seedling

Embodied carbon report (A1-A5 - cradle to site)

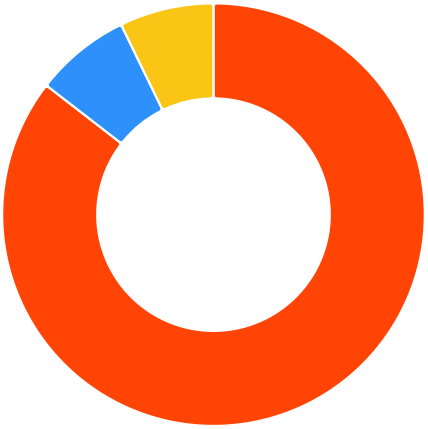
UNIQUE WINDOWS

Project	Stage	Report date	Produced by	Methodology
CQ00049 - Wilsons Lane, Coventry	Concept design (Stage 2)	28 November 2025	Unique Window Systems Ltd	See appendix

66.43 t CO2e

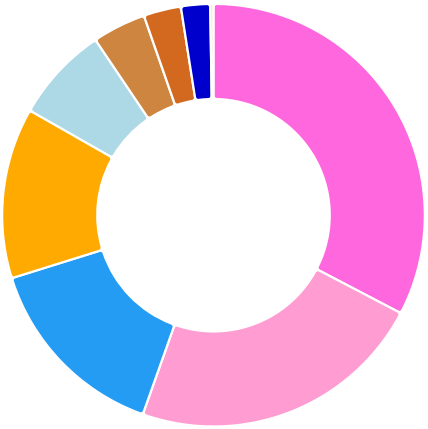
Total embodied carbon (A1-A5), in t CO2e

Emissions by life-cycle stage (A1-A5)



A1-3	56.78 t CO2e
A5	4.87 t CO2e
A4	4.78 t CO2e

Emissions by category



SECURIT (6mm)	21.70 t CO2e
STAPID	15.12 t CO2e
Tourniket Revolver	9.80 t CO2e
SF52 Curtain Wall System	8.68 t CO2e
Diesel (100% mineral diesel)	4.87 t CO2e
Vans - diesel	2.72 t CO2e
HGV - non-refrigerated	1.90 t CO2e
Metal: aluminium	1.48 t CO2e
Hybrid car	0.16 t CO2e

Appendix - Methodology

This assessment covers **upfront embodied carbon (A1–A5)** in line with **BS EN 15978** and **RICS Whole Life Carbon Assessment for the Built Environment** (current edition).

Results are reported by life-cycle module: **A1–A3, A4 and A5.**

Scope of life-cycle stages

- **A1–A3 Product stage**. Raw material extraction, processing, transport to manufacturer and product manufacture for permanent construction materials.
- **A4 Transport to site**. Transport of materials from manufacturer or merchant to the construction site.
- **A5 Construction/installation**. Site-based emissions associated with material wastage, packaging, temporary works (where significant) and site energy use (diesel and electricity).

Use-stage (B), end-of-life (C) and beyond-system-boundary (D) impacts are excluded.

Data sources and hierarchy

A consistent data hierarchy has been applied:

- **Product-specific EPDs (preferred).** Where available, EN 15804-compliant EPDs have been used for A1–A3 impacts of individual products.
- **Generic / industry-average EPDs.** Where no product-specific EPD exists, generic or association EPDs from recognised EPD programmes have been used.
- **Generic embodied carbon datasets.** For remaining materials, reputable LCA/embodied carbon databases (e.g. generic material factors) have been used to represent A1–A3.
- **DEFRA/BEIS GHG Conversion Factors**. DEFRA/BEIS factors are used where no suitable EPD or LCA dataset exists for A1–A3 and for all A4 transport and A5 site energy and waste.

All material quantities are taken from project information (depending on stage: drawings, schedules, specifications, cost plans pre-construction, and actual data for construction).

Assumptions and limitations

- Where specific product information is unavailable, reasonable assumptions have been made on material type, density, waste rates and transport distances based on typical UK practice.
- Combining EPD and non-EPD datasets may introduce methodological differences (e.g. treatment of biogenic carbon in timber). These are minimised by following the data hierarchy above and are considered acceptable for project-level decision-making.

Appendix - Calculations

Category	Module	UoM	Qty	t CO2e	Source
SF52 Curtain Wall System	A1-3	m2	90.00	8.68	Third-party EPD
STAPID	A1-3	m2	900.00	15.12	Third-party EPD
SECURIT (6mm)	A1-3	m2	1,000.00	21.70	Third-party EPD
Diesel (100% mineral diesel)	A5	Litres used	1,800.00	4.87	DEFRA
Metal: aluminium	A1-3	Recycled	1,495.85	1.48	DEFRA
Vans - diesel	A4	Miles travelled	6,750.00	2.72	DEFRA
HGV - non-refrigerated	A4	Miles travelled	1,350.00	1.90	DEFRA
Tourniket Revolver	A1-3	Number	1.00	9.80	Third-party EPD
Hybrid car	A4	Miles travelled	810.00	0.16	DEFRA
Total			**14,196.85**	**66.43 t CO2e**	