



E-permitting and Building Information
Modelling BIM as a tool for Building Control
in Anticorruption work
ICAC conference 23.5.2019, Hong Kong

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Building Control in Vantaa

Personnel 40

12 permitting architects, 14 engineers, 2 lawyers
and assisting personnel

Annual budget 3.5 M€

Permits about 1500 / year

4000 apartments, 450 single houses, offices,
storages etc. 500 000 sqm²

Building permit, technical survey, site inspections,
final inspection



Building Control

From e-permitting via modelchecking to part of customers processes

- **Started in 2014**

- All single houses 11/2014, All permits 11/2015, site inspections 11/2016, archive 1/2017, BIM inspections 11/2017

- **Concerns all activities**

- Application, consultation, decision making, statistics and archive
- No papers in any part on the process

- **Lupapiste.fi**

- Operating system
- Developed under umbrella of Ministry of Environment
- Operator Evolta Oy

Fight against corruption

- **Construction industry globally is rigged with corruption**
 - Complex policies and long approvals
 - Heavy wins and losses
 - Public and private sector involved in process
- **E-permitting and Building Information Modelling in Building permit process gives new possibilities**
 - More openness
 - Possibility to track even after long time
 - BIM in the future to use even bigdata and artificial intelligence in tracking criminal procedures

<https://govinsider.asia/innovation/why-finland-issues-95-of-building-permits-digitally/>



Permit Point brief of the system

Overview – Permit Point

- 24/7/365 electronic service for building permits
- Covers the entire permit and building process from information inquiry through application and decision-making to the final inspection
- Interactive service, which involves all the parties in the project
 - Enables guidance and supervision of the applicants
 - A shared workspace for the project
- In Finland Service includes over 100 different permit applications for the built environment and the volume exceeds 8 000 monthly applications

Coverage of the system

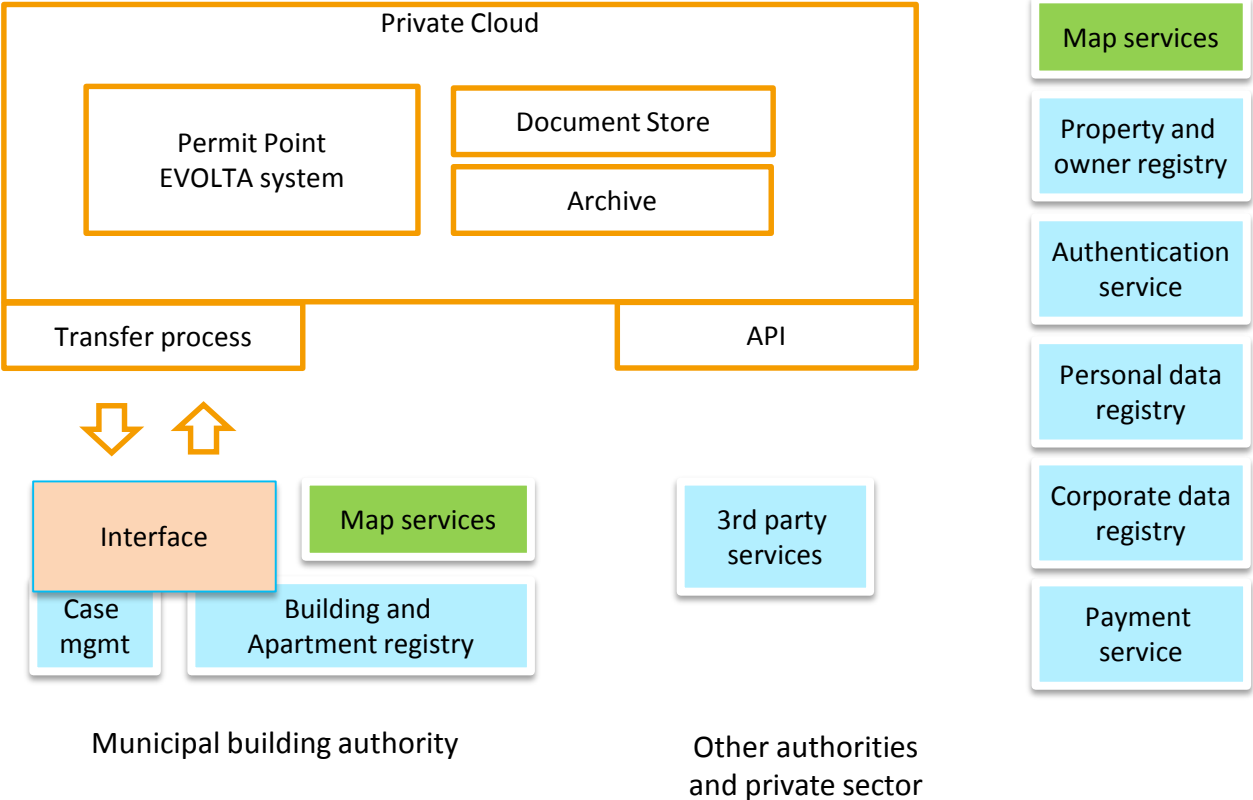
- Main Permit types

- New Buildings
- Alterations and additions
- Demolitions
- Minor projects
- Supervisors
- Planners and architects

