

Transforming the Real Estate with C2C CE

How to retain and create value for business, society and environment by implementing the the Cradle to Cradle principles in the Built Environment.



A journey that
started with a goal:

**We aim to create a
world of abundance**

Defining the Circular Vision



2007_ C2C Certified and C2C framework

EIG brought the C2C principles to Spain back in 2007. It managed the first W. McDonough speech at the Internet Global Conference in Barcelona and worked in building projects together with WM+P.



2009_EIG becomes LAP of MBDC

To run the C2C Certified process in the Iberian Peninsula. The collaboration still stands. EIG becomes also member of the USGBC and is one of the introducers of LEED in Spain.



2011_First circular economy workshop for companies

At the local entity that works for economic activation and local industries development and innovation..



2012_EIG is participated by Grupo Construcción

The construction company aims to redefine its business model on the C2C CE principles and wants also to contribute to the local industry's transformation.



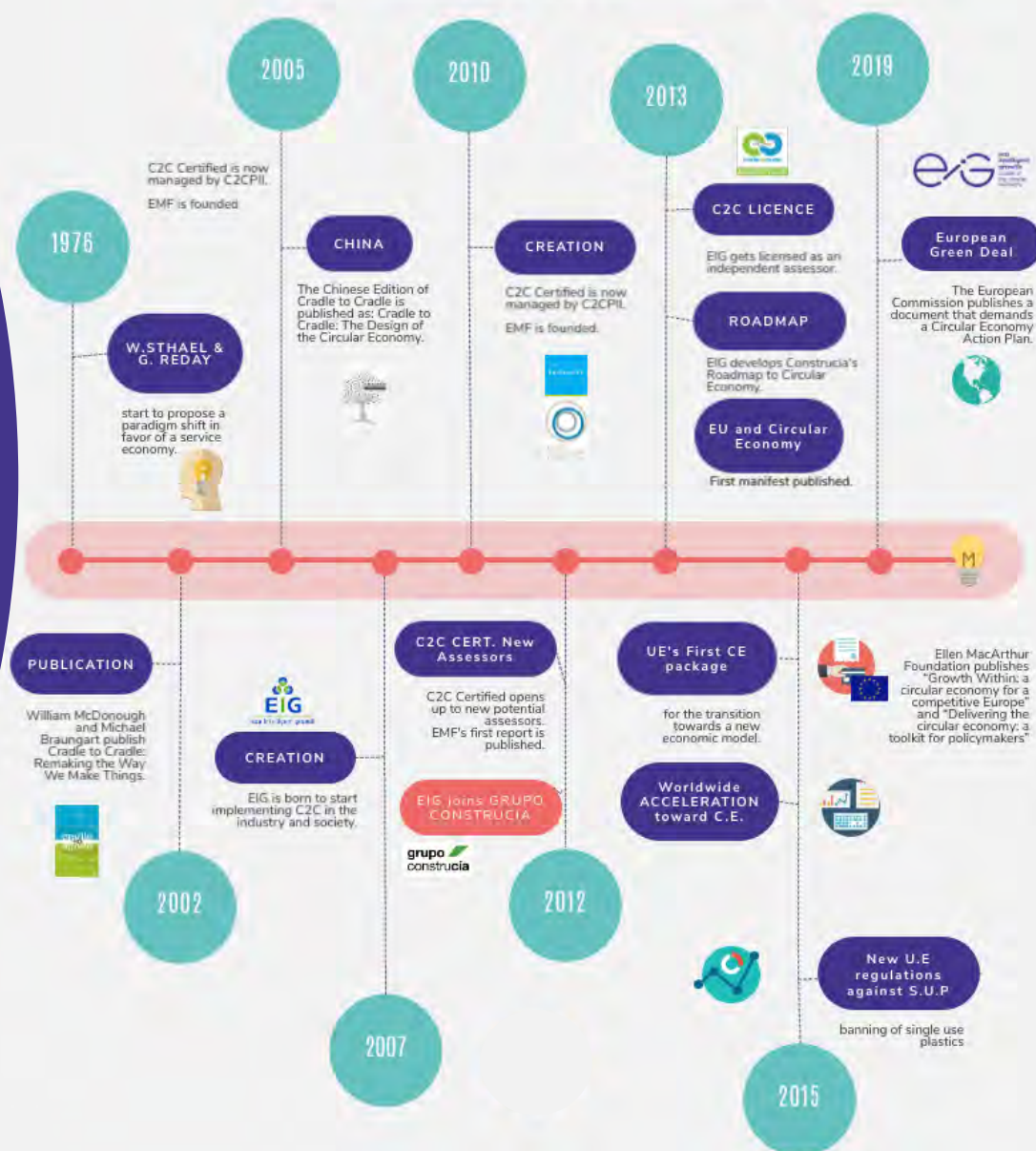
2013_EIG becomes C2C Accredited Assessment Body

