

Could we rethink the French building legislation



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Developing the use of BIM : A legitimate public interest



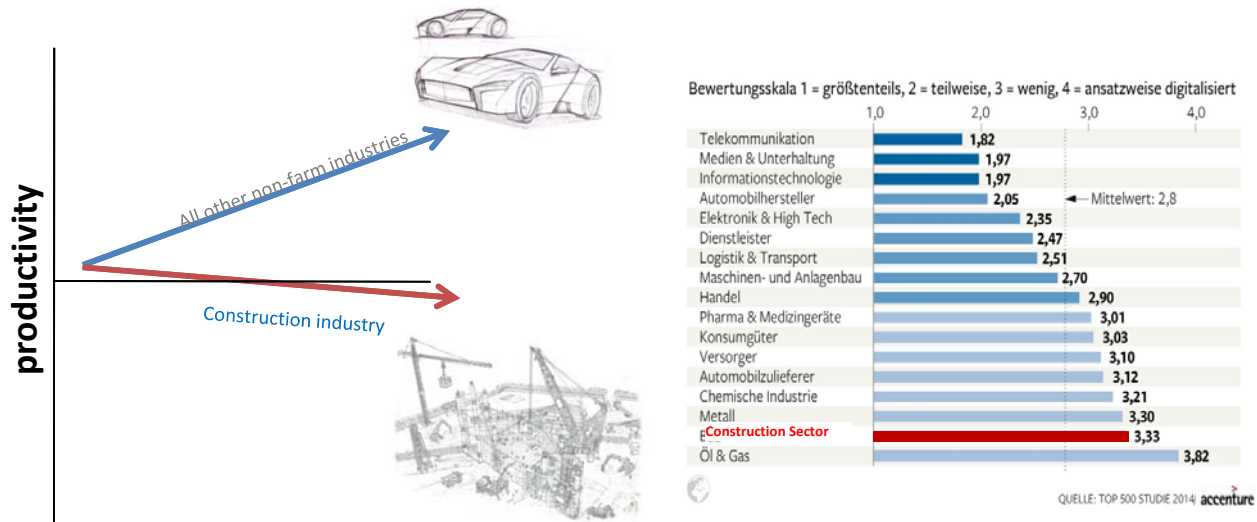
Plan Transition Numérique
dans le Bâtiment

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Declining productivity and low degree of digitalisation

* Example of the German construction sector



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National Digital Programmes

PTNB: Plan for the digital transition in the building industry
Launched in 2014 by the French Minister of housing



Plan priorities

- Convincing and inspiring all stakeholders
- Responding to stakeholders needs for equipment and improved digital skills,
- Develop a trusted digital ecosystem

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A legitimate public interest to...

- Avoid the digital gap between SMEs and other stakeholders .
- Promote open formats / standards while limiting native systems monopolies
- Answer the (real) needs of professionals: simplicity, reliability, security
- Initiate a digital ecosystem dedicated to construction
- Enable future digital public services

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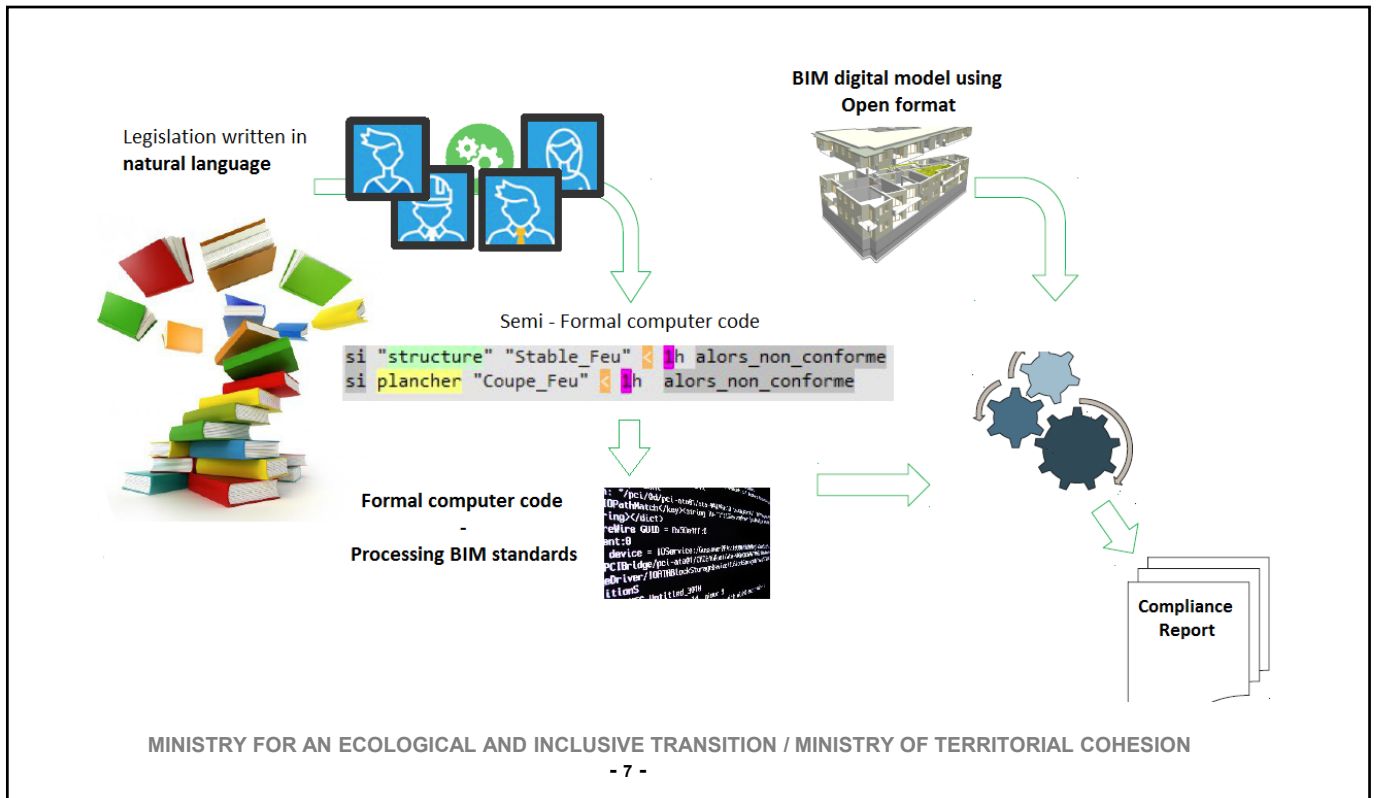
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Experimenting the digitalisation of legislation



