

EuroSDR GeoBIM project

National Mapping Agencies



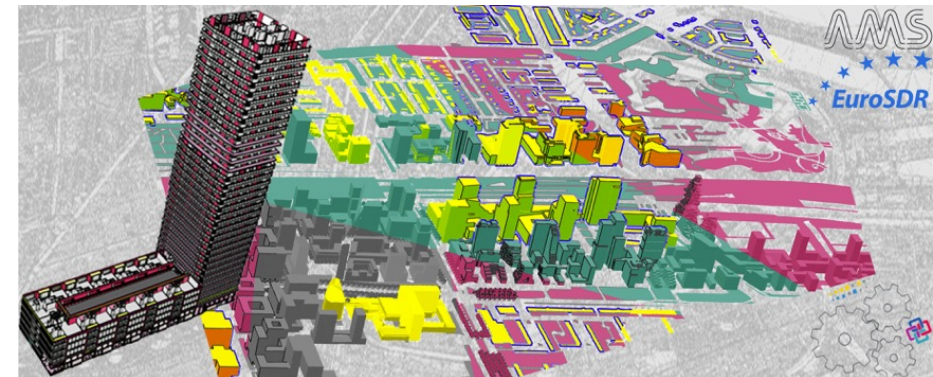
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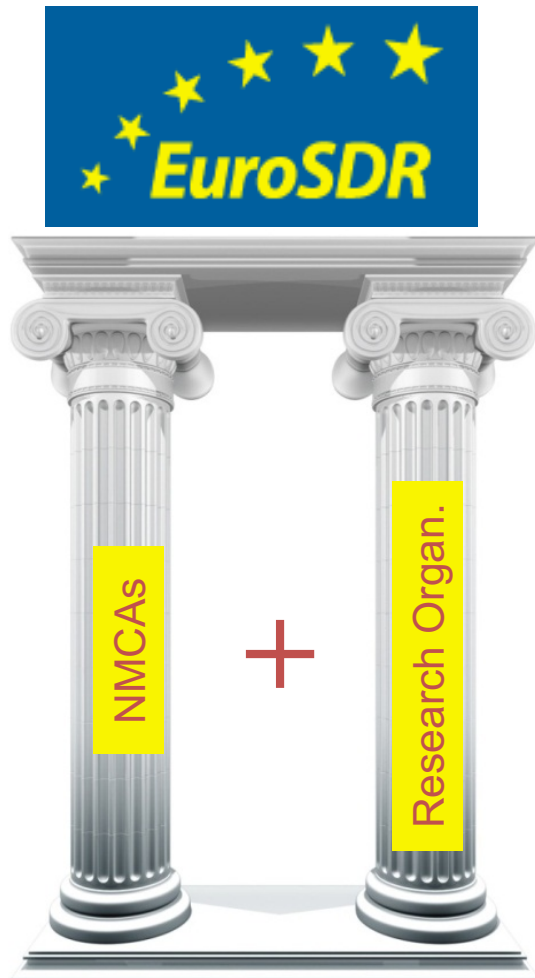
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EuroSDR – European Spatial Data Research



- Non-profit organization since 1953
- Brings together NMCAs and academia in Europe
- Aim:
 - jointly perform applied research
 - provide educational activities
 - 20 member countries
- Members are NMCAs & Research / Academic institutes

The EuroSDR GeoBIM project

National Mapping and Cadastral Agencies (NMCAs)



Universities



Collaboration started in 2017

Aim:

to understand issues that hinder use of NMCA data in BIM domain; to develop initial solutions accordingly