The C2CPII trains the first group of assessors under the new structure of the certification program. EIG becomes General Assessor with two accredited assessors on staff.

Working for circularity since 2005

Circular Economy

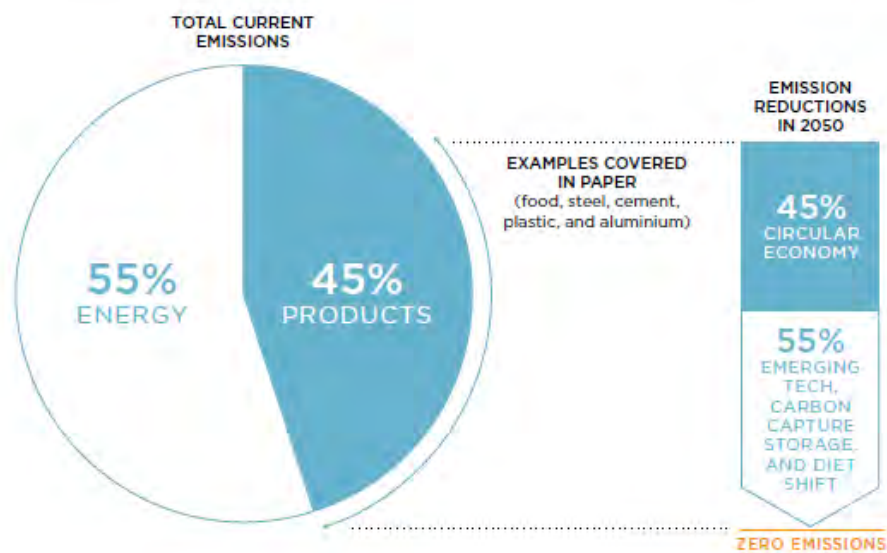
1976-2019



Addressing the positive impact

Steps and collaborations to create a
regenerative economy

We fight climate change



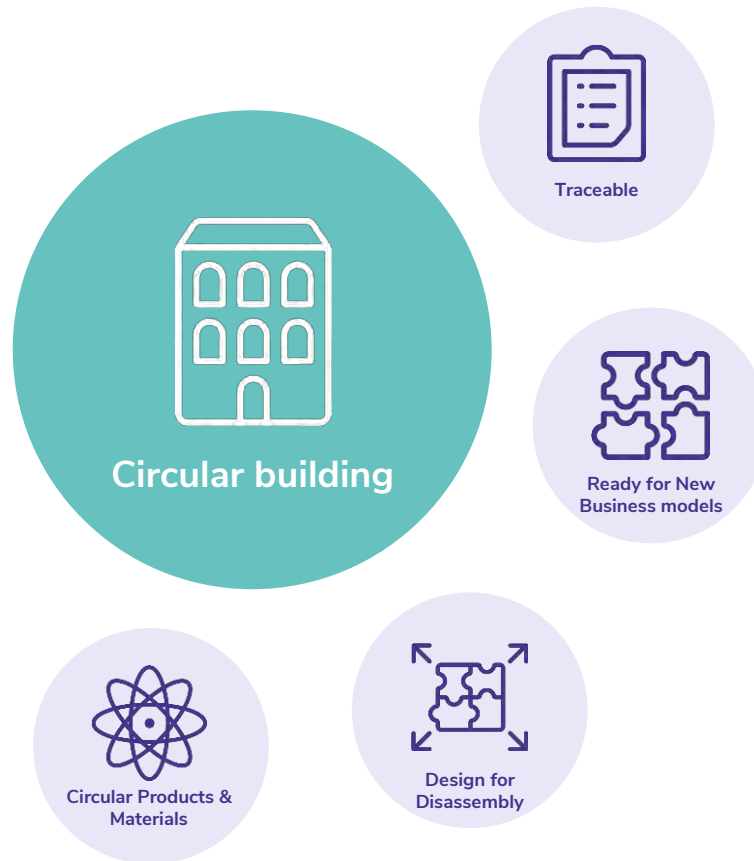
- 45% of hard-to-avoid emissions are related to the way we make and use products. The circular economy applied to the food sector and industry (aluminum, steel, cement and plastic) can help reduce global emissions by 9.3 Gt CO₂e in 2050.
- A circular scenario can reduce CO₂ emissions by up to 38% in 2050, acting only on the demand for 4 materials (aluminum, steel, cement and plastic).

