

# Il Congreso de Ingeniería Municipal

Barcelona 27 y 28 de Octubre

# BIM EN LA GESTIÓN DE LAS OBRAS Y PROYECTOS MUNICIPALES

Ignasi Pérez Arnal



## Senior Cabinet Leadership the Key

"This Government's four year strategy for BIM implementation will change the dynamics and behaviours of the construction supply chain, unlocking new, more efficient and collaborative ways of working. This whole sector adoption of BIM will put us at the vanguard of a new digital construction era and position the UK to become the world leaders in BIM."

Francis Maude
Minister for the Cabinet Office

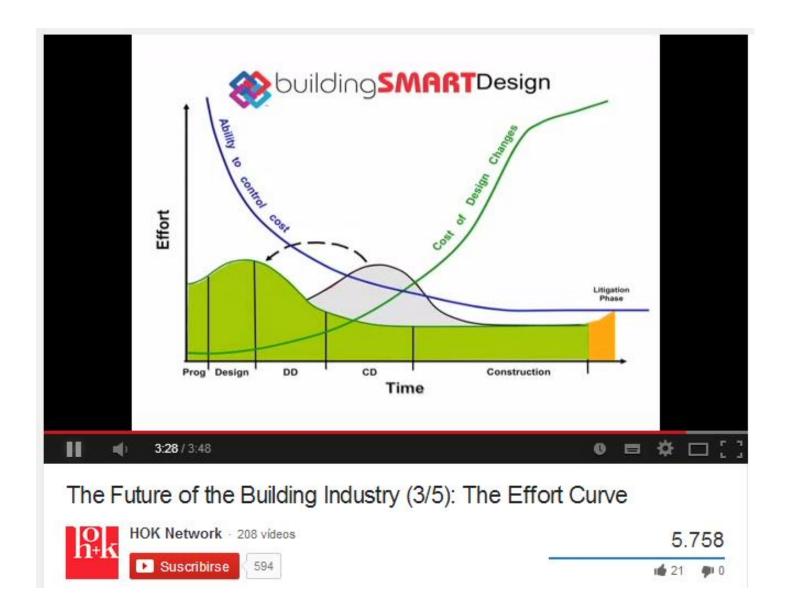


## **BIM**

Es el acrónimo (siglas) de Building Information Modeling



Building Information Modeling



Building Information Modeling (BIM) es el proceso de generar, construir y gestionar datos a lo largo de la vida del proyecto mediante el uso de tecnologías basadas en modelos enlazados a una base de datos de información del proyecto.

BIM incorpora datos - físicos, ambientales, comerciales - en cada uno de sus elementos.

For Crossrail, Building Information Modelling (BIM) is the process of generating, building and managing data through the life of the project by using model-based technologies linked to a database of project information. BIM incorporates data – physical, environmental, commercial – on every element designed for Crossrail.

## Situación actual

- Tenemos disposición a pagar más por proyectos con un presupuesto fijado?
- Podemos acceder a crédito para financiar proyectos y construcciones de una forma más fácil?
- Tenemos más parámetros y agentes interviniendo en los procesos?
- Entendemos que el ciclo de una edificación es cada vez más complejo?
- Aprobamos que haya menos control en los proyectos y en cada decisión tomada en su construcción?

Podemos admitir inaugurar una escuela después de haber comenzado el curso?

Podemos admitir desviaciones en un hospital, una estación, una vivienda social?

# Por qué es obligado pasarse al BIM?

Directive 2014/24/EU of the European Parliament and of the Council of 26 February 2014 on public procurement and repealing Directive 2004/18/EC de 28.3.2014, Article 22, Punt 4 (Plana 107)

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01/31/2014

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## European Parliament Directive to Spur BIM Adoption in 28 EU Countries

Earlier this month, the European Parliament voted to modernize European public procurement rules by recommending the use of electronic tools such as building information electronic modelling, or BIM, for public works contracts and design contests.

\*For the first time, the EU is asking their member states to consider the use of technology to modernise and improve the public procurement processes. The recent vote represents a big step forward for the EU and its member states. The wide adoption of BIM across the European AEC industry would not only reduce the cost of publicly funded building projects at home, but also tremendously boost EU industry's global competitiveness in winning international building contracts," said Roland Zelles, Autodesk vice president of Europe, Middle East and Africa.



