



DIGITALIZATION OF THE CONSTRUCTION SECTOR :

AN INCENTIVE POLICY FOR THE DEVELOPMENT OF BIM

Japanese–French workshop on housing
13th –14th May 2025



General overview of the french construction sector

Construction sector :

- account for 5% of gross domestic product (GDP) and 6% of value added (VA)
- mainly involve building (e.g. residential housing, offices, factories, etc. & maintenance/improvement work) and, to a lesser extent, public works (e.g. roads, bridges, tunnels)
- 530,000 companies, 95.8% are very small businesses
- The building sector represents 44% of the energy consumed in France, far ahead of the transport sector (31.3%), and 16% of national CO2 emissions.

Challenges :

- The sector faces many major challenges : productivity, energy and environmental stress, increase of the price of building materials.
- The sector's silo-based working methods are not the most efficient, whereas simultaneous engineering, based on new technologies, has proven its effectiveness in the aeronautical sector for instance.
- Following the 2008 crisis : an in-depth consultation process with housing and construction players is conduct to propose in 2014 a 'shared action plan' to build and renovate 500,000 homes a year, to a high standard of quality and at controlled costs.
 - *Digital technology, or BIM, is clearly identified as a major opportunity to improve the construction process, and cooperation between all players to deliver more housing at controlled costs.*

First regulatory steps

- European Directive 2014/24/EU (Article 22)
- **Rules applicable to communication :**
 - For public works contracts and design contests, Member States may require the use of specific electronic tools, such as of building information electronic modelling tools.
 - The contracting authorities shall offer alternative means of access, until such time as those tools become generally available.
- French Decree of 25/03/2016 (Article 42)
 - The purchaser may, if necessary, require the use of tools and devices which are not commonly available, such as electronic building data modelling or similar tools”
- A mission on the development of digital technology in the building industry
 - A 'Digital Ambassador for the Building Industry' is appointed in 2014 (former Chairman of the CSTB)
 - A wide-ranging consultation of all those involved in the building and property industries is conduct in order to establish the current state of digital practices in the various trades, and to identify best practices and innovative initiatives to be promoted.

'Digital and Building' mission report

- Digital technology is clearly identified as a major opportunity to improve the construction process and cooperation between all the players involved, so that more homes can be built at controlled costs.
- Digital tools are helping to develop a global approach to the building's entire life cycle, optimising interfaces to enable more collaborative working between the various trades.



A collaborative process above all



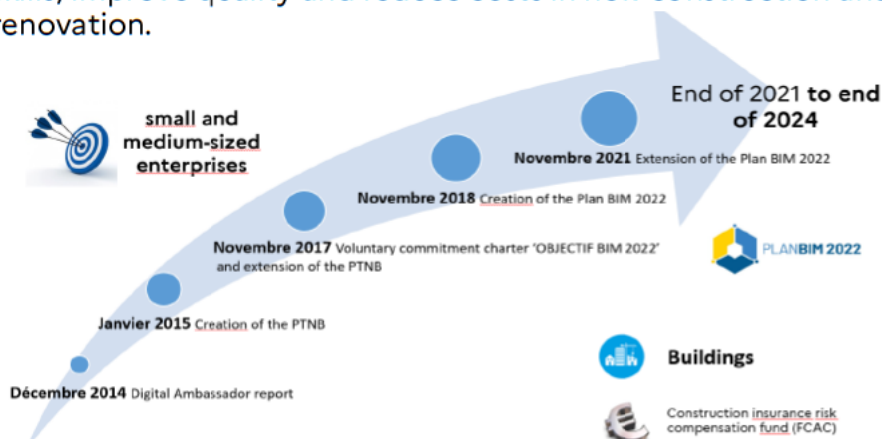
The importance of the life cycle

The Digital Transition Plan for the Building Industry (PTNB)

Building Digital Transition Plan

France has chosen to support the deployment of digital technology in the construction industry.

The **Building Digital Transition Plan (PTNB)** presented in 2014 aimed to modernise the industry, encourage professionals to upgrade their skills, improve quality and reduce costs in new construction and renovation.



