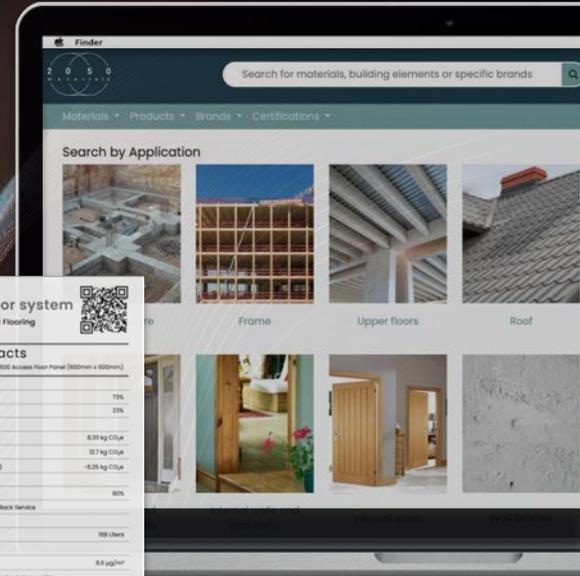


2050 materials

The Data Layer of Sustainable Construction



RMG600 Access Floor system
Kingspan Data and Flooring
Manufactured in, Italy, UK



Materials Facts
Detailed and full RMG600 Access Floor Panel (500mm x 600mm)

Materials	
Chipboard	17%
Steel, Zn-coated	23%

Carbon

Manufacturing (GRI A3)	8.38 kg CO ₂ e
End of life (GRI C4)	58.7 kg CO ₂ e
Biogenic carbon (GRI A3)	-6.28 kg CO ₂ e

Circularity

Recycled Content	60%
++ Free Kingspan Take Back Service	

Water

Freshwater use (GRI A3)	168 liters
-------------------------	------------

Health

Total VOC	8.8 µg/m ³
Free from 16 AEN restricted substances list	

Certifications

- Cradle to Cradle Certified® A Material health bronze
- Health Product Declaration
- Indoor Air Comfort Gold
- Environmental Product Declaration (ISO 14025 and EN 15804)