The adoption of the directive, officially called the European Union Public Procurement Directive (EUPPD) means that all the 28 European Member States may encourage. specify or mandate the use of BIM for publicly funded construction and building projects in the European Union by 2016. The UK, Netherlands, Denmark, Finland and Norway already require the use of BIM for publicly funded building projects.



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## Legislation

Volume 57 28 March 2014

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*	Directive 2014/36/EU of the European Parliament and of the Council of 26 February 2014 on the conditions of entry and stay of third-country nationals for the purpose of employment as seasonal workers	

Price: EUR 10

(1) Text with EEA relevance



- (c) the use of electronic means of communication would require specialised office equipment that is not generally available to contracting authorities;
- (d) the procurement documents require the submission of physical or scale models which cannot be transmitted using electronic means.

In respect of communications for which electronic means of communication are not used pursuant to the second subparagraph, communication shall be carried out by post or other suitable carrier or by a combination of post or other suitable carrier and electronic means.

Notwithstanding the first subparagraph of this paragraph, contracting authorities are not obliged to require electronic means of communication in the submission process to the

requests to participate are preserved. They shall examine the content of tenders and requests to participate only after the time limit set for submitting them has expired.

- 4. 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 or similar. In such cases the contracting authorities shall offer alternative means of access, as provided for in paragraph 5, until such time as those tools become generally available within the meaning of the second sentence of the first subparagraph of paragraph 1.
- 5. Contracting authorities may, where necessary, require the use of tools and devices which are not generally available, provided that the contracting authorities offer alternative means of access.

Contracting authorities shall be deemed to offer suitable alter-

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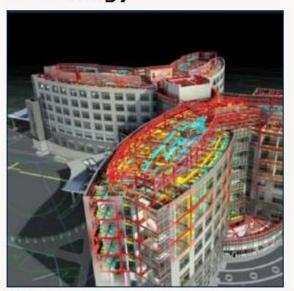
 Can PLM Systems Manage Highly Complex Products? - TV Report

2013-11-19

## **NEWS IN FOCUS**

NEWS 2014-01-17 CAD • VERKSTADSFORUM.SE;S TELEGRAMREDAKTION

## Applauds to the European Parliament's call to modernise EU public works projects with BIM technology



Bildtext:

Leaders from Europe's architecture, engineering and construction industry expressed their support today of the European Parliament's decision to modernize European public procurement rules by recommending the use of electronic tools such as building information electronic modelling, or BIM, for public works contracts and design contests.

BIM enables project teams of architects, engineers, building and infrastructure owners and construction firms to use 3D digital models to collaborate and support building projects throughout their lifecycle from design and documentation to building and field support. Unlike with traditional 2D drawings, the data in a BIM-led project remains consistent, coordinated, and more

accurate across all stakeholders, regardless of how many times the design changes, or who changes it. As a result, building and infrastructure projects are created and completed faster, more economically and sustainably.

**W KOMMENTERA** 

SKICKA TILL EN VÄN BELA



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## **NEWS IN FOCUS**

Key benefits of adopting BIM for public procurement projects include:

Cost Savings for Taxpayers: Public procurement plays an important role in the overall economic performance of the EU, where public purchasers spend approximately 18% of GDP on supplies, works and services. According to a 2012 report issued by the European Commission, public entities that have already implemented e-procurement solutions report savings of between 5% and 20% of their procurement expenditure. The total size of the EUs procurement market is estimated to be more than 2 trillion Euro, so each 5% saved could result in about 100 billion Euro of savings per year - the equivalent to building more than 150 large-size hospitals.

The UK government estimates that it saved £1.7 billion (2 billion Euro) on major public building projects since 2012 and that 66 per cent of the the UK's Major Project Authority portfolio is now being delivered on time and within budget, a substantial improvement on the 33 per cent seen in 2010. (Source: Construction News).

Economic Boost to the Construction Sector: The European construction sector generates almost 10% of the region's GDP and provides 20 million jobs, mainly in micro and small enterprises. Construction is also a major consumer of intermediate products, such as raw materials, chemicals, electrical and electronic equipment, and related services. Because of its economic importance, the performance of the construction sector can significantly influence the development of the overall European economy.

**Higher Impact for Sustainable Design:** In addition to the economic benefits observed by introducing technology to construction, existing buildings contribute approximately 40% to greenhouse gases and to energy use by a similar proportion. Tackling the energy performance of existing buildings also falls within the scope of the PPD.

Representatives from various European membership organisations and Companies, as well as Autodesk are available for interviews about today's vote and its implications for the Member.