- Process coverage

- Information enquiries
- Submissions
- Applications processing
- Decision
- Site inspections
- Archival
- Selling of documents

Architecture



Features – Evolta Building permit system

Single door service

- Registration and 2-F authentication via strong identification and management of user accounts
- Management of work-in-process and work queues for the authority organisations
- Two-way communication channel between authorities and applicants
- Sending and receiving of applications, plans and drawings, decisions and statements
- Stamping of the approved submissions
- Notifying neighbors
- Statements from different authorities
- Reviews and inspections during the building process
- Interactive map with multiple layers: viewing and drawing
- Integration to several local and national authorities' registeries and geodata services
- Easy setup for new organisations / Cloud service

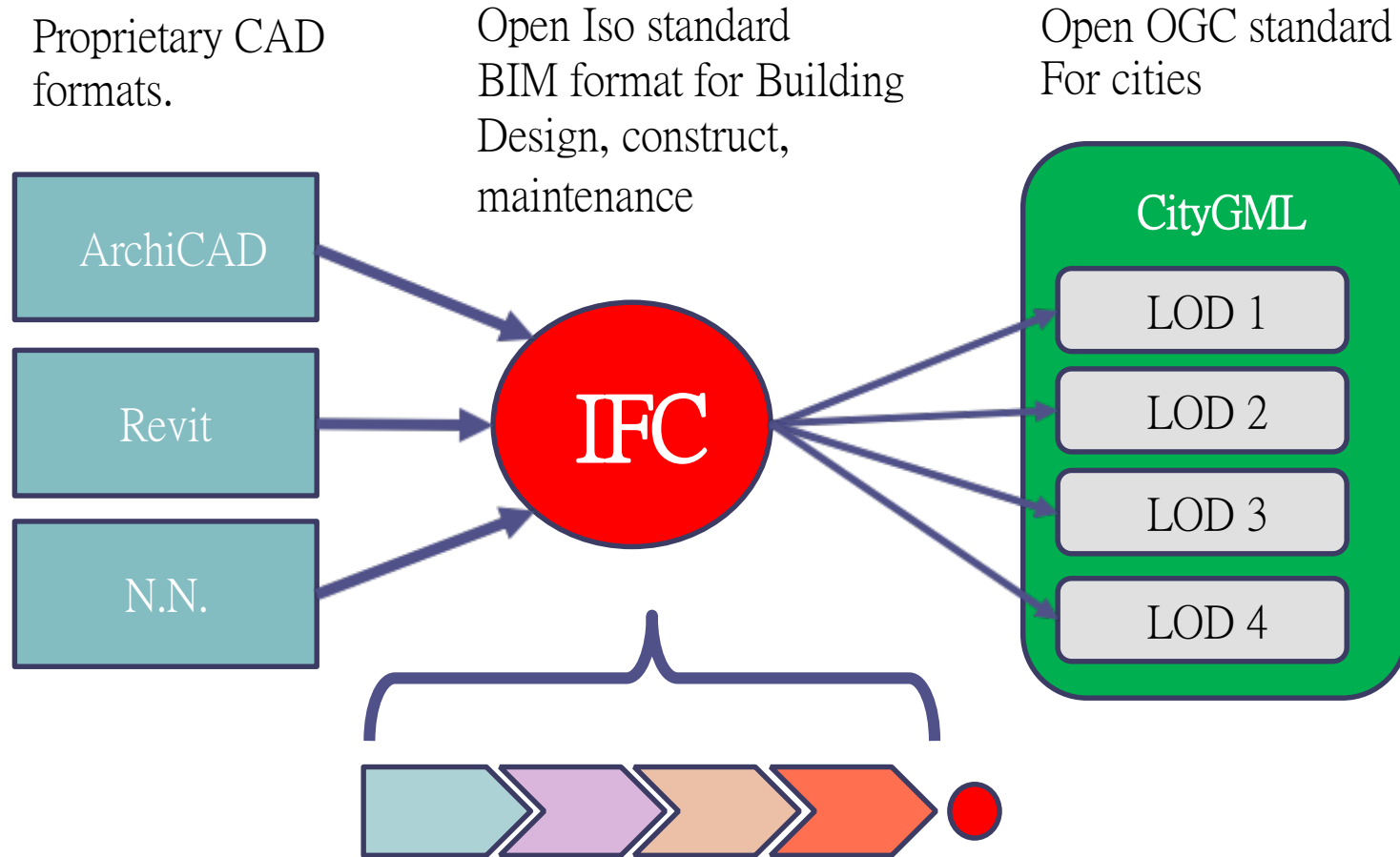
EVOLTA electronic archive

- Electronic archive is an extension to the ePermit service
- Key features
 - Archive file format transformation (PDF/A)
 - Automatic archival data generation from Information Control System
 - Archives project data and documents to a document archive
 - All discussion permanently stored
 - Long-time and permanent archived material
 - Enables fast and accurate searches based on location data
- Reviewed and approved by the Finnish National Archive authority

BIM-model

Building Control

From BIM (IFC) to CityModel (CityGML)



DYNAMIC 3D-CITYMODEL – ” ECOSYSTEM”

SOFTWARE DEVELOPMENT ON CITYPLATFORM



APPLICATIONS

- For specified used, Sova3D
- Licenced Use