Ellen MacArthur Foundation, Completing the Picture: How the Circular Economy Tackles Climate Change (2019)

“Carbon is the new token”

Ignasi Cubiñá

The Circular Building:



**How to manage
valuable
resources in a
circular economy?**

Design. Implement. Measure.

1

Lean2Cradle®

Resilient and modular design

2

Safe then Circular

based on Cradle to Cradle Certified™ criteria

3

Materials Management Platform



01

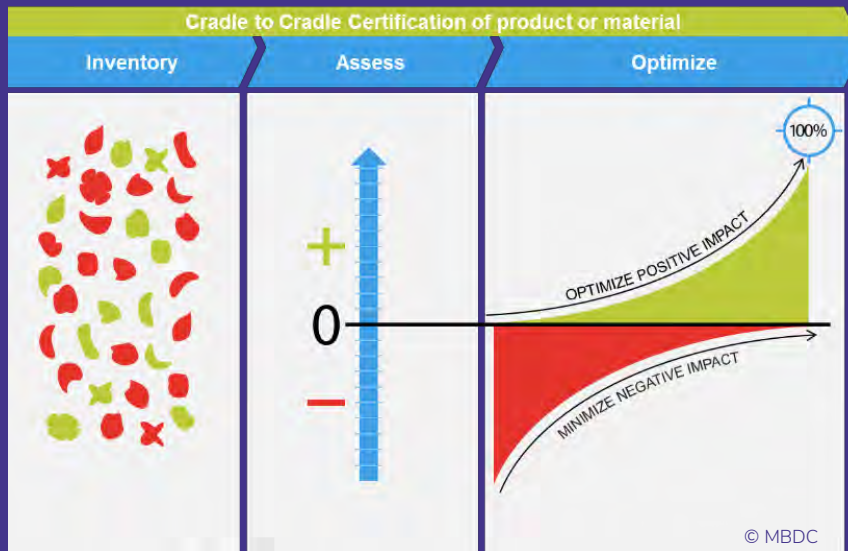
Resilient & Modular Design



The **Lean2Cradle®** methodology combines the benefits of Lean Construction with the Cradle to Cradle design framework



Cradle to Cradle Certified™



5 quality categories based on principles



02

Safe then Circular

Circulate Goods
not Bads

W.McDonough

The Circular Shared Value

Social Value

- Zero Waste
- Health & Wellbeing
- Clean Water
- Clean Energy
- Durable & Positive Carbon
- Resiliency & Diversity

- Higher Productivity

Business Value

- Reputational Risk Reduction
- Lower capital cost
- Acces to tax reductions & incentives
- Protection against future regulations
- Lower running cost
- Residual Value