**BE KOMMENTERA** 

■ SKICKA TILL EN VÄN ■ DELA



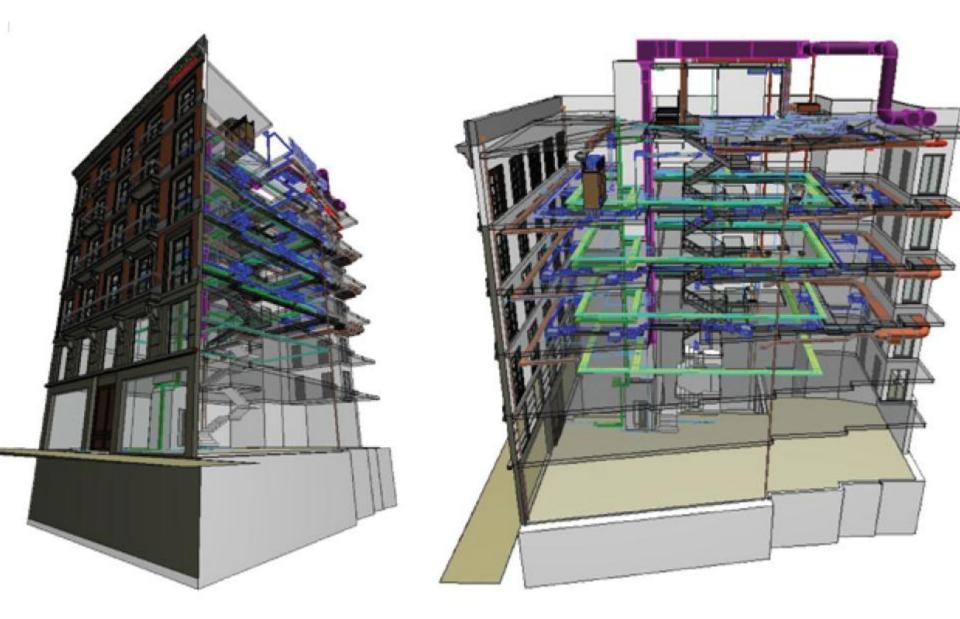
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Utility corridor to be created beneath Liverpool Street ticket hall, Crossrail



PCARS



## PLECS DE CLÀUSULES ADMINISTRATIVES PARTICULARS PER A LA CONTRACTACIÓ DE L'OBRA:

"REURBANITZACIÓ DE L'AV. Mn. CINTO VERDAGUER, ENTRE LA CTRA.
DE MONT-RODON I LA CTRA. DE BALENYÀ"

Procediment negociat amb publicitat al perfii del contractant. Tramitació ordinària. Expedient núm. 101/2014-S

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NE P0827800

Es valorará la coherència i detall del numero d'equips, tipologia, personal, maquinària i mitjans auxiliars durant tot el període d'execució del contracte.

## c)Logística de l'obra. Fins a un màxim de 10 punts.

Es presentarà un estudi de la realitat de l'entorn, tràfic, comerç i altres que hi puguin haver així com les interferències que puguin sorgir i les mesures per minimitzar-les, i de la logística de l'obra respecte als moviments interns i externs del personal, maquinària i materials.

Es valorarà la coherència de l'estudi quan a la situació de la zona en relació a la logística proposada i la menor incidència respecte la població i activitats.

## d)Implantació del sistema BIM (Building Information Modeling) a les obres. Fins a un màxim de 10 punts.

Es valoraran les possibles alternatives, metodologia a seguir i beneficis a obtenir amb la implantació d'aquest sistema de treball en cada fase de vida de l'obra (licitació, preconstrucció, construcció, manteniment, rehabilitació i deconstrucció).

## e)Estudi d'assignació de pressupostos. Fins a un màxim de 5 punts.

Es farà una previsió de les certificacions en funció de la planificació presentada, expresada en percentatges, així com una evolució al llarg del temps de les principals activitats d'obra.

Es valorarà la coherència en l'assignació de pressupostos.

## f)Millora dels processos constructius i impacte de les obres. Fins a un màxim de 5 punts.

Es valoraran aquelles alternatives que suposin un canvi en algun dels processos constructius sense que variin els materials amb l'objectiu de minimitzar afeccions, temps, o residus.

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#E Ph927800D

La pregunta ya no es si tengo que entrar en el BIM, la pregunta es:

¿Hasta cuándo puedo permitirme no integrarlo?



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