Downloaded by 2025.08.08.09.11.44



Funded by the
European Union
NextGenerationEU

Cyprus tomorrow
RECOVERY AND RESILIENCE PLAN



Supported by

Microsoft
For Startups

The **Climate Transition** in construction creates a huge data problem

£ 59
12 kg CO₂e



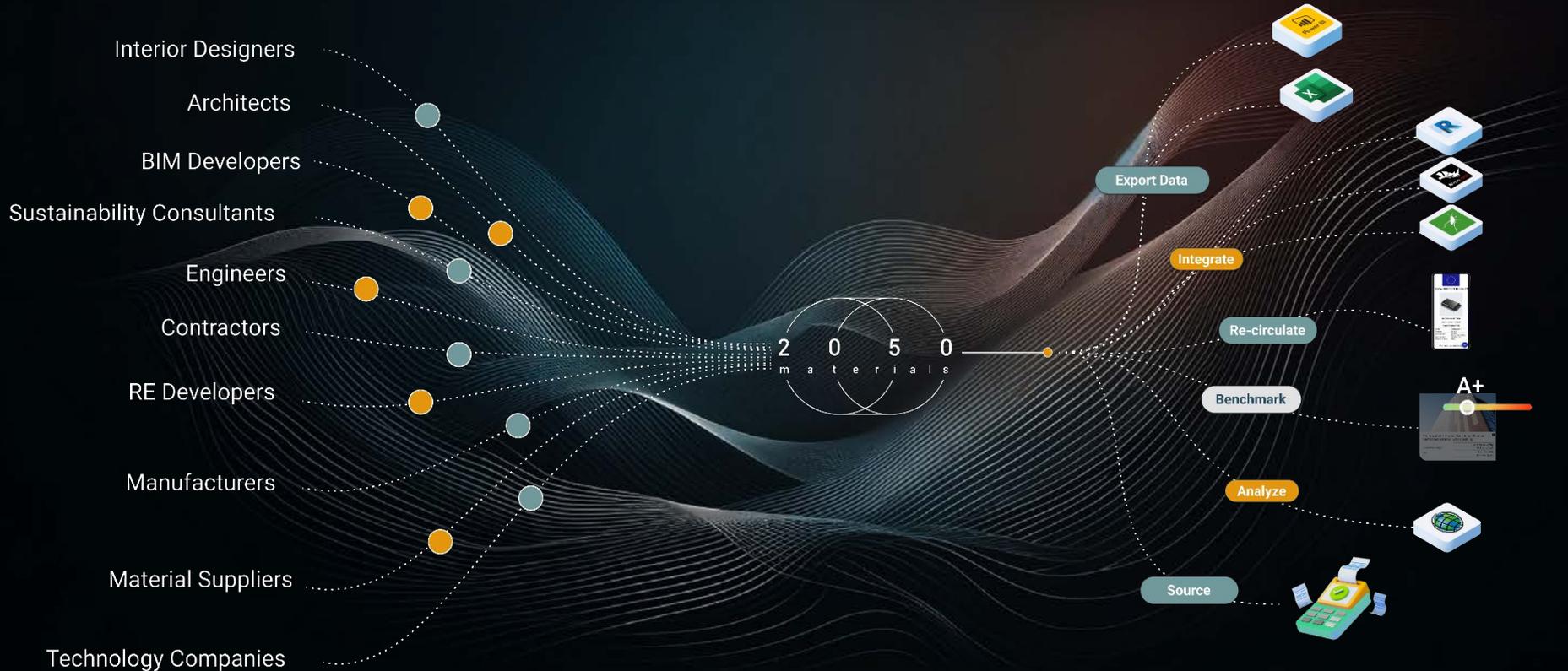
£ 10
23 kg CO₂e

Carbon budgets are being defined by regulators and clients.



Data gathering and CO₂ calculations make up 2-15% of project costs

2050 Materials is the Global **Climate Data Platform** for the AEC Industry



Technology Companies

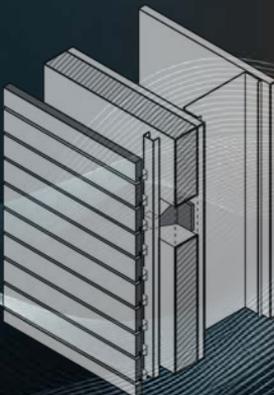


Types of **Climate Data** We Offer

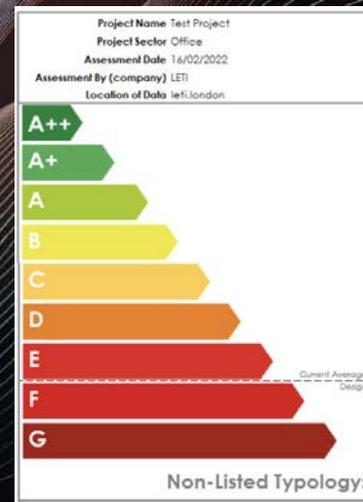
Product/Material Data

Product Passport	
Materials	
Lime, Water, Calcium Carbonates	85-99%
Titanium Dioxide & Graphene	1-5%
Carbon	
Manufacturing (A1-A3)	0.178 kg CO ₂ e / m ²
End of Life (C1-C4)	0.002 kg CO ₂ e / m ²
++ Absorbs CO ₂ in the curing process	
Water	
Percentage of recyclable water	100%
Health	
VOCs	< 1g / liter of paint
++ Air purifying photocatalytic reaction (NOx, SOx and VOCs)	

Assembly Data



Benchmark Data



Types of **Climate Data** We Offer - Coverage*

Product/Material Data

>200k products

*80% from EPDs

>10k generic materials

83 countries covered

Assembly Data

>60 architectural systems

120 structural systems

+10 assemblies per month

Benchmark Data

>20 white-paper datasets

Global
regulations tracker

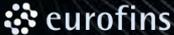
Non-Listed Typology:



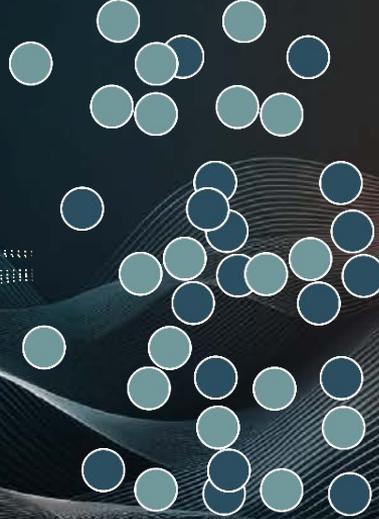
5 Million data points for global coverage and compliance



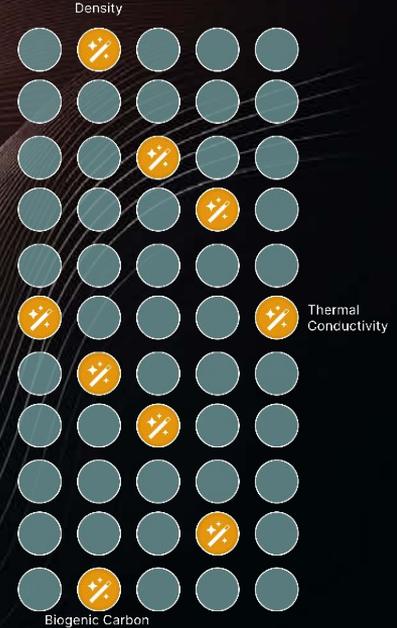
Partnerships



Open Data

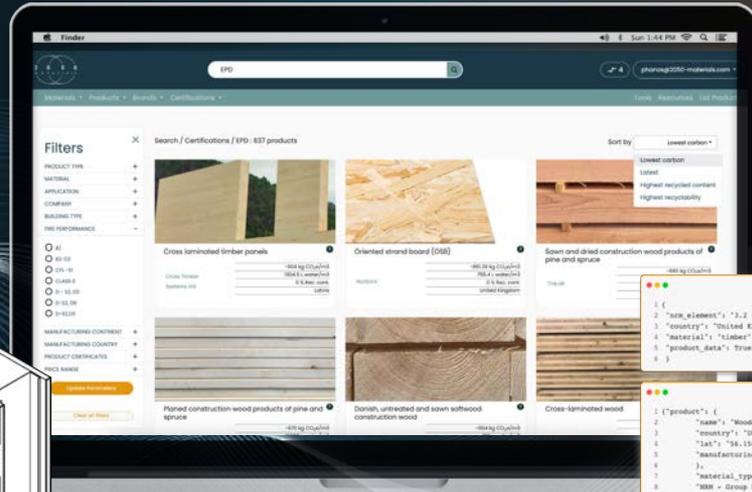


Unstructured Data



AI-Enhanced Datasets

We offer a tier-based data platform to **comply and prepare** for the transition



Export Data

Benchmark

Analyze

Source



Platform to cut research & calculation time by 30-90%

Data Licensing to enable integrations that scale decarbonization workflows.



Our Customers are the **Climate Action Drivers** of the Industry

Specifiers / Architects

Hawkins\ Brown

H&dM

Allies and Morrison

**HE
NN**

Foster + Partners

Engineering & Consulting



نيوم، NEOM

ARUP

mace



Royal HaskoningDHV
Enhancing Society Together



Implenia®

Software



RIB

AUTODESK

M

MOTT
MACDONALD

M

MOATA



Causeway

Work With Us to Unlock a **New Era of AEC**



- Education Dashboards
- Performance tracking
- Client Guidance
- Supply chain & procurement optimisation



- Performance tracking
- Data Analysis
- Value Engineering
- Cost plan alignment



- Digital take-off integrations
- Early stage Carbon Management
- Cost & Carbon models
- Multi Stage Life Cycle Assessment

*See examples in Appendix and case studies under [our blog](#)



Thank you!