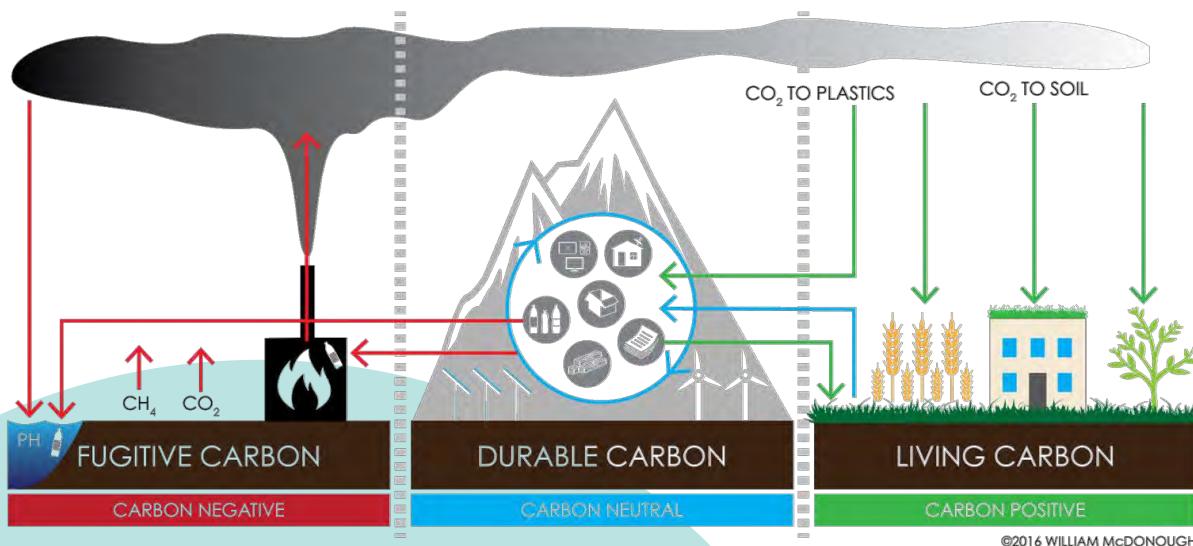
value creation
+
value retention
=
value captured

Companies working together since 2018 to implement the C2C principles in Italy.



Carbon is the new token...

THE NEW LANGUAGE OF CARBON



Collaboration to develop a methodology to assess the circular carbon cycle together with

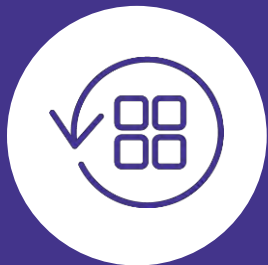


POLITECNICO
MILANO 1863

03

The Circular Ecosystem

The meeting point to manage and circulate valuable goods



All the data contained in the Material Passport is uploaded to **Upcyclea**, the resource management platform that enables the traceability of material and products, as well as the value recovery for every new use cycle at material/ product level.



EIG is working with Upcyclea to improve MyUpcyclea, including new functionalities to help decision making in financial and non-financial aspects.

Case Studies

Some experiences on L2C buildings
and their circular performance

Construcía HQ

Madrid

1.165 sqm

Interior refurbish of the office space..

The biophilic design and modern space concept were developed by Construcía architecture team.

Materials selection is based on C2C Criteria and suppliers are trained to preserve the value of materials.

Project Team

Developer: Construcía

Architect: Construcía.

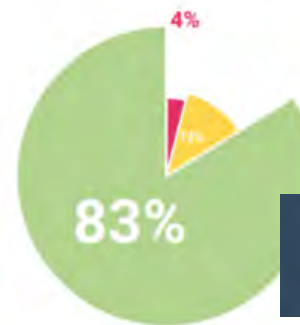
General Contractor: Construcia

Circular Economy advisor: EIG

Health & Wellbeing

The office space was designed and built to enhance workers satisfaction. Construcía knows that human resources are its greater investment and value, therefore this human centred design maximizes both.

The Circular Signature



MATERIAL HEALTH

Oficina Construcción Madrid

58 / 76 deposits considered
95.3 tons of deposits in total

Report n°75
15/10/2020 at 10:28am

CARBON FOOTPRINT

Oficina Construcción Madrid

The carbon footprint measures greenhouse gas emissions from anthropogenic sources. This indicator highlights the carbon footprint due to the manufacturing stage (taking into account the extraction of raw materials and manufacturing) of the products and materials composing the deposits. The transport, use and end-of-life phases are not taken into account.

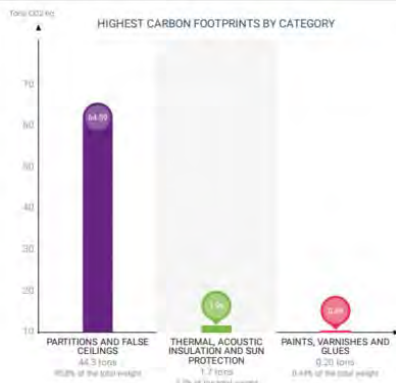
Please note that the figures given below are based on the information provided in the platform. Incorrect or missing information can lead to unrepresentative results for your deposits.

TOTAL CARBON FOOTPRINT

67
tons CO2 eq.

