

**EDUBIM 2016 : 2ème édition des journées de l'enseignement de la maquette numérique et du BIM
- Bâtiment et Infrastructures - en France**

Cachan, Paris Friday, 17 June 2016

Développement d'une certification professionnelle BIM en Espagne – retour d'expérience

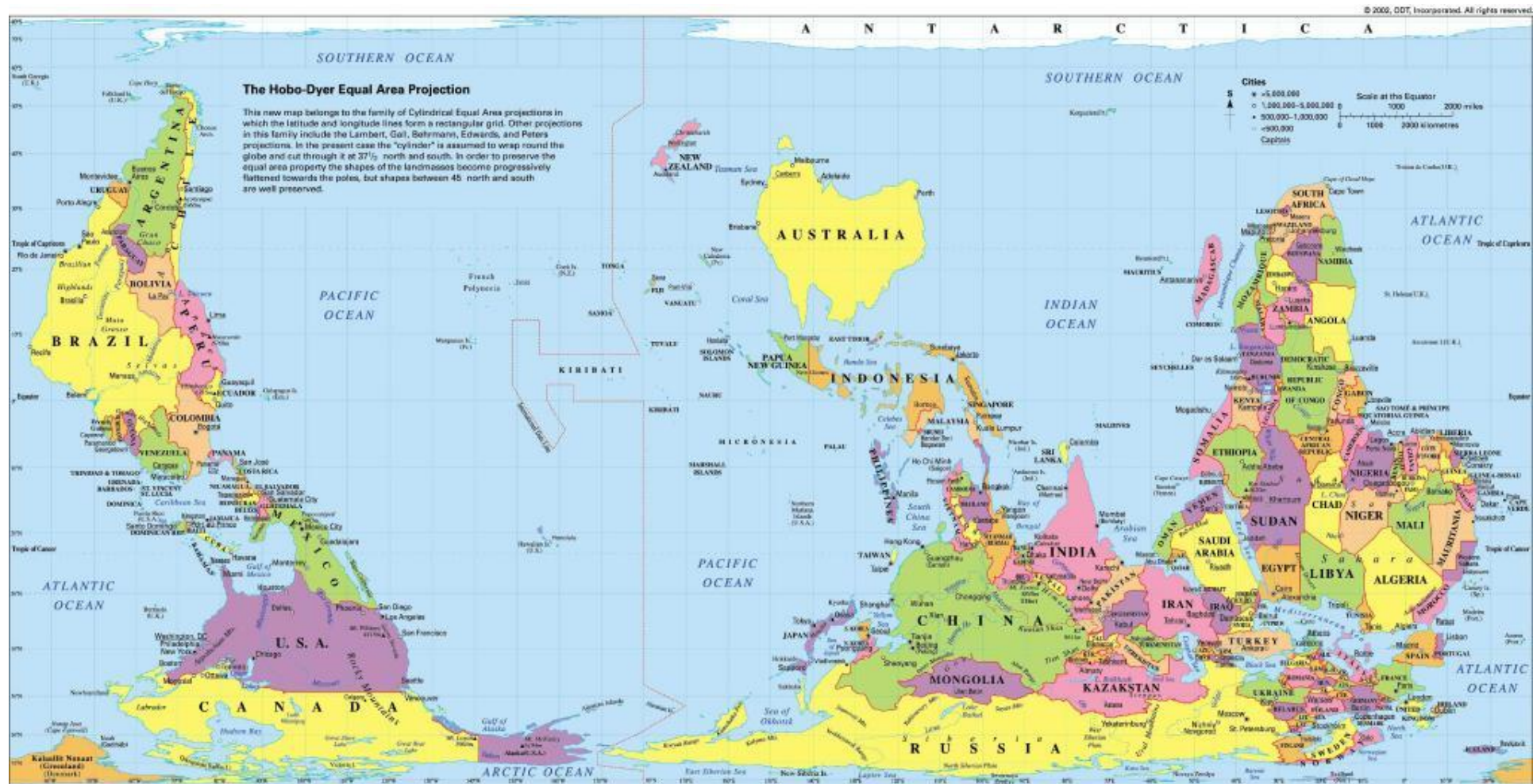
Ignasi Pérez Arnal

ignasiperezarnal@bimacademy.es

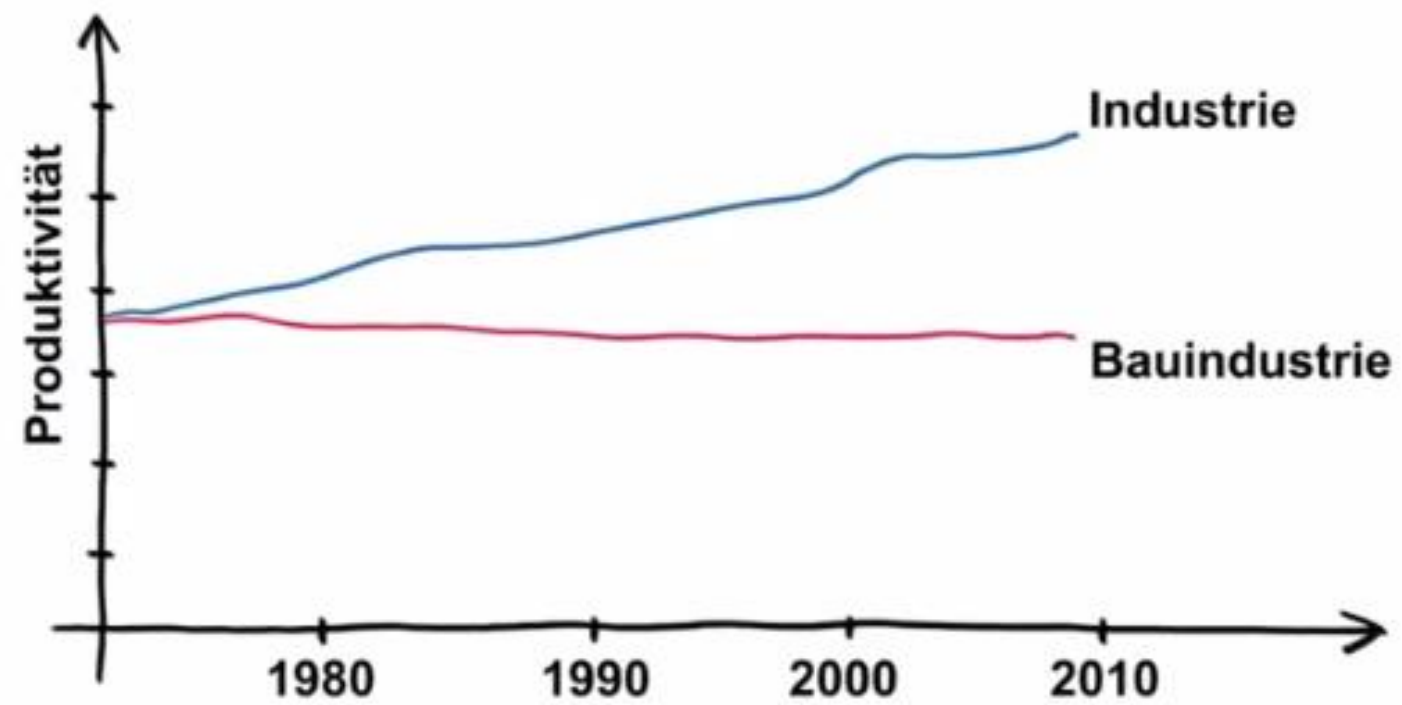
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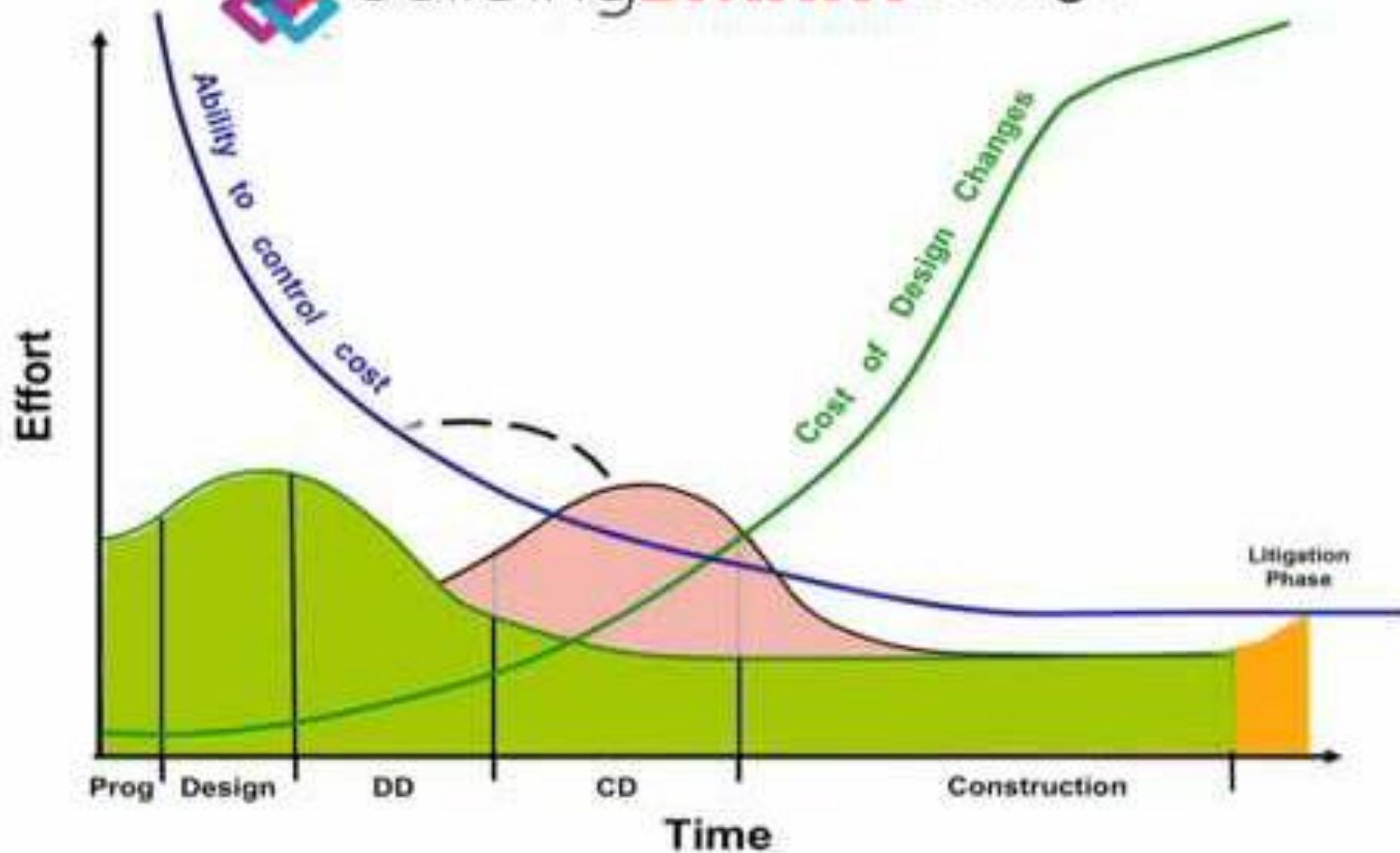


10 items as a background
for a BIM certification developed in Spain



BIM = Tool/Process/Environment





What it happens right now



El alcalde de Berlín dimite por los retrasos y sobrecostes del nuevo aeropuerto

Wowereit se retira voluntariamente aunque no pudo olvidarse de su amargo fracaso: el nuevo aeropuerto que debía haberse inaugurado hace tres años





