Geospatial World Forum 4.4.2019

Mike von Wehrt

Up-to-date City Model – Platform for the smart mobility

Connected infrastructure for smart mobility

- Smart mobility needs smart planning
- City Model is a platform for smart city and smart mobility
- City Model can be used for planning, information sharing or citizen engagement purposes
- Three demands for useful and modern digital city twin
  - It’s available through open interfaces
  - It’s up-to-date all the time
  - Extensive data content (not only buildings)

City Model is a platform serves city procesesses

Service planning

Platform for interaction
e.g. citizen feedback

Infrastructure planning
e.g. smart mobility

Platform for IOT

Building construction planning

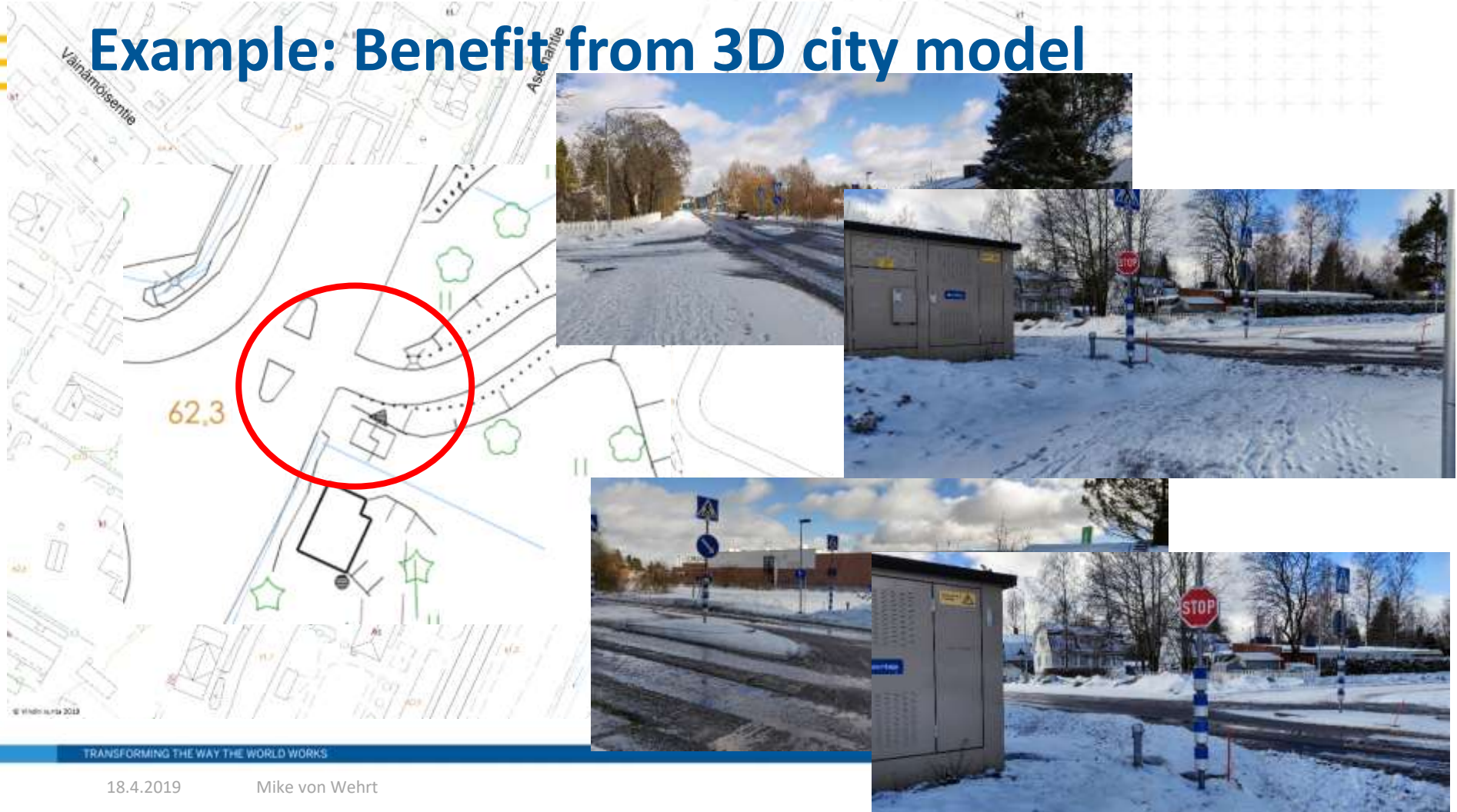
...

