

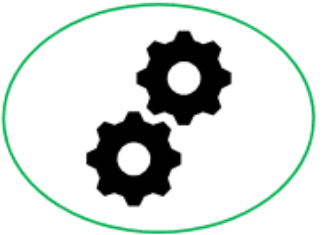
One  
Click 



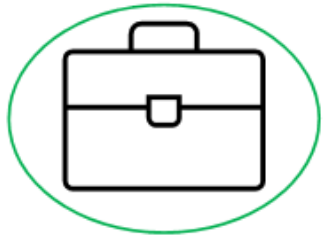
**One Click LCA** – World-leading carbon and life cycle metrics software



**Professional services and Training** – EPD verification/publishing, Sustainable policy, life-cycle assessment, life-cycle costing, CSR



**Custom Solutions** – Branded and white labelled solutions for life-cycle efficiency, best practice tracking, scoring, data collections, environmental impacts assessment, and more



**High Impact Research on Decarbonisation** – The Embodied Carbon Review of 100+ regulations and global rating systems



ABOUT ONE CLICK LCA

# World-leading Carbon & Life-cycle Metrics Software.



## MADE FOR CONSTRUCTION

Buildings and Renovation, Infrastructure, Product EPDs, CSR



## COMPLIES WITH 40+ CERTIFICATIONS

BREEAM, LEED, DGNB, HQE/ E+C-, CEEQUAL, etc.



## INTEGRATE WITH YOUR DESIGN TOOLS

### & 40+ DATABASE

Revit, BIM, IFC file, IESVE, other tools.



# Easy to use tools for construction sustainability metrics and impact reduction



LIFE CYCLE ASSESSMENT



LIFE CYCLE COSTING



EMBODIED CARBON REDUCTION



EARLY DESIGN OPTIMIZATION



CIRCULARITY ASSESSMENT



EPDs GENERATION

# One Click LCA helps to improve your project in every stage



## PRE-PROJECT



## DESIGN



## AS BUILT



Set a target

Decide direction

Optimize design

Specify products

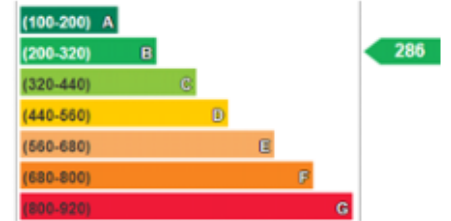
Validate result and compare against peers



Site Designer



Carbon Designer



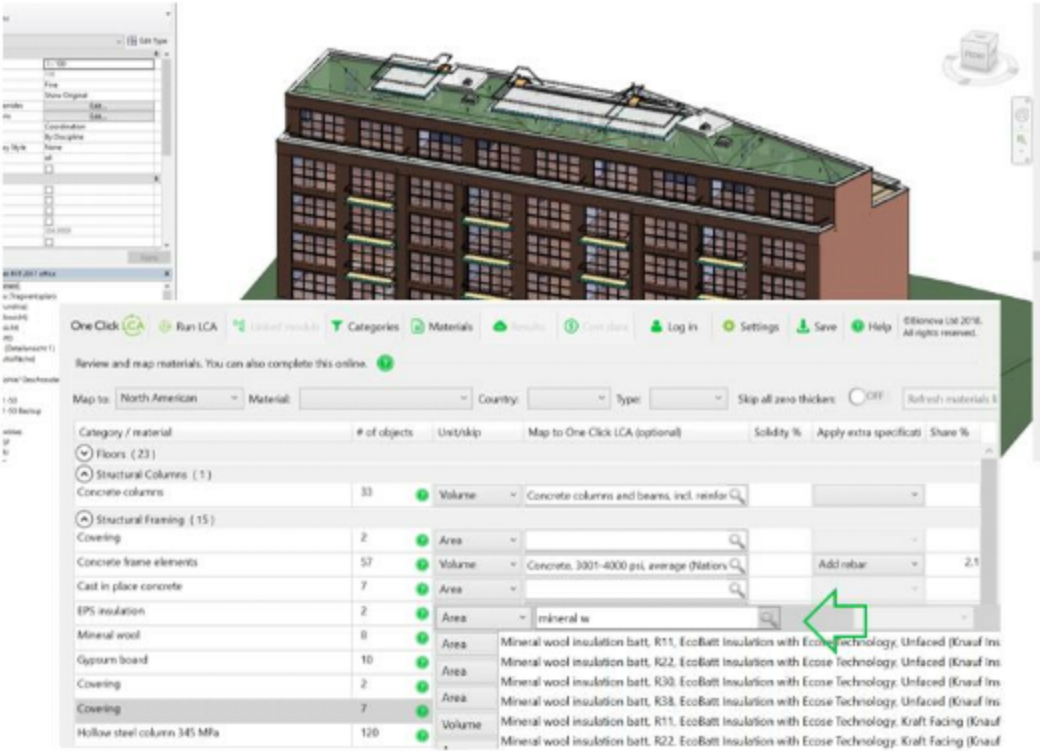
High influence & cost-efficiency: reducing carbon can reduce cost

Some influence & cost savings possible

Limited influence, savings rarely possible

- LOCAL GENERIC DATA (2) - Use when products not chosen or manufacturer has no specific data
- Y Gypsum plaster board, regular, generic, 0.5-25 mm (0.25-0.98 in), 10.725 kg/m<sup>2</sup> (2.20 lbs/ft<sup>2</sup>) (for 12.5 mm/0.49 in), 858 kg/m<sup>3</sup> (53.6 lbs/ft<sup>3</sup>) - One Click LCA 🌱 ?
- Y Gypsum plasterboard, 12.5 mm, 8.985 kg/m<sup>2</sup> (average product weight) (Elex Building Performance) - BRE 🌱 ?
- LOCAL MANUFACTURER SPECIFIC DATA (2) - Use for specific local product or for the closest alternative product
- Y Gypsum plasterboard, high strength, 12.5 mm, 12 kg/m<sup>2</sup>, 984 kg/m<sup>3</sup>, Habito (British Gypsum Saint Gobain) - International EPD System 🌱 ?
- Y Gypsum plasterboard, with square edges, 9.5/12.5 mm, 998 kg/m<sup>3</sup>, 10µ water vapour resistance, Gyproc WallBoard (British Gypsum) - International EPD System 🌱 ?
- REGIONAL GENERIC DATA (4) - Use when no suitable local data available or manufacturer has no specific data
- Y Gypsum plaster board, perforated, 12.5mm, 8.5 kg/m<sup>2</sup>, 580 kg/m<sup>3</sup> - OKOBAUDAT 🌱 ?
- Y Gypsum plaster board, perforated plate, 8.5 kg/m<sup>2</sup>, Rigifone (Saint-Gobain Rigips GmbH) - IBU 🌱 ?
- Y Plaster plate, perforated plate, 11.2 mm, 8.5 kg/m<sup>2</sup>, 760 kg/m<sup>3</sup> (Bundesverband der Gipsindustrie e.V.) - IBU 🌱 ?
- Y Plasterboard, 12.5 mm, 10kg/m<sup>2</sup>, 800 kg/m<sup>3</sup>, DIN EN 520, DIN 18180 (Bundesverband der Gipsindustrie e.V.) - IBU 🌱 ?
- REGIONAL MANUFACTURER SPECIFIC DATA (147) - Use when buying specific product or no local data available

