Project name

Planning application reference number (if applicable)

Lise Clas

Authors (organisation or individuals)

Operational modelling methodology for Module B6 results

Reference study period (if not 60 years)

Types of EPDs and carbon database used

Please confirm if 95% of the cost allocated to each building element category has been accounted for

Explanation of mechanisms which have been adopted to quality assure the submission

Please confirm whether you have submitted this assessment to the Built Environment Carbon Database (https://www.becd.co.uk/) or if you give permission for the GLA to do this on your behalf by checking one of the following boxes

Estimated WLC emissions N.B. This forms the WLC baseline for the development. The green cells will automatically popula

TOTAL kg CO₂e

TOTAL kg CO₂e/m² GIA

Please select most appropriate benchmark from drop-down menu

WLC Benchmark

Aspirational WLC Benchmark

Assessment details

Project details

Comparison with WLC benchmarks (see Appendix 2 of the guidance)

Retention of existing buildings and structures

Confirmation that options for retaining existing buildings and structures have been fully explored before considering substantial demolition

Carbon emissions associated with pre-construction demolition (kgCO₂e)

Estimate of the percentage of the new build development which will be made up of existing elements

Summary of <u>key actions</u> to reduce whole life-cycle carbon emissions that have informed this assessment, including the WLC reductions

Specify further opportunities to reduce the development's whole life-cycle carbon emissions. including the WLC reduction potential

MATERIAL QUANTITY AND END OF LIFE SCENARIOS

Building element category

Note/example

0.1	Demolition: Toxic/Hazardous/Contaminated Material Treatment
0.2	Major Demolition Works
0.3	Temporary Support to Adjacent Structures
0.4	Specialist Ground Works

1	Substructure
	Cc
	F
	Cc
	Co
	Insulat
2.1	Superstructure: Frame
2.2	Superstructure: Upper Floors

	Concrete
	Insulat
	Insula
2.3	Superstructure: Roof
	Insula
	 Timber
	Cc
	F
	Ferrous Met

	Γ.
2.4	Superstructure: Stairs and Ramps
2.5	Superstructure: External Walls
	Asphalt a
	Brick
	Cerr
	Ferr
	E
	Ins

	Insula
	Plaster and Mi
	F
	Plaster and N
2.6	Superstructure: Windows and External Doors
	Glazing Windows
	Insulat
	Insulat
2.7	Superstructure: Internal Walls and Partitions
	Cerr
2.8	Superstructure: Internal Doors

	Insulat
3	Finishes
	Con
	Plaster and Minera
	Timber Su:
	Timber
	C
	c
	Plaster and Mi
	Plaster and Minera

4	Fittings, furnishings & equipment (FFE)
	Ferro
	Finished Pr
	P
	Timber Su:

5	Services (MEP)
	Finist
	Insula
	Finish
	Finished P
	Finished Pr
	Ferrous Met
	Finished Pr
	Insul

	Ferrous Met
	Finist
6	Prefabricated Buildings and Building Units
7	Work to Existing Building
8	External works
	Asphalt a
	Bulk Aggregates Sands
	Co
	Insul
Refrigerants	
а	Refrigerants Type 1 (if applicable) - please see CIBSE TM65 for methodology
b	Refrigerants Type 2 (if applicable) - please see CIBSE TM65 for methodology
С	Refrigerants Type 3 (if applicable) - please see CIBSE TM65 for methodology

GWP POTENTIAL FOR ALL LIFE-CYCLE MODULES (kgCO₂e) (See Note 1 below if you entered a reference study period in cell C12)

Building element category		
0.1	Demolition: Toxic/Hazardous/Contaminated Material Treatment	
0.2	Major Demolition Works	
0.3	Temporary Support to Adjacent Structures	
0.4	Specialist Ground Works	
0.5	Temporary Diversion Works	
1	Substructure	
2.1	Superstructure: Frame	
2.2	Superstructure: Upper Floors	
2.3	Superstructure: Roof	
2.4	Superstructure: Stairs and Ramps	
2.5	Superstructure: External Walls	
2.6	Superstructure: Windows and External Doors	
2.7	Superstructure: Internal Walls and Partitions	
2.8	Superstructure: Internal Doors	
3	Finishes	
4	Fittings, furnishings & equipment	
5	Services (MEP)	
6	Prefabricated Buildings and Building Units	
7	Work to Existing Building	
8	External works	