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5 different legislations

- **Fire protection**
- **Disabled access standards**
- **Noise protection**
- **Energy and environmental legislation in buildings**
- **Products implementation in buildings**

→ **1/3 of legislations**

Main outcomes

- **Controlled dictionary and vocabulary : Adjust legislation terms & BIM standards**
- **Guidance to design the BIM model**
- **Guidance to ease legislation digitalisation**

Energy & Carbon legislation in the context of BIM



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Context

Digital technology and BIM (Building Information Modeling) must serve the **buildings energy and environmental transition**.

Benefits of the BIM

During the building conception and construction, the BIM is a helpful tool :

- to collect and organize all the buildings data (construction elements and equipment data (dimensions, quantities, cost) and all other technical-economical data, etc.)
- to facilitate the project stakeholders interaction
- to extract specific data and make simulations/calculations thanks appropriated software

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Context

France launched in 2016 a national **trial phase E+C-** for new constructions in order to develop **high energy and carbon performance buildings** and to prepare the future environmental regulation (after RT2012).

Through this trial phase, new buildings will be tested and submitted under several assessments following the reference calculation method established by the ministry :

- Energy consumption assessment (at the operation phase)
- Greenhouse gas emissions assessment through a building lifecycle analysis
- Economical assessment



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Actions in France

In France, several actions have been set up to develop the BIM use in the conception and construction of high energy and carbon buildings :

- **Call for projects « BIM et E+C- »**

- **BIM workshops « ABV »**

>> Is the BIM useful to make more efficient and reliable lifecycle analysis and energy assessments ?

>> Is the BIM useful to make a more efficient and reliable economical assessment ?

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Call for projects « BIM et E+C- »



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•Objectives :

- to select projects that use BIM to make building energy assessment and lifecycle analysis
- to collect feedbacks

•Launched in September 2017 – 20 project candidatures – Ministry financial support in total : 200 000 euros

•January 2018 : 10 projects selected :

- 3 education buildings
- 1 retirement home
- 1 office building
- 5 collective and individual housing (including one with shops)

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BIM workshops “ABV”



Objectives :

- to **compare** at different project phases :
practices using the BIM to do the building energy assessment and life cycle analysis
... with “classical” practices (without BIM use)
- to **evaluate the pros and cons** of practices with BIM use

Several difficulties have been encountered :

Lack of information in the digital model filled by the architects

+ digital model “objects” doesn’t fit correctly the objects defined in the reference calculation method established by the ministry

-> engineering consultants have to modify the model -> loss of time

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And next...

Efforts must be continued to :

- strengthen the reliability and completeness of a building digital model
- make it compatible with the reference calculation method established by the ministry
- develop more effectively software to facilitate the data extraction from the digital model to calculate the building energy and carbon performance

These developments will have to rely on feedbacks of projects that took part at this experiment.

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Rewriting the legislation



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Context and objectives

Bil at the French parliament to simplify relations with civil services

- Proposition to rewrite the legislation on construction rules into **performance objectives**

- Working groups with civil services and stakeholders
- Work to be achieved by the end of 2019

Development of BIM and digital tools has to be taken into account:

- Use of controlled vocabulary to ease implementation of digital control using BIM
- BIM has to be a mean for the developers to prove that they reach performance objectives
 - Construction products and equipment datas to assess energy / carbon performances
 - Controlled softwares to simulate the behaviour of the building.
- Datas to be archived in an observatory
 - Results, hypothesis **and code**

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Thank you

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