

Who

From French mapping agency (IGN) and laboratory LaSTIG, Paris, France. Team 'MEIG' Mediating geographic information

Focus on geospatial data infrastructure, information brokering, semantic Web, metadata, integration, quality



LaSTIG – ENSG - IGN

Interest in Digital Building Permits

To support the retrieval of context data (geographical, statistical, climatic) and of regulation

To curate collaboratively a European DBP Knowledge graph (what happens next to the DBP),

To support recommendations for public action

Expertise on the table

- Geographical data and referencing systems
- Metadata standards, ontologies
- INSPIRE

Expertises	Research	Gover nment	Practice	Sw devlp.
3Dcity models	✓			
BIM				
GeoBIM, standardization, interoperability	✓			
AEC				
Planning, regulations				

National Land Survey of Finland

Who

National Land Survey of Finland

National cadastral and map data authority. Focus on creating trustworthy, high quality data and promoting interoperability and harmonization of spatial data between multiple stakeholders.



<https://mapchart.net/europe.html>

Interest in Digital Building Permits

- Updating nation-wide 3D data repository with high level-of-detail models obtained from IFC-models
- (Spatial) data quality and related QA
- Address data (entrances)

Expertises on the table

- 3D city models, related standards and guidelines
- 3D spatial data acquisition and processing

Expertises	Research	Gover nment	Practi ce	Sw devlp.
3D city models		✓		
BIM				
GeoBIM, standardization, interoperability				
AEC				
Planning, regulations				

Czech Standardization Agency (ČAS)

Who

Stepanka Tomanova (mirror committee of CEN/TC442)

Part of the team supporting the BIM strategy concept based on the [document describing the state](#) of the BIM implementation in Europe and in the Czech environment, lists the key BIM issues that need to be addressed, and contains a BIM Schedule for the phasing-in of BIM in the years 2018-2027, including recommended measures so as to use this method in a routine and efficient manner..



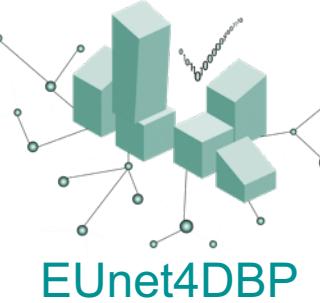
Interest in Digital Building Permits

- Digital permit application,
- data/model standards,
- design validation,
- modelling guidelines,
- GIS and BIM integration / georeferencing.

Expertises on the table

- BIM software / MEP modelling,
- IFC,
- needs of product data,
- localisation of software,
- translation of the standards,
- communication with the administration.

Expertises	Research	Gover nment	Pract ice	Sw devlp.
3Dcity models				
BIM				✓
GeoBIM, standardization, interoperability		✓	✓	
AEC			✓	
Planning, regulations		✓		



Who

From University of Ljubljana (SI)

Focus on **GIS-technologies** and **geospatial data processing** (from geospatial data acquisition, to 3D data modelling) for better **3D city and landscape models / 3D-GIS**



RG Geoinformatics and Real Estate Management – UNI Ljubljana



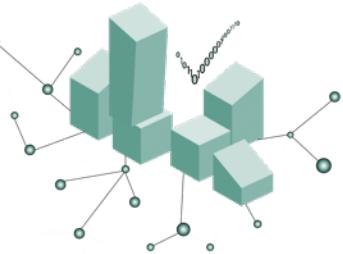
Interest in Digital Building Permits

- *3D geospatial data modelling, data integration (BIM / GIS)*
- *3D GIS as support for decision making from building permit issuing to real estate registration using open standards and open technologies*
- *Geospatial data quality and interoperability*

Expertises on the table

- 3D geospatial modelling using various data sources/standards (point-clouds, CityGML, IndoorGML etc.)
- BIM (focus on geometry representation and topology)
- Data interoperability, geospatial ETL
- GeoBIM
- Land Administration Systems (LAS), 3D-LAS

Expertises	Research	Government	Practice	Sw develop.
3Dcity models	✓			
BIM				
GeoBIM, standardization, interoperability	✓			
AEC				
Planning, regulations	✓			



EUnet4DBP

swisstopo

Who

Swiss mapping agency swisstopo

Focus on the exchange of information between BIM and geographical information systems (GIS).
Aims at designing, developing, and implementing better systems to model buildings, and landscapes.