# Automation from Design Tools



**COMPLIANCE TOOLS**

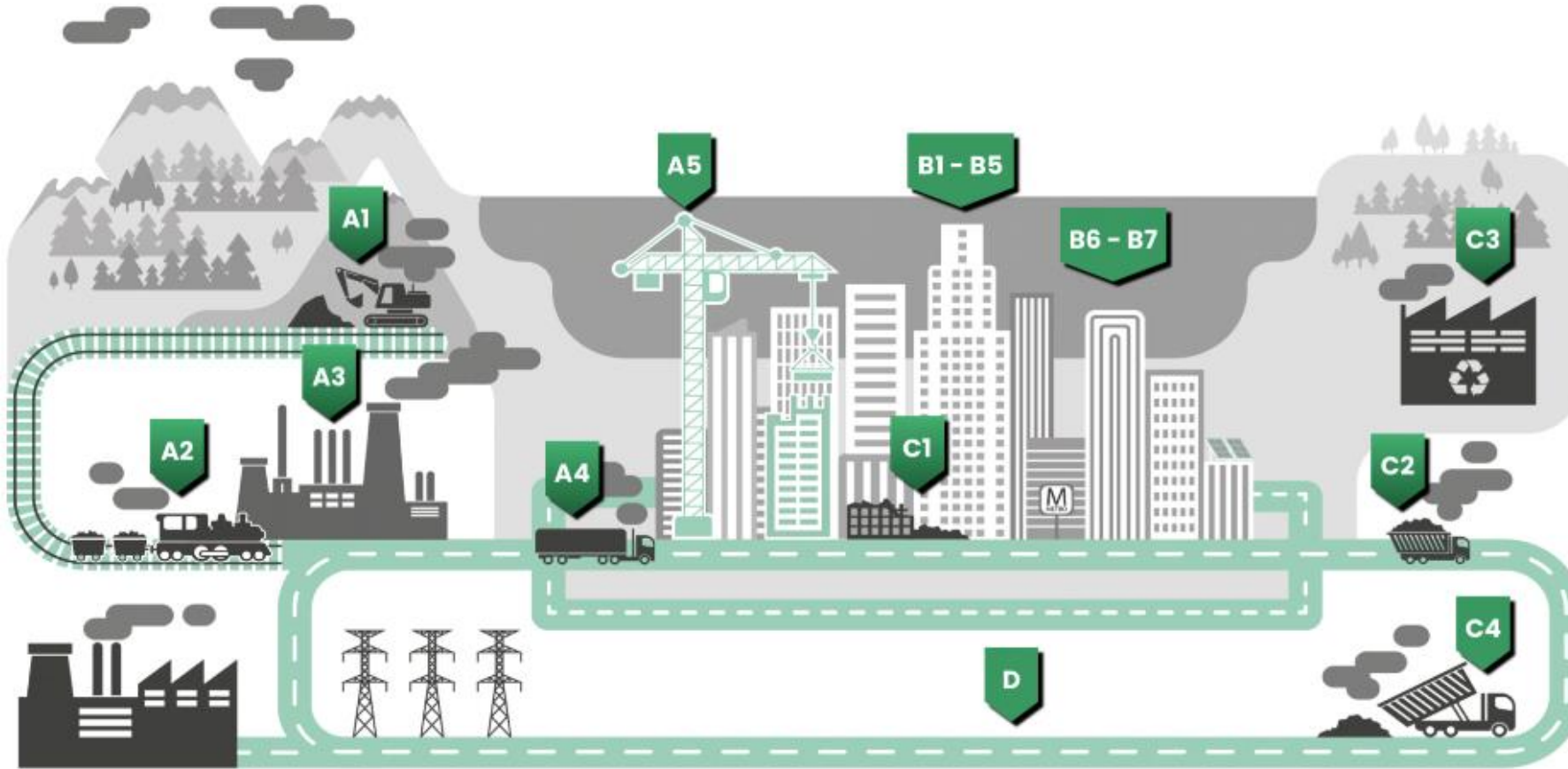
**DESIGN**

**FILE FORMATS**

**BIM MANAGEMENT**







**A1 - A3 Product stage**

- A1** Raw material extraction
- A2** Transport to manufacturing site
- A3** Manufacturing

**A4 - A5 Construction stage**

- A4** Transport to construction site
- A5** Installation / Assembly

**B1 - B5 Use stage**

- B1** Use
- B2** Maintenance
- B3** Repair
- B4** Replacement
- B5** Refurbishment
- B6** Operational energy use
- B7** Operational water use

**C1 - C4 End of life stage**

- C1** Deconstruction & demolition
- C2** Transport
- C3** Waste processing
- C4** Disposal

**D - Benefits and loads beyond system boundary**

Reuse, recovery and/or recycling potentials, expressed as net impacts and benefits

PROJECT LIFE CYCLE INFORMATION

SUPPLEMENTARY INFORMATION BEYOND THE PROJECT LIFE CYCLE

[A1 – A3]			[A4 – A5]		[B1 – B7]					[C1 – C4]								
PRODUCT stage			CONSTRUCTION PROCESS stage		USE stage					END OF LIFE stage								
[A1]	[A2]	[A3]	[A4]	[A5]	[B1]	[B2]	[B3]	[B4]	[B5]	[C1]	[C2]	[C3]	[C4]					
Raw material extraction & supply	Transport to manufacturing plant	Manufacturing & fabrication	Transport to project site	Construction & installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Deconstruction Demolition	Transport to disposal facility	Waste processing for reuse, recovery or recycling	Disposal					
														[B6] Operational energy use				
														[B7] Operational water use				

[D]
Benefits and loads beyond the system boundary
Reuse Recovery Recycling potential



PROJECT LIFE CYCLE INFORMATION

[A1 – A3]			[A4 – A5]		[B1 – B7]					[C1 – C4]								
PRODUCT stage			CONSTRUCTION PROCESS stage		USE stage					END OF LIFE stage								
[A1]	[A2]	[A3]	[A4]	[A5]	[B1]	[B2]	[B3]	[B4]	[B5]	[C1]	[C2]	[C3]	[C4]					
Raw material extraction & supply	Transport to manufacturing plant	Manufacturing & fabrication	Transport to project site	Construction & installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Deconstruction Demolition	Transport to disposal facility	Waste processing for reuse, recovery or recycling	Disposal					
														[B6] Operational energy use				
														[B7] Operational water use				

SUPPLEMENTARY INFORMATION BEYOND THE PROJECT LIFE CYCLE

[D]
Benefits and loads beyond the system boundary
Reuse Recovery Recycling potential

What most regulations focus on at the moment

PROJECT LIFE CYCLE INFORMATION

SUPPLEMENTARY INFORMATION BEYOND THE PROJECT LIFE CYCLE

[A1 – A3]			[A4 – A5]		[B1 – B7]					[C1 – C4]								
PRODUCT stage			CONSTRUCTION PROCESS stage		USE stage					END OF LIFE stage								
[A1]	[A2]	[A3]	[A4]	[A5]	[B1]	[B2]	[B3]	[B4]	[B5]	[C1]	[C2]	[C3]	[C4]					
Raw material extraction & supply	Transport to manufacturing plant	Manufacturing & fabrication	Transport to project site	Construction & installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Deconstruction Demolition	Transport to disposal facility	Waste processing for reuse, recovery or recycling	Disposal					
														[B6] Operational energy use				
														[B7] Operational water use				

[D]
Benefits and loads beyond the system boundary
Reuse Recovery Recycling potential

Cradle to gate

PROJECT LIFE CYCLE INFORMATION

[A1 – A3]			[A4 – A5]		[B1 – B7]					[C1 – C4]								
PRODUCT stage			CONSTRUCTION PROCESS stage		USE stage					END OF LIFE stage								
[A1]	[A2]	[A3]	[A4]	[A5]	[B1]	[B2]	[B3]	[B4]	[B5]	[C1]	[C2]	[C3]	[C4]					
Raw material extraction & supply	Transport to manufacturing plant	Manufacturing & fabrication	Transport to project site	Construction & installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Deconstruction Demolition	Transport to disposal facility	Waste processing for reuse, recovery or recycling	Disposal					
														[B6] Operational energy use				
														[B7] Operational water use				

SUPPLEMENTARY INFORMATION BEYOND THE PROJECT LIFE CYCLE

[D]
Benefits and loads beyond the system boundary
Reuse Recovery Recycling potential

Cradle to practical completion

PROJECT LIFE CYCLE INFORMATION

[A1 – A3]			[A4 – A5]		[B1 – B7]					[C1 – C4]								
PRODUCT stage			CONSTRUCTION PROCESS stage		USE stage					END OF LIFE stage								
[A1]	[A2]	[A3]	[A4]	[A5]	[B1]	[B2]	[B3]	[B4]	[B5]	[C1]	[C2]	[C3]	[C4]					
Raw material extraction & supply	Transport to manufacturing plant	Manufacturing & fabrication	Transport to project site	Construction & installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Deconstruction Demolition	Transport to disposal facility	Waste processing for reuse, recovery or recycling	Disposal					
														[B6] Operational energy use				
														[B7] Operational water use				

SUPPLEMENTARY INFORMATION BEYOND THE PROJECT LIFE CYCLE

[D]
Benefits and loads beyond the system boundary
Reuse Recovery Recycling potential