Phanos Hadjikyriakou

CEO & Co-founder

phanos@2050-materials.com



Appendix A
Examples of
2050 Materials API Integrations

Designing in Revit with CO2e-labelled systems and buildups

LoCO2

Library Analyse

Walls

- Brick cavity facade with stone wool insulation (255mm)
- CLT frame facade with hemp fibre insulation (460mm)

Floors

- Concrete slab with stone wool insulation and ceramic tiles (363mm)
- CLT slab with hemp fibre insulation and parquet flooring (390mm)

Roof

- Pitched concrete roof with stone wool insulation and clay tiles (490mm)
- Pitched CLT roof with hemp fibre insulation and clay tiles (570mm)

Partition Walls

- Brick partition wall with stone wool insulation (140mm)
- Timber frame partition wall with hemp fibre insulation (160mm)

LoCO2

Library Analyse

780 kg CO₂/m² (floor area) High

Wall 250.0

Floor 210.0

Roof 150.0

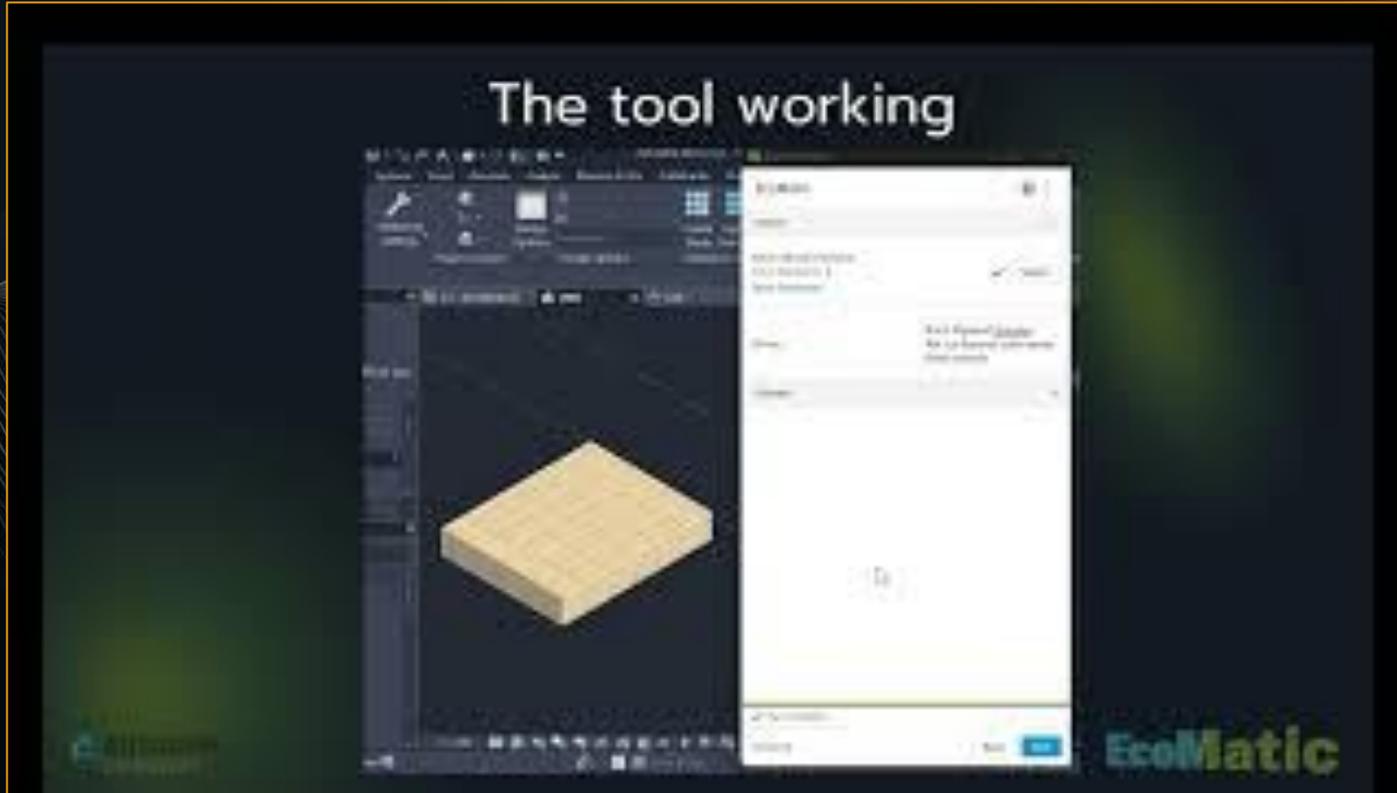
Partition walls 170.0

Worst performers kg CO₂/m²

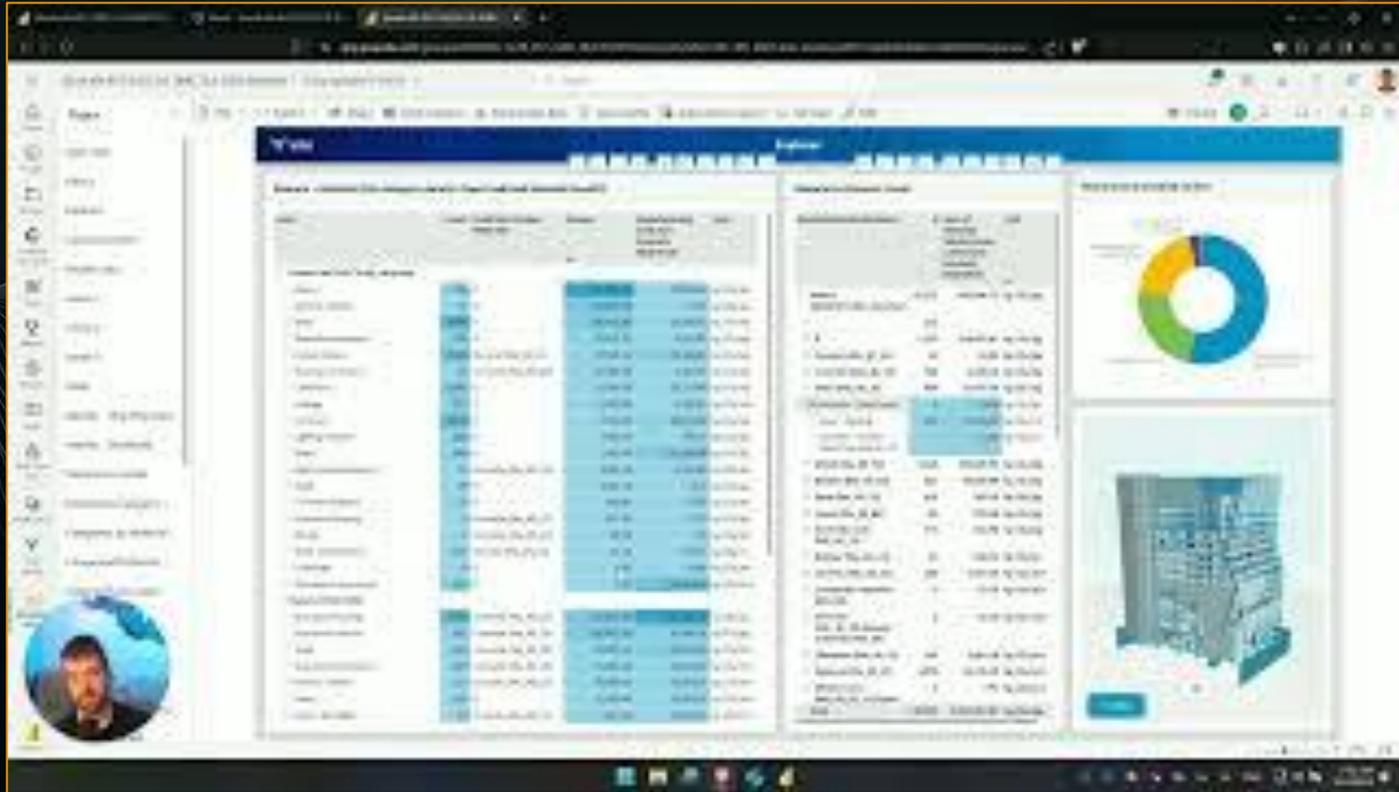
- Concrete slab with stone wool insulation and ceramic tiles (363mm) 143.0
- Pitched concrete roof with stone wool insulation and clay tiles (490mm) 121.0
- Brick cavity facade with stone wool insulation (255mm) 22.7
- Brick partition wall with stone wool insulation (140mm) 22.7
- CLT frame facade with hemp fibre insulation (460mm) 9.1

Export .png Calculate

Dynamo-based AI-Driven Material Creation



VIM / PowerBI visualization of embodied carbon for large BIM models



3D Embodied Carbon Visualizer for early-stage client engagement

The screenshot displays the VIKTOR interface for a 3D Parametric Building App. The top left shows the VIKTOR logo and the project name "Internal 2050 Materials Test". The top right includes a "Made with VIKTOR" badge, a "Share" button, and a "Finished" status indicator. The main interface is divided into three sections: a control panel on the left, a 3D model in the center, and a data panel on the right.

