Cloudbased Estimation at Bonava

Patrik Lindvall, Group Head of VDC
Who we are

- Bonava is a leading residential development company in Northern Europe
- Bonava operates in Sweden, Germany, Finland, Denmark, Norway, St. Petersburg, Estonia and Latvia
- Bonava has approximate sales of SEK 14 billion
- Balanced mix of private customers and investors
- Since 2009 Bonava has started and sold ca 50,000 homes
- Bonava has 2,100 employees
- Bonava has been creating homes and neighbourhoods since the 1930’s
- Bonava’s shares are listed on Nasdaq Stockholm
Our Culture

Vision
We create happy neighbourhoods where people have the highest quality of life

Customer Promise
We create homes and neighbourhoods that bring a sense of belonging

Values
Customer focus, Passion, Delivering excellence, Reliable, Brave and Friendly

Mission
We challenge ourselves every day to change the housing game, creating better homes and lives for the many

Employee Promise
Join our journey - We’re on an exciting change journey as a start-up with a history, with a great atmosphere, team spirit, high ambitions and lots of expertise.
Virtual Design and Construction at Bonava is about linking models, information and digital processes.

Examples on different Bonava parts:
Bonava’s standard set of VDC tools

BONAVA PROCUREMENT SYSTEM
• Purchase the right amount of goods and contracts and secure received goods according to contract

POWERPROJECT
• Create and follow-up on time and resource plans

SIGMA
• Create cost calculations and forecast for the production phase
• Production cost follow-up against actual costs

REVIT
• Create and maintain Bonava Parts (design components)
• Create BIM Models and drawings

BONAVA PROJECTS
• Sharepoint Online: Create, share and manage project documentation
• BIM360: View and access models and drawings
New ways of working to improve efficiency:

- Standardisation
- Industrialisation
- Modularisation
Cloudification a part of digitalisation

Digitalisation
Sampling from analogue to digital

Cloudification
Internet as delivery channel
Service instead of product

Easy to store
Easy to copy
Easy to transfer

Single version of information
Always available and updated
Easy to share and collaborate
MODELS & DOCUMENTS
Integrated production
Connecting Revit with Sigma

“bona_part_id” exported into the 5D model.
Connecting Revit with Sigma

- Model
- Estimating
- Sourcing
- Reporting
- Forecasting

E.g. Type of paint and surface area per Apartment and rooms

E.g. building-parts arranged by classification
## W22-01 56 26-000 Standard fence (Troax) and Gates

**Quantity:** 1 set  |  **Total Production Cost:** $11,586,475.63  |  **Hours:** 3,000.00  |  **Labor:** $165,000.00  |  **Materials:** $0.00  |  **Lease/Equip:** $11,586,475.63  |  **Sc:** 0.00

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<td>23-11 25 19 19</td>
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<td>23-11 25 15 17</td>
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Non Construction Site Related Production Costs

1. Construction Works (BIM/QTO)
2. (Actuals) Actual costs from UBW
3. Model

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Bonavaland Sample Estimate

- Site General Costs
  - Development Costs
  - Construction Site
    - [W22-01 56 26-000] Standard fence (Troax) and Gates
      - [BART-22-01 56 26-001] Commissioning of Temporary Fence
      - [BART-23-11 25 19 19-000] Lease of Troax fence
      - [BART-23-11 25 15 17-000] Lease of Gate to Troax fence
      - [BART-33-41 03 31-001] Decommissioning of Temporary Fence
    - [W22-01 52 13] Site Offices and Cabins incl. Water and Electric Systems
    - [W22-41 53 18] Storage and Containers
  - Non Construction Site Related Production Costs
  - (21) Construction Works (BIM/QTO)
  - (Actuals) Actual costs from UBW
  - Model
Estimating with Sigma

1. Selecting source (updating from)
2. Choosing project/estimate matching
3. Protecting columns that shouldn’t be updated (e.g. quantity)
4. Initiating the update
Changes and modifications will be highlighted in the new estimate.

Applying changes from the model to Sigma.
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<th>Quantity</th>
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<td><strong>Development Costs</strong></td>
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<td>Existing Conditions</td>
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<td><strong>Lease: Standard fence (Troax) and Gates</strong></td>
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<td>set</td>
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<td>1,500</td>
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</table>
Building Competence

Champion

Explain (Super Users)

Understand

Aware
Key roles in ensuring value of VDC

- **Change leader activities**
  - Perform **target group analysis** and gather input for ramp-up plan
  - **Onboard** superusers, external trainers and translators etc.
  - Initial WS for BU management team and other key stakeholders to **gain buy-in on implementation** approach
  - Plan and execute Workshops for superusers together with SME
  - Set **training and communication plans**
  - Set **training content and structure**
  - **Support superusers** in preparing for End user training
  - Create **communication drafts** (used for translations)
  - Plan **post go-live support** together with Superusers
  - Collecting and acting on **feedback** from superusers and other stakeholders
  - **Sync** all ongoing VDC activities
  ....Always with input from the local business

- **VDC manager** can focus more on:
  - Monitoring overall progress
  - Follow-up of deliverables
  - Sign-off on implementation, training and comms plan/activities
  - Ensuring involvement of the right stakeholders
  - Managing risks and mitigations
  - Providing feedback on how to localise plans

- **VDC superusers** can focus more on:
  - Providing content expertise
  - Provide feedback and input regarding training and support
  - Supporting end users in a structured way
  - Develop and compile local best-practice
  - Developing the VDC solutions – providing feedback
  - Prepare for End user training and post go-live support
Examples on training and communication plans

**Communication plan**

**End user training content and plan**

**Train-the-trainer concept**

**Superuser training 26 and 27 March**

**Superuser package**
Looking back

- Enabled a collaborative team approach
  - Migrated 8 countries and 5 different systems into BIM360 Teams (2017)
  - Migrated 1700 projects from BIM360 Teams to BIM360 Docs (2019)

- Using BIM360 stored models connected to Sigma
  - Reduced time for estimates by 50%
  - Reduced time for updates by 98%
Q & A
Thank You!