BORRADOR DE ANTEPROYECTO DE LEY DE CONTRATOS DEL SECTOR PÚBLICO- 17 DE ABRIL DE 2015

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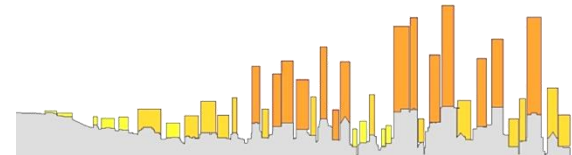
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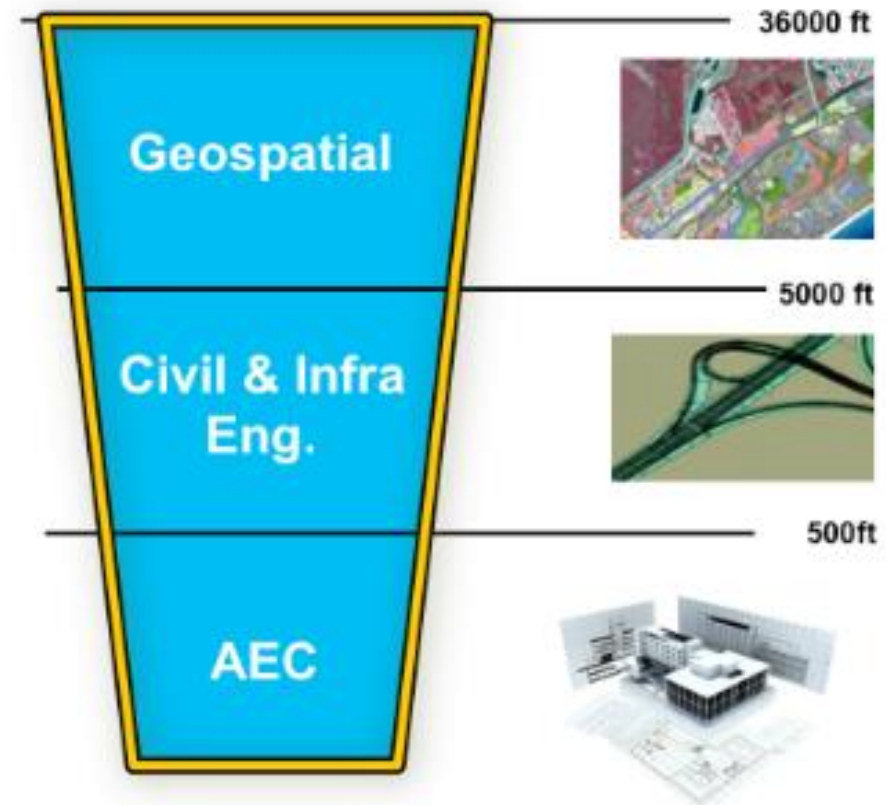






Future City Pilot: History & Context

- Geospatial, Civil Engineering & BIM come perfectly together in the Urban environment and are destined to work together



Cataluña implantará el BIM como solución a sus futuras obras

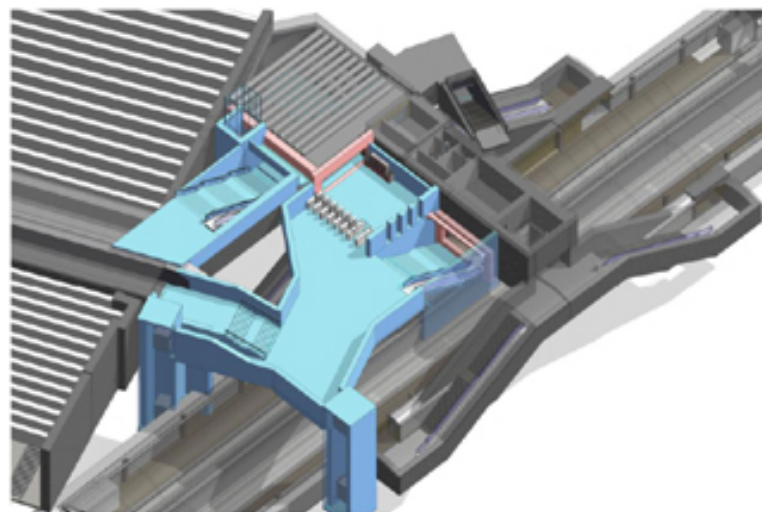
El gobierno catalán establecerá una normativa que concrete y obligue a su aplicación



Declaraciones de Josep Rull, Conseller de Territorio i Sostenibilitat

Catalunya impulsa la metodologia de treball virtual en 3D a l'obra pública

El Govern lidera una comissió interdepartamental per implantar el Building Information Modelling (BIM)



- Consisteix en elaborar un model virtual en tres dimensions d'una construcció, incloent el seu projecte, l'execució i el manteniment

La Generalitat lidera el procés d'implantació a Catalunya de l'anomenat *Building Information Modelling* (BIM), un nou

sistema de treball per a l'obra pública basat en l'elaboració d'un model virtual d'una obra, fet que permet compartir informació entre tots els involucrats en la seva execució i fer-hi canvis.

El conseller de Territori i Sostenibilitat, Josep Rull, s'ha referit aquest dilluns al BIM com una metodologia **"que ens dona molts avantatges perquè permet minimitzar les pèrdues d'informació, millorar la coordinació del projecte entre els diversos actors i les diverses fases, reduir costos i optimitzar els recursos en la construcció i el manteniment"**. Per a Rull, el BIM **"ens fa ser més eficients i eficaços, les desviacions de costos es redueixen a la mínima expressió i ens permet fer una obra pública de major qualitat"**.

Manifest BIMCAT Barcelona

El context socioeconòmic i ambiental actual demana una aposta decidida per l'eficiència, l'estalvi i l'optimització de recursos, molt especialment en l'àmbit de l'edificació i l'arquitectura. Això obliga a modernitzar el sector de la construcció, que arrossega pràctiques que s'han demostrat obsoletes a l'hora de respondre aquesta demanda.

L'entorn del BIM, basat en la col·laboració i transparència de tots els agents que participen en el procés constructiu, configura un nou paradigma en el sector de la construcció l'adopció del qual sembla inevitable -perquè així ho han entès molts països europeus i la pròpia UE -, inajornable - perquè el mateix compromís energètic pel 2020 ens obliga - i desitjable - per la voluntat de canvi i millora que hi ha en el context actual

Catalunya sempre ha estat un motor de canvi a Europa i ara és bo incorporar aquest canvi per transformar un sector productiu perquè ofereixi noves oportunitats, creant un nou marc col·laboratiu de tots els intervinents en el cicle de l'edificació. Les administracions, els agents de la construcció, la indústria, els tècnics i els professionals han de treballar conjuntament per assolir aquest repte comú, de tal manera que esdevingui efectiu i estigui atent al que significa la introducció d'una nova actitud envers les tecnologies i metodologies actuals orientades al control, la transparència, la col·laboració i l'eficiència.

A tal efecte, el Govern de la Generalitat de Catalunya i l'Ajuntament de la ciutat de Barcelona es marquen el repte de crear un *Grup de Treball BIM* que ajudi a implementar la cultura, valors, mètodes de treball, tecnologies digitals i electròniques per capacitar la indústria, l'administració pública, els centres de recerca, els col·lectius professionals i el món acadèmic. El *Grup de Treball BIM* actuarà sobre:

- El que ja s'ha construït: els actius immobiliaris del país, la seva actualització funcional, la seva intervenció material i energètica
- El que s'ha de construir: els processos i requeriments per entendre, sol·licitar, contractar i executar obres dins aquest nou cicle de l'edificació
- I la ciutat: entenent les capacitats que poden aportar una construcció industrialitzada per crear edificis intel·ligents que configurin una ciutat i creïn un territori geogràfic intel·ligent, que es pugui gestionar amb eficiència i eficàcia.

El teixit industrial que tenim a Catalunya ha de liderar aquest canvi, amb l'objectiu de treballar per millorar la sostenibilitat en els seus tres àmbits – social, ambiental i econòmic -. Per això caldrà tenir cura en l'ús dels recursos públics i privats necessaris que ens permetin incidir de manera efectiva sobre el canvi de mentalitat i de processos que cal empènyer, per tal que el sector es reactivi de manera responsable en favor del benestar dels ciutadans i de manera decidida per generar un nou futur econòmic i laboral.

Tanmateix, per tal de crear un observatori que mesuri aquestes manifestacions i les contrasti internacionalment, s'aprofitarà l'impuls que es donarà a la celebració anual de la Cimera Europea BIM a Barcelona, peça clau en l'estratègia d'intercanvi d'experiències i d'anàlisi de l'estat de l'art del BIM.



Calendari de treball:

1. Objectiu 2015-2016: Consensuar un mandat BIM a Catalunya
2. Objectiu 2017: Adopció d'uns estàndards IFC, guies, classificacions i processos d'entrega del model digital pensant en cada fase del projecte constructiu, de la seva execució, del posterior manteniment i de la seva integració en la ciutat. Definició d'uns protocols comuns en la creació i definició de la informació compartida entre els agents orientats a la plena interoperabilitat entre les parts.
3. Objectius 2018
 - a. Els equipaments i les infraestructures públiques de pressupost superior a 2M€ s'hauran de produir en BIM en les fases de Disseny a Construcció
 - b. Circumscriure aquest objectiu als projectes d'obra nova
4. Objectius 2020
 - a. Tots els equipaments i les infraestructures públiques s'hauran de produir en BIM en totes les fases, Disseny – Construcció – Operació (Manteniment i *Facility Management*)
 - b. Circumscriure aquest objectiu a tots els projectes d'obra nova i rehabilitació

Es considera que d'aquesta manera es dóna el temps suficient i necessari tant a la indústria com als diferents agents que intervenen en el cicle de la construcció i l'edificació per a l'adopció del BIM.

A Barcelona, 13 de febrer de 2015

Promotors de la Declaració:



COL·LEGI D'ARQUITECTES TÈCNICS
I ENGINYERS D'EDIFICACIÓ DE BARCELONA



BIM Academy®
Pioneers in BIM Education



Agència de l'Habitatge
de Catalunya



IMUB
Institut Municipal
d'Urbanisme



Institut Municipal
d'Informàtica



ICGC
Institut
Cartogràfic i Geològic
de Catalunya

infraestructures.cat

BIM/SA

Barcelona d'Infraestructures Municipals

Background

- Accreditation
- Spanish culture

License to kill

- What we have realised:

You can be operating in your job during 60 years without being forced to learn anything

No cpd's

Building sector, no technologies/no innovation/no industrialisation/no digital

The sector with more accidents/deaths

No ranking of universities in public media

But, we are the best architects, we have the better cities, we have the best public spaces

What is your concept?

to say that I'm good working with BIM

to certify I know to play in a team, the best players in the world Messi/Cristiano Ronaldo, the best matches, the best results, the best percentages and statistics

We are going to a anglosaxon culture: RICS, PMI, CPD, KTAP... with more trials at courts, with more importance of contracts

