Ympäristöministeriö
Miljöministeriet
Ministry of the Environment

IFC to become a mandatory building permit document in Finland

Finnish-German BIM-Seminar and Networking Event:
Shaping the Future of Built Environment through BIM
Berlin 8.5.2023 Finnish Embassy

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IFC to become a mandatory building permit document in Finland

- The revised Finnish Building Act will enter into force in January 2025, when the IFC will be a mandatory building permit document for all new and renovation projects.
- The reform will bring the entire building construction sector into the IFC era. Preparing the law and implementing the new articles has been a long process.
- Building control authorities are already preparing the procedures required by the legislation (RAVA3Pro project).
- On EU-level has also started Accord –project with objectives to make tools for Building Control for CO2 handprint and footprint surveys as well to circulation economy calculations
  - Secondary Act that defines detailed requirementswill be given this year

Finnish State BIM Strategy based on Land Use and Building Act reform 2023

Concerns all building projects and permits from the beginning of 2025

BIM objectives of Building Act reform

Building Permits are applied for using BIM or other machine-readable formats.

Design and as-built BIM models are stored to the national register in an open standard format.

The building owner is responsible for updating the register about repairs that do not require a permit.

Machine-readable operating and maintenance manuals are required for new buildings.

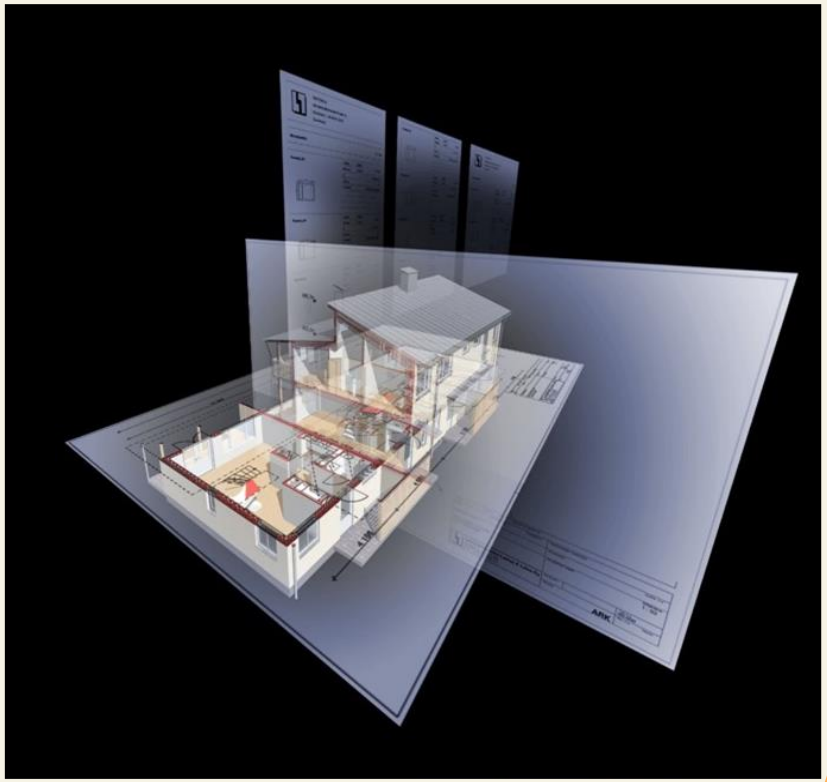


Image: Larkas & Laine Architects

RENEVED BUILDING ACT 2023

(Approved February 2023.In force 1.1.2025) Main objectives

Material changes to new Building act

- Integrating the fight against climate change into construction legislation.
- New essential technical requirements for the building on life-cycle and low carbon
- Simpler authorisation system and building permit not needed for smaller projects (under 30 sqm):

- **Single permit, construction permit**
- Higher authorisation threshold
- Construction permission is applied for in a data model format or other machine-readable form in all building projects that need a Building Permit
- **Improving the quality of construction:**

  Register of qualifications for designers and managers

CURRENT USE OF BIM
Building permits applied by BIM (IFC)

2015
- Electronic Building Permit processing started by Cloudpermit and Trimble ePermit

2018
- Digital permitting covers all building permit activities in 90% of municipalities
- First IFC-based permit experiment