Players at the heart of the plan's governance and management

Building Digital Transition Plan

The PTNB has prepared for the deployment of digital technology throughout the construction industry, particularly in small structures, by focusing on 3 guidelines :

- Experiment, capitalise, convince to inspire all stakeholders ;
- Support the enhancement of the skills of professionals and stimulate the development of tools tailored small projects ;
- Develop a trusted digital ecosystem.

Supported with : Digital tools, communication, events, call for projects

BIM tools

Discover ORELIE, the new tool to help you draw up BIM specifications, created as part of the BIM 2022 Plan.

The BIM 2022 Plan will unveil a new tool to help draft BIM specifications on 9 December 2021, following six months of development.



Called ORELIE, this platform is entirely free of charge and has been co-constructed with the various players in the building industry. It is aimed at all project owners, regardless of their structure, their level of BIM maturity or the type of project they are involved in.

Through the support offered by ORELIE, project owners are able to integrate all the theoretical concepts associated with BIM specifications.





 Bâtir avec le numérique



La plateforme de travail collaboratif

 publique et gratuite pour tous les professionnels de la construction

 développée par le CSTB

La plateforme KROQI vous permet de travailler ensemble autour de la maquette numérique à toutes les étapes du cycle de vie du bâtiment, et ainsi de :

- travailler dans un environnement numérique fiable
- améliorer la gestion de votre planning et de vos ressources
- gagner en réactivité et en productivité
- exprimer vos idées.

Accès gratuit, gratuité ARD pour les professionnels de la construction (CSTB, ARD, etc.)

www.kroqi.fr

Un outil associé à un écosystème de services complémentaires et interconnectés, dont :



 eveBIM

Viewer de maquette numérique du bâtiment BIM multi-échelles

 Gratuite et développée par le CSTB, la visionneuse BIM eveBIM® est synchronisable à la plateforme KROQI pour accéder directement aux documents.

 Elle permet la visualisation et la compréhension des maquettes numériques BIM multi-échelles en format standard IFC, CityGML, SHP, etc.

Téléchargement gratuit sur logiciels.cstb.fr

a collaborative working platform

Information media

PLANBIM
Généraliser l'usage du numérique dans le bâtiment

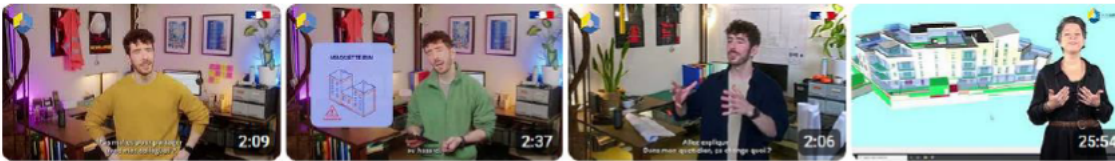
Plan BIM France
@PlanBIM-yb6kx · 16 abonnés · 11 vidéos
Bienvenue sur la chaîne dédiée au Plan BIM. ...plus

Personnaliser la chaîne Gérer les vidéos



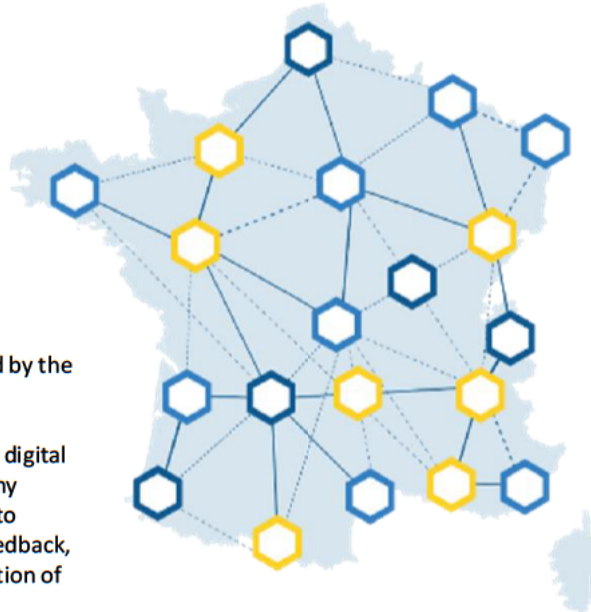
Accueil Vidéos Posts 🔍

Vidéos



BIM#3_L'usage de la maquette numérique en... Vidéo sur les différents types de logiciels. Vidéo d'introduction : « la transition numérique, c'est l... OLYMPI Tuto 03 Etude de prix - Lot Gros Œuvre

Regional events



The BIM Tour is an initiative supported by the French government .

