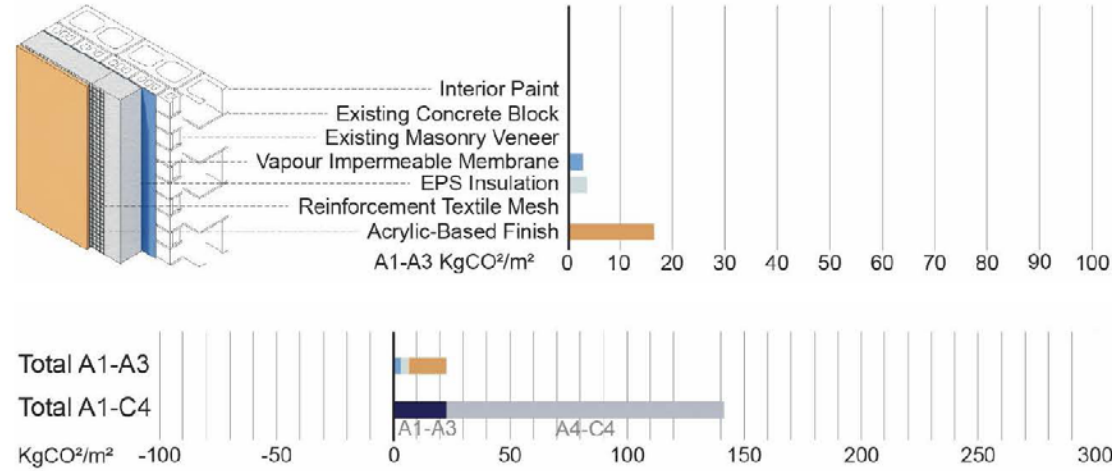


APPENDIX A WALL ASSEMBLY 16

W16: Results Summary

Metrics	Results
Description	Existing Masonry with Exterior EIFS Overcladding
Effective R-value	RSI-4.4 m ² K/W R-24.8 ft ² ·°F·h/BTU
Embodied Carbon per m ² of Enclosure (A1-A3)	22.9 kgCO ₂ /m ²
Biogenic Carbon per m ² of Enclosure	0 kgCO ₂ /m ²



W16: Assembly Effective R-value Calculation

Description	t _{si}	t _{ip}	k	C (USI)	RSI _{effective}	R _{effective}	R _{nominal}
Units	mm	in	W/mK	W/m ² K	m ² K/W	ft ² ·°F·h/BTU	ft ² ·°F·h/BTU
Interior air film					0.12	0.68	
Existing multi-wythe CMU wall	203	8.00	1.18	5.81	0.17	0.98	
Existing multi-wythe brick masonry	88.9	3.50	1.31	14.7	0.07	0.39	
Fluid-applied air barrier and WRB membrane (vapour impermeable)	3.00	0.12	-	-	-	-	
Expanded polystyrene (EPS) rigid board insulation	152	6.00	0.04	0.25	3.96	0.88	22.5
EIFS base and finish coat	4.00	0.16	-	-	0.01	0.06	
Exterior air film					0.03	0.17	
TOTALS	451	17.8			4.40	24.8	22.5

W16: Embodied Carbon Emissions (A1 to A3 Life Stages) for 9m² Assembly Area

Category	Material	Description (from EPD)	Thickness	Material Volume	Carbon Emissions (A1-A3)	% of total
Units			mm	m ³	kgCO ₂ e	%
Finish	Interior Paint	Eggshell acrylic paint, 1294.29 kg/m ³ (Generic)	0.16 (0.0063")	0.0014	0.56	0%
Existing structure	Existing CMU	Not Included in calculation		-	-	-
Exterior Finish	Existing masonry veneer	Not Included in calculation		-	-	-
Exterior Membrane	Vapor impermeable water resistive barrier membrane	Latex-based membrane, vapor impermeable, fluid-applied, 1.016 mm (40 mils), 1.150 kg/L (9.6 lbs/gal), Perm-A-Barrier® NPL 10	3 (0.12")	0.027	22	10.69%
Exterior Insulation	EPS Insulation	EPS insulation Generic	152.4 (6")	1.3716	25	12.1%
Cladding coating	EIFS base and finish coat system	Acrylic-based finish	-	*	150	72.89%
		Fluoropolymer powder coating	-	(1 kg)	1.6	0.78%
		Reinforcement textile mesh	-	*	7.2	3.50%
TOTAL					205.8	100.0%

*Software auto-calculates the impact based on the area provided.

W16: Environmental Emissions (A1 to C4 Life Stages) for 9m² Assembly Area

Lifecycle Stage	A1 to C4	A1-A3	A4-A5	B1-B5	C1-C4	A1-A3 Contribution to total	
Category	Units	Total	Construction Materials	Transport to Site & Construction	Material Replacement & Refurbishment	Deconstruction %	
Global Warming	kg CO ₂ e	1281.4895	205.8	11.084	961.7	102.9055	16.05%
Acidification	kg SO ₂	0.00623053	0.001	2.81E-06	0.005224	3.72E-06	16.05%
Eutrophication	kg Ne	5.412342	0.8692	0.055424	4.366	0.121718	16.05%
Ozone Depletion	kg CFC11e	0.516917	0.066844	0.008223	0.39598	0.04587	12.93%
Formation of Tropospheric Ozone	kg O ₃ e	59.195161	9.474	1.5218	47.12	1.079361	16.00%
Fossil Fuel Primary Energy	MJ	23516.7635	3908.37	309.87	19279.54	18.9835	16.62%
Biogenic Carbon Storage	kg CO ₂ e	0					