**Cradle to Grave**



PROJECT LIFE CYCLE INFORMATION

SUPPLEMENTARY INFORMATION BEYOND THE PROJECT LIFE CYCLE

[A1 – A3]			[A4 – A5]		[B1 – B7]					[C1 – C4]			
PRODUCT stage			CONSTRUCTION PROCESS stage		USE stage					END OF LIFE stage			
[A1]	[A2]	[A3]	[A4]	[A5]	[B1]	[B2]	[B3]	[B4]	[B5]	[C1]	[C2]	[C3]	[C4]
Raw material extraction & supply	Transport to manufacturing plant	Manufacturing & fabrication	Transport to project site	Construction & installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Deconstruction Demolition	Transport to disposal facility	Waste processing for reuse, recovery or recycling	Disposal
					[B6] Operational energy use								
					[B7] Operational water use								

[D]
Benefits and loads beyond the system boundary
Reuse Recovery Recycling potential

Embodied Carbon Assessment

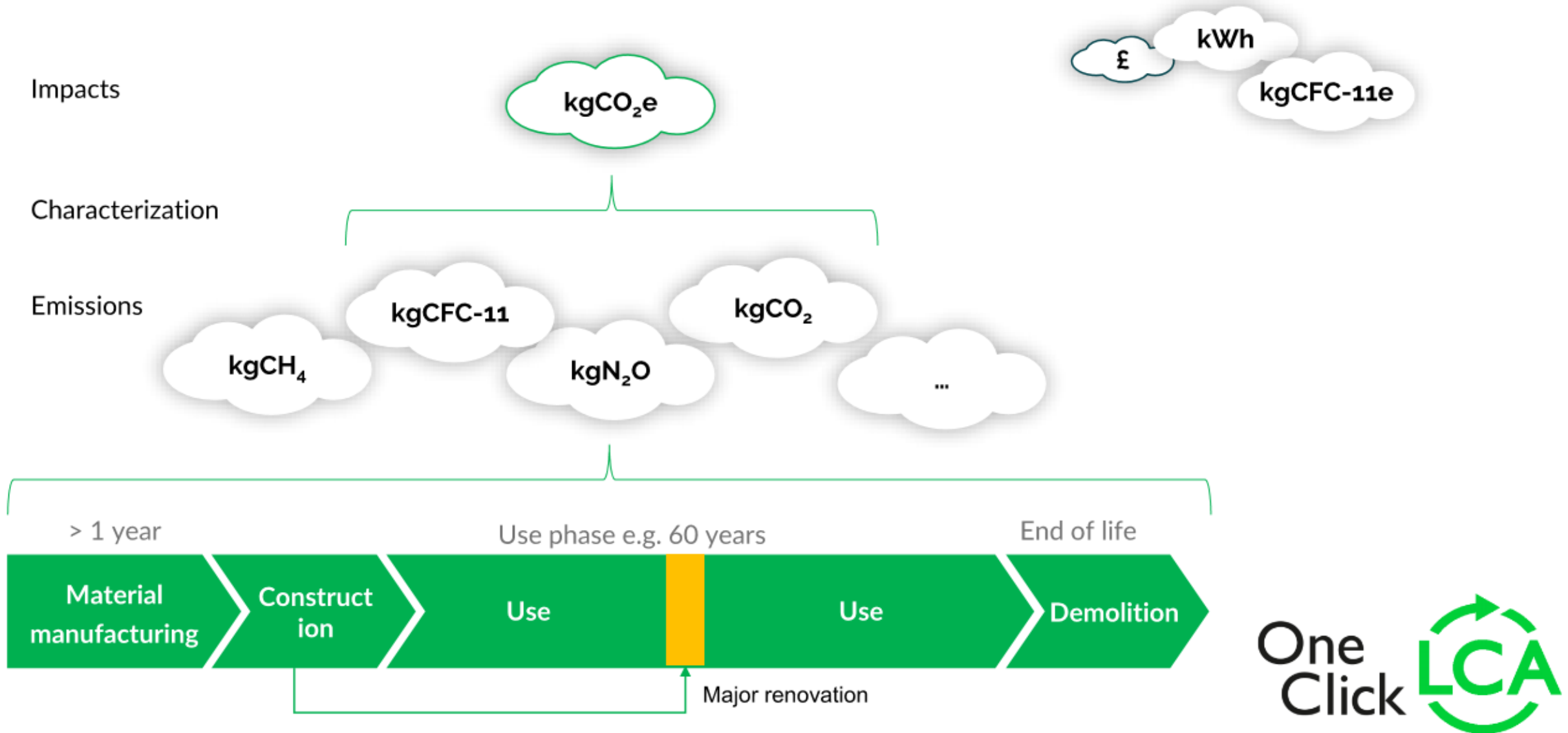


## LCA outputs are environmental indicators

**Each indicator describes a particular category of environmental impacts.** The impacts are expressed as quantities of a matter that has the potential to cause such impacts – but they do not represent the actual harm (final impact, e.g. endpoint) eventually caused. For instance, global warming potential represents the amount of CO<sub>2</sub>e gases released. But the final impact is the acceleration to the polar melt, for instance.

- **Global Warming Potential** describes how much a product contributes to climate change. When LCA concerns only this impact category, it's called the carbon footprint.
- **Acidification** describes how much product acidifies the environment, resulting e.g. acid rain.
- **Eutrophication** describes flow of nutrients to ecosystems, resulting e.g. to algae growth.
- **Ozone Depletion** describes damage caused to the Ozone Layer in the stratosphere.
- **Tropospheric Ozone** describes the quantity of summer smog causing gases emitted.
- **Depletion of fossil resources** describes how much fossil resources are withdrawn.

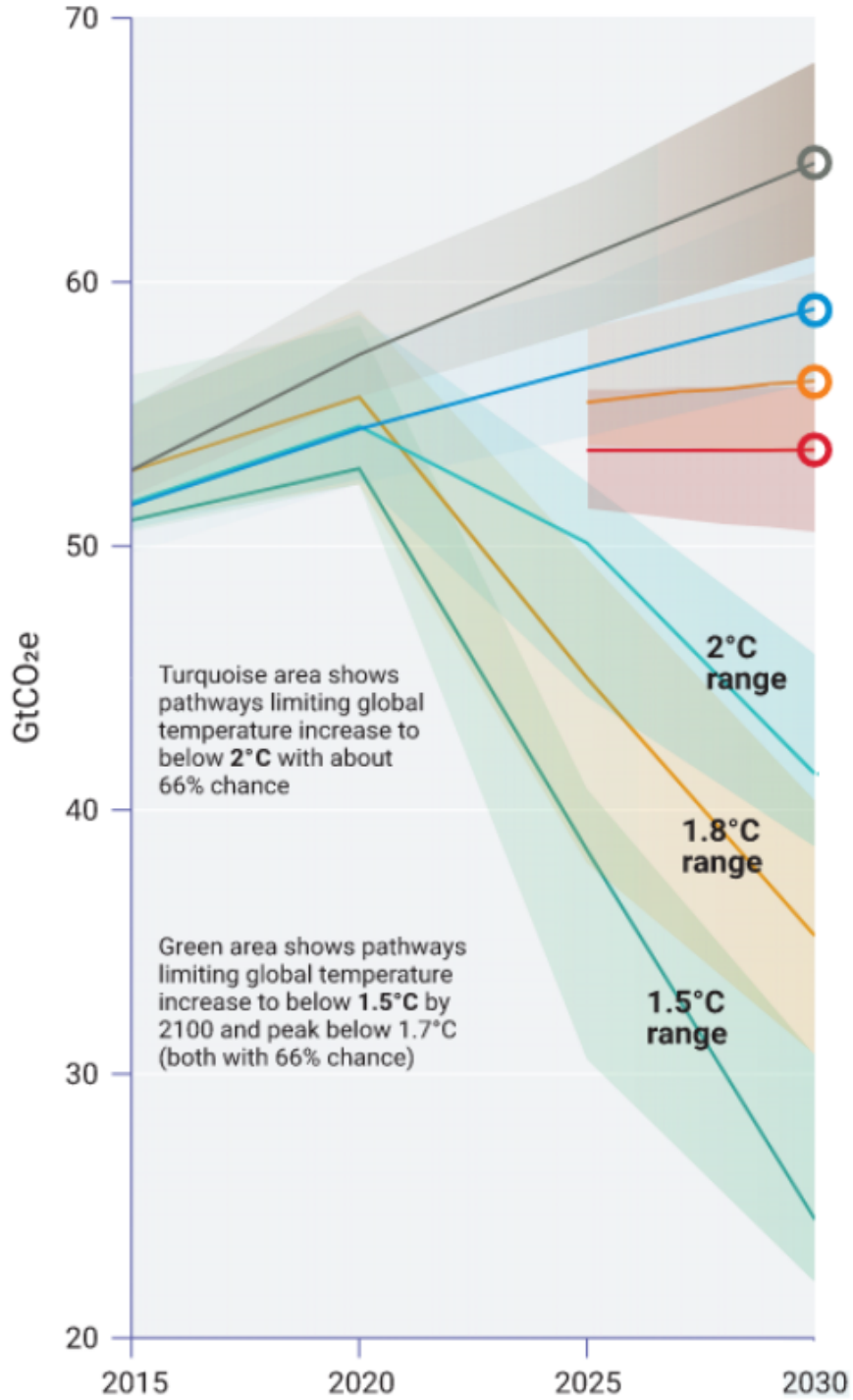
# Characterization



## LCA characterization methods

**Impact assessment methodology defines the target units and emission characterization factors.** European standards require using CML (Characteration Factor). North American data is normally in TRACI method.