Other site construction impacts or overall construction stage [A5]	carbon emissions not specific to an
	individual building element category

TOTAL kg CO₂e

TOTAL - kg CO₂e/m² GIA

Notes:

1 If you have entered a reference study period in cell C12 because the assumed building life expectancy

Heath Drive

C3 Redevelopment of the site following demolition (>90% Recycled) of existing 1 x 6 Bed Maisonette and 6 x 3 Bed flats, 2 x 4 Bed flats as private dwellings in building with gym, yoga facilities , 24 Bicycle stora landscaping. 2812

Sustain Quality Ltd	
21 May 2024	
TM65	
eTool	
eTool	
Yes	
Third party verification	
I have submitted this assessment to the BECD	
I give permission for the GLA to submit this assessment to the BECD on my behalf	✓

te from the tables below	
Module A1-A5 (excluding sequestered carbon)	Modules B-C (excl B6 & B7)
1,601,903 kg CO2e	389,377 kg CO2e
569.667	138.470
Residential	
<850	<350
<500	<300

Module A1-A5 (excluding sequestered carbon) exceeds aspirational benchmark. Likely due to concrete and replacements required.

Existing building summary

The existing building, proposed for partial demolition, is a 672 sqm residential building with a poor EPC proposed partial demolition are 33.600kgCO2e. A baritage and townscape assessment has been under

33600

50% subbase material reuse, 100% basement retention (contributing 5% of total GIA of the proposed of

Actions included in WLC assessment results repor

Slate tiling over concrete tiling

Timber Joist roof framing over steel purlins

Further potential opportunities

Roof rockwool insulation CLT upper flooring

40% fly-ash upper floor

Product and Construction Stage (Module A)	
Material type	Material quantity (kg)
Breakdown of material type in each category [Insert more lines if needed] e.g. Concrete	
	65000 kg
e.g. Reinforcement	5000 kg
e.g. Formwork	250 kg

and Soils Aggregate Gravel (High quallity e.g. blasted	99742.72
Bulk Aggregates Sands and Soils Sand Unspecified	23184
Cementitious Binders Portland Cement Unspecified	105.3876924
oncrete Unreinforced Portland Cement Blends 30 M	205925.148
Ferrous Metals Steel General Unspecified	2.74008
Ferrous Metals Steel Reinforcement bar Unspecified	12531.288
Plastics High Density Polyethylene (HDPE) Unspecifie	142.51536
Timber Sustainably Sourced Plywood Unspecified	6108.57
Bricks, Blocks and Pavers Concrete Blocks 12 MPa	263374.608
Bulk Aggregates Sands and Soils Sand Unspecified	72128
Cementitious Binders Portland Cement Unspecified	13671
oncrete Unreinforced Portland Cement Blends 30 M	99835.648
oncrete Unreinforced Portland Cement Blends 40 M	3941.795
Ferrous Metals Steel Reinforcement bar Unspecified	6099.03
tion Rigid Foams and Boards Polystyrene Unspecifie	1420.365
Timber Sustainably Sourced Plywood Unspecified	84.09375
oncrete Unreinforced Portland Cement Blends 30 M	54146.4
Ferrous Metals Steel General Unspecified	234150
Ferrous Metals Steel Reinforcement bar Unspecified	1764
Resins and Adhesives Melamine Resin	5673.12
Timber Sustainably Sourced Hardwood Unspecified	5192.90343
Bulk Aggregates Sands and Soils Sand Unspecified	251417.6