Land Use planning

Open interface CityGML

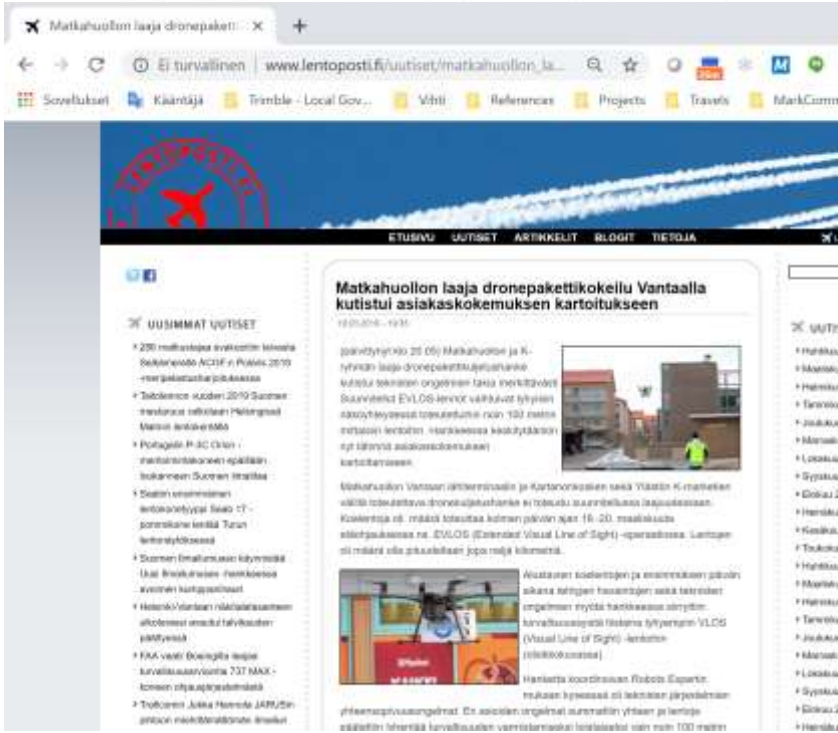
Up-to-date 3D CityModel Database

Example: Benefit from 3D city model



Example: Benefit from 3D city model

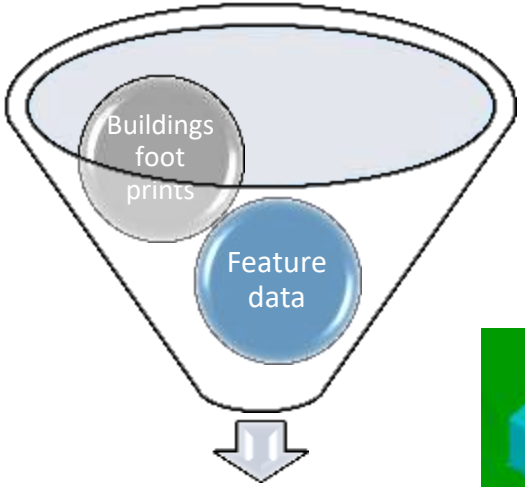
- Pilot project of drone delivery
  - Plan was to deliver products between two branches but it shrinked to 100 m distance
  - There were several reasons to change the plan, but one was outdated citymodel
    - Trees have grown and electrical networks should be surveyed with better accuracy
- ”These kind of drone opeartions are growing and creating new demand for city models”
  - Flight corridor planning needs accurate data