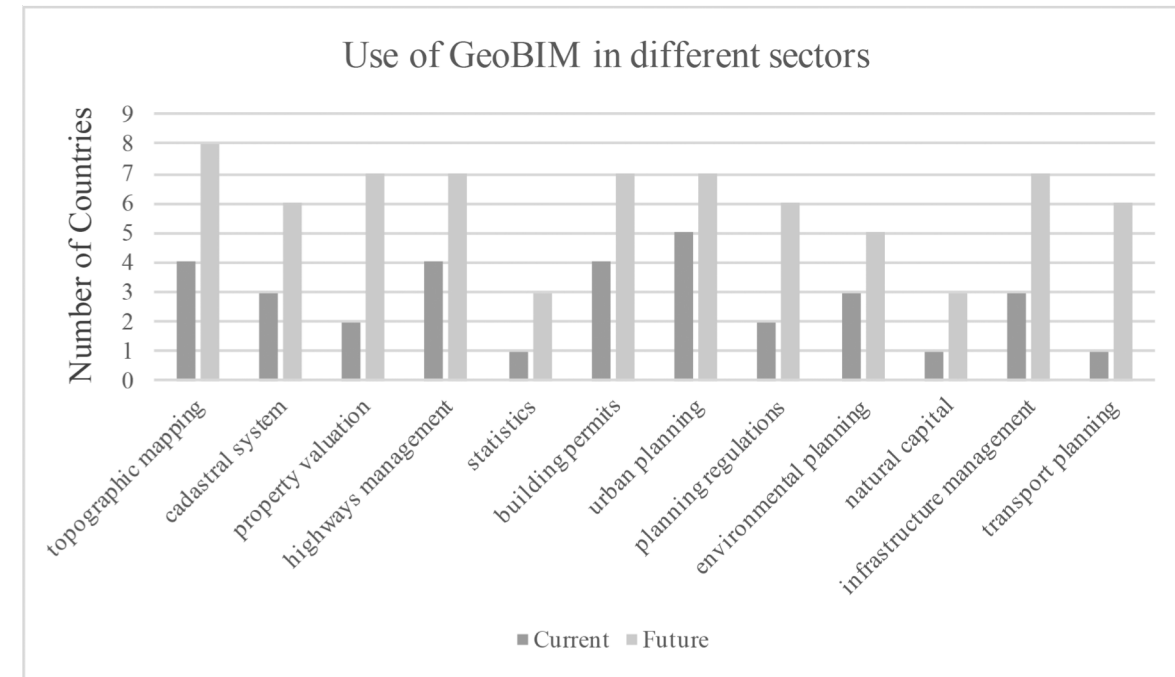


Phase 1: Investigating the state of play of GeoBIM Across Europe (2017-2018)

Questionnaires in the participating Countries to assess **the current status of use, awareness and activities** related to the use of integrated geoinformation and BIM. Pointing out challenges.

Table 1. Summary of GeoBIM challenges identified by respondents.

	Organisational-level	National-level
Non-technical	<ul style="list-style-type: none"> - lack of knowledge, expertise and focus on GeoBIM; - lack of clarity of the role of an NMCA in the context of BIM; - lack of clarity of the role of BIM in existing tasks such as urban planning - slow adoption of new technologies; - lack of available BIM data; 	<ul style="list-style-type: none"> - lack of awareness, knowledge, and expertise regarding what GeoBIM is, especially among top-level decision makers; - lack of a national strategy; - lack of investment; - parallel initiatives (sometimes carried out by competing entities) due to the lack of coordination between GIS and BIM entities.
Technical	<ul style="list-style-type: none"> - lack of interoperability (e.g. with systems such as transport modelling); - disciplinary divide between architects, engineers and geographers; - lack of suitable software; - not harmonised geo- and BIM data 	<ul style="list-style-type: none"> - lack of standards; - different data models; - software incompatibility - absence of software which can support both BIM and Geo data, along with having GeoBIM capability.



- Results published in a paper (2018)



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12 Sep 2018

INVESTIGATING THE STATE OF PLAY OF GEOBIM ACROSS EUROPE

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Keywords: BIM, GIS, Interoperability, GeoBIM, Research Challenges, interoperability, data integration, National Mapping and Cadastral Agency

Abstract. In both the Geographic Information (Geo) and Building Information Modelling (BIM) domains, it is widely acknowledged that the integration of data from both domains is beneficial and a crucial step in facing the multi-disciplinary challenges of our built environment. The result of this integration – which can broadly be termed *GeoBIM* – could answer questions such as identifying an appropriate Heating, Ventilation and Air Conditioning system for a building based on room usage, outside air temperature, solar exposure and traffic pollution or validating whether a proposed built asset meets relevant planning constraints.