<https://mapchart.net/europe.html>



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Bundesamt für Landestopografie swisstopo
Office fédéral de topographie swisstopo
Ufficio federale di topografia swisstopo
Uffizi federali da topografia swisstopo

Interest in Digital Building Permits

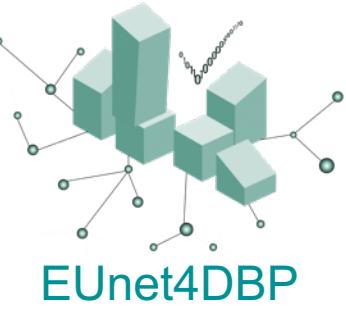
Integration of BIM data in official geodata, through open standards, automating of building permits

(Spatial) data quality

Expertises on the table

- national geodata
- GeoBIM (infra, georeferencing)
- Industry Foundation Classes (IFC) standard

Expertises	Research	Gover nment	Practi ce	Sw devlp.
3Dcity models				
BIM				
GeoBIM, standardization, interoperability		✓		
AEC				
Planning, regulations		✓		



BIM/BEM/IoT Research – UNIBS



Who

Silvia Mastroleombo Ventura, Lavinia C. Tagliabue and Angelo L.C. Ciribini

From [University of Brescia](#) (ITA).

Focus on process-related digital innovation working on design/ construction management and in-use procedures and workflows involving BIM, BEM and IoT technologies.



Interest in Digital Building Permits

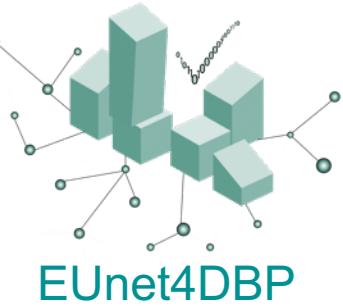
BP process re-engineering for the implementation of digital innovation (e.g. BIM/GIS) to support PA.

Digitally-enabled code checking procedures and workflows.

Expertises	Research	Gover nment	Practi ce	Sw devlp.
3Dcity models				
BIM	✓			
GeoBIM, standardization, interoperability				
AEC	✓			
Planning, regulations				

Expertise on the table

- BIM implementation in PA (process-related issues)
- BIM-enabled design management, model validation and code checking procedures
- Building Energy Performance, BIM-BEM interoperable workflow, Building Sustainability, nZEB
- IoT-based facility management (eLUX lab <https://elux.unibs.it/>)
- VR implementation for usability-focused design review (process-related issues)



Belgian Building Research Institute (BBRI)



Who

Digital Construction department

Working on all subjects concerning BIM through research projects our main goal is to perform scientific and technical research for the benefit of its members, supply technical information, assistance, advice, innovation and development in the construction sector.



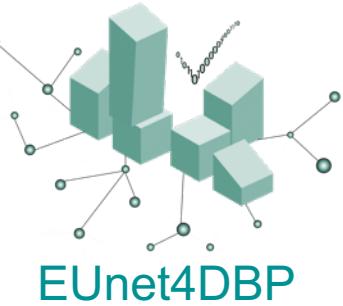
Interest in Digital Building Permits

Digital permit application and proof of concepts
Modelling guidelines
GIS and BIM integration

Expertises on the table

- BIM technologies:
 - Modelling,
 - Classification standards,
 - IFC
- Plugins developments
- AR/VR
- Industry Foundation Classes (IFC) standard

Expertises	Research	Gover nment	Practi ce	Sw devlp.
3Dcity models				
BIM	✓			✓
GeoBIM, standardization, interoperability				
AEC				
Planning, regulations				



Who

From Istanbul Technical University (ITU), Turkey.

Focus on geodesy, surveying, photogrammetry, remote sensing, spatial information systems, global positioning systems, cartography, and database management systems.



Geomatics Engineering – ITU

İTÜ



Interest in Digital Building Permits

To create a framework including the use of digital building models (formatted in IFC, CityGML, etc.) for both building permit processes and 3D registration of property ownership as well as updating 3D digital twin city databases in Turkey

Expertises	Research	Gover nment	Practi ce	Sw devlp.
3Dcity models	✓			
BIM	✓			
GeoBIM, standardization, interoperability				
AEC				
Planning, regulations				

Expertises on the table

- 3D city models and related standards
- Industry Foundation Classes (IFC) standard
- BIM (in particular land administration context)

Who

Fraunhofer Italia Research

Support SMEs and public administrations in the construction sector in facing the challenges of digital transformation. Develop information management tools and systems to improve decision making processes.