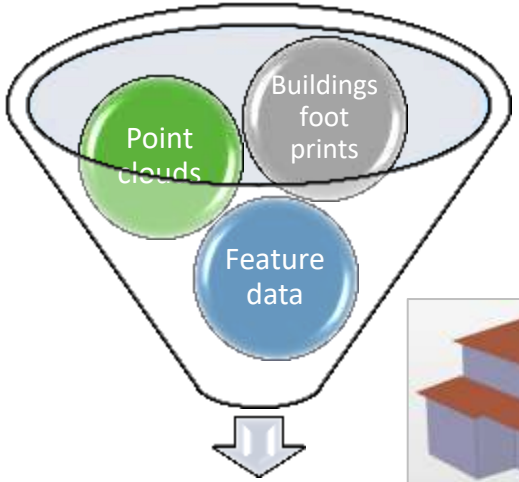
19.3.2019: http://www.lentoposti.fi

How to get started with 3D city model

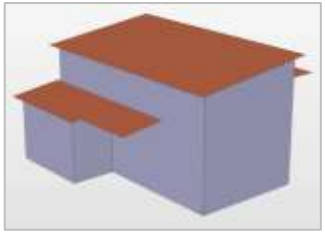
- Needed elements
  - Vector data
  - Point Clouds
  - Oblique aerial photograph
  - Solution that supports 2D and 3D