Control Panel (Left):

- Input:** 2050 Materials Development ID: eyJhbGciOiJIUzI1NiIsInR5c...
- Width:** 30
- Length:** 80
- How many floors:** 16 (slider)
- Glazing Ratio:** 71 (slider)
- Typology options:** Commercial, Hig... (dropdown)
- Material options:** High-carbon (M...) (dropdown)
- Facade Color:** Orange (color picker)

3D Model (Center): A 3D visualization of a building with 16 floors, colored orange, shown from an isometric perspective. A 3D coordinate system (X, Y, Z) is visible at the bottom right of the model.

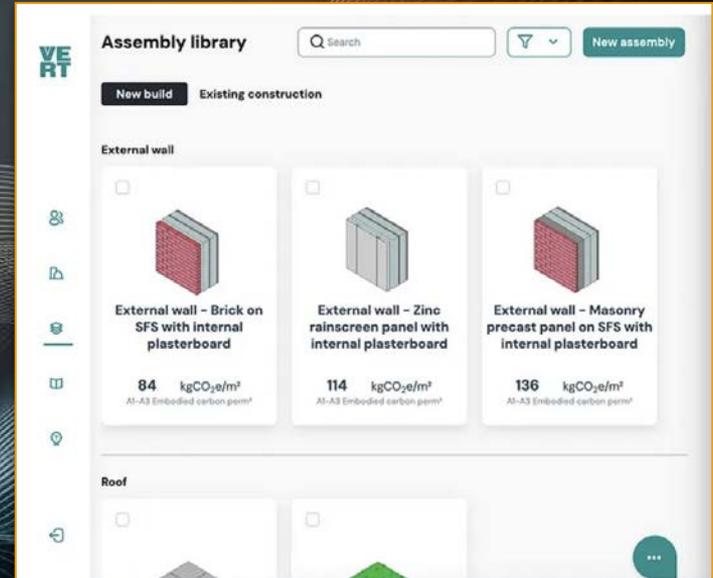
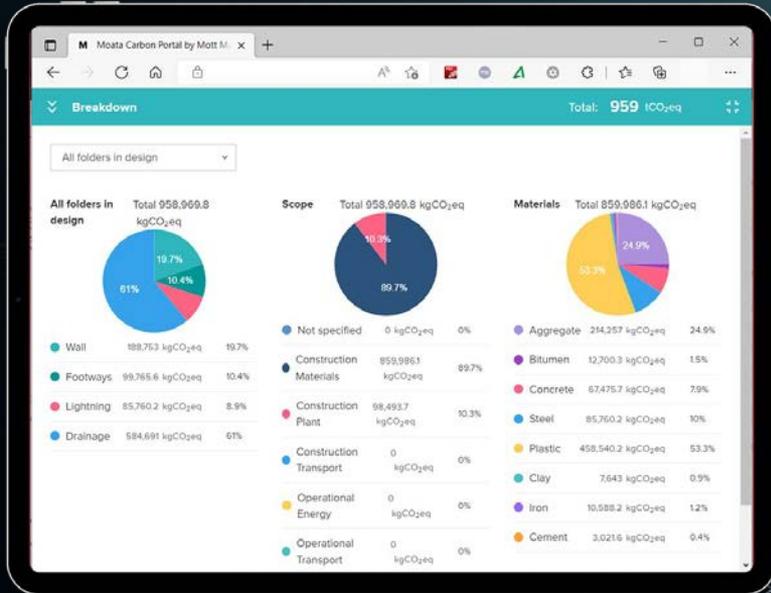
Data Panel (Right):

Embodied Carbon (kgCO ₂ e/m ² ...)	964.9
Warming Potential (°C)	5.0

3D Parametric Building App

In this app, the user can change the dimensions of the building, choose the amount of floors and a color for the facade. The app will generate a 3D building and a carbon footprint for the user as output.