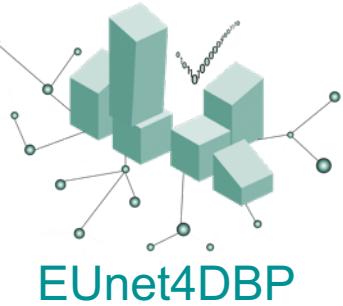
Interest in Digital Building Permits

Integration of 3D geoinformation systems and BIM to develop an open format platform for code compliance checking easy to use and to manage by municipal technician.

Expertises	Research	Gover nment	Pract ice	Sw devlp.
3Dcity models				
BIM	✓		✓	
GeoBIM, standardization, interoperability				
AEC			✓	
Planning, regulations	✓			

Expertises on the table

- BIM – in particular BIM strategies and tools to support the implementation in public administrations.
- BIM – information requirements and strategies to improve the exchange in a CDE perspective.
- Building permit process – as is situation VS to be situation.



Geomatics Group - UCL



Who

Geomatics Group, Dept of Civil Engineering, University College London

Focus on geospatial science – BIM, GeoBIM, 3D GIS, GNSS, Machine Learning/STDM, Geodesy, Sensors, Satellite Geodesy



<https://mapchart.net/europe.html>

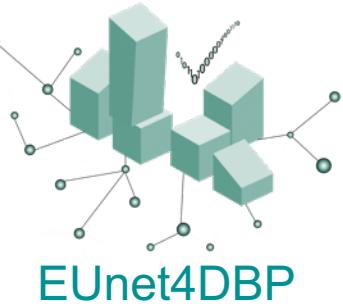
Interest in Digital Building Permits

- Taking the data generated by DPB and re-using it – full lifecycle data management (“no data left behind”)
- (Spatial) data quality and interoperability
- Enabling reuse of data 3D/4D to underpin digital twins and smart Cities

Expertise	Research	Govern ment	Practi ce	Sw devlp.
3Dcity models	✓			✓
BIM	✓			
GeoBIM, standardization, interoperability	✓			✓
AEC	✓			
Planning, regulations	✓			

Expertise on the table

- 3D generalisation (user needs, BIM, Geo)
- 3D city models and 3D spatial databases (topology, user needs, generalisation, data modelling)
- GeoBIM data integration – georeferencing, semantic mapping
- BIM (in particular in infrastructure contexts)
- GeoBIM and Asset Management

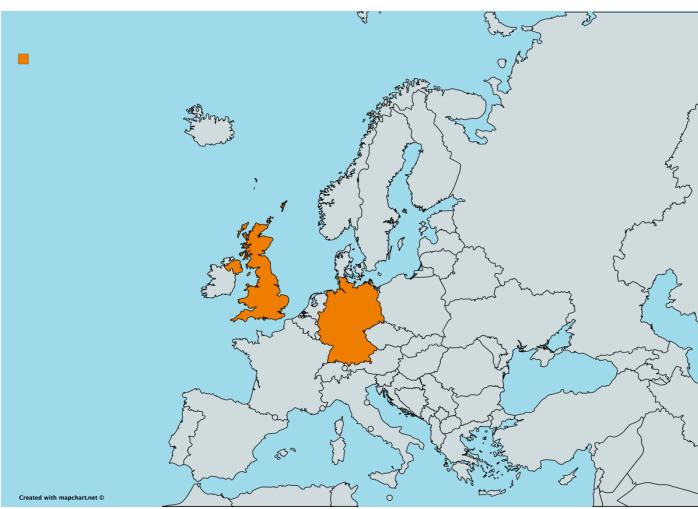


Cogital – Digital Think Thank for AEC



Who: Cogital – UK, Germany

- Think Thank in the Digital Transformation of the AEC Sector
- **Thought Leadership**, Strategy, Venture Capital, Implementation
- Working with **Buro Happold**, **3DRepo**, **Xinaps Verify3D**
- Research with Innovate UK: AEC Delta



Interest in Digital Building Permits

- Greater transparency and openData for better planning, better compliance, better asset performance
- Greater Civic Engagement
- Faster planning for greater ease of doing business

Expertises	Research	Government	Practice	Sw devlp.
3Dcity models				
BIM			✓	✓
GeoBIM, standardization, interoperability	✓		✓	✓
AEC	✓		✓	✓
Planning, regulations				

Expertises on the table

- BIM/GIS Interoperability
- Software implementation
- Reference use cases
- Client pilots
- international links

in partnership with:

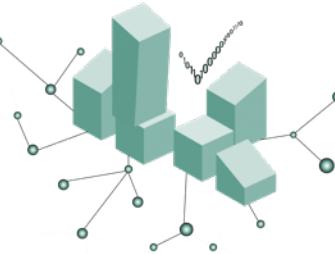
BURO HAPPOLD

Xinaps

3D REPO

**speckle.
works**

JLL



EUnet4DBP

GIS/geomatics group – Lund University, Sweden

Who

GIS Centre, Lund University, Sweden (SE).