34 / 76 deposits considered
46.2 tons of deposits in total

HIGHEST CARBON FOOTPRINTS BY CATEGORY



Report n°75
15/10/2020 at 10:28am

CIRCULARITY

Oficina Construcción Madrid

The circularity indicator is the result of an operation that takes into account both the previous lives of the materials integrated into products under consideration and the next possible usages for these deposits.

Please note that the figures given below are based on the information provided in the platform. Incorrect or missing information can lead to unrepresentative results for your deposits.



58 / 76 deposits considered
95.3 tons of deposits in total

PREVIOUS LIVES

80% recycled or rapidly renewable materials integrated into products

NEXT USAGES

Disassemblability of products and deposits: ●●●●○
Identification and potential of future uses: ●●●●○
Presence and reliability of information: ●●●●○

	MOST PRESENT PRODUCT CATEGORY (IN MASS)	MOST CIRCULAR PRODUCT CATEGORY	LEAST CIRCULAR PRODUCT CATEGORY
Circularity grade	80/100	100/100	0/100
Previous lives grade	82%	100%	0%
Disassemblability of products and deposits	●●●●○	●●●●○	○●●●○
Identification and potential of future uses	●●●●○	●●●●○	○●●●○
Presence and reliability of information	●●●●○	●●●●○	○●●●○
	PARTITIONS AND FALSE CEILINGS 44.3 tons 97.6% of the total weight	PLUMBING AND SANITATION 0.23 tons 0.0% of the total weight	PAINTS, VARNISHES AND GLUES 0.20 tons 0.2% of the total weight

Report n°75
15/10/2020 at 10:28am

RESIDUAL VALUE IN CASE OF REHABILITATION

Oficina Construcción Madrid

The financial residual value stands for what income could potentially be generated by managing your deposits in a circular way. It takes into account the value of the material at the end of the use period, and includes the additional cost of clean disposal as well as the savings associated with less waste management.

The financial residual value in case of rehabilitation induces an immediate valorisation of all deposits except those that concerns the foundation of the building. Two scenarios are proposed, one favouring a maximum valorisation of resources, the other favouring economic profitability. Two recovery hypotheses are taken into account: upcycling and reuse. For each deposit, the most profitable hypothesis is chosen.

Please note that the figures given below are based on the information provided in the platform. Incorrect or missing information can lead to unrepresentative results for your deposits.

TWO POSSIBLE SCENARIOS



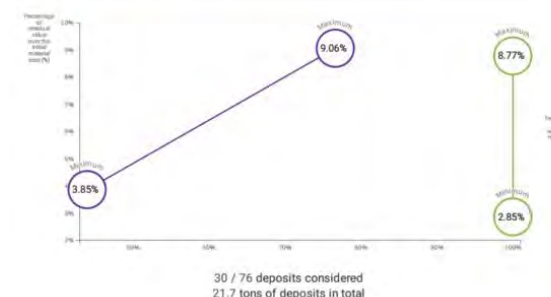
PROFIT ORIENTED SCENARIO

Residual value obtained by recovering only those materials for which recovery results in an economic benefit compared to conventional waste treatment.



ENVIRONMENT ORIENTED SCENARIO

Residual value in the case where 100% of the materials (including those for which recovery entails an additional cost compared to conventional waste treatment) are recovered.



30 / 76 deposits considered
21.7 tons of deposits in total

Active Cycle



Of the installed materials has a cyclability path defined

97%

Of the installed materials is properly identified

95,5%

Of the installed materials is C2C cErtified™ or validated accordingly

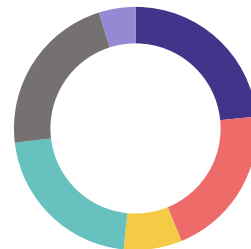
Identified Materials

63.564 kg

↓
10 adult elephants (aprox.)



