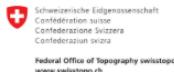


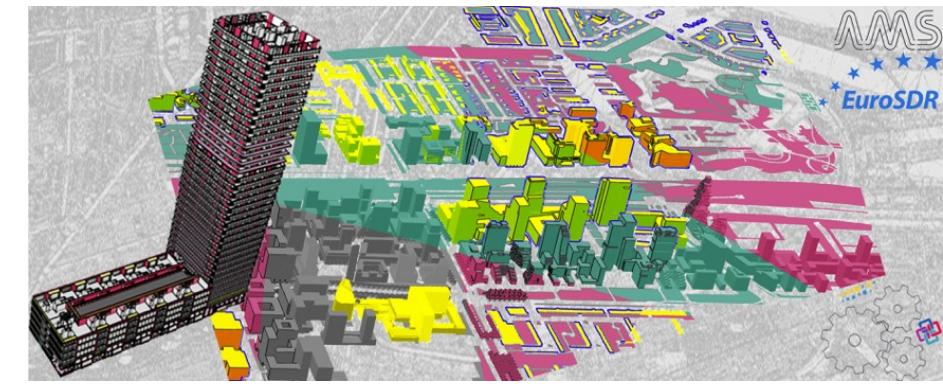


# EuroSDR GeoBIM project

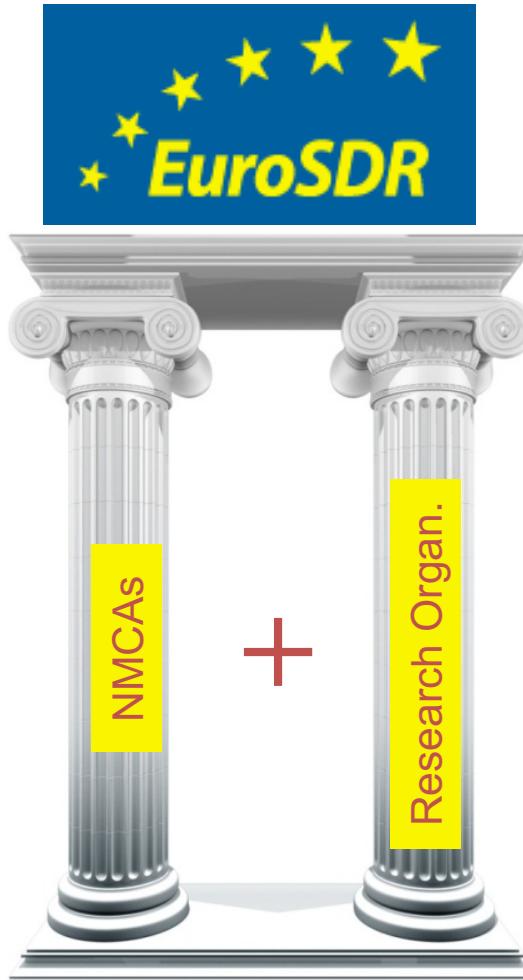
## National Mapping Agencies



## Universities



# 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)



Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederación Suiza  
Federal Office of Topography swisstopo  
[www.swisstopo.ch](http://www.swisstopo.ch)



kadaster



Universities



Collaboration started in 2017

Aim:

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

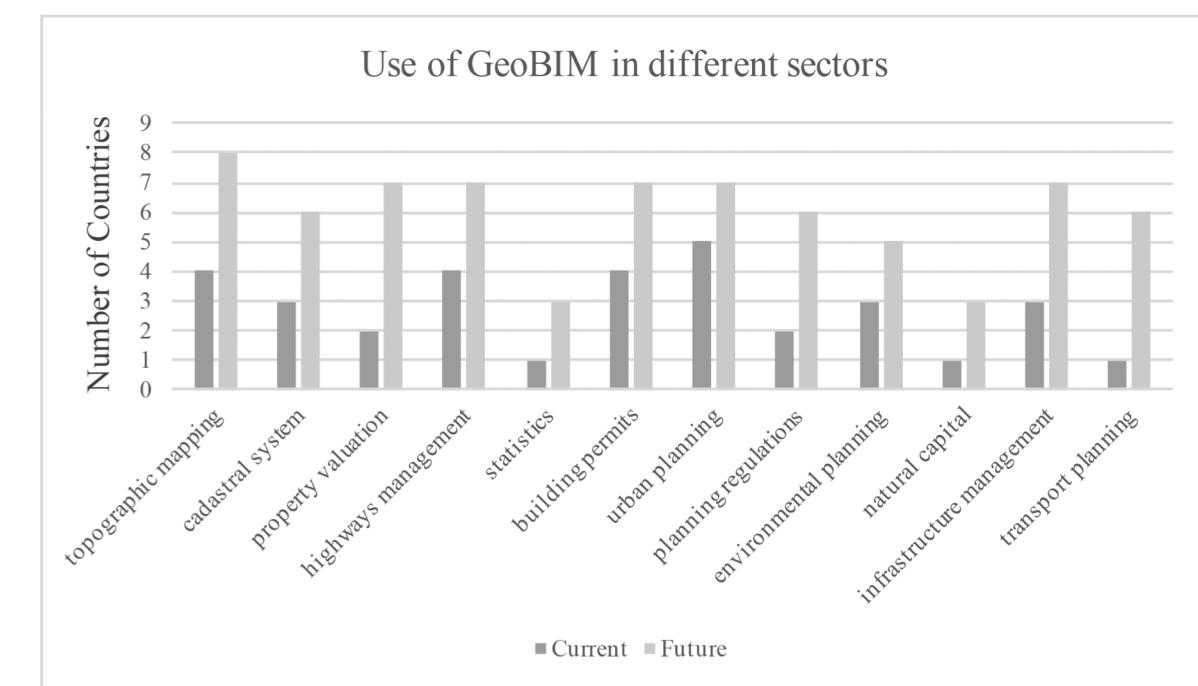


# Phase 1: Investigating the state of play of GeoBIM Across Europe (2017-2018)

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.

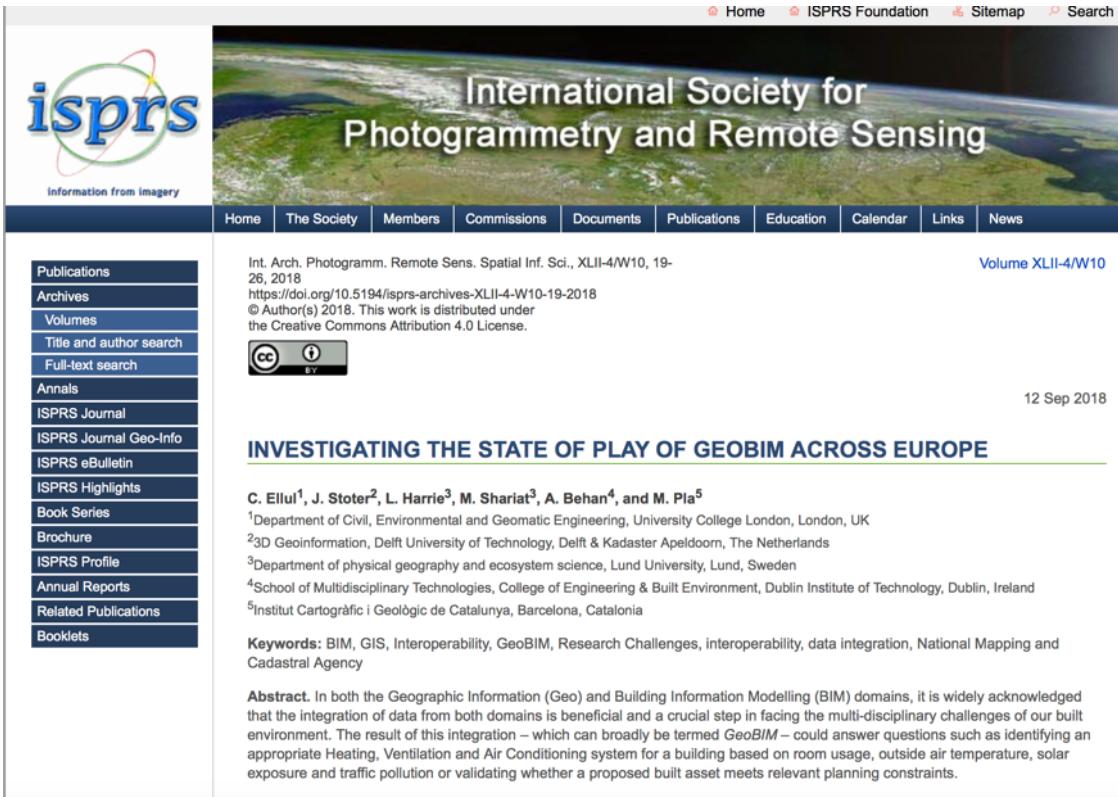
	<b>Organisational-level</b>	<b>National-level</b>
<b>Non-technical</b>	<ul style="list-style-type: none"> <li>- lack of knowledge, expertise and focus on GeoBIM;</li> <li>- lack of clarity of the role of an NMCA in the context of BIM;</li> <li>- lack of clarity of the role of BIM in existing tasks such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