Cementitious Binders Portland Cement Unspecified	47653.2
Ferrous Metals Steel Accessories Unspecified	6.420645
Ferrous Metals Steel Reinforcement bar Unspecified	60024.0375
Resins and Adhesives Epoxy Resin	110.0682
Timber Sustainably Sourced Plywood Unspecified	2742.53265
Unreinforced Blast Furnace Slag Blends 40 MPa	980433.959
tion Rigid Foams and Boards Polystyrene Unspecifie	4972.6
ation Rigid Foams and Boards Polyurethane Polyure	8310.912
Timber Sustainably Sourced Plywood Unspecified	20511.0711
nsulation Blankets and Batts Glass Fibre Batts R 4.0	790.0308
ation Rigid Foams and Boards Polyurethane Polyure	3087.52
Metals (Non-Ferous) Aluminium Unspecified	142.7603187
Metals (Non-Ferous) Aluminium Unspecified Ferrous Metals Steel Accessories Unspecified	142.7603187 6.420645
Metals (Non-Ferous) Aluminium Unspecified Ferrous Metals Steel Accessories Unspecified Resins and Adhesives Urea Formaldehyde	142.7603187 6.420645 12.2298
Metals (Non-Ferous) Aluminium Unspecified Ferrous Metals Steel Accessories Unspecified Resins and Adhesives Urea Formaldehyde Timber Sustainably Sourced Hardwood Unspecified	142.7603187 6.420645 12.2298 5192.90343
Metals (Non-Ferous) Aluminium Unspecified Ferrous Metals Steel Accessories Unspecified Resins and Adhesives Urea Formaldehyde Timber Sustainably Sourced Hardwood Unspecified Sustainably Sourced Oriented Stand Board (OSB) Un	142.7603187 6.420645 12.2298 5192.90343 1142.282429
Metals (Non-Ferous) Aluminium Unspecified Ferrous Metals Steel Accessories Unspecified Resins and Adhesives Urea Formaldehyde Timber Sustainably Sourced Hardwood Unspecified Sustainably Sourced Oriented Stand Board (OSB) Un Timber Sustainably Sourced Softwood Unspecified	142.7603187 6.420645 12.2298 5192.90343 1142.282429 2360.054827
Metals (Non-Ferous) Aluminium Unspecified Ferrous Metals Steel Accessories Unspecified Resins and Adhesives Urea Formaldehyde Timber Sustainably Sourced Hardwood Unspecified Sustainably Sourced Oriented Stand Board (OSB) Un Timber Sustainably Sourced Softwood Unspecified oncrete Unreinforced Portland Cement Blends 25 M	142.7603187 6.420645 12.2298 5192.90343 1142.282429 2360.054827 21287.91902
Metals (Non-Ferous) Aluminium Unspecified Ferrous Metals Steel Accessories Unspecified Resins and Adhesives Urea Formaldehyde Timber Sustainably Sourced Hardwood Unspecified Sustainably Sourced Oriented Stand Board (OSB) Un Timber Sustainably Sourced Softwood Unspecified oncrete Unreinforced Portland Cement Blends 25 M Plastics High Density Polyethylene (HDPE) Unspecifie	142.7603187 6.420645 12.2298 5192.90343 1142.282429 2360.054827 21287.91902 67.508496
Metals (Non-Ferous) Aluminium Unspecified Ferrous Metals Steel Accessories Unspecified Resins and Adhesives Urea Formaldehyde Timber Sustainably Sourced Hardwood Unspecified Sustainably Sourced Oriented Stand Board (OSB) Un Timber Sustainably Sourced Softwood Unspecified oncrete Unreinforced Portland Cement Blends 25 M Plastics High Density Polyethylene (HDPE) Unspecifie Rock and Stone Cut or Split Slate	142.7603187 6.420645 12.2298 5192.90343 1142.282429 2360.054827 21287.91902 67.508496 17319.575
Metals (Non-Ferous) Aluminium Unspecified Ferrous Metals Steel Accessories Unspecified Resins and Adhesives Urea Formaldehyde Timber Sustainably Sourced Hardwood Unspecified Sustainably Sourced Oriented Stand Board (OSB) Un Timber Sustainably Sourced Softwood Unspecified oncrete Unreinforced Portland Cement Blends 25 M Plastics High Density Polyethylene (HDPE) Unspecifie Rock and Stone Cut or Split Slate Roofing Tiles Clay and Terracotta Tiles	142.7603187 6.420645 12.2298 5192.90343 1142.282429 2360.054827 21287.91902 67.508496 17319.575 23337.82158
Metals (Non-Ferous) Aluminium Unspecified Ferrous Metals Steel Accessories Unspecified Resins and Adhesives Urea Formaldehyde Timber Sustainably Sourced Hardwood Unspecified Sustainably Sourced Oriented Stand Board (OSB) Un Timber Sustainably Sourced Softwood Unspecified oncrete Unreinforced Portland Cement Blends 25 M Plastics High Density Polyethylene (HDPE) Unspecifie Rock and Stone Cut or Split Slate Roofing Tiles Clay and Terracotta Tiles Timber Sustainably Sourced Softwood Unspecified	142.7603187 6.420645 12.2298 5192.90343 1142.282429 2360.054827 21287.91902 67.508496 17319.575 23337.82158 990.642567