Doing the work, doing well the work

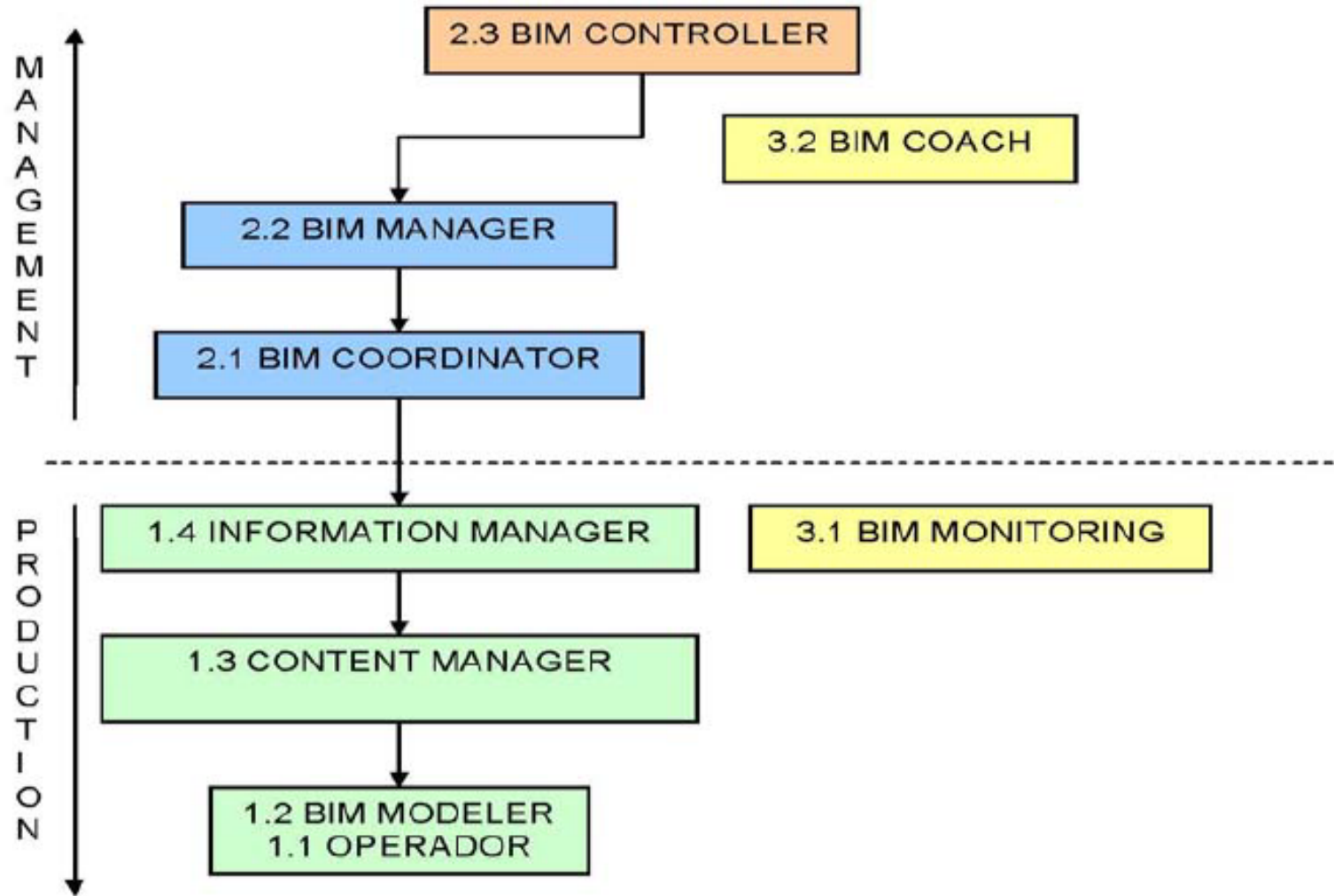
Work is more important than talent when talent is not used

How to make an accreditation when we are talking about Collaborative Projects and not single and independent jobs

Denmark has a process where you evaluate each job done by a professional

When we make any education programme, we are analysed as professors hour per hour, session by session. And the other people?

BIM PROFILES





In this first approach it is clearly discriminated different profiles Management and Production, so it was decided to create two different professional certifications, one for each scope.

The Production profile would be a Head of Project expert in BIM. The name of this profile is being studied, but it would BIM Head Project, BIM Production or similar, like a responsible of the drafting of the construction project, in its various stages of development from Concept Design to As Built

2.- MARKET ANALISYS

Starting with the Production profile, the market reality leads us to think that the profile BIM Modeler needs a diploma of the acquired knowledge, related to the use of computer programs and therefore the diploma issued by software manufacturers puts it in value.

But we are talking about Professional Certification (competences), not about training courses.

Therefore the profile certifiable related to Production, even at the lower levels, must have more competencies to permit it to higher performance than those of a modeling technician. Therefore it has of knowledge to perform the function of Manager Contents and even Information Manager

As BIM Manager we understand the certification profile that's includes the coordination, communication, customer relationship, management and development, time and costs of BEP (BIM Executive Plan)

So we understand that both profiles, (related to management and production) would cover the need in the market, although, in many cases it is possible that one professional can achieve both professional certificates.

3.- IMPLEMENTATION AND PROCEDURE

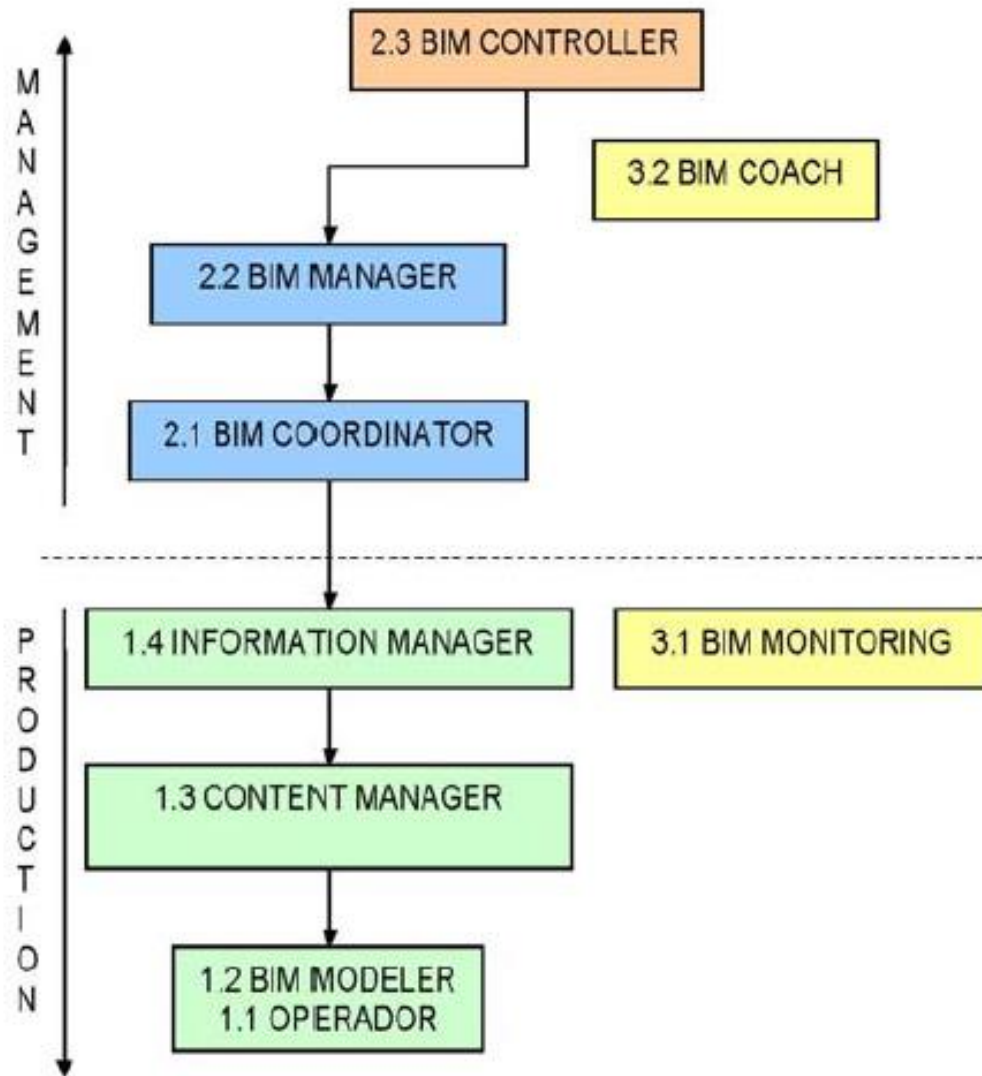
In both cases, there will be four categories of certification, depending on the training and experience that can be demonstrated, as well as their skill level: Professional, Advanced, Expert and Excellence.

Each of them will be accessible by two routes of experience, such as work in a BIM environment in production or management, and as work in equivalent jobs in the traditional way, over 1, 2 or 3 years of work in BIM production or management.

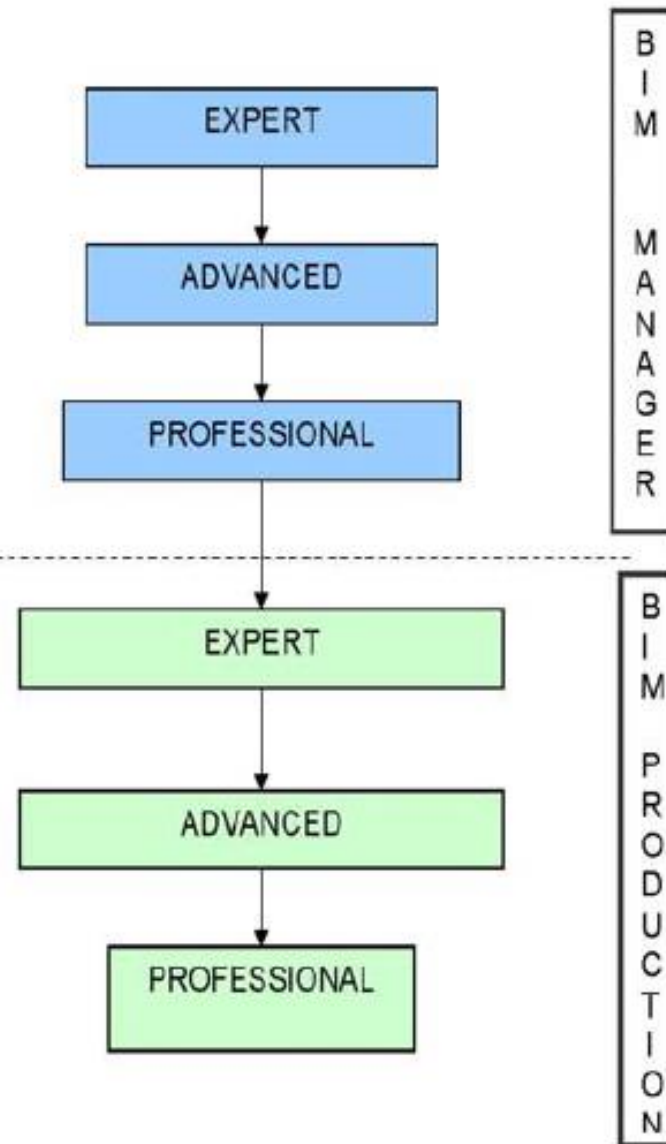
In all cases it will be necessary to prove specific training in BIM 200 hours.

The BIM CONTROLLER, in our opinion, not need specific professional certification, because it would be a BIM Manager Expert or even Excellence. The profiles indicated in yellow on the chart, BIM COACH and BIM MONITORING, are the people who transmit their knowledge or who audit procedures.

