TEEDEKLASTER

ESTONIAN ROAD CLUSTER

TALLINNA TEHNIKAKÕRGKOOL

TTK UNIVERSITY OF APPLIED SCIENCES

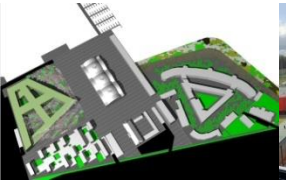
RoadBIM Seminar
11.09.2013 Tallinn

Euroopa Liit
Euroopa Regionaalarengu Fond

Eesti tuleviku heaks

Actions by public owner, lessons learned in civil engineering

Riigi Kinnisvara



about Riigi Kinnisvara AS

Riigi Kinnisvara AS = State Real Estate Ltd

- Established in 2001
- Owned by Republic of Estonia
- Shareholders meeting performed by the Minister of Finance

Portfolio

- Buildings: 1066
- Closed net.area: 936 817 sqm

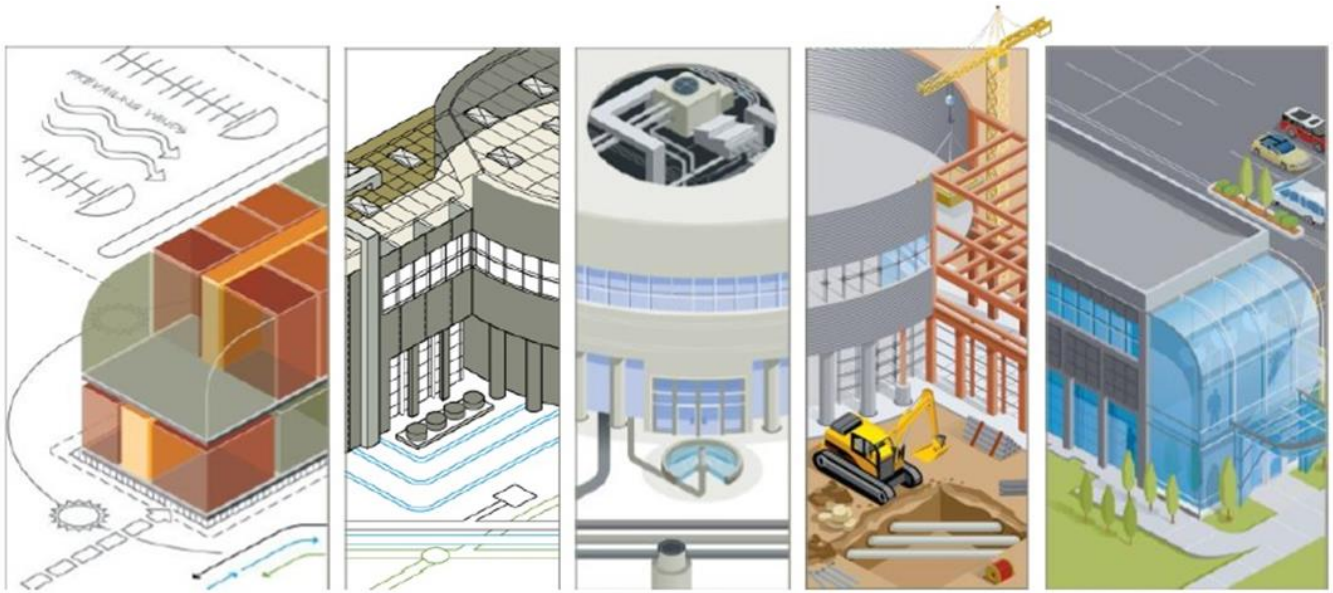
biggest projects

Viru Prison (East Estonia)
cost ~74 mln €, 2008

biggest projects

Koidula railway border station (South Estonia)
cost ~70 mln €, 2011

BIM in process



Conceptualization **Design** **Implementation** **Construction** **Own/Operate**

Docs

- Collaborative processes
- Key stakeholders contribute expertise
- Improved decision-making and quality

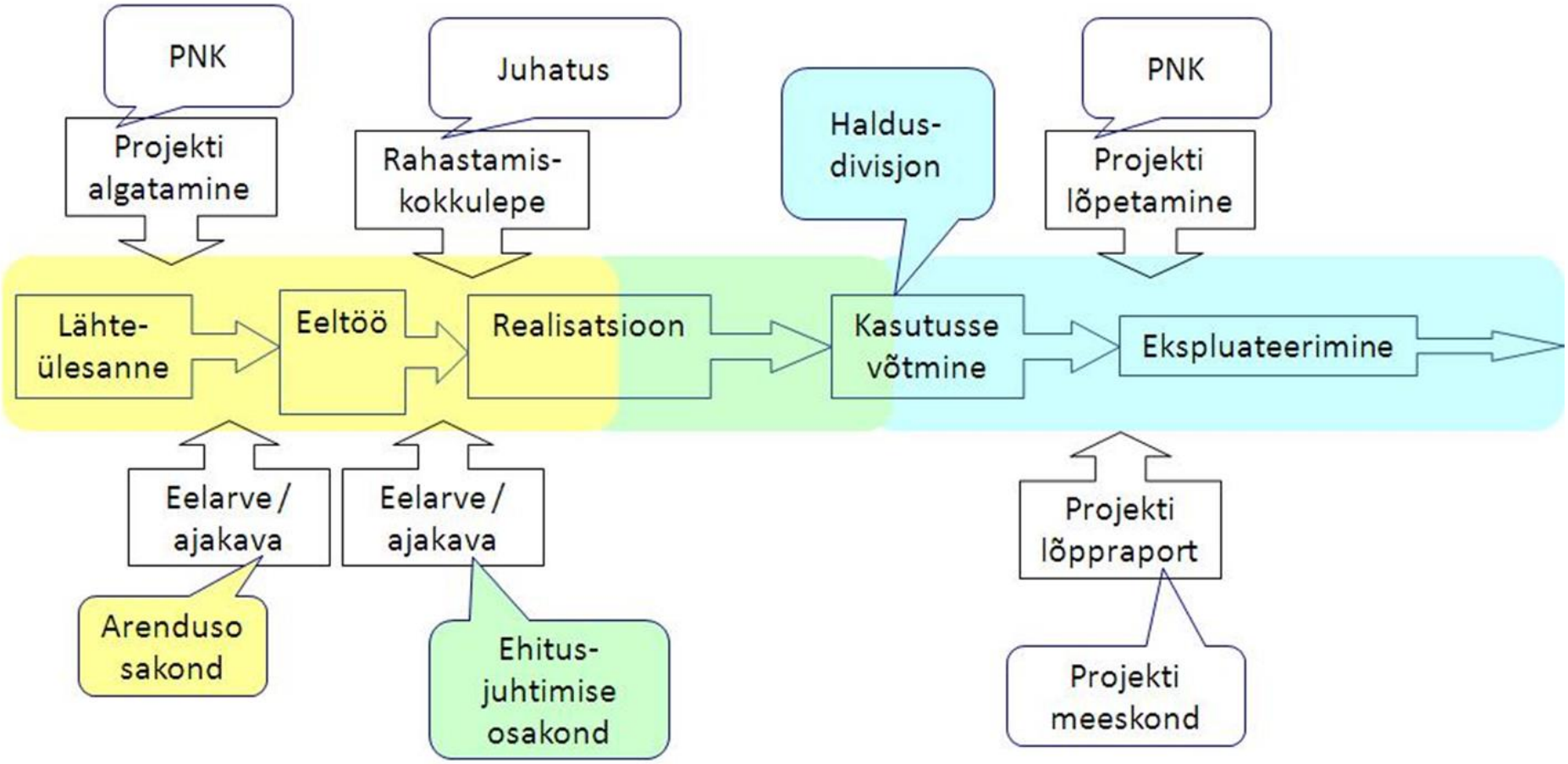
- Controlled by precise design model
- Improved coordination and documentation