Materials by Type



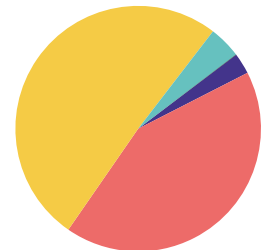
■ Minerals
■ Metals
■ Multi-mat.
■ Wood
■ Glass
■ Plastics

	Minerales y Pétreos	11,8 t
	Metals	10,5 t
	Multi-material	4 t
	Wood & byproducts	23,5 t
	Glass	11 t
	Plastics	2,5 t



Materials Health

■ MHA Platinum / Gold / Silver
■ MHA Bronze
■ MHA Basic / L2C Compatible
■ Unknown



■ Technical nutrients ■ Biological Nutrients
■ Mixed nutrients

Value to Society

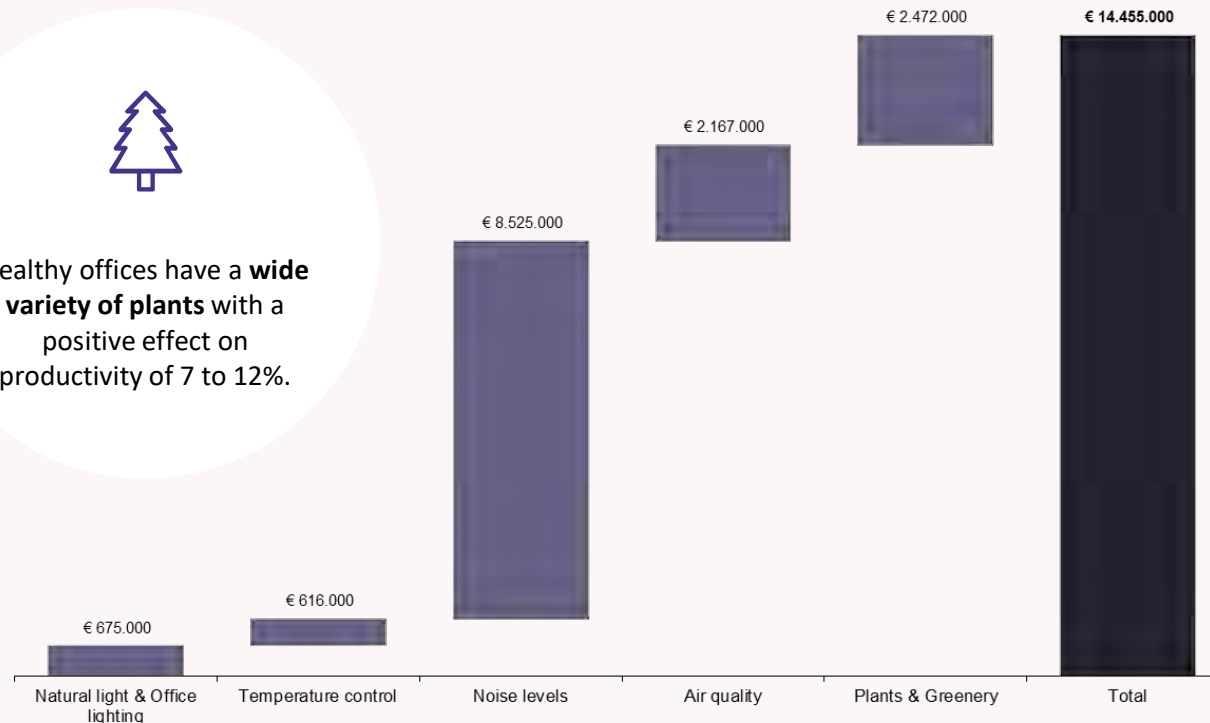
L2C True Value de KPMG & EIG

TRUE VALUE OF PRODUCTIVITY

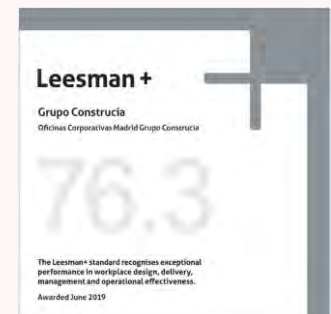
CASE STUDY CONSTRUCIA MADRID HQ. BUILT



Healthy offices have a **wide variety of plants** with a positive effect on productivity of 7 to 12%.



Productivity increase is ~€5.600 per employee per year which equals ~16% reduced employee expenses.