Whole Life Cycle Carbon Tools (MOATA & Hawkins Brown)



Python-based Data Analytics Tools

Enter your developer key

Limited access: You have access to a limited number of product types. Enter your [developer token](#) for access to the complete list.

Filters

Select a Continent

Select a Product Type

Cladding

Use full API

Consider only EN 15804: 2012 +A1/+A2

Fetch Data

More Info

2050 Materials - Benchmark Generator

This tool is developed and powered by [2050 Materials](#) and the open-source [aecdata](#) Python Library.

Select Functional Unit: m2

Narrow down Material Types: Choose an option

Split by Material Type

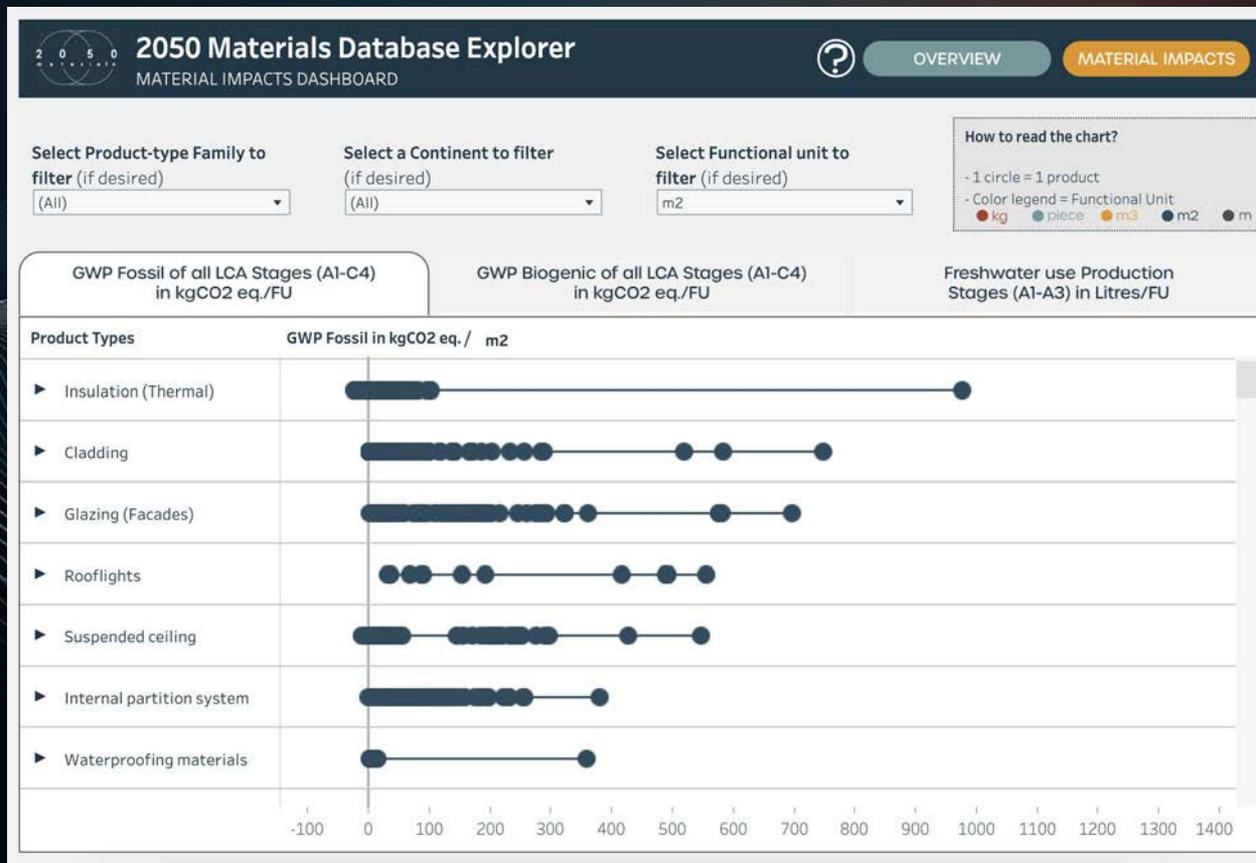
Median emissions for Cladding in stages A1-A3 (based on 179 EPDs)

16.4 kg CO2e / m2

Distribution of Manufacturing emissions (A1-A3) by Material Type.