errous Metals Steel Galvanised Structural Unspecifie	6.111
Plastics Polyvinyl Chloride (PVC) PVC Pipe	127.8709092
oncrete Unreinforced Portland Cement Blends 40 Ml	48924.15
Ferrous Metals Steel Reinforcement bar Unspecified	777.65625
Timber Sustainably Sourced Plywood Unspecified	1009.125
Ferrous Metals Steel Stainless Unspecified	156.2778
Ferrous Metals Steel Accessories Unspecified	0.42071925
Ferrous Metals Steel General Unspecified	2.96352
Paints and Finishes Unspecified 1 Coat	32.4576
Plastics Polyvinyl Chloride (PVC) Unspecified	12.834
nd Bitumen Asphalt hot mix 5.50% primary bitumen, (50.8992
s, Blocks and Pavers Clay Bricks and Pavers Unspec	103182.784
Bricks, Blocks and Pavers Concrete Blocks 12 MPa	143874.192
Bulk Aggregates Sands and Soils Soil Unspecified	1330.32
entitious Binders Mortars and Renders 1 cement : 4 s	22544.25938
ous Metals Steel Coated Sheet Galvanised (zinc coa	177.96093
errous Metals Steel Galvanised Structural Unspecifie	5057.745
Ferrous Metals Steel General Unspecified	713.475
nsulation Blankets and Batts Glass Fibre Batts R 1.5	2495.124
ulation Blankets and Batts Mineral Wool Blanket R	31.55930554
Insulation Blankets and Batts Polyester Batts R 2.5	64.89648

ation Rigid Foams and Boards Polyurethane Polyure	3365.728
Vetals (Non-Ferous) Aluminium Sheet - Powder-coated	1448.71875
Metals (Non-Ferous) Aluminium Unspecified	297.748
Paints and Finishes Unspecified 1 Coat	84.81825
neral Derived Products 100% Primary Gypsum Plaste	710.40816
Plastics Acrylic Unspecified	0.088506
Plastics High Density Polyethylene (HDPE) Unspecifie	152.67285
Ineral Derived Products Fibre Cement Medium Dens	556.700625
Glazing Glass and Films Flat Glass	9476.203272
Hybrid Framed Double Glaze Ali and Timber Dome	18857.5101
tion Rigid Foams and Boards Polystyrene Unspecifie	231.7573523
Metals (Non-Ferous) Aluminium Unspecified	1132.763346
Plastics General Unspecified	118.9422
Rubber Synthetic	123.3702654
Ferrous Metals Steel Coated Sheet Enamelled	55.7424
tion Rigid Foams and Boards Polystyrene Unspecifie	3.3327
Timber Sustainably Sourced General Unspecified	78.4875
Bricks, Blocks and Pavers Concrete Blocks 12 MPa	36505.392
entitious Binders Mortars and Renders 1 cement : 4 s	4412.265
Timber Sustainably Sourced General Unspecified	3381
Ferrous Metals Steel Coated Sheet Enamelled	127.49

tion Rigid Foams and Boards Polystyrene Unspecifie	7.522
Timber Sustainably Sourced General Unspecified	180.332
Ceramics Tiles Ceramic Tiles	12247.5
crete Unreinforced Portland Cement Blends Unspec	363.165
Ferrous Metals Steel General Unspecified	99.1305
Paints and Finishes Unspecified 1 Coat	625.14
Paints and Finishes Water Based 1 Coat	1085.715
al Derived Products 100% Primary Gypsum Plasterboa	71265.96
Resins and Adhesives Urea Formaldehyde	511.2
stainably Sourced Medium Density Fibreboard (MDF)	7160.90625
Carpets and Floor Coverings Underlay Rubber	1394.88
Sustainably Sourced Cross Laminated Timber Unsp	16291.7625
arpets and Floor Coverings Carpet Nylon Medium Us	411.84
arpets and Floor Coverings Carpet Wool Medium Us	561.6
Carpets and Floor Coverings Underlay Nylon	299.52
Cementitious Binders Portland Cement Unspecified	65.751
Ceramics Tiles Ceramic Tiles	2323
Resins and Adhesives Urea Formaldehyde	149.76
Ferrous Metals Steel General Unspecified	0.33886125
Resins and Adhesives Epoxy Resin	17.42715
Ferrous Metals Steel General Unspecified	2.259075
neral Derived Products 100% Primary Gypsum Plaste	227.955728
al Derived Products 100% Primary Gypsum Plasterboa	5641.233