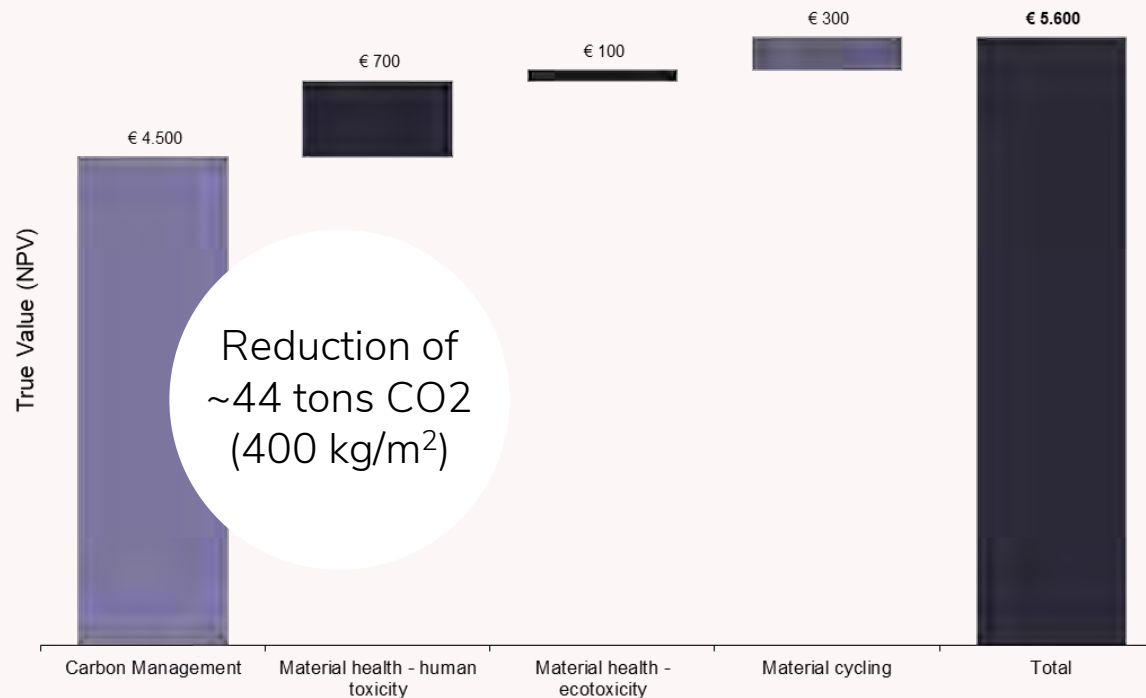
Spaces in the HQ Grupo Construcia project have been matched to the needs of the occupants. There are dedicated focus areas, meeting rooms and working spaces. Transit areas have been included to separate the different functional spaces and control noise levels.

Value to Society

L2C True Value de KPMG & EIG

TRUE VALUE OF PRODUCTIVITY

CASE STUDY CONSTRUCCIA MADRID HQ. BUILT



The graph shows the difference in societal impact between a mainstream reference renovation and the HQ Grupo Construcción renovation. The reference renovation scenario would result in €0,27 societal costs per kilogram renovation material, while the HQ Grupo Construcción renovation project performs 33% better with only €0,18 societal costs per kilogram renovation material.

Spaces in the HQ Grupo Construcción project have been matched to the needs of the occupants. There are dedicated focus areas, meeting rooms and working spaces. Transit areas have been included to separate the different functional spaces and control noise levels.

Construcía Madrid

TENANT'S APPROACH | 1.000 M²



Source: 2019 Eco Intelligent
Growth, Construcía Madrid HQ
Material Passport report

Health

MATERIAL HEALTH INDEX

72 out of 100

95%

In weight of C2C products
or equivalents

MATERIALS

Raw materials and used
products

62,9 t

Nutrients



0,66 t

Waste

MATERIALS

Natural and office lighting	675.000€
Temperature control	616.000 €
Noise levels	8.525.000 €
Air quality	2.167.000 €
Plants and vegetation	2.472.000 €

Society

SOCIAL IMPACT

5.600 €

ECOTOXICITY

100 €

saved society

HUMAN TOXICITY

700 €

ahorrados a la sanidad pública

CICLABILITY OF MATERIALS

300 €

99%

of the installed materials has
a **ciclability path defined.**

REDUCTION OF CO₂ EMISSIONS

44 Tn

of CO₂ eq
reduce

4.500 €

Carbon social
cost

Economy

PRODUCTIVITY (10Y)

4.818.000 €

PRODUCTIVITY (30Y)

14.455.000 €

RESIDUAL VALUE

42.000 €

48.000

- **6,6 %** **7,7 %** (out of budget)

SHARED VALUE (DIFFERENTIAL, 10Y)

4.872.000 €



**eco
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growth**
cradle of
the circular
economy

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