



INTELLECTUAL OUTPUT 3

TASK O3-A3

Report on the results of Final International Seminar in Spain

Presentation of CircularBIM Open Educational Resource (OER)



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Universitatea
Transilvania
din Braşov





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1. INTRODUCTION

The seminar "Circular economy and decarbonisation of the building sector as a climate change mitigation strategy", held on 27 May 2022 at the HTSA Conference Hall Manuel Trillo, Sevilla, Spain, was organized by the University of Seville in the context of the ERASMUS+ CircularBIM project involving Portuguese, Spanish and Romanian partners since 2019, for the definition of suitable databases for sustainability and BIM interoperability processes.

To contribute to the transition to the Circular Economy model in the construction sector, this conference has been planned with the following objectives:

- Increase awareness and information of the Circular Economy and its application in the construction sector.
- To teach how to reduce the generation of construction material waste by reincorporating it into the value chain.
- Provide information on the possibility of revaluing each construction element.
- Facilitate free access to free software for the consultation, calculation and use of techniques and methods for the reuse of construction materials, also available in BIM format. As well as the quantification of its environmental impact, which will facilitate the implementation of constructive solutions with data relating to CO2 emissions, energy consumption and waste generated.
- Involve students and professionals in new technologies, such as BIM applications, and in the transition to the Circular Economy.

Agenda

9h00 - 9h30 Reception and registration.

9h30-10h00 Opening

Ms. Alicia Martínez Marín. General Secretary for Housing of the Andalusian Regional Government.

Ms. María López Sanchís, General Director of Environmental Quality and Climate Change. Ministry of Agriculture, Livestock, Fisheries and Sustainable Development. Regional Government of Andalucía.

Mr. Ramón Pico Valimaña. Director of the Higher Technical School of Architecture of Seville.

Ms. Melania Rivers Rodríguez. Coordinator of Research Projects, International Center of the University of Seville.

Pilar Mercader Moyano, Deputy Director of Quality and Sustainable Habitat. School of Architecture of Seville. Superior Technical School of Architecture of Seville.

10h00-10h20 AWARDS CEREMONY OF *MY SPACE 2021* COMPETITION



10h20-10h40 The new Circular Economy Law. Director-General for Environmental Quality and Climate Change. María López Sanchís.

10h400-11h00 How is the Circular Economy being embroidered in Europe? The Next Generation Funds and the Eco-housing Plan. Alicia Martínez Martín, Secretary-General for Housing of the Andalusian Regional Government.

11h00-11h20 The new waste law. President Ansemac “Andalusian Association of Women Entrepreneurs in the Environment” Esperanza Fitz.

11h20 – 12h00 Coffee break

12h00-12h20 Project CircularBIM. Calculation of the Environmental Impact of a project from BIM models. Mr. Pablo Gilabert. Innovation Director at CYPE Soft SL, Spain.

12h20-12h40 Project RecycleBIM ‘Integrated Planning and Recording Circularity of Constructionon Materiales through Digital Modelling’. D. Miguel Azenha. Director of European Master BIM A+. Assistant Professor ISISE, Dep. Civil Eng. School Eng., University of Minho, Portugal.

12h40-13h00 The need for a circular economy in the Construction sector in Romania. Radu Muntean, Assistant Professor. Transilvania University of Brasov, Rumania.

13h00-13h20 The circular economy in green buildings and sustainable communities. D^a. Monica Ardeleanu. Daniel N. Armenciu. Lecturer University. Dr. Arhitect. GBC - Green Building Council, Rumania.

13h20-13h40 Towards a circular economy for Seville. Development of a Guide for a more Sustainable Architecture and Urban Planning (GSAUP). María Lumbreras, researcher HUM 965 TRANSHUMANCIAS group.

13h40-14h00 ROUND TABLE: Recycling in the construction sector.

Moderator: Pilar Mercader Moyano, Deputy Director Quality and Sustainable Habitat. ETSAS.

Partucipants: Marisa Almeida CTCV- Technological Centre of Ceramics and Glass, Coimbra, Portugal.

David Caparrós Pérez, CTM, Spain. Anna Manyes, Architect, Development and Technical

Service Department, Rockwool S.A.U. Spain, José Carlos Claro Ponce, Commissioner of Rehabilitaverde Sevilla.

14h00 *Closing ceremony*



D. Ramón Pico Valimaña. Director of the Higher Technical School of Architecture of Seville.

D^a Rosario Chaza Chimeno, Director of the Higher Technical School of Building Engineering.

D^a Pilar Mercader Moyano, subdirectora de Calidad y Hábitat Sostenible. HTSA of Seville.

During the seminar there was a change in the order of presentations. Ms. Alicia Martínez Martín's presentation (*How is the Circular Economy being embroidered in Europe? The Next Generation Funds and the Eco-housing Plan*) took place at 10h20, while Ms. María López Sanchís 's presentation (*The new Circular Economy Law*) was held later, reversing the order.

All the presentations and interventions of the Final International Seminar were recorded and posted on the CircularBIM project website, available in in the following link:

<https://circularbim.eu/es/oer/acceso-directo/?lang=en>

1. Opening

The opening session begins with a welcome from Mr. Ramón Pico Valimaña, director of the Higher Technical School of Architecture of Seville. Then Mr. Ramón introduced the interveners at this session: Ms. Alicia Martínez Marín (General Secretary for Housing of the Andalusian Regional Government), Ms. Melania Rivers Rodríguez (Coordinator of Research Projects, International Center of the University of Seville), Ms. María López Sanchís, (General Director of Environmental Quality and Climate Change. Ministry of Agriculture, Livestock, Fisheries and Sustainable Development. Regional Government of Andalucía) and Ms. Pilar Mercader Moyano (Deputy Director of Quality and Sustainable Habitat. School of Architecture of Seville. Higher Technical School of Architecture of Seville.)

This session will highlight two issues, the framework in which the seminar will take place, the New European Bauhaus, which encompasses three concepts: beauty, necessary in architecture and the city, inclusion and sustainability. It also highlights the commitment of the Higher Technical School of Architecture of Seville and its trajectory in this field.

Also, it is underlined the commitment to Andalusia's Eco-housing plan, thanks to Europe's Next Generations funds, which has four objectives: ecological transition, digital transformation, social and territorial cohesion and gender equality. The circular BIM project is situated in the ecological transition, in the component of the housing rehabilitation and urban regeneration plan.

It ends by introducing the problems with residues in construction, the objectives of the Circular BIM project and the agenda of the seminar.



2. AWARDS CREMONY OF MY SPACE 2021 COMPETITION

Gabriel Vascones, representative member of the jury of the MY ESPACE 2021 competition created by the Higher Technical School of Architecture of Seville, presents the section of the awards of the competition. The CircularBIM seminar was used as an opportunity to award prizes to the winners. This was a competition in which pre-university students participate with creative proposals for a home that reflects the expectations of an ideal space.



3. How is the Circular Economy being embroidered in Europe? The Next Generation Funds and the Eco-housing Plan. Alicia Martínez Martín, Secretary-General for Housing of the Andalusian Regional Government.

Ms. Alicia talked about the work being done by the Autonomous Community of Andalusia to implement the Circular Economy in the context of the Next Generation funds and the Eco-Housing Plan of Andalusia.



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She started by commenting on the legislative and regulatory context of the Eco-Housing Plan together with the explanation of the Next Generation grants. The principles of the plan were defined: rehabilitation, energy efficiency, circularity and comfort.

PRINCIPIOS EN LOS QUE SE FUNDAMENTA EL PLAN ECO-VIVIENDA

- _LA REHABILITACIÓN COMO PRIORIDAD DE INTERVENCIÓN EN LA CIUDAD
- _LA EFICIENCIA ENERGÉTICA CLAVE CONTRA EL CAMBIO CLIMÁTICO
- _CICLO DE VIDA Y CIRCULARIDAD BASE DE LA SOSTENIBILIDAD
- _ELEVAR LOS NIVELES DE CONFORT, CALIDAD AMBIENTAL Y SALUD

2016-2017, 1ª rehabilitación energética integral solo con medidas pasivas, 100 viv., Barrio Antonio Muro, Puerto Real (Cádiz)

Junta de Andalucía

eco vivienda

4. The new Circular Economy Law. Director-General for Environmental Quality and Climate Change. María López Sanchís.

Ms. Alicia López Sanchís begins by contextualising the draft Circular Economy Law, providing data on climate change in Andalusia: diffuse emissions and emissions by sector. The Andalusian Climate Action Plan, which aims to reduce greenhouse gas emissions by 30% by 2030 compared to 2005, is then discussed. The Andalusian Climate Action Plan, which aims to reduce greenhouse gas emissions by 30% by 2030 compared to 2005, is then discussed. As a solution to the problem, the Strategic Framework for the Circular Economy of the Andalusian Regional Government has emerged, which was detailed by Ms. María López Sanchís.

ECONOMÍA CIRCULAR DE ANDALUCÍA

MARCO ESTRATÉGICO DE ECONOMÍA CIRCULAR DE LA JUNTA DE ANDALUCÍA

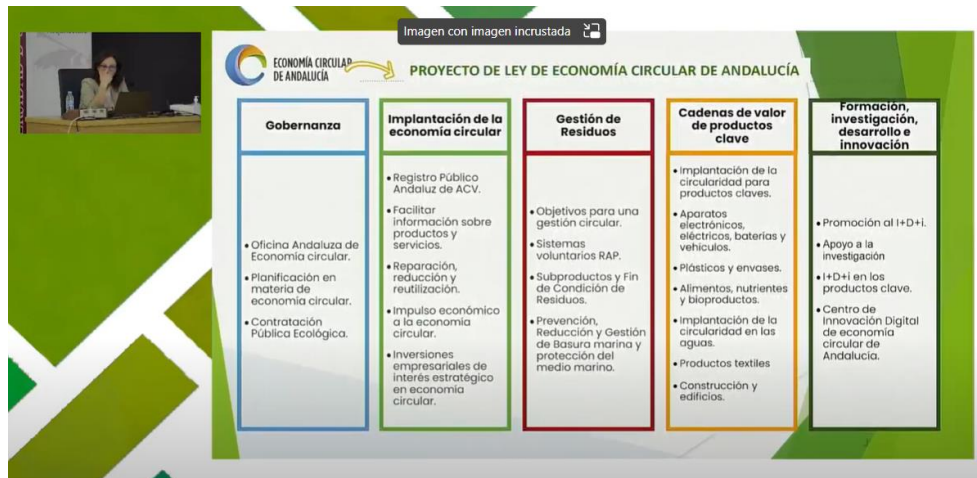
- ➔ **Desarrollo normativo y de planificación**
Proyecto de LEY DE ECONOMÍA CIRCULAR DE ANDALUCÍA
PLAN INTEGRAL DE RESIDUOS DE ANDALUCÍA PIRec2030
- ➔ **Plan de inversiones**
Infraestructuras
Apoyo al cumplimiento de la normativa de residuos
Futuro P.O. FEDER 2021-2027
- ➔ **Proyectos**
SIMBY
COCOON
ECONOMÍA CIRCULAR SIERRA DE CÁDIZ
- ➔ PROTOCOLO GENERAL DE ACTUACIÓN RCDs

Andalucía verde, sostenible y circular

The Director's presentation focused on discussing all the details of the regulatory and planning development of the Strategic Framework for the Circular Economy of the Andalusian Regional Government. Ms. María López Sanchís explained its two components: the draft Andalusian Circular Economy Law and the Andalusian Integrated Waste Plan PIRec2030. In summary, this



strategic framework seeks to implement governance, circular economy, waste management, value chains of key products and training, research, development and innovation.



5. The new waste law. President Ansemac “Andalusian Association of Women Entrepreneurs in the Environment”. Esperanza Fitz.

Ms. Esperanza Fitz began by contextualising the new Waste Law, which came about thanks to the need to implement the circular economy in the face of a linear economy. She continued by explaining the structure of this law, its definitions and most important articles.



Next, the types of waste covered by the law, their treatment and legislation were defined. Emphasis was placed on the obligations of waste producers. The president explained the new taxation and producer responsibility applied in this new law.



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OBLIGACIONES COMO PRODUCTOR DE RESIDUOS

AUTORIZACIÓN : art 20.6
El productor de residuos peligrosos estará obligado a suscribir un seguro u otra garantía financiera que cubra las responsabilidades a que puedan dar lugar sus actividades. Quedan exentos de esta obligación los productores de residuos peligrosos que generen menos de 10 toneladas al año

Real Decreto 208/2022 , de 22 de marzo , sobre las garantías financiera residuos.

La información se incorporará al registro de producción y gestión de residuos en un plazo no superior a quince días desde su inscripción en el registro autonómico
POSIBILITA LA TRAMITACIÓN ELECTRONICA

Artículo 4. Constitución de la fianza.

1. La fianza, con el importe previsto en el artículo 7, se constituirá ante las cajas de depósitos u órganos que determine la autoridad competente, que lleva a cabo el registro de la autorización o ante la que se presenta la comunicación previa correspondiente y a cuyo favor se constituye la garantía. La constitución de la fianza se realizará en la forma y condiciones establecidas en la normativa que requiera el funcionamiento de dichas cajas de depósitos u órganos ante los que se constituye.
2. Las fianzas podrán constituirse mediante cualquiera de las siguientes formas:
 - a) Garantía constituida en efectivo.
 - b) Aval, otorgado por entidades de crédito, establecimientos financieros de crédito o sociedades de garantía recíproca debidamente autorizadas para desarrollar su actividad en España.
 - c) Seguro de caución, formalizado con entidades aseguradoras debidamente autorizadas para desarrollar esta actividad en España.
 - d) Otras formas de garantía de las previstas en el título IV del texto refundido de la Ley de Contratos del Sector Público, siempre que ofrezcan un grado de protección equivalente a los instrumentos anteriores.

Then, the particular case of contaminated soils was discussed, as well as the sanctioning regime and other modifications present in the law. She concluded by talking about the new Royal Decree on packaging and packaging waste.

6. Project CircularBIM. Calculation of the Environmental Impact of a project from BIM models. Mr. Pablo Gilabert. Innovation Director at CYPE Soft SL, Spain. Number of attendees.

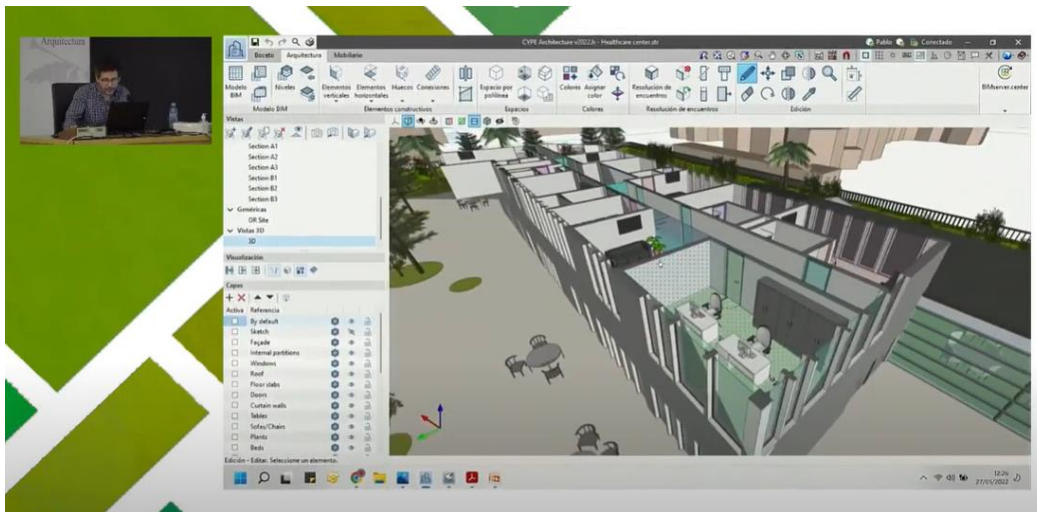
Mr. Pablo Gilabert gives an introduction of the CircularBIM project, the partners and objectives. According to the challenges regarding the environmental assessment of Life Cycle Assessment (LCA), the CircularBIM project takes up the challenges regarding the cost dimension and the sustainability dimension.



The project workflow, which uses the BIM model and the basis for constructive solutions, was explained. First in a theoretical way, and then in a practical way with an example of the CYPE Architecture tool and Open BIM Quantities, showing how to modify building elements step by step and generate the economic and energy costs and waste generated.



O3-A3. REPORT ON THE RESULTS OF FINAL INTERNATIONAL SEMINAR IN SEVILLA (SPAIN)



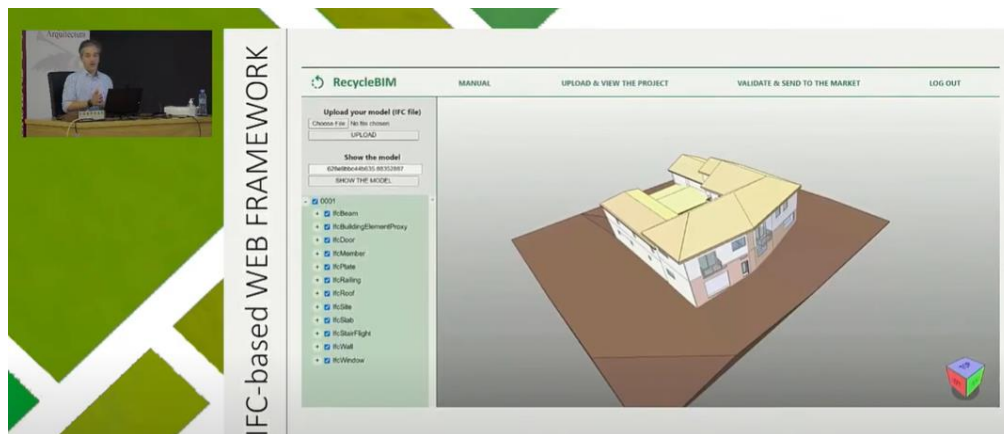
7. Project RecycleBIM ‘Integrated Planning and Recording Circularity of Construction Materials through Digital Modelling’. Mr. Miguel Azenha. Director of European Master BIM A+. Assistant Professor ISE, Dep. Civil Eng. School Eng., University of Minho, Portugal.

Mr. Miguel Azenha gives an explanation of the RecycleBIM project., that intends to make a multi-national and multi-stakeholder effort towards the creation of an integrated framework for circularity of raw materials of construction, leveraged on the wealth of information that is brought about by “Building Information Modeling”. Mr. Miguel Azenha commented on the main aspects, partnership, work packages and timetable of the project.

Nº	Partner name/acronym	WP1		WP2		WP3		WP4		WP5		WP6		WP7		Country/region	Person-month
		L	P	L	P	L	P	L	P	L	P	L	P				
1	Univ. Minho / UMinho	L	7	L	27.5	Col.	10	Col.	10.2	P	3	P	8.5	L	7	Portugal	73.2
2	TU Darmstadt / TUDA	Col.	3	P	2	P	2	L	19	P	3	P	4	Col.	3	Germany	36
3	Univ. Vigo / UVIGO	sp	1	Col.	15	L	31	P	8	sp	0.5	P	8	sp	3.1	Spain	66.6
4	Univ. Stellenbosch / SU	sp	1	P	3.25	O	0	P	13.5	L	6.5	P	23.25	sp	2.5	S. Africa	111
5	ACCA Software / ACCA	P	2.25	P	18	P	14.8	P	12	O	0	Col.	36.55	P	11.8	Italy	95.4
6	SHW Messel / SHW	sp	1	O	0	O	0	P	7	P	5	P	6.5	sp	1	Germany	20.5
7	Univ. Western Cape / UWC	sp	1.5	P	3.75	sp	1	sp	1.25	Col.	44	P	6.5	sp	5	S. Africa	63
8	IZSAM/ IZSAM/ IZSAM	sp	1	sp	3.5	sp	7	sp	1.8	sp	3	L	10	P	3	Spain	32.5
9	Lafarge Holcim / LHol	sp	1	P	4	O	2	P	2.8	P	1.8	P	5.4	sp	1	France	18
10	Newton Consult / NWT	O	0	O	0	O	0	O	0	O	0	P	5	sp	1	Portugal	6
11	Marta Campos / MCA	O	0	O	0	O	0	O	0	O	0	P	5	sp	1	Portugal	6
12	Gauro EM, GUR	O	0	O	0	O	0	O	0	O	0	P	1	sp	1	Portugal	2

L - Leader; Col - Co-Leader; P - Strong participant; sp - small participant; O - Observer

He then showed a case study, the survey that was carried out to find out the cost-effectiveness, the BIM model created and the IFC-based WEB FRAMEWORK, with the libraries used in the tool.



8. The need for a circular economy in the Construction sector in Romania. Radu Muntean, Assistant Professor. Transilvania University of Brasov, Rumania.

Mr. Radu Muntean introduces the geographical characteristics of Romania and their relationship with the demand for housing, exposing the problem of the linear economy in the country. He focuses on the need to adopt a circular economy in construction due to the demand in the increasing number of inhabitants and the impact this has on the environment. It highlights the impact that waste has and the need to implement, at an educational level, the technologies that enable the application of the circular economy.

Circular economy:

- the built environment has a significant impact on many sectors of the economy, on local jobs and on the quality of life....
- civil / administrative / social / industrial buildings are intensive energy consumers (heating and cooling, ventilation, lighting, production support systems, etc) and use large quantities of building materials, labor and transportation;
 - for their execution or for their rehabilitation / current service

It ends with the curriculum created at the Civil Engineering in Brasov, which consists of courses related to the environment and circular economy.



PRESENT CURRICULA IN CIVIL ENGINEERING IN BRASOV:

NEW Environmental related courses:

- **Circular economy**
 - 2 hours / week for course;
 - 2 hours / week for laboratory / practical works;
 - 4 ECTS credits
- Proposed topics:
 - Principles of construction design to ensure a maximum degree of circular economy
 - Types of products and materials and reduce waste - through reuse and recycling
 - Ways to calculate the circular economy in construction
 - Monitoring the circular economy in construction

9. The circular economy in green buildings and sustainable communities. D^a. Monica Ardeleanu. Daniel N. Armenciu. Lecturer University. Dr. Arhitect. GBC – Green Building Council, Rumania.

Mr. Daniel N. Armenciu begins by describing the paradigm shift in Romania regarding the life cycle of materials used in construction. He then comments on the importance that the Romania Green Boulding Council (RoGBC) has had in bringing about greater stakeholder involvement in the promotion of sustainable buildings in the country, explaining the different routes by which this council promotes the circular economy.

One of the initiatives carried out by the RoGBC is the issuing of a certificate for "Green homes" or "Green schools". The presentation explains the criteria chosen to award these certificates as well as other details.

GREEN HOMES
CERTIFIED BY
ROMANIA GREEN BUILDING COUNCIL

GREEN SCHOOLS
CERTIFIED BY
ROMANIA GREEN BUILDING COUNCIL

Se comenta como ejemplos de proyectos que han conseguido el certificado: Amber Forest, Binarium Bushiness Center, Ecobiblioteca, Liceul Onisfor Ghibu, AMERA Tower, Exite Project, y los distintos motivos por los que han obtenido la acreditación.

Por otra parte, se comenta que también se ha creado una la Green Building Profesional Platform que ha sido reconocida como ejemplo de buenas prácticas por el European Construction Observatory.



Finalmente, Mr. Daniel N. Marmenciu comenta el proyecto de investigación que lleva a cabo en materia de economía circular y residuos: RecoverIND.

Research: RoGBC is part of different ongoing research projects

RecoverIND (Ecological and Innovative Technologies for recovering industrial areas from LCA and Energy Efficiency point of view) is a project funded by the Erasmus+ program and aims to deepen the interconnection between energy efficiency, Life Cycle Assessment (LCA) and the use of advanced technologies for building design and rehabilitation of the construction sector, with the need to improve knowledge in the education sector.

New technologies applicable to the conversion and restoration of industrial areas are emerging every day. Therefore, the project will offer training in systems such as collaborative robotics and drones, which will allow the project's target groups to adapt to new management systems and new production processes.

The training of both students and professionals becomes essential to take advantage of the interoperability offered by ICTs with equipment and software for the evaluation of EE and LCA for industrial restoration.

10. Towards a circular economy for Seville. Development of a Guide for a more Sustainable Architecture and Urban Planning (GSAUP). María Lumbreras, researcher HUM 965 TRANSHUMANCIAS group.

Ms. María Lumbreras begins by contextualising the "Guide for a More Sustainable Architecture and Urbanism (GSAUP)", commenting on the framework, the main areas of commitment and bibliographical references or previous related work. The guide scope is then presented. Afterwards, the contribution of the Circular Economy to the development of the guide was discussed.

3 CIRCULAR ECONOMY CONTRIBUTION

Who will it be for?

- Developers & Contractors
- Occupiers
- Asset Owners & Managers
- Investors
- Financiers & Funders
- Consultants
- Architects
- Supply Chain Partners

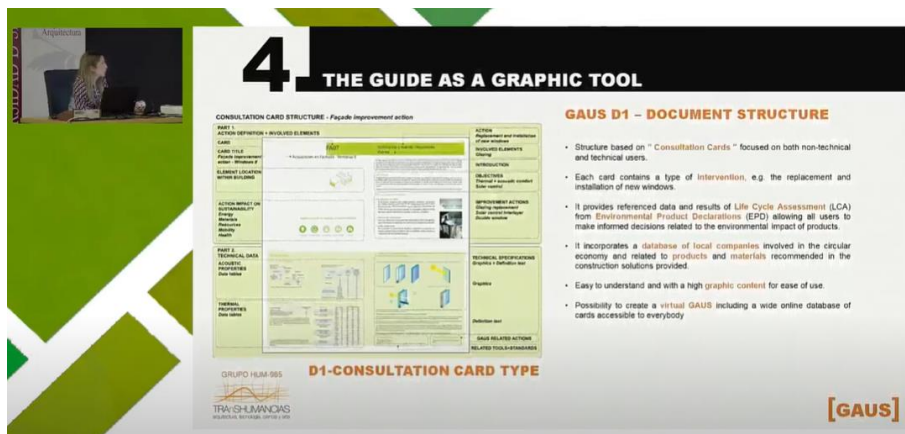
GAUS

EDUCATION

DEVELOPMENT

[GAUS]

Ms. María Lumbreras explains how the guide is organised by means of letters and its structure, showing examples of the different sections and their tasks.



Finally, he comments on the work in progress, including the development of several gaus, a digital database and the intention to take the guide to an international application.

11.ROUND TABLE: Recycling in the construction sector.



This round table was moderated by Ms. Pilar Mercader Moyano and the following speakers took part: Mr. David Caparrós Pérez (CTM, Spain), Ms. Anna Manyes (Architect, Development and Technical Service Department, Rockwool S.A.U. Spain) and Mr. José Carlos Claro Ponce (Commissioner of Rehabilitaverde Sevilla).

The discussion focused on the following questions:

- What are the barriers and opportunities when implementing recycling services in the industrial sector. Ms Anna Manyes answered by commenting on her experience at Rockwool: being a manufacturer but not a waste manager in the face of current regulations and the construction sector is very different from the industrial sector.
- Is the concept of recycling applied in the construction of buildings? Mr. José Carlos Claro Ponce answered, listing three advantages when it comes to recycling: the awareness of the site managers, the regulatory level and the economic level.



- What problems were detected in the industry for the creation of the CircularBIM project? Mr. David Caparrós answers, talking about the context in which it was seen that the Circular Economy needed to be applied in the industry.
- Has the positive or negative impact of the products on the social level been taken into account? The three components intervened to discuss the question posed by the public.
- How will the recycling project evolve in a building? Mr. José Carlos Claro Ponce talks about the awareness and updating of regulations, necessary to make building projects more sustainable.
- What is the projection for the coming years on how circular economy criteria will be implemented in construction processes? Mr. David Caparrós talks about the paradigm shift of companies on waste management and energy efficiency.

12. NUMBER OF ATTENDEES

The total attendance at the Seminar was 114 persons, of which 45 were external participants not belonging to the project consortium entities.

Project participants who attended the event:

- Mr. Ramón Pico Valimaña. Higher Technical School of Architecture of Seville.
- Ms. Melania Rivers Rodríguez. University of Seville.
- Ms. Pilar Mercader Moyano, Higher Technical School of Architecture of Seville.
- Prof. Miguel Azenha, Uminho.
- Eng. Marisa Almeida, CTCV.
- Mr. Pablo Gilabert, CYPE.
- Mr. David Caparrós, CTM.
- Mr. Radu Muntean, University of Brasov.
- Daniel N. Armenciu. GBC - Green Building Council, Rumania.

Due to the Data Protection Law, the Attendees list is not available for public use.

13. RESULTS

After the workshop, attendees were asked to complete a survey in order to evaluate its impacts and collect feedback from industry professionals on key aspects of the project.

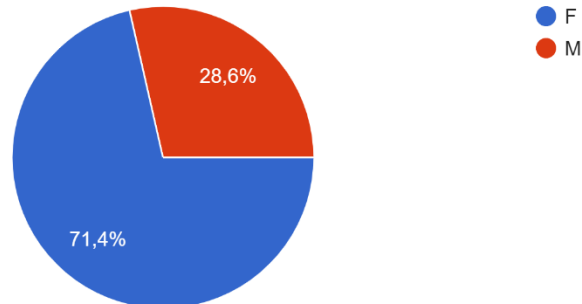
The reception was very satisfactory by the attendees and the main results are reflected below:



O3-A3. REPORT ON THE RESULTS OF FINAL INTERNATIONAL SEMINAR IN SEVILLA (SPAIN)

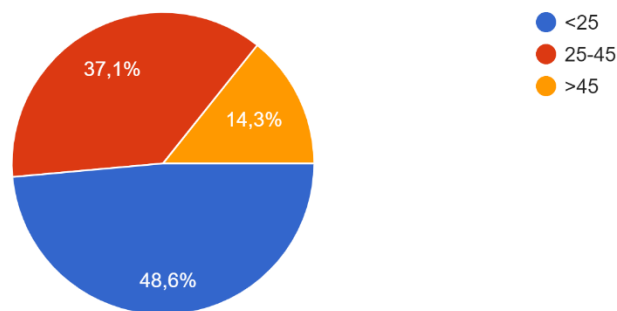
Género

35 respuestas



Edad:

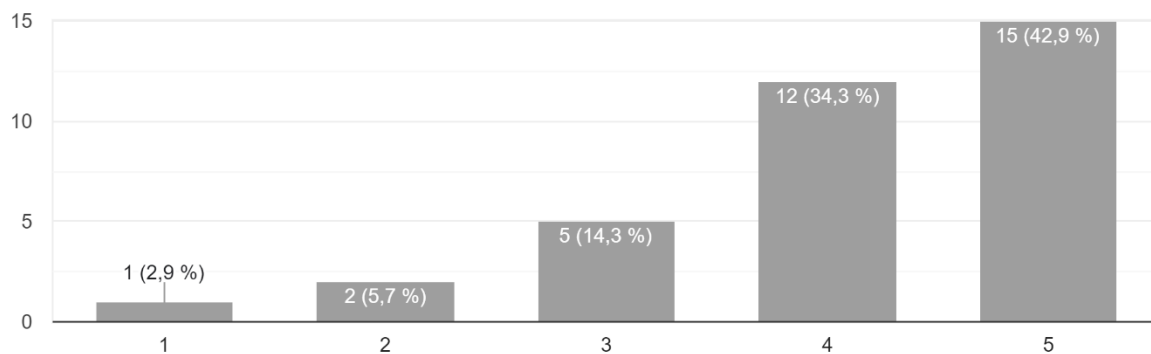
35 respuestas



Antes de mi participación en esta actividad (1:Totalmente en desacuerdo, 5:Totalmente de acuerdo):

Estaba familiarizado con el sector de la construcción:

35 respuestas

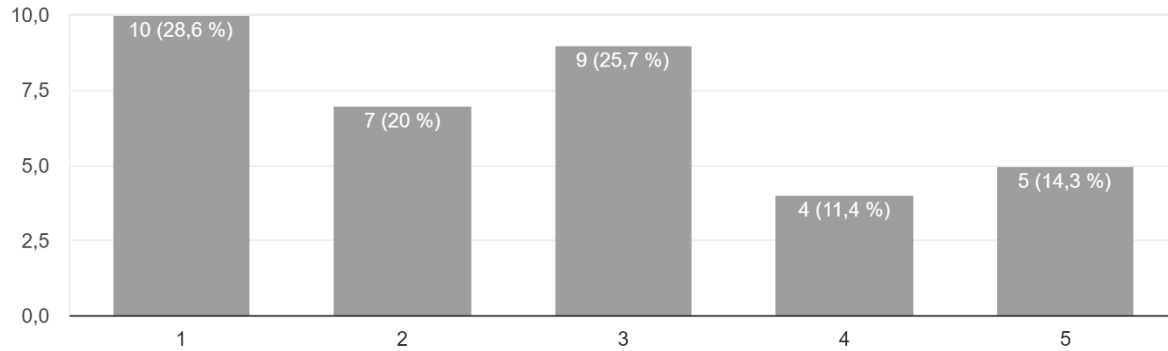




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Había participado en actividades similares relacionadas con la economía circular (no para el sector de la construcción):

35 respuestas

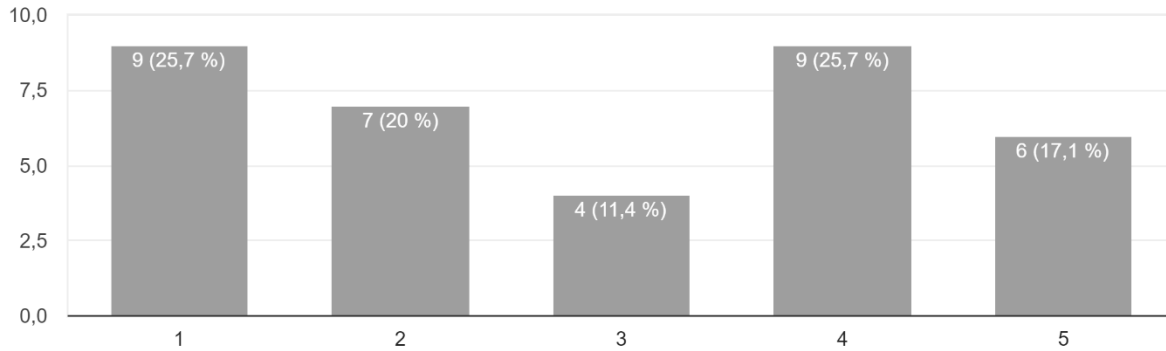




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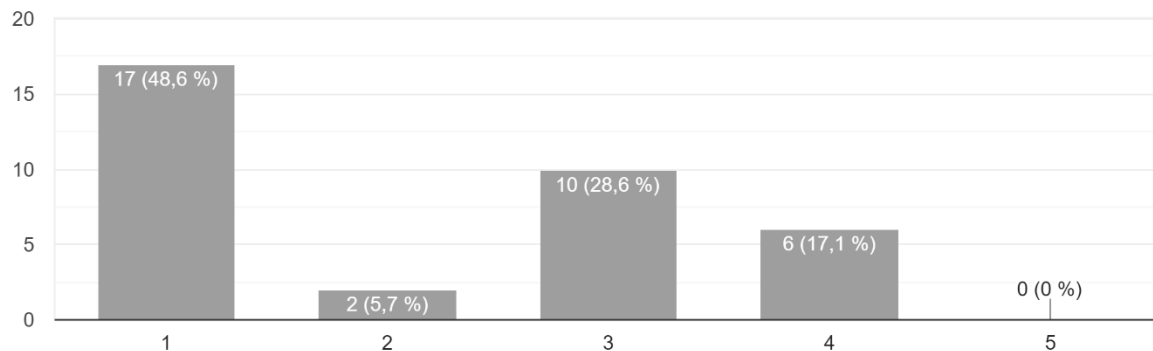
Ya había participado en otra actividad similar relacionada con el sector de la construcción en el pasado:

35 respuestas



No veía la necesidad de hacer uso de la economía circular en la construcción:

35 respuestas



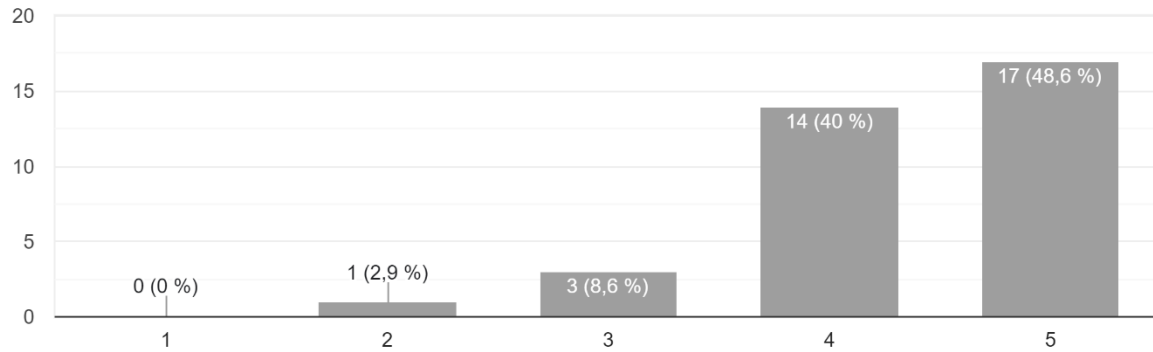
Después de mi participación en esta actividad (1:Totalmente en desacuerdo, 5:Totalmente de acuerdo):



03-A3. REPORT ON THE RESULTS OF FINAL INTERNATIONAL SEMINAR IN SEVILLA (SPAIN)

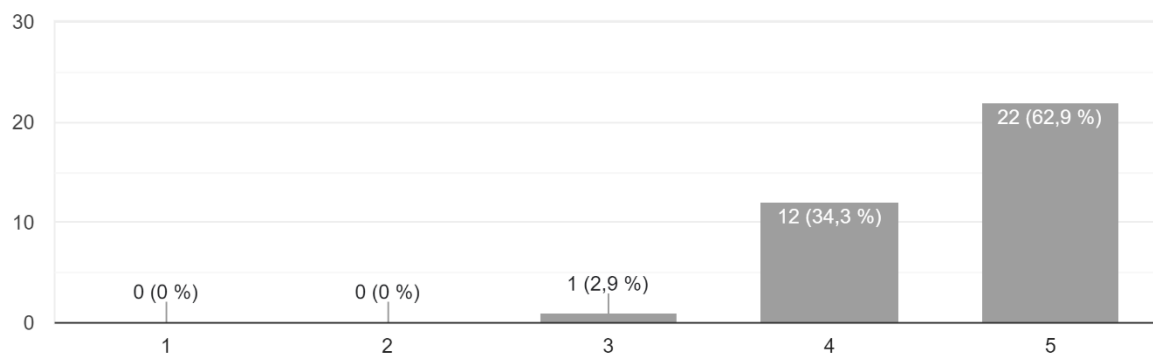
Estoy más familiarizado con el sector de la construcción:

35 respuestas



Me gustaría saber más sobre la economía circular en el sector de la construcción:

35 respuestas

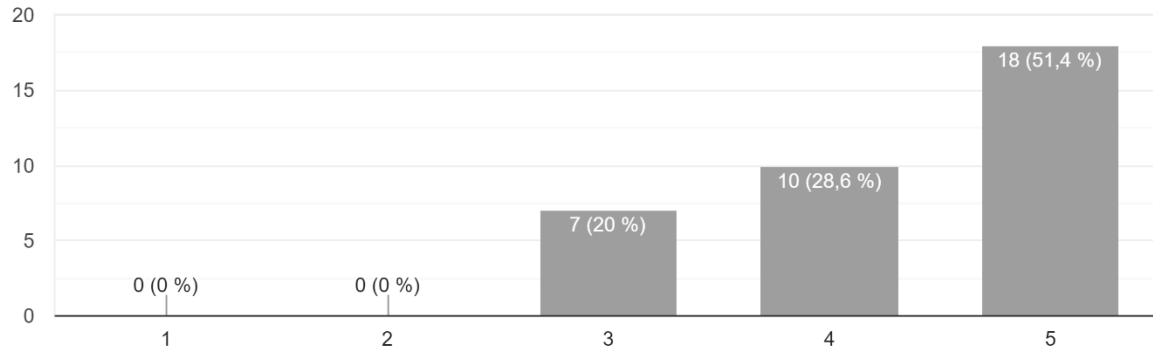




03-A3. REPORT ON THE RESULTS OF FINAL INTERNATIONAL SEMINAR IN SEVILLA (SPAIN)

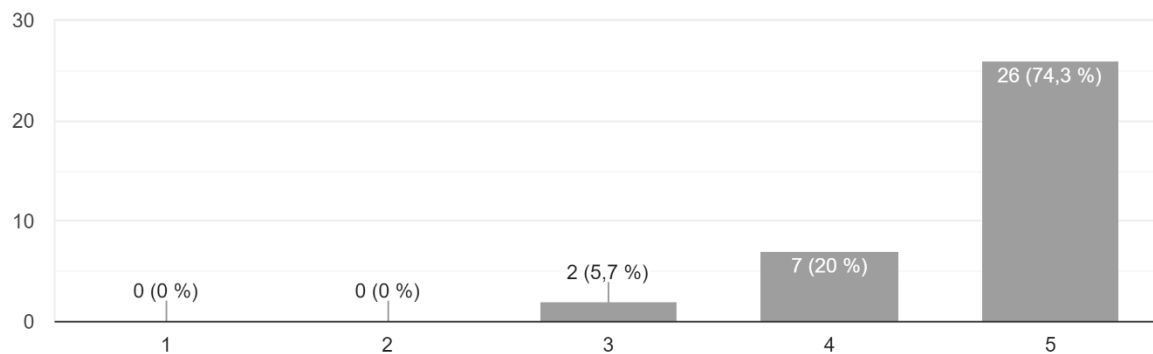
Me gustaría participar en actividades similares relacionadas con la economía circular en general (no para el sector de la construcción):

35 respuestas



Estoy interesado en participar en otras actividades orientadas al sector de la construcción en el futuro:

35 respuestas

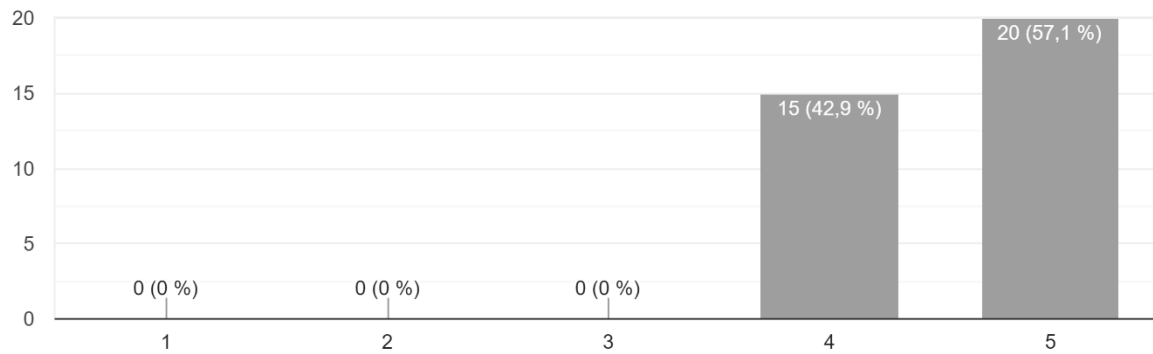




03-A3. REPORT ON THE RESULTS OF FINAL INTERNATIONAL SEMINAR IN SEVILLA (SPAIN)

Tengo una opinión más positiva sobre el uso de la economía circular en el sector de la construcción:

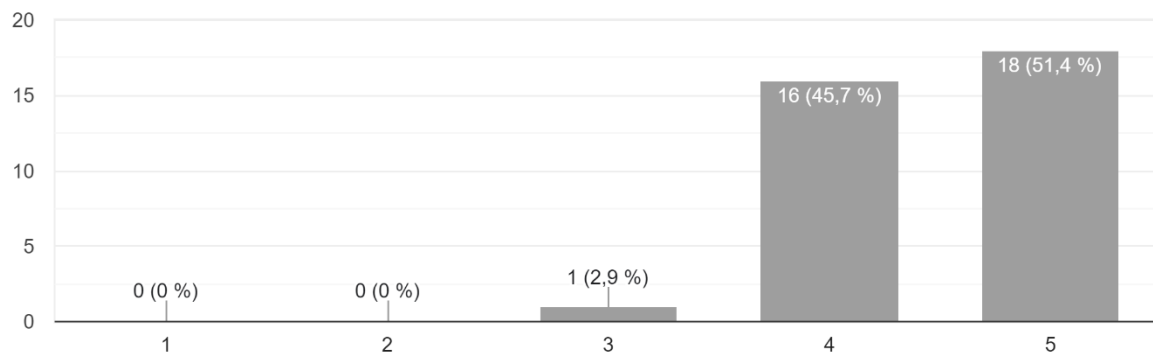
35 respuestas



Evalúe su experiencia en este evento (1:Totalmente en desacuerdo, 5:Totalmente de acuerdo):

La información y los consejos proporcionados fueron útiles:

35 respuestas

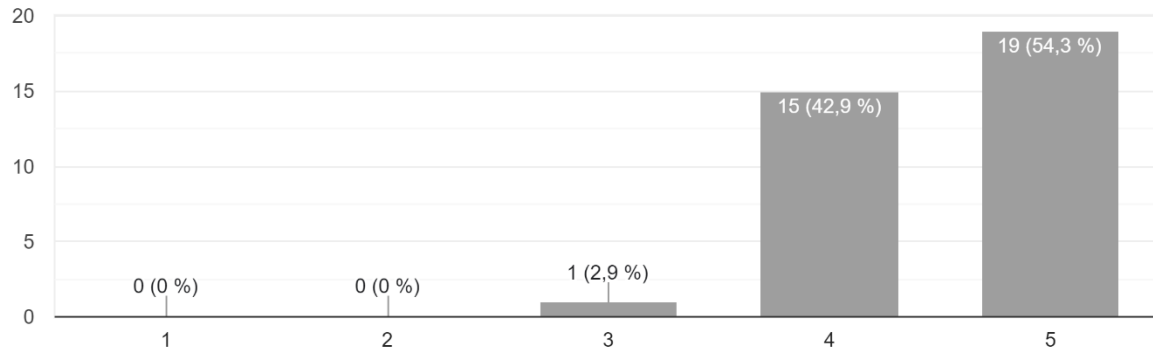




O3-A3. REPORT ON THE RESULTS OF FINAL INTERNATIONAL SEMINAR IN SEVILLA (SPAIN)

La información se comunicó de forma comprensible:

35 respuestas



Se me dio la oportunidad de hacer preguntas y éstas fueron respondidas satisfactoriamente:

35 respuestas