LCA impact indicator units	CML 2002	TRACI 2.1	ReCiPe
Global warming potential	CO <sub>2</sub> e	CO <sub>2</sub> e	CO <sub>2</sub> e
Ozone depletion potential	CFC-11-eq	CFC-11-eq	CFC-11-eq
Acidification potential (land)	SO <sub>2</sub> e	SO <sub>2</sub> e	SO <sub>2</sub> e
Eutrophication potential (fresh water)	PO <sub>4</sub> <sup>3</sup> e	N eq	P eq
Formation of tropospheric ozone(photochemical oxidant formation)	C <sub>2</sub> H <sub>4</sub> e	NO <sub>x</sub> eq	kg NMVOC
Depletion of non-renewable energy resources	MJ	MJ	Kg oil eq



2010 Policies Scenario

Current policies Policies Scenario

Current targets

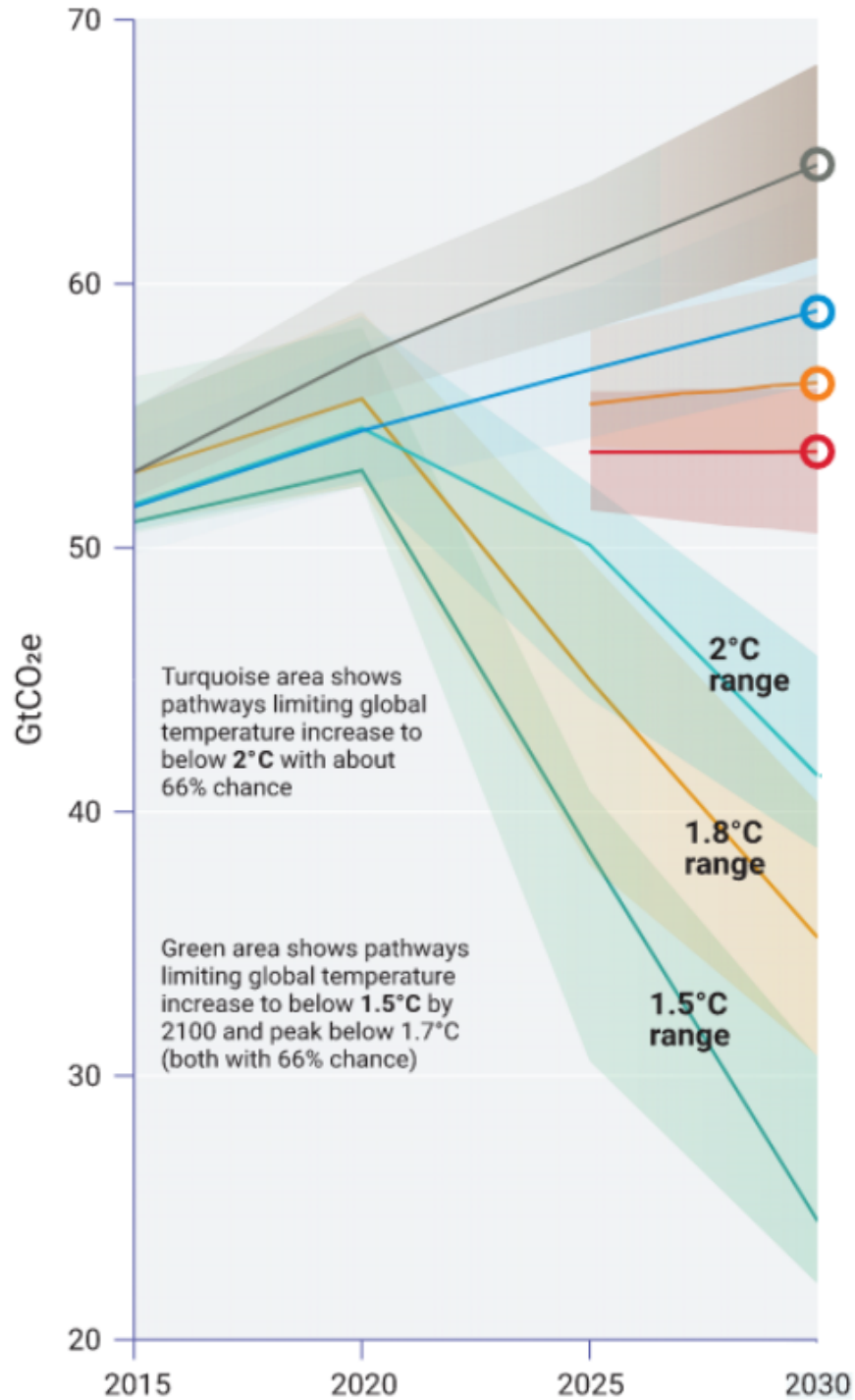
Predicted global GHGs

Current level 53 GtCO<sub>2</sub>e /a

**Emissions on 2030 with current actions 55 – 60 GtCO<sub>2</sub>e/a**

**← 25-30 GtCO<sub>2</sub>e/a**

Source: UN EP Emission Gap Report 2020.



Restricting global warming to 1,5 degrees requires approx. **35 GtCO<sub>2</sub>e of additional emission reduction measures**

Source: UN EP Emission Gap Report 2020.