The aim was to share experiences and digital practices in order to encourage as many players as possible to adopt BIM, and to increase the number of exchanges (feedback, training, collaborative work, identification of needs in the field) between local stakeholders.



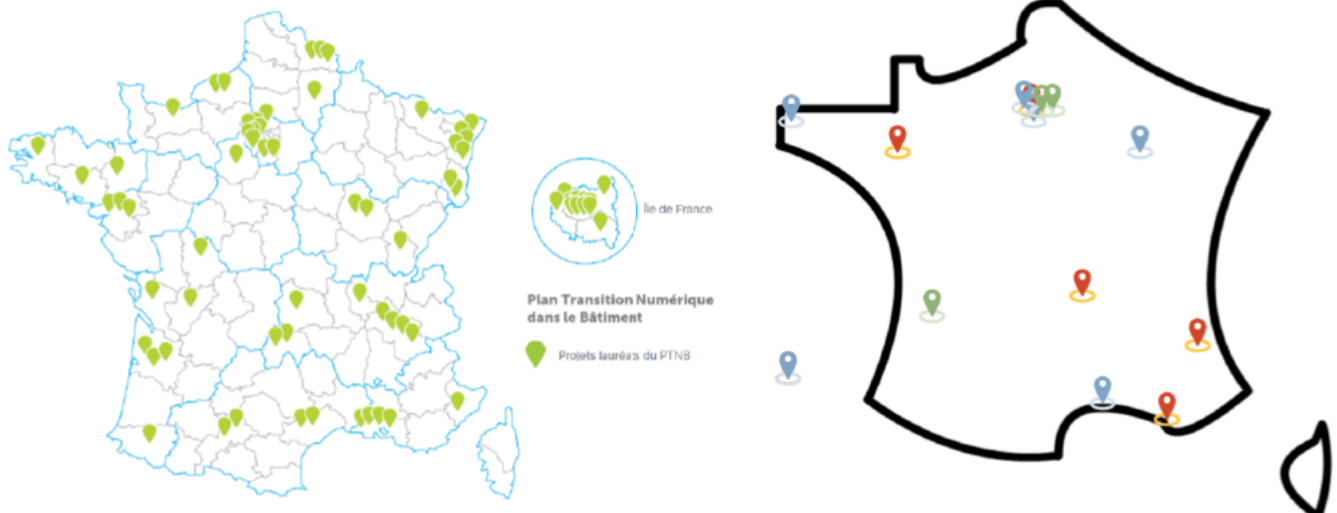
Conferences at BIM WORLD

The screenshot shows the BIM WORLD website interface. At the top, there is a navigation menu with the following items: CONFÉRENCES, EXPOSANTS, INFOS PRATIQUES, THÉMATIQUES (with a dropdown arrow), EN PARALLÈLE (with a dropdown arrow), and a green button labeled S'INSCRIRE. Below the menu is a large banner image of a city skyline at night with the word "NEWS" overlaid. Underneath the banner are four news article cards:

- Card 1:** Features the logo for "Plan Transition Numérique dans le Bâtiment" and "PLAN BIM 2022". The title is "La transition numérique dans le bâtiment selon PLAN BIM" with a date of 13/03/2024.
- Card 2:** Features a landscape image of a river. The title is "Projet GIROS par EGIS : des jumeaux numériques au service de l'Estuaire de la Gironde".
- Card 3:** Features an image of AR glasses. The title is "BIMx, la visionneuse BIM disponible pour Apple Vision Pro !" with a date of 07/03/2024.
- Card 4:** Features an image of two construction workers. The title is "Construction durable : le digital pour bâtir un avenir meilleur" with a date of 26/02/2024.