# EuroSDR GeoBIM project Phase I

European Spatial Data Research

- Results published in a paper (2018)



The screenshot shows the ISPRS website with a search result for a publication. The title is "INVESTIGATING THE STATE OF PLAY OF GEOBIM ACROSS EUROPE" by C. Ellul<sup>1</sup>, J. Stoter<sup>2</sup>, L. Harrie<sup>3</sup>, M. Shariat<sup>3</sup>, A. Behan<sup>4</sup>, and M. Pla<sup>5</sup>. The publication is dated 12 Sep 2018 and is part of Volume XLII-4/W10. The abstract discusses the integration of Geographic Information (Geo) and Building Information Modelling (BIM) domains.



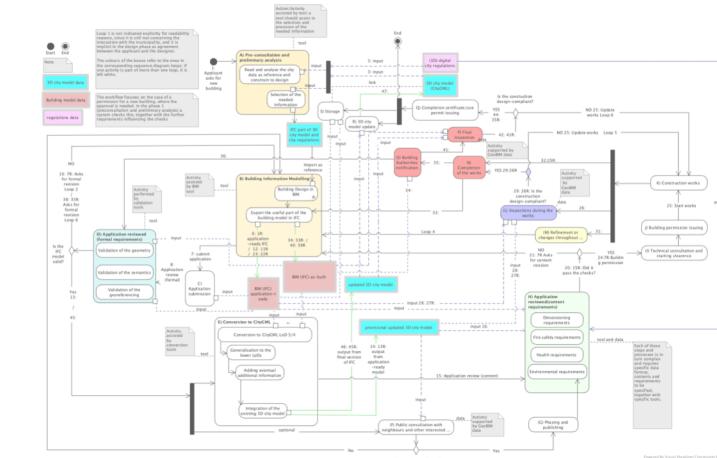
## Main conclusion 1<sup>st</sup> phase

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

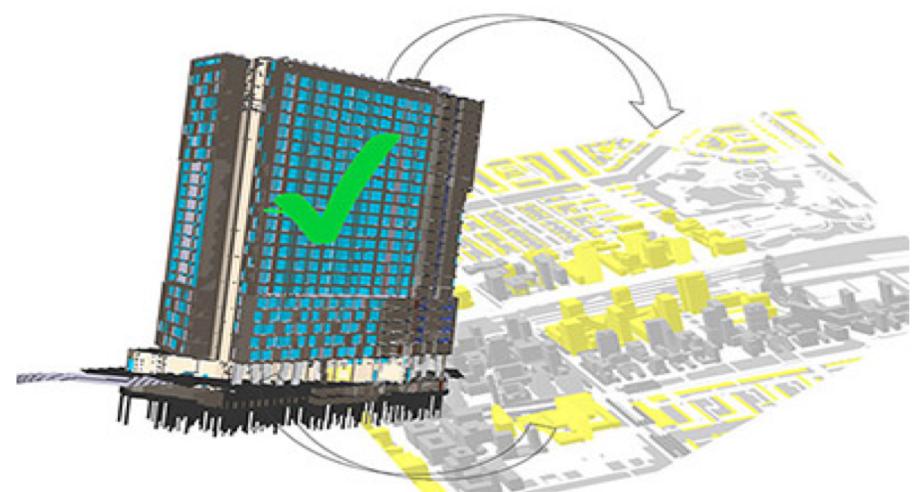
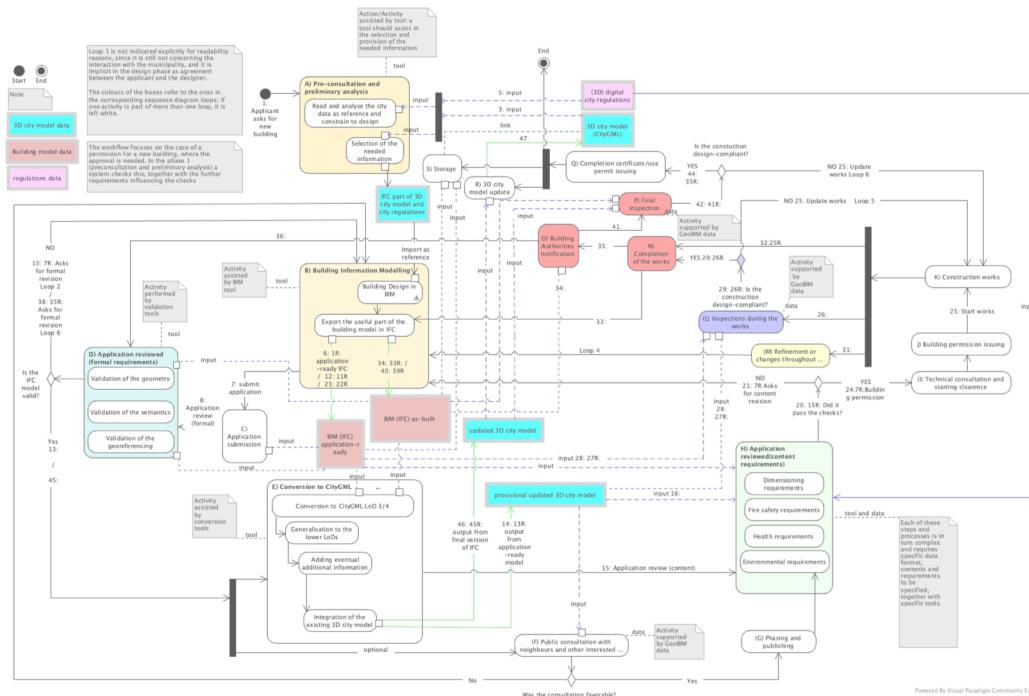
