NET-UBIEP | Network for Use BIM to Increase Energy Performance www.net-ubiep.eu



DELIVERABLE: D28 - D4.8

Review of the three-dimensional Matrix

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WP Leader: University of Zagreb, Faculty of Civil Engineering Authors: CSA - CENTRO SERVIZI AZIENDALE - University of Zagreb, Faculty of Civil Engineering Contribution: all partners

Network for Using BIM to Increase the Energy Performance

Grant Agreement Number:

754016 Net-UBIEP H2020

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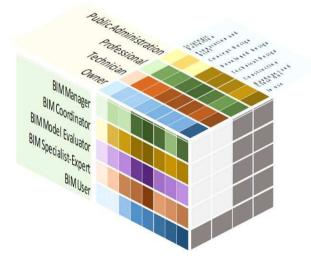
The present deliverable will be update during the project in order to align the outcome to the market needs as well as to other BIM related projects realized within Horizon 2020 program.

The updated version of the deliverable will be only available in the website of the project www.net-ubiep.eu.

Some deliverables could also be translated in partners national languages and could be find in the respective national web pages. Click on the flags to open the correspondence pages:



NET UBIEP Network for Using BIM to Incre						3D N	1atri	x							This project has received funding the European Union's Hortzor research and Innovation progr under grant agreement Nc.3							
BIM Profiles	Strategic Definition	Preparation and Brief	Concept Design	Developed Design	Technical Design	Construction	Handover and Close Out	In use		Strategic Definition	Preparation and Brief	Concept Design	Developed Design	Technical Design	Construction	Handover and Close Out	In use		Owner	Technician	Professional	Public Administration
BIM Manager																		BIM Manager				
BIM Coordinator									BIM Coordinator									BIM Coordinator				
BIM Model Evaluator									BIM Model Evaluator									BIM Model Evaluator				
BIM Specialist-Expert									BIM Specialist-Expert									BIM Specialist-Expert				
BIM User									BIM User									BIM User				
Target Group	Strategic Definition	Preparation and Brief	Concept Design	Developed Design	Technical Design	Construction	Handover and Close Out	In use		Strategic Definition	Preparation and Brief	Concept Design	Developed Design	Technical Design	Construction	Handover and Close Out	In use					
Public Administration									Public Administration													
Professional									Professional													
Technician									Technician													
Owner									Owner													





EQF LEVELS

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement *No.754016*



LEGEND:	KNOWLEDGE		RESPONSABILITY AND AUTONOMY
	In the context of EQF, knowledge is described as theoretical and/or	In the context of EQF, skills are described as cognitive (involving the use of logical, intuitive and creative thinking) and practical (involving manual dexterity and the use of methods, materials, tools and instruments).	In the context of the EQF responsibility and autonomy is described as the ability of the learner to apply knowledge and skills autonomously and with responsibility
Level 1 The learning outcomes relevant to Level 1 are	basic general knowledge	basic skills required to carry out simple tasks	work or study under direct supervision in a structured context
Level 2 The learning outcomes relevant to Level 2 are	basic factual knowledge of a field of work or study	basic cognitive and practical skills required to use relevant information in order to carry out tasks and to solve routine problems using simple rules and tools	work or study under supervision with some autonomy
Level 3 The learning outcomes relevant to Level 3 are	knowledge of facts, principles, processes and general concepts, in a field of work or study.	a range of cognitive and practical skills required to accomplish tasks	take responsibility for completion of tasks in work or study adapt own behaviour to circumstances in solving problems
Level 4 The learning outcomes relevant to Level 4 are	factual and theoretical knowledge in broad contexts within a field of work or study	a range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study	exercise self-management within the guidelines of work or study contexts that are usually predictable, but are subject to change supervise the routine work of others, taking some responsibility for the evaluation and improvement of work or study activities
Level 5* The learning outcomes relevant to Level 5 are	within a field of work or study and an awareness of the boundaries	a comprehensive range of cognitive and practical skills required to develop creative solutions to abstract problems	exercise management and supervision in contexts of work or study activities where there is unpredictable change review and develop performance of self and others
Level 6** The learning outcomes relevant to Level 6 are	advanced knowledge of a field of work or study, involving a critical understanding of theories and principles	advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work or study	manage complex technical or professional activities or projects, taking responsibility for decision-making in unpredictable work or study contexts take responsibility for managing professional development of individuals and groups
Level 7*** The learning outcomes relevant to Level 7 are		specialised problem-solving skills required in research and/or innovation in order to develop new knowledge and procedures and	manage and transform work or study contexts that are complex, unpredictable and require new strategic approaches take responsibility for contributing to professional knowledge and practice and/or for reviewing the strategic performance of teams
Level 8**** The learning outcomes relevant to Level 8 are	knowledge at the most advanced frontier of a field of work or study and at the interface between fields	synthesis and evaluation, required to solve critical problems in research and/or innovation and to extend and redefine existing	demonstrate substantial authority, innovation, autonomy, scholarly and professional integrity and sustained commitment to the development of new ideas or processes at the forefront of work or study contexts including research



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Network for Using BIM to Increase the Energy Performance

Public Administration

N	Competence		Learr	ning out	come (D)3.2-A)	
C0	Have basic BIM knowledge and skills	PA.L01	PA.L02	PA.LO3	PA.L04	PA.L05	PA.L06
C0.K1	BIM basic concepts, terminology, principles, strategies and its value proposition						
C0.K2	Benefits and uses of BIM compared to traditional methods for improving energy efficiency of new or existing buildings						
C0.K3	Project information development cycle: information specification, development, exchange and maintenance throughout						
C0.K4	Reasons for open and interoperable solutions to ensure collaboration among professionals of different disciplines						
C0.K5	Methodology to identify, plan, develop and evaluate organization's BIM implementation capabilities and BIM uses						
C0.K6	Relevance of maintenance for maintaing the foreseen energy performance						
C0.S1	Read a BIM Execution Plan (BEP)						
C0.S2	Read a Information Delivery Manual						
C0.S3	Identify information requirements for his own role						
C0.S4	Identify the format to read information and transfer information within the supply chain						
C0.S5	Identify the EIR (Employer Information Requirements)						
C0.S6	Identify and/or verify the stages of PIM (Project Information Management)						
C1	Understand BIM tools	PA.L01	PA.L02	PA.L03	PA.L04	PA.L05	PA.L06
C1.K1	Principle of economic subjects for the cost estimation and evaluation of energy refurbishment						
C1.S1	Specialised skills to incorporate information into BIM Model, evaluating openBIM software						
C1.S2	Stay up to date on BIM trends, current developments and new directions of BIM technologies						
C2	Apply information management	PA.L01	PA.L02	PA.L03	PA.L04	PA.L05	PA.L06
C2.K1	Principle of data mining, data base and back up in the CDE (Common Data Environment)						
C2.K2	Principle of data transferring among different software and/or data federating into an integrated design						
C2.K3	Principle of data security and administrative law in the archiving of data in a CDE (Common Data Environment)						
C2.K4	Principle of information management in building sustainability and lean design						
C2.K5	Principle of reusing and recycling of materials and components of a building						
C2.S1	Manage and coordinate information related to energy performance						
C2.S6	Verify the correspondence between the "as built" and the final BIM model						
C2.S7	Identify requirements for the management of data in the CDE (Common Data Environment) for any professionals						
C2.S11	Use BIM for assessing the reusability and recycling of building materials and components						



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Network for Using BIM to Increase the Energy Performance

Public Administration Learning outcome (D3.2-A) Competence Ν PA.L01 PA.L02 PA.LO3 PA.LO4 PA.L05 PA.L06 C3 Apply procurement management C3.K1 Processes, methods and principles of decision-making on procuring services and suppliers C3.K3 Legal and technical aspects on green procurement, state and rules for using public funding and international good C3.K4 Strategies for training programs to increase energy efficiency with the support of BIM C3.S1 Select or evaluate selected companies with experience in the technologies defined C3.S3 List and collaborate with several stakeholders who participate in the sustainable project, distinguishing roles/needs and C3.S4 Apply change management, identifying and handling deviations / breach of the contract with particular guarantees C3.S5 Negotiate and take necessary legal steps if the contractual requirements were not met C3.S6 Include measureable Quality Analysis criteria as part of the contract PA.L01 PA.L02 PA.L03 PA.L04 C4 Use BIM technology PA.L05 PA.L06 C4.K7 Techniques of automatic code checking and management of software e-permit Principle of information maturity level representation of the model defining the methodology for BIM maturity level C4.K8 C4.S10 Use 4D and 5D BIM technologies to evaluate time and cost PA.L04 C5 Analyse the BIM Model PA.L01 PA.L02 PA.L03 PA.L05 PA.L06 C5.K1 Principle of global environmental impact of different building products and technologies (RES use, insulation, HVAC C5.S1 Coordinate the work of different disciplines in order to obtain a consolidate BIM model that satisfy all the requirements C5.S2 Apply Quality Management and coordinate team members of different disciplines C5.S6 Use BIM models to communicate installation instructions

	BACK EXTRACT												
U Network	NET BIEP Competences & Lea	rning c	outcon	nes				וד	the Europear research and i	received fund n Union's Hork Innovation pro t agreement N	lzon 2020 ogramme	\bigcirc	
S	Professio	onal											
N	Competence					Learn	ing outo	come (D	3.2-A)				
C0	Have basic BIM knowledge and skills	PR.L01	PR.LO2	PR.LO3	PR.L04	PR.L05	PR.LO6	PR.L07	PR.L08	PR.L09	PR.L10	PR.L11	PR.L12
C0.K1	BIM basic concepts, terminology, principles, strategies and its value proposition												
C0.K2	Benefits and uses of BIM compared to traditional methods for improving energy efficiency of new or existing buildings												
C0.K3	Project information development cycle: information specification, development, exchange and maintenance throughout all the												
C0.K4	Reasons for open and interoperable solutions to ensure collaboration among professionals of different disciplines												
C0.K5	Methodology to identify, plan, develop and evaluate organization's BIM implementation capabilities and BIM uses												
C0.K6	Relevance of maintenance for maintaing the foreseen energy performance												
C0.S1	Read a BIM Execution Plan (BEP)												
C0.S2	Read a Information Delivery Manual												
C0.S3	Identify information requirements for his own role												
C0.S4	Identify the format to read information and transfer information within the supply chain												
C0.S5	Identify the EIR (Employer Information Requirements)												
C0.S6	Identify and/or verify the stages of PIM (Project Information Management)												
C1	Understand BIM tools	PR.LO1	PR.LO2	PR.L03	PR.LO4	PR.L05	PR.LO6	PR.L07	PR.L08	PR.L09	PR.L10	PR.L11	PR.L12
C1.K1	Principle of economic subjects for the cost estimation and evaluation of energy refurbishment												
C1.S1	Specialised skills to incorporate information into BIM Model, evaluating openBIM software												
C1.S2	Stay up to date on BIM trends, current developments and new directions of BIM technologies												
C1.S3	Decrease the life cycle cost of the building using methods described in ISO 15686-5												
C1.S4	Evaluate and compare different plans and related Return of Investments using methods described in ISO 15686-5												
C2	Apply information management	PR.L01	PR.LO2	PR.LO3	PR.LO4	PR.L05	PR.LO6	PR.L07	PR.LO8	PR.L09	PR.L10	PR.L11	PR.L12
C2.K1	Principle of data mining, data base and back up in the CDE (Common Data Environment)												
C2.K2	Principle of data transferring among different software and/or data federating into an integrated design												
C2.K3	Principle of data security and administrative law in the archiving of data in a CDE (Common Data Environment)												
C2.K4	Principle of information management in building sustainability and lean design												
C2.S1	Manage and coordinate information related to energy performance												
C2.S2	Identify which graphic and/or non-graphic information are necessary for a better management of works and for define the												
C2.S3	Archive the model ensuring that the information provided is kept intact and not manipulated for any future use												
C2.S4	Evaluate the completeness of the maintenance plan to be used in EPC (Energy Performance Contracting)												
C2.S6	Verify the correspondence between the "as built" and the final BIM model								\square				
C2.S7	Identify requirements for the management of data in the CDE (Common Data Environment) for any professionals involved in the								\square		\square		
C2.S8	Transfer building information using BIM to facility managers and final users										\square		
C2.S9	Ensure that construction process and product information is transferred into BIM Model / Technical Specifications and provide												





Network f	Jetwork for Using BIM to Increase the Energy Performance												
3	Professio	onal											
N	Competence					Learn	ing outo	come (D	9.2-A)				
C2.S10	Ensure the update of the BIM Model / Technical Specification when a maintenance is performed												
C2.S11	Use BIM for assessing the reusability and recycling of building materials and components												
C2.S12	Develop a CDE (Common Data Environment) to exchange data through the building life cycle as well as through the supply chain												
C3	Apply procurement management	PR.L01	PR.LO2	PR.LO3	PR.LO4	PR.L05	PR.LO6	PR.L07	PR.LO8	PR.L09	PR.L10	PR.L11	PR.L12
C3.K1	Processes, methods and principles of decision-making on procuring services and suppliers												
C3.K2	Processes, methods and principles of decision-making on materials and products												
C3.K4	Strategies for training programs to increase energy efficiency with the support of BIM												
C3.S1	Select or evaluate selected companies with experience in the technologies defined												
C3.S2	Select products that fit specifications and demands on given quality aspects making financial calculation related to contracting phase												
C3.S3	List and collaborate with several stakeholders who participate in the sustainable project, distinguishing roles/needs and involving												
C3.S5	Define building environmental impact as part of the contract												
C4	Use BIM technology	PR.LO1	PR.LO2	PR.LO3	PR.LO4	PR.L05	PR.LO6	PR.L07	PR.LO8	PR.L09	PR.L10	PR.L11	PR.L12
C4.K1	Techniques and principles of integrated digital production and rendering												
C4.K2	Principle of integrated design and data transferring, with particular knowledge of IFC (Industry Foundation Classes) structure using												
C4.K3	Principle of planning and scheduling for BEP (BIM Execution Plan)												
C4.K4	Principles of interplays between all aspects of building design, building use and outdoor climate for dynamic evaluation												
C4.K5	Principles and systems of sustainable buildings, including renewable energy production												
C4.K6	Design techniques for different scenarios for new resilient buildings to future climate changes and for the refurbishment of existing												
C4.K7	Techniques of automatic code checking and management of software e-permit												
C4.K8	Principle of information maturity level representation of the model defining the methodology for BIM maturity level												
C4.S1	Produce a digital 3D model of building / any BIM objects needed for the library in the Common Data Environment												
C4.S2	Develop a BEP (BIM Execution Plan)												
C4.S3	Develop site utilization planning, set-up organized management systems, tack the effectiveness distribution of appropriate spaces												
C4.S4	Use laser scanning in order to produce a point of cloud of existing buildings, comparing and evaluating facilities and related systems												
C4.S5	Use BIM enabled simulation techniques to reduce the environmental impact												
C4.S6	Integrate different RES (Renewable Energy Sources) and energy efficiency systems into buildings without clash detection												
C4.S7	Produce a maintenance plan and a maintenance manual for building systems												
C4.S8	Produce a visualization design in order to report back to costumers, users and reviewers												
C4.S9	Use code checking to verify the respect of energy performance requirements												
C4.S10	Use 4D and 5D BIM technologies to evaluate time and cost												
C5	Analyse the BIM Model	PR.LO1	PR.LO2	PR.LO3	PR.LO4	PR.L05	PR.LO6	PR.L07	PR.L08	PR.L09	PR.L10	PR.L11	PR.L12
C5.K1	Principle of global environmental impact of different building products and technologies (RES use, insulation, HVAC systems and												
C5.K2	Techniques of passive measures needed for the management of nZEB												
C5.K3	Principle of integrated design and data transferring, with particular knowledge of IFC (Industry Foundation Classes) structure using												
C5.S1	Coordinate the work of different disciplines in order to obtain a consolidate BIM model that satisfy all the requirements												
C5.S2	Apply Quality Management and coordinate team members of different disciplines												
C5.S3	Apply BIM enabled energy and lighting analysis with periodic monitoring												
C5.S4	Validate BIM Model												
C5.S5	Use BIM to assure the technical supervision of construction works												
C5.S6	Use BIM models to communicate installation instructions												

NCompetence0Have basic BIM knowledge and skillsTE.L01C0.K1BIM basic concepts, terminology, principles, strategies and its value propositionTE.L01C0.K2Benefits and uses of BIM compared to traditional methods for improving energy efficiency of new or existing buildingsTE.L01C0.K2Benefits and uses of BIM compared to traditional methods for improving energy efficiency of new or existing buildingsTE.L01C0.K3Project information development cycle: information specification, development, exchange and maintenance throughout all the building life cycleTE.L01C0.K4Reasons for open and interoperable solutions to ensure collaboration among professionals of different disciplinesTE.L01C0.K5Methodology to identify, plan, develop and evaluate organization's BIM implementation capabilities and BIM usesTE.L01C0.K6Relevance of maintenance for maintaing the foreseen energy performanceTE.L01C0.S1Read a BIM Execution Plan (BEP)TE.L01C0.S2Read a Information Delivery ManualTE.L01	Learning TE.L02	g outcom TE.L03	ie (D3.2-A	
C0Have basic BIM knowledge and skillsTE.L01C0.K1BIM basic concepts, terminology, principles, strategies and its value propositionImage: Concept and the strategies and its value propositionC0.K2Benefits and uses of BIM compared to traditional methods for improving energy efficiency of new or existing buildingsImage: Concept and the strategies and its value propositionC0.K3Project information development cycle: information specification, development, exchange and maintenance throughout all the building life cycleImage: Concept and interoperable solutions to ensure collaboration among professionals of different disciplinesC0.K4Reasons for open and interoperable solutions to ensure collaboration among professionals of different disciplinesImage: Concept and the strategies and evaluate organization's BIM implementation capabilities and BIM usesC0.K6Relevance of maintenance for maintaing the foreseen energy performanceImage: Concept and the strategies and BIM usesC0.S1Read a BIM Execution Plan (BEP)Image: Concept and the strategies and an use of the strategies and a linformation Delivery Manual			ie (D3.2-A	
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C0.K2 Benefits and uses of BIM compared to traditional methods for improving energy efficiency of new or existing buildings Improving energy efficiency of new or existing buildings C0.K3 Project information development cycle: information specification, development, exchange and maintenance throughout all the building life cycle Improving energy efficiency of new or existing buildings C0.K3 Project information development cycle: information specification, development, exchange and maintenance throughout all the building life cycle Improving energy efficiency of new or existing buildings C0.K4 Reasons for open and interoperable solutions to ensure collaboration among professionals of different disciplines Improving energy efficiency of all the building life cycle C0.K5 Methodology to identify, plan, develop and evaluate organization's BIM implementation capabilities and BIM uses Improving energy performance C0.K6 Relevance of maintenance for maintaing the foreseen energy performance Improving energy performance C0.S1 Read a BIM Execution Plan (BEP) Improving energy manual			TE.L04	TE.L05
C0.K3 Project information development cycle: information specification, development, exchange and maintenance throughout all the building life cycle Image: C0.K4 C0.K4 Reasons for open and interoperable solutions to ensure collaboration among professionals of different disciplines Image: C0.K5 C0.K5 Methodology to identify, plan, develop and evaluate organization's BIM implementation capabilities and BIM uses Image: C0.K6 C0.K6 Relevance of maintenance for maintaing the foreseen energy performance Image: C0.S1 C0.S2 Read a BIM Execution Plan (BEP) Image: C0.S2 C0.S2 Read a Information Delivery Manual Image: C0.S2		1		
C0.K4 Reasons for open and interoperable solutions to ensure collaboration among professionals of different disciplines Image: Coll Coll Coll Coll Coll Coll Coll Col				
C0.K5Methodology to identify, plan, develop and evaluate organization's BIM implementation capabilities and BIM usesC0.K6Relevance of maintenance for maintaing the foreseen energy performanceC0.S1Read a BIM Execution Plan (BEP)C0.S2Read a Information Delivery Manual				
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C0.S1 Read a BIM Execution Plan (BEP) C0.S2 Read a Information Delivery Manual				
C0.S2 Read a Information Delivery Manual				
C0.S3 Identify information requirements for his own role				
C0.54 Identify the format to read information and transfer information within the supply chain				
C2 Apply information management TE.L01	TE.L02	TE.L03	TE.L04	TE.L05
C2.K2 Principle of data transferring among different software and/or data federating into an integrated design				
C2.K3 Principle of data security and administrative law in the archiving of data in a CDE (Common Data Environment)				
C2.K4 Principle of information management in building sustainability and lean design				
C2.K5 Principle of reusing and recycling of materials and components of a building				
C2.S1 Manage and coordinate information related to energy performance				
C2.S2 Identify which graphic and/or non-graphic information are necessary for a better management of works and for define the completeness of the Information Delivery				
C2.S3 Archive the model ensuring that the information provided is kept intact and not manipulated for any future use				
C2.S4 Evaluate the completeness of the maintenance plan to be used in EPC (Energy Performance Contracting)				
C2.S7 Identify requirements for the management of data in the CDE (Common Data Environment) for any professionals involved in the process				
C2.S9 Ensure that construction process and product information is transferred into BIM Model / Technical Specifications and provide status of works when request				1
C3 Apply procurement management TE.L01	TE.L02	TE.L03	TE.L04	TE.L05
C3.K2 Processes, methods and principles of decision-making on materials and products				-
C3.S2 Select products that fit specifications and demands on given quality aspects making financial calculation related to contracting phase				
C3.S3 List and collaborate with several stakeholders who participate in the sustainable project, distinguishing roles/needs and involving them in the information delivery plan				
C4 Use BIM technology TE.L01	TE.L02	TE.L03	TE.L04	TE.L05
C4.K4 Principles of interplays between all aspects of building design, building use and outdoor climate for dynamic evaluation	-			
C4.K5 Principles and systems of sustainable buildings, including renewable energy production				
C4.S4 Use laser scanning in order to produce a point of cloud of existing buildings, comparing and evaluating facilities and related systems				1
C4.S5 Use BIM enabled simulation techniques to reduce the environmental impact				
C5 Analyse the BIM Model TE.L01	TE.L02	TE.L03	TE.L04	TE.L05
C5.K1 Principle of global environmental impact of different building products and technologies (RES use, insulation, HVAC systems and building automation systems)	1			
C5.S6 Use BIM models to communicate installation instructions	1	-		



ВАСК

Network for Using BIM to Increase the Energy Performance

NET

ВАСК

URIFP



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No.754016



OW.LO8

Owner Competence Learning outcome (D3.2-A) Ν OW.LO3 OW.LO4 OW.LO5 OW.LO6 OW.LO7 OW.LO8 0 Have basic BIM knowledge and skills OW.LO1 OW.LO2 C0.K1 BIM basic concepts, terminology, principles, strategies and its value proposition C0.K2 Benefits and uses of BIM compared to traditional methods for improving energy efficiency of new or existing buildings СО.КЗ Project information development cycle: information specification, development, exchange and maintenance throughout all the building life cycle C0.K4 Reasons for open and interoperable solutions to ensure collaboration among professionals of different disciplines C0.K5 Methodology to identify, plan, develop and evaluate organization's BIM implementation capabilities and BIM uses C0.K6 Relevance of maintenance for maintaing the foreseen energy performance C0.S1 Read a BIM Execution Plan (BEP) C0.S2 Read a Information Delivery Manual CO.S3 Identify information requirements for his own role C0.S4 Identify the format to read information and transfer information within the supply chain OW.LO1 OW.LO2 OW.LO3 OW.LO4 OW.LO5 OW.LO6 OW.LO7 Understand BIM tools 21 C1.K1 Principle of economic subjects for the cost estimation and evaluation of energy refurbishment C1.S1 Specialised skills to incorporate information into BIM Model, evaluating openBIM software C1.S3 Decrease the life cycle cost of the building using methods described in ISO 15686-5 C1.S4 Evaluate and compare different plans and related Return of Investments using methods described in ISO 15686-5 OW.LO3 OW.LO4 OW.LO5 OW.LO6 OW.LO7 OW.LO8 22 Apply information management OW.LO1 OW.LO2 C2.K1 Principle of data mining, data base and back up in the CDE (Common Data Environment) C2.K2 Principle of data transferring among different software and/or data federating into an integrated design C2.K3 Principle of data security and administrative law in the archiving of data in a CDE (Common Data Environment) C2.K4 Principle of information management in building sustainability and lean design C2.K5 Principle of reusing and recycling of materials and components of a building C2.S1 Manage and coordinate information related to energy performance C2.S2 Identify which graphic and/or non-graphic information are necessary for a better management of works and for define the completeness of the C2.S3 Archive the model ensuring that the information provided is kept intact and not manipulated for any future use C2.S4 Evaluate the completeness of the maintenance plan to be used in EPC (Energy Performance Contracting) C2.S5 Evaluate the completeness of the handover strategy C2.S6 Verify the correspondence between the "as built" and the final BIM model C2.S7 Identify requirements for the management of data in the CDE (Common Data Environment) for any professionals involved in the process C2.S11 Use BIM for assessing the reusability and recycling of building materials and components

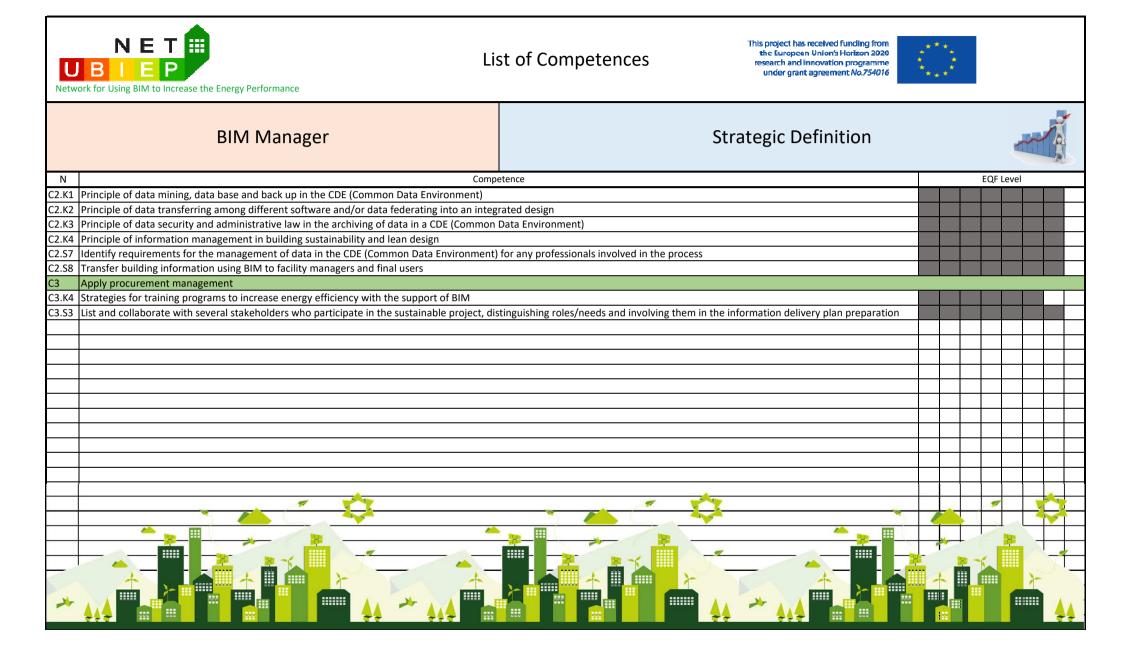


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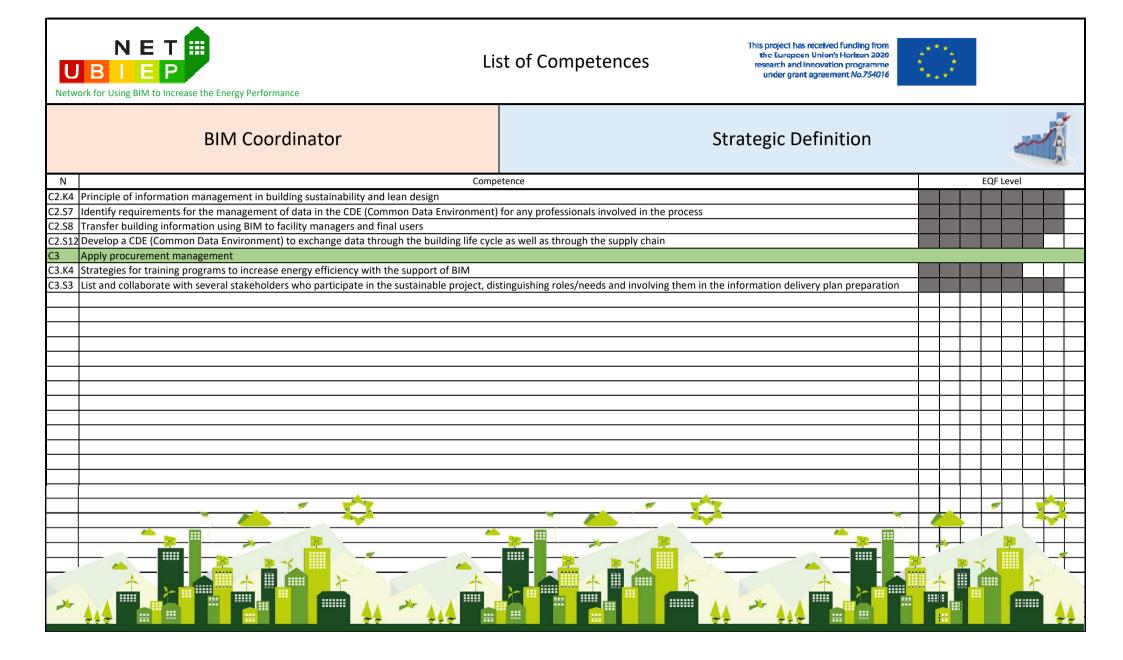


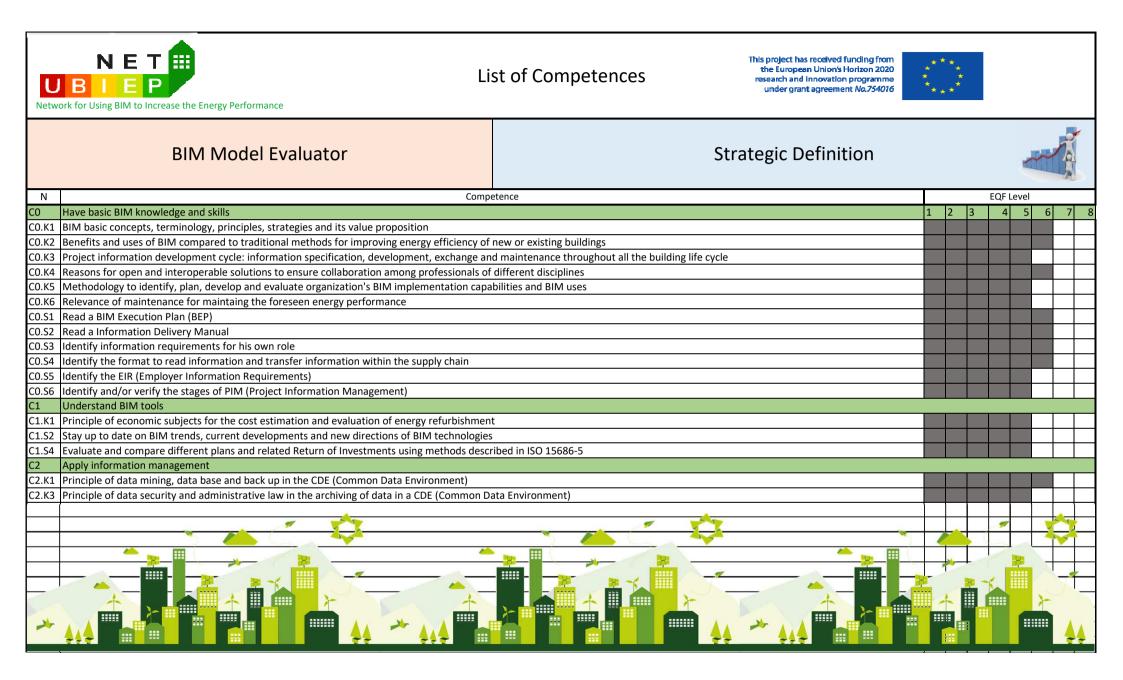
~~~	Owner								
N	Competence			Learr	ning out	come (D	)3.2-A)		
C3	Apply procurement management	OW.LO1	OW.LO2	OW.LO3	OW.LO4	OW.LO5	OW.LO6	OW.LO7	OW.LO8
C3.K1	Processes, methods and principles of decision-making on procuring services and suppliers								
C3.K3	Legal and technical aspects on green procurement, state and rules for using public funding and international good practices of energy performance								
C3.S1	Select or evaluate selected companies with experience in the technologies defined								
C3.S3	List and collaborate with several stakeholders who participate in the sustainable project, distinguishing roles/needs and involving them in the								
C3.S4	Apply change management, identifying and handling deviations / breach of the contract with particular guarantees								
C3.S5	Negotiate and take necessary legal steps if the contractual requirements were not met								
C4	Use BIM technology	OW.LO1	OW.LO2	OW.LO3	OW.LO4	OW.LO5	OW.LO6	OW.LO7	OW.LO8
C4.K5	Principles and systems of sustainable buildings, including renewable energy production								
C4.S5	Use BIM enabled simulation techniques to reduce the environmental impact								
C4.S10	Use 4D and 5D BIM technologies to evaluate time and cost								
C5	Analyse the BIM Model	OW.LO1	OW.LO2	OW.LO3	OW.LO4	OW.LO5	OW.LO6	OW.LO7	OW.LO8
C5.K1	Principle of global environmental impact of different building products and technologies (RES use, insulation, HVAC systems and building automation								
C5.K2	Techniques of passive measures needed for the management of nZEB								
C5.S6	Use BIM models to communicate installation instructions								

	BACK		
Netw	NET BIEP Ork for Using BIM to Increase the Energy Performance	ist of Competences This project has received funding from the European Union's Horizon 2020 research and Innovation programme under grant agreement No.754016	
	BIM Manager	Strategic Definition	A A
Ν		petence EQF Level	
	Have basic BIM knowledge and skills	1 2 3 4 5 6	7 8
C0.K1	BIM basic concepts, terminology, principles, strategies and its value proposition		
C0.K2	Benefits and uses of BIM compared to traditional methods for improving energy efficiency of	of new or existing buildings	
	Project information development cycle: information specification, development, exchange a		
C0.K4	Reasons for open and interoperable solutions to ensure collaboration among professionals	s of different disciplines	
	Methodology to identify, plan, develop and evaluate organization's BIM implementation ca	apabilities and BIM uses	
C0.K6	Relevance of maintenance for maintaing the foreseen energy performance		
C0.S1	Read a BIM Execution Plan (BEP)		
C0.S2	Read a Information Delivery Manual		
	Identify information requirements for his own role		
	Identify the format to read information and transfer information within the supply chain		
	Identify the EIR (Employer Information Requirements)		
C0.S6	Identify and/or verify the stages of PIM (Project Information Management)		
C1		Understand BIM tools	
C1.K1	Principle of economic subjects for the cost estimation and evaluation of energy refurbishme	nent	
	Specialised skills to incorporate information into BIM Model, evaluating openBIM software		
	Stay up to date on BIM trends, current developments and new directions of BIM technologi	gies	
	Decrease the life cycle cost of the building using methods described in ISO 15686-5		
C1.S4	Evaluate and compare different plans and related Return of Investments using methods des	escribed in ISO 15686-5	
C2		Apply information management	
*			



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NET UBIEP Network for Using BIM to Increase the Energy Performance	This project has receive the European Unio research and innova under grant agree	ation programme
BIM Coordinator	Strategic Defir	
	etence	EQF Level
CO Have basic BIM knowledge and skills		1 2 3 4 5 6 7 8
CO.K1 BIM basic concepts, terminology, principles, strategies and its value proposition		
CO.K2 Benefits and uses of BIM compared to traditional methods for improving energy efficiency		
CO.K3 Project information development cycle: information specification, development, exchange		
CO.K4 Reasons for open and interoperable solutions to ensure collaboration among professionals		
CO.K5 Methodology to identify, plan, develop and evaluate organization's BIM implementation ca	pabilities and BIM uses	
CO.K6 Relevance of maintenance for maintaing the foreseen energy performance		
CO.S1 Read a BIM Execution Plan (BEP)		
CO.S2 Read a Information Delivery Manual		
C0.S3 Identify information requirements for his own role		
C0.S4 Identify the format to read information and transfer information within the supply chain		
C0.S5 Identify the EIR (Employer Information Requirements)		
C0.S6 Identify and/or verify the stages of PIM (Project Information Management)		
C1 Understand BIM tools		
C1.S1 Specialised skills to incorporate information into BIM Model, evaluating openBIM software		
C1.S2 Stay up to date on BIM trends, current developments and new directions of BIM technologi	es	
C2 Apply information management		
C2.K1 Principle of data mining, data base and back up in the CDE (Common Data Environment)		
C2.K2 Principle of data transferring among different software and/or data federating into an integ		
C2.K3 Principle of data security and administrative law in the archiving of data in a CDE (Common	Data Environment)	





	NET BIEP Fork for Using BIM to Increase the Energy Performance	Li	st of Competences	This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement <i>No.754016</i>		r				
	BIM Model Evaluator			Strategic Definition						han
N		Comp	tence			_	EQF L	.evel		
C2.K4	Principle of information management in building sustainability and lean design									
C2.S7	Principle of information management in building sustainability and lean design Identify requirements for the management of data in the CDE (Common Data Environme	ent) f	or any professionals involved in the process							
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NET UBIEP Network for Using BIM to Increase the Energy Performance	List of Competences This project has received funding from the European Union's Horizon 2020 research and Innovation programme under grant agreement No.754016		
BIM Specialist-Expert	Strategic Definition		
	mpetence	E	EQF Level
CO Have basic BIM knowledge and skills		1 2 3	4 5 6 7 8
CO.K1 BIM basic concepts, terminology, principles, strategies and its value proposition			
CO.K2 Benefits and uses of BIM compared to traditional methods for improving energy efficience			
CO.K3 Project information development cycle: information specification, development, exchange			
CO.K4 Reasons for open and interoperable solutions to ensure collaboration among professiona			
CO.K5 Methodology to identify, plan, develop and evaluate organization's BIM implementation	capabilities and BIM uses		
CO.K6 Relevance of maintenance for maintaing the foreseen energy performance			
CO.S1 Read a BIM Execution Plan (BEP)			
CO.S2 Read a Information Delivery Manual			
C0.S3 Identify information requirements for his own role			
CO.S4 Identify the format to read information and transfer information within the supply chain			
C0.S5 Identify the EIR (Employer Information Requirements)			
C0.S6 Identify and/or verify the stages of PIM (Project Information Management)			
C1 Understand BIM tools			
C1.S1 Specialised skills to incorporate information into BIM Model, evaluating openBIM softwa			
C1.S2 Stay up to date on BIM trends, current developments and new directions of BIM technologies of BIM technologies and the state of BIM technologies of BIM technologies and the state of	ogies		
C2 Apply information management			
C2.K2 Principle of data transferring among different software and/or data federating into an int	tegrated design		
C2.K4 Principle of information management in building sustainability and lean design			
C2.K3 Principle of data security and administrative law in the archiving of data in a CDE (Commo	on Data Environment)		

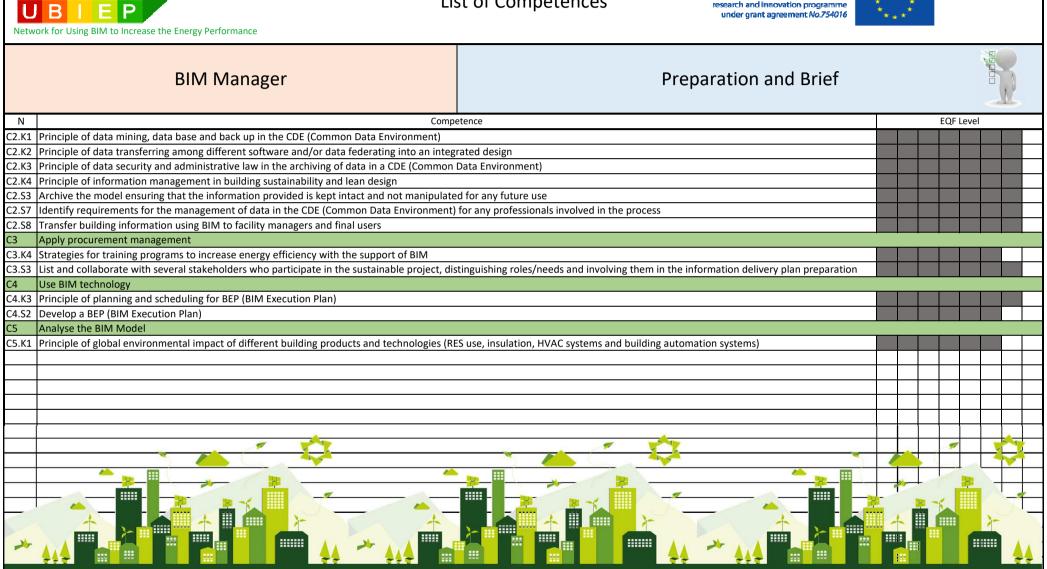


This project has received funding from the European Union's Horizon 2020



	BACK EXTRACT				
Netv	NET BIEP Vork for Using BIM to Increase the Energy Performance	st of Competences This project has received funding from the European Union's Horizon 2020 research and Innovation programme under grant agreement No.754016	*** * *		
	BIM User	Strategic Definition			
Ν	Comp	petence		EQF Level	
C0	Have basic BIM knowledge and skills	1	2 3	4 5	6 7 8
	BIM basic concepts, terminology, principles, strategies and its value proposition				
	Benefits and uses of BIM compared to traditional methods for improving energy efficiency				
C0.K3	Project information development cycle: information specification, development, exchange	and maintenance throughout all the building life cycle			
	Reasons for open and interoperable solutions to ensure collaboration among professionals	of different disciplines			
	Relevance of maintenance for maintaing the foreseen energy performance				
C0.S2	Read a Information Delivery Manual				
	Identify information requirements for his own role				
	Identify the EIR (Employer Information Requirements)				
C0.S6	Identify and/or verify the stages of PIM (Project Information Management)				
C2	Apply information management				
	Principle of data transferring among different software and/or data federating into an integ	grated design			
C2.K4	Principle of information management in building sustainability and lean design				
C3	Apply procurement management				
C3.S3	List and collaborate with several stakeholders who participate in the sustainable project, di	istinguishing roles/needs and involving them in the information delivery plan preparation			
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NET UBIEP Network for Using BIM to Increase the Energy Performance	St of Competences This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No.754016	***			
BIM Manager	Preparation and Brief				
	etence	EQF Level			
CO Have basic BIM knowledge and skills	1	1 2 3 4 5 6 7 8			
CO.K1 BIM basic concepts, terminology, principles, strategies and its value proposition					
CO.K2 Benefits and uses of BIM compared to traditional methods for improving energy efficiency of					
CO.K3 Project information development cycle: information specification, development, exchange a					
CO.K4 Reasons for open and interoperable solutions to ensure collaboration among professionals					
CO.K5 Methodology to identify, plan, develop and evaluate organization's BIM implementation ca	pabilities and BIM uses				
CO.K6 Relevance of maintenance for maintaing the foreseen energy performance					
C0.S1 Read a BIM Execution Plan (BEP)					
C0.S2 Read a Information Delivery Manual					
C0.S3 Identify information requirements for his own role					
C0.S4 Identify the format to read information and transfer information within the supply chain					
CO.S5 Identify the EIR (Employer Information Requirements)					
C0.S6 Identify and/or verify the stages of PIM (Project Information Management)					
C1 Understand BIM tools					
C1.K1 Principle of economic subjects for the cost estimation and evaluation of energy refurbishme					
C1.S1 Specialised skills to incorporate information into BIM Model, evaluating openBIM software C1.S2 Stay up to date on BIM trends, current developments and new directions of BIM technologi	~				
C1.S2 Stay up to date on bin trends, current developments and new directions of bin technologi C1.S3 Decrease the life cycle cost of the building using methods described in ISO 15686-5					
C1.S4 Evaluate and compare different plans and related Return of Investments using methods des	cribad in ISO 15686 5				
C2 Apply information management	Chibed in 150 15080-5				



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	BACK		
	NET BIEP ork for Using BIM to Increase the Energy Performance	ist of Competences This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No.754016	
	BIM Coordinator	Preparation and Brief	
N		petence	EQF Level
	Have basic BIM knowledge and skills		1 2 3 4 5 6 7 8
C0.K1	BIM basic concepts, terminology, principles, strategies and its value proposition		
C0.K2	Benefits and uses of BIM compared to traditional methods for improving energy efficiency	y of new or existing buildings	
	Project information development cycle: information specification, development, exchange		
C0.K4	Reasons for open and interoperable solutions to ensure collaboration among professional	s of different disciplines	
C0.K5	Methodology to identify, plan, develop and evaluate organization's BIM implementation of	capabilities and BIM uses	
C0.K6	Relevance of maintenance for maintaing the foreseen energy performance		
C0.S1	Read a BIM Execution Plan (BEP)		
C0.S2	Read a Information Delivery Manual		
C0.S3	Identify information requirements for his own role		
C0.S4	Identify the format to read information and transfer information within the supply chain		
C0.S5	Identify the EIR (Employer Information Requirements)		
C0.S6	Identify and/or verify the stages of PIM (Project Information Management)		
C1	Understand BIM tools		
C1.S1	Specialised skills to incorporate information into BIM Model, evaluating openBIM softwar	e	
C1.S2	Stay up to date on BIM trends, current developments and new directions of BIM technolo	gies	
C2	Apply information management		
C2.K1	Principle of data mining, data base and back up in the CDE (Common Data Environment)		
C2.K2	Principle of data transferring among different software and/or data federating into an inte	egrated design	
C2.K3	Principle of data security and administrative law in the archiving of data in a CDE (Commo	n Data Environment)	
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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No.754016



	BIM Coordinator	Preparation and Brief			A coded
Ν	Comp	petence		 EQF	Level
C2.K4	Principle of information management in building sustainability and lean design				
C2.S2	Identify which graphic and/or non-graphic information are necessary for a better managem	nent of works and for define the completeness of the Information Delivery Plan in relation to			
C2.S3	Archive the model ensuring that the information provided is kept intact and not manipulate	ed for any future use			
C2.S7	Identify requirements for the management of data in the CDE (Common Data Environment)	) for any professionals involved in the process			
C2.S8	Transfer building information using BIM to facility managers and final users				
C2.S12	Develop a CDE (Common Data Environment) to exchange data through the building life cycl	le as well as through the supply chain			
C3	Apply procurement management				
C3.K4	Strategies for training programs to increase energy efficiency with the support of BIM				
C3.S3	List and collaborate with several stakeholders who participate in the sustainable project, dis	stinguishing roles/needs and involving them in the information delivery plan preparation			
C4	Use BIM technology				
C4.K1	Techniques and principles of integrated digital production and rendering				
C4.K3	Principle of planning and scheduling for BEP (BIM Execution Plan)				
C4.K4	Principles of interplays between all aspects of building design, building use and outdoor clin	nate for dynamic evaluation			
C4.S2	Develop a BEP (BIM Execution Plan)				
C4.S10	Use 4D and 5D BIM technologies to evaluate time and cost				
C5	Analyse the BIM Model				
C5.K1	Principle of global environmental impact of different building products and technologies (R	ES use, insulation, HVAC systems and building automation systems)			
C5.S2	Apply Quality Management and coordinate team members of different disciplines				
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NET UBIEP Network for Using BIM to Increase the Energy Performance	st of Competences	**			
BIM Model Evaluator	Preparation and Brief				
	etence	EQF Level			
CO Have basic BIM knowledge and skills	1	2 3 4 5 6 7 8			
CO.K1 BIM basic concepts, terminology, principles, strategies and its value proposition					
CO.K2 Benefits and uses of BIM compared to traditional methods for improving energy efficiency of					
CO.K3 Project information development cycle: information specification, development, exchange					
CO.K4 Reasons for open and interoperable solutions to ensure collaboration among professionals					
CO.K5 Methodology to identify, plan, develop and evaluate organization's BIM implementation ca	pabilities and BIM uses				
C0.K6 Relevance of maintenance for maintaing the foreseen energy performance					
CO.S1 Read a BIM Execution Plan (BEP)					
C0.S2 Read a Information Delivery Manual					
C0.S3 Identify information requirements for his own role					
C0.54 Identify the format to read information and transfer information within the supply chain					
CO.SS Identify the EIR (Employer Information Requirements)					
0.S6 Identify and/or verify the stages of PIM (Project Information Management)					
C1 Understand BIM tools C1.K1 Principle of economic subjects for the cost estimation and evaluation of energy refurbishme	net .				
C1.S2 Stay up to date on BIM trends, current developments and new directions of BIM technologi					
C1.54 Evaluate and compare different plans and related Return of Investments using methods des					
C2 Apply information management					
C2.K1 Principle of data mining, data base and back up in the CDE (Common Data Environment)					
C2.K3 Principle of data security and administrative law in the archiving of data in a CDE (Common	Data Environment)				



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No.754016



**BIM Model Evaluator Preparation and Brief** Ν Competence EQF Level C2.K4 Principle of information management in building sustainability and lean design C2.S2 Identify which graphic and/or non-graphic information are necessary for a better management of works and for define the completeness of the Information Delivery Plan in relation to C2.S3 Archive the model ensuring that the information provided is kept intact and not manipulated for any future use C2.S7 Identify requirements for the management of data in the CDE (Common Data Environment) for any professionals involved in the process Use BIM technology C4 C4.K3 Principle of planning and scheduling for BEP (BIM Execution Plan) C4.S8 Produce a visualization design in order to report back to costumers, users and reviewers C5 Analyse the BIM Model C5.K1 Principle of global environmental impact of different building products and technologies (RES use, insulation, HVAC systems and building automation systems) 1

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BACK EXTRACT		
NET UBIEP Network for Using BIM to Increase the Energy Performance	This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No.754016	***
BIM Specialist-Expert	Preparation and Brief	
	petence	EQF Level
CO Have basic BIM knowledge and skills		1 2 3 4 5 6 7 8
CO.K1 BIM basic concepts, terminology, principles, strategies and its value proposition		
CO.K2 Benefits and uses of BIM compared to traditional methods for improving energy efficiency		
CO.K3 Project information development cycle: information specification, development, exchange		
CO.K4 Reasons for open and interoperable solutions to ensure collaboration among professionals		
CO.K5 Methodology to identify, plan, develop and evaluate organization's BIM implementation ca	apabilities and BIM uses	
CO.K6 Relevance of maintenance for maintaing the foreseen energy performance		
CO.S1 Read a BIM Execution Plan (BEP)		
C0.S2 Read a Information Delivery Manual		
CO.S3 Identify information requirements for his own role		
CO.S4 Identify the format to read information and transfer information within the supply chain		
CO.S5 Identify the EIR (Employer Information Requirements)		
C0.S6 Identify and/or verify the stages of PIM (Project Information Management)		
C1 Understand BIM tools		
C1.S1 Specialised skills to incorporate information into BIM Model, evaluating openBIM software		
C1.S2 Stay up to date on BIM trends, current developments and new directions of BIM technolog	ies	
C2 Apply information management		
C2.K2 Principle of data transferring among different software and/or data federating into an inte		
C2.K3 Principle of data security and administrative law in the archiving of data in a CDE (Commor	n Data Environment)	
C2.K4 Principle of information management in building sustainability and lean design		



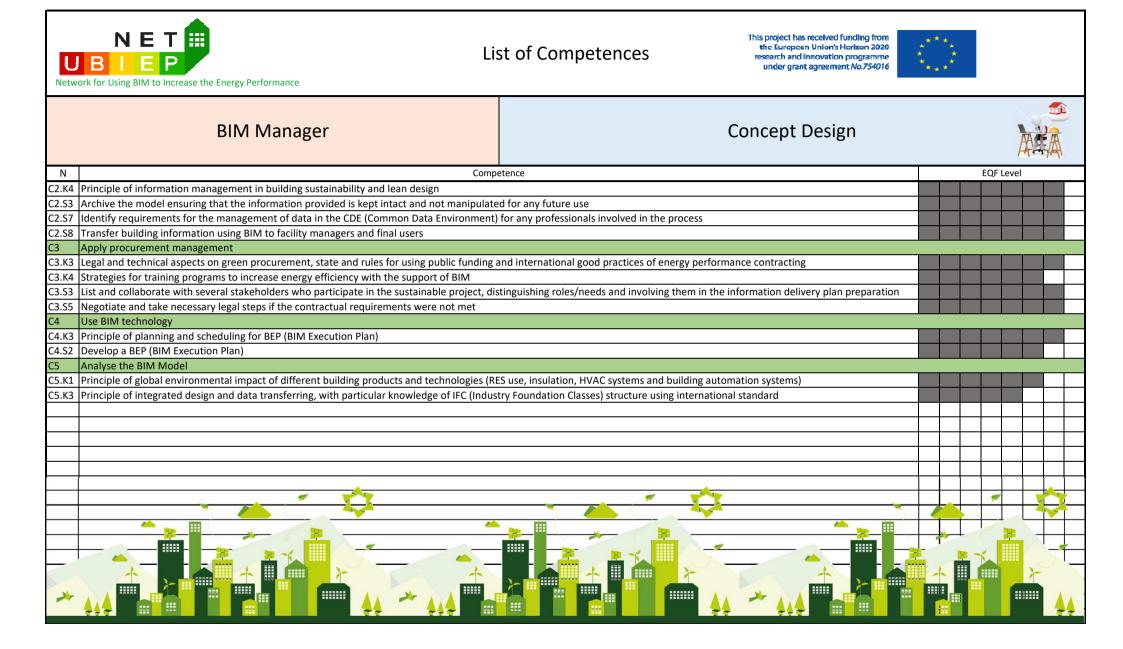
This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement *No.754016* 



**BIM Specialist-Expert Preparation and Brief** Ν Competence EQF Level C2.S2 Identify which graphic and/or non-graphic information are necessary for a better management of works and for define the completeness of the Information Delivery Plan in relation to C2.S12 Develop a CDE (Common Data Environment) to exchange data through the building life cycle as well as through the supply chain C3 Apply procurement management C3.S3 List and collaborate with several stakeholders who participate in the sustainable project, distinguishing roles/needs and involving them in the information delivery plan preparation C4 Use BIM technology C4.K1 Techniques and principles of integrated digital production and rendering C4.K4 Principles of interplays between all aspects of building design, building use and outdoor climate for dynamic evaluation C4.S4 Use laser scanning in order to produce a point of cloud of existing buildings, comparing and evaluating facilities and related systems C4.S10 Use 4D and 5D BIM technologies to evaluate time and cost Analyse the BIM Model C5 C5.K1 Principle of global environmental impact of different building products and technologies (RES use, insulation, HVAC systems and building automation systems)

	BACK EXTRACT					
	NET BIEP Fork for Using BIM to Increase the Energy Performance	st of Competences This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No.754016	*** * * * *			
	BIM User	Preparation and Brief				
Ν	Сотр	petence		EQF	Level	
	Have basic BIM knowledge and skills		1 2	3 4	456	78
	BIM basic concepts, terminology, principles, strategies and its value proposition					
	Benefits and uses of BIM compared to traditional methods for improving energy efficiency					
	Project information development cycle: information specification, development, exchange					
	Reasons for open and interoperable solutions to ensure collaboration among professionals	of different disciplines				
	Relevance of maintenance for maintaing the foreseen energy performance					
	Read a Information Delivery Manual					
	Identify information requirements for his own role					
	Identify the EIR (Employer Information Requirements)					
	Identify and/or verify the stages of PIM (Project Information Management)					
C2	Apply information management					
	Principle of data transferring among different software and/or data federating into an integ	grated design				
C2.K4	Principle of information management in building sustainability and lean design					
C3	Apply procurement management					
C3.S3	List and collaborate with several stakeholders who participate in the sustainable project, di	istinguishing roles/needs and involving them in the information delivery plan preparation				
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NET UBIEP Network for Using BIM to Increase the Energy Performance	List of Competences	This project has received funding from the European Union's Horizon 2020 research and Innovation programme under grant agreement <i>No.754016</i>	***
BIM Manager		Concept Design	AAA
Ν	Competence		EQF Level
C0 Have basic BIM knowledge and skills		1	2 3 4 5 6 7 8
CO.K1 BIM basic concepts, terminology, principles, strategies and its value proposition			
C0.K2 Benefits and uses of BIM compared to traditional methods for improving energy effic			
CO.K3 Project information development cycle: information specification, development, exc		life cycle	
CO.K4 Reasons for open and interoperable solutions to ensure collaboration among profess			
CO.K5 Methodology to identify, plan, develop and evaluate organization's BIM implementa	tion capabilities and BIM uses		
CO.K6 Relevance of maintenance for maintaing the foreseen energy performance			
CO.S1 Read a BIM Execution Plan (BEP)			
C0.S2 Read a Information Delivery Manual			
C0.S3 Identify information requirements for his own role			
C0.S4 Identify the format to read information and transfer information within the supply ch	hain		
C0.S5 Identify the EIR (Employer Information Requirements)			
C0.S6 Identify and/or verify the stages of PIM (Project Information Management)			
C1 Understand BIM tools	A.		
C1.S1 Specialised skills to incorporate information into BIM Model, evaluating openBIM sol			
C1.S2 Stay up to date on BIM trends, current developments and new directions of BIM tech	nnologies		
C2 Apply information management			
C2.K1 Principle of data mining, data base and back up in the CDE (Common Data Environme			
C2.K2 Principle of data transferring among different software and/or data federating into a			
C2.K3 Principle of data security and administrative law in the archiving of data in a CDE (Co	mmon Data Environment)		



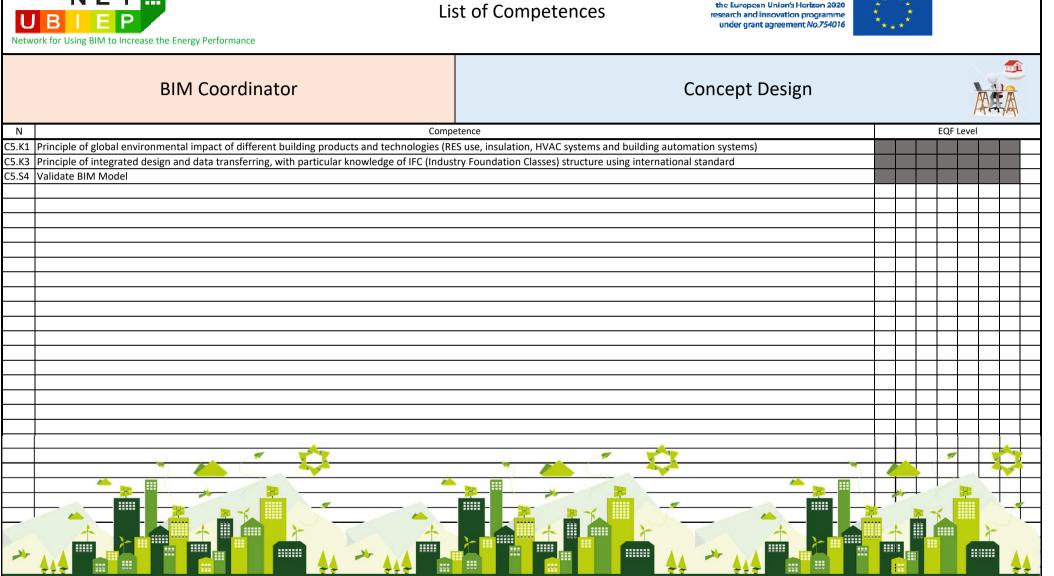
Netw	NET BIEP ork for Using BIM to Increase the Energy Performance	List of Competences	This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No.754016	***. * * *
	BIM Coordinator		Concept Design	ALA
N		ompetence		EQF Level
C0	Have basic BIM knowledge and skills		1	2 3 4 5 6 7 8
	BIM basic concepts, terminology, principles, strategies and its value proposition			
C0.K2	Benefits and uses of BIM compared to traditional methods for improving energy efficien	cy of new or existing buildings		
	Project information development cycle: information specification, development, exchan		life cycle	
	Reasons for open and interoperable solutions to ensure collaboration among profession			
	Methodology to identify, plan, develop and evaluate organization's BIM implementation	n capabilities and BIM uses		
C0.K6	Relevance of maintenance for maintaing the foreseen energy performance			
C0.S1	Read a BIM Execution Plan (BEP)			
	Read a Information Delivery Manual			
C0.S3	Identify information requirements for his own role			
C0.S4	Identify the format to read information and transfer information within the supply chair	1		
C0.S5	Identify the EIR (Employer Information Requirements)			
C0.S6	Identify and/or verify the stages of PIM (Project Information Management)			
C1		Understand BIM tools		
C1.S1	Specialised skills to incorporate information into BIM Model, evaluating openBIM softwa	are		
C1.S2	Stay up to date on BIM trends, current developments and new directions of BIM techno	logies		
C2	Apply information management			
C2.K1	Principle of data mining, data base and back up in the CDE (Common Data Environment)			
C2.K2	Principle of data transferring among different software and/or data federating into an ir	itegrated design		
C2.K3	Principle of data security and administrative law in the archiving of data in a CDE (Comm	non Data Environment)		
*				



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No.754016



BIM Coordinator	Concept Design	AAAA
N Comp	etence	EQF Level
C2.K4 Principle of information management in building sustainability and lean design		
C2.S2 Identify which graphic and/or non-graphic information are necessary for a better managem	ent of works and for define the completeness of the Information Delivery Plan in relation to	
C2.S3 Archive the model ensuring that the information provided is kept intact and not manipulate	d for any future use	
C2.S7 Identify requirements for the management of data in the CDE (Common Data Environment)	for any professionals involved in the process	
C2.S8 Transfer building information using BIM to facility managers and final users		
C2.S12 Develop a CDE (Common Data Environment) to exchange data through the building life cycl	e as well as through the supply chain	
C3 Apply procurement management		
C3.K3 Legal and technical aspects on green procurement, state and rules for using public funding a	and international good practices of energy performance contracting	
C3.K4 Strategies for training programs to increase energy efficiency with the support of BIM		
C3.S3 List and collaborate with several stakeholders who participate in the sustainable project, dis	tinguishing roles/needs and involving them in the information delivery plan preparation	
C4 Use BIM technology		
C4.K1 Techniques and principles of integrated digital production and rendering		
C4.K3 Principle of planning and scheduling for BEP (BIM Execution Plan)		
C4.K4 Principles of interplays between all aspects of building design, building use and outdoor clim	nate for dynamic evaluation	
C4.K5 Principles and systems of sustainable buildings, including renewable energy production		
C4.K6 Design techniques for different scenarios for new resilient buildings to future climate change	es and for the refurbishment of existing buildings	
C4.K7 Techniques of automatic code checking and management of software e-permit		
C4.S1 Produce a digital 3D model of building / any BIM objects needed for the library in the Comm	non Data Environment	
C4.S2 Develop a BEP (BIM Execution Plan)		
C5 Analyse the BIM Model		



This project has received funding from the European Union's Horizon 2020 research and innovation programme





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Li NET UBIEP Network for Using BIM to Increase the Energy Performance	st of Competences	This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement <i>No.754016</i>	****
BIM Model Evaluator		oncept Design	
	etence		EQF Level
CO Have basic BIM knowledge and skills		1	2 3 4 5 6 7 8
CO.K1 BIM basic concepts, terminology, principles, strategies and its value proposition			
C0.K2 Benefits and uses of BIM compared to traditional methods for improving energy efficiency			
C0.K3 Project information development cycle: information specification, development, exchange			
C0.K4 Reasons for open and interoperable solutions to ensure collaboration among professionals			
C0.K5 Methodology to identify, plan, develop and evaluate organization's BIM implementation ca	pablilities and BIW uses		
C0.K6 Relevance of maintenance for maintaing the foreseen energy performance			
C0.51 Read a BIM Execution Plan (BEP)			
C0.52 Read a Information Delivery Manual			
C0.S3 Identify information requirements for his own role C0.S4 Identify the format to read information and transfer information within the supply chain			
C0.S5 Identify the EIR (Employer Information Requirements)			
C0.S6 Identify and/or verify the stages of PIM (Project Information Management) C1 Understand BIM tools			
C1.S2 Stay up to date on BIM trends, current developments and new directions of BIM technologi			
C1.52 Stay up to date on bin trends, current developments and new directions of bin technologi C2 Apply information management	es		
C2.K1 Principle of data mining, data base and back up in the CDE (Common Data Environment)			
C2.K3 Principle of data security and administrative law in the archiving of data in a CDE (Common	Data Environment)		
C2.K4 Principle of information management in building sustainability and lean design			
C2.S2 Identify which graphic and/or non-graphic information are necessary for a better managem	ent of works and for define the completeness of the l	nformation Delivery Plan in relation to	
	ent of works and for define the completelless of the h		



C3

C4

C5

### List of Competences

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No.754016



Network for Using BIM to Increase the Energy Performance

#### **BIM Model Evaluator**

# **Concept Design** Ν Competence EQF Level C2.S3 Archive the model ensuring that the information provided is kept intact and not manipulated for any future use C2.S7 Identify requirements for the management of data in the CDE (Common Data Environment) for any professionals involved in the process Apply procurement management C3.K3 Legal and technical aspects on green procurement, state and rules for using public funding and international good practices of energy performance contracting C3.S5 Define building environmental impact as part of the contract Use BIM technology C4.K3 Principle of planning and scheduling for BEP (BIM Execution Plan) C4.K7 Techniques of automatic code checking and management of software e-permit C4.S8 Produce a visualization design in order to report back to costumers, users and reviewers Analyse the BIM Model C5.K1 Principle of global environmental impact of different building products and technologies (RES use, insulation, HVAC systems and building automation systems) C5.K3 Principle of integrated design and data transferring, with particular knowledge of IFC (Industry Foundation Classes) structure using international standard C5.S4 Validate BIM Model 1

	BACK			
	NET BIEP ork for Using BIM to Increase the Energy Performance	List of Competences	This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No.754016	• * *
	BIM Specialist-Expert		Concept Design	A
N		ompetence		EQF Level
	Have basic BIM knowledge and skills		1	2 3 4 5 6 7 8
	BIM basic concepts, terminology, principles, strategies and its value proposition			
	Benefits and uses of BIM compared to traditional methods for improving energy efficien			
C0.K3	Project information development cycle: information specification, development, exchan	ge and maintenance throughout all the building life	e cycle	
	Reasons for open and interoperable solutions to ensure collaboration among profession			
	Methodology to identify, plan, develop and evaluate organization's BIM implementation	n capabilities and BIM uses		
	Relevance of maintenance for maintaing the foreseen energy performance			
	Read a BIM Execution Plan (BEP)			
-	Read a Information Delivery Manual			
	Identify information requirements for his own role			
C0.S4	Identify the format to read information and transfer information within the supply chair	1		
C0.S5	Identify the EIR (Employer Information Requirements)			
C0.S6	Identify and/or verify the stages of PIM (Project Information Management)			
C1	Understand BIM tools			
	Specialised skills to incorporate information into BIM Model, evaluating openBIM softwa			
C1.S2	Stay up to date on BIM trends, current developments and new directions of BIM techno	logies		
C2	Apply information management			
C2.K2	Principle of data transferring among different software and/or data federating into an in	itegrated design		
C2.K3	Principle of data security and administrative law in the archiving of data in a CDE (Comm	ion Data Environment)		
C2.K4	Principle of information management in building sustainability and lean design			
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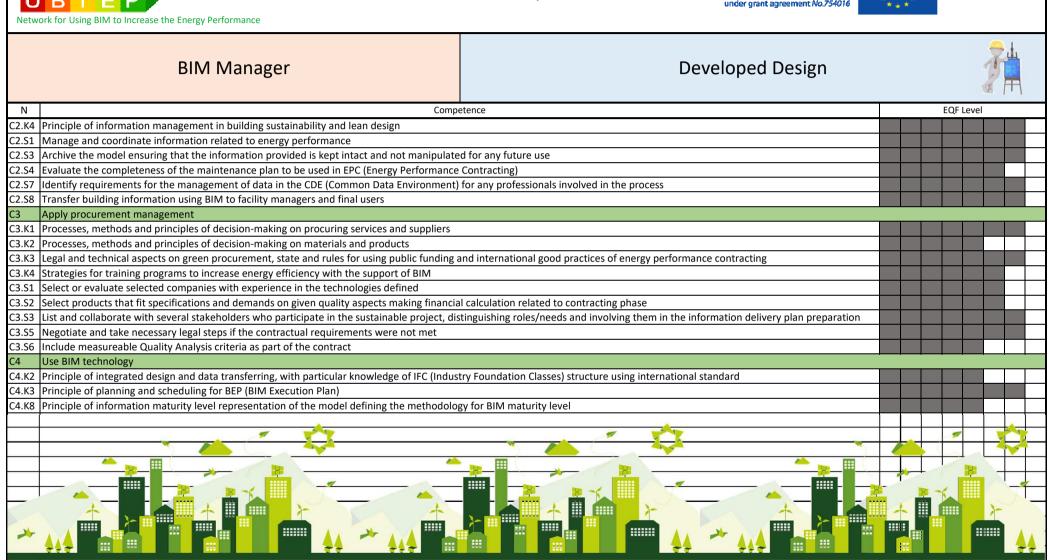




	BIM Specialist-Expert     Concept Design       N     Competence			A A			
Ν	Comp	etence		EC	QF Level		
C2.S2	Identify which graphic and/or non-graphic information are necessary for a better managem	ent of works and for define the completeness of the Information Delivery Plan in relation to					
C2.S1	2 Develop a CDE (Common Data Environment) to exchange data through the building life cycl	e as well as through the supply chain					
C3	Apply procurement management						
C3.K3	Legal and technical aspects on green procurement, state and rules for using public funding	and international good practices of energy performance contracting					
C3.S3	List and collaborate with several stakeholders who participate in the sustainable project, di	stinguishing roles/needs and involving them in the information delivery plan preparation					
C4	Use BIM technology						
C4.K1	Techniques and principles of integrated digital production and rendering						
C4.K4	Principles of interplays between all aspects of building design, building use and outdoor clir						
C4.K5	Principles and systems of sustainable buildings, including renewable energy production						
C4.K6	Design techniques for different scenarios for new resilient buildings to future climate change						
C4.K7	Techniques of automatic code checking and management of software e-permit						
C4.S1	Produce a digital 3D model of building / any BIM objects needed for the library in the Comr	non Data Environment					
C4.S4	Use laser scanning in order to produce a point of cloud of existing buildings, comparing and	evaluating facilities and related systems					
C5	Analyse the BIM Model			<u> </u>			
-	Principle of global environmental impact of different building products and technologies (R						
C5.K3	Principle of integrated design and data transferring, with particular knowledge of IFC (Indus	try Foundation Classes) structure using international standard					
C5.S4	Validate BIM Model						
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NET UBIEP Network for Using BIM to Incre		ist of Competences	This project has received funding from the European Union's Horizon 2020 research and Innovation programme under grant agreement <i>No.754016</i>				
	BIM User		Concept Design		A		
N		petence		I	EQF Level		
C0 Have basic BIM knowl				1 2 3	4 5	6 7 8	
	erminology, principles, strategies and its value proposition						
	IM compared to traditional methods for improving energy efficiency						
	evelopment cycle: information specification, development, exchange		life cycle				
	interoperable solutions to ensure collaboration among professionals	of different disciplines					
	ance for maintaing the foreseen energy performance						
	C0.S2 Read a Information Delivery Manual						
C0.S3 Identify information re							
C0.S5 Identify the EIR (Employer Information Requirements)							
	the stages of PIM (Project Information Management)						
C2 Apply information ma							
	ferring among different software and/or data federating into an inte	grated design					
· ·	on management in building sustainability and lean design						
C3 Apply procurement ma	<b>.</b>						
	pects on green procurement, state and rules for using public funding						
	ith several stakeholders who participate in the sustainable project, d	istinguishing roles/needs and involving them i	in the information delivery plan preparation				
C3.S5 Define building enviro	nmental impact as part of the contract						
C4 Use BIM technology							
C4.K5 Principles and systems	s of sustainable buildings, including renewable energy production						

BACK							
NET UBIEP Network for Using BIM to Increase the Energy Performance	ist of Competences This project has received funding from the European Union's Horizon 2020 research and Innovation programme under grant agreement No.754016						
BIM Manager	Developed Design						
	EQF Le	vel					
C0 Have basic BIM knowledge and skills	1 2 3 4	5 6 7 8					
CO.K1 BIM basic concepts, terminology, principles, strategies and its value proposition							
C0.K2 Benefits and uses of BIM compared to traditional methods for improving energy efficiency of							
C0.K3 Project information development cycle: information specification, development, exchange							
CO.K4 Reasons for open and interoperable solutions to ensure collaboration among professionals							
CO.K5 Methodology to identify, plan, develop and evaluate organization's BIM implementation ca	capabilities and BIM uses						
CO.K6 Relevance of maintenance for maintaing the foreseen energy performance							
CO.S1 Read a BIM Execution Plan (BEP)							
C0.S2 Read a Information Delivery Manual							
C0.S3 Identify information requirements for his own role							
C0.S4 Identify the format to read information and transfer information within the supply chain							
C0.S5 Identify the EIR (Employer Information Requirements)							
C0.S6 Identify and/or verify the stages of PIM (Project Information Management)							
C1 Understand BIM tools							
C1.S1 Specialised skills to incorporate information into BIM Model, evaluating openBIM software	e						
C1.S2 Stay up to date on BIM trends, current developments and new directions of BIM technologi	gies						
C2 Apply information management							
C2.K1 Principle of data mining, data base and back up in the CDE (Common Data Environment)							
C2.K2 Principle of data transferring among different software and/or data federating into an integ	egrated design						
C2.K3 Principle of data security and administrative law in the archiving of data in a CDE (Common	n Data Environment)						



List of Competences



Netw	NET BIEP ork for Using BIM to Increase the Energy Performance	Lis	t of Competences	This project has received funding from the European Union's Horizon 2020 research and Innovation programme under grant agreement <i>No.754016</i>		**					
	BIM Manager			Developed Design					1 1 1		
N		Compe	tence			_	'	EQF Le	evel	_	
	Develop a BEP (BIM Execution Plan)										
	Analyse the BIM Model										
	Principle of global environmental impact of different building products and technologie										
C5.K3	Principle of integrated design and data transferring, with particular knowledge of IFC (I	ndust	ry Foundation Classes) structure using internat	tional standard							
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Netw	NET BIEP ork for Using BIM to Increase the Energy Performance	ist of Competences	This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No.754016	*** * **				
	BIM Coordinator		Developed Design					
N		petence			EQF Leve			
	Have basic BIM knowledge and skills		1	2 3	4 5	678		
	BIM basic concepts, terminology, principles, strategies and its value proposition							
	Benefits and uses of BIM compared to traditional methods for improving energy efficiency	·						
	Project information development cycle: information specification, development, exchange		g life cycle					
	Reasons for open and interoperable solutions to ensure collaboration among professionals							
	CO.K5 Methodology to identify, plan, develop and evaluate organization's BIM implementation capabilities and BIM uses							
C0.K6	20.K6 Relevance of maintenance for maintaing the foreseen energy performance							
	D.S1 Read a BIM Execution Plan (BEP)							
C0.S2	S2 Read a Information Delivery Manual							
C0.S3	Identify information requirements for his own role							
	Identify the format to read information and transfer information within the supply chain							
C0.S5	Identify the EIR (Employer Information Requirements)							
C0.S6	Identify and/or verify the stages of PIM (Project Information Management)							
C1	Understand BIM tools							
	Specialised skills to incorporate information into BIM Model, evaluating openBIM software							
C1.S2	Stay up to date on BIM trends, current developments and new directions of BIM technolog	gies						
C2	Apply information management							
	Principle of data mining, data base and back up in the CDE (Common Data Environment)							
	Principle of data transferring among different software and/or data federating into an inte							
C2.K3	Principle of data security and administrative law in the archiving of data in a CDE (Commor	n Data Environment)						
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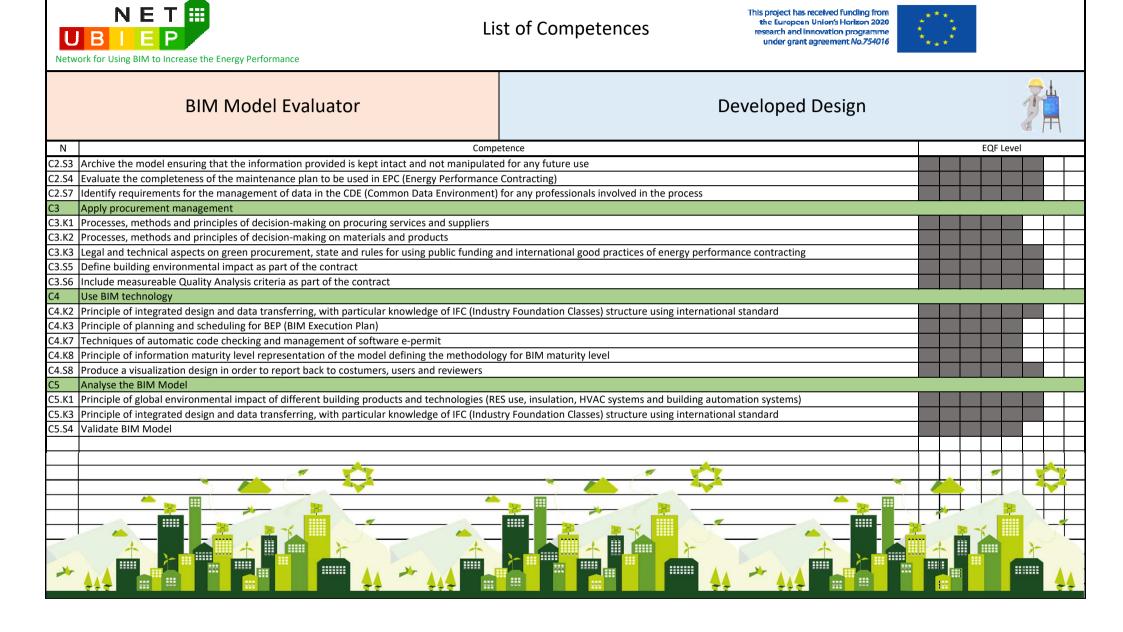
	BIM Coordinator	Developed Design	<b>Z</b>				
Ν	Comp	etence	EQF Level				
C2.K4	Principle of information management in building sustainability and lean design						
C2.S1	Manage and coordinate information related to energy performance						
C2.S2	Identify which graphic and/or non-graphic information are necessary for a better management of works and for define the completeness of the Information Delivery Plan in relation to						
C2.S3	Archive the model ensuring that the information provided is kept intact and not manipulate	d for any future use					
C2.S4	Evaluate the completeness of the maintenance plan to be used in EPC (Energy Performance	Contracting)					
C2.S7	Identify requirements for the management of data in the CDE (Common Data Environment)	for any professionals involved in the process					
C2.S8	Transfer building information using BIM to facility managers and final users						
C3	Apply procurement management						
C3.K1	Processes, methods and principles of decision-making on procuring services and suppliers						
C3.K2	Processes, methods and principles of decision-making on materials and products						
C3.K3	B Legal and technical aspects on green procurement, state and rules for using public funding and international good practices of energy performance contracting						
C3.K4	3.K4 Strategies for training programs to increase energy efficiency with the support of BIM						
C3.S1	Select or evaluate selected companies with experience in the technologies defined						
C3.S2	Select products that fit specifications and demands on given quality aspects making financia	l calculation related to contracting phase					
C3.S3	List and collaborate with several stakeholders who participate in the sustainable project, dis	tinguishing roles/needs and involving them in the information delivery plan preparation					
C4	Use BIM technology						
C4.K1	Techniques and principles of integrated digital production and rendering						
C4.K2	Principle of integrated design and data transferring, with particular knowledge of IFC (Indus	try Foundation Classes) structure using international standard					
C4.K3	Principle of planning and scheduling for BEP (BIM Execution Plan)						
C4.K4	Principles of interplays between all aspects of building design, building use and outdoor clin	nate for dynamic evaluation					
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	BIM Coordinator	Developed Design	T				
Ν	Сотр	betence	EQF Level				
C4.K5	Principles and systems of sustainable buildings, including renewable energy production						
C4.K6	Design techniques for different scenarios for new resilient buildings to future climate chang	ges and for the refurbishment of existing buildings					
C4.K7	Techniques of automatic code checking and management of software e-permit						
C4.K8	Principle of information maturity level representation of the model defining the methodolo	pgy for BIM maturity level					
C4.S1	Produce a digital 3D model of building / any BIM objects needed for the library in the Common Data Environment						
C4.S2	Develop a BEP (BIM Execution Plan)						
C4.S5	Use BIM enabled simulation techniques to reduce the environmental impact						
C4.S6	Integrate different RES (Renewable Energy Sources) and energy efficiency systems into build	dings without clash detection					
C5	Analyse the BIM Model						
C5.K1	Principle of global environmental impact of different building products and technologies (RES use, insulation, HVAC systems and building automation systems)						
C5.K3	Principle of integrated design and data transferring, with particular knowledge of IFC (Industry Foundation Classes) structure using international standard						
C5.S1	Coordinate the work of different disciplines in order to obtain a consolidate BIM model that	t satisfy all the requirements					
C5.S2	Apply Quality Management and coordinate team members of different disciplines						
C5.S4	Validate BIM Model						
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BACK						
NET UBIEP Network for Using BIM to Increase the Energy Performance	st of Competences	This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement <i>No.754016</i>	:** * *			
BIM Model Evaluator		veloped Design		e		
· · · · · · · · · · · · · · · · · · ·	etence			EQF Level		
C0 Have basic BIM knowledge and skills		1	2 3	4 5	6 7 8	
CO.K1 BIM basic concepts, terminology, principles, strategies and its value proposition						
C0.K2 Benefits and uses of BIM compared to traditional methods for improving energy efficiency						
C0.K3 Project information development cycle: information specification, development, exchange		2				
C0.K4 Reasons for open and interoperable solutions to ensure collaboration among professionals						
C0.K5 Methodology to identify, plan, develop and evaluate organization's BIM implementation ca	pabilities and BIM uses					
CO.K6 Relevance of maintenance for maintaing the foreseen energy performance						
CO.S1 Read a BIM Execution Plan (BEP)						
C0.S2 Read a Information Delivery Manual						
C0.S3 Identify information requirements for his own role						
C0.S4 Identify the format to read information and transfer information within the supply chain						
C0.S5 Identify the EIR (Employer Information Requirements)						
C0.S6 Identify and/or verify the stages of PIM (Project Information Management)						
C1 Understand BIM tools						
C1.S2 Stay up to date on BIM trends, current developments and new directions of BIM technolog	ies					
C2 Apply information management						
C2.K1 Principle of data mining, data base and back up in the CDE (Common Data Environment)						
C2.K3 Principle of data security and administrative law in the archiving of data in a CDE (Common	Data Environment)					
C2.K4 Principle of information management in building sustainability and lean design						
C2.S2 Identify which graphic and/or non-graphic information are necessary for a better managem	ent of works and for define the completeness of the I	nformation Delivery Plan in relation to				



BACK EXTRACT							
NET UBIEP Network for Using BIM to Increase the Energy Performance	ist of Competences	This project has received funding from the European Union's Horizon 2020 research and Innovation programme under grant agreement <i>No.754016</i>	***				
BIM Specialist-Expert		eloped Design		4. 4			
	petence		E	QF Level			
CO Have basic BIM knowledge and skills		1	2 3	4 5	6 7 8		
CO.K1 BIM basic concepts, terminology, principles, strategies and its value proposition							
CO.K2 Benefits and uses of BIM compared to traditional methods for improving energy efficiency							
CO.K3 Project information development cycle: information specification, development, exchange							
CO.K4 Reasons for open and interoperable solutions to ensure collaboration among professional							
	CO.K5 Methodology to identify, plan, develop and evaluate organization's BIM implementation capabilities and BIM uses						
CO.K6 Relevance of maintenance for maintaing the foreseen energy performance							
CO.S1 Read a BIM Execution Plan (BEP)							
C0.S2 Read a Information Delivery Manual							
CO.S3 Identify information requirements for his own role							
C0.S4 Identify the format to read information and transfer information within the supply chain							
CO.S5 Identify the EIR (Employer Information Requirements)							
CO.S6 Identify and/or verify the stages of PIM (Project Information Management)							
C1 Understand BIM tools							
C1.S1 Specialised skills to incorporate information into BIM Model, evaluating openBIM softwar							
C1.S2 Stay up to date on BIM trends, current developments and new directions of BIM technolo	gies						
C2 Apply information management							
C2.K2 Principle of data transferring among different software and/or data federating into an inte	grated design						
C2.K3 Principle of data security and administrative law in the archiving of data in a CDE (Commo	n Data Environment)						
C2.K4 Principle of information management in building sustainability and lean design							



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No.754016



Network for Using BIM to Increase the Energy Performance

#### **BIM Specialist-Expert Developed Design** Ν Competence EQF Level C2.S2 Identify which graphic and/or non-graphic information are necessary for a better management of works and for define the completeness of the Information Delivery Plan in relation to C2.S4 Evaluate the completeness of the maintenance plan to be used in EPC (Energy Performance Contracting) C3 Apply procurement management C3.K3 Legal and technical aspects on green procurement, state and rules for using public funding and international good practices of energy performance contracting C3.S3 List and collaborate with several stakeholders who participate in the sustainable project, distinguishing roles/needs and involving them in the information delivery plan preparation C4 Use BIM technology C4.K1 Techniques and principles of integrated digital production and rendering C4.K2 Principle of integrated design and data transferring, with particular knowledge of IFC (Industry Foundation Classes) structure using international standard C4.K4 Principles of interplays between all aspects of building design, building use and outdoor climate for dynamic evaluation C4.K5 Principles and systems of sustainable buildings, including renewable energy production C4.K6 Design techniques for different scenarios for new resilient buildings to future climate changes and for the refurbishment of existing buildings C4.K7 Techniques of automatic code checking and management of software e-permit C4.S1 Produce a digital 3D model of building / any BIM objects needed for the library in the Common Data Environment C4.S5 Use BIM enabled simulation techniques to reduce the environmental impact C4.S6 Integrate different RES (Renewable Energy Sources) and energy efficiency systems into buildings without clash detection C5 Analyse the BIM Model C5.K1 Principle of global environmental impact of different building products and technologies (RES use, insulation, HVAC systems and building automation systems) C5.K3 Principle of integrated design and data transferring, with particular knowledge of IFC (Industry Foundation Classes) structure using international standard C5.S4 Validate BIM Model

	BACK EXTRACT						
Netw	NET BIEP In the Energy Performance	t of Compotonoos	is project has received funding from the European Union's Horizon 2020 esearch and Innovation programme under grant agreement <i>No.754016</i>	*** <u>*</u> *			
	BIM User	Deve	loped Design			2 Contraction	± +=
Ν	Сотр	etence			EQF Lev	el	
	Have basic BIM knowledge and skills		1	2 3	4	5 6	7 8
	BIM basic concepts, terminology, principles, strategies and its value proposition						
	Benefits and uses of BIM compared to traditional methods for improving energy efficiency of						
	Project information development cycle: information specification, development, exchange a						
-	Reasons for open and interoperable solutions to ensure collaboration among professionals	of different disciplines					
	Relevance of maintenance for maintaing the foreseen energy performance						
	Read a Information Delivery Manual						
	Identify information requirements for his own role						
	Identify the EIR (Employer Information Requirements)						
C0.S6	Identify and/or verify the stages of PIM (Project Information Management)						
C2	Apply information management						
C2.K2	Principle of data transferring among different software and/or data federating into an integ	rated design					
C2.K4	Principle of information management in building sustainability and lean design						
C2.S1	Manage and coordinate information related to energy performance						
C3	Apply procurement management						
C3.K2	Processes, methods and principles of decision-making on materials and products						
C3.K3	Legal and technical aspects on green procurement, state and rules for using public funding a	and international good practices of energy performance c	contracting				
C3.S3	List and collaborate with several stakeholders who participate in the sustainable project, dis	tinguishing roles/needs and involving them in the inform	ation delivery plan preparation				
C3.S5	Define building environmental impact as part of the contract						
C3.S6	Include measureable Quality Analysis criteria as part of the contract						
*							

NET UBIEP Network for Using BIM to Increase the Energy Performance	Li	st of Competences	This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement <i>No.754016</i>	*** ***	***				
BIM User			Developed Design					1000	
N	Comp	etence				E	QF Leve	el	
C4 Use BIM technology								-	
C4.K5 Principles and systems of sustainable buildings, including renewable energy production	on								$\vdash$
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	Li	st of Competences	This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No.754016				
	BIM Manager		Technical Design				
N		etence		EQF Level			
	Have basic BIM knowledge and skills		1	. 2 3 4 5	6 7 8		
	BIM basic concepts, terminology, principles, strategies and its value proposition						
	Benefits and uses of BIM compared to traditional methods for improving energy efficiency						
	Project information development cycle: information specification, development, exchange		cycle				
CO.K4 Reasons for open and interoperable solutions to ensure collaboration among professionals of different disciplines							
	Methodology to identify, plan, develop and evaluate organization's BIM implementation ca	pabilities and BIM uses					
CO.K6 Relevance of maintenance for maintaing the foreseen energy performance							
	CO.S1 Read a BIM Execution Plan (BEP)						
	Read a Information Delivery Manual						
	Identify information requirements for his own role						
-	Identify the format to read information and transfer information within the supply chain						
	Identify the EIR (Employer Information Requirements)						
	Identify and/or verify the stages of PIM (Project Information Management)						
C1	Understand BIM tools						
	Specialised skills to incorporate information into BIM Model, evaluating openBIM software Stay up to date on BIM trends, current developments and new directions of BIM technolog	ioc					
C1.52		les					
	Apply information management Principle of data mining, data base and back up in the CDE (Common Data Environment)						
	Principle of data transferring among different software and/or data federating into an integ	rated design					
	Principle of data security and administrative law in the archiving of data in a CDE (Common						
C2.K3							
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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No.754016



Network for Using BIM to Increase the Energy Performance

#### **BIM Manager Technical Design** Ν Competence EQF Level C2.K4 Principle of information management in building sustainability and lean design C2.S1 Manage and coordinate information related to energy performance C2.S3 Archive the model ensuring that the information provided is kept intact and not manipulated for any future use C2.S4 Evaluate the completeness of the maintenance plan to be used in EPC (Energy Performance Contracting) C2.S7 Identify requirements for the management of data in the CDE (Common Data Environment) for any professionals involved in the process C2.S8 Transfer building information using BIM to facility managers and final users C3 Apply procurement management C3.K1 Processes, methods and principles of decision-making on procuring services and suppliers C3.K2 Processes, methods and principles of decision-making on materials and products C3.K3 Legal and technical aspects on green procurement, state and rules for using public funding and international good practices of energy performance contracting C3.K4 Strategies for training programs to increase energy efficiency with the support of BIM C3.S1 Select or evaluate selected companies with experience in the technologies defined C3.S2 Select products that fit specifications and demands on given quality aspects making financial calculation related to contracting phase C3.S3 List and collaborate with several stakeholders who participate in the sustainable project, distinguishing roles/needs and involving them in the information delivery plan preparation C3.S5 Negotiate and take necessary legal steps if the contractual requirements were not met C3.S6 Include measureable Quality Analysis criteria as part of the contract C4 Use BIM technology C4.K2 Principle of integrated design and data transferring, with particular knowledge of IFC (Industry Foundation Classes) structure using international standard C4.K3 Principle of planning and scheduling for BEP (BIM Execution Plan) C4.K8 Principle of information maturity level representation of the model defining the methodology for BIM maturity level

Netw	NET BIEP Fork for Using BIM to Increase the Energy Performance	ist of Competences	This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No.754016	*** * **	***					
	BIM Manager	Te	echnical Design					ALLY		
Ν		npetence		$\perp$	_	E	EQF Le	vel		
	Develop a BEP (BIM Execution Plan)									
C5	Analyse the BIM Model									
	Principle of global environmental impact of different building products and technologies			_					4	
	Principle of integrated design and data transferring, with particular knowledge of IFC (Ind Use BIM models to communicate installation instructions	ustry Foundation Classes) structure using international	standard	_			$\rightarrow$			
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	BACK		
	NET BIEP ork for Using BIM to Increase the Energy Performance	List of Competences This project has received funding from the European Union's Horizon 2020 research and Innovation programme under grant agreement No.754016	
	BIM Coordinator	Technical Design	
N		npetence	EQF Level
	Have basic BIM knowledge and skills		1 2 3 4 5 6 7 8
	BIM basic concepts, terminology, principles, strategies and its value proposition		
-	Benefits and uses of BIM compared to traditional methods for improving energy efficience		
	Project information development cycle: information specification, development, exchange		
	Reasons for open and interoperable solutions to ensure collaboration among professional		
	Methodology to identify, plan, develop and evaluate organization's BIM implementation of	capabilities and BIM uses	
	Relevance of maintenance for maintaing the foreseen energy performance		
	Read a BIM Execution Plan (BEP)		
	Read a Information Delivery Manual		
	Identify information requirements for his own role		
	Identify the format to read information and transfer information within the supply chain		
	Identify the EIR (Employer Information Requirements)		
	Identify and/or verify the stages of PIM (Project Information Management)		
C1	Understand BIM tools		
	Specialised skills to incorporate information into BIM Model, evaluating openBIM softwar		
	Stay up to date on BIM trends, current developments and new directions of BIM technolo	gies	
C2	Apply information management		
	Principle of data mining, data base and back up in the CDE (Common Data Environment)		
	Principle of data transferring among different software and/or data federating into an into Principle of data security and administrative law in the archiving of data in a CDE (Commo		
C2.K5	Principle of data security and administrative law in the archiving of data in a CDE (commo		
*			



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No.754016



**BIM Coordinator Technical Design** Ν Competence EOF Level C2.K4 Principle of information management in building sustainability and lean design C2.S1 Manage and coordinate information related to energy performance C2.S2 Identify which graphic and/or non-graphic information are necessary for a better management of works and for define the completeness of the Information Delivery Plan in relation to C2.S3 Archive the model ensuring that the information provided is kept intact and not manipulated for any future use C2.S4 Evaluate the completeness of the maintenance plan to be used in EPC (Energy Performance Contracting) C2.S7 Identify requirements for the management of data in the CDE (Common Data Environment) for any professionals involved in the process C2.S8 Transfer building information using BIM to facility managers and final users C3 Apply procurement management C3.K1 Processes, methods and principles of decision-making on procuring services and suppliers C3.K2 Processes, methods and principles of decision-making on materials and products C3.K3 Legal and technical aspects on green procurement, state and rules for using public funding and international good practices of energy performance contracting C3.K4 Strategies for training programs to increase energy efficiency with the support of BIM C3.S1 Select or evaluate selected companies with experience in the technologies defined C3.S2 Select products that fit specifications and demands on given quality aspects making financial calculation related to contracting phase C3.S3 List and collaborate with several stakeholders who participate in the sustainable project, distinguishing roles/needs and involving them in the information delivery plan preparation C4 Use BIM technology C4.K1 Techniques and principles of integrated digital production and rendering C4.K2 Principle of integrated design and data transferring, with particular knowledge of IFC (Industry Foundation Classes) structure using international standard C4.K3 Principle of planning and scheduling for BEP (BIM Execution Plan) C4.K4 Principles of interplays between all aspects of building design, building use and outdoor climate for dynamic evaluation



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No.754016



**BIM Coordinator Technical Design** Ν Competence EQF Level C4.K5 Principles and systems of sustainable buildings, including renewable energy production C4.K6 Design techniques for different scenarios for new resilient buildings to future climate changes and for the refurbishment of existing buildings C4.K7 Techniques of automatic code checking and management of software e-permit C4.K8 Principle of information maturity level representation of the model defining the methodology for BIM maturity level C4.S1 Produce a digital 3D model of building / any BIM objects needed for the library in the Common Data Environment C4.S2 Develop a BEP (BIM Execution Plan) C4.S3 Develop site utilization planning, set-up organized management systems, tack the effectiveness distribution of appropriate spaces and related resources C4.S5 Use BIM enabled simulation techniques to reduce the environmental impact C4.S6 Integrate different RES (Renewable Energy Sources) and energy efficiency systems into buildings without clash detection C4.S7 Produce a maintenance plan and a maintenance manual for building systems C4.S9 Use code checking to verify the respect of energy performance requirements C5 Analyse the BIM Model C5.K1 Principle of global environmental impact of different building products and technologies (RES use, insulation, HVAC systems and building automation systems) C5.K3 Principle of integrated design and data transferring, with particular knowledge of IFC (Industry Foundation Classes) structure using international standard C5.S1 Coordinate the work of different disciplines in order to obtain a consolidate BIM model that satisfy all the requirements C5.S2 Apply Quality Management and coordinate team members of different disciplines C5.S4 Validate BIM Model C5.S6 Use BIM models to communicate installation instructions

BACK			
Li NET UBIEP Network for Using BIM to Increase the Energy Performance	st of Competences the Eur	ct has received funding from ropean Union's Horizon 2020 and Innovation programme grant agreement <i>No.754016</i>	
BIM Model Evaluator		al Design	
· · · · · · · · · · · · · · · · · · ·	etence		EQF Level
C0 Have basic BIM knowledge and skills		1 2 3	4 5 6 7 8
CO.K1 BIM basic concepts, terminology, principles, strategies and its value proposition			
CO.K2 Benefits and uses of BIM compared to traditional methods for improving energy efficiency			
CO.K3 Project information development cycle: information specification, development, exchange			
CO.K4 Reasons for open and interoperable solutions to ensure collaboration among professionals			
C0.K5 Methodology to identify, plan, develop and evaluate organization's BIM implementation ca	pabilities and BIM uses		
C0.K6 Relevance of maintenance for maintaing the foreseen energy performance			
C0.S1 Read a BIM Execution Plan (BEP)			
C0.S2 Read a Information Delivery Manual			
C0.S3 Identify information requirements for his own role			
C0.S4 Identify the format to read information and transfer information within the supply chain			
C0.S5 Identify the EIR (Employer Information Requirements)			
C0.S6 Identify and/or verify the stages of PIM (Project Information Management)			
C1 Understand BIM tools			
C1.S2 Stay up to date on BIM trends, current developments and new directions of BIM technolog	es		
C2 Apply information management			
C2.K1 Principle of data mining, data base and back up in the CDE (Common Data Environment)			
C2.K3 Principle of data security and administrative law in the archiving of data in a CDE (Common	Data Environment)		
C2.K4 Principle of information management in building sustainability and lean design			
C2.S2 Identify which graphic and/or non-graphic information are necessary for a better managem	ent of works and for define the completeness of the Informatio	n Delivery Plan in relation to	





	BIM Model Evaluator	Technical Design	
N		etence	EQF Level
C2.S3	Archive the model ensuring that the information provided is kept intact and not manipulate	d for any future use	
	Evaluate the completeness of the maintenance plan to be used in EPC (Energy Performance		
	Identify requirements for the management of data in the CDE (Common Data Environment)	for any professionals involved in the process	
C3	Apply procurement management		
C3.K1	Processes, methods and principles of decision-making on procuring services and suppliers		
	Processes, methods and principles of decision-making on materials and products		
C3.K3	Legal and technical aspects on green procurement, state and rules for using public funding a	and international good practices of energy performance contracting	
	Define building environmental impact as part of the contract		
	Include measureable Quality Analysis criteria as part of the contract		
C4	Use BIM technology		
		try Foundation Classes) structure using international standard	
C4.K3	Principle of planning and scheduling for BEP (BIM Execution Plan)		
C4.K7	Techniques of automatic code checking and management of software e-permit		
C4.K8	Principle of information maturity level representation of the model defining the methodolog	gy for BIM maturity level	
C4.S8	Produce a visualization design in order to report back to costumers, users and reviewers		
	Use code checking to verify the respect of energy performance requirements		
C5	Analyse the BIM Model		
C5.K1	Principle of global environmental impact of different building products and technologies (RE	S use, insulation, HVAC systems and building automation systems)	
C5.K3	Principle of integrated design and data transferring, with particular knowledge of IFC (Indus	try Foundation Classes) structure using international standard	
C5.S4	Validate BIM Model		
*			

	BACK EXTRACT					
	NET BIEP Pork for Using BIM to Increase the Energy Performance	ist of Competences	This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement <i>No.754016</i>	:** * *		
	BIM Specialist-Expert		Technical Design		No.	
N		npetence			EQF Level	
	Have basic BIM knowledge and skills		1	2 3	4 5	6 7 8
	BIM basic concepts, terminology, principles, strategies and its value proposition					
	Benefits and uses of BIM compared to traditional methods for improving energy efficiency					
C0.K3	Project information development cycle: information specification, development, exchange	e and maintenance throughout all the building life	e cycle			
C0.K4	Reasons for open and interoperable solutions to ensure collaboration among professional	s of different disciplines				
	Methodology to identify, plan, develop and evaluate organization's BIM implementation of	capabilities and BIM uses				
C0.K6	Relevance of maintenance for maintaing the foreseen energy performance					
	Read a BIM Execution Plan (BEP)					
C0.S2	Read a Information Delivery Manual					
	Identify information requirements for his own role					
	Identify the format to read information and transfer information within the supply chain					
C0.S5	Identify the EIR (Employer Information Requirements)					
C0.S6	Identify and/or verify the stages of PIM (Project Information Management)					
C1	Understand BIM tools					
C1.S1	Specialised skills to incorporate information into BIM Model, evaluating openBIM software	e				
C1.S2	Stay up to date on BIM trends, current developments and new directions of BIM technolo	gies				
C2	Apply information management					
C2.K2	Principle of data transferring among different software and/or data federating into an inte	egrated design				
C2.K3	Principle of data security and administrative law in the archiving of data in a CDE (Commo	n Data Environment)				
C2.K4	Principle of information management in building sustainability and lean design					
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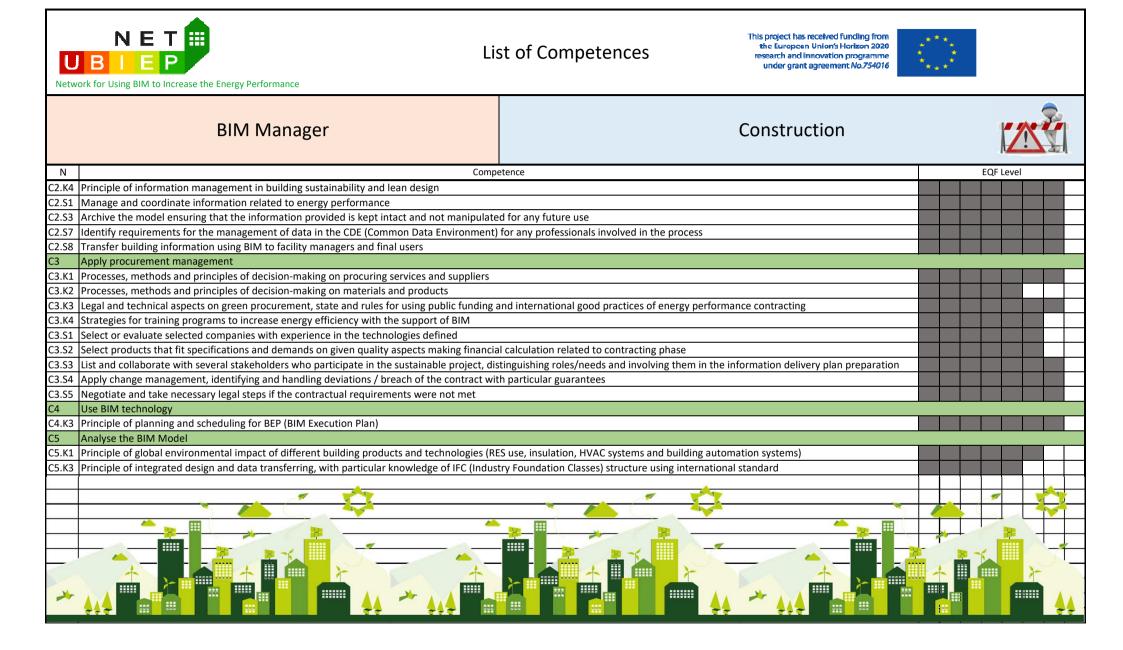
		Technical Design	
N	Сотр	etence	EQF Level
C2.S2	Identify which graphic and/or non-graphic information are necessary for a better managem	ent of works and for define the completeness of the Information Delivery Plan in relation to	
C2.S4	Evaluate the completeness of the maintenance plan to be used in EPC (Energy Performance	Contracting)	
C3 /	Apply procurement management		
C3.K3	Legal and technical aspects on green procurement, state and rules for using public funding a	and international good practices of energy performance contracting	
C3.S3	List and collaborate with several stakeholders who participate in the sustainable project, dis	stinguishing roles/needs and involving them in the information delivery plan preparation	
C4 เ	Use BIM technology		
C4.K1	Techniques and principles of integrated digital production and rendering		
C4.K2	Principle of integrated design and data transferring, with particular knowledge of IFC (Indus	try Foundation Classes) structure using international standard	
C4.K4	Principles of interplays between all aspects of building design, building use and outdoor clin	nate for dynamic evaluation	
C4.K5	Principles and systems of sustainable buildings, including renewable energy production		
C4.K6	Design techniques for different scenarios for new resilient buildings to future climate chang	es and for the refurbishment of existing buildings	
C4.K7	Techniques of automatic code checking and management of software e-permit		
C4.S1 F	Produce a digital 3D model of building / any BIM objects needed for the library in the Comn	non Data Environment	
C4.S3	Develop site utilization planning, set-up organized management systems, tack the effective	ness distribution of appropriate spaces and related resources	
C4.S5	Use BIM enabled simulation techniques to reduce the environmental impact		
C4.S6	Integrate different RES (Renewable Energy Sources) and energy efficiency systems into build	dings without clash detection	
C4.S9	Use code checking to verify the respect of energy performance requirements		
C5 /	Analyse the BIM Model		
C5.K1	Principle of global environmental impact of different building products and technologies (RI	ES use, insulation, HVAC systems and building automation systems)	
C5.K3	Principle of integrated design and data transferring, with particular knowledge of IFC (Indus	try Foundation Classes) structure using international standard	

NET UBIEP Network for Using BIM to Increase the Energy Performance	Li	st of Competences	This project has received funding from the European Union's Horizon 2020 research and Innovation programme under grant agreement No.754016		***				
BIM Specialist-Expert			Technical Design					行	
N	Comp	etence				E	EQF Le	vel	
C5.S4 Validate BIM Model									
C5.S6 Use BIM models to communicate installation instructions									
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BACK EXTRACT					
NET UBIEP Network for Using BIM to Increase the Energy Performance	List of Competences	This project has received funding from the European Union's Horizon 2020 research and Innovation programme under grant agreement <i>No.754016</i>			
BIM User		Technical Design			
Ν	Competence			EQF Level	
C0 Have basic BIM knowledge and skills			1 2 3	4 5	6 7 8
CO.K1 BIM basic concepts, terminology, principles, strategies and its value proposition					
CO.K2 Benefits and uses of BIM compared to traditional methods for improving energy eff	ficiency of new or existing buildings				
CO.K3 Project information development cycle: information specification, development, ex	<b>o</b>	Iding life cycle			
CO.K4 Reasons for open and interoperable solutions to ensure collaboration among profe	ssionals of different disciplines				
CO.K6 Relevance of maintenance for maintaing the foreseen energy performance					
C0.S2 Read a Information Delivery Manual					
C0.S3 Identify information requirements for his own role					
C0.S5 Identify the EIR (Employer Information Requirements)				+++	
C0.S6 Identify and/or verify the stages of PIM (Project Information Management)					
C2 Apply information management				<del></del>	
C2.K2 Principle of data transferring among different software and/or data federating into	an integrated design				
C2.K4 Principle of information management in building sustainability and lean design					
C2.S1 Manage and coordinate information related to energy performance					
C3 Apply procurement management					
C3.K2 Processes, methods and principles of decision-making on materials and products					
C3.K3 Legal and technical aspects on green procurement, state and rules for using public		÷, , , , , , , , , , , , , , , , , , ,			
C3.S3 List and collaborate with several stakeholders who participate in the sustainable pro-	oject, distinguishing roles/needs and involving the	hem in the information delivery plan preparation			
C3.S5 Define building environmental impact as part of the contract					
C3.S6 Include measureable Quality Analysis criteria as part of the contract				+++	

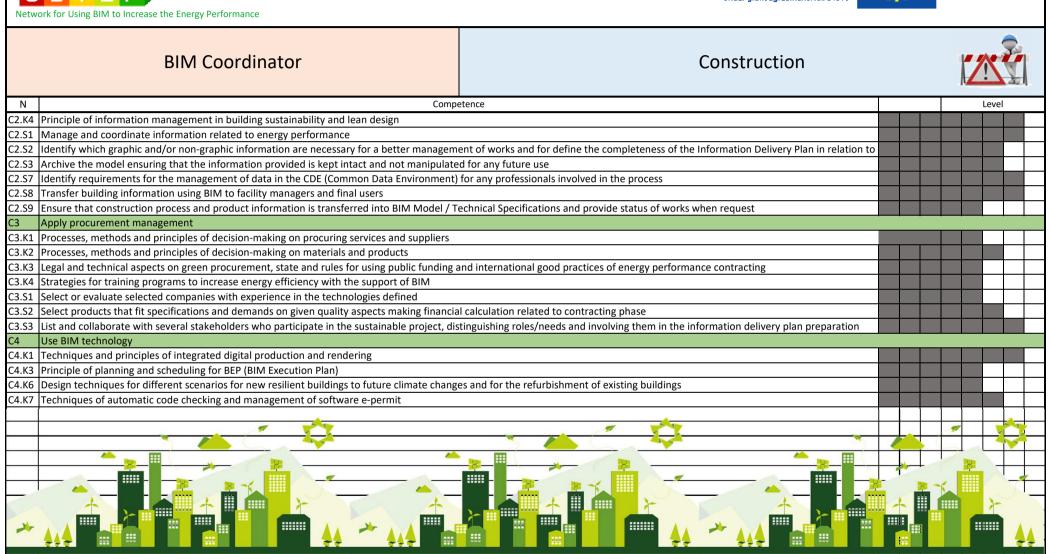
Netv	NET BIEP work for Using BIM to Increase the Energy Performance	Li	st of Competences This project has received funding from the European Union's Horizon 2020 research and Innovation programme under grant agreement No.754016	** * *	****				
	BIM User		Technical Design					行之	
N		Comp	etence				EQF Le	vel	
C4	Use BIM technology			_					
C4.K5	Principles and systems of sustainable buildings, including renewable energy productio	n							
C5	Analyse the BIM Model Use BIM models to communicate installation instructions								
C3.30						-	_	_	+
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BACK EXTRACT			
NET UBIEP Network for Using BIM to Increase the Energy Performance	List of Competences	This project has received funding from the European Union's Horizon 2020 research and Innovation programme under grant agreement <i>No.754016</i>	
BIM Manager		Construction	
N	Competence		EQF Level
C0 Have basic BIM knowledge and skills			1 2 3 4 5 6 7 8
CO.K1 BIM basic concepts, terminology, principles, strategies and its value proposition			
CO.K2 Benefits and uses of BIM compared to traditional methods for improving energy efficiency			
CO.K3 Project information development cycle: information specification, development, exch		cycle	
CO.K4 Reasons for open and interoperable solutions to ensure collaboration among professi			
CO.K5 Methodology to identify, plan, develop and evaluate organization's BIM implementat	ion capabilities and BIM uses		
CO.K6 Relevance of maintenance for maintaing the foreseen energy performance			
CO.S1 Read a BIM Execution Plan (BEP)			
C0.S2 Read a Information Delivery Manual			
C0.S3 Identify information requirements for his own role			
C0.S4 Identify the format to read information and transfer information within the supply ch	ain		
C0.S5 Identify the EIR (Employer Information Requirements)			
C0.S6 Identify and/or verify the stages of PIM (Project Information Management)			
C1 Understand BIM tools			
C1.S1 Specialised skills to incorporate information into BIM Model, evaluating openBIM soft			
C1.S2 Stay up to date on BIM trends, current developments and new directions of BIM tech	nologies		
C2 Apply information management			
C2.K1 Principle of data mining, data base and back up in the CDE (Common Data Environme			
C2.K2 Principle of data transferring among different software and/or data federating into an			
C2.K3 Principle of data security and administrative law in the archiving of data in a CDE (Cor	nmon Data Environment)		



Netv	NET BIEP Vork for Using BIM to Increase the Energy Performance	st of Competences	This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No.754016	.*** * **	* * *			
	BIM Manager	C	onstruction			1	<u>/</u>	
Ν		petence				EQF L	.evel	
	Use BIM to assure the technical supervision of construction works							
C5.S6	Use BIM models to communicate installation instructions							
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	NET BLEP Vork for Using BIM to Increase the Energy Performance	st of Competences	This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement <i>No.754016</i>		
	BIM Coordinator		Construction		
N		petence		EQF Level	
C0	Have basic BIM knowledge and skills			1 2 3 4 5 6	578
	BIM basic concepts, terminology, principles, strategies and its value proposition				
	Benefits and uses of BIM compared to traditional methods for improving energy efficiency				
	Project information development cycle: information specification, development, exchange		cle		
	Reasons for open and interoperable solutions to ensure collaboration among professionals				
	Methodology to identify, plan, develop and evaluate organization's BIM implementation ca	pabilities and BIM uses			
	Relevance of maintenance for maintaing the foreseen energy performance				
	Read a BIM Execution Plan (BEP)				
	Read a Information Delivery Manual				
	Identify information requirements for his own role				
	Identify the format to read information and transfer information within the supply chain				
	Identify the EIR (Employer Information Requirements)				
	Identify and/or verify the stages of PIM (Project Information Management)				
C1	Understand BIM tools				
	Specialised skills to incorporate information into BIM Model, evaluating openBIM software				
C1.S2	Stay up to date on BIM trends, current developments and new directions of BIM technologi	ies			
C2	Apply information management				
	Principle of data mining, data base and back up in the CDE (Common Data Environment)				
	Principle of data transferring among different software and/or data federating into an integ				
C2.K3	Principle of data security and administrative law in the archiving of data in a CDE (Common	Data Environment)			
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List of Competences

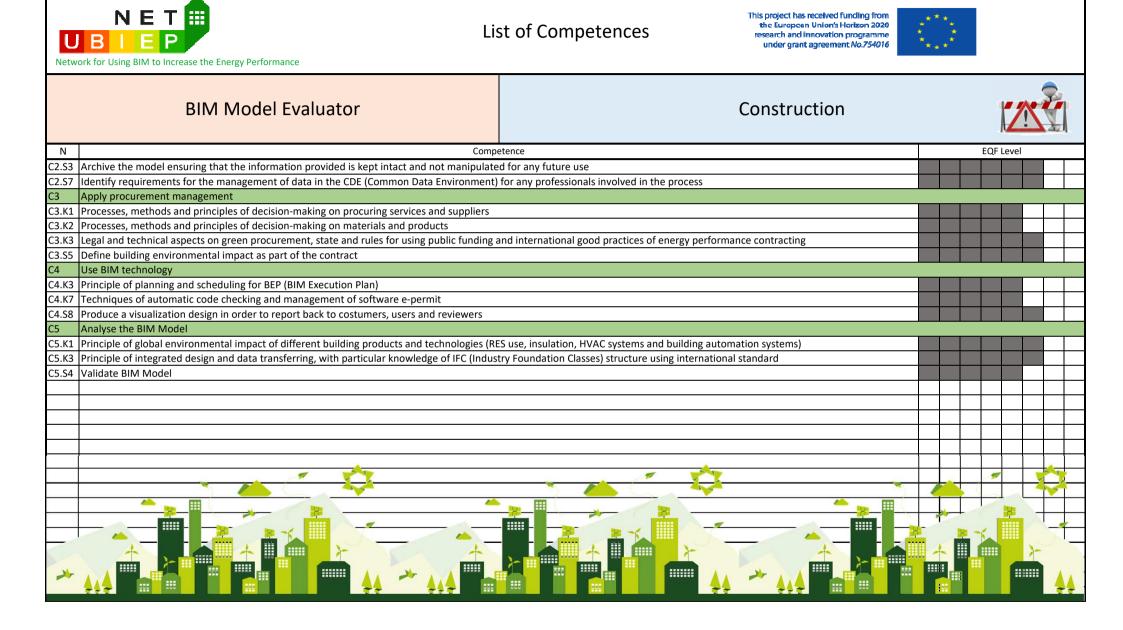






BIM Coordinator	Construction		
Ν			
	4.S3 Develop site utilization planning, set-up organized management systems, tack the effectiveness distribution of appropriate spaces and related resources		
C4.S5 Use BIM enabled simulation techniques to reduce the environmental impact			
C5 Analyse the BIM Model			
C5.K1 Principle of global environmental impact of different building products and techn			
C5.K3 Principle of integrated design and data transferring, with particular knowledge of			
C5.S1 Coordinate the work of different disciplines in order to obtain a consolidate BIM I			
C5.S2 Apply Quality Management and coordinate team members of different discipline			
C5.S4 Validate BIM Model			
C5.S5 Use BIM to assure the technical supervision of construction works			
C5.S6 Use BIM models to communicate installation instructions			
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BACK EXTRACT					
NET UBIEP Network for Using BIM to Increase the Energy Performance	List of Competences	This project has received funding from the European Union's Horizon 2020 research and Innovation programme under grant agreement <i>No.754016</i>			
BIM Model Evaluator		Construction			
N	Competence		EQF Level		
CO Have basic BIM knowledge and skills		1 2	3 4 5 6 7 8		
CO.K1 BIM basic concepts, terminology, principles, strategies and its value propo					
CO.K2 Benefits and uses of BIM compared to traditional methods for improving					
C0.K3 Project information development cycle: information specification, develo		puilding life cycle			
CO.K4 Reasons for open and interoperable solutions to ensure collaboration am					
CO.K5 Methodology to identify, plan, develop and evaluate organization's BIM in					
C0.K6 Relevance of maintenance for maintaing the foreseen energy performance					
CO.S1 Read a BIM Execution Plan (BEP)					
	20.52 Read a Information Delivery Manual				
	20.03 Identify information requirements for his own role				
CO.S4 Identify the format to read information and transfer information within the supply chain					
C0.S5 Identify the EIR (Employer Information Requirements)					
C0.S6 Identify and/or verify the stages of PIM (Project Information Managemen C1 Understand BIM tools	ι,				
C1 Understand BIM tools C1.S2 Stay up to date on BIM trends, current developments and new directions	of DIM tochnologies				
C2 Apply information management					
C2.K1 Principle of data mining, data base and back up in the CDE (Common Data	Environment)				
C2.K3 Principle of data security and administrative law in the archiving of data in					
C2.K4 Principle of information management in building sustainability and lean d					
C2.S2 Identify which graphic and/or non-graphic information are necessary for a		aleteness of the Information Delivery Plan in relation to			
	better management of works and for define the com				



	BACK					
	NET BIEP ork for Using BIM to Increase the Energy Performance	ist of Competences	This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement <i>No.754016</i>	**** **** ****		
	BIM Specialist-Expert		Construction			
N		npetence		E	EQF Level	
	Have basic BIM knowledge and skills			1 2 3	4 5 6	7 8
	BIM basic concepts, terminology, principles, strategies and its value proposition					$\square$
	CO.K2 Benefits and uses of BIM compared to traditional methods for improving energy efficiency of new or existing buildings					
	Project information development cycle: information specification, development, exchang		le			
	CO.K4 Reasons for open and interoperable solutions to ensure collaboration among professionals of different disciplines					
	CO.K5 Methodology to identify, plan, develop and evaluate organization's BIM implementation capabilities and BIM uses					
	CO.K6 Relevance of maintenance for maintaing the foreseen energy performance					
	CO.S1 Read a BIM Execution Plan (BEP)					
	C0.S2 Read a Information Delivery Manual					
	20.53     Identify information requirements for his own role					
	0.S4 Identify the format to read information and transfer information within the supply chain					
	20.55 Identify the EIR (Employer Information Requirements)					
	CO.S6 Identify and/or verify the stages of PIM (Project Information Management)					
C1	Understand BIM tools					
	1.S1 Specialised skills to incorporate information into BIM Model, evaluating openBIM software					
	C1.S2 Stay up to date on BIM trends, current developments and new directions of BIM technologies					
	Apply information management					
	C2.K2 Principle of data transferring among different software and/or data federating into an integrated design					+
	22.K3 Principle of data security and administrative law in the archiving of data in a CDE (Common Data Environment)					
C2.K4	Principle of information management in building sustainability and lean design					
*						



## List of Competences

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No.754016



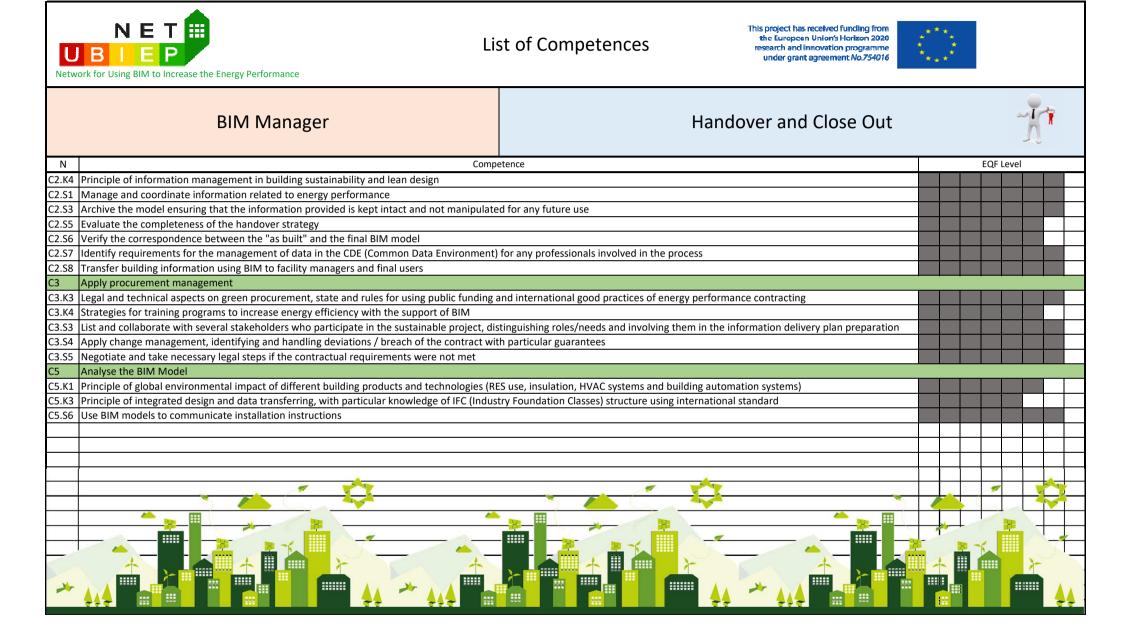
Network for Using BIM to Increase the Energy Performance

	BIM Specialist-Expert	Construction			1	2	- S	1
Ν	Сотр	etence			EQF	Level		
C2.S2	Identify which graphic and/or non-graphic information are necessary for a better managem	ent of works and for define the completeness of the Information Delivery Plan in relation to						
C3	Apply procurement management							
C3.K3	Legal and technical aspects on green procurement, state and rules for using public funding	and international good practices of energy performance contracting						
C3.S3	List and collaborate with several stakeholders who participate in the sustainable project, dis	stinguishing roles/needs and involving them in the information delivery plan preparation						
C4	Use BIM technology							
C4.K1	Techniques and principles of integrated digital production and rendering							
C4.K6	Design techniques for different scenarios for new resilient buildings to future climate chang	es and for the refurbishment of existing buildings						
C4.K7	Techniques of automatic code checking and management of software e-permit							
C4.S3	Develop site utilization planning, set-up organized management systems, tack the effective	ness distribution of appropriate spaces and related resources						
C4.S4	Use laser scanning in order to produce a point of cloud of existing buildings, comparing and	evaluating facilities and related systems						
C4.S5	Use BIM enabled simulation techniques to reduce the environmental impact							
C5	Analyse the BIM Model							
C5.K1	Principle of global environmental impact of different building products and technologies (RI	ES use, insulation, HVAC systems and building automation systems)						
C5.K3	Principle of integrated design and data transferring, with particular knowledge of IFC (Indus	try Foundation Classes) structure using international standard						
C5.S4	Validate BIM Model							
C5.S6	Use BIM models to communicate installation instructions							
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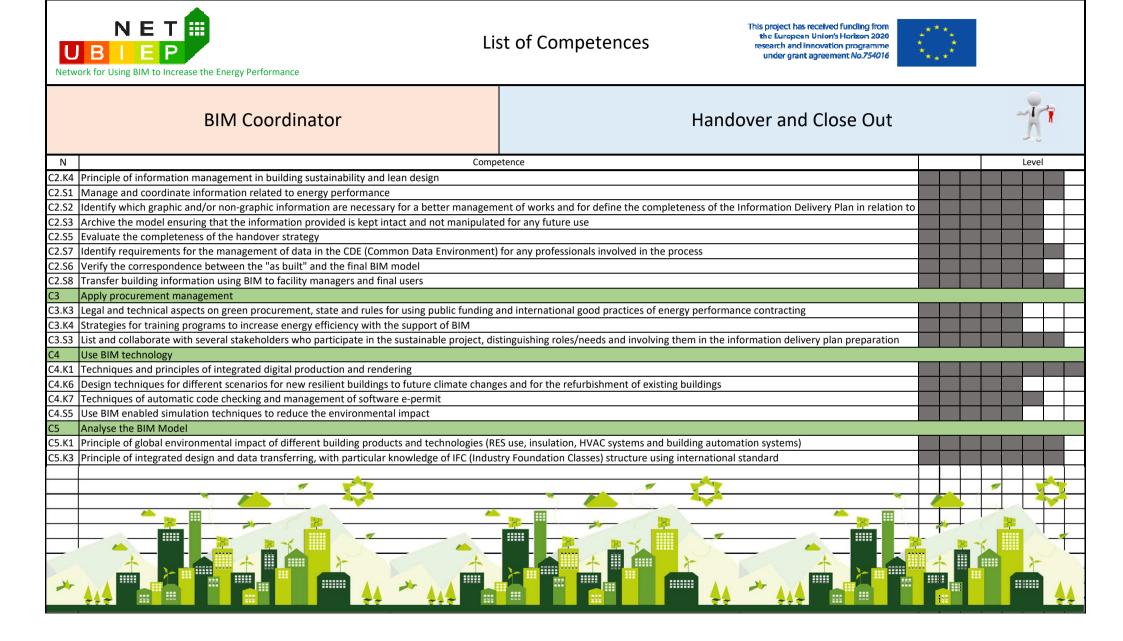
BACK EXTRACT	ist of Competences	This project has received funding from the European Union's Horizon 2020 research and Innovation programme under grant agreement <i>No.754016</i>			
BIM User		Construction			
N Com	petence			EQF Level	
C0 Have basic BIM knowledge and skills			1 2 3	4 5	6 7 8
CO.K1 BIM basic concepts, terminology, principles, strategies and its value proposition					
C0.K2 Benefits and uses of BIM compared to traditional methods for improving energy efficiency					
C0.K3 Project information development cycle: information specification, development, exchange		le			
CO.K4 Reasons for open and interoperable solutions to ensure collaboration among professionals					
C0.K6 Relevance of maintenance for maintaing the foreseen energy performance					
C0.S2 Read a Information Delivery Manual					
C0.S3 Identify information requirements for his own role					
C0.S5 Identify the EIR (Employer Information Requirements)					
C0.S6 Identify and/or verify the stages of PIM (Project Information Management)					
C2 Apply information management					
C2.K2 Principle of data transferring among different software and/or data federating into an inter	grated design				
C2.K4 Principle of information management in building sustainability and lean design					
C2.S1 Manage and coordinate information related to energy performance					
C2.S9 Ensure that construction process and product information is transferred into BIM Model /	Technical Specifications and provide status of works	when request			
C3 Apply procurement management					
C3.K2 Processes, methods and principles of decision-making on materials and products					
C3.K3 Legal and technical aspects on green procurement, state and rules for using public funding	and international good practices of energy performa	ance contracting			
C3.S3 List and collaborate with several stakeholders who participate in the sustainable project, d	istinguishing roles/needs and involving them in the ir	nformation delivery plan preparation			
C3.S4 Apply change management, identifying and handling deviations / breach of the contract w	ith particular guarantees				

	NET BIEP Pork for Using BIM to Increase the Energy Performance	Li	to f Competences This project has received for the European Union's H research and Innovation under grant agreemen	programme	*** ***	***				
	BIM User		Construction					K	X	
N		Comp	etence				EC	(F Lev	el	
C3.S5	Define building environmental impact as part of the contract							۰.		
C5	Analyse the BIM Model Use BIM models to communicate installation instructions									
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BACK EXTRACT		
NET UBIEP Network for Using BIM to Increase the Energy Performance	This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No.754016	
BIM Manager	Handover and Close Out	
	petence	EQF Level
C0 Have basic BIM knowledge and skills		1 2 3 4 5 6 7 8
CO.K1 BIM basic concepts, terminology, principles, strategies and its value proposition		
CO.K2 Benefits and uses of BIM compared to traditional methods for improving energy efficiency	of new or existing buildings	
C0.K3 Project information development cycle: information specification, development, exchange		
CO.K4 Reasons for open and interoperable solutions to ensure collaboration among professionals	•	
CO.K5 Methodology to identify, plan, develop and evaluate organization's BIM implementation ca	apabilities and BIM uses	
C0.K6 Relevance of maintenance for maintaing the foreseen energy performance		
CO.S1 Read a BIM Execution Plan (BEP)		
C0.S2 Read a Information Delivery Manual		
C0.S3 Identify information requirements for his own role		
C0.S4 Identify the format to read information and transfer information within the supply chain		
C0.S5 Identify the EIR (Employer Information Requirements)		
C0.S6 Identify and/or verify the stages of PIM (Project Information Management)		
C1 Understand BIM tools		
C1.S1 Specialised skills to incorporate information into BIM Model, evaluating openBIM software		
C1.S2 Stay up to date on BIM trends, current developments and new directions of BIM technolog	jes	
C2 Apply information management		
C2.K1 Principle of data mining, data base and back up in the CDE (Common Data Environment)		
C2.K2 Principle of data transferring among different software and/or data federating into an integration of the second se		
C2.K3 Principle of data security and administrative law in the archiving of data in a CDE (Common	n Data Environmentj	

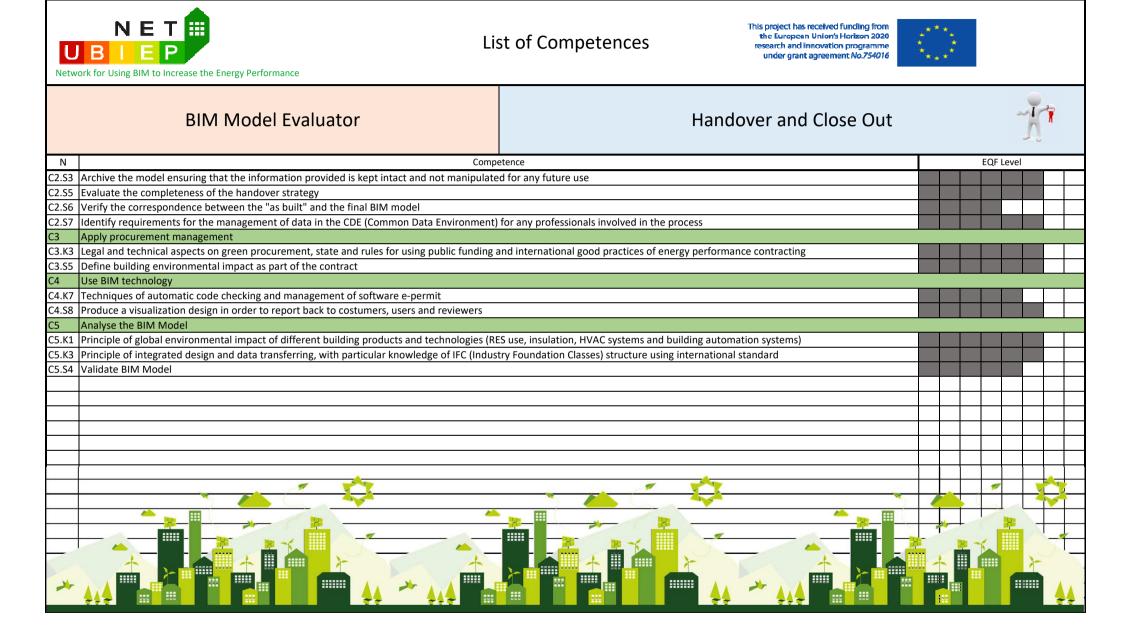


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U Netwo	NET BIEP rk for Using BIM to Increase the Energy Performance	ist of Competences	This project has received funding from the European Union's Horizon 2020 research and Innovation programme under grant agreement <i>No.754016</i>	
	BIM Coordinator		Handover and Close Out	
Ν	Com	petence		EQF Level
C0 I	lave basic BIM knowledge and skills			1 2 3 4 5 6 7 8
C0.K1	BIM basic concepts, terminology, principles, strategies and its value proposition			
C0.K2	Benefits and uses of BIM compared to traditional methods for improving energy efficiency	of new or existing buildings		
	Project information development cycle: information specification, development, exchange		ilding life cycle	
	Reasons for open and interoperable solutions to ensure collaboration among professional			
C0.K5	Methodology to identify, plan, develop and evaluate organization's BIM implementation c	apabilities and BIM uses		
C0.K6	Relevance of maintenance for maintaing the foreseen energy performance			
C0.S1	Read a BIM Execution Plan (BEP)			
C0.S2	Read a Information Delivery Manual			
C0.S3	dentify information requirements for his own role			
C0.S4 I	dentify the format to read information and transfer information within the supply chain			
C0.S5 I	dentify the EIR (Employer Information Requirements)			
C0.S6 I	dentify and/or verify the stages of PIM (Project Information Management)			
C1 (	Inderstand BIM tools			
C1.S1 S	pecialised skills to incorporate information into BIM Model, evaluating openBIM software	e		
C1.S2 S	tay up to date on BIM trends, current developments and new directions of BIM technolo	gies		
C2 /	Apply information management			
C2.K1	Principle of data mining, data base and back up in the CDE (Common Data Environment)			
C2.K2	Principle of data transferring among different software and/or data federating into an inte	egrated design		
C2.K3	Principle of data security and administrative law in the archiving of data in a CDE (Commo	n Data Environment)		
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NET UBIEP Network for Using BIM to Increase the Energy Performance	Lis	St of Competences This project has received funding from the European Union's Horizon 2020 research and Innovation programme under grant agreement No.754016	** * * *	***					
BIM Coordinator		Handover and Close Out					1	<b>N</b>	
	Comp	etence		_		EQF L	evel		_
C5.S3 Apply BIM enabled energy and lighting analysis with periodic monitoring								_	_
C5.S4 Validate BIM Model C5.S6 Use BIM models to communicate installation instructions			—						<b>-</b>
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BACK EXTRACT			
NET UBIEP Network for Using BIM to Increase the Energy Performance	∟ist of Competences	This project has received funding from the European Union's Horizon 2020 research and Innovation programme under grant agreement <i>No.754016</i>	
BIM Model Evaluator		Handover and Close Out	
	npetence		EQF Level
C0 Have basic BIM knowledge and skills			1 2 3 4 5 6 7 8
CO.K1 BIM basic concepts, terminology, principles, strategies and its value proposition			
C0.K2 Benefits and uses of BIM compared to traditional methods for improving energy efficience	y of new or existing buildings		
CO.K3 Project information development cycle: information specification, development, exchanged		ilding life cycle	
CO.K4 Reasons for open and interoperable solutions to ensure collaboration among professiona	ls of different disciplines		
C0.K5 Methodology to identify, plan, develop and evaluate organization's BIM implementation	capabilities and BIM uses		
CO.K6 Relevance of maintenance for maintaing the foreseen energy performance			
C0.S1 Read a BIM Execution Plan (BEP)			
C0.S2 Read a Information Delivery Manual			
C0.S3 Identify information requirements for his own role			
C0.S4 Identify the format to read information and transfer information within the supply chain			
C0.S5 Identify the EIR (Employer Information Requirements)			
C0.S6 Identify and/or verify the stages of PIM (Project Information Management)			
C1 Understand BIM tools			
C1.S2 Stay up to date on BIM trends, current developments and new directions of BIM technology	ogies		
C2 Apply information management			
C2.K1 Principle of data mining, data base and back up in the CDE (Common Data Environment)			
C2.K3 Principle of data security and administrative law in the archiving of data in a CDE (Commo	on Data Environment)		
C2.K4 Principle of information management in building sustainability and lean design			
C2.S2 Identify which graphic and/or non-graphic information are necessary for a better manage	ement of works and for define the complete	teness of the Information Delivery Plan in relation to	



BACK EXTRACT			
NET UBIEP Network for Using BIM to Increase the Energy Performance	List of Competences	This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement <i>No.754016</i>	
BIM Specialist-Expert		Handover and Close Out	
N	Competence		EQF Level
C0 Have basic BIM knowledge and skills			1 2 3 4 5 6 7 8
CO.K1 BIM basic concepts, terminology, principles, strategies and its value proposition			
CO.K2 Benefits and uses of BIM compared to traditional methods for improving energy efficiency			
CO.K3 Project information development cycle: information specification, development, exc		uilding life cycle	
CO.K4 Reasons for open and interoperable solutions to ensure collaboration among profess			
CO.K5 Methodology to identify, plan, develop and evaluate organization's BIM implementa	tion capabilities and BIM uses		
CO.K6 Relevance of maintenance for maintaing the foreseen energy performance			
CO.S1 Read a BIM Execution Plan (BEP)			
C0.S2 Read a Information Delivery Manual			
C0.S3 Identify information requirements for his own role			
C0.S4 Identify the format to read information and transfer information within the supply ch	hain		
C0.S5 Identify the EIR (Employer Information Requirements)			
C0.S6 Identify and/or verify the stages of PIM (Project Information Management)			
C1 Understand BIM tools			
C1.S1 Specialised skills to incorporate information into BIM Model, evaluating openBIM so	ftware		
C1.S2 Stay up to date on BIM trends, current developments and new directions of BIM tech	hnologies		
C2 Apply information management			
C2.K2 Principle of data transferring among different software and/or data federating into a	in integrated design		
C2.K3 Principle of data security and administrative law in the archiving of data in a CDE (Co	mmon Data Environment)		
C2.K4 Principle of information management in building sustainability and lean design			



## List of Competences

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No.754016



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Network for Using BIM to Increase the Energy Performance

## BIM Specialist-Expert

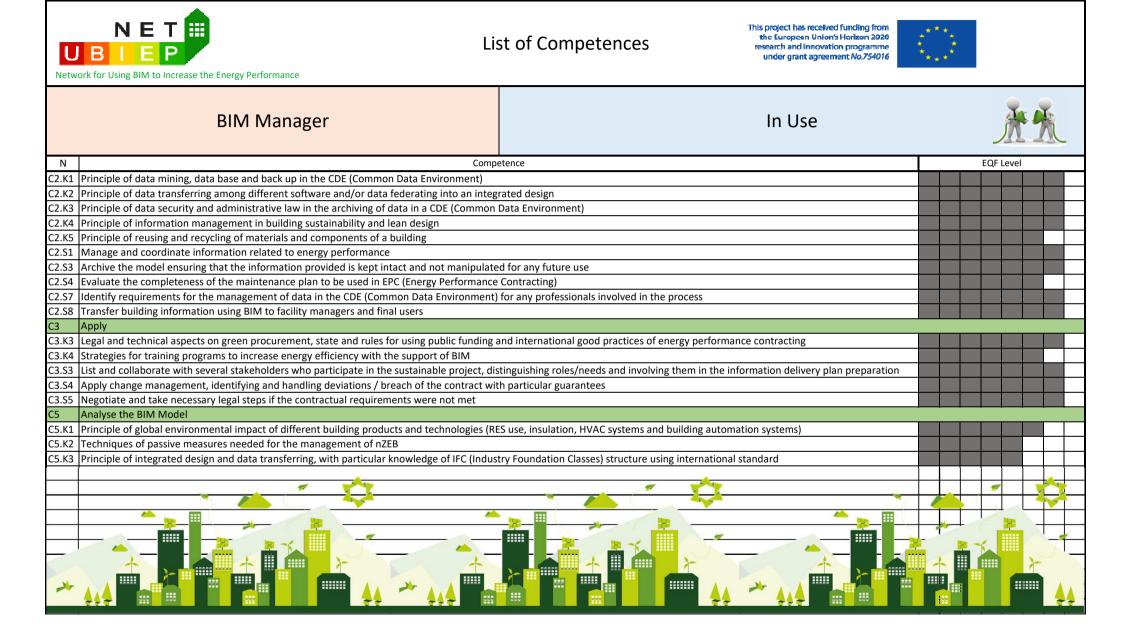
## Handover and Close Out

competence gement of works and for define the completeness of the Information Delivery Plan in relation to			EQF Le	vel	
gement of works and for define the completeness of the Information Delivery Plan in relation to					
gement of works and for define the completeness of the mornation betwery han in relation to					
ling and international good practices of energy performance contracting					
t, distinguishing roles/needs and involving them in the information delivery plan preparation					
hanges and for the refurbishment of existing buildings					
and evaluating facilities and related systems					
es (RES use, insulation, HVAC systems and building automation systems)					
ndustry Foundation Classes) structure using international standard					
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	algement of works and for define the completeness of the information belivery plan in relation to adding and international good practices of energy performance contracting act, distinguishing roles/needs and involving them in the information delivery plan preparation changes and for the refurbishment of existing buildings g and evaluating facilities and related systems ies (RES use, insulation, HVAC systems and building automation systems) Industry Foundation Classes) structure using international standard	ading and international good practices of energy performance contracting ect, distinguishing roles/needs and involving them in the information delivery plan preparation changes and for the refurbishment of existing buildings g and evaluating facilities and related systems ies (RES use, insulation, HVAC systems and building automation systems)	ading and international good practices of energy performance contracting ect, distinguishing roles/needs and involving them in the information delivery plan preparation changes and for the refurbishment of existing buildings g and evaluating facilities and related systems ies (RES use, insulation, HVAC systems and building automation systems)	adding and international good practices of energy performance contracting ect, distinguishing roles/needs and involving them in the information delivery plan preparation changes and for the refurbishment of existing buildings g and evaluating facilities and related systems ies (RES use, insulation, HVAC systems and building automation systems)	adding and international good practices of energy performance contracting ect, distinguishing roles/needs and involving them in the information delivery plan preparation changes and for the refurbishment of existing buildings g and evaluating facilities and related systems ies (RES use, insulation, HVAC systems and building automation systems)

	BACK EXTRACT					
Netw	NET BIEP Vork for Using BIM to Increase the Energy Performance	ist of Competences	This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement <i>No.754016</i>			
	BIM User		Handover and Close Out		-	X
Ν	Comp	petence			EQF Level	
C0	Have basic BIM knowledge and skills			1 2 3	4 5	678
C0.K1	BIM basic concepts, terminology, principles, strategies and its value proposition					
C0.K2	Benefits and uses of BIM compared to traditional methods for improving energy efficiency	of new or existing buildings				
	Project information development cycle: information specification, development, exchange		Iding life cycle			
	Reasons for open and interoperable solutions to ensure collaboration among professionals	of different disciplines				
C0.K6	Relevance of maintenance for maintaing the foreseen energy performance					
C0.S2	Read a Information Delivery Manual					
C0.S3	Identify information requirements for his own role					
C0.S5	Identify the EIR (Employer Information Requirements)					
C0.S6	Identify and/or verify the stages of PIM (Project Information Management)					
C2	Apply information management					
C2.K2	Principle of data transferring among different software and/or data federating into an integ	grated design				
C2.K4	Principle of information management in building sustainability and lean design					
C2.S1	Manage and coordinate information related to energy performance					
C2.S5	Evaluate the completeness of the handover strategy					
C2.S6	Verify the correspondence between the "as built" and the final BIM model					
C3	Apply procurement management					
C3.K3	Legal and technical aspects on green procurement, state and rules for using public funding	and international good practices of ener	rgy performance contracting			
C3.S3	List and collaborate with several stakeholders who participate in the sustainable project, di	istinguishing roles/needs and involving the state of the second sec	hem in the information delivery plan preparation			
C3.S4	Apply change management, identifying and handling deviations / breach of the contract wi	ith particular guarantees				

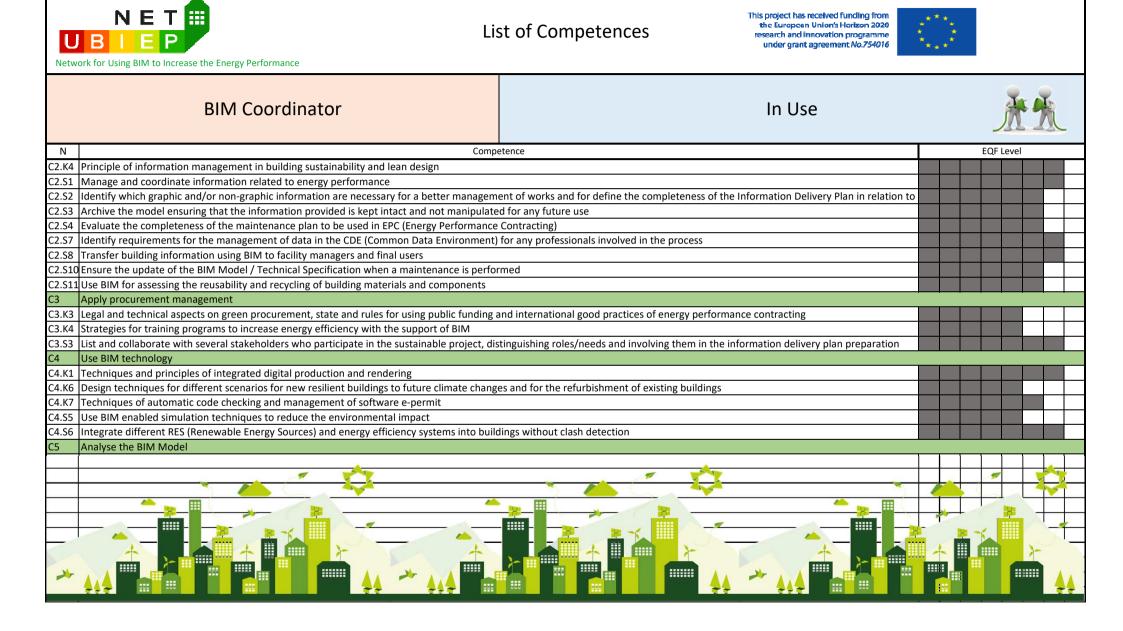
Netw	NET BIEP ork for Using BIM to Increase the Energy Performance	Lis	t of Competences		research and in	eceived funding fi Union's Horizon 2 novation program agreement No.754	020 Ime	***	* *				
	BIM User			Hando	over and	Close O	ut				3	K	7
N		Compet	tence						_	EQF	Level		
	Negotiate and take necessary legal steps if the contractual requirements were not met	et							4		$\vdash$		
C3.S5 C5	Define building environmental impact as part of the contract Analyse the BIM Model												
	Use BIM models to communicate installation instructions												
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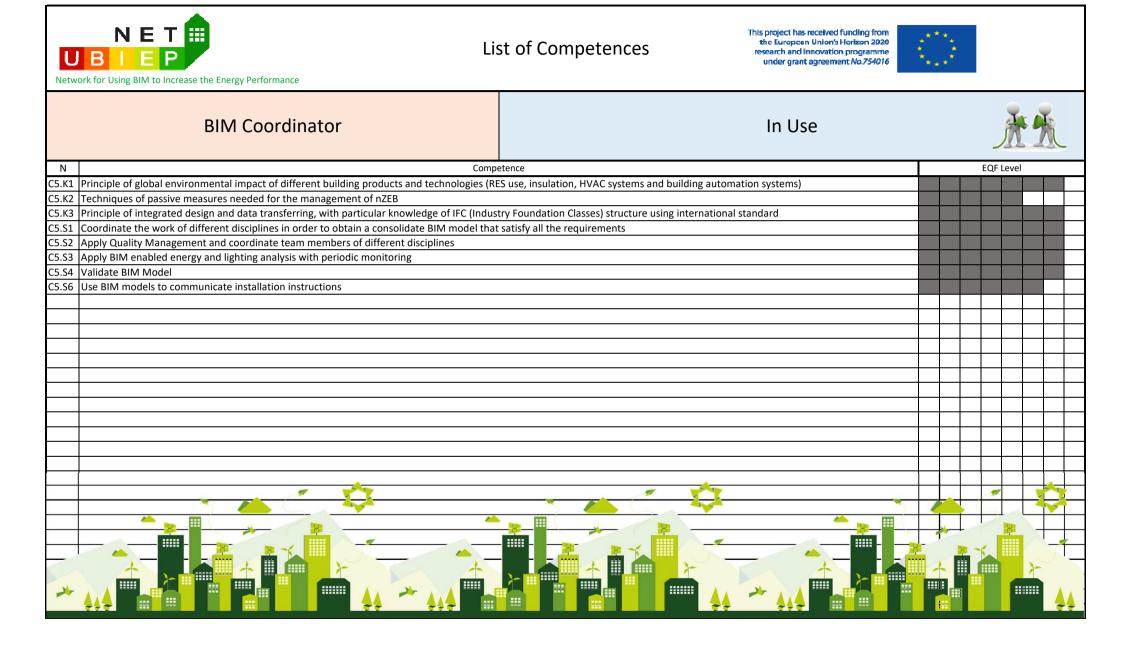
	BACK EXTRACT								
Netv	NET BIEP Vork for Using BIM to Increase the Energy Performance	st of Competences	This project has received funding from the European Union's Horizon 2020 research and Innovation programme under grant agreement <i>No.754016</i>	(2)					
	BIM Manager		In Use		法法				
N	· · · · · · · · · · · · · · · · · · ·	etence			- Level				
CO	Have basic BIM knowledge and skills			1 2 3	4 5 6 7 8				
	BIM basic concepts, terminology, principles, strategies and its value proposition								
	Benefits and uses of BIM compared to traditional methods for improving energy efficiency of								
-	Project information development cycle: information specification, development, exchange a								
	K4 Reasons for open and interoperable solutions to ensure collaboration among professionals of different disciplines								
	D.K5       Methodology to identify, plan, develop and evaluate organization's BIM implementation capabilities and BIM uses								
_	K6 Relevance of maintenance for maintaing the foreseen energy performance								
	1 Read a BIM Execution Plan (BEP)								
-	Read a Information Delivery Manual								
	Identify information requirements for his own role								
-	Identify the format to read information and transfer information within the supply chain								
	Identify the EIR (Employer Information Requirements)								
	Identify and/or verify the stages of PIM (Project Information Management)								
C1	Understand BIM tools								
	Principle of economic subjects for the cost estimation and evaluation of energy refurbishme	ent							
-	Specialised skills to incorporate information into BIM Model, evaluating openBIM software								
	Stay up to date on BIM trends, current developments and new directions of BIM technologi	es							
	Decrease the life cycle cost of the building using methods described in ISO 15686-5								
	Evaluate and compare different plans and related Return of Investments using methods des	cribed in ISO 15686-5							
C2	Apply information management				1 1 1 1				
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Netw	NET BIEP Dork for Using BIM to Increase the Energy Performance	st of Competences	This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement <i>No.754016</i>	.***. ** **		
	BIM Manager		In Use		Ĵ	
Ν		petence			EQF Lev	el
C5.S6	Use BIM models to communicate installation instructions					
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Li NET UBIEP Network for Using BIM to Increase the Energy Performance	st of Competences	This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement <i>No.754016</i>	
BIM Coordinator		In Use	法法
	etence		EQF Level
CO Have basic BIM knowledge and skills			1 2 3 4 5 6 7 8
CO.K1 BIM basic concepts, terminology, principles, strategies and its value proposition			
CO.K2 Benefits and uses of BIM compared to traditional methods for improving energy efficiency			
CO.K3 Project information development cycle: information specification, development, exchange			
CO.K4 Reasons for open and interoperable solutions to ensure collaboration among professionals	•		
CO.K5 Methodology to identify, plan, develop and evaluate organization's BIM implementation ca	pabilities and BIM uses		
C0.K6 Relevance of maintenance for maintaing the foreseen energy performance			
CO.S1 Read a BIM Execution Plan (BEP)			
C0.S2 Read a Information Delivery Manual			
C0.S3 Identify information requirements for his own role			
C0.54 Identify the format to read information and transfer information within the supply chain			
C0.S5 Identify the EIR (Employer Information Requirements)			
C0.S6 Identify and/or verify the stages of PIM (Project Information Management) C1 Understand BIM tools			
C1.S1 Specialised skills to incorporate information into BIM Model, evaluating openBIM software			
C1.S2 Stay up to date on BIM trends, current developments and new directions of BIM technolog	loc		
C2 Apply information management			
C2.K1 Principle of data mining, data base and back up in the CDE (Common Data Environment)			
C2.K2 Principle of data transferring among different software and/or data federating into an integr	urated design		
C2.K3 Principle of data security and administrative law in the archiving of data in a CDE (Common			





	BACK							
	<b>NET</b> BIEP Ork for Using BIM to Increase the Energy Performance	st of Competences	This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No.754016					
	BIM Model Evaluator		In Use	<u>A K</u>				
N		etence		EQF Level				
	Have basic BIM knowledge and skills			1 2 3 4 5 6 7 8				
	BIM basic concepts, terminology, principles, strategies and its value proposition							
	Benefits and uses of BIM compared to traditional methods for improving energy efficiency							
	Project information development cycle: information specification, development, exchange		2					
	Reasons for open and interoperable solutions to ensure collaboration among professionals							
	Methodology to identify, plan, develop and evaluate organization's BIM implementation ca	pabilities and BIM uses						
	Relevance of maintenance for maintaing the foreseen energy performance							
	Read a BIM Execution Plan (BEP)							
	Read a Information Delivery Manual							
	Identify information requirements for his own role							
	Identify the format to read information and transfer information within the supply chain							
	Identify the EIR (Employer Information Requirements)							
	Identify and/or verify the stages of PIM (Project Information Management)							
C1	Understand BIM tools							
	Principle of economic subjects for the cost estimation and evaluation of energy refurbishme							
	Stay up to date on BIM trends, current developments and new directions of BIM technolog							
	Evaluate and compare different plans and related Return of Investments using methods de	scribed in ISO 15686-5						
C2	Apply information management							
	Principle of data mining, data base and back up in the CDE (Common Data Environment)	Data Environment)						
C2.K3	Principle of data security and administrative law in the archiving of data in a CDE (Common	Data Environment)						
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NET UBIEP Network for Using BIM to Increase the Energy Performance	List of Competences This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No.754016	·*** * * * *
BIM Model Evaluator	In Use	法武
N Con	npetence	EQF Level
C2.K4 Principle of information management in building sustainability and lean design		
C2.S2 Identify which graphic and/or non-graphic information are necessary for a better manage	ment of works and for define the completeness of the Information Delivery Plan in relation to	
C2.S3 Archive the model ensuring that the information provided is kept intact and not manipula	ted for any future use	
C2.S7 Identify requirements for the management of data in the CDE (Common Data Environmer	t) for any professionals involved in the process	
C3 Apply procurement management		
C3.K3 Legal and technical aspects on green procurement, state and rules for using public fundin	g and international good practices of energy performance contracting	
C4 Use BIM technology		
C4.K7 Techniques of automatic code checking and management of software e-permit		
C5 Analyse the BIM Model		
C5.K1 Principle of global environmental impact of different building products and technologies (	RES use, insulation, HVAC systems and building automation systems)	
C5.K2 Techniques of passive measures needed for the management of nZEB		
C5.K3 Principle of integrated design and data transferring, with particular knowledge of IFC (Ind	ustry Foundation Classes) structure using international standard	
C5.S4 Validate BIM Model		

	BACK EXTRACT					
	NET BIEP Vork for Using BIM to Increase the Energy Performance	st of Competences	This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement <i>No.754016</i>			
	BIM Specialist-Expert		In Use		À.	K
N	· · · · · · · · · · · · · · · · · · ·	etence			EQF Level	
	Have basic BIM knowledge and skills			1 2 3	4 5 (	678
	BIM basic concepts, terminology, principles, strategies and its value proposition					
	Benefits and uses of BIM compared to traditional methods for improving energy efficiency of					
	Project information development cycle: information specification, development, exchange a					
	Reasons for open and interoperable solutions to ensure collaboration among professionals					
	Methodology to identify, plan, develop and evaluate organization's BIM implementation ca	pabilities and BIM uses				
	Relevance of maintenance for maintaing the foreseen energy performance					
	Read a BIM Execution Plan (BEP)					
	Read a Information Delivery Manual					
	Identify information requirements for his own role					
	Identify the format to read information and transfer information within the supply chain					
	Identify the EIR (Employer Information Requirements)					
	Identify and/or verify the stages of PIM (Project Information Management)					
C1	Understand BIM tools					
	Specialised skills to incorporate information into BIM Model, evaluating openBIM software					
	Stay up to date on BIM trends, current developments and new directions of BIM technologi	es				
	Apply information management					
	Principle of data transferring among different software and/or data federating into an integ	-				
	Principle of data security and administrative law in the archiving of data in a CDE (Common	Data Environment)				
C2.K4	Principle of information management in building sustainability and lean design					
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List of Competences

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No.754016



Network for Using BIM to Increase the Energy Performance

	BIM Specialist-Expert In Use				À	19	Ĺ
Ν	N Competence					el	
C2.S2	Identify which graphic and/or non-graphic information are necessary for a better managem	ent of works and for define the completeness of the Information Delivery Plan in relation to					
C2.S4	Evaluate the completeness of the maintenance plan to be used in EPC (Energy Performance	Contracting)					
C2.S1	1 Use BIM for assessing the reusability and recycling of building materials and components						
C3	Apply procurement management						
C3.K3	Legal and technical aspects on green procurement, state and rules for using public funding a	and international good practices of energy performance contracting					
C3.S3	List and collaborate with several stakeholders who participate in the sustainable project, dis	stinguishing roles/needs and involving them in the information delivery plan preparation					
C4	Use BIM technology						
C4.K1	Techniques and principles of integrated digital production and rendering						
C4.K6	Design techniques for different scenarios for new resilient buildings to future climate chang	es and for the refurbishment of existing buildings					
C4.K7	Techniques of automatic code checking and management of software e-permit						
C4.S4	Use laser scanning in order to produce a point of cloud of existing buildings, comparing and	evaluating facilities and related systems					
C4.S5	Use BIM enabled simulation techniques to reduce the environmental impact						
C4.S6	Integrate different RES (Renewable Energy Sources) and energy efficiency systems into build	dings without clash detection					
C5	Analyse the BIM Model						
C5.K1	Principle of global environmental impact of different building products and technologies (RI	ES use, insulation, HVAC systems and building automation systems)					
C5.K3	Principle of integrated design and data transferring, with particular knowledge of IFC (Indus	try Foundation Classes) structure using international standard					
C5.S3	Apply BIM enabled energy and lighting analysis with periodic monitoring						
C5.S4	Validate BIM Model						
C5.S6	Use BIM models to communicate installation instructions						
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	BACK EXTRACT							
Netw	NET BIEP Tork for Using BIM to Increase the Energy Performance	ist of Competences	This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No.754016	(* . . * . *				
	BIM User		In Use		<u>À</u>	X		
Ν	Comp	petence		EQ	F Level			
C0	Have basic BIM knowledge and skills		1	2 3	4 5	6 7 8		
C0.K1	BIM basic concepts, terminology, principles, strategies and its value proposition							
C0.K2	Benefits and uses of BIM compared to traditional methods for improving energy efficiency	of new or existing buildings						
C0.K3	Project information development cycle: information specification, development, exchange	and maintenance throughout all the building life	cycle					
C0.K4	Reasons for open and interoperable solutions to ensure collaboration among professionals	s of different disciplines						
	Relevance of maintenance for maintaing the foreseen energy performance							
C0.S2	Read a Information Delivery Manual							
C0.S3	Identify information requirements for his own role							
C0.S5	.S5 Identify the EIR (Employer Information Requirements)							
C0.S6	6 Identify and/or verify the stages of PIM (Project Information Management)							
C2	Apply information management							
C2.K2	Principle of data transferring among different software and/or data federating into an integ	grated design						
-	Principle of information management in building sustainability and lean design							
C2.K5	Principle of reusing and recycling of materials and components of a building							
	Manage and coordinate information related to energy performance							
C2.S10	Ensure the update of the BIM Model / Technical Specification when a maintenance is perfo	ormed						
C3	Apply procurement management							
	Legal and technical aspects on green procurement, state and rules for using public funding							
C3.S3	List and collaborate with several stakeholders who participate in the sustainable project, di	listinguishing roles/needs and involving them in th	e information delivery plan preparation					
C3.S4	Apply change management, identifying and handling deviations / breach of the contract with	rith particular guarantees						

	NET BIEP vork for Using BIM to Increase the Energy Performance	Li	st of Competences	This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No:754016		***				
	BIM User			In Use				j	ł	煮
Ν			etence				E	QF Le	vel	
	Negotiate and take necessary legal steps if the contractual requirements were not me	et								
C5	Analyse the BIM Model				_	_				
	Techniques of passive measures needed for the management of nZEB							$\rightarrow$	+	+-+-
C5.56	Use BIM models to communicate installation instructions				-				_	+
						+			_	+
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