Resins and Adhesives Epoxy Resin	116.181
Timber Sustainably Sourced Softwood Unspecified	889.062626
Ceramics Porcelain Sanitary Products Bathroom Sink	396
Ceramics Porcelain Sanitary Products General	1155
Ceramics Porcelain Sanitary Products Toilet	1650
Ferrous Metals Steel Stainless Unspecified	88.2
us Metals Steel Stainless Finished Products Laundry	52.5
Glazing Glass and Films Flat Glass	2494.8
Ferrous Metals Steel General Unspecified	153.78125
oducts Electrical Goods Electronics Electronics For	4.921
Plastics General Unspecified	87.875
Ferrous Metals Steel Accessories Unspecified	157.5
Glazing Glass and Films Flat Glass	183.75
Metals (Non-Ferous) Aluminium Unspecified	7.3629
lastics Polyvinyl Chloride (PVC) PVC Injection Mouldir	36
Resins and Adhesives Epoxy Resin	252
Resins and Adhesives Melamine Resin	180
Resins and Adhesives Urea Formaldehyde	90
Rock and Stone Polished Granite / Basalt / Marble	3831.8
stainably Sourced Medium Density Fibreboard (MDF)	93.15
Timber Sustainably Sourced Particle Board Indoor	8193.75

Ferrous Metals Steel General Unspecified	462
Ferrous Metals Steel Stainless Unspecified	210.22848
red Products Electrical Goods Electric Motors Unspe	315
ation Rigid Foams and Boards Polyurethane Polyure	296.51232
Metals (Non-Ferous) Aluminium Unspecified	83.325
Metals (Non-Ferous) Copper Unspecified	724.8514515
Plastics General Unspecified	264
Plastics Polyvinyl Chloride (PVC) PVC Pipe	51.36912
Rubber Synthetic	13.2
ned Products Electrical Goods Electric Motors Unspe	2875
roducts Electrical Goods Solar Inverters Solar Invert	66.125
Metals (Non-Ferous) Copper Wire	201.5266667
Plastics General Unspecified	224.96
oducts Electrical Goods Electronics Electronics For	3.15
Ferrous Metals Steel Coated Sheet Enamelled	1626.975
Bricks, Blocks and Pavers Concrete Blocks 12 MPa	1293.6
als Steel Coated Sheet Zinc Coated & Coloured She	4.2
Ferrous Metals Steel General Unspecified	651
oducts Electrical Goods Electronics Electronics For	2.1
ation Rigid Foams and Boards Polyethylene Polyethy	0.575
Metals (Non-Ferous) Aluminium Unspecified	1.8096372
Metals (Non-Ferous) Copper Unspecified	66.65
Plastics General Unspecified	223.2

Plastics Nylon Unspecified	1.2479616
Resins and Adhesives Urea Formaldehyde	4.8
Rubber Synthetic	5.5
als Steel Coated Sheet Zinc Coated & Coloured She	106.056
ned Products Electrical Goods Electric Motors Unspe	2.1
Metals (Non-Ferous) Copper Unspecified	2361.640625
Plastics General Unspecified	2109
nd Bitumen Asphalt hot mix 4.50% primary bitumen (2	24.9845904
nd Bitumen Asphalt hot mix 5.50% primary bitumen, (13398
and Soils Aggregate Gravel (High quallity e.g. blasted	91512.4
oncrete Unreinforced Portland Cement Blends 25 M	2509.306061
ation Rigid Foams and Boards Polyethylene Polyethy	1.5239616
Resins and Adhesives Mastic Sealant	7.60032
Refrigerant name	Initial Charge(kg)
R32	20
TOTAL	3,235,871 kg
Material intensity (kg/m2 GIA)	1,151 kg/m2 GIA