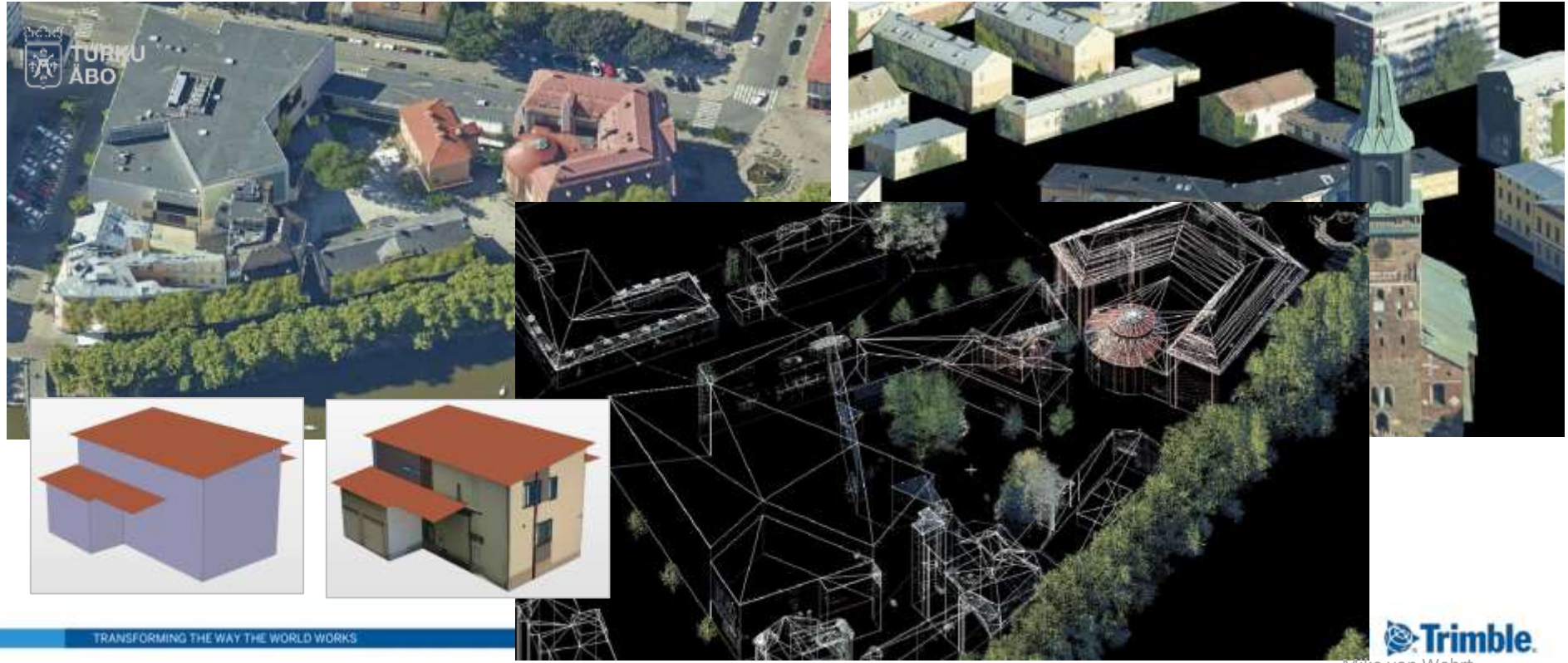
LOD 1 building



LOD 3 building



Texturing buildings by utilizing oblique aerial photograph



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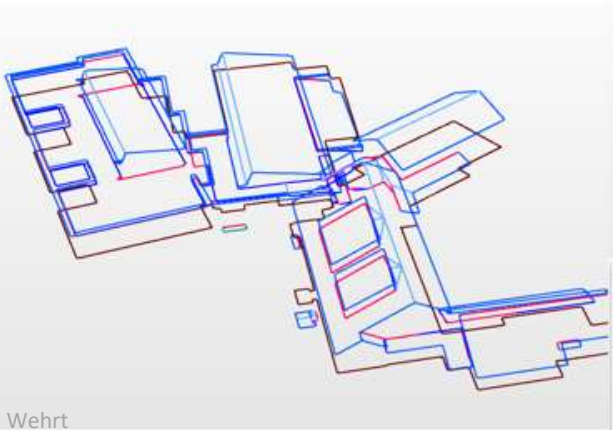
Up-to-date, multipurpose data: case Building

- Different presentations on the same data
  - 2D maps
  - 3D vector models (export to cad formats dxf, dwg, dgn)
  - 3D city model objects (export to CityGML)

2D **3D** **City Model**



3D City Model components

CityGML components

- Building
- Generics
- CityFurnitures & Veget.obj
- WaterBody
- Transportation & Vegetation
- LandUse
- Relief

Attribute data

3D CityModel Database

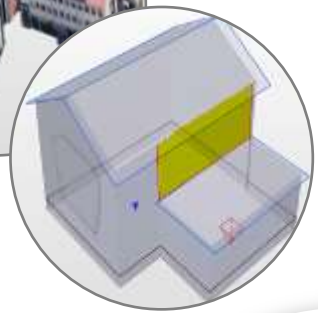
Point clouds

IFC/BIM

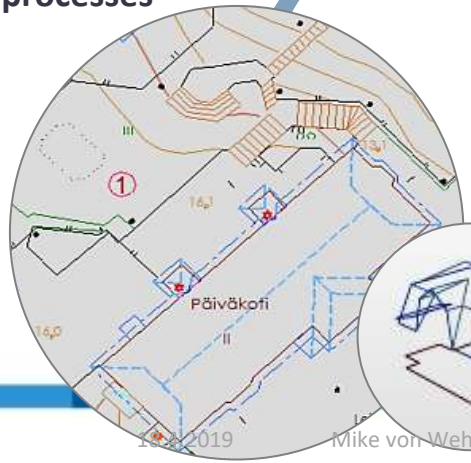
InfraBIM

City model maintenance processes

Semi-automatic processes for texturizing



Cartographic processes



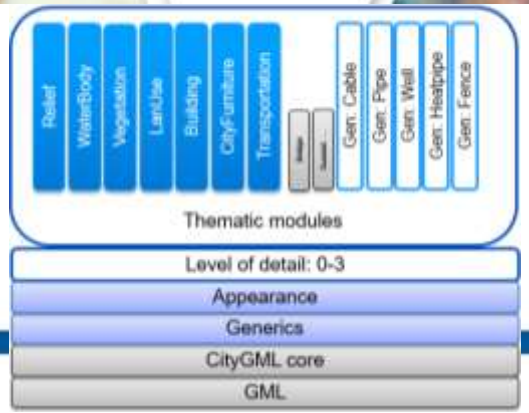
Service Interface

3D CityModel Database

Innovation services and solutions

Needs for digital city twin

- 3D City Model is the foundation for various Smart city operations
  - City model data should be up-to-date
  - City model should be available from open interfaces
    → CityGML
  - Data content needs to be rich and accurate enough



City model from city of Turku - Finland

TURKU ÅBO

Trimble.