BIM PROFILES



ACP PROFILES



4.- ACP FUNCTIONS_ MATRIX OF PROFILES

BIM PROFILES VERSUS OCUPATIONS MATRIX

	MISSION	CATEGORY	MISSION BY CATEGORY (LEVEL)	CODE	FUNCTIONS	BIM PRODUCTION			BIM MANAGEMENT			EXTERNAL	
						BIM Operator/Modeler	BIM Content Manager	BIM Information Manager	BIM Coordinator	BIM Manager	BIM Controller	BIM Coach	BIM Monitoring
BIM PRODUCTION CERTIFICATION	Produces the BIM model and its components by using several computer programs used in performing models, development and views, as well as content management, and information management in a common data environment (CDE Common Data environment), according to the integration plan and data exchange in each stage (LOD) or level of development.	Expert, Advanced, Professional	Professional responsible for generating the model according to disciplines (architecture, structure, facilities, urban planning). As well as keeping updated content libraries.	1	Know the projects workflows on a general level.	X	X	X					
				2	Development and modeling of 3D component library.	X							X
				2	3D modeling	X							
				3	3D models coordination with other disciplines and / or specialties	X							
				4	Review of interference, collisions and update the 3D model	X							
				5	Configuration of the parameters for the generation of views and drawings	X							
				6	Create, maintain and edit content libraries (materials, standards) and update their links (platforms, forums, blogs, webs, etc.)		X						
				7	Manage the information needed to develop the BIM model of an existing building (partially or completely) with the appropriate level of development, taking into account the customer's expectations.							X	
		Expert	Its main mission is the consistency of information on the model, up-to-date, and is consistent with the vision of both the BCP as the company standards.	8	Management of common data exchange (Common Data Environment CDE) and the Plan project information: Define and agree the information structure, appropriate software platform and roles of the participants according to the needs and resources of the project team. Define the responsibilities and schedules the information inclusion and formats required according to planned deliverables and / or LODs, enabling integration as established with the project manager.			X					
				9	Manage the process of exchange of information and team collaboration model: coordinate the attendance and shared responsibility of the participants, ensuring compliance with established procedures, and carrying out the management control and audit model, in order to ensure the operation and maintenance of records and files. As well as manage the changes and process performance measurement budget adjustments and programming, in order to ensure the collection and management of deliverables or LOD's			X					
BIM MANAGER CERTIFICATION	BIM model manager, responsible Execution Plan (BEP) according to the standards, guidelines, and regulatory innovations, coordinating the project modeling and resources in collaboration with designers, ensuring the proper integration of the models and their disciplines overview project, identifying interference and inconsistencies and coordinating its resolution. Transmitting element between customer needs and project development teams, as manager of resources, time and costs. May perform functions of consultant in the implementation and development of BIM processes in companies or organizations	Expert, Advanced y Professional	Management the project (the functions cover the training profile BIM Manager and Coordinator)	1	BIM model leadership as responsible before the customer. Responsible for its alignment with the objectives of the project and level of development as well as the fulfillment of plans according to customer requirements.				X				
				2	Define, implement and comply with BIM Execution Plan (BEP) including: a) Project information (basic and relevant data of the project participants and role of project phases and milestones and dates). b) Plan organization model (models and level of development, LOD) c) Elements, parameters or guides of each discipline				X				
				3	Responsible for overall coordination of the BIM Model production (with the rest of the project team (BIM PRODUCTION, designers, planners, etc), ensuring teamwork and communication in accordance with the objectives of their area or discipline within the project				O				
				4	Define the overall strategy of communication between the parties involved, external and customer.					X			
				5	Generate the schedule for the development of the operation under BIM, its enforcement and implement the corrective actions				O	X			
				6	Ensures proper integration of BIM models and disciplines with a global vision of the project and the interrelationship between them, identifying interference and coordinating the partners in the resolution				O	X			
				7	Management development, coordination, publication and verification of all necessary settings required for the business integration of design and construction information: model, Geo determines the reference point and ensures coordination between different disciplines				O	X			
				8	Assumes responsibility for the appropriate classification of the useful space, equipment and facilities in the model areas, to ensure consistency throughout the project life					X			
				9	Manage project costs under the framework BIM. Monitors and the necessary corrections					X	X		
				10	Customer project delivery. Deliver the project as built and collaborate on legalization and final delivery to the customer interacting with the BIM process						O	X	
		Expert	This profile is equivalent to BIM Controller, training profile. The duties of protocol implementation, business process management and functional development are defined for EXPERT profile. The COACH BIM functions are included in this level	11	Manage the updating and innovation of protocols and standards used in the company, ensuring the continuous updating of processes and information systems and management and technological resources.								
				12	Know, analyze and diagnose the management processes of the company and define strategies, plans actions and manages change processes, procedures and resources to adapt the organization to the goals of management						O	X	
				13	Know the appropriate technology (software and hardware) to the organization or project to be developed and functionally defined implementation and change management, as well as setting the proper equipment and training						O	X	
				14	Lead the team of BIM Managers						X		

4.- ACP FUNCTIONS_ MATRIX OF PROFILES

BIM PROFILES VERSUS OCUPATIONS MATRIX

					BIM PRODUCTION		
MISSION	CATEGORY	MISSION BY CATEGORY (LEVEL)	CODE	FUNCTIONS	BIM Operator/Modeler	BIM Content Manager	BIM Information Manager
BIM PRODUCTION CERTIFICATION	Expert, Advanced, Professional	Professionals responsible for generating the model according to disciplines (architecture, structures, facilities, urban planning). As well as keeping updated content libraries.	1	Know the projects workflows on a general level	X	X	X
			2	Development and modeling of 3D component library	X		
			3	3D modeling	X		
			4	3D models coordination with other disciplines and / or specialties	X		
			5	Review of interference, collisions and update the 3D model	X		
			6	Configuration of the parameters for the generation of views and drawings	X		
			7	Create, maintain and edit content libraries (materials, standards) and update their links (platforms, forums, blogs, webs, etc.) Manage the information needed to develop the model of a BIM model or an existing building (partially or completely) with the appropriate level of development, taking into account the customer's expectations.		X	
			8	Management of common data exchange (Common Data Environment CDE) and the Plan project information: Define and agree the information structure, appropriate software platform and roles of the participants according to the needs and resources of the project team. Define the responsibilities and schedules the information inclusion and formats required, according to planned deliverables and / or LOD's, enabling integration as established with the project manager.			X
	Expert	Its main mission is the consistency of information in the model, up to date, and is consistent with the views of both the MEP and the company standards.	9	Manage the process of exchange of information and team collaboration model: coordinate the attendance and shared responsibility of the participants, ensuring compliance with established procedures, and carrying out the management control and audit model, in order to ensure the operation and maintenance of records and files. As well as manage the changes and process performance measurement budget adjustments and programming, in order to ensure the collection and management of deliverables or LOD's			X

4.- ACP FUNCTIONS_ MATRIX OF PROFILES

BIM PROFILES VERSUS OCCUPATIONS MATRIX

					BIM PRODUCTION			BIM MANAGEMENT			EXTERNAL	
MISSION	CATEGORY	MISSION BY CATEGORY (LEVEL)	CODE	FUNCTIONS	BIM Operator/Modeler	BIM Content Manager	BIM Information Manager	BIM Coordinator	BIM Manager	BIM Controller	BIM Coach	BIM Monitoring
BIM PRODUCTION CERTIFICATION	Expert, Advanced, Professional	Professional is responsible for generating the model according to disciplines (architecture, structures, facilities, urban planning). As well as keeping updated content libraries.	1	Know the project workflows on a general level	X	X	X					X
			2	Development and modeling of 3D component library	X							
			3	3D modeling	X							
			4	3D models coordination with other disciplines and / or specialties	X							
			5	Review of interference, collisions and update the 3D model	X							
			6	Configuration of the parameters for the generation of views and drawings	X							
			7	Create, maintain and edit content libraries (materials, standards) and update their links (platforms, forums, blogs, webs, etc.)		X						
			8	Manage the information needed to develop the BIM model of an existing building (partially or completely) with the appropriate level of development, taking into account the customer's expectations								X
	Expert	Its main mission is the consistency of information in the model, up to date, and is consistent with the views of both the ERP in the company standards.	9	Management of common data exchange (Common Data Environment CDE) and the Plan project information: Define and agree the information structure, appropriate software platform and roles of the participants according to the needs and resources of the project team. Define the responsibilities and schedules the information inclusion and formats required according to planned deliverables and / or LOD's, enabling integration as established with the project manager.			X					
			10	Manage the process of exchange of information and team collaboration model: coordinate the attendance and shared responsibility of the participants, ensuring compliance with established procedures, and carrying out the management control and audit model, in order to ensure the operation and maintenance of records and files. As well as manage the changes and process performance measurement budget adjustments and programming, in order to ensure the collection and management of deliverables or LOD's			X					
BIM MANAGER CERTIFICATION	Expert, Advanced y Professional	Management the project (the functions cover the training profiles BIM Manager and Coordinator)	1	BIM model leadership as responsible before the customer. Responsible for its alignment with the objectives of the project and level of development as well as the fulfillment of plans according to customer requirements				X				
			2	Define, implement and comply with BIM Execution Plan (BEP) including: a) Project information (basic and relevant data of the project participants and role of project phases and milestones and dates). b) Plan organization model (models and level of development, LOD) c) Elements, parameters or guides of each discipline				X				
			3	Responsible for overall coordination of the BIM Model production (with the rest of the project team (BIM PRODUCTION, designers, planners, etc), ensuring teamwork and communication in accordance with the objectives of their area or discipline within the project				O				
			4	Define the overall strategy of communication between the parties involved, external and customer					X			
			5	Generate the schedule for the development of the operation under BIM, it's enforcement and implement the corrective actions				O	X			
			6	Ensures proper integration of BIM models and disciplines with a global vision of the project and the interrelationship between them, identifying interference and coordinating the partners in the resolution				O	X			
			7	Management development, coordination, publication and verification of all necessary settings required for the seamless integration of design and construction information model. Geo determines the reference point and ensures coordination between different disciplines				O	X			
			8	Assumes responsibility for the appropriate classification of the useful space, equipment and facilities in the model areas, to ensure consistency throughout the project life					X			
			9	Manage project costs under the framework BIM. Monitors and the necessary corrections					X	X		
			10	Customer project delivery. Deliver the project as built and collaborate on legalization and final delivery to the customer interacting with the BIM process						O	X	
	Expert	This profile is equivalent to a BIM Controller, training profile. The duties of protocol implementation, business process management and functional development are defined for EXPERT profile. The COACH BIM functions are included in this level	11	Manage the updating and innovation of protocols and standards used in the company, ensuring the continuous updating of processes and information systems and management and technological resources.						O		
			12	Know, analyze and diagnose the management processes of the company and define strategies, plans actions and manages change processes, procedures and resources to adapt the organization to the goals of management						O	X	
			13	Know the appropriate technology (software and hardware) to the organization or project to be developed and functionally defined implementation and change management, as well as setting the proper equipment and training						O	X	
			14	Lead the team of BIM Managers						X		

BIM MANAGEMENT		
BIM Coordinator	BIM Manager	BIM Controller

EXTERNAL	
BIM Coach	BIM Monitoring
	X
	X

4.- ACP FUNCTIONS_ MATRIX OF PROFILES

BIM PROFILES VERSUS OCCUPATIONS MATRIX

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BIM PRODUCTION CERTIFICATION	Expert, Advanced, Professional	Professional is responsible for generating the model according to disciplines (architecture, structures, facilities, urban planning). As well as keeping updated content libraries.	1	Know the project workflows on a general level	X	X	X					X
			2	Development and modeling of 3D component library	X							
			3	3D modeling	X							
			4	3D models coordination with other disciplines and / or specialties	X							
			5	Review of interference, collisions and update the 3D model	X							
			6	Configuration of the parameters for the generation of views and drawings	X							
			7	Create, maintain and edit content libraries (materials, standards) and update their links (platforms, forums, blogs, webs, etc.)		X						
			8	Manage the information needed to develop the BIM model of an existing building (partially or completely) with the appropriate level of development, taking into account the customer's expectations								X
	Expert	Its main mission is the consistency of information in the model, up to date, and is consistent with the views of both the ERP in the company standards.	9	Management of common data exchange (Common Data Environment CDE) and the Plan project information: Define and agree the information structure, appropriate software platform and roles of the participants according to the needs and resources of the project team. Define the responsibilities and schedules the information inclusion and formats required according to planned deliverables and / or LOD's, enabling integration as established with the project manager.			X					
			10	Manage the process of exchange of information and team collaboration model: coordinate the attendance and shared responsibility of the participants, ensuring compliance with established procedures, and carrying out the management control and audit model, in order to ensure the operation and maintenance of records and files. As well as manage the changes and process performance measurement budget adjustments and programming, in order to ensure the collection and management of deliverables or LOD's			X					
BIM MANAGER CERTIFICATION	Expert, Advanced y Professional	Management the project (the functions cover the training profiles BIM Manager and Coordinator)	1	BIM model leadership as responsible before the customer. Responsible for its alignment with the objectives of the project and level of development as well as the fulfillment of plans according to customer requirements				X				
			2	Define, implement and comply with BIM Execution Plan (BEP) including: a) Project information (basic and relevant data of the project participants and role of project phases and milestones and dates). b) Plan organization model (models and level of development, LOD) c) Elements, parameters or guides of each discipline				X				
			3	Responsible for overall coordination of the BIM Model production (with the rest of the project team (BIM PRODUCTION, designers, planners, etc), ensuring teamwork and communication in accordance with the objectives of their area or discipline within the project				O				
			4	Define the overall strategy of communication between the parties involved, external and customer					X			
			5	Generate the schedule for the development of the operation under BIM, it's enforcement and implement the corrective actions				O	X			
			6	Ensures proper integration of BIM models and disciplines with a global vision of the project and the interrelationship between them, identifying interference and coordinating the partners in the resolution				O	X			
			7	Management development, coordination, publication and verification of all necessary settings required for the seamless integration of design and construction information model. Geo determines the reference point and ensures coordination between different disciplines				O	X			
			8	Assumes responsibility for the appropriate classification of the useful space, equipment and facilities in the model areas, to ensure consistency throughout the project life					X			
			9	Manage project costs under the framework BIM. Monitors and the necessary corrections					X	X		
			10	Customer project delivery. Deliver the project as built and collaborate on legalization and final delivery to the customer interacting with the BIM process						O	X	
	Expert	This profile is equivalent to a BIM Controller, training profile. The duties of protocol implementation, business process management and functional development are defined for EXPERT profile. The COACH BIM functions are included in this level	11	Manage the updating and innovation of protocols and standards used in the company, ensuring the continuous updating of processes and information systems and management and technological resources.						O		
			12	Know, analyze and diagnose the management processes of the company and define strategies, plans actions and manages change processes, procedures and resources to adapt the organization to the goals of management						O	X	
			13	Know the appropriate technology (software and hardware) to the organization or project to be developed and functionally defined implementation and change management, as well as setting the proper equipment and training						O	X	
			14	Lead the team of BIM Managers						X		

BIM MANAGER CERTIFICATION									
BIM model manager, responsible Execution Plan (BEP) according to the standards, guidelines, and regulatory mandates, coordinating the project modeling and resources in collaboration with designers, ensuring the proper integration of the models and their disciplines overview project, identifying interference and inconsistencies and coordinating its resolution. Transmitting element between customer needs and project development teams, as manager of resources, time and costs. May perform functions of consultant in the implementation and development of BIM processes in companies or organizations	Expert, Advanced y Professional	Manages the project (the functions cover the training profiles BIM Manager and Coordinator)	1	BIM model leadership as responsible before the customer. Responsible for its alignment with the objectives of the project and level of development as well as the fulfillment of plans according to customer requirements.					
			2	Define, implement and comply with BIM Execution Plan (BEP) including: a) Project information (basic and relevant data of the project participants and role of project phases and milestones and dates). b) Plan organization model (models and level of development, LOD) c) Elements, parameters or guides of each discipline					
			3	Responsible for overall coordination of the BIM Model production (with the rest of the project team (BIM PRODUCTION, designers, planners, etc), ensuring teamwork and communication in accordance with the objectives of their area or discipline within the project					
			4	Define the overall strategy of communication between the parties involved, external and customer.					
			5	Generate the schedule for the development of the operation under BIM, it's enforcement and implement the corrective actions					
			6	Ensures proper integration of BIM models and disciplines with a global vision of the project and the interrelationship between them, identifying interference and coordinating the partners in the resolution					
			7	Management development, coordination, publication and verification of all necessary settings required for the seamless integration of design and construction information: model, Geo determines the reference point and ensures coordination between different disciplines					
			8	Assumes responsibility for the appropriate classification of the useful space, equipment and facilities in the model areas, to ensure consistency throughout the project life					
			9						
			10	Manage project costs under the framework BIM. Monitors and the necessary corrections					
	10	Customer project delivery. Deliver the project as built and collaborate on legalization and final delivery to the customer interacting with the BIM process							
	Expert	this profile is equivalent to a BIM Controller, training profile. The duties of protocol implementation, business process management and functional development are defined for COACH BIM profile. The COACH BIM functions are included in this level	11	Manage the updating and innovation of protocols and standards used in the company, ensuring the continuous updating of processes and information systems and management and technological resources.					
			12	Know, analyze and diagnose the management processes of the company and define strategies, plans actions and manages change processes, procedures and resources to adapt the organization to the goals of management					
			13	Know the appropriate technology (software and hardware) to the organization or project to be developed and functionally defined implementation and change management, as well as setting the proper equipment and training					
14			Lead the team of BIM Managers						

4.- ACP FUNCTIONS_ MATRIX OF PROFILES

BIM PROFILES VERSUS OCCUPATIONS MATRIX

BIM PROFILE VERSUS OCCUPATIONS MATRIX					BIM PRODUCTION			BIM MANAGEMENT			EXTERNAL	
MISSION	CATEGORY	MISSION BY CATEGORY (LEVEL)	CODE	FUNCTIONS	BIM Operator/Modelator	BIM Content Manager	BIM Information Manager	BIM Coordinator	BIM Manager	BIM Controller	BIM Coach	BIM Monitoring
BIM PRODUCTION CERTIFICATION	Expert, Advanced, Professional	Professional is responsible for generating the model according to disciplines (architecture, structures, facilities, urban planning). As well as keeping updated content libraries.	1	Know the projects workflows on a general level	X	X	X					X
			2	Development and modeling of 3D component library	X							
			2	3D modeling	X							
			3	3D models coordination with other disciplines and / or specialties	X							
			4	Review of interference, collisions and update the 3D model	X							
			5	Configuration of the parameters for the generation of views and drawings	X							
			6	Create, maintain and edit content libraries (materials, standards) and update their links (platforms, forums, blogs, webs, etc.)		X						
			7	Manage the information needed to develop the string of a BIM model of an existing building (partially or completely) with the appropriate level of development, taking into account the customer's expectations.						X		
	Expert	Its main mission is the consistency of information in the model, up to date, and is consistent with the views of both the BEP in the company standards.	8	Management of common data exchange (Common Data Environment CDE) and the Plan project information: Define and agree the information structure, appropriate software platform and roles of the participants according to the needs and resources of the project team. Define the responsibilities and schedule the information inclusion and formats required according to planned deliverables and / or LOD's, enabling integration as established with the project manager.			X					
			9	Manage the process of exchange of information and team collaboration model: coordinate the attendance and shared responsibility of the participants, ensuring compliance with established procedures, and carrying out the management control and audit model, in order to ensure the operation and maintenance of records and files. As well as manage the changes and process performance measurement budget adjustments and programming, in order to ensure the collection and management of deliverables or LOD's			X					
BIM MANAGER CERTIFICATION	Expert, Advanced y Professional	Management the project (the functions cover the training profiles BIM Manager and Coordinator)	1	BIM model leadership as responsible before the customer. Responsible for its alignment with the objectives of the project and level of development as well as the fulfillment of plans according to customer requirements.				X				
			2	Define, implement and comply with BIM Execution Plan (BEP) including: a) Project information (basic and relevant data of the project participants and role of project phases and milestones and dates). b) Plan organization model (models and level of development, LOD) c) Elements, parameters or guides of each discipline				X				
			3	Responsible for overall coordination of the BIM Model production (with the rest of the project team (BIM PRODUCTION, designers, planners, etc), ensuring teamwork and communication in accordance with the objectives of their area or discipline within the project				O				
			4	Define the overall strategy of communication between the parties involved, external and customer.					X			
			5	Generate the schedule for the development of the operation under BIM, it's enforcement and implement the corrective actions				O	X			
			6	Ensures proper integration of BIM models and disciplines with a global vision of the project and the interrelationship between them, identifying interference and coordinating the partners in the resolution				O	X			
			7	Management development, coordination, publication and verification of all necessary settings required for the seamless integration of design and construction information model. Geo determines the reference point and ensures coordination between different disciplines				O	X			
			8	Assumes responsibility for the appropriate classification of the useful space, equipment and facilities in the model areas, to ensure consistency throughout the project life					X			
			9	Manage project costs under the framework BIM. Monitors and the necessary corrections					X	X		
			10	Customer project delivery. Deliver the project as built and collaborate on legalization and final delivery to the customer interacting with the BIM process						O	X	
	Expert	This profile is equivalent to a BIM Controller, training profile. The duties of protocol implementation, business process management and functional development are defined for EXPERT profile. The COACH BIM functions are included in this level	11	Manage the updating and innovation of protocols and standards used in the company, ensuring the continuous updating of processes and information systems and management and technological resources.						O		
			12	Know, analyze and diagnose the management processes of the company and define strategies, plans actions and manages change processes, procedures and resources to adapt the organization to the goals of management						O	X	
			13	Know the appropriate technology (software and hardware) to the organization or project to be developed and functionally defined implementation and change management, as well as setting the proper equipment and training						O	X	
			14	Lead the team of BIM Managers						X		

5.- SURVEY FOR THE DEVELOPMENT OF A BIM CERTIFICATION

As a starting point for development of professional certification BIM, we believe necessary know the point of view of experts and professionals representing the BIM environment.

As an expert in this methodology, we ask for your opinion about the model (approach) of professional certification in the BIM environment:

5.1.- Do you think a Professional Certification in the BIM environment for building and architecture professionals would respond a market requirement? Y/N Why?

5.2.- Do you consider that the two profiles identified (for certification) correspond to BIM's job that demand the market? Y/N. Why?

5.3.- In your opinion, would there be other profiles (for certification)? Which one's?

5.4.- Do you think it is appropriate the approach of two different certification profiles (management and production)? Y/N. Why?

5.5.- Professional Certification available categories depending on the experience (Professional 1-3 years, Advanced 4-14 years, Expert >14 years, and Excellence add to Expert, the merits). There are different functions for different categories. Do you consider appropriate the functions associated with the categories defined profile of Productions? Y/N. Why?

5.6.- In the case of BIM Manager profile, do you consider appropriate the functions associated with the categories defined for the Management profile? Y/N. Why?

5.7.- According to the market demand, do you think that the BIM Manager has the same functions that Project Management in a building (Person who is total responsible respect to the planning and execution of a project) or not? Same functions/ Different functions. Why?

5.8.- Do you consider Project Manager in building and BIM Manager must have the same competencies? Y/N. Why?

5.9.- Do you think it's important to integrate exiting certification profiles (Modeler, Controller, ...) in the certification approach? Y/N. Why? If your answer is "YES" you might say in what profiles



Dublin Institute of Technology
ARROW@DIT

Conference papers

Dublin School of Architecture

2015-11-10

"Defining Job Titles and Career Paths in BIM"

Malachy Mathews

Dublin Institute of Technology, malachy.mathews@dit.ie

BIM Title with Career Structure - Undergraduate

BIM Technician – (designation with base degree)

Level 7 educated (Arch Tech), (Eng MEP)
(Eng, Struct), (Eng Civil), (Geo)

BIM Coordinator – (designation with base degree)

+ 1 years office experience;

Level 8 educated (Arch Tech), (Eng MEP)
(Arch Design), (Eng, Struct), (Eng Civil), (CM),
(QS), (Geo)

BIM Title with Career Structure - Postgraduate

BIM Technician – (designation with base degree)

Level 8 entry to BIM PG Cert;

(Arch Tech), (Eng MEP) (Arch Design),
(Eng Struct), (Eng Civil), (Geo)

BIM Coordinator – (designation with base degree)

Collaborative

Level 8 entry + PG Cert + BIM PG Diploma + 1
years office experience; (Arch Tech), (Arch
Design), (Eng MEP), (Eng Struct), (Eng Civil),
(CM), (QS), (Geo).

BIM Project Manager – (designation with base degree)

Collaborative

Level 8 entry + PG Cert on to BIM PG Diploma +
3/5 years project running experience; (Arch Tech),
(Arch design), (Eng MEP), (Eng Struct), (Eng
Civil), (CM), (QS)/CCE - specific for complex
contracts.

BIM Manager – no designation

Level 8 entry + complete Level 9 MSc aBIMM +
3/5 years office/project management experience;

BIM Title with Career Structure - Undergraduate

BIM Technician – (designation with base degree)

Level 7 educated (Arch Tech), (Eng MEP)
(Eng, Struct), (Eng Civil), (Geo)

BIM Coordinator – (designation with base degree)

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Level 8 educated (Arch Tech), (Eng MEP)
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(Arch Design), (Eng, Struct), (Eng Civil), (CM),
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(Eng Struct), (Eng Civil), (Geo)

BIM Coordinator – (designation with base degree)

Collaborative

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years office experience; (Arch Tech), (Arch
Design), (Eng MEP), (Eng Struct), (Eng Civil),
(CM), (QS), (Geo).

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3/5 years project running experience; (Arch Tech),
(Arch design), (Eng MEP), (Eng Struct), (Eng
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BIM Manager – no designation

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3/5 years office/project management experience;

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Level 8 entry to BIM PG Cert;
(Arch Tech), (Eng MEP) (Arch Design),
(Eng Struct), (Eng Civil), (Geo)

BIM Coordinator – (designation with base degree)

Collaborative

Level 8 entry + PG Cert + BIM PG Diploma + 1
years office experience; (Arch Tech), (Arch
Design), (Eng MEP), (Eng Struct), (Eng Civil),
(CM), (QS), (Geo).

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Collaborative

Level 8 entry + PG Cert on to BIM PG Diploma +
3/5 years project running experience; (Arch Tech),
(Arch design), (Eng MEP), (Eng Struct), (Eng
Civil), (CM), (QS)/CCE - specific for complex
contracts.

BIM Title with Career Structure - Undergraduate

BIM Technician – (designation with base degree)

Level 7 educated (Arch Tech), (Eng MEP)
(Eng. Struct), (Eng Civil), (Geo)

BIM Coordinator – (designation with base degree)

+ 1 years office experience;
Level 8 educated (Arch Tech), (Eng MEP)
(Arch Design), (Eng. Struct), (Eng Civil), (CM),
(QS), (Geo)

BIM Title with Career Structure - Postgraduate

BIM Technician – (designation with base degree)

Level 8 entry to BIM PG Cert;
(Arch Tech), (Eng MEP) (Arch Design),
(Eng Struct), (Eng Civil), (Geo)

BIM Coordinator – (designation with base degree)

Collaborative

Level 8 entry + PG Cert + BIM PG Diploma + 1
years office experience; (Arch Tech), (Arch
Design), (Eng MEP), (Eng Struct), (Eng Civil),
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3/5 years office/project management experience;**

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3. Estructura del perfil certificable

1. OBJETO

2. ALCANCE

3. REFERENCIAS

4. DESCRIPCIÓN

- Misión del perfil
- Ámbito de actuación profesional
- Funciones por categoría
 - Las funciones desarrolladas por un profesional de este perfil
- Matriz de competencias del perfil
 - Competencias genéricas
 - Competencias de gestión
 - Competencias Técnicas

5. REQUISITOS DE ACCESO A LA CERTIFICACIÓN DEL PERFIL

- Pre-requisitos del perfil
- Requisitos del perfil
 - Formación genérica
 - Formación continuada
 - Experiencia
 - Méritos

6. EVALUACIÓN

- Evaluación de la experiencia y formación
- Exámenes
- Entrevista

7. RENOVACIÓN

8. VIGILANCIA

9. CÓDIGO ÉTICO



LE BLOG DU BIM
PAR MEDIACONSTRUCT

LE BLOG DU BIM

PAR MEDIACONSTRUCT, CHAPITRE FRANÇAIS DE BUILDINGSMART

THÈMES

■ ACTUS

- Mediaconstruct
- Comprendre le BIM
- Réglementations
- Infrastructures
- Process BIM
- BIM et produits
- Sur le terrain
- R&D et BIM
- À l'international

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Formation : quand l'option BIM devient une évidence



22/10/2015



Se former au BIM



Consciente des attentes du marché vis-à-vis du BIM, l'école d'ingénieurs du CESI a

- Décembre 2014
- Novembre 2014
- Octobre 2014
- Septembre 2014
- Août 2014
- Juillet 2014
- Juin 2014
- Mai 2014
- Avril 2014
- Mars 2014
- Février 2014
- Janvier 2014
- Décembre 2013
- Novembre 2013
- Octobre 2013
- Septembre 2013
- Juin 2013
- Mars 2013

(notamment en IFC) ou encore les spécificités d'un pilotage de projet en BIM.

3/ La stratégie aborde les façons de « marketer » un projet grâce au BIM, les utilisations de l'outil dans les différentes phases d'un chantier et la conduite du changement.

Pour l'« option Projet International » de ce Mastère Spécialisé, nous avons déjà développé un partenariat avec l'Université de Newcastle, qui dispose d'une BIM Academy. Nous avons donc étendu notre partenariat à l'option BIM qui profite ainsi, elle aussi, d'intervenants de l'Université : 30% des cours sont donc en anglais.

Quelle est la place de l'interopérabilité au sein de ce Mastère ?

S.R. : Afin que les projets de construction puissent se développer et être optimisés au maximum, mais aussi pour conserver et garantir la pérennité des données, il est essentiel que tous les logiciels soient interopérables, ce sujet est donc intégré au programme pédagogique.

Membre de Mediaconstruct et partenaire du projet MINnD, le CESI souhaite intégrer le BIM dans un autre département de l'école, celui de la recherche. Par ailleurs, l'école réfléchit à injecter du BIM dans ses formations « ingénieur BTP en apprentissage ». Un mouvement est sans conteste en marche.

En parallèle : 3 formations courtes

La communication autour de l'option BIM du Mastère Spécialisé a engendré de nombreuses demandes de formations plus courtes (des collectivités territoriales notamment). Le CESI a donc développé 3 formats d'une durée de 10 à 12 jours chacun, reposant sur des notions « métier ».

Modélisateur BIM : élaboration de la maquette numérique 3D et de ses données.

Coordinateur BIM : synthèse de maquettes, simulations thermiques ou acoustiques, extraction de quantitatif ou de métrés.

Chef de projet BIM : pilotage de la stratégie BIM dans son environnement.



AGENCIA DE
CERTIFICACIÓN PROFESIONAL

EDIFICACIÓN Y ARQUITECTURA

Inicio de sesión



Elige idioma:



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[ACP](#)

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ACP ofrece la primera certificación en BIM Manager basada en la norma ISO 17024

La ACP presentó en la segunda edición del European BIM Summit celebrada en el World Trade Centre de Barcelona, su nueva certificación de BIM Manager. Es la primera certificación europea en la materia basada en la normativa ISO 17024. Esta iniciativa también permite definir las funciones de este perfil emergente en un momento en el que los propios profesionales del sector de la edificación demandan un esfuerzo de todos los agentes para mejorar su cualificación en esta metodología,

de forma que vaya más allá de sus meros aspectos tecnológicos, para implantar un cambio cultural y una nueva forma de pensar y ver el proyecto, la obra, la ejecución y su mantenimiento.

El Building Information Modeling (BIM) es una nueva metodología de gestión de la información del ciclo de vida de los edificios. El llamado modelado de información para la edificación es el proceso de generación y gestión de datos de un edificio que utiliza software dinámico en tres dimensiones y en tiempo real. Esta metodología permite reducir pérdidas y recursos en el diseño y construcción y también durante la explotación, mantenimiento, rehabilitación e incluso derribo o desconstrucción del edificio.

Su implantación conlleva la aparición de nuevos roles y perfiles profesionales, entre los que destaca la figura del BIM Manager, un papel poco regulado en lo referente a sus funciones y competencias. De ahí la importancia de la una certificación basada en la normativa ISO 17024 que homogenice las funciones y procedimientos de estos expertos.

El BIM Manager debe ser responsable de una serie de cometidos multidisciplinarios, entre los cuales destacan el control, supervisión y coordinación del modelo en BIM, ser facilitador del entorno tecnológico a los diferentes agentes que participan en un proyecto y proponer y coordinar la definición, implementación y cumplimiento del Plan de

|| CON EL APOYO DE



¿Qué es ACP?



La Agencia de Certificación Profesional (ACP) es la entidad independiente encargada de emitir un distintivo de la calidad profesional, la capacidad y la competencia de un profesional del sector de la edificación en España para la realización de su ejercicio profesional.

ACP surge a raíz de la demanda de nuevos perfiles profesionales y la recuperación de la capacidad de generar empleo en un sector liberalizado y de máxima competitividad profesional.

Con el objetivo de adecuar el mercado de trabajo español a otros mercados internacionales, ACP ofrece un reconocimiento de la valía de los profesionales de la edificación

tras haber sido sometido a un proceso de validación en base a la normativa ISO 17024. ACP nace y opera bajo tres criterios que engloban toda su actividad:

- Confianza
- Independencia

|| ÚLTIMAS NOTICIAS

- > La Agencia de Certificación Profesional homologa catorce cursos de la Escuela de Edificación de Madrid
- > PREMAAT firma un acuerdo de colaboración con ACP
- > ACP ofrece la primera certificación en BIM Manager basada en la normativa ISO 17024
- > La Agencia de Certificación Profesional homologa los cursos de formación del CAATEEB
- > La ACP reconocerá la formación de postgrado en edificación de la Universidad Europea de Madrid

requiere que un profesional tenga vocación de aprendizaje continuo, que esté altamente especializado, tenga un mayor desarrollo de sus habilidades y actitudes y que, además de su capacitación técnica, se adapte rápidamente a los cambios, sea autónomo y tenga un alto nivel de iniciativa. Su formación, experiencia, dominio de idiomas, movilidad geográfica y su red de contactos son factores clave para afrontar el ejercicio profesional. Todo profesional necesita tener desarrollada una marca personal que le dote de mayor profesionalidad.

Y además necesita demostrar sus conocimientos, experiencia y competencias. Por ello, todo profesional necesita tener desarrollada una marca personal que sea su aval profesional.

La certificación otorgada por ACP se obtiene a través de un proceso objetivo e imparcial, facilitado por una herramienta informática de fácil manejo creada para tal efecto y en función de criterios como la experiencia del profesional, la formación y las competencias y nivel de profesionalidad.

En función de estos criterios, se han establecido categorías de certificación en función del perfil del profesional: Professional, Advanced, Expert y Excellence.

Los ámbitos de especialidad que encontramos dentro del sector de la edificación son: Project Manager, Concepción, Diseño, Producción, Ejecución, Seguridad, Salud, Área de gestión, Sostenibilidad y Eco eficiencia y Auditoría Externa.

La certificación profesional va destinada a los profesionales de la edificación pero no es excluyente, sino que persigue conseguir el mayor número de adhesiones posibles tanto del sector como de otros ámbitos.

El sistema de certificación de la ACP es muy riguroso para dotarlo de prestigio nacional e internacional, pero sencillo en forma para facilidad del profesional. El proceso de certificación se desarrolla a través de una plataforma informática situada en la web de ACP, lo que permite un proceso amigable con el candidato.

El profesional cuenta con un sistema sencillo, de coste mínimo y que se adelanta a las exigencias de la ley, dando soluciones por anticipado.

En España existe un rango mínimo de especialidades del sector de la construcción cubiertas por certificados. ACP surge para paliar esta situación y dar cobertura al profesional a nivel internacional.

Para el profesional, estar certificado es:

- Mejorar tu visibilidad como experto: diferenciación y distintivo de calidad.
- Un aval profesional.
- Potenciar la imagen profesional ante una oferta laboral, empleadores y clientes.
- Mejorar la empleabilidad ya que pone en valor la experiencia y la especialización.
- Mejorar y potencia la marca personal y profesional.
- Cumplimiento de posibles requerimientos internacionales de contratación y mejora de las oportunidades de movilidad laboral internacional.
- Disponer de un certificado en línea con entidades similares de reputación internacional como RICS.
- Desarrollo profesional especializado.