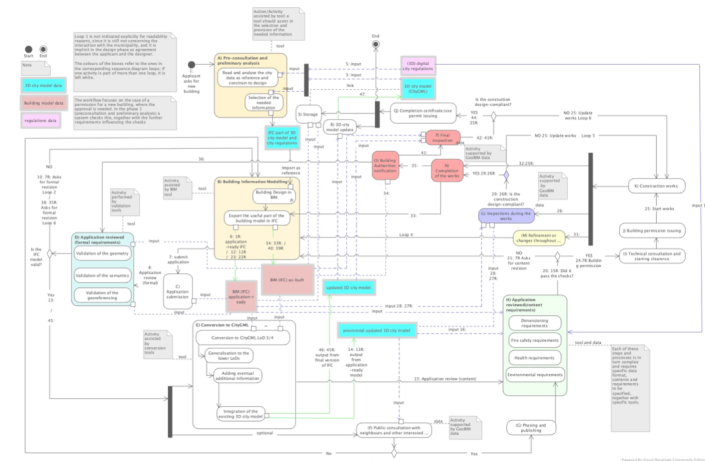
Main conclusion 1st phase

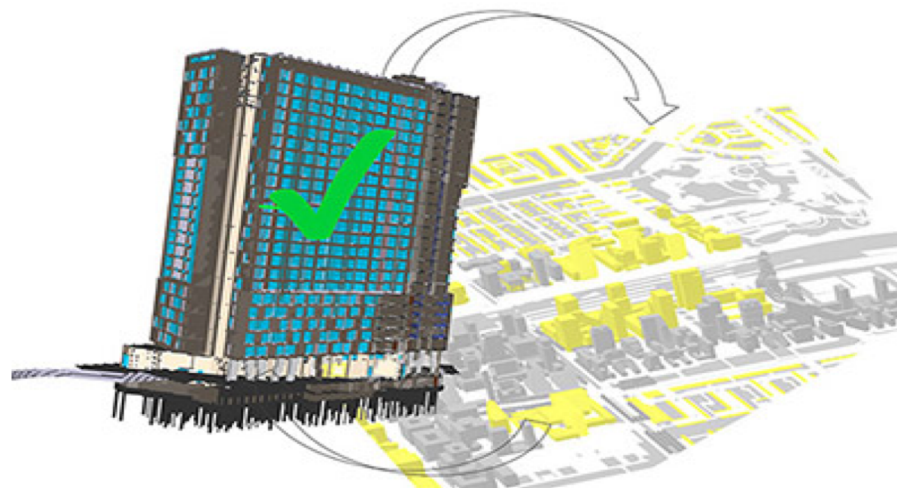
- Knowledge gap exists on how geodata is used in BIM and vice versa and how workflows can be improved by better integration

For two Geo/BIM use cases

- Analyse current workflow
- Study improvements by using better Geo/BIM integration (what data is needed)
- Best practice with data requirements:
 - Semantic (content); geometry; georeferencing; Level of Development; Level of Detail

Led by Francesca Noardo...





GeoBIM for Building permission overview

National Experiences overview

Ireland

Students doing work to automate regulations (e.g. fire regulations implemented as Revit templates, accessibility rules implemented with Dynamo)

UK

Submission of 2D PDF
Work on Urban planning and BIM
UK Future Cities Catapult report

France

Simulation of urbanism rules
Started project (CityGML, building exterior)
SimPLU web tool provides error (warning) report
Sponsored FutureCityPilot
working group for national 3D geodata standard

The Netherlands

Kadaster and municipalities working for automating building permissions with (geo)BIM

Denmark

Project 'Indoor geography'

Norway

project 'ByggSøk' on-going

Sweden

Smart Built Environment
(many funds): industry, construction, **GeoBIM**
Project for building permits:
Får jag lov?

Finland

Upload of **BIM** available, not mandatory for small projects
3 checks: BIM only, manual, BIM+Geo

Poland

Paper documents, 2D

Slovenia

e-PROSTOR (meaning 'e-SPACE') project aims at the digitalisation of the full process from plan submission (e-PLAN) to issuing the permit (e-CONSTRUCTION).

European Directive 2014/24/EU, strongly encouraging the use of BIM for public projects.
→ In many countries from 2018 a process began towards the **mandatory adoption of BIM** at least for public buildings, generally to be fulfilled *by 2022*



374

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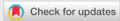
Opportunities and challenges for GeoBIM in Europe: developing a building permits use-case to raise awareness and examine technical interoperability challenges

Francesca Noardo , C. Ellul , L. Harrie , I. Overland, M. Shariat, Ken Arroyo Ohori  & ...show all

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ABSTRACT

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EUROSDR GEOBIM PROJECT A STUDY IN EUROPE ON HOW TO USE THE POTENTIALS OF BIM AND GEO DATA IN PRACTICE