Focus on geographic information science and its application on natural and urban processes.



LUND
UNIVERSITY

Interest in Digital Building Permits

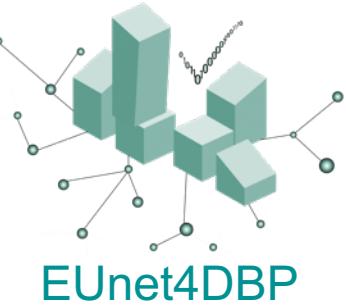
Interested in the utilization and sharing of 2D/3D geodata as part of the digitalisation of the planning and building process in general, where building permits place a crucial part.

Expertises on the table

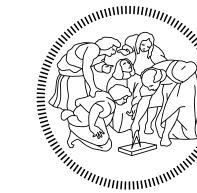
- 3D city models and related standards
- GeoBIM
- Digital detail development plans
- Visualisation

Expertises	Research	Gover nment	Practi ce	Sw devlp.
3Dcity models	✓	✓		
BIM				
GeoBIM, standardization, interoperability	✓			
AEC				
Planning, regulations				

Contact: lars.harrie@nateko.lu.se



DIGITAL ASSET MANAGEMENT GROUP



POLITECNICO
MILANO 1863

Who

Digital Asset Management Group from Politecnico di Milano, Department of Architecture, Built Environment and Construction engineering
Focus on data driven decision making, machine learning, BIM and IoT.



<https://mapchart.net/europe.html>

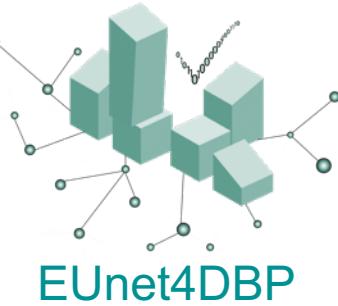
Interest in Digital Building Permits

- DBP data management and re-use (Considering DBP as a part of the City Digital Twin data / transforming data into information);
- GIS and BIM integration.

Expertises	Research	Government	Practice	Sw devlp.
3Dcity models				
BIM	✓			
GeoBIM, standardization, interoperability				
AEC	✓		✓	✓
Planning, regulations	✓		✓	

Expertise on the table

- Building data collection and management (Digital Building Logbook)
- Machine Learning application for strategic asset management decisions
- IoT data collection and use for asset and facility management
- Code/Rule checking
- digital AM service design & development



Who

From Delft University of Technology,
Delft (NL).

Focus on the technologies underpinning
geographical information systems (GIS),
and aims at designing, developing, and
implementing better systems to model
3D cities, buildings, and landscapes.



3D geoinformation group – TU Delft



Interest in Digital Building Permits

Integration of 3D (geo)information systems (3D city models and BIMs), through open standards and open (and F.A.I.R.) technologies.

(Spatial) data quality

Expertises	Research	Gover nment	Practi ce	Sw devlp.
3Dcity models	✓			✓
BIM				
GeoBIM, standardization, interoperability	✓			✓
AEC				
Planning, regulations				

Expertises on the table

- 3D city models and related standards (CityGML, CityJSON...)
- GeoBIM
- Industry Foundation Classes (IFC) standard
- BIM (in particular: geometry representation and validation)



OUR INSTITUTE AND OUR FOCUS

Hannover, Germany (Leibniz Universität Hannover)

member of the TU9 Network

member and founder of the BIM Cluster
Lower-Saxony

engaged in BuildingSMART Germany and regional



Institute of
Construction Management
and Digital Engineering

111
102
1004

Leibniz
Universität
Hannover

BIM-CLUSTER Niedersachsen



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can't be
displayed.



