling", "Forskalingsoverflate: Glatt", "Forskalingsstype: Krum forskaling", "Utførelse og kontroll: Utførelsesklasse 3", "Lokalisering: 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."

Quality Checked Data



Let's Take a Look



Thank you for your attention



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