Calls for projects to stimulate innovation and practices

113 winning projects + 2 demonstrators each involving more than 100 stakeholders



Calls for projects : digital solutions for management, operations and maintenance



Integration and real-time visualisation of sensor data in a BIM hypervisor, with testing on a pilot (tertiary) building.



The project involves creating a supervision interface centred on a BIM digital models for management, operation and maintenance, to facilitate communication and the appropriation of information.



Enhancing the models of Brest Métropole Habitat's assets with a view to adapting them to management operation maintenance.



The project involves helping the Sainte-Marie Foundation, the project owner for the Sainte-Marie Hospital in Nice, to develop its skills in digital models in order to operate, maintain and service its future building.



Using digital technology to reduce energy consumption in old existing buildings and recommend thermal renovation work.



Creation of GEM-oriented digital models based on design elements, with testing for a new housing project in partnership with all those involved in the construction phase.

Calls for projects : digital technology for construction sites



Use of the BIM model and virtual immersion by people not used to handling BIM tools (site managers, team leaders and site workers).



Implementation of a BIM approach on the worksite (single mock-up, monitoring of controls and digital file of completed works), involving the training of craftsmen.



The project involves testing the interoperability between planning and site resource management tools and the digital model, integrating 4D and 5D.



The project involves developing the use of BIM for site monitoring in three areas: producing digital site installation plans, monitoring bills of quantities for invoicing purposes and monitoring inspections.



The project involves developing the use of a single BIM platform for monitoring and organising construction sites (Clune) on NGE Bâtiment's construction sites.

Call for projects : using digital technology to improve environmental performance



Translating regulatory requirements into data sets.



BIM makes it possible to simulate different scenarios and analyse their impact on the project.



The project involves consolidating the 'MOPEEE' method (Open Environmental, Energy and Economic Prescription Modelling)

Call for projects : Using digital technology to process building permit applications

Aim to demonstrate how the use of a digital model coupled with the implementation of software(s) for self-checking and checking compliance with town planning regulations and the main building regulations (accessibility, safety, thermal regulations, etc.) can improve efficiency, resulting in a win-win situation for both the applicant and the Inspector.



Reference : PBIM-01-24

Published on 10 June 2024
Closed on 14 October 2024

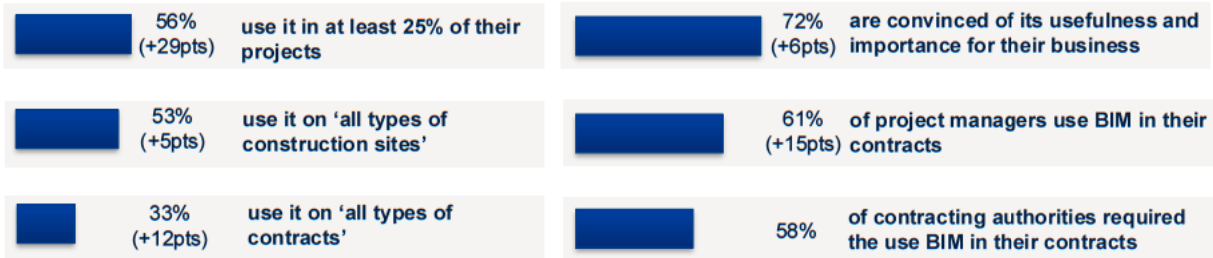
10 years on, what results on the use of BIM ?

Barometer on the use of digital technology and BIM among construction professionals

The results of the 2024 Barometer

Those who use BIM are developing their practices!

Those who use BIM ...



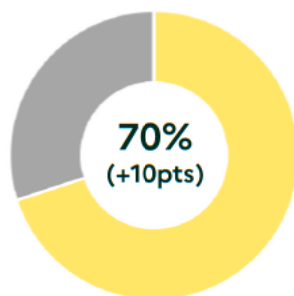
Barometer on the use of digital technology and BIM among construction professionals

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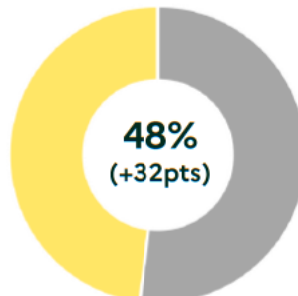
But BIM is still not widely used in the industry