2020
- Standardisation and harmonisation started

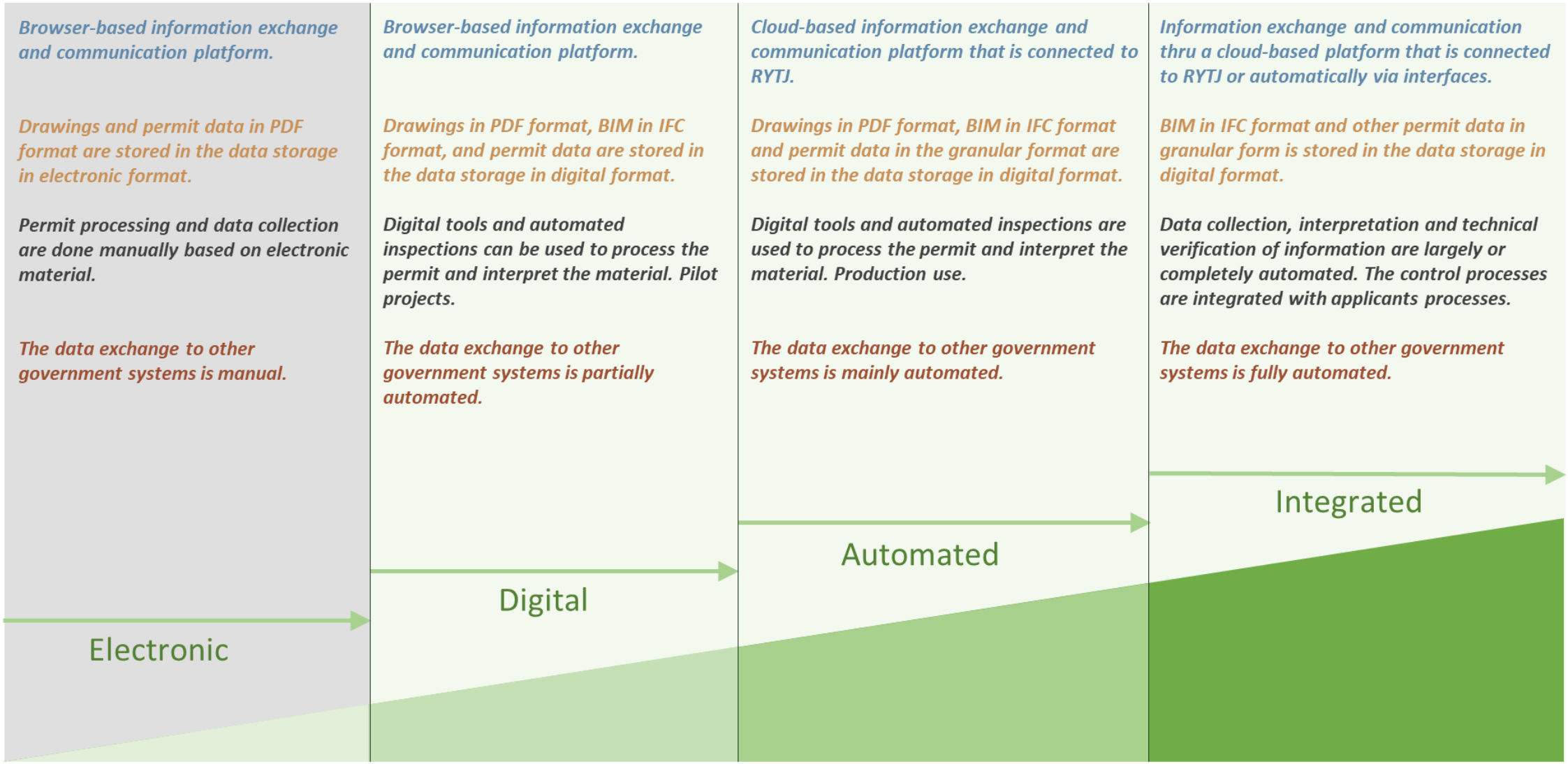
2022
- IFC 4 OpenBIM format approved as a permanent archiving format by The National Archives of Finland (decision 10/2022)
- 15 week BIM coordinator program for building controllers (100 people/year, totally 500, supported by the Ministry 0,3 M€/year)

2023
- First automated code checking solutions (Cloudpermit, Trimble ePermit)
- Rava3pro (23 municipalities, 1 M€, specifications and tools for automated code checking 22/23)