## For two Geo/BIM use cases

- 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...*



# 1st use case: building permission workflow



# 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



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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

Published online: 27 Jun 2019

Download citation <https://doi.org/10.1080/14498596.2019.1627253>

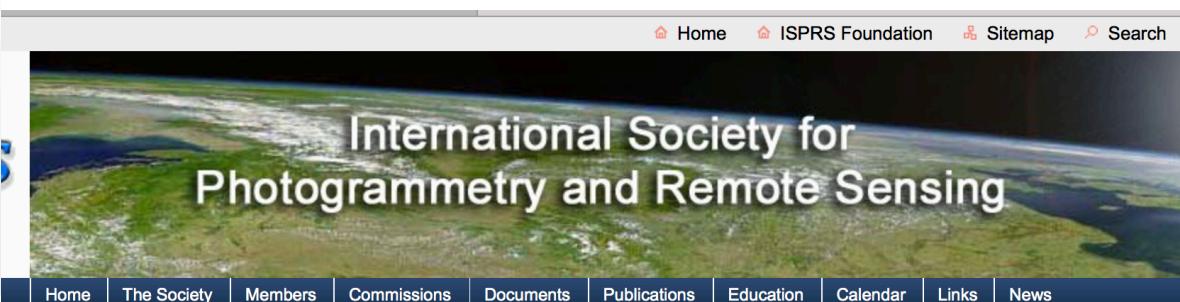
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60, 2019

<https://doi.org/10.5194/isprs-archives-XLII-4-W15-53-2019>

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23 Sep 2019

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

F. Noardo<sup>1</sup>, C. Ellul<sup>2</sup>, L. Harrie<sup>3</sup>, E. Devys<sup>4</sup>, K. Arroyo Ohori<sup>1</sup>, P. Olsson<sup>3</sup>, and J. Stoter<sup>1</sup>