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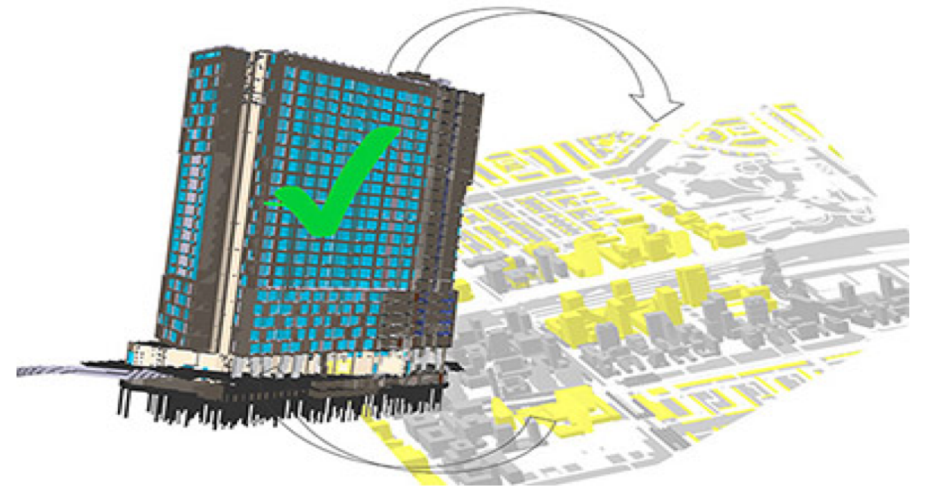
⁴IGN Institut géographique national, France

Keywords: GeoBIM, software support, data interoperability, open standards, 3D city models, BIM

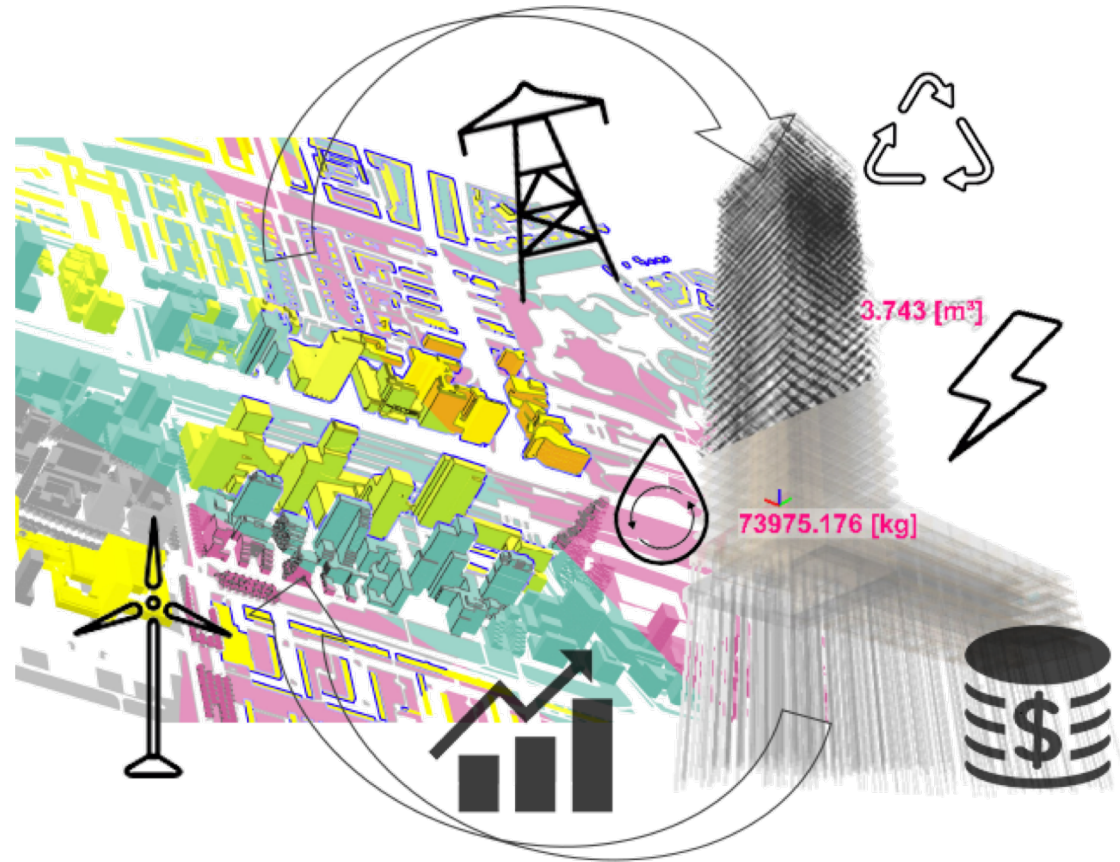
Abstract. In both the Geo and BIM domains, it is widely acknowledged that the integration of geo-data and BIM-data is beneficial and a crucial step in facing the multi-disciplinary challenges of our built environment. The result of this integration – broadly termed as GeoBIM – has a range of potential uses from district study to road safety. However, from the data perspective, this integration raises the question of how to integrate very detailed design and construction data from the BIM domain with contextual geospatial data (both 2D and 3D) that model a very diverse range of aspects of the wider built and natural environment.