The main obstacles to the development of BIM according to the players :

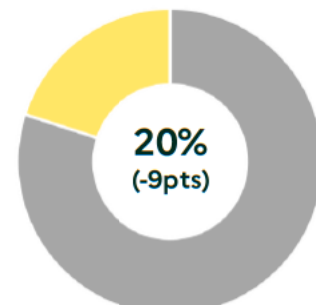
Perceived lack of usefulness/need and lack of customer demand



Costs associated with tools and their maintenance



The costs and financial investment involved in upgrading the skills of teams

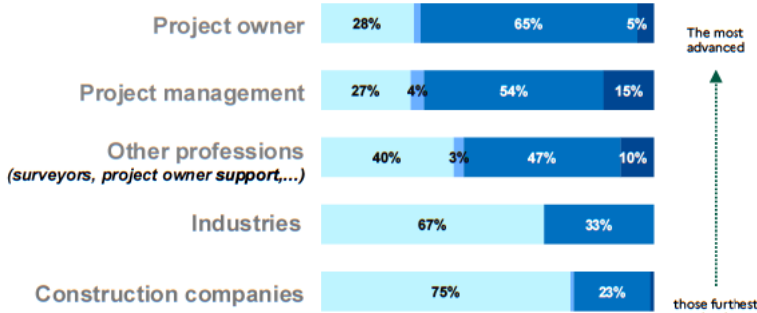


Barometer on the use of digital technology and BIM among construction professionals

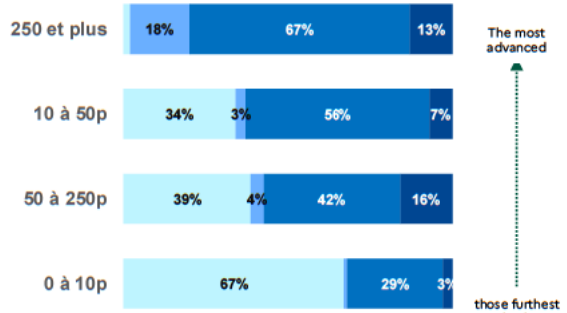
The results of the 2024 Barometer

Typology of BIM stakeholders : heterogeneous practices

Appetence for BIM : differences by profession



Appetence for BIM : differences by size (number of employees)



■ those furthest back: do not use BIM and it is not an important issue for them
■ the most sceptical: use BIM but are not convinced of its usefulness
■ the players in transition: are not (yet) using BIM but are convinced of its usefulness
■ the most advanced: use BIM and are convinced of its usefulness

Barometer on the use of digital technology and BIM among construction professionals

The results of the 2024 Barometer

Lessons learned and future prospects: levers for developing BIM in the industry

Information and awareness-raising initiatives are having an impact on the practices of players in the sector, and must be pursued to keep pace with the industry's needs.



Supporting project owners in their growing digital practices and encouraging them to make even greater use of BIM in their contracts: 32% (+8pts) of those who are already working with BIM but who have not taken part in a project where BIM is included in the contract say they are ready to adopt a BIM approach as soon as their contracts require them to do so.



Propose/develop 'simple', easy-to-use tools/software that meet the needs/expectations of construction companies in particular, especially those with fewer than 10 employees.



Helping SMEs and VSEs to recruit and train their teams in BIM.

Communicating/valuing BIM successes : 23% think that awareness-raising/information campaigns would help to accelerate the adoption of BIM within their organisation.

Thank you for your attention

Bâtiment et numérique

Construction et performance environnementale du bâtiment

Partager la page



SOMMAIRE

1. Le Plan BIM
2. La Charte « Objectif BIM 2022 »
3. La Charte « Bâtiments connectés, bâtiments solidaires et humains »
4. Le Plan de transition numérique du bâtiment (PTNB)

De la construction neuve à la rénovation, de la maquette numérique aux objets connectés, le secteur du bâtiment est pleinement concerné par la transformation digitale. Les pouvoirs publics soutiennent la transition numérique du bâtiment, pour améliorer le confort d'usage et la qualité de vie dans les logements, les écoles ou encore les bureaux.

Le Plan BIM

<https://www.ecologie.gouv.fr/batiment-et-numerique>