Leading the BIM way

Natasha Blommaert
Information and Data Management Coordinator

Timothy Nuttens
BIM Manager

AWV - Flemish Agency for Roads and Traffic
Implementing BIM and asset lifecycle management as a contracting authority in road infrastructure projects in Flanders, Belgium.
Natasha Blommaert

Program Manager AIM/BIM

- Program Manager of the AIM/BIM implementation program at AWV
- Focussing on the change management and program coordination
- Enabler of digitization of the construction industry
- Regularly invited speaker on events about BIM, digital twins, infrastructure management...
Timothy Nuttens

BIM Manager

- PhD in Geomatics – Land Surveying
- BIM Manager at AWV
- Focussing on implementing our BIM vision in design and execution projects
- Setting out the guidelines for collaborating with engineering companies and contractors
- Elaborating the necessary standardized contract documents
Policy Area

AWV is part of the policy area of Mobility and Public Works of the Flemish Government.
Our infrastructure

- **7.694 km cycle tracks**
  - 2.613 km adjoining to the road
  - 4.121 km separate
  - 960 km adjoining but raised

- **6.985 km roads**
  - 1.356 km motorways (incl. entry and exit ramps)
  - 5.629 km regional roads
Our infrastructure

- **17,000 electrical installations**
  - Dynamic signs
  - Cameras: red light, distance…
  - Average speed control, speed cameras
  - Inductive loops
  - …

- **1,600 traffic lights**
Our BIM vision
WHAT IS BIM?
BIM process
BIM interacts with many fields

- Processes
  - BIM Protocol
  - BIM Execution plan
  - BIM Public Tender

- Management & Organisation
  - BIM policy
  - Impact of BIM on business

- Information Technology
  - Development, promotion & implementation of BIM standards

- Human & Culture
  - BIM competences
  - BIM Classes
  - AIM training & coaching
Object Type Library - OTL

- OTL as a standard for BIM and AIM
  - Contains the information need of our assets
  - Centralized creation and management
  - Publication in human readable web pages
  - Also published via machine readable technical artefacts
    - [Wegenenverkeer.data.vlaanderen.be](http://Wegenenverkeer.data.vlaanderen.be)
OTL – What is it?

• **Object Type Library – a data standard for BIM and AIM**
  - Semantic data standard
  - Goal: To identify, define and standardize the information need of assets / infrastructure objects with a semantic model that can be used as an open standard

• **Covering the whole asset lifecycle**
  - Design – Execution – Management – Maintenance – Exploitation

• **Data exchange**
  - Standardization to facilitate a BIM oriented way of working and to set up and feed a lifecycle Asset Information Management System
OTL in Civil3D – Property sets
AWV is leading the BIM way

How to do that in real projects?
The added value of BIM in a project
What’s the added value of BIM in THIS project?
When can we use BIM?
How are we going to use BIM? – BIM applications

Collecting Information

Analyzing Information

Communication & generating output
Design model  –  Construction model
Modelling the existing situation
3D clash and issue detection

Navisworks Manage

Analyzing Information
3D clash and issue detection
3D clash and issue detection
3D clash and issue detection
Simulations

- 4D phasing
- Water drainage
- Noise barriers
- Vision analysis
- Daylight and shade analysis
- Logistical flow during execution
- ...

www.pinnacleconsultingengineers.com

www.youtube.com - Drainage and Object 3D Clash Detection - Training Webinar Series
Output - Drawings
Output - Documentation

128.64 m²

26.4 m²
Output - Visualizations
What to BIM exactly?

• LOI – Level of Information
  o See the OTL
  o A selection of object types, attributes and relations as defined in the OTL
  o Depends on the phase and scope of the project

• LOG – Level of Geometry
  o LOG -1 to LOG 4
  o Less/more detailed geometry per object type
How detailed do we go?
How detailed do we go?
Data collection methods
BIM in a project

= Customization
Standardization
BIM Protocol

- AWV BIM vision
- BIM process and information management
- Information exchange
- BIM specific tasks and responsabilities
- BIM roles
- OTL
BIM Execution Plan

- BIM applications to deliver in this project
- Level of Geometry table
- Quality control: reporting clash detection results
- Software and hardware
Annex 1 - BIM applications

- Ordered by theme
- Filled in and added to the BIM Execution Plan
Annex 2 – LOG Table

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<th>VO</th>
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In de bovenstaande tabel staan de fasen (PF = opstartfase, CF = conceptfase, VO = voorontwerpfase, DO = definitieve ontwerpfase, UF = uitvoeringsfase, BF = beheersfase) op de bovenste rij.

*afhankelijk van type renovatie of volledige (ver)nieuwbouw
Collaboration on a CDE – BIM360
BIM@AWV website

- [https://wegenenverkeer.be/zakelijk/bim](https://wegenenverkeer.be/zakelijk/bim)
- Dutch only
- What is BIM for us?
- More information on the Object Type Library
- Standardized contract documents
- FAQ
- BIM news
- [Subscribe](#) to our newsletter

- Or contact us directly:
  - Natasha.Blommaert@mow.vlaanderen.be
  - Timothy.Nut tens@mow.vlaanderen.be
Thank you for your attention!