- Early planning = efficient material use, less waste
- Change orders are minimized
- Construction: on schedule/budget

- Predictable building outcomes
- Digital building model for FM

(c) Autodesk

process management in Riigi Kinnisvara AS



guidelines we have

- 2009 Riigi Kinnisvara AS BIM requirements

  http://www.rkas.ee/parim-praktika/bim

- 2013 COBIM 2012 translations

  http://www.tktk.ee/cobim2012

Kiriku 2/4 Tallinn => vacant, tenant needs ca 2000 sqm

Office building
area ~1700 m², 2 floors

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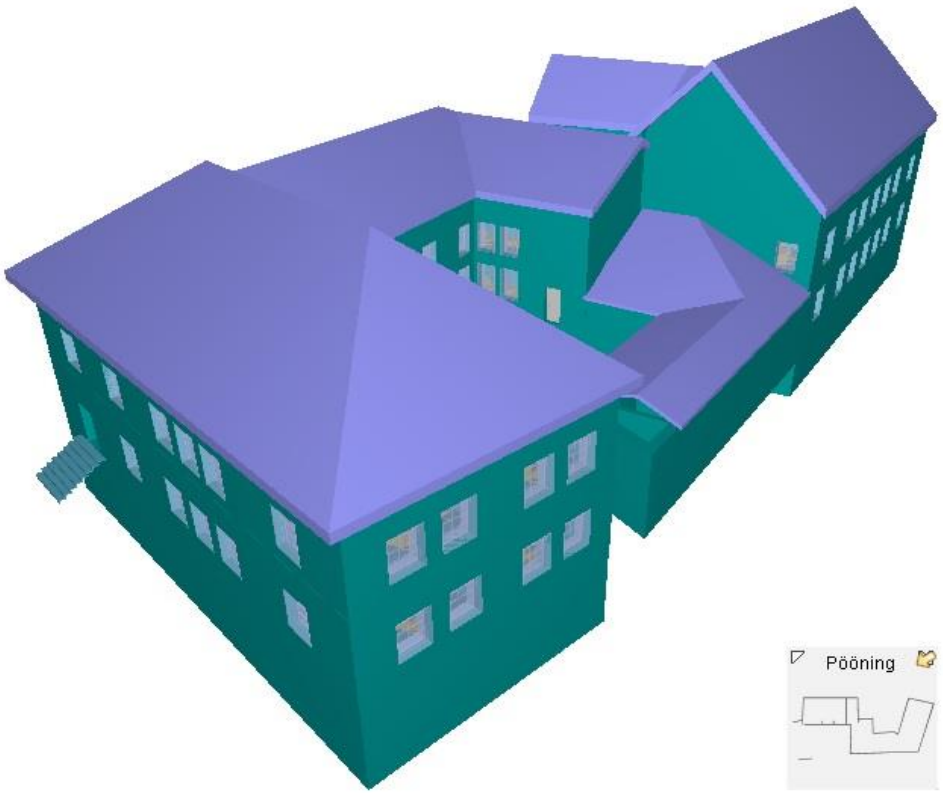
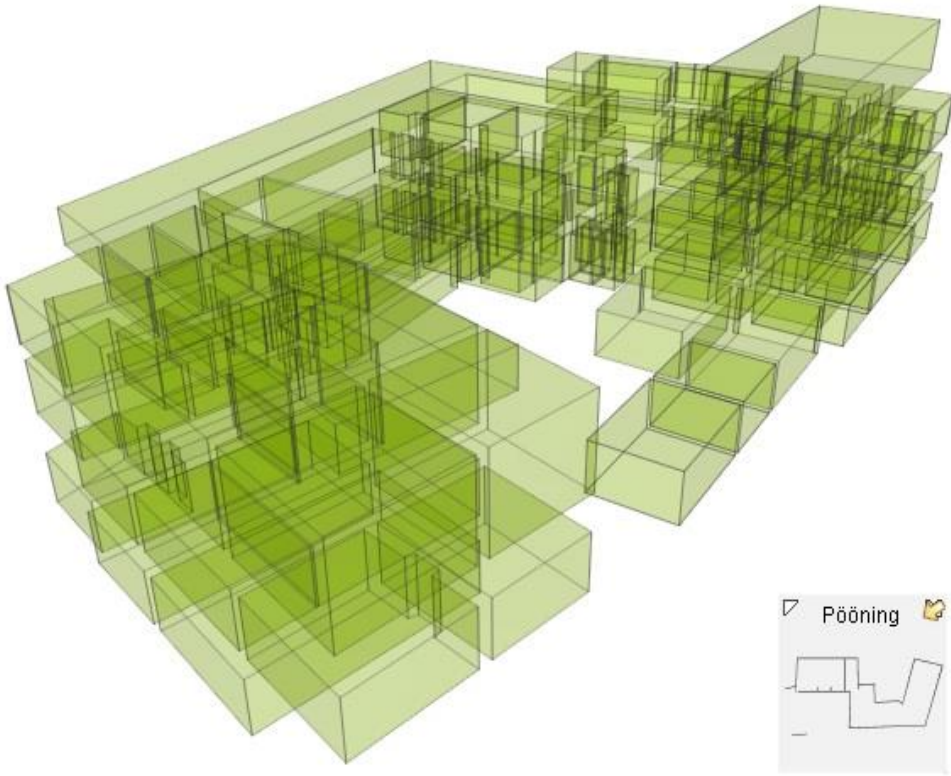
Kiriku 2/4 Tallinn