<sup>1</sup>3D Geoinformation research group, Delft University of Technology, Delft, The Netherlands

<sup>2</sup>Dept. of Geomatic Engineering, University College London, Gower Street, London, WC1E 6BT, UK

<sup>3</sup>Department of Physical Geography, Lund University, Lund, Sweden

<sup>4</sup>IGN Institut géographique national, France

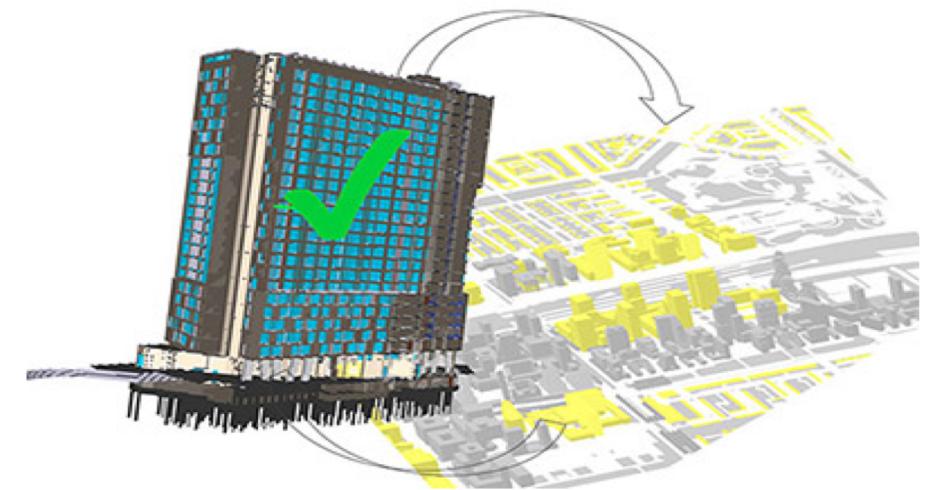
**Keywords:** GeoBIM, software support, data interoperability, open standards, 3D city models, BIM

**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.

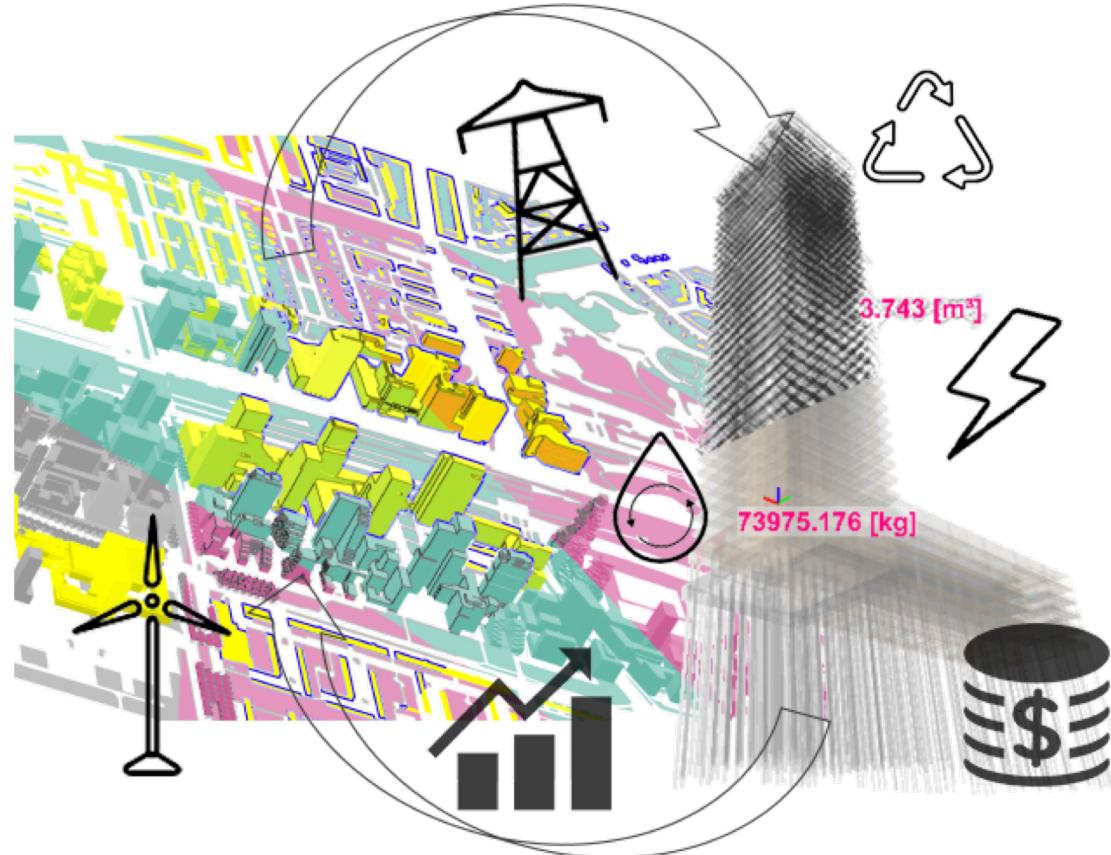
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ISPRS eBulletin  
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# 1st use case: building permission workflow