**Buildings are responsible for 39% of global carbon emissions:**



**28% from operational emissions**



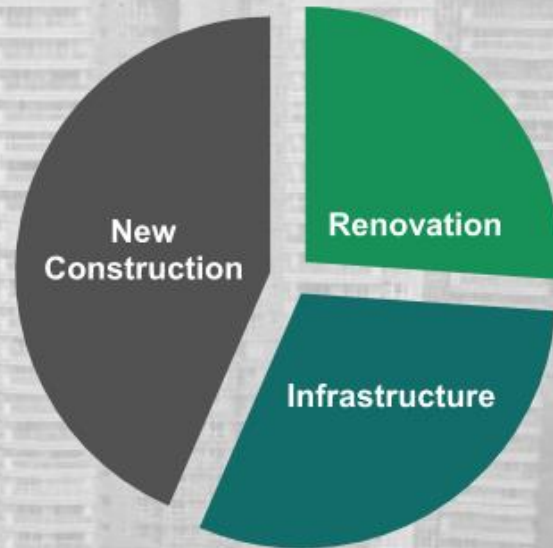
**11% from materials and construction**

**SOURCE: BRINGING EMBODIED CARBON UPFRONT**



# Cities will double by 2060, creating 150-250 gigatons of embodied carbon from construction materials

CITIES GROW  
**230 BILLION M<sup>2</sup>**  
BY 2060



GENERATING  
**150-250 GIGATONS**  
EMBODIED CARBON

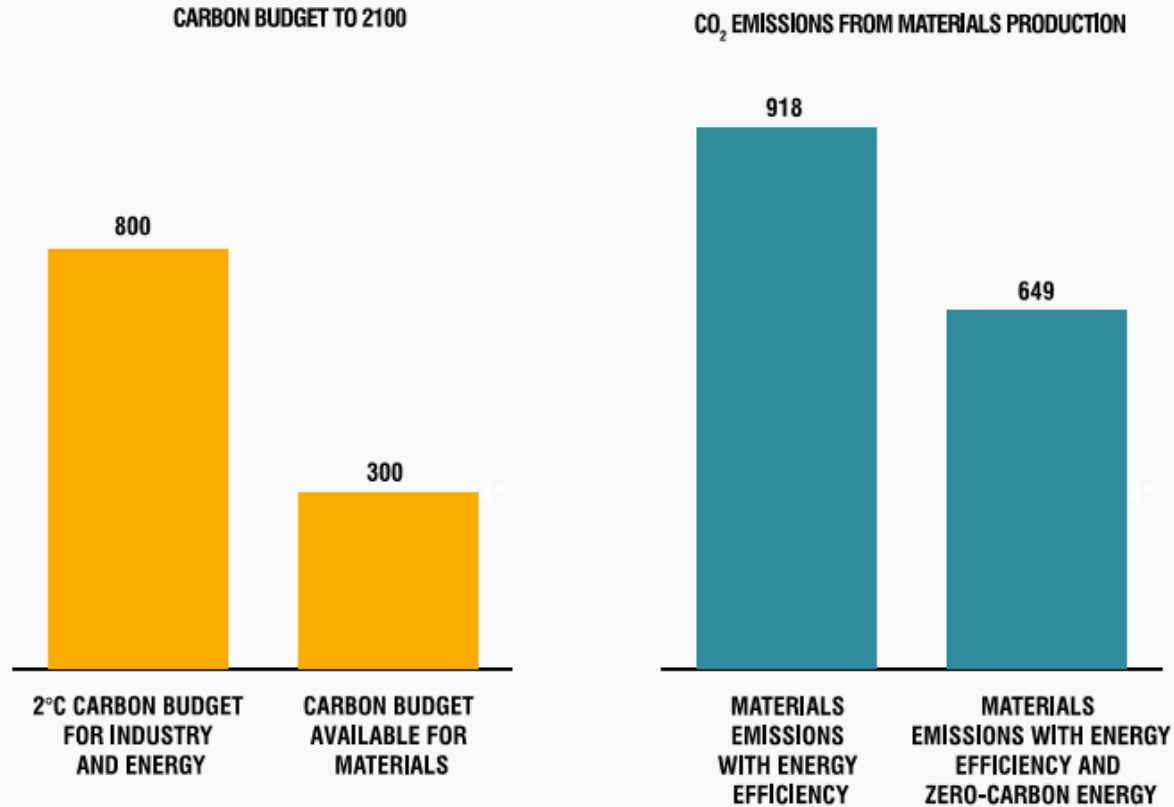
# Emissions from material manufacturers alone risk exceeding the 2-degree emission scenario

Aim, 2 degrees

Full carbon budget for industry and power generation & budget for 4 main materials (Steel, plastics, concrete, aluminium)



CO<sub>2</sub> EMISSIONS AND CARBON BUDGET  
Gt TONNES CO<sub>2</sub>



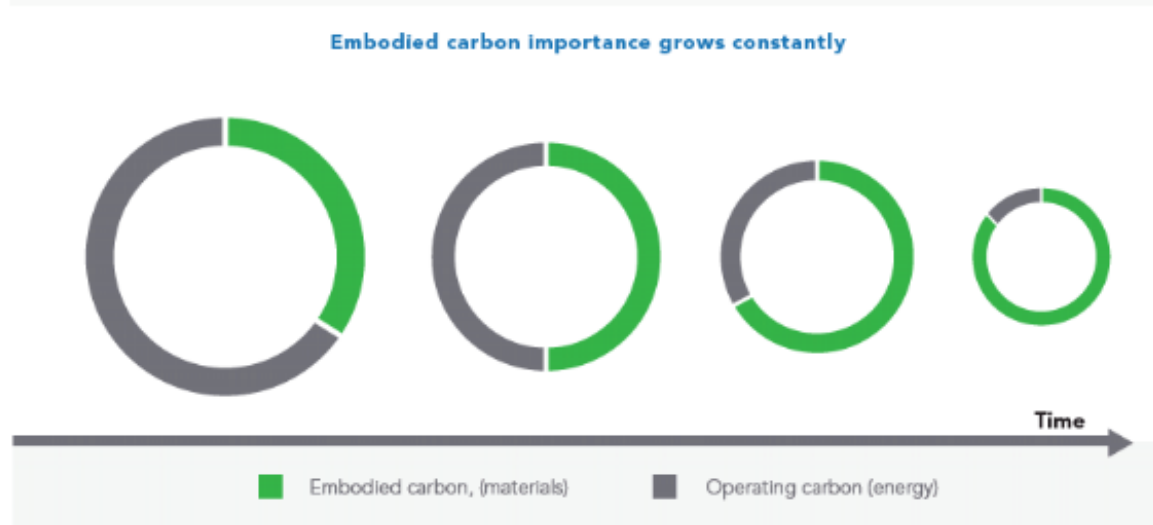
Current state

Emissions of materials with reduction of energy emissions

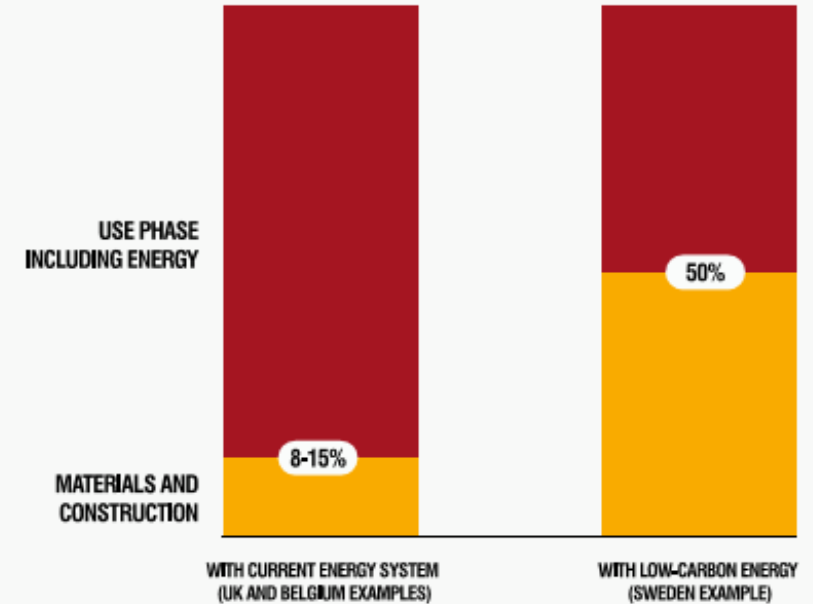


# How emissions are created during building life cycle?

- Energy efficiency and cleaner production reduce the emissions from operational energy
- Material emissions already exceed emissions of operating energy within a 50-year time frame, for some countries



LIFECYCLE CO<sub>2</sub> EMISSIONS FROM BUILDINGS  
% OF CO<sub>2</sub> EMISSIONS DURING LIFETIME





# World GBC: We need to be cutting embodied carbon now

All construction to be  
**operationally carbon neutral**  
and create at least  
**40 % less embodied carbon**  
by 2030



WORLD  
GREEN  
BUILDING  
COUNCIL



*Embodied carbon = CO<sub>2</sub>e from manufacturing, transporting, replacing and disposing of materials*

Source: <https://www.worldgbc.org/embodied-carbon1/2>



# Summary of Industry trends

BREEAM®



Certifications Like BREEAM and LEED increasing credits and weighting in material sections



Investestors and developers growing geen agenda and Zero carbon commitments

amazon



European commission has released their Level(s) framework for sustainable construction.



Amount of manufacturer EPDs in Europe and also globally increase rapidly. France has regulated EPD's.



Many countries and cities are moving towards building LCA regulation and requirements to achieve their carbon targets.

MAYOR OF LONDON

## LCA follows standards

### **Cornerstone standards**

ISO 14040 and ISO 14044 – fundamentals for LCA; used in all industries and in professional context, almost all the time

### **Construction works specific standards**

EN 15978 – LCA standard for construction projects

ISO 21929-1 and ISO 21931-1 - hardly used LCA standards in Europe

### **Environmental Product Declaration standards**

ISO 14025 – cornerstone standard for all kinds of EPDs

EN 15804 (EPD data) and EN 15942 (EPD format)

ISO 21930 – hardly used EPD standard in Europe



## Generic LCA principles

**Life-cycle assessment may be done with several different scopes:**

- cradle to gate (product before use),
  - cradle to grave (product, including use and final disposal) basis,
- Note!** for construction projects, the natural scope is always cradle to grave.

**The construction LCA standards use attributional approach.**

Attributional LCA assigns responsibility using allocation methodology and avoids the use of system expansion.

**Conduct an LCA following agreed EN & ISO standards or National methodology like RICS**

**An LCA may be used to** identify performance gaps, compare products, make procurement decisions or improve designs, amongst others.

# Environmental Product Declarations (EPDs)



Software ▾

Solutions ▾

Resources

Pricing ▾

Support ▾

FREE TRIAL

LOGIN

Embodied Carbon & Circular Economy Road Tour, World Green Building Week, 23-29 Sept. Join us [online](#) or in 6 countries!