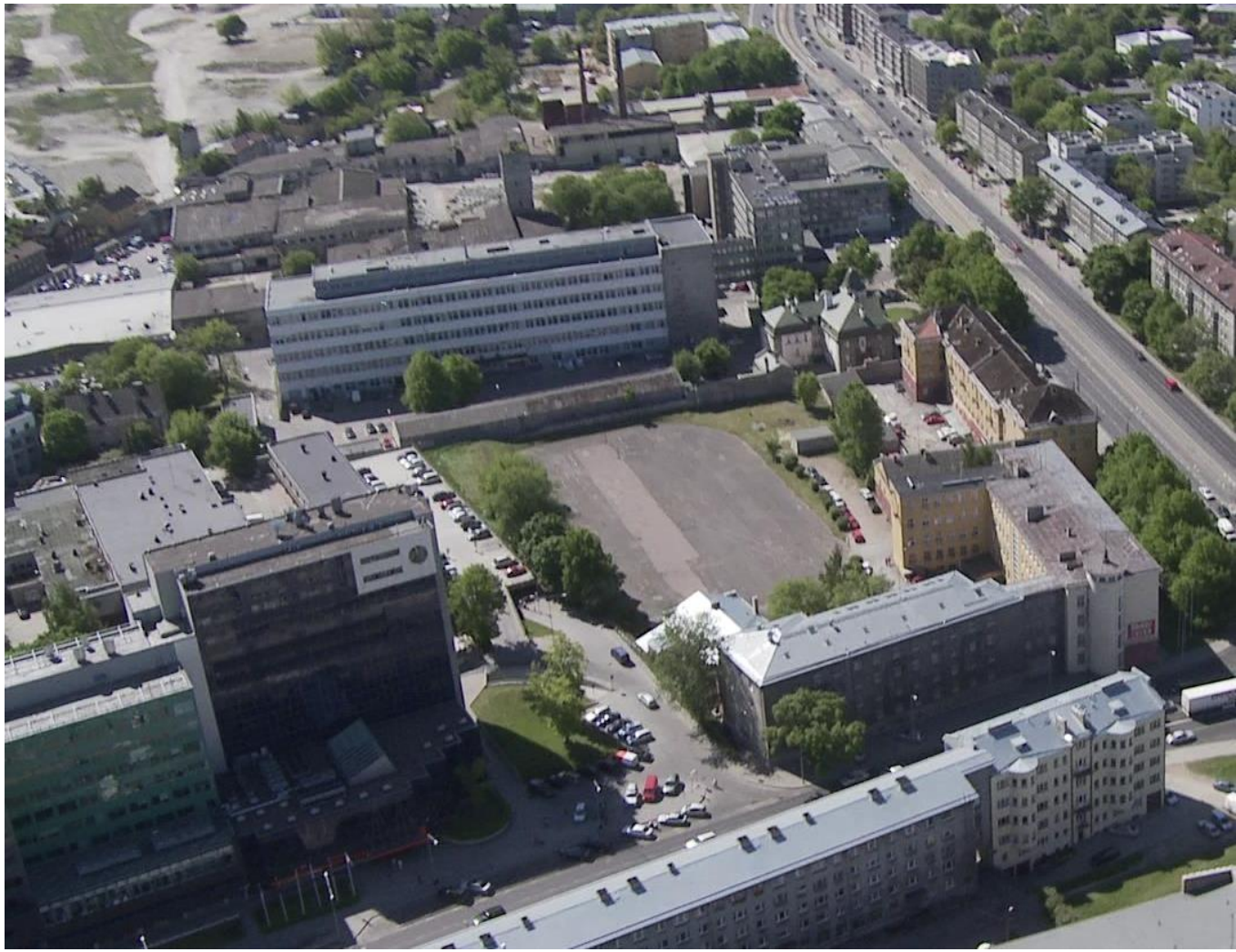


area ~2000+ m² including attic
suitable for a tenant

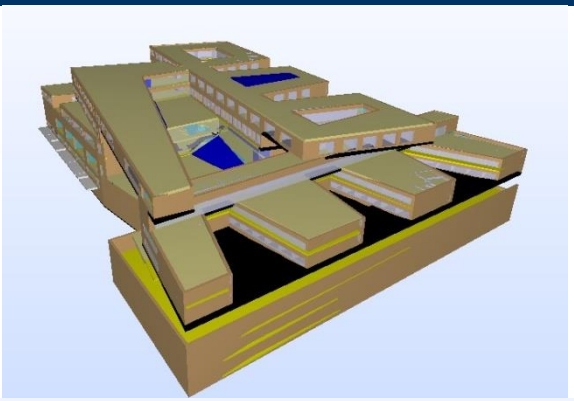
Art School in Tallinn

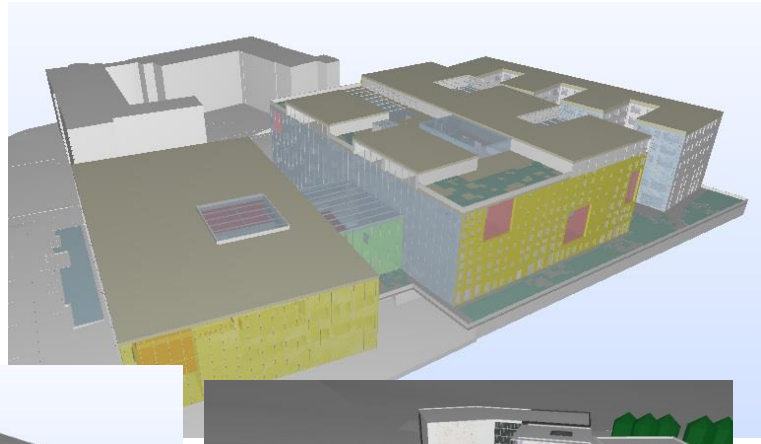
- 1st stage: architectural competition

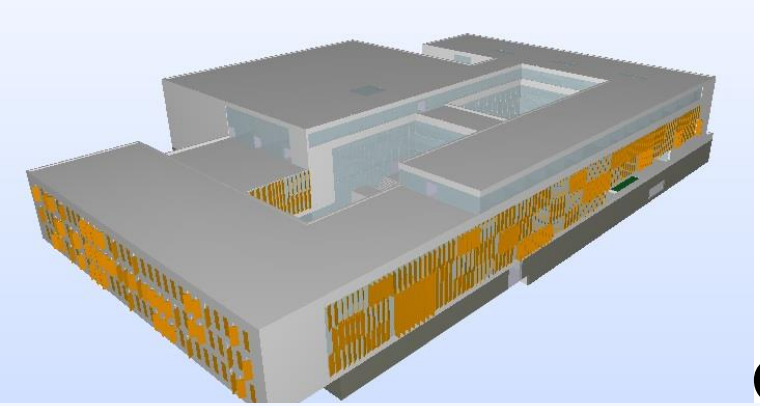
- 2nd stage: BIM
  - walls
  - slabs
  - space elements
  - room names