1st use case: building permission workflow

More details in Hasim's and Francesca's presentation

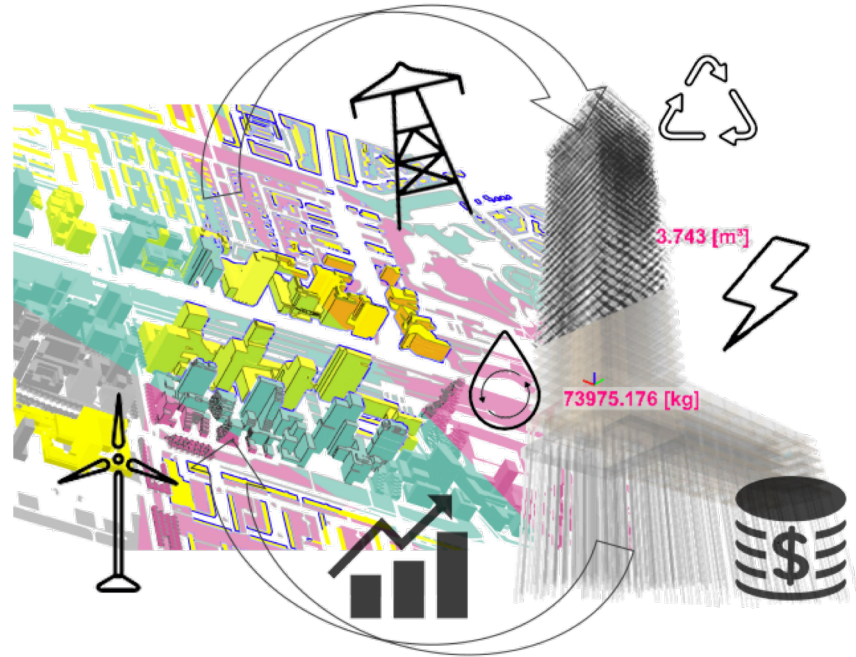


2nd workflow: Asset management



2nd use case: Asset management workflow

More details in Nicola's and Claire's presentation



EuroSDR GeoBIM

Meetings as 'workshops' - Sharing and connecting national GeoBIM efforts



2nd EuroSDR GeoBIM project meeting: 8-9 May 2018, Amsterdam (NL).



4th EuroSDR GeoBIM project meeting: 13th-14th February 2019, Copenhagen (DK).



3rd EuroSDR GeoBIM project meeting: 26th September 2018, Amsterdam (NL).



5th EuroSDR GeoBIM project meeting: 17th-18th June 2019, Lund (Sweden).

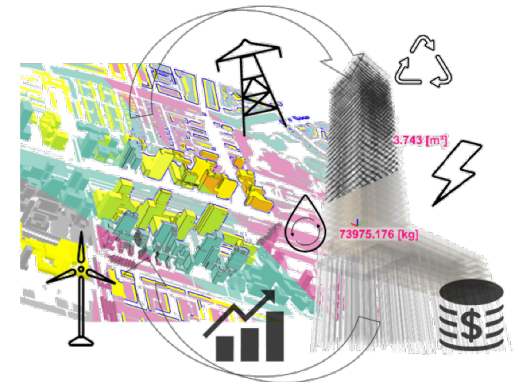


Next planned 6th EuroSDR GeoBIM project meeting: 16-17th January 2020, Amsterdam (NL).

For two workflows, best practices with data requirements:

- Semantic (content); geometry; georeferencing;
Level of Development; Level of Detail

<https://3d.bk.tudelft.nl/projects/euroedr-geobim/>



Thank you!

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