DIGITAL TWINS

- Holistic data management
- Model development and model checking
- 4D, 5D, xD models
- *perspective, with respect to building permits: linking building models with Geo models and city models*



HOLISTIC AND OPEN FORMAT APPROACHES

- Use of BIM models in planning, construction execution and operations
- Experience in various use cases (buildings, railways, road, waterways)
- Open standards/formats (IFC, BCF etc.)

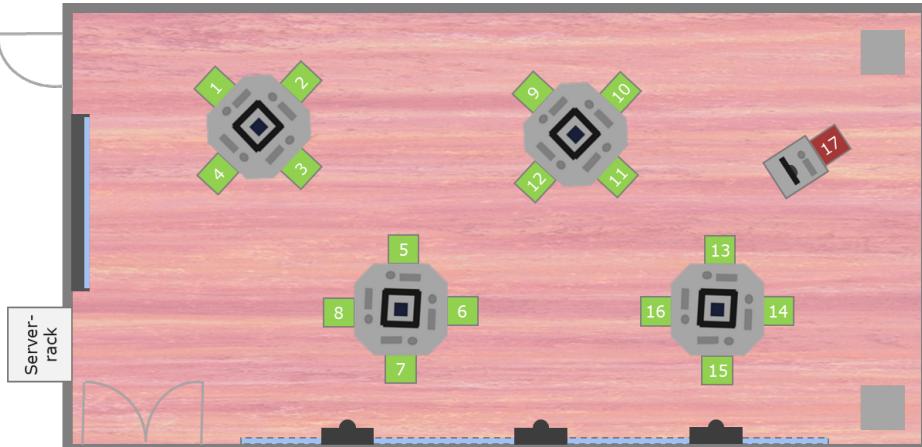


PROCESS MODELS

- Elaboration, analysis and evaluation
- User rights and role concepts in CDE
- Life-cycle overspanning model use

SIMULATION IN Co and VR LAB

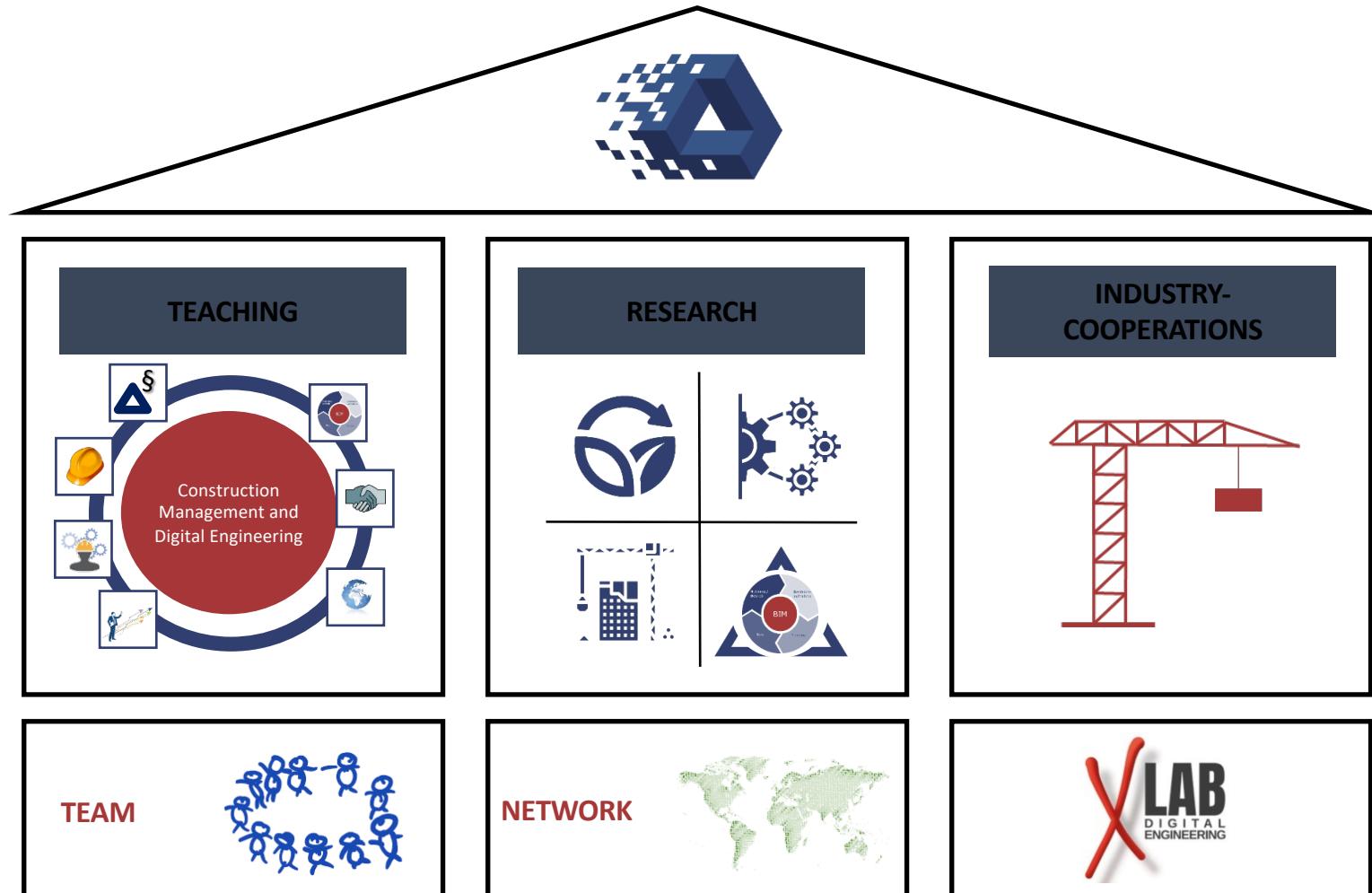
COLLABORATION | COMMUNICATION | DATA EXCHANGE