Sequestered (or biogenic) carbon (negative value) (kgCO ₂ e)	Product stage (kgCO₂e)
	[A1] to [A3]

-2,101 kg CO2e	136,868 kg CO2e
-6,081 kg CO2e	308,032 kg CO2e
-13,883 kg CO2e	322,963 kg CO2e
-8,086 kg CO2e	21,586 kg CO2e
-429 kg CO2e	9,241 kg CO2e
-393 kg CO2e	119,474 kg CO2e
-15,967 kg CO2e	22,669 kg CO2e
98 kg CO2e	7,715 kg CO2e
-3,881 kg CO2e	-8,540 kg CO2e
-8,628 kg CO2e	71,080 kg CO2e
-5,027 kg CO2e	4,306 kg CO2e
-69 kg CO2e	44,267 kg CO2e
-67 kg CO2e	2,726 kg CO2e

-64,515 kg CO2e	1,062,386 kg CO2e
-23 kg CO2e/m2 GIA	378 kg CO2e/m2 GIA

i is greater or less than 60 years, then you will need to fill in this table using a 60 year building life expect

1 x 2 Bed basement flat to a Residential Development of 10 flats of 2 x 2 Bed flats, age, Electric Car Parking with charging points and associated

Modules A-C (excl B6 & B7; including sequestered carbon)	Module B1-B5
1,926,766 kg CO2e	150,593 kg CO2e
685.194	53.554
<1200	
<800	

e structural elements. This was an acoustic and fire consideration over the use of tin

energy performance rating. The expected carbon emissions arising from the articles by Tristan Squire, which justifies the existing building as a poutral building

development)

ted	WLC reduction (kg CO₂e/m ² GIA)
	4
	1

WLC reduction potential (kg
CO ₂ e/m ² GIA)
8.53485064
14.22475107
23.11522048

Assumptions made with respect to maintenance, repair and replacement cycles (Module B)	Material 'end of life'
For all primary building systems (structure, substructure, envelope, MEP services, internal finishes) including assumed material/product lifespans and annual maintenance/repair %	Declare 'end of life' scenario as Statement, and used in the Module

150yr	Rec
150yr	Reuse
150yr	Recycle
60yr	Recycle
60yr	Landfill
150yr	Recycle
60yr	Recycle
60yr	Landfill
150yr	Rec
100yr	Recycle
100yr	Recycle
60yr	Landfill
100yr	Landfill
150yr	Rec

60yr	Recycle
100yr	Recycle
100yr	Recycle
60yr	Landfill
100yr	Landfill
150yr	Recycle
60yr	Recycle
60yr	Recycle
100yr	Landfill
60yr	Re
60yr	Recycle
60yr	Recycle
60yr	Recycle
60yr	Landfill
60yr	Recycle
60yr	Landfill
60yr	Recycle
60yr	Recycle
60yr	Landfill
60vr	Recycle

60yr	Recycle
60yr	Recycle
60yr	Re
60yr	Recycle
60yr	Landfill
60yr	Recycle
60yr	Re
60yr	Recycle
50yr	Recycle
60yr	Recycle
40yr	Reuse
60yr	Recycle

60yr	Recycle
60yr	Recycle
60yr	Recycle
50yr	Landfill
60yr	Recycle
50yr	Recycle
60yr	Recycle
60yr	Recycle
60yr	Rec
60yr	Recycle
30yr	Recycle
60yr	Recycle
30yr	Recycle
60yr	Landfill
60yr	Rec
60yr	Recycle
60yr	Landfill
60yr	Red

60yr	Recycle
60yr	Landfill
30yr	Rec
20yr	Recycle
39yr	Recycle
50yr	Landfill
50yr	Landfill
39yr	Recycle
20yr	Landfill
45yr	Landfill
15yr	Recycle
45yr	Landfill
15yr	Recycle
15yr	Recycle
15yr	Recycle
30yr	Recycle
30yr	Recycle
50yr	Landfill
45yr	Recycle
45yr	Landfill
45yr	Recycle
45yr	Recycle
45yr	Recycle

45yr	Landfill
45yr	Landfill
50yr	Red
50yr	Recycle
50yr	Recycle
75yr	Recycