



# INTELLECTUAL OUTPUT 2

## New interactive BIM-learning methods for Circular Economy

### TASK O2-A1

## Guideline notes and functional specifications



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## INTRODUCTION

The interactive tool described in this Guideline notes has been developed to feed the implementation of CircularBIM Course (O1/A4) and the OER (Open Educational Resource, O3), and it is basis on knowledge developed in the O1 of the project (Establishment of common learning outcomes on placing methods based on circular economy criteria, life cycle assessment (LCA) and relative regulations).

It has been produced an ICT based tool on BIM technology for the CircularBIM project. This content is available for free on the website of the project for being used as a supporting material in the numerous architecture and construction courses distributed within the sector of construction products.

This task is included in the O2 (Intellectual Output 2, called New interactive BIM-learning methods for Circular Economy). In the first task of this O2, it was established the guideline notes and functional specifications which is compiled in this report, where it is described in detail the technical development of the tool. Mainly, intended capabilities, appearance, and interactions with users.

Those functional specifications and user's guide will be a guideline and continuing reference point for the main developer of the task (CYPE) to write the programming code.

In this document, it will be shown the visual appearance of the user interface and description of each possible user input actions and the program response actions, as well as formal descriptions of user tasks, dependencies on other products, and usability criteria.



## GUIDELINE VIDEOTUTORIAL

CircularBIM tool is an educational developed for CircularBIM project in order to calculate environmental impacts (carbon footprint, energy envolded and recyclability) for building.

All the information related to environment database and BIM objects will be allocated here:

<https://circularbim.eu/es/productos-circularbim/>

Here, it can be find video tutorials where the tool is perfectly explained, where it can be use as a guideline for students of CircularBIM methology.

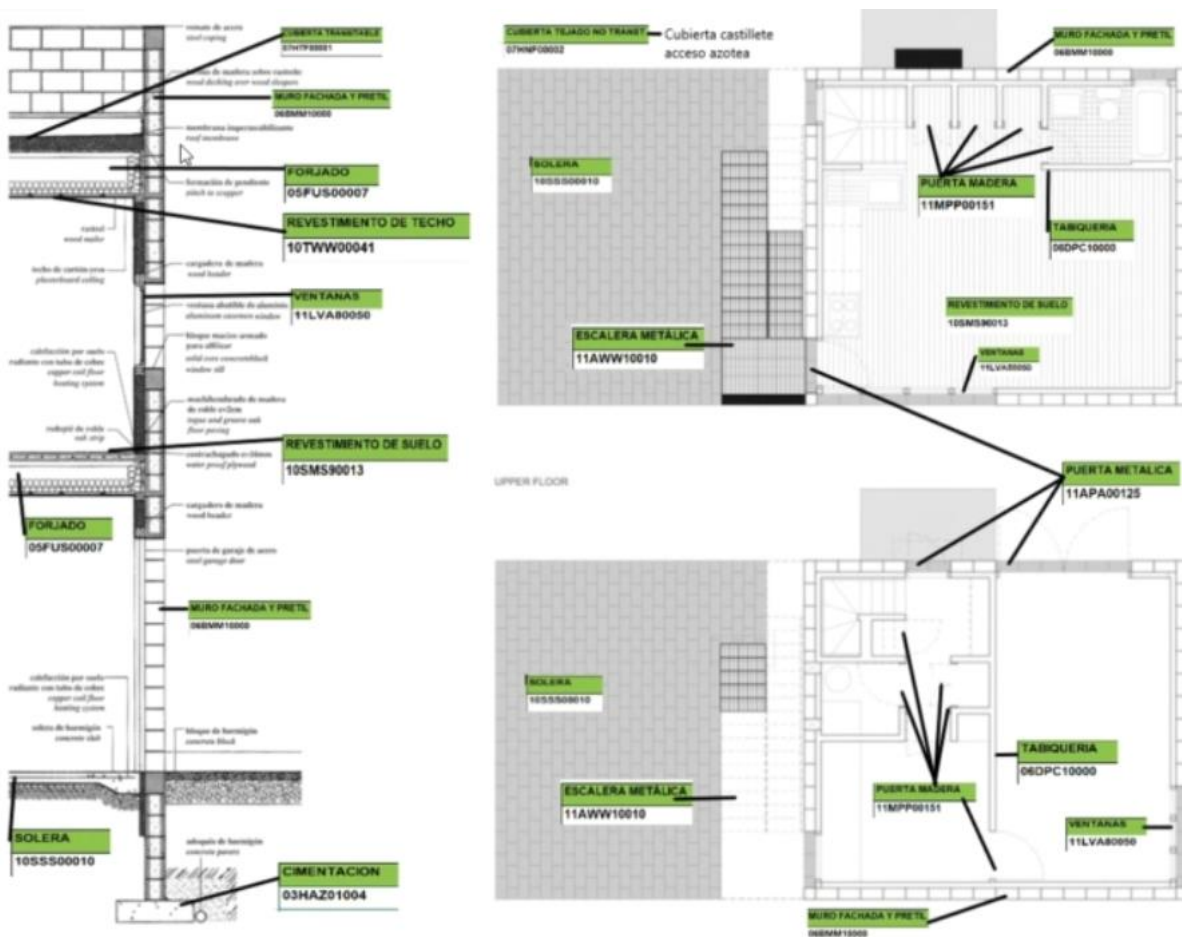


Image 1. Example of project of the guideline videotutorial.



O2-A1. GUIDELINE NOTES AND FUNCTIONAL SPECIFICATIONS

Material	Cantidad	Unidad	Precio	Coste energético	Emisión de CO2	Masa total del residuo	Volumen total del residuo
Acero reforzado CA01700	0.2	kg	1.23	0.25	0.00146	0.00029	23.325
Hormigón (de) CH02910	1.1	m3	59.53	65.48	0.28696	0.31566	1575.336
SOLERA HORMIGÓN HM-20 15 cm ESP	1055.00010	m2	18.74	4.69	0.00000	0.00000	0.00000
MANO DE OBRAS TO02200	0.25	h	18.74	4.69	0.00000	0.00000	0.00000
MANO DE OBRAS TP00100	0.25	h	18.9	4.73	0.00000	0.00000	0.00000
Grava AG00400	0.15	m3	9.13	1.37	0.01621	0.00243	149.019
Hormigón (de) CH04020	0.162	m3	56.63	9.17	0.22957	0.03719	1360.269
Película de polietileno XI01100	1.111	m2	0.6	0.67	0.00050	0.00055	132.924
Plancha de poliestireno XT14000	0.003	m3	178.6	0.54	0.05757	0.00017	3605.858

Image 2. Example of environment database of the guideline videotutorial.

Cantidad	Precio	Importe	Coste energético	Emisión de CO2	Masa total del residuo	Volumen total del residuo
767.52	804.702600	804.702600 MJ	87.544800	87.544800 kg	9,636.300000 kg	5.400000 m3
767.52	804.702600	804.702600 MJ	87.544800	87.544800 kg	9,636.300000 kg	5.400000 m3
767.52	804.702600	804.702600 MJ	87.544800	87.544800 kg	9,636.300000 kg	5.400000 m3
767.52	804.702600	804.702600 MJ	87.544800	87.544800 kg	9,636.300000 kg	5.400000 m3
767.52	804.702600	804.702600 MJ	87.544800	87.544800 kg	9,636.300000 kg	5.400000 m3
767.52	804.702600	804.702600 MJ	87.544800	87.544800 kg	9,636.300000 kg	5.400000 m3
36.00	21.32	767.52	804.702600 MJ	87.544800 kg	9,636.300000 kg	5.400000 m3

Image 3. Example of results of the guideline videotutorial.