FEATURES

- **Networked and role-based workstations with a versatile hardware and software environment**
- Closed network environment for **process simulations and process evaluations**
- Different **visualisation and interaction components**
- Use in **teaching, research, qualification** and project kick-offs
- Implementation of **Virtual Design Reviews** in combination with the VR LAB

INTERDISCIPLINARY EDUCATION AND RESEARCH IN BIM COMBINED APPROACHES AND PRACTICE-ORIENTED



Construction Management and Digital Engineering

RESEARCH PROJECTS



ENHANCING SUSTAINABILITY THROUGH DIGITAL DESIGN (ONIB)

- Optimisation of sustainability assessments by integrating specific criteria into the BIM method
- Early pre-certification of sustainability criteria during design phase
- Follow-up project just about to start in 2020



DIGITAL MAINTENANCE OF RAILWAY BRIDGES (DIMARB)

- Development of a digital and preventive maintenance concept for railway bridges
- Use of SHM and holistic data integration in a digital twin based on the BIM approach
- Design of shBIM platform



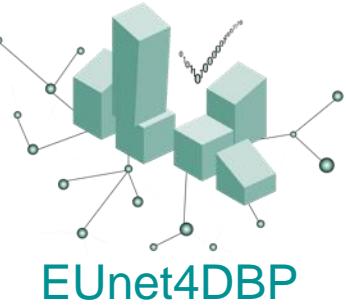
DIGITAL BUILDING PERMIT IN LOWER SAXONY, GERMANY (DIGIKOM)

- All crucial partners included (Building Ministry, Ministry for Inner Affairs – GeoData), Ministry for Economics and 8 pilot municipalities
- supported by the Economics Ministry (funded through their digitization)
- Result of BIM cluster activities



MASTERPLAN BIM RESEARCH AND BIM FEDERAL BUILDING CONSTRUCTION

- Integrated elaboration of the BIM strategy for the Federal Ministry of the Interior for BIM research
- Development of an overall BIM strategy for the federal building construction in cooperation with BIM DEUTSCHLAND



Estonian Building Registry



REPUBLIC OF ESTONIA
MINISTRY OF ECONOMIC AFFAIRS
AND COMMUNICATIONS

Who

Ministry of Economics Affairs and Communications, Housing and Building department, Estonia.

Developer of Building Registry, digital building permit system, digital twin, e-construction platform



<https://mapchart.net/europe.html>

Interest in Digital Building Permits

Applying BIM and 3DCity models into practice, integrating the processes between the two and creating a holistic platform for the built environment

Expertises on the table

Already working digital building permit system for 4+ years.

Open standards – IFC, CityGML, CCI

Piloting and prototyping experience with 3DCity models and BIM-based building permit checks

Expertises	Research	Gover nment	Practi ce	Sw devlp.
3Dcity models		✓	✓	✓
BIM		✓	✓	
GeoBIM, standardization, interoperability		✓	✓	✓
AEC		✓	✓	
Planning, regulations		✓	✓	✓