More details in Hasim's and Francesca's presentation

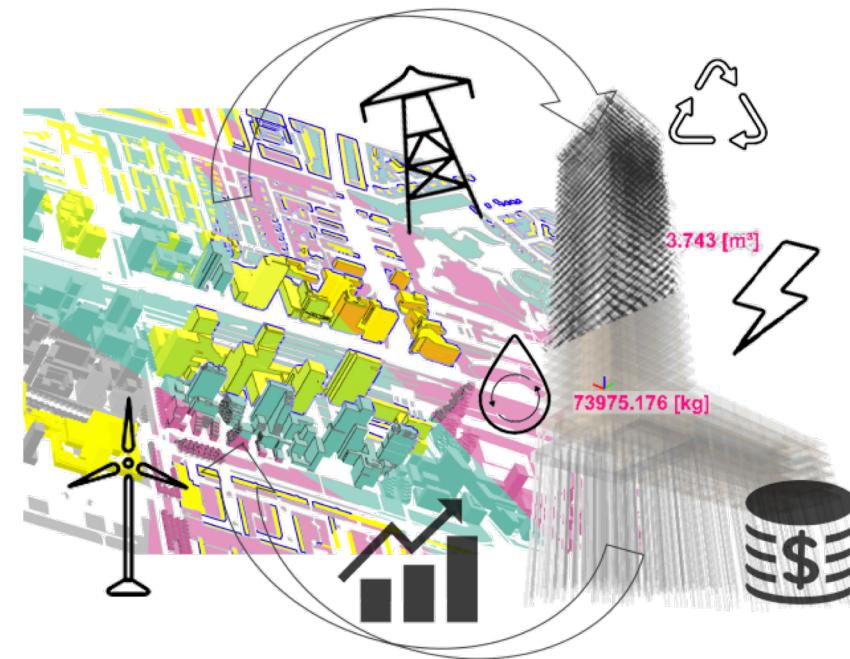


# 2nd workflow: Asset management



## 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***



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



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



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



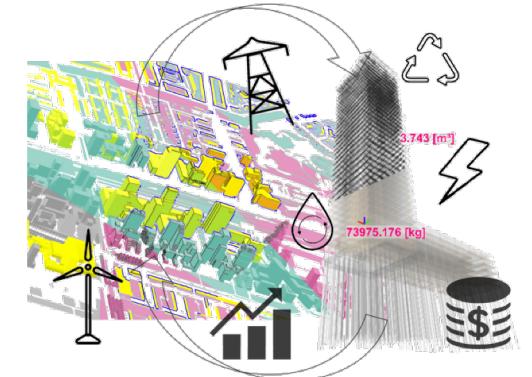
5<sup>th</sup> EuroSDR GeoBIM  
project meeting: 17<sup>th</sup>-  
18<sup>th</sup> June 2019, Lund  
(Sweden).

Next planned 6<sup>th</sup> EuroSDR GeoBIM project meeting: 16-17<sup>th</sup> 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/eurosdr-geobim/>



Thank you!  
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