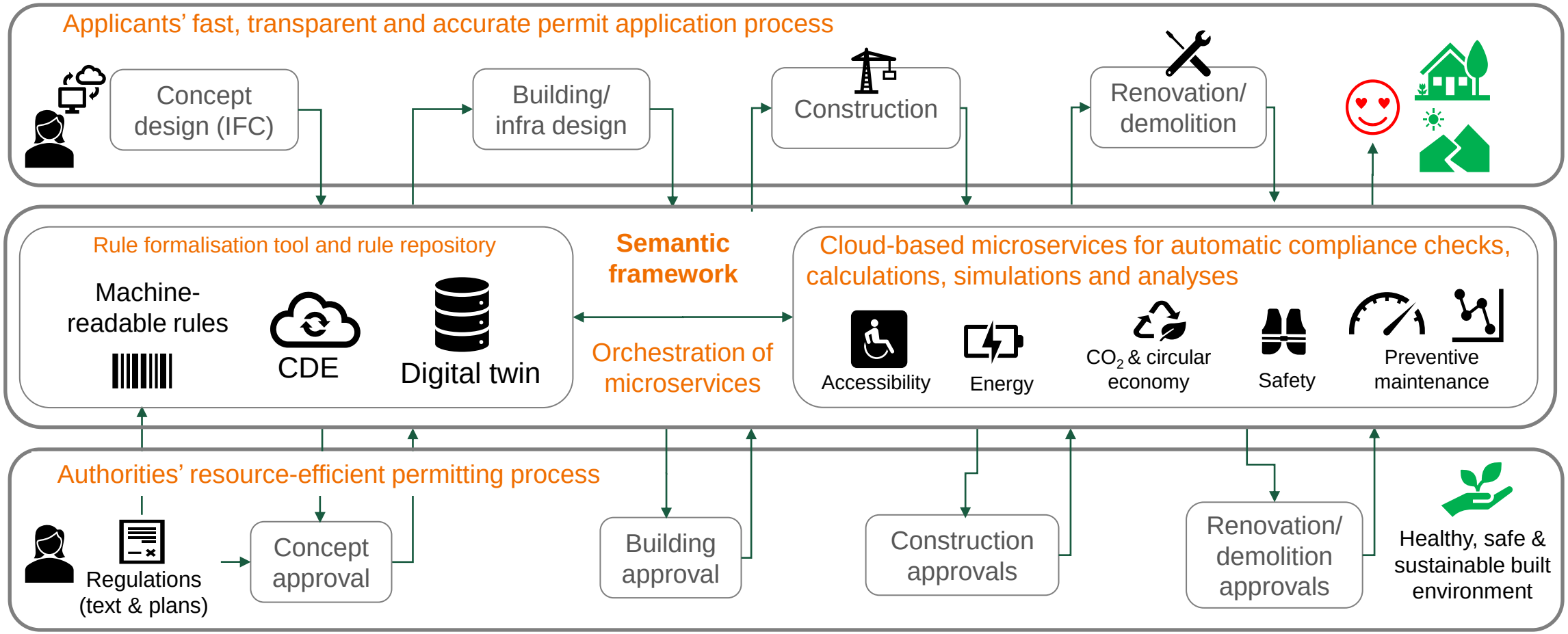
2025
- IFC becomes compulsory for building permits (Building Act 1.1.2025)
- National Building Information Register in use 2024-27, investment cost 20 M€ (2021-24)

2027
- As-built BIM desings stored in National Building Information System Archive 2027.
- Detailed Information of duildings is also collected and stored in NBIS for the use of state and municipal offices needs. Some of the information can be given for private organisations and in general use.

Towards BIM-Based Building Permit



Transparent & resource-efficient BIM-based permitting process



BIM definition roadmap for BIM Building Control

Semantic interoperability theme groups

Collaboration platform ontologies, code lists and data models

Digital

- Building control specifications
- Common BIM Requirements COBIM2020
- International requirements
- Development of international standards
- Updating and implementing the guidelines

→ BIM data is standardized to comply with Building Act 5.2.1999 / 132

Automated

- IFC is certified by the National Archives of Finland
- Builded enviroment data requirements (RYTJ)
- International requirements
- International IFC development
- Development of ISO/CEN standards
- Implementation and guidance

→ BIM data is standardized to comply with MRL2023 and RYTJ MVP

Integrated

- Development of machine-readable regulations
- Ensuring the technical compatibility between BIM data and regulations
- Piloting
- Implementation and guidance

→ Checking of BIM-based building permit against regulations is automated

BIM MODEL BASED BUILDING PERMIT PROCESS

ACCORD

RYTJ
(BUILT ENVIRONMENT INFORMATION MODEL)

CITY MODEL

INTEGRATED IFC CHECKER

Zoning and city planning phase

Building permit phase

Construction phase

Use and maintenance phase

Development and renovation

IFC

IFC-MODEL
ARCHITECTS PLANS

BUILDING PERMIT

e-service

INTRODUCTION (ARCH, CONST, HVAC)
AS BUILT IFC MODELS

Changes or renovation?

DATA COLLECTED FROM CONSTRUCTION PHASE
- CONSTRUCTION WORK STARTING ANNOUNCEMENT
- RESPONSIBLE WORK LEADER NAMING / - CHANGES
- WORK PHASE REVIEWS (MEASURED TO THE PLACE, GEOLOGICAL, FRAMEWORK ...)

AS BUILT MODELS AS PREQIOSITIES FOR INTRODUCTION / USE
- ARCHITECTURAL-, CONSTRUCTION- AND HVAC-MODELS
- AUTOMATED CHECK ACCORDING TO THE PROPERTYSETS, ENTITIES AND USE CASES DEFINED

OWNERS RESPONSABILITY TO MAINTAIN INFORMATION MODEL UPDATED
ISSUES WITH NO NEED FOR A PERMIT PROCESS

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Thank-You

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