PARA EMPRESAS E INSTITUCIONES

ACP persigue ser un aval para las empresas ante sus clientes o antes las administraciones públicas en las licitaciones, bajo una adecuación a los estándares internacionales. La certificación de los profesionales de una empresa a través de ACP supone un impulso a la comercialización, al desarrollo de negocio y al aumento de la competitividad.

Para las empresas, la certificación profesional de la ACP:

- Es garantía de cualificación de los profesionales ante los clientes.
- Aspecto diferenciador ante el cliente.
- Consolida la imagen de profesionalidad en la presentación de ofertas.
- Herramienta de apoyo para la internacionalización.
- Confianza y seguridad en la cualificación y experiencia de los candidatos a un puesto ofertado.
- Un reconocimiento profesional de los empleados.

PARA PARTICULARES

Mediante los **listados de profesionales certificados** por la Agencia de Certificación Profesional , cualquier particular puede tener la confianza y seguridad de que contrata a un especialista en ese trabajo, con el aval de una institución independiente que acredita su valía.

Las primeras especialidades que certifica ACP a nivel nacional son:

- Auditor Energético en Edificación
- Consultor Técnico en Edificación
- Director de Ejecución de la Obra
- Coordinador Seguridad y Salud
- BIM Manager
- Jefe de Obra (próximamente)

Para cada una de las especialidades se han establecido distintas categorías de certificación en función del perfil del profesional:

- Junior (Solo para Consultor Técnico en Edificación)
- Professional
- Advanced
- Expert
- Excellence

El certificado tiene una duración específica, de manera que para asegurar que un profesional mantiene actualizados sus conocimientos y habilidades, se le exige que demuestre (mediante formación continua, actuaciones profesionales, examen, etc.) que continúa estando capacitado para el ejercicio de una determinada actividad.

Categoría	Certificado de inicio	Mantenimiento (*)		Renovación	Aumento de Categoría	Copia del Certificado
		año	mes			
Professional	340,00 €	120 €	10 €	255,00 €	367,50 €	42,00 €
Advanced	490,00 €	120 €	10 €	367,50 €	480,00 €	
Expert	640,00 €	120 €	10 €	480,00 €	592,50 €	
Excellence	790,00 €	120 €	10 €	592,50 €	-----	

- A estos precios habrá que añadir el 21% de IVA.
- Los precios son susceptibles a cambios sin previo aviso.

Bonificaciones

- Si tu Colegio tiene acuerdo con ACP, tienes una bonificación de un 6% de descuento. Esta bonificación será aplicable siempre que se evidencie que estás al corriente de pago con las cuotas de colegiado.
- Para segundas Certificaciones se aplicará un 10% de descuento.
- En caso de acogerte a pago fraccionado, las bonificaciones se regularizarán en el último pago.
- Consulte nuestras promociones para empresas que presenten a un grupo de profesionales a la certificación.

Certificado de Inicio da derecho a:

- Solicitud de certificación.
- Asesor durante el proceso.

**BIM
COORDINATOR**

You can do basic modeling
and work collaboratively



BIM SPECIALIST

The user designs, calculates and manages a project using the software modeling to advanced. The user is able to take a holistic view of design team.



BIM EXPERT

The user will learn the management of advanced BIM systems and their interoperability.

The user also has IT Manager skills and manages and develops libraries.



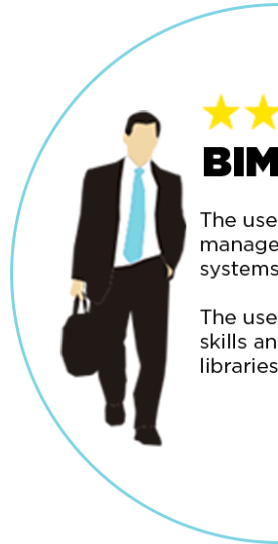
★★★★

MÁSTER BIM MANAGER

The BIM expert has the skills necessary for the management and implementation of BIM systems on any work sta

	BIM COORDINATOR		BIM SPECIALIST								BIM EXPERT									MASTER BIM MANAGER																						
			BIM INTERIOR ARCHITECT			BIM ARCHITECT			BIM MEP/ STRUCTURE ENGINEER																				BIM PROJECT MANAGER		BIM CONSTRUCTION ENGINEER			BIM BIOCLIMATIC DESIGNER		BIM FM FACILITIES MANAGER						
LEVELS	A1	B1	A1	A3	B1	A1	A2	A3	B1	A1	B1	B3	A1	B1	B2	A1	B1	B2	B3	A1	B1	B2	A1	B1	A1	A2	A3	B1	B2	B3	C1	C2	C3	A1	A2	A3	B1	B2	B3	C1	C2	C3
COMPETENCES	Digital Model		Digital Model		Digital Model		Digital Model		Digital Model		Digital Model		Digital Model		Digital Model		Digital Model		Digital Model		Digital Model						Digital Model															
	Collaborative Teamwork		Advanced Modelling		Model Documentation		Collaborative Teamwork		Collaborative Teamwork		Collaborative Teamwork		Collaborative Teamwork		Collaborative Teamwork		Collaborative Teamwork		Collaborative Teamwork		Model Documentation						Model Documentation															
			Collaborative Teamwork		Advanced Modelling		MEP/Struct. Interoperability		4D, 5D, 6D, 7D Interoperability		4D, 5D, 6D, 7D Interoperability		4D, 5D, 6D, 7D Interoperability		4D, 5D, 6D, 7D Interoperability		Asset Management		Advanced Modelling						Advanced Modelling																	
					Collaborative Teamwork								MEP/Struct. Interoperability						Collaborative Teamwork						Collaborative Teamwork																	
																					4D, 5D, 6D, 7D Interoperability						4D, 5D, 6D, 7D Interoperability															
																					MEP/Struct. Interoperability						MEP/Struct. Interoperability															
																					BIM Objects Development. BIM Libraries Management						BIM Objects Development. BIM Libraries Management															
																					BIM Style Guide						BIM Style Guide															
																					IT Management						IT Management															
A1: Digital Model		B1: Collaborative Teamwork																								BIM Systems Implementation																
A2: Model Documentation		B2: 4D, 5D, 6D, 7D Interoperability																								BIM Systems Management																
A3: Advanced Modelling		B3: MEP/Struct. Interoperability																																								

BIM PROFILES



BIM COORDINATOR		BIM SPECIALIST																BIM EXPERT														
		BIM INTERIOR ARCHITECT			BIM ARCHITECT				BIM MEP/STRUCTURE ENGINEER			BIM PROJECT MANAGER			BIM CONSTRUCTION ENGINEER								BIM BIOCLIMATIC DESIGNER			BIM FM FACILITIES MANAGER						
LEVELS	A1	B1	A1	A3	B1	A1	A2	A3	B1	A1	B1	B3	A1	B1	B2	A1	B1	B2	B3	A1	B1	B2	A1	B1	A1	A2	A3	B1	B3			
	Digital Model		Digital Model			Digital Model				Digital Model			Digital Model			Digital Model			Digital Model			Digital Model			Digital Model			Digital Model				
	Collaborative Teamwork		Advanced Modelling			Model Documentation				Collaborative Teamwork			Collaborative Teamwork			Collaborative Teamwork			Collaborative Teamwork			Collaborative Teamwork			Collaborative Teamwork			Model Documentation				
			Collaborative Teamwork			Advanced Modelling				MEP/Struct. Interoperability			4D, 5D, 6D, 7D Interoperability			4D, 5D, 6D, 7D Interoperability			4D, 5D, 6D, 7D Interoperability			4D, 5D, 6D, 7D Interoperability			Asset Management			Advanced Modelling				
COMPETENCES						Collaborative Teamwork										MEP/Struct. Interoperability												Collaborative Teamwork				
																												4D, 5D, 6D, 7D Interoperability				

						BIM EXPERT									MASTER BIM MANAGER										
CONSTRUCTION EXPERT		BIM BIOCLIMATIC DESIGNER			BIM FM FACILITIES MANAGER																				
A1	B1	B2	B3	C1	C2	C3	A1	A2	A3	B1	B2	B3	C1	C2	C3	A1	A2	A3	B1	B2	B3	C1	C2	C3	
Digital Model	Digital Model			Digital Model		Digital Model									Digital Model										
Collaborative Work	Collaborative Teamwork			Collaborative Teamwork		Model Documentation									Model Documentation										
4D, 5D, 6D, 7D Interoperability	4D, 5D, 6D, 7D Interoperability			Asset Management		Advanced Modelling									Advanced Modelling										
Struct. Interoperability						Collaborative Teamwork									Collaborative Teamwork										
						4D, 5D, 6D, 7D Interoperability									4D, 5D, 6D, 7D Interoperability										
						MEP/Struct. Interoperability									MEP/Struct. Interoperability										
						BIM Objects Development. BIM Libraries Management									BIM Objects Development. BIM Libraries Management										
						BIM Style Guide									BIM Style Guide										
						IT Management									IT Management										
															BIM Systems Implementation										
															BIM Systems Management										

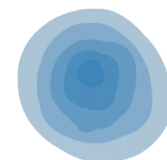
Then, the question –instead of being
How do we have to certify
professionals?- would have to be:

**How do we have to certify processes
in order to create better cities, better
territories?**

Ignasi Pérez Arnal

ignasiperezarnal@bimacademy.es

BIMAcademy.es



BIM Academy



Barcelona
World Trade Center
18 · 19 February 2016

BIM MANAGER

Primera certificación profesional basada en ISO 17.024

Javier Chaves Carrascosa

Organizers:



COL·LEGI D'APARELLADORS, ARQUITECTES TÈCNICS
I ENGINYERS D'EDIFICACIÓ DE BARCELONA

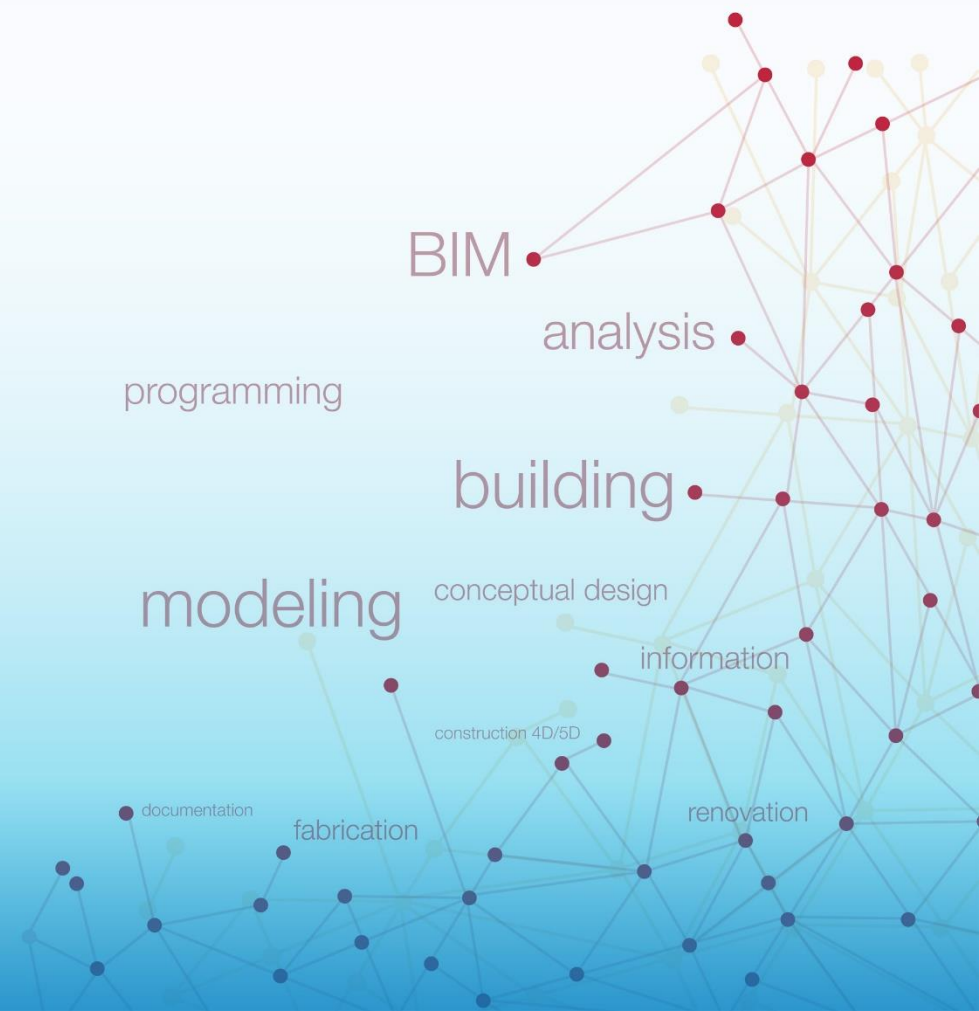


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Spanish home of OpenBIM[®]