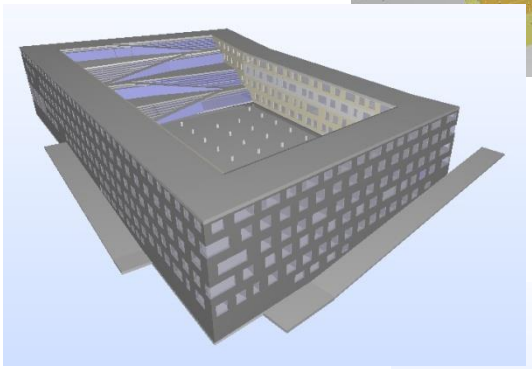


Art School in Tallinn

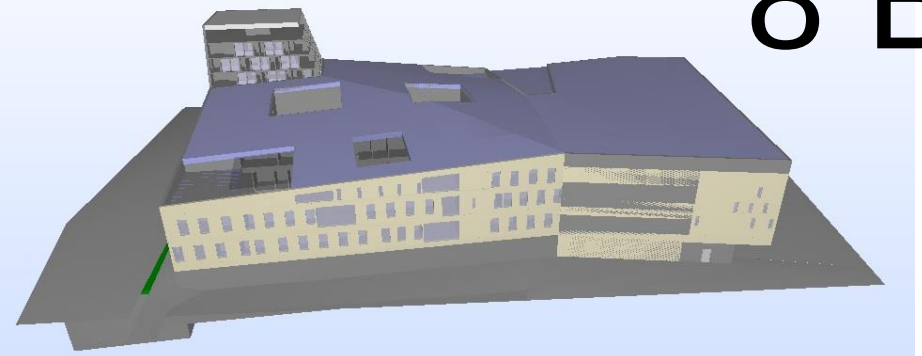


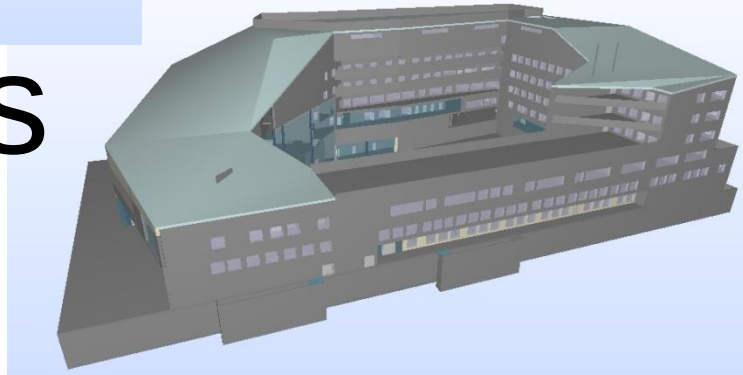




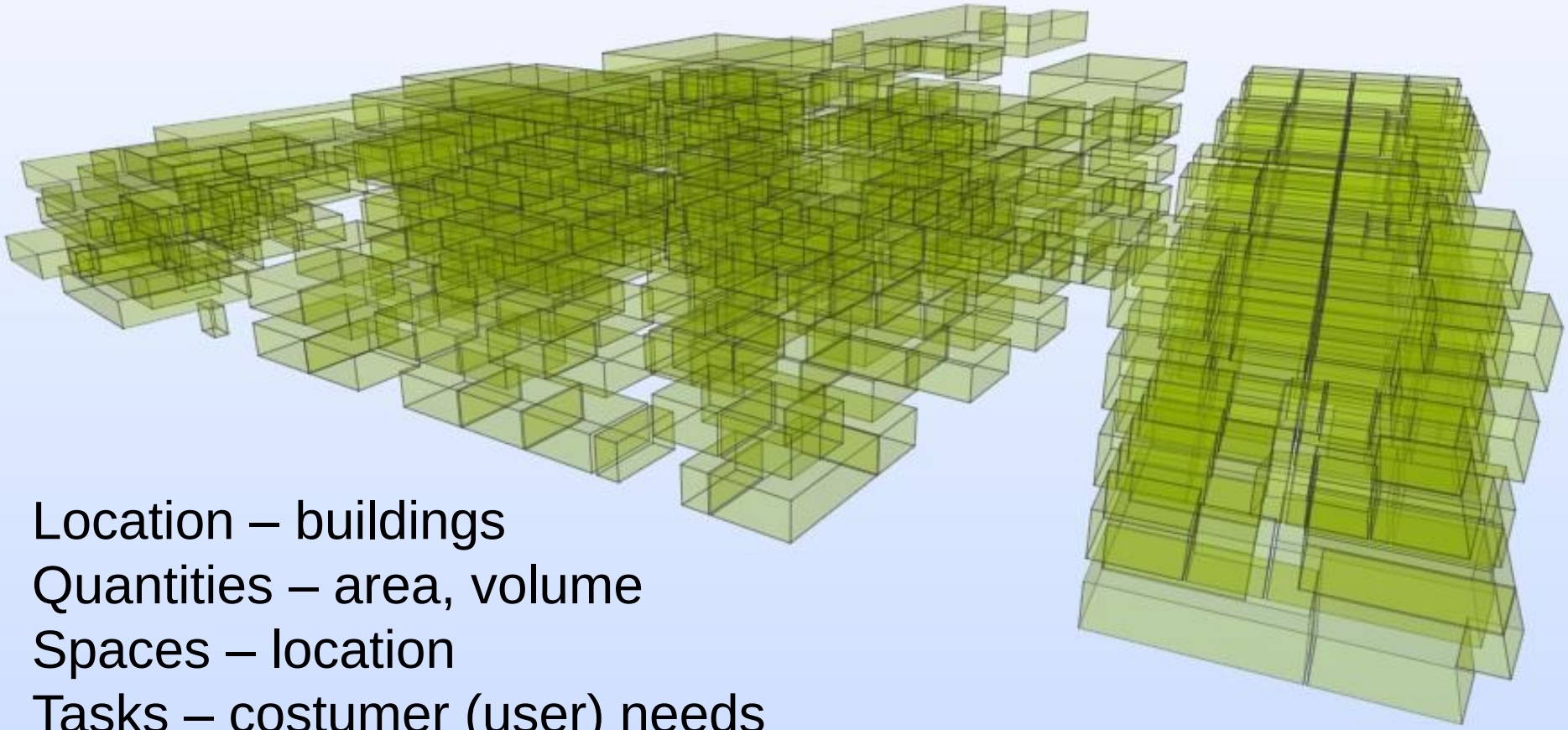


8 BIMs





Art School in Tallinn



Location – buildings
Quantities – area, volume
Spaces – location
Tasks – costumer (user) needs

Wismari 7 Tallinn => scan to FM BIM

Office building
area ~2000 m²

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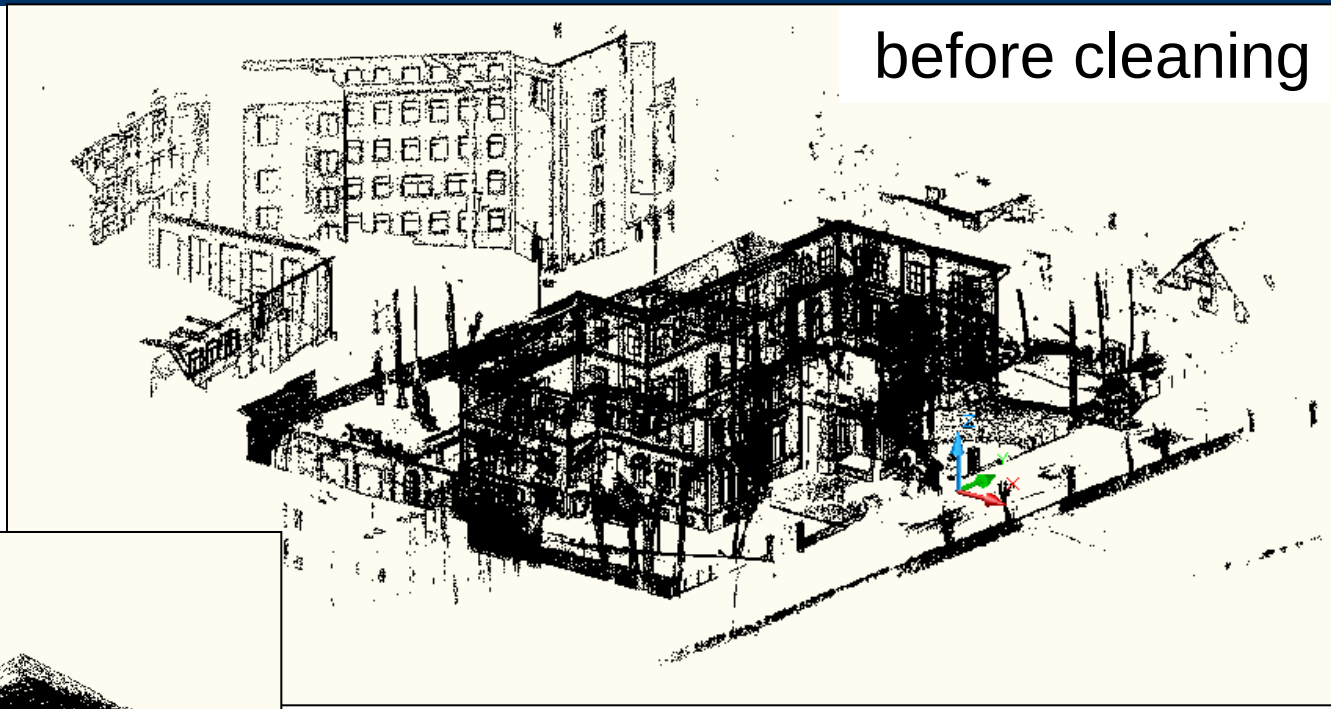
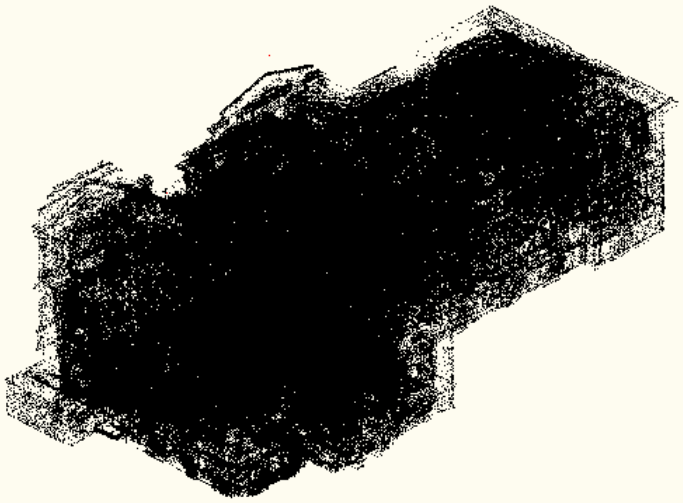
Wismari 7 Tallinn => scan to FM BIM