- Services, Points-of-Interest

PLATFORM

- Basic features open for all
- VirtualCity
- Several simultaenous users
- Interaction (chat, VOIP)
- Map service, trafic



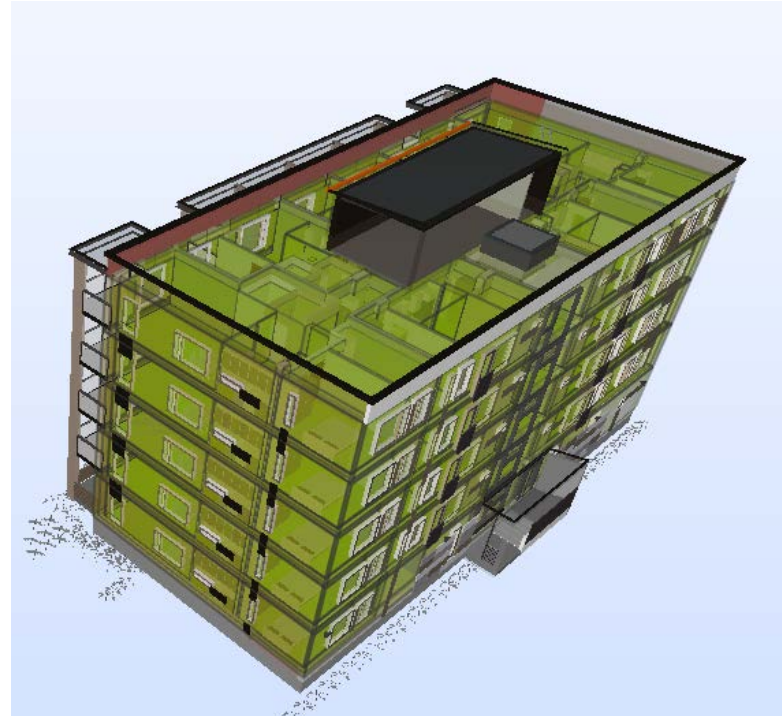
RESOURCES

- Register data (open/licensed)
- Point Clouds
- BIM /
- City Data
- Maps and GIS



Solibri Automated checking up to 70 %

Solibri is a originally Finnish software for IFC model checking, acquired by Nemetcheck, Germany





Vantaa experiences

Benefits

Building control and officials

Same updated database for all

Simultaneous opinions at the same time (fire department, road access, pipelines etc.)

Possibility to work and independent of working hours and place

Better control of working list

Possibility for deputies to help during vacations

Faster and more accurate processes

Possibility to contact and ask all the time to planners and owner

No papers and electronic archive all the time in use

Site control can all be done on site. No extra writing in office.

In future 3D model checking (Solibri) and comprehensive City Model

Benefits

In fight against corruption in Building Control proces

E'Permitting

- Every step of the building process can be easily tracked during the process and long after building has been finished
- All the stakeholders have all the time upodated information
- Approved and stamped plans are available for official ude anytime anywhere
- Irregularities and unnecessary delays can easily be followed by all stakeholders

Building Information Modelling BIM

- Gives possibilities use Big Data and artificial intelligense programs in tracking criminals

YOU WILL BE COUHT !!