Main Partner:



Certificación Profesional ISO 17.024

BIM MANAGER

- Nueva figura emergente
- Gran demanda en oddslot el mercado
- Poca regulación en funciones y competencias
- Múltiples cursos, grados y post-grados
- Auto-denominación de Bim Manager



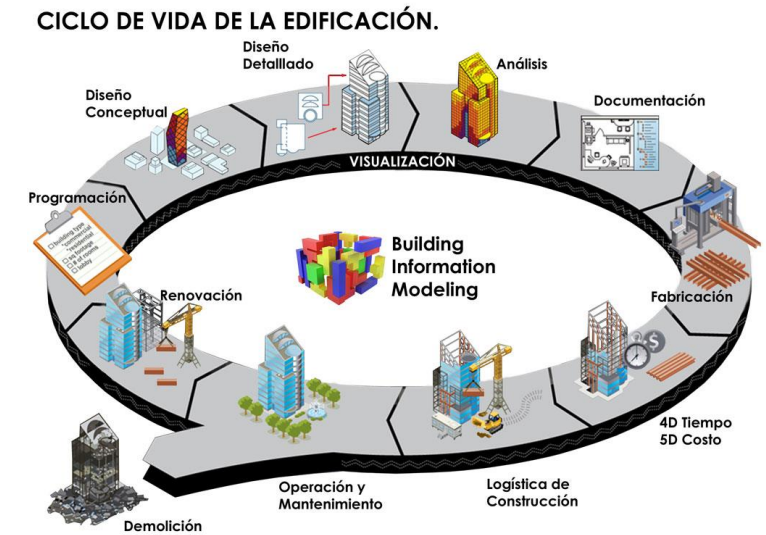
Certificación Profesional ISO 17.024

BIM MANAGER

- Volumen de información y procedimientos **BIM**
- El carácter multidisciplinar

BIM Manager

- Control , supervisión y coordinación del modelo BIM
- Facilitador del entorno tecnológico
- Propone y coordina la definición, implementación y cumplimiento del BEP



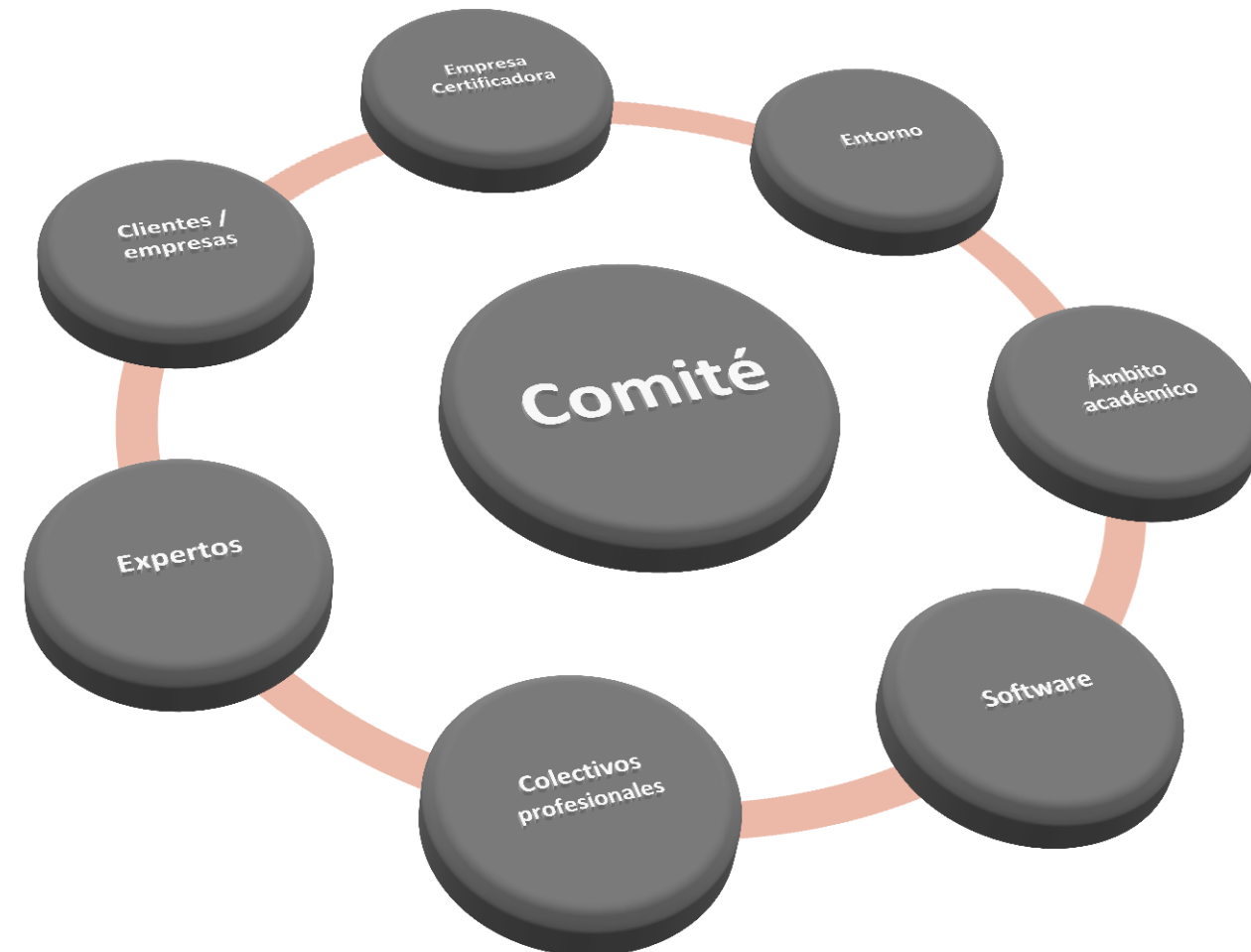
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BIM MANAGER

Validar competencias y los requisitos

- Representación del 100% de las partes interesadas.
- Más de 30 entidades.
- Integrados por reputados profesionales, empresas y entidades del sector.

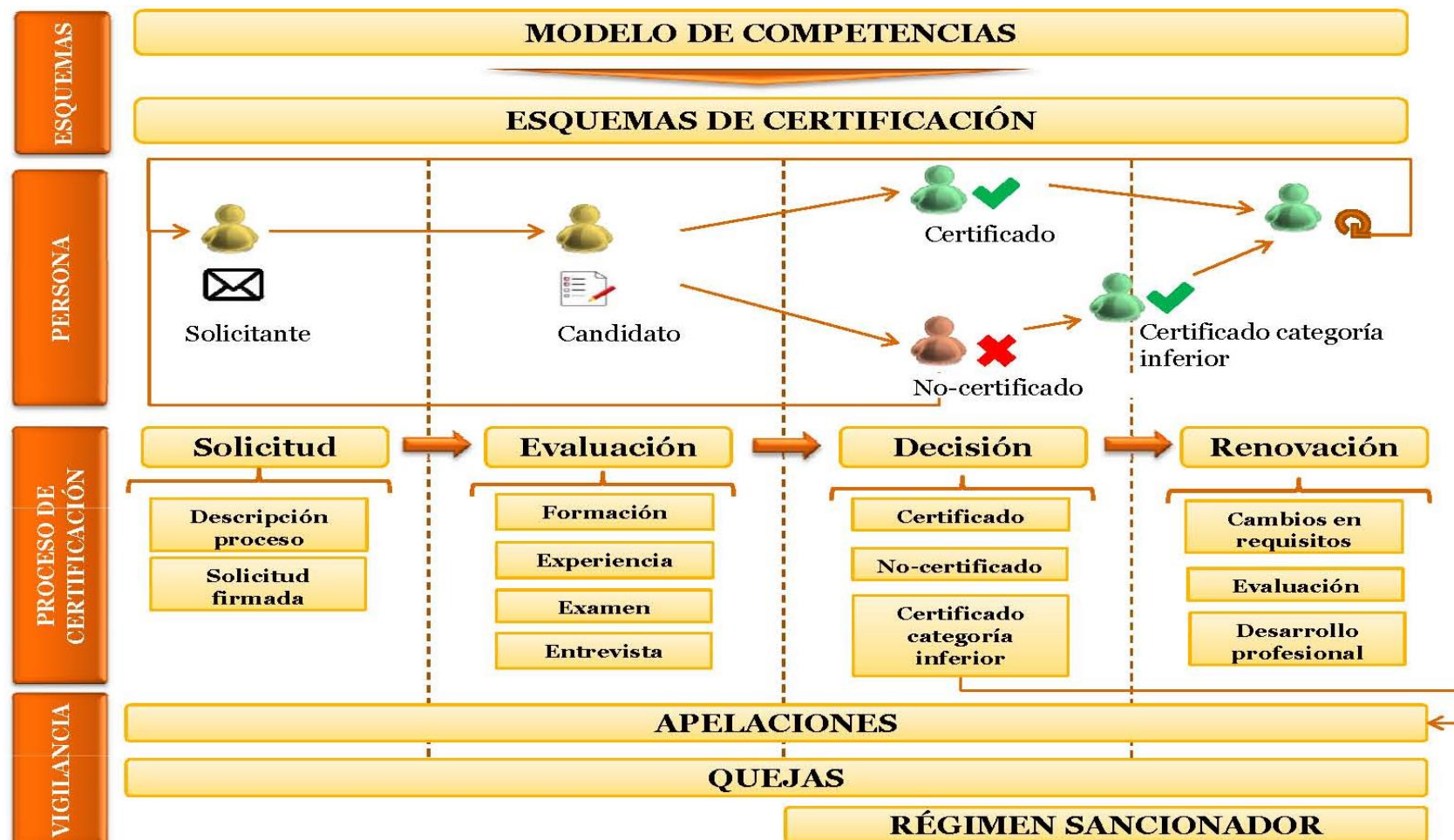
www.agenciacertificacionprofesional.org



Certificación Profesional ISO 17.024

BIM MANAGER

Proceso
Obtención
Certificado



Certificación Profesional ISO 17.024

BIM MANAGER



Certificación Profesional ISO 17.024

BIM MANAGER



Acreditará nuestra
entidad Certificadora
de personas bajo
la ISO 17024



Nuestra entidad certifica
profesionales

PROFESIONAL
CERTIFICADO
por ACP en una o
varias especialidades

Independiente, transparente, objetiva, sin conflictos de intereses

Certificación Profesional ISO 17.024

BIM MANAGER

- Entrega de un distintivo de calidad profesional.
- Mejora y potencia la marca personal y profesional
- Uso personal en ofertas, redes sociales, etc.
- Uso en tarjetas de visita
- Listado público de personal certificado