Material Type	Median Emissions (kg CO2e / m2)
Aluminium	~16.4
Ceramic	~18.5
Composite (Other)	~12.5
Concrete	~14.5
Fibre cement	~11.5
GFRc (Glass Fibre...)	~15.5
Glass	~16.5
Laminate	~12.5
Steel	~14.5
Stone (Other)	~14.5

Tableau Dashboard for analytics and advisory services



LLM-based Agent - Sustainability Consultant

2050 Materials Consultant ▾



You

Give me low carbon insulation materials in france



2050 Materials Consultant

2050 Materials Consultant wants to talk to app.2050-materials.com

Allow

Always Allow

Decline

⚠ Only allow sites you trust.



CostX Data Integration to enable Cost & Carbon Estimates

GlobalData.

RIB Software partners with 2050 Materials for its CostX solution



Subcontractors

Microsoft Sans Serif 8

System Administration Administration

Measuring Workbooks

Cell = =XSLMTOTD Total = 695,763

	A:Code	B:Description	C:Quantity	D:Unit	E:Rate	F:Subtotal	G:Factor	H:Total	I:Lab (Hr)	J:Mat (\$)	K:% of CT
1	T02	Rebar/nails	311	m2	150.72	46,875		46,875			7.15
2	T04	Groundworks	311	m2	122.45	38,082		38,082			5.81
3	T06	Concrete	311	m2	65.00	20,215		20,215	142	14,002.00	3.08
4	T08	Reinforcement	311	m2	21.25	6,609		6,609			1.01
5	T11	Tanking and Waterproofing Membranes	311	m2	8.51	2,648		2,648			0.40
6	T12	Masonry	311	m2	278.02	85,530		85,530			12.05
7	T16	Roofing	311	m2	245.33	76,297		76,297			11.64
8	T18	Windows	311	m2	299.46	93,133		93,133			14.21
9	T20	Carpentry	311	m2	227.32	70,698		70,698	436	41,013.80	10.78
10	T24	Doors	311	m2	58.50	18,192		18,192			2.78
11	T26	Applied Finishes, Plaster and Textured Finishes	311	m2	116.54	36,245		36,245			5.53
12	T27	Tiling, Slate and Paving	311	m2	87.98	27,362		27,362			4.17
13	T28	Carpet and Resilient Finishes	311	m2	57.74	17,558		17,558			2.74
14	T29	Painting	311	m2	37.70	11,725		11,725			1.79
15	T30	Joinery	311	m2	72.03	22,400		22,400			3.42
16	T31	Furniture, Fittings and Equipment	311	m2	21.06	6,550		6,550			1.00
17	T32	Hydraulics	311	m2	75.27	23,410		23,410			3.57
18	T33	Drainage	311	m2	13.05	4,060		4,060			0.62
19	T34	Electrical Installation	311	m2	41.96	13,050		13,050			1.99
20	T35	Mechanical Installations	311	m2	27.01	8,400		8,400			1.28
21	T37	General Elements	311	m2	79.88	22,359		22,359			3.41
22	T38	Fire Protection	311	m2	12.12	3,770		3,770			0.58
23		Construction Total:						\$ 695,563			100%
24	T39	Included Sums	311	m2	129.25	40,200		40,200			
25		Estimate Total:	311	m2	2,238.18			\$ 695,763			

Rates Values Phraseologies Workbook Values

Dimension Groups Dimensions Codes Constants

Click for Options and Filtering Filter is Empty

Code Description

- 11 Interior Doors
- 12 Floor Finishes
- 13 Wall Finishes
- 14 Ceiling Finishes
- 15 Fittings and Fixtures
- 16 D - SERVICES
- 17 F - EXTERNAL WORKS AND SUBGRIDS
- 18 F - PAVG, MARGINS AND CONTINGENCIES
- 19 G - GENERAL

