

Upfront Carbon (A1-A5) Summary

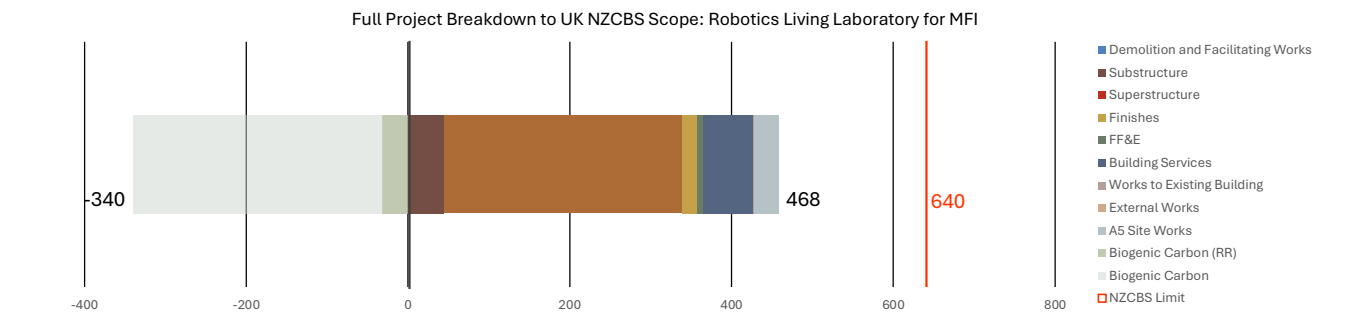
Project Robotics Living Laboratory for MFI
Typology Education / Workspace
Location Manchester, UK
GIA 76 m²
NIA (Existing | New) 0 m² | 75 m²

RIBA Workstage 5
Calculation Method One Click LCA RICS Aligned (Internal)
NZCBS Sector Higher Education
Reviewed by -
Checked by HS (07.03.2025)

Project Overview
A small low-carbon, timber and straw pavilion for the Robotics Living Lab at Manchester Fashion Institute, Manchester Metropolitan University. An existing slab is reused, with limited new foundation works. Walls use glulam framed SIPs panels with straw insulation and charred larch timber cladding. The assessment was undertaken in-house using One Click LCA and quantities derived from RIBA Stage 5 specifications, drawings, BIM and site information.

Upfront Carbon per Module per Building Element (kgCO ₂ e/m ² GIA)									
	Building Element	A1-A3	A1-A3 (Seq.)	A4	A5.3	A1-A5	% Cont.	Contingency	Notes / Comments
Demolition and Facilitating Works	Toxic Material Treatment	0.0	0.0	0.0	0.0	0	0	0	
	Major Demolition Works	0.0	0.0	0.0	0.0	0	0	0	
	Facilitating Works	0.0	0.0	0.0	0.0	0	0	0	
Substructure	Foundations and piling	37.3	-17.1	4.0	3.6	45	0	0	
	Retaining walls / lowest slab	10.4	0.0	0.3	0.4	11	0	0	
Superstructure	Frame	29.3	-143.9	31.0	1.8	62	0	0	
	Upper Floors	0.0	0.0	0.0	0.0	0	0	0	No upper floors
	Roof	4.2	-19.6	1.3	0.1	6	0	0	
	Stairs and Ramp	0.0	0.0	0.0	0.0	0	0	0	No stairs or ramps
	External Walls and Roof Finish	107.0	-106.1	17.0	9.4	133	0	0	
	Windows and External Doors	73.0	-18.9	15.8	4.4	93	0	0	
	Internal Walls and Partitions	0.0	0.0	0.0	0.0	0	0	0	No internal walls
	Internal Doors	0.0	0.0	0.0	0.0	0	0	0	No internal doors
Finishes	Wall Finishes	10.1	-22.4	0.4	1.1	12	0	0	
	Floor Finishes	4.3	-4.3	0.5	0.4	5	0	0	
	Ceiling Finishes	1.8	0.0	0.1	0.0	2	0	0	
FF&E	FF&E (Fixed)	5.9	-7.8	0.2	0.4	6	0	0	
	FF&E (non-fixed)	-	-	-	-	-			Excluded from Total for Sector
Building Services	Building Services	57.6	0.0	3.4	1.9	63	0	0	
	Renewable Energy Generation	0.0	0.0	0.0	0.0	0	0	0	Excluded from Scope
Works to Existing Building	Pre-fab Building Units	0.0	0.0	0.0	0.0	0	0	0	
	Minor Demolition and Alterations	0.0	0.0	0.0	0.3	0	0	0	
External Works	External Works	-	-	-	-	-			Excluded from NZCBS for Sector
A5 Site Works	A5.1 Demolition	-	-	-	-	1	0	0	Data collected from Site
	A5.2 Site Activities	-	-	-	-	30	0	0	Benchmarked Rate at current
	A5.4 Workers and Transport	-	-	-	-	-			Not reported (optional)
SUBTOTAL		341	-340	74	24	468	0	0	
NZCBS Scope Uplift (if reqd.)						N/A			None required.
TOTAL A1-A5						468	+	0	kgCO ₂ e/m ² GIA

Summary and Comparison to UK NZCBS Limit			
Upfront Carbon	468 kgCO ₂ e/m ²	(A1-A5) Excludes Sequestration, includes Contingency	
Sequestered Carbon	-340 kgCO ₂ e/m ²	(A1-A3)	
UK NZCBS Limit	640 kgCO ₂ e/m ²	Year: 2025 Sector: Higher Education	



Additional Notes
Of the total Sequestered (Biogenic) Carbon reported, approximately 10% (-32 kgCO₂e/m²) is contributed by straw-based insulation in the wall panels. Straw is a rapidly renewable material and as such the atmospheric carbon is likely to have been sequestered within the 24-months prior to Practical Completion and sourced within the UK.