Point cloud



before cleaning

cleaned



- Who creates a BIModel?
- What software to prefer?
- What kind of information to add, where? space vs element

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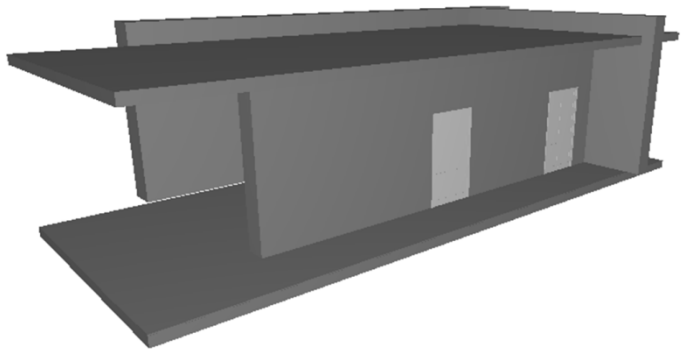
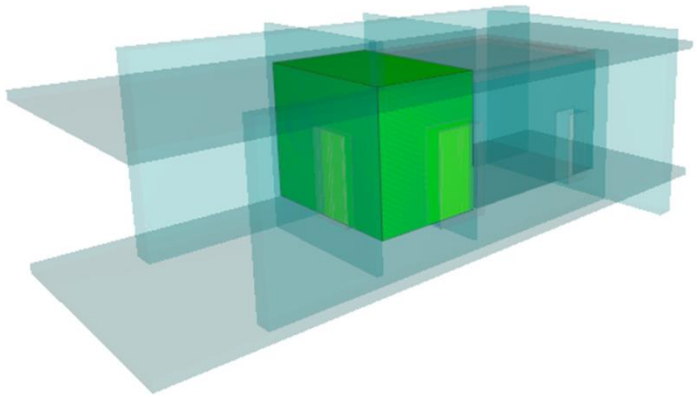
Wismari 7 Tallinn => scan to FM BIM

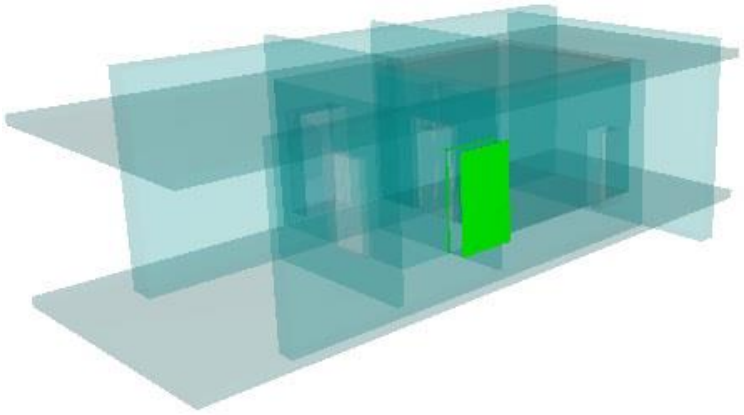
part of the building



a room



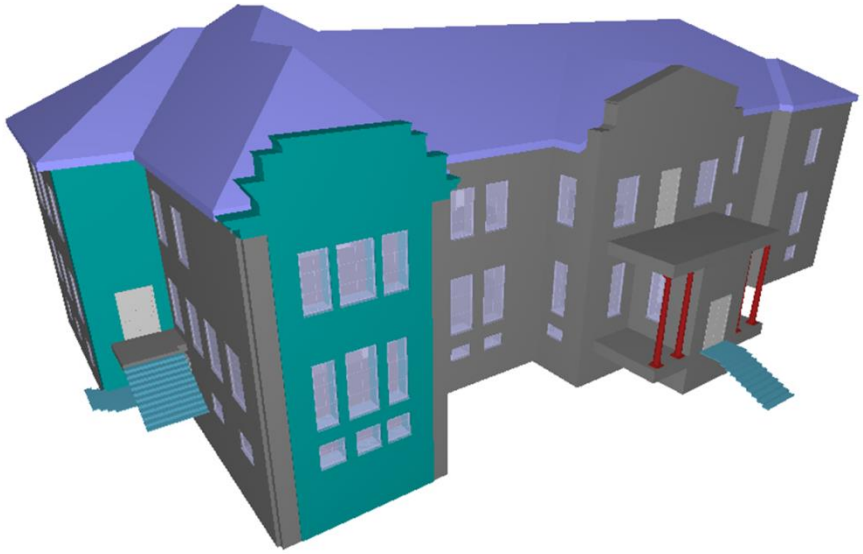
a door



Wismari 7 Tallinn => scan to FM BIM

Model

BIM



Narva Police and Rescue Station => new building, 5000 m²

Stage 1:

- design

Different users

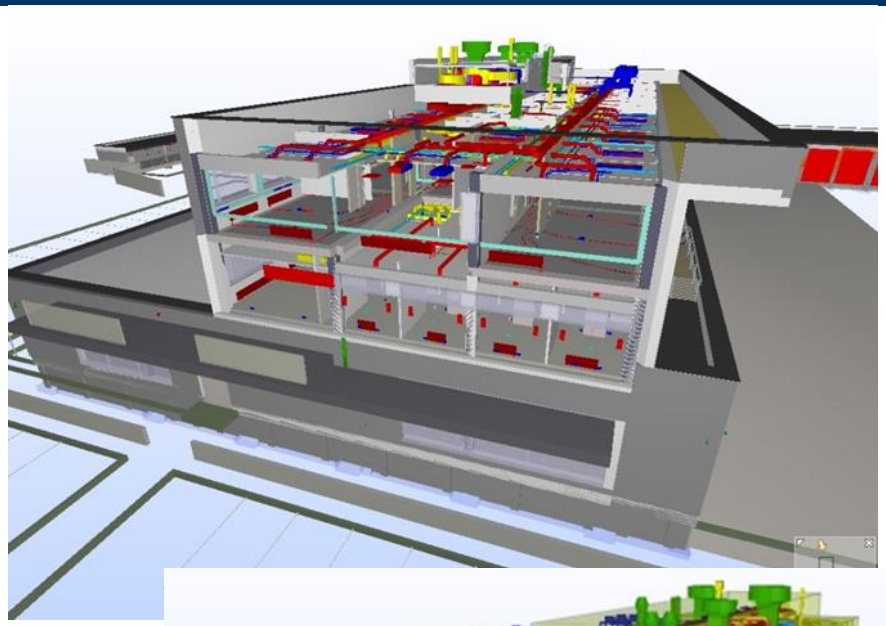
Different functions

- office
- customer service
- training and meeting rooms
- jail 24h
- rescue works 24h

Narva Police and Rescue Station => new building, 5000 m²

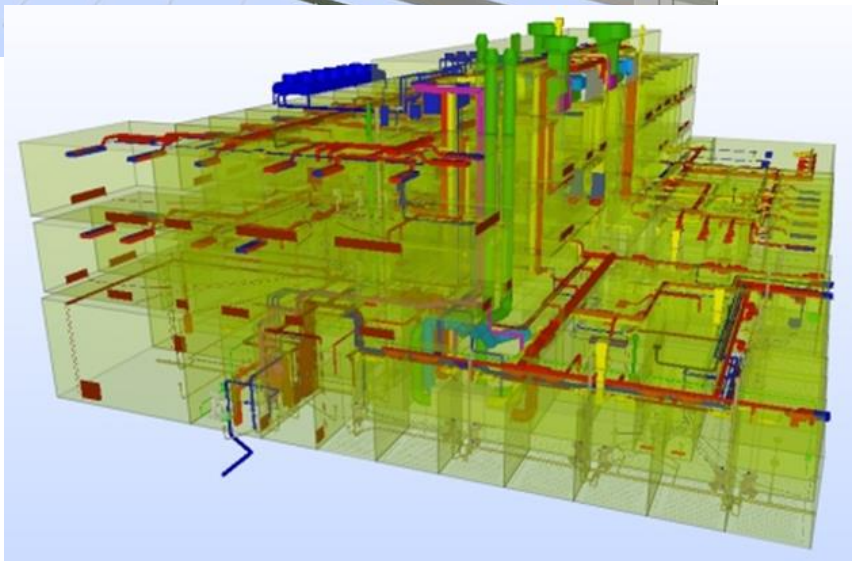
Softwares:

- ArchiCAD
- Revit Structure
- MagiCAD
- Solibri MC
- Tekla BIMsight

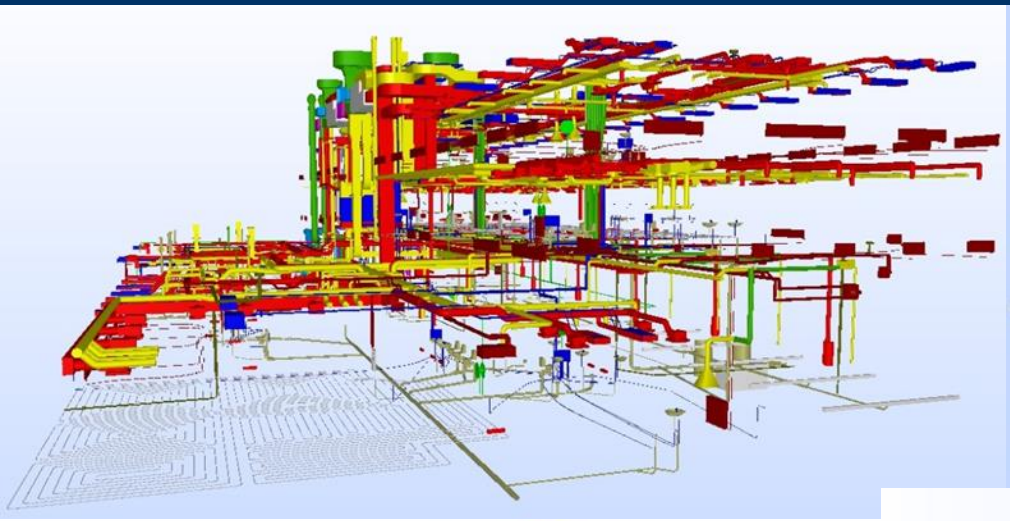


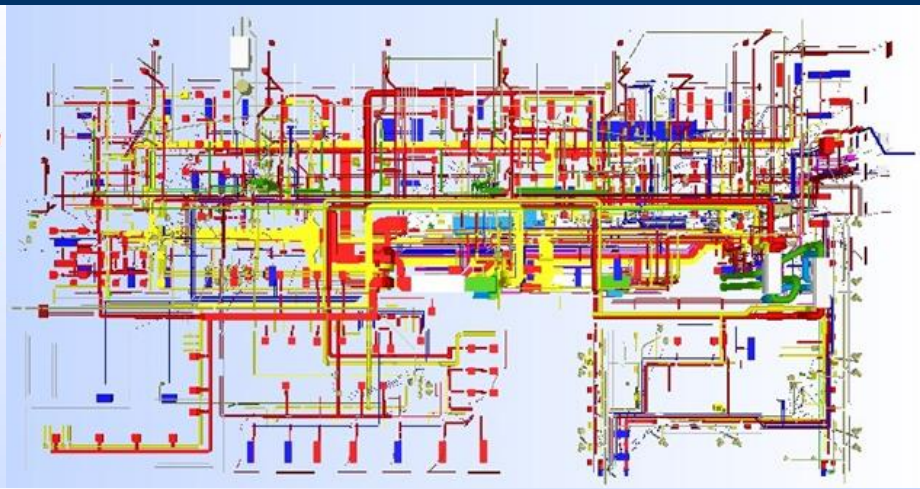
Main goals:

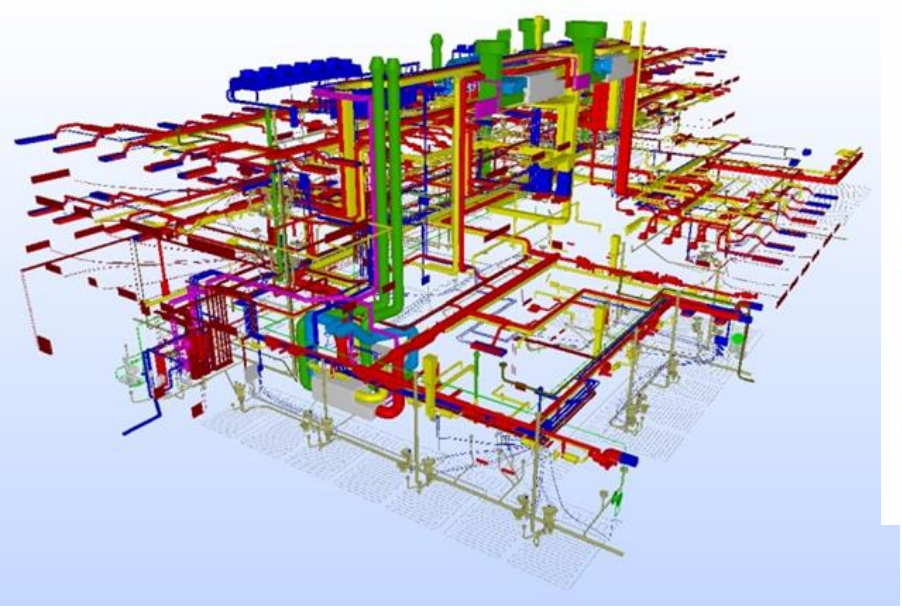
- better quality construction project
- quantity analysis
- clash detection
- energy analysis by models
- better communication

