



INNOVATIVE EDUCATIONAL INTEGRATION OF URBAN  
PLANNING BASED ON BIM-GIS TECHNOLOGIES AND  
FOCUSED ON CIRCULAR ECONOMY CHALLENGES

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## Task O4/A3 and A4

# TECHNICAL AND PEDAGOGICAL TEST AND IMPLEMENTATION



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Universitatea  
Transilvania  
din Braşov



ROMANIA  
GREEN  
BUILDING  
COUNCIL



Centro Tecnológico  
del mármol, piedra y materiales



Warsaw University  
of Technology



Consortium members: Universitatea Transilvania din Braşov (UTBV), Asociația România Green Building Council (RoGBC), Universidad de Sevilla (USE), Asociación Empresarial de Investigación Centro Tecnológico del Mármol, Piedra y Materiales (CTM), Politechnika Warszawska (WUT), Datacomp sp. z o.o. (Datacomp).



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## 1. DESCRIPTION OF THE TASK

This report is included in the IO4 ORC (Developing of Educational software of UrbanBIM Learning Application) which is based on the implementation in technical courses and trainings on specialisation focused on the UrbanBIM project. Partners of the Project have implemented pilot courses and used current courses based on the products of the project, which was also served as evaluating products for possible improvement before the end of the project.

The feedback obtained from experts during these courses and events was very useful to the improvement of the products of the project, mainly the Production of the OECP, UrbanBIM training materials and the UrbanBIM learning Application, both quality assessment of technical content and pedagogical approach and IT quality assessment of ICT Based.

The beta versions of those products were shown to experts and teachers, to be checked and used in during or after the courses. It was necessary because beta versions to correct them, as well as sometimes the trainings are carrying out in facilities where there is not online connection.

Finally, the consortium has also scheduled courses, trainings and other events (workshops, meetings, seminars, etc.) beyond the end of the project in order to guarantee the sustainability of the project.

## 2. EXPERTS AND ENTITIES CONSULTED ON UrbanBIM PROJECT

### 2.1. TECHNICAL EXPERTS CONSULTED

**Table 2.1.1. Technical experts consulted**

#### USE

Profession	Name of Organisation where he/she works or freelance, if applicable
Builder	SELF-ADVOCACY
Building engineer	SELF-ADVOCACY
Building engineer	SELF-ADVOCACY
Building engineer	SELF-ADVOCACY
Building engineer	SELF-ADVOCACY
Building engineer	Co.Habitable
Architect	AUTONOMO
Architect	Servicio de Arquitectura. Junta de Andalucía
Architect	R&M Arquitectos Asociados S.L.
Architect	Arquitecturasostenible
Architect	ESCUELA TÉCNICA SUPERIOR DE ARQUITECTURA DE SEVILLA
Architect	Junta de Andalucía
Building engineer	Coaat Sevilla
Building engineer	Ayuntamiento de Sanlúcar de Barrameda
Building engineer	Autónoma
Architect	AUTONOMO
Architect	ESCUELA TÉCNICA SUPERIOR DE ARQUITECTURA DE SEVILLA
Architect	AUTONOMO
Architect	Escuela Técnica Superior de Arquitectura de Sevilla
Architect	AUTONOMO
Architect	CTMarmol
Architect	Consejería de Fomento y Vivienda
Architect	ETSAS



Architect	AUTONOMO
Architect	JUNTA DE ANDALUCIA
Architect	R&M Arquitectos Asociados S.L.
Architect	R&M Arquitectos Asociados S.L.
Architect	R&M Arquitectos Asociados S.L.
Architect	RoGBC
Architect	IUACC - Universidad de Sevilla
Architect	Universidad de Sevilla
Architect	Universidad de Sevilla
Architect	Universidad de Sevilla Escuela Técnica Superior de Arquitectura
Architect	Universidad de Sevilla
Architect	ESCUELA TÉCNICA SUPERIOR DE ARQUITECTURA DE SEVILLA
Research Architect	Universidad de Sevilla
Building engineer	UNIVERSIDAD DE SEVILLA
Building engineer	AUTONOMO
Building engineer	AUTONOMO
Building engineer	Prointec
Building engineer	AUTONOMO
Building engineer	AUTONOMO
Building engineer	AUTONOMO
Building engineer	AUTONOMO
Building engineer	AUTONOMO
Building engineer	COAAT Sevilla
Building engineer	Autónomo
Building engineer	Particular
Building engineer	Saint Gobain Weber
Building engineer	Ayesa
Building engineer	Particular
Building engineer	Avintia Proyectos y Construcciones
Building engineer	Universidad de Sevilla

Building engineer	Colegio Oficial de Aparejadores y Arquitecto Técnicos de Sevilla
Building engineer	DIMArquiTec.,s.c.p.
Building engineer	Universidad de Sevilla
Building engineer	Sika, S.A.U.
Building engineer	Autónoma
Building engineer	Autónomo
Building engineer	DILEMA PROJECTS
Building engineer	Excmo ayuntamiento de Utrera
Building engineer – Technical Secretary of the Organization	C.O.A.A.T. de Sevilla
Technical Architect, Head of Infrastructure	Agencia Andaluza de Instituciones Culturales
Technical architect, technician B	agencia pública de puertos de andalucía
Technical architect. works department	JUNTA DE ANDALUCÍA. CONSEJERÍA DE FOMENTO Y VIVIENDA
Building engineer	Junta de Andalucía
Building engineer	Autónomo
Building engineer	Autónomo
public domain management technician	Agencia Pública De Puertos De Andalucía
Manager	LAENSA
Building engineer	Escuela Técnica Superior de Ingeniería de Edificación
Mining engineer	CTMarmol
Civil engineer	Escuela Técnica Superior de Arquitectura
Building engineer	Universidad de Sevilla
Civil engineer	Centro Tecnológico del Mármol
Building engineer	Autónomo
Building engineer	Labrum
Building engineer	Autónomo
Building engineer	LABRUM S.L.
Forestry Engineer	Trinomio. Construcción, eficiencia y medio ambiente
Civil Engineer	AYESA
Building Forensic Engineer. Technical Architect.	EXPERTA. Ingeniería y patología en la edificación, SL.
Researcher	Universidad de Sevilla

Pre-doctoral student in the doctoral programme in architecture	Universidad de Sevilla
Technical Director in R&D sector	CertiMaC ScarL
Technician B of the department of management of the public domain	Agencia Pública De Puertos De Andalucía
Architect/Engineer	ETSIE

## WUT

Profession	Name of Organisation where he/she works or freelance, if applicable
CIV. Eng.	Korporacja Radex S.A.
BIM Specialist	PMGroup Sp. z o.o.
Civ. Eng.	Polish Association of Building Managers
BIM Specialist	Polish Association of Building Managers
Civ. Eng.	Norgips S.A.
Civ. Eng.	Polish Association of Building Managers
Civ. Eng.	Polish Association of Building Managers

## CTM

Profession	Name of Organisation where he/she works or freelance, if applicable
Engineer	CertiMaC soc.cons. a r.l.
Architect	Cype Soft SL
Architect	Cype Soft SL
Architect	Cype Soft SL
Civil Engineer	Deutscher Naturwerkstein-Verband E.V (DNV)
Engineer	Klesarska skola (KSK)
Engineer	Centro Provinciale Di Istruzione Professionale Edile (C.P.I.P.E.)
Architect	Colegio Oficial de Arquitectos de la Región de Murcia (COAMU)

## UNITBv

Profession	Name of Organisation where he/she works or freelance, if applicable
Civil engineer	Transilvania University of Brasov / Faculty of Civil Engineering
Geotechnical engineer	Transilvania University of Brasov / Faculty of Civil Engineering
Civil engineer	Transilvania University of Brasov / Faculty of Civil Engineering
Architect	Transilvania University of Brasov / Faculty of Wood Industry
Road engineer	Holcim Romania
Civil Engineer	Holcim Romania
Civil Engineer	Holcim Romania
Civil Engineer	Heidelbergcement Romania
Road engineer	RS Active SRL
Civil Engineer / Economist	Gh. Asachi Technical University / Faculty of Civil Engineering
Civil Engineer / Economist	Gh. Asachi Technical University / Faculty of Civil Engineering
Engineer / BIM expert	Future Electric Energy Project SRL
Road Engineer / BIM expert	Contiu Struct SRL
Civil engineer	State Inspectorate of Construction
Urban developer	Maurer Imobiliare SA
Urban developer	Maurer Imobiliare SA
Civil engineer / Cost estimator	Softmagazin
Cost estimator	Softmagazin

## 2.2. EXPERTS IN THE FIELD OF EDUCATION CONSULTED

**Table 2.2.1. Educational experts**

### USE

Profession	Name of Organisation where he/she works or freelance, if applicable
Professor / Architect	Universidad de Sevilla
Professor	Universidad de Sevilla





Professor	Universidad de Sevilla
Teaching and research	Universidad de Sevilla
Civil engineer/Teacher	Transilvania University of Brasov
Director of Research/Teacher	Romania Green Building Council
Teaching and research	Universidad del Bío-Bío
Eng. do Ambiente/Teacher	Centro Tecnológico da Cerâmica e do Vidro
Teaching and research	Universidad del Bío-Bío
Teaching and research	Universidad del Bío-Bío
Teaching and research	Universidad de Sevilla
Professor / Architect	Universidad de Sevilla
Professor	Universidad de Sevilla
Professor	Universidad de Sevilla
Teaching and research	Universidad de Sevilla
Professor / Building engineer	Universidad de Sevilla
Professor / Building engineer	Universidad de Sevilla
Professor / Architect	Universidad de Sevilla
Professor / Building engineer	Universidad de Sevilla
Professor / Building engineer	Universidad de Sevilla
Professor / Building engineer	Universidad de Sevilla

## WUT

Profession	Name of Organisation where he/she works or freelance, if applicable
IT Expert	WUT, CEF
Academic teacher	WUT, CEF
Academic teacher	WUT, CEF
Academic teacher	WUT, CEF
Academic teacher	WUT, CEF

## CTM

Profession	Name of Organisation where he/she works or freelance, if applicable
Professor	Centro Provinciale Di Istruzione Professionale Edile (C.P.I.P.E.)
Architect	Cype Soft SL
Construction teacher	Klesarska skola (KSK)
Civil Engineer	Universidade do Minho
Construction teacher	Lycee Des Metiers Leonard De Vinci
Construction teacher	Centro Provinciale Di Istruzione Professionale Edile (C.P.I.P.E.)

## UNITBv

Profession	Name of Organisation where he/she works or freelance, if applicable
HR, sociological and marketing research	Transilvania University of Brasov / Faculty of Sociology
Education expert	Transilvania University of Brasov / Faculty of Psychology and Education Sciences
Education expert	FPIP Foundation
Civil engineer / professor	Technical University of ClujNapoca, Romania
Civil engineer / professor	Nihon University, Tokyo, Japan
Civil engineer / professor	South West State University, Kursk, Russian Federation

### 2.3. ORGANISATIONS/ENTITIES CONSULTED

**Table 2.3.1. Organisations/entities consulted**

## USE

Name	Contact (email or phone)	Type of organisation (SME, LE, VET, University, etc.)	Field (industry, mining, research, etc.)
Servicio de Arquitectura. Junta de Andalucía	<i>Private e-mail</i>	Public body	Architecture
Co.Habitable	<i>Private e-mail</i>	SME	Architecture
R&M Arquitectos Asociados S.L.	<i>Private e-mail</i>	SME	Architecture



Arquitecturasostenible	<i>Private e-mail</i>	SME	Architecture
COAAT Sevilla	<i>Private e-mail</i>	Architects Association	Architecture
Consejería de Fomento y Vivienda	<i>Private e-mail</i>	Public body	Urbanism
Prointec	<i>Private e-mail</i>	SME	Architecture
Saint Gobain Weber	<i>Private e-mail</i>	LE	Construction
AYESA	<i>Private e-mail</i>	SME	Construction
Avintia Proyectos y Construcciones	<i>Private e-mail</i>	SME	Construction
Sika, S.A.U.	<i>Private e-mail</i>	LE	Construction
DILEMA PROJECTS	<i>Private e-mail</i>	SME	Construction
LAENSA	<i>Private e-mail</i>	SME	Construction
LABRUM S.L.	<i>Private e-mail</i>	SME	Construction
Trinomio. Construcción, eficiencia y medio ambiente	<i>Private e-mail</i>	SME	Construction
EXPERTA. Ingeniería y patología en la edificación, SL.	<i>Private e-mail</i>	SME	Construction
Universidad del Bío-Bío	<i>Private e-mail</i>	University	Construction

## WUT

Name	Contact (email or phone)	Type of organisation (SME, LE, VET, University, etc.)	Field (industry, mining, research, etc.)
CAS - Contract Advisory Services	<i>Private e-mail</i>	SME	Construction
HALBUD Jędras Grochowski Sp. J.	<i>Private e-mail</i>	SME	Construction
SERW Sp. z o.o.	<i>Private e-mail</i>	SME	Construction
GW Dom Development	<i>Private e-mail</i>	Large Developer	Construction
Electronic Control Systems S.A.	<i>Private e-mail</i>	SME	Designers of installations
Egis Poland Sp. z o.o.	<i>Private e-mail</i>	Construction company	Designers / project management



Skanska S.A.	<i>Private e-mail</i>	Large construction company	Building / construction
DEKA Edyta Kępińska	<i>Private e-mail</i>	SME	Architect

## CTM

Name	Contact (email or phone)	Type of organisation (SME, LE, VET, University, etc.)	Field (industry, mining, research, etc.)
Centro Provinciale Di Istruzione Professionale Edile (C.P.I.P.E.)	<i>Private e-mail</i>	VET Center	Construction
Lycee Des Metiers Leonard De Vinci	<i>Private e-mail</i>	VET Center	Construction
Deutscher Naturwerkstein-Verband E.V (DNV)	<i>Private e-mail</i>	Technical counselling	Construction
Asesoramiento, Tecnología e Investigación (ATIN)	<i>Private e-mail</i>	Technical counselling	Technology
Colegio Oficial de Arquitectos de la Región de Murcia (COAMU)	<i>Private e-mail</i>	Architects Association	Architecture
Department of Technical Sciences, University of Bucharest	<i>Private e-mail</i>	University	Architecture
Klesarska skola (KSK)	<i>Private e-mail</i>	VET Center	Construction

## UNITBV

Name	Contact (email or phone)	Type of organisation (SME, LE, VET, University, etc.)	Field (industry, mining, research, etc.)
FPIP Foundation	<i>Private e-mail</i>	VET school	constructions
ICDT - Research and Development Institute of Transilvania University of Braşov	<i>Private e-mail</i>	Research Institute	research
AlBIM Net SRL	<i>Private e-mail</i>	BIM developer	Software development

### 3. DURING THE PROJECT. EXPERTS, ENTITIES, COURSES AND OTHER EVENTS WHERE WAS CONSULTED ON UrbanBIM MULTIMEDIA MATERIALS, UrbanBIM LEARNING APPLICATION AND OECP

#### 3.1. COURSES AND TRAININGS

**Table 3.1.1. Courses or trainings where UrbanBIM project was shown**

#### USE

Name of the course/training	Venue	Date/Period	Number of students
GESTIÓN DE RESIDUOS Y SUELOS CONTAMINADOS EN CONSTRUCCIÓN	MUGIE-ETSIE	11/02/2020-13/02/2020	13
ASIGNATURA: CERTIFICACIÓN AMBIENTAL DE PRODUCTOS DE CONSTRUCCIÓN Y EDIFICIOS (CAPCE)	MUGIE-ETSIE	27/02/2020-11/03/2020	13
REHABILITACIÓN ECOEFICIENTE DE EDIFICIOS Y BARRIOS	PAB. MÉXICO US/ON-LINE	14/01/2020	10
DECLARACIÓN AMBIENTAL DE PRODUCTO BASADA EN EL ANÁLISIS DE CICLO DE VIDA (ACV) DE PRODUCTOS Y SISTEMAS CONSTRUCTIVOS	Murcia	9/10/11 de septiembre de 2020	30
DECLARACIÓN AMBIENTAL DE PRODUCTO BASADA EN EL ANÁLISIS DE CICLO DE VIDA (ACV) DE PRODUCTOS Y SISTEMAS CONSTRUCTIVOS	Cartagena	14/15/16 de septiembre de 2020	30
DECLARACIÓN AMBIENTAL DE PRODUCTO BASADA EN EL ANÁLISIS DE CICLO DE VIDA (ACV) DE PRODUCTOS Y SISTEMAS CONSTRUCTIVOS	Alicante	21/22/23 de octubre de 2020	30

#### WUT

Name of the course/training	Venue	Date/Period	Number of students
MSc management in construction course, at WUT (J. Zawistowski)	WUT CEF	28 November 2018	10
BSc. Diploma Seminar (dr P. Nowak) (up to March 2020 – face to face, from 18th March 2020 – online)	WUT CEF	Oct. 2019 – June 2020	22
BSc. Diploma Seminar (dr P. Nowak)	WUT CEF ONLINE	Oct. 2020 – Dec. 2020	25
MSc. Diploma Seminar (dr P. Nowak) (up to March 2020 – face to face, from 18th March 2020 – online)	WUT CEF	Oct. 2019 – June 2020	19
MSc. Diploma Seminar (dr P. Nowak)	WUT CEF ONLINE	Oct. 2020 – Dec. 2020	21



Computer Methods in Construction (dr J. Rosłon) (up to March 2020 – face to face, from 18th March 2020 – online)	WUT CEF	Oct. 2019 – June 2020	28
Computer Methods in Construction (dr J. Rosłon)	WUT CEF ONLINE	Oct. 2020 – Dec. 2020	24

## CTM

Name of the course/training	Venue	Date/Period	Number of students
APLICACIÓN PRÁCTICA DE NUEVAS TECNOLOGÍAS BIM EN LA PRESCRIPCIÓN TÉCNICA DEL IMPACTO AMBIENTAL DE PRODUCTOS Y SISTEMAS CONSTRUCTIVOS	Murcia	9-16 de noviembre de 2020	30
APLICACIÓN PRÁCTICA DE NUEVAS TECNOLOGÍAS BIM EN LA PRESCRIPCIÓN TÉCNICA DEL IMPACTO AMBIENTAL DE PRODUCTOS Y SISTEMAS CONSTRUCTIVOS	Cartagena	16-20 de noviembre de 2020	30
APLICACIÓN PRÁCTICA DE NUEVAS TECNOLOGÍAS BIM EN LA PRESCRIPCIÓN TÉCNICA DEL IMPACTO AMBIENTAL DE PRODUCTOS Y SISTEMAS CONSTRUCTIVOS	Alicante	23-27 de noviembre de 2020	30
DECLARACIÓN AMBIENTAL DE PRODUCTO BASADA EN EL ANÁLISIS DE CICLO DE VIDA (ACV) DE PRODUCTOS Y SISTEMAS CONSTRUCTIVOS	Murcia	9/10/11 de septiembre de 2020	30
DECLARACIÓN AMBIENTAL DE PRODUCTO BASADA EN EL ANÁLISIS DE CICLO DE VIDA (ACV) DE PRODUCTOS Y SISTEMAS CONSTRUCTIVOS	Cartagena	14/15/16 de septiembre de 2020	30
DECLARACIÓN AMBIENTAL DE PRODUCTO BASADA EN EL ANÁLISIS DE CICLO DE VIDA (ACV) DE PRODUCTOS Y SISTEMAS CONSTRUCTIVOS	Alicante	21/22/23 de octubre de 2020	30

## UNITBv

Name of the course/training	Venue	Date/Period	Number of students
Degree classes (4th year of study), students from the Faculty of Civil Engineering	Brasov (Romania)	January – June 2019	75
Master classes, master students from the Faculty of Civil Engineering	Brasov (Romania)	January – June 2019	40
Training classes, students from FPIP VET school	Brasov (Romania)	March 2019	25
IACSlc – Academic and Cultural Meeting of Students in Civil Engineering	Iasi (Romania)	April 2019	>200
Student's scientific communication session, Faculty of Civil Engineering	Brasov (Romania)	May 2019	100
Erasmus+ Teaching Mobility	Tokyo (Japan)	October 2019	200
UrbanBIM results presented to students from the Faculty of Civil Engineering	On-line	October – December 2020	>200



UrbanBIM results presented to master students from the Faculty of Civil Engineering	On-line	October – December 2020	>50
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### 3.2. OTHER EVENTS

**Table 3.2.1. Other events (workshops, meetings, seminars, etc.) where UrbanBIM project was shown**

#### USE

Name of the event	Venue	Date/Period	Number of attendants
Ecological Modelling Global Conference, Salzburg, Austria, October 2019	Austria International Society for Ecological Modelling	Journal	500
CIDICO, Congreso, Madrid. November 2019 Congreso Internacional de Innovación Docente e Investigación en Educación Superior	On-line, Organization in Madrid	Association	1000
Scientific article published in the open-access journal Sustainability, May 2020	On-line	Journal	Open access journal, 751 reads

#### WUT

Name of the event	Venue	Date/Period	Number of attendants
Presentation in Seville, Spain	ICERI 2018 - 11th annual International Conference of Education, Research and Innovation	12 November 2018	500
Presentation in Mikolajki, Poland	XIXth International Conference related to education and innovation in construction sector	23 November 2018	60
Presentation in Warsaw, Poland	Meeting with graduates of Intensive postgraduate course Management in construction, at WUT.	18 January 2019	50
Presentation in Warsaw, Poland	Presentation, and discussion with the European Erasmus+ mobility students, at WUT	18 February 2019	21
Presentation in Krakow, Poland	Presentation, and discussion with staff and co-operants of Bentley Infrastructure (BIM software producer)	11 March 2019	20
Presentation in Warsaw, Poland	Presentation, and discussion with Polish construction experts at WUT	5th April 2019	30



Presentation in Warsaw, Poland	Presentation, and discussion with British tutors and students of Construction Management studies from Nottingham Trent University at WUT	30th April 20	70
Presentation in Warsaw, Poland	General Assembly of Polish Association of Building Managers	10th May 2019	40
Presentation in Taiyouan, China	Presentation, and discussion with Chinese students, tutors and construction experts at North University of China	17th May 2019	40
Presentation in Vicenza, Italy	Presentation, and discussion with Partners of Erasmus+ IPCIC project from Italy, Lithuania, Poland. Meeting at Centro Edile Andrea Palladio	24th June 2019	10
Presentation in Kazań, Russia	Presentation, and discussion with Russian and international tutors and construction experts at Expo Center, PPT loop with presentation of the project for all Construction Fairs and Worldskills 2019 competition visitors	27th August 2019	1000
Presentation in Warsaw, Poland	presentation of the project ideas at CEF WUT, meeting of Section of Project Management in Construction of Polish Academy of Science, professors and tutors from 20+ faculties related to construction from Poland	15th November 2019	40
Presentation in Riga, Latvia	Presentation at ERASMUS+ HSME Partners meeting in Riga.	18th November 2019	10
Presentation in Warsaw, Poland	presentation of the project at the diploma award celebration of Construction Management postgraduate studies at CEF WUT	31st January 2020	60
Presentation on-line in Warsaw, Poland	Presentation Online at the General Assembly of Polish Association of Building Managers. Presentation, and discussion with PABM members	14th May 2020	20
Presentation Online, Warsaw, Poland	Presentation online at the Webinar organised by CEF WUT, PMGroup Academy and Skanska	9th June 2020	45
Presentation Online, Warsaw, Poland	opening session of postgraduate (postgraduate means in Poland – foreseen for BSc. MSc. Or DSc. Diploma holders) studies “Management in construction”	30th September 2020	45
Presentation Online, Warsaw, Poland	presentation of the project at the special event – FRSE (Polish Agency managing Erasmus+ Programme) webinar titled “Erasmus+ EU Project Management rules during Covid-19 epidemic”. P. Nowak was invited as lecturer, presenting EU rules of the project management, including management of Partners, information management, partners’ inspiration and motivation.	12th November 2020	55





## CTM

Name of the event	Venue	Date/Period	Number of attendants
APLICACIÓN PRÁCTICA DE NUEVAS TECNOLOGÍAS BIM EN LA PRESCRIPCIÓN TÉCNICA DEL IMPACTO AMBIENTAL DE PRODUCTOS Y SISTEMAS CONSTRUCTIVOS	Alicante – Murcia - Cartagena	November 2020	30
DECLARACIÓN AMBIENTAL DE PRODUCTO BASADA EN EL ANÁLISIS DE CICLO DE VIDA (ACV) DE PRODUCTOS Y SISTEMAS CONSTRUCTIVOS	Alicante – Murcia - Cartagena	September 2020	30
Foro Contract Mediterráneo	Murcia	May 2019	>100
Marmmomac	Verona	September 2019	>2500
1st Transnational Meeting of WinSTONE project	Cehegin	November 2019	12
1st Transnational Meeting of CircularBIM project	Alicante	December 2019	11
1st Transnational Meeting of BIMHealth project	Cehegin	December 2019	22
1st Transnational Project Meeting of BKStone project	Tirana	February 2020	35
CEVISAMA	Valencia	February 2020	>200

## UNITBv

Name of the event	Venue	Date/Period	Number of attendants
RezultatE+ Seminar	Bucharest (Romania)	April 2019	40
7th International Conference Contemporary Achievements in Civil Engineering	Subotica (Serbia)	April 2019	>250
BIMcon conference	Bucharest (Romania)	May 2019	>100
European Researchers's Night	Brasov (Romania)	September 2019	>2500
CIBv 2019 – International Scientific Conference	Brasov (Romania)	November 2019	250
1st Transnational Meeting of CircularBIM project	Alicante (Spain)	December 2019	11
1st Transnational Meeting of BIMHealth project	Cehegin (Spain)	December 2019	22
1st Transnational Project Meeting of BKStone project	Tirana (Albania)	February 2020	35
ICDT research centers on-line 1st meeting	On-line	September 2020	19
ICDT research centers 2nd meeting	Brasov (Romania)	October 2020	20

#### 4. BEYOND THE END OF THE PROJECT

Partners of the project will use the final version of the UrbanBIM Multimedia Materials, UrbanBIM Learning Application and OP in their courses beyond the end of the project. In the following tables are shown some examples scheduled.

**Table 4.1.1. Courses or trainings where UrbanBIM project results will be shown**

#### USE

Name of the course/training	Venue	Date/Period	Number of students
GESTIÓN DE RESIDUOS Y SUELOS CONTAMINADOS EN CONSTRUCCIÓN	MUGIE-ETSIE University of Seville, Masters degree	16/02/2021-25/02/2021	15
ASIGNATURA: CERTIFICACIÓN AMBIENTAL DE PRODUCTOS DE CONSTRUCCIÓN Y EDIFICIOS (CAPCE)	MUGIE-ETSIE University of Seville, Masters degree	10/03/2021-11/03/2021	15
REHABILITACIÓN ECOEFICIENTE DE EDIFICIOS Y BARRIOS	PAB. MÉXICO US/ON-LINE University of Seville, Masters degree	UNDEFINED (JANUARY 2021)	12

#### WUT

Name of the course/training	Venue	Date/Period	Number of students
BSc. Diploma Seminar (dr P. Nowak)	WUT CEF ONLINE or Face to Face	Mar. 2021 – Mar. 2022	20-30
MSc. Diploma Seminar (dr P. Nowak)	WUT CEF ONLINE or Face to Face	Mar. 2021 – Mar. 2022	20-30
Computer Methods in Construction (dr J. Rostón)	WUT CEF ONLINE or Face to Face	Mar. 2021 – Mar. 2022	20-30

#### UNITBV

Name of the course/training	Venue	Date/Period	Number of students
Degree and master classes in the Faculty of Civil Engineering	Brasov (Romania)	Next academic years	>500
Training classes in FPIP VET school	Brasov (Romania)	March 2021	>50
Newsletter of the Transilvania University of Brasov	On-line	2021	>1000

**Table 4.1.2. Other events (workshops, meetings, seminars, etc.) where UrbanBIM project results will be shown**

Name of the event	Venue	Date/Period	Number of attendants
BIM TEAM tutoring	WUT CEF or online	April-June 2021	50
Construction Conference in Mikołajki	Mikołajki Hotel or online	November 2021	60
The 16th International Conference "Computational Civil Engineering" CCE2021	Iasi (Romania)	May 2021	>200
CIBv 2021 International Scientific Conference	Brasov (Romania)	November 2021	>200

## 5. QUESTIONNAIRE

For the pedagogical and technical evaluation of the products of the UrbanBIM project, a survey was distributed to obtain the opinion of the educational and technical experts. This form is divided into four large blocks into which the project is divided:

- Training materials.
- Online Educational Collaborative Platform.
- UrbanBIM Course curricula.
- UrbanBIM Learning Application.

It also includes a generic question for experts to propose the comments they consider necessary to improve the quality of all UrbanBIM project products.

Below is the questionnaire carried out for the technical and pedagogical evaluation of this project and its products.



## Feedback questionnaire of UrbanBIM training materials

Project code: 2018-1-RO01-KA203-049458

1. Overall, how satisfied were you with the training materials? \*

	1	2	3	4	5	
Not satisfied at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very satisfied

2. To what extent do you agree or disagree with the following statements? \*

	Fully disagree	Rather disagree	Neither agree n...	Rather agree	Fully agree
Training materi...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel now better...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I now better un...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel that it has ...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



3. To what extent do the Online Educational Collaborative Platform (OECF) show the following attributes? \*

	Fully disagree	Rather disagree	Neither agree n...	Rather agree	Fully agree
The contents of...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The OECF is we...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The OECF is us...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall, the OEC...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4. Do you have any further comments and recommendations on the UrbanBIM training materials? What could have been done better? \*

	Fully disagree	Rather disagree	Neither agree n...	Rather agree	Fully agree
The methodolo...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The curriculum i...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The Collaborati...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The developme...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The contents of...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The educational...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



5. Do you have any further comments and recommendations on the UrbanBIM Course Curriculum ? What could have been done better?

	Fully disagree	Rather disagree	Neither agree n...	Rather agree	Fully agree
The UrbanBIM c...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The developme...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The curriculum ...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The educational...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. Do you have any further comments and recommendations on the UrbanBIM Learning Application? What could have been done better?

	Fully disagree	Rather disagree	Neither agree n...	Rather agree	Fully agree
The position of ...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The operating s...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The UrbanBIM ...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The colours use...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The UrbanBIM ...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
LCA data are ea...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please, tell us what kind of improvement you can suggest:

Texto de respuesta corta

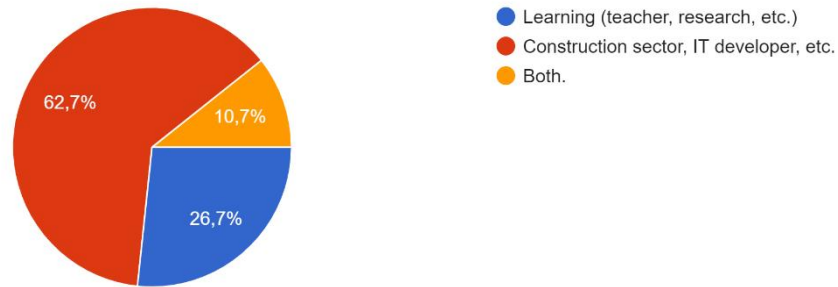


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## 5.1 QUESTIONNAIRE RESULTS

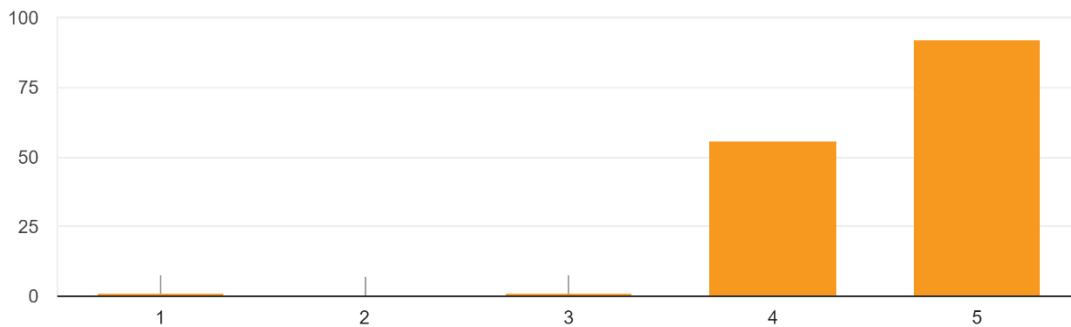
Professional profile:

150 respuestas

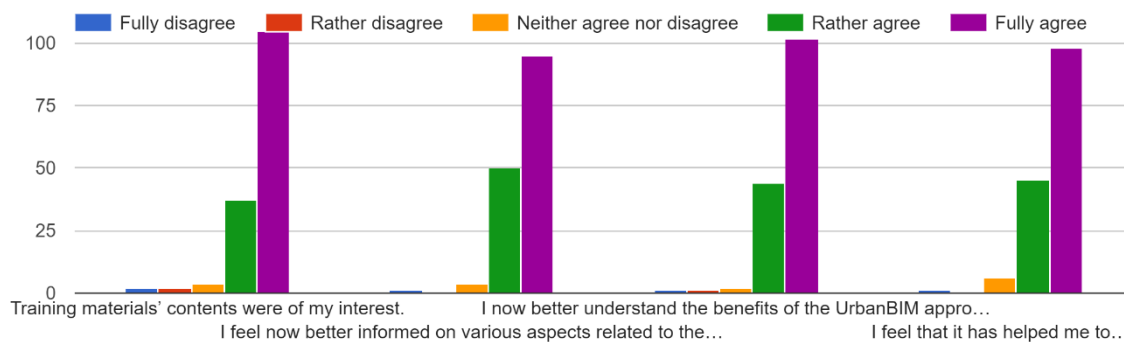


1. Overall, how satisfied were you with the training materials?

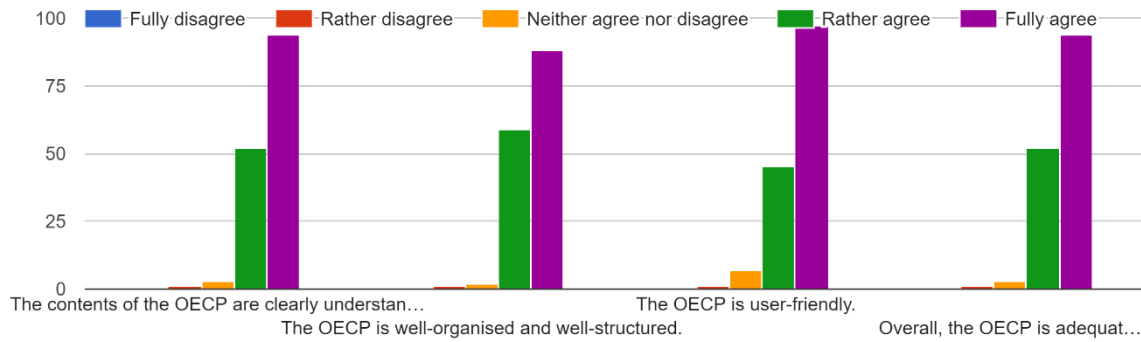
150 respuestas



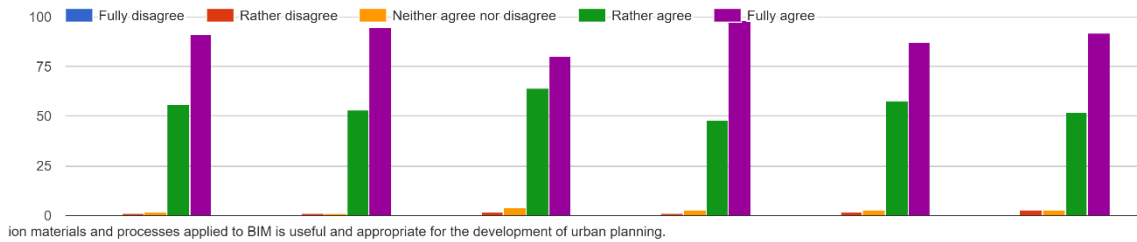
2. To what extent do you agree or disagree with the following statements?



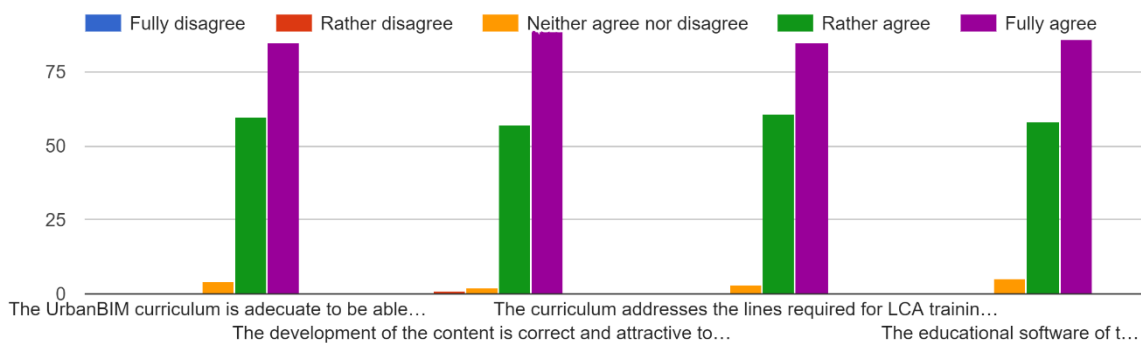
3. To what extent do the Online Educational Collaborative Platform (OECP) show the following attributes?



4. Do you have any further comments and recommendations on the UrbanBIM training materials? What could have been done better?

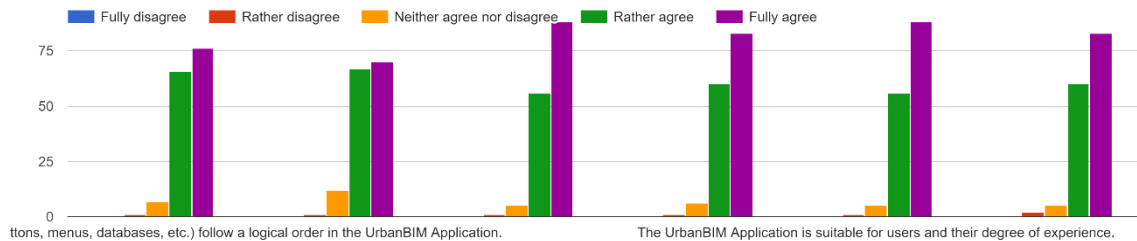


5. Do you have any further comments and recommendations on the UrbanBIM Course Curriculum? What could have been done better?



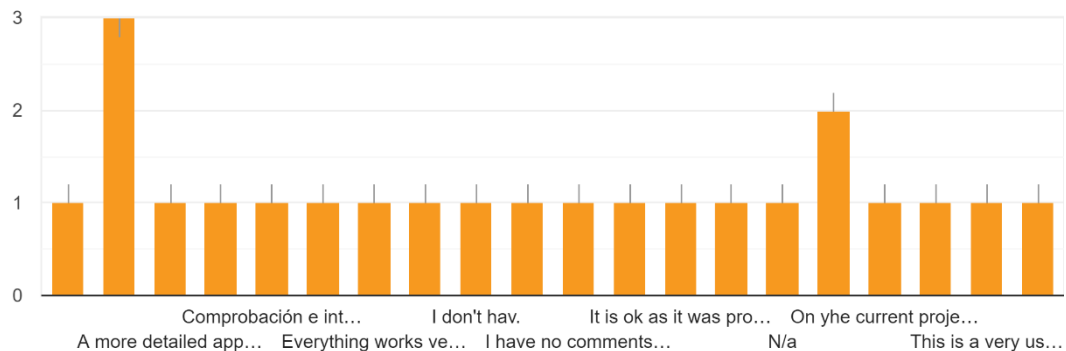


6. Do you have any further comments and recommendations on the UrbanBIM Learning Application? What could have been done better?



Please, tell us what kind of improvement you can suggest:

23 respuestas



In relation to the free-answer questions included in the technical experts' questionnaire, the most outstanding answers are the following:

- This is a very useful tool and should be promoted widely in public and private sector in order to implement it.
- A more detailed approach would increase the level of interest in using the application.
- The project is very well solved.
- Better explaining the importance of LCA in construction domain.
- Checking and interoperability of the final .IFC file created, on BIM platforms such as Revit, Archicad, Allplan, etc.
- Further opening of the BIM app for development and usage.

## 5.2 CONCLUSIONS

In general, the evaluation of the project by the technical and educational experts was really positive.



Despite the comments mentioned in the previous section, all the experts considered that the methodology of LCA calculation for materials and construction elements in urban developments was carried out correctly and in line with reality, as well as the training materials and the UrbanBIM software are innovative materials that are in line with the objectives set out in the project and are therefore very useful.

On the other hand, they appreciated the need for this type of training material in order to explain and teach how to proceed towards a more sustainable urban development. In this sense, they commented that they are very useful as training material for future professionals and some who currently need to renew their training to adjust to the new environmental requirements.