## Calculate Your Environmental Impacts in Minutes



Reduce Cost, Carbon, and Material Use in Construction.

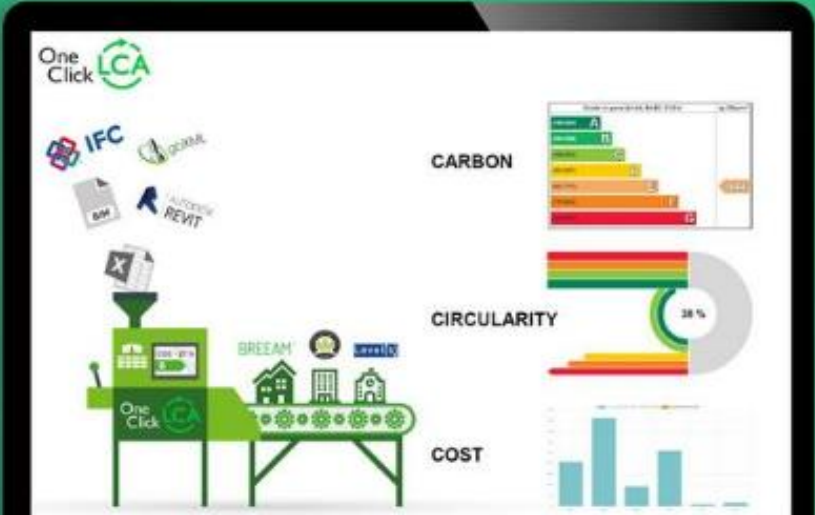


For LEED, BREEAM and more.



Integrated with Revit, BIM, IESVE and other tools.

GET A FREE DEMO



# An EPD is an LCA for a product with additional rules for calculation, verification and publication




**Rakennustietosäätiö  
RTS Building  
Information**

**19. Ympäristövaikutukset**

Vaikutukset esitetään ilmoitus yksiköä kohti. Ilmoittajan ympäristövaikutukset muodostuvat pääosin tuotannosta.

Ympäristövaikutukset				
Ympäristövaikutusluokka	Yksikkö	A1	A2	A3
Ilmastotasonmuutos	kg CO2 ekv	6,24E1	1,99E0	1,59E-1
Oksygeni	kg OPC 11 ekv	1,78E-6	4,25E-7	3,88E-8
Väestöarvojen muutos	kg eteen ekv	9,89E-3	2,57E-4	2,91E-5
Happamotus	kg SO2 ekv	1,37E-1	9,98E-3	3,58E-4
Rehokäytös	kg (PO4)- ekv	3,78E-2	2,18E-3	2,83E-4
Uusien tuotteiden valmistus	kg Sb ekv	3,78E-4	3,72E-3	4,40E-4
Uusien tuotteiden valmistus	kg	2,93E2	5,49E1	2,49E0

This verified Environmental Product Declaration assessment, life-cycle costing and sustainability



**CONSOLIS  
PARMA**

Ympäristövaikutukset				
Ympäristövaikutusluokka	Yksikkö	B4	B5	B6



**Environmental Product Declaration**

BREG EN EPD No.: 000001  
ECO EPD Ref. No.: 000091


This is to certify that this verified Environmental Product Declaration provided by:  
**Forterra Building Products**

is in accordance with the requirements of the EN 15804:2012+A1:2013

This declaration is for:  
**Thermalite Autoclave (kg/m3)**

**Company Address**  
5 Grange Park Court  
Roman Way  
Northampton  
NN4 5EA

**ENVIRONMENTAL PRODUCT DECLARATION**



Insulated Metal Panels  
Industry-Wide EPD

This declaration is an environmental product declaration in accordance with EN 15804:2012+A1:2013. It does not guarantee that any performance benchmarks, including any benchmarks, are met. EPDs are intended to complement Type I or Type II EPDs provide LCA-based information and additional information on products and assist purchasers and users to make informed comparisons. EPDs encourage improvement of environmental performance. EPDs encourage improvement of environmental performance by providing information for assessing the environmental impacts of products on an LCA covering all life cycle stages, or based on a different Product Category Rule (PCR) that have limited comparability. EPDs from different programs may not be comparable.

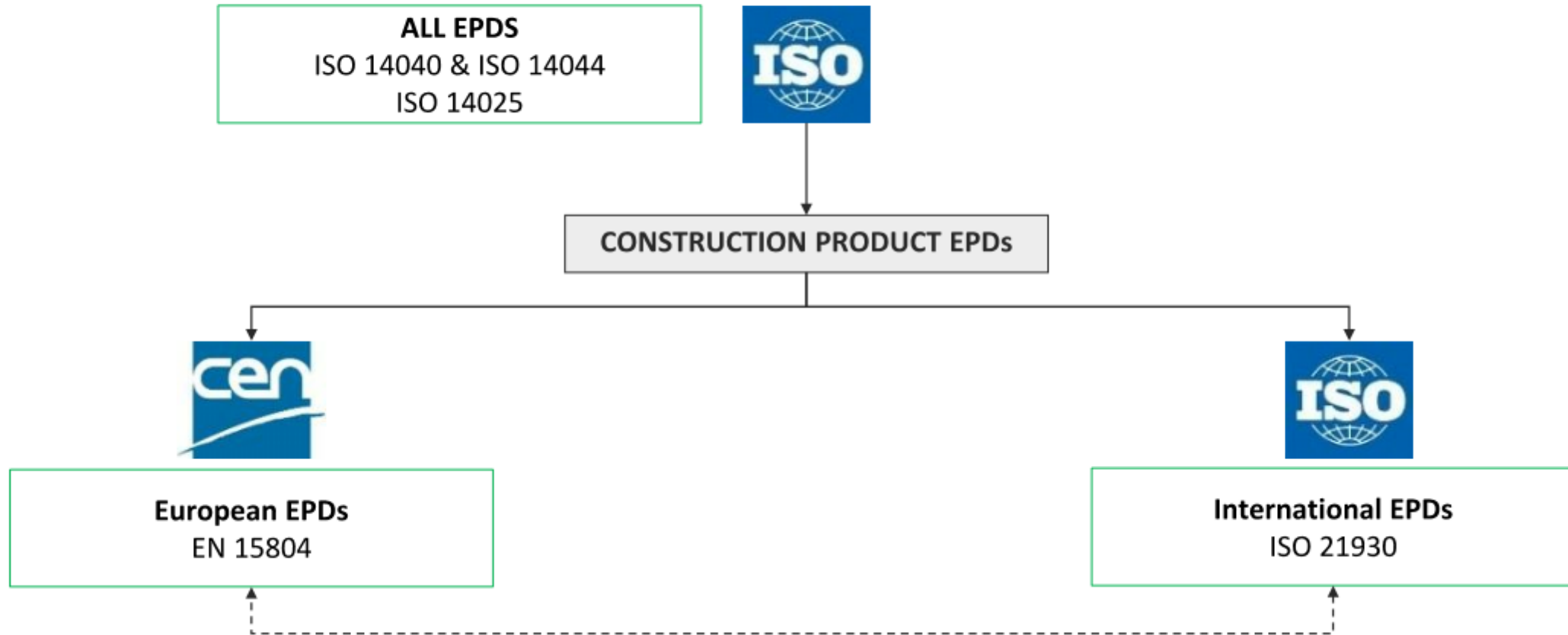
PROGRAM OPERATOR	UL Environment
DECLARATION HOLDER	Metal Construction Association (MCA)
DECLARATION NUMBER	13CA27321.101.1
DECLARED PRODUCT	Insulated Metal Panels
REFERENCE PCR	Insulated Metal Panels & Metal Panels (UL, October 2012)
DATE OF ISSUE	27 August 2013
PERIOD OF VALIDITY	5 Years
CONTENTS OF THE DECLARATION	Product definition and information Information about basic material Description of the product's manufacturing process Indication of product processing Information about the in-use carbon footprint Life cycle assessment results Testing results and verifications
The PCR review was conducted by:	
This declaration was independently verified in accordance with 14025 by Underwriters Laboratories	<input type="checkbox"/> INTERNAL <input checked="" type="checkbox"/> EXTERNAL

# EPD in a Nutshell

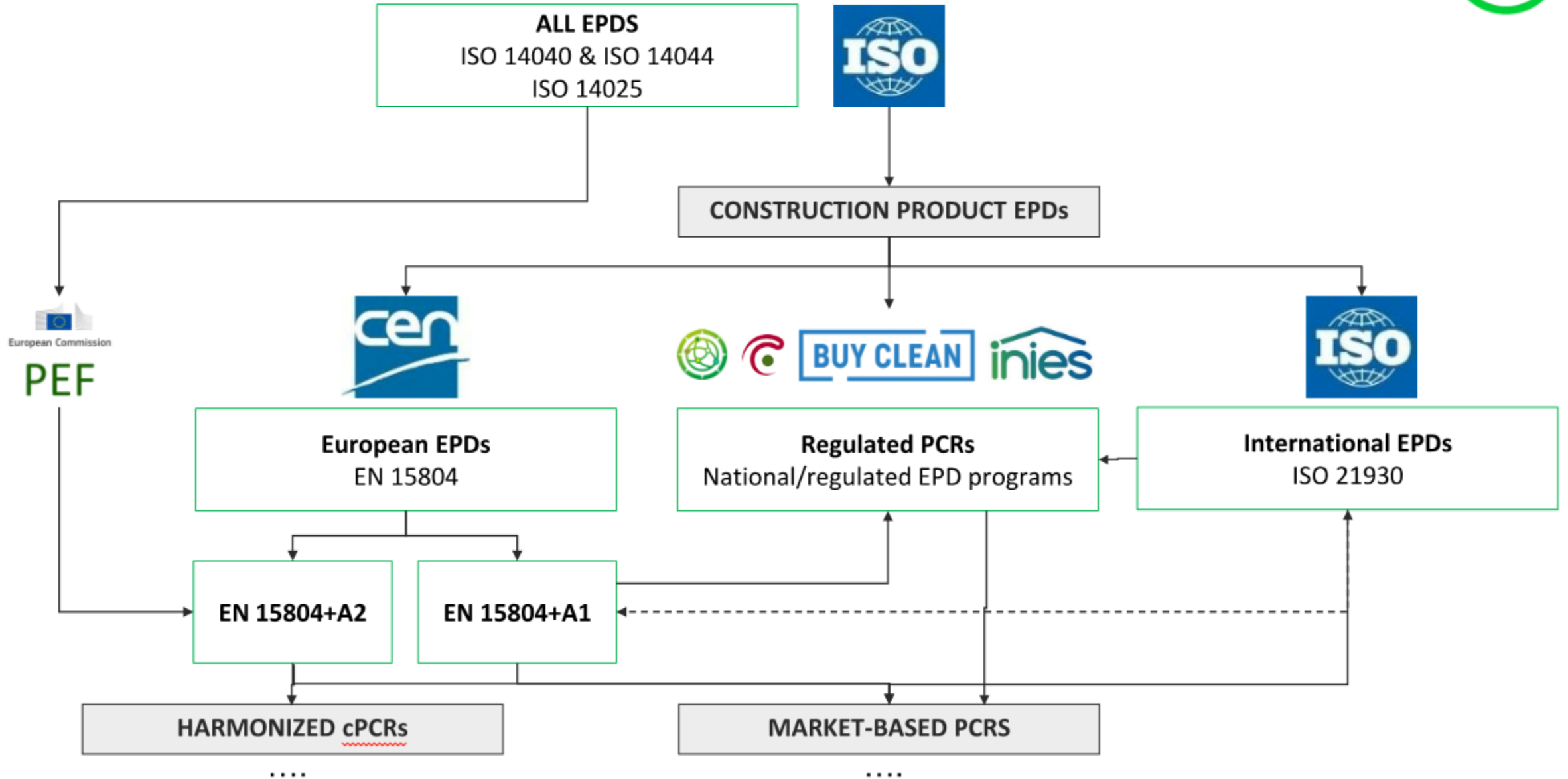
- Based on real data, no forecasting
- Can represent either one product and one factory or many products and many factories
- Often valid for 5 years
- Several kinds of EPDs, that represent different scopes
  - Cradle-to-gate
  - Cradle-to-grave
  - Cradle-to-gate with options
- Offer knowledge on the product's environmental performance. Only similar products that are calculated with same methods can be compared.



# The family of EPD standards...



# ... is growing fast!





# Example EPD



**FINNFOAM**

## ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025 / ISO 21930

### TULPPA - WET ROOM BOARDS

FINNFOAM OY



### PRODUCT DESCRIPTION

Finnfoam Oy's Tulppa is a Finnish-made wet room panel, which functions as both a construction board and waterproofing material. The core of the panel is made from a closed-cell, waterproof and mold-proof Finnfoam (XPS) insulation material and the surface layer consists of strong, special-purpose cement mortar. The Tulppa panel can be used as a base for tiling.

### PRODUCT APPLICATION

Tulppa is a horizontally installed wet room panel, which functions as both a construction board and waterproofing material.

### DECLARED AND FUNCTIONAL UNIT

Declared unit	1 m <sup>2</sup>
<b>Mass per declared unit</b>	3.54 kg (with 12.5 mm XPS)
	3.80 kg (with 20 mm XPS)
	4.15 kg (with 30 mm XPS)
	4.85 kg (with 50 mm XPS)
	5.90 kg (with 80 mm XPS)

#### TULPPA WITH 12.5 MM XPS

#### CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
Climate change - total	kg CO <sub>2</sub> e	2,285+00	5,075+01	-1,187-01	5,985+00	8,985+02	5,985+01	MND	3,005+00	2,250+00	2,485+00	3,985+00	4,035+01
Climate change - fossil	kg CO <sub>2</sub> e	2,275+00	5,075+01	4,005+01	3,130+00	7,945+02	3,025+02	MND	3,005+00	2,250+00	2,280+01	3,985+00	4,035+01
Climate change - biogenic	kg CO <sub>2</sub> e	1,000+00	2,700+00	-2,192+01	4,120+01	5,110+00	5,280+01	MND	3,005+00	1,200+00	1,805+00	3,985+00	-4,200+04
Climate change - GLOBE	kg CO <sub>2</sub> e	1,280+00	1,800+00	4,000+00	4,480+00	7,120+00	2,720+00	MND	3,005+00	1,480+00	1,480+00	3,985+00	3,760+04
Ozone depletion	kg CFC11e	1,020+01	1,150+01	8,970+00	3,960+01	1,884+00	1,910+00	MND	3,005+00	4,740+00	7,480+00	3,985+00	1,875+01
Acidification	meq H <sup>+</sup> e	3,980+00	3,070+00	3,110+00	1,480+00	3,980+04	8,310+00	MND	3,005+00	3,280+00	3,880+04	3,985+00	4,120+02
Eutrophication, aquatic freshwater	kg P <sub>e</sub>	4,370+00	4,290+00	3,020+00	4,420+00	8,710+01	1,280+01	MND	3,005+00	1,860+01	1,860+01	3,985+00	1,770+00
Eutrophication, aquatic marine	kg N <sub>e</sub>	2,880+00	4,140+00	4,760+00	3,170+00	8,910+00	5,880+00	MND	3,005+00	2,740+00	1,880+00	3,985+00	7,980+00
Eutrophication, terrestrial	kg N <sub>e</sub>	3,210+00	4,720+00	4,780+00	3,680+00	8,840+00	3,870+00	MND	3,005+00	3,330+00	1,920+00	3,985+00	7,490+00
Photochemical ozone formation	kg NMVOC <sub>e</sub>	3,700+00	2,980+00	1,480+00	1,200+00	3,480+00	1,880+00	MND	3,005+00	4,910+00	4,020+00	3,985+00	2,470+00
Acidic equivalent, metals & metals <sup>†</sup>	kg Sb <sub>e</sub>	1,730+04	1,370+00	2,770+00	1,980+04	1,820+00	1,880+01	MND	3,005+00	3,810+01	3,020+01	3,985+00	4,110+01
Acidic equivalent, total resources <sup>††</sup>	N <sub>e</sub>	3,020+01	1,040+00	1,880+01	3,020+01	1,040+00	1,110+01	MND	3,005+00	3,420+01	3,210+01	3,985+00	-1,150+01
Minerals <sup>†††</sup>	kg Sb <sub>e</sub> (acid)	4,000+01	3,400+00	2,940+01	1,880+01	4,010+02	2,020+02	MND	3,005+00	1,220+01	3,540+02	3,985+00	-1,880+01

<sup>†</sup> The required characterization method weights are in kg Pb<sub>e</sub> to get GLOBE, multiply the result by 3.07.

<sup>††</sup> EN 15804+A2 Directive 2: "The results of this environmental impact indicator shall be used with care as the uncertainties on these results are higher as there is limited experience with the indicator."

# Comparing EPDs

## DECLARED UNIT

Declared unit	1 m <sup>2</sup>
Mass per declared unit	500 kg/m <sup>2</sup>

## ENVIRONMENTAL IMPACT DATA

Note: additional environmental impact data may be presented in annexes.

### CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4
GWP – total	kg CO <sub>2</sub> e	6,58E1	4,89E0	3,86E0	7,45E1	5,49E0	MND	MND	MND	MND	MND
GWP – fossil	kg CO <sub>2</sub> e	6,48E1	4,89E0	3,69E0	7,33E1	5,54E0	MND	MND	MND	MND	MND
GWP – biogenic	kg CO <sub>2</sub> e	9,83E-1	2,97E-3	1,49E-1	1,14E0	3,4E-3	MND	MND	MND	MND	MND
GWP – LULUC	kg CO <sub>2</sub> e	1,78E-2	1,73E-3	1,4E-2	3,36E-2	1,96E-3	MND	MND	MND	MND	MND
Crude depletion pot.	kg CO <sub>2</sub> e	2,00E-2	1,10E-2	5,00E-3	4,50E-2	1,00E-2	MND	MND	MND	MND	MND

# Carbon footprint and LCA gives points in green building certifications



LCA: 3 + 1 pistettä  
EPDs: 2 pistettä



LCA: 5 + 1 credits  
LCC: 3 credits  
EPDs: 1 + 1 credits



**World's Most Sustainable Office Building – UK (BREEAM)**

One Click LCA was used to calculate LCA for the World's Most Sustainable Office Building, Bloomberg's New European Headquarters.



**Zoo Atlanta Savannah Hall and Exhibit – US (LEED)**

Read this case study on Life Cycle Assessment for LEED v4 and find out how Epsten Group used One Click LCA for their Savannah Hall project.



**Shopping center I3 – Finland**

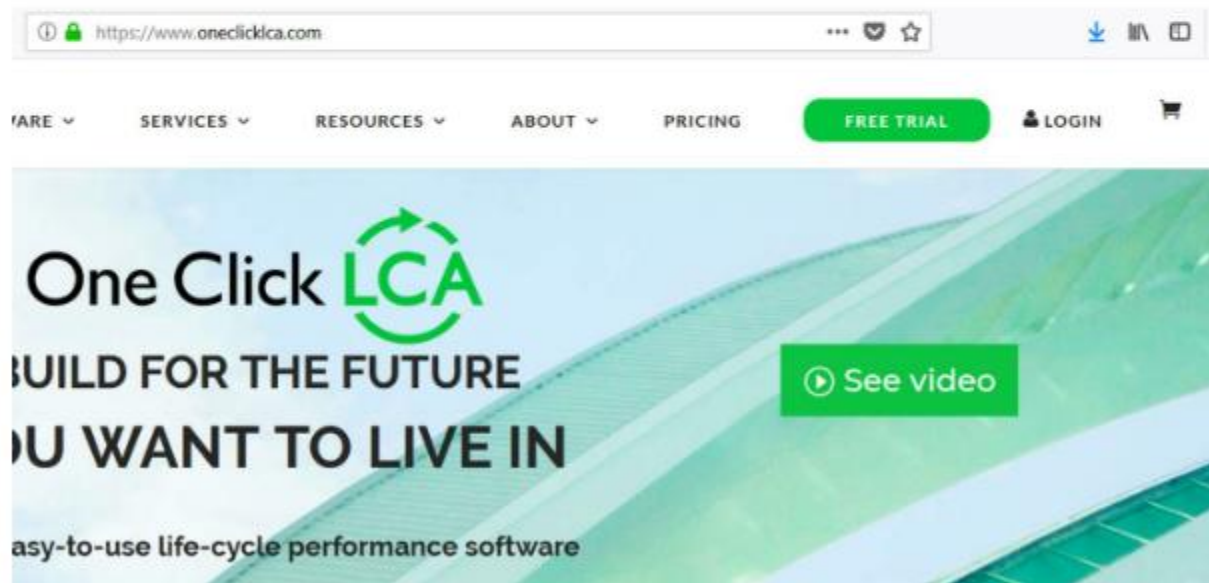
Granlund has used One Click LCA to measure Life-Cycle metrics for their Kauppakeskus I3 project in Finland.





# Create account

1. Go to oneclicklca.com
2. Choose “Login” from the right corner of the page
3. In the login form choose “New user? Register here!”
4. Fill in your information
5. Activate the account from the link in your email
6. Log in to One Click LCA using the same login form



# Create project and activate licence

1. Select “Create a new project”
2. Select “Building”
3. Choose building and add basic information for your own building and save.
4. Activate your licence by typing the licence key provided by your teacher.
5. Press “Get started” and add the Level(s) tool.





# Getting started – Inside the project

- 1/ Click on "Getting Started" button and
- 2/ name your 1<sup>st</sup> design

## › General information



Create at least one design to start calculations. Click Get Started to continue.

## ▼ Design phase: 0 designs

Choose calculation tools and set up calculations [Get started](#)

### Available calculation tools - [Get more tools](#)

Tools available in applied licences

- Whole life carbon assessment, RICS** This tool meets the RICS professional standards and guidance, whole life carbon assessment for the b [See all](#)
- Building Circularity** Material efficiency and circular economy - for BREEM MAT 06 and GRI G4 reporting as well as other p [See all](#)

[Toggle all](#) [Next](#)

### Create a design

**Name, design stage and calculation tools**

Name

Additional information (e.g. description in portfolio)

Stage of construction process (RIBA / AIA stages)

Choose the tools you want to use in this design

- Whole life carbon assessment, RICS
- Building Circularity

**Scope and type of analysis**

Pre-defined scopes (if available)

Project type

Frame type

Included parts. Check all applicable.

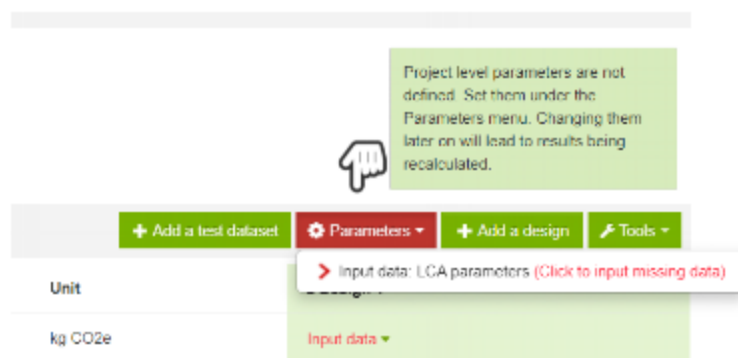
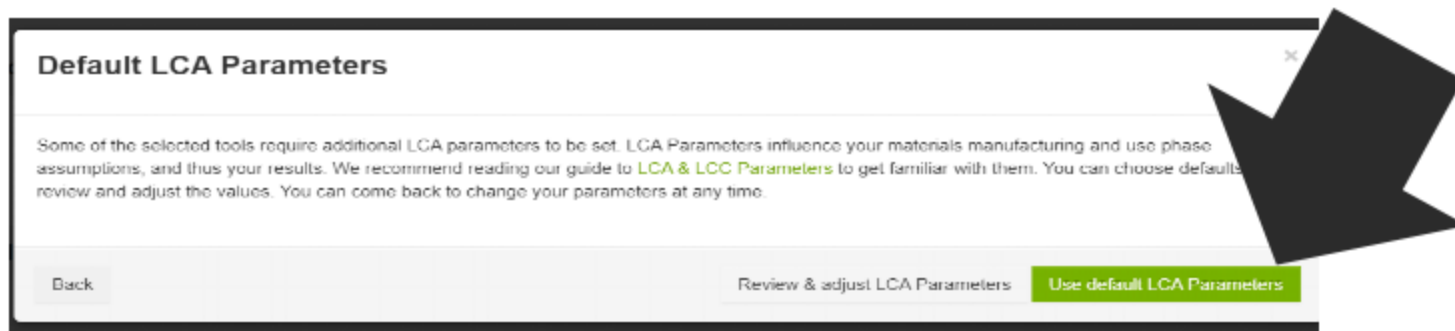
- Foundations and substructure
- Structure and enclosure
- Finishings and other materials
- External areas
- Services

[Back](#) [Next](#)



## Getting started – Approve or review parameters

- 3/ You can confirm “Use default LCA Parameters” or Review
- Default choices are almost always what you need
  - Can always be edited and project is recalculated



All set to start adding data to your 1<sup>st</sup> DESIGN