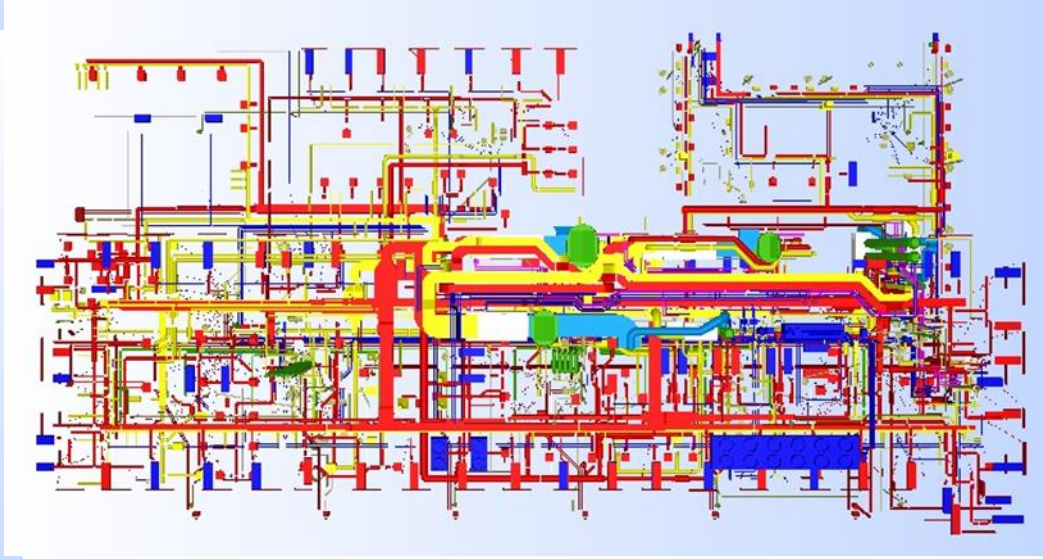


Narva Police and Rescue Station => new building, 5000 m²





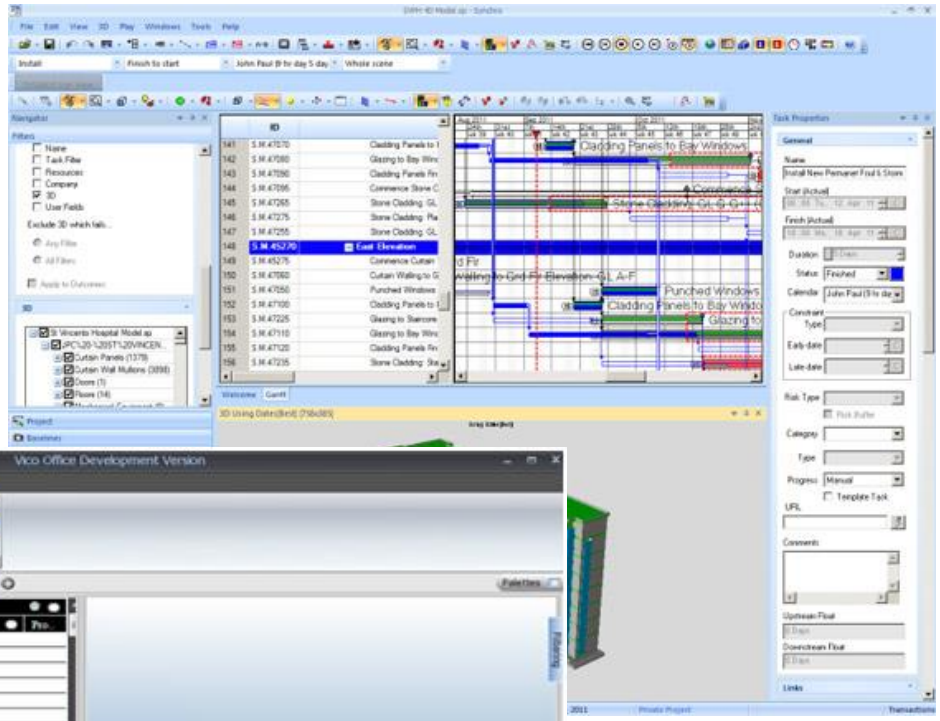




Narva Police and Rescue Station => new building, 5000 m²

Stage 2

- Construction planning and management
- FM BIM



Softwares:

- Synchro
- VICO office
- Revit
- Solibri MC
- Tekla BIMsight

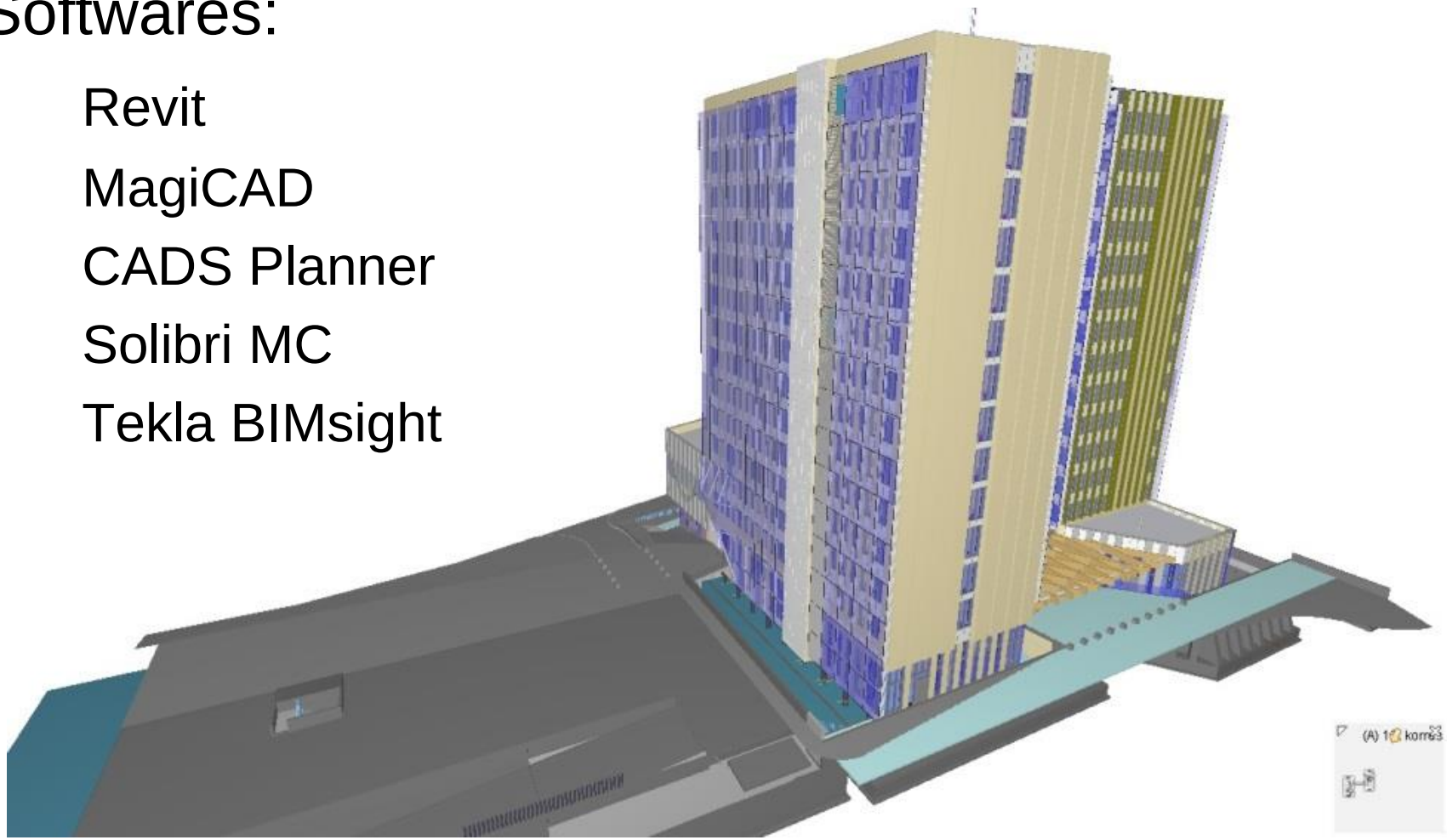
Suur-Ameerika 1 Tallinn => new building

Office building

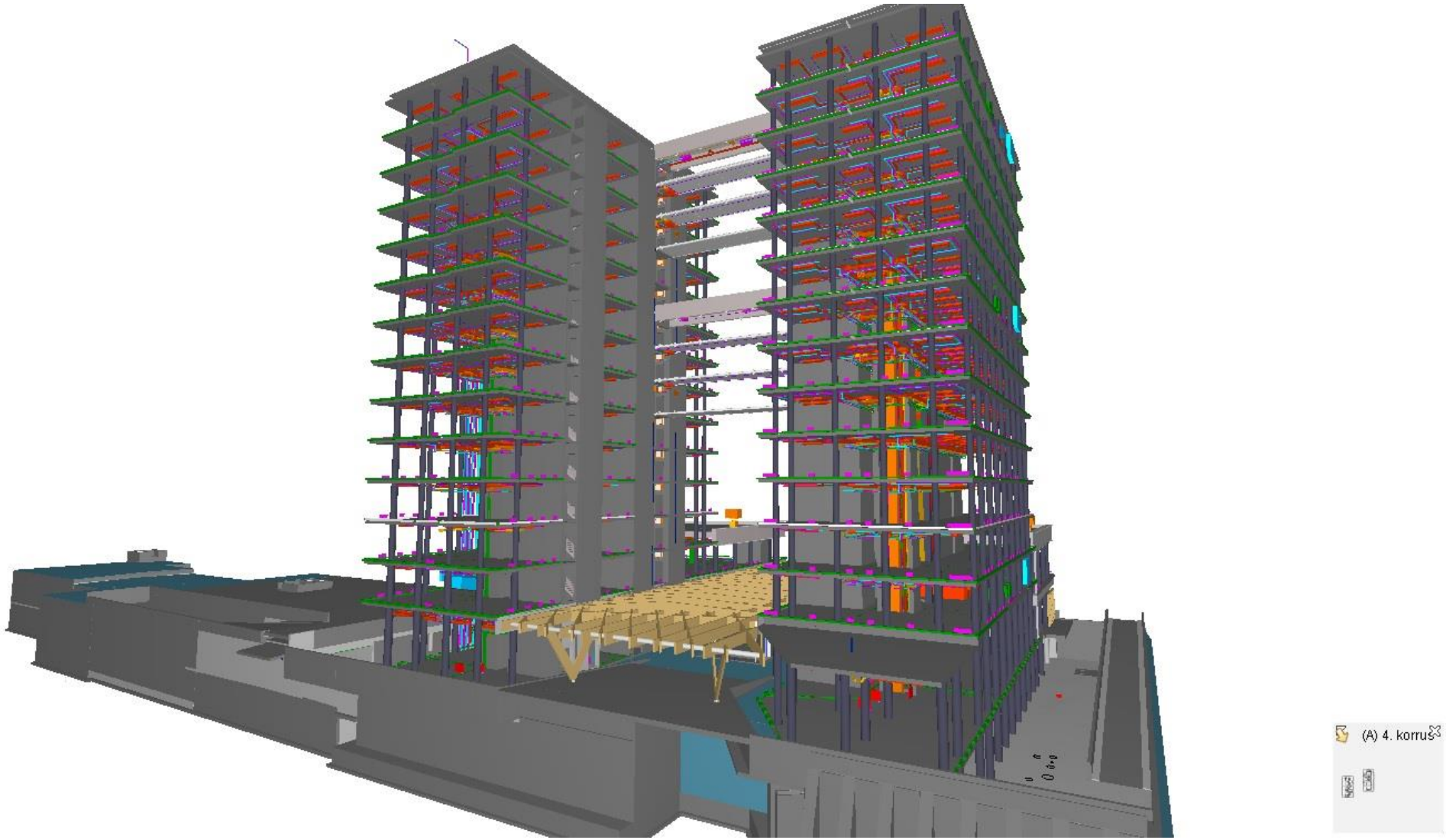
- 2 towers
- Underground parking
- Closed net.area ~22,000 m²

Suur-Ameerika 1 Tallinn => new building

- Softwares:
  - Revit
  - MagiCAD
  - CADS Planner
  - Solibri MC
  - Tekla BIMsight



Suur-Ameerika 1 Tallinn => new building

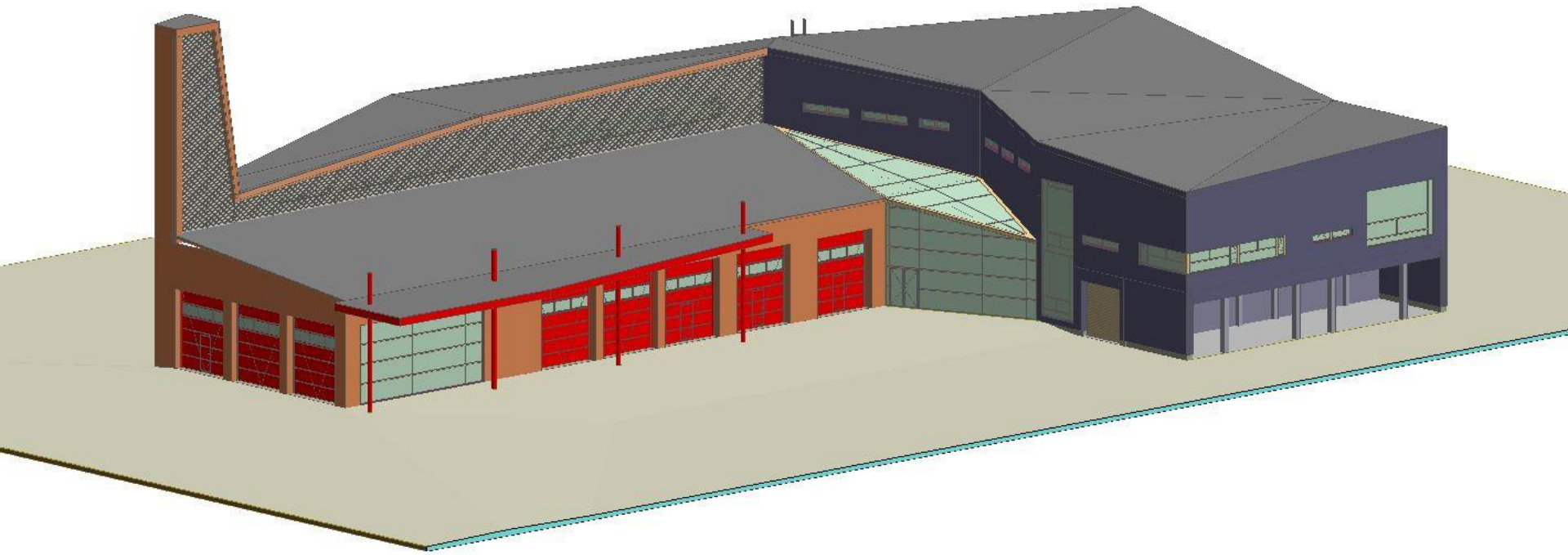


… under way

- Tallinna Vangla (prison)
- Rahvusarhiiv (National Archives)
- Piusa kordon (border quard station)
- Kiriku 2/4 Tallinn kontorihoone (office building)
- Pärnu PPA (police and rescue station)
- Lubja 4 kohtumaja (court building)

lonely BIM => Haapsalu orphanage

lonely BIM => Kuressaare police and rescue station



Riigi Kinnisvara

conclusions

- We have designers
- Communication stays
- Terms
  - kipsum vs light vs kyproc wall
  - office vs bureau vs …
- Is standard suitable?
  - early design or more
  - detailed design or more
- Lack of BIM managers
  - experience
- Missing building elements

THANK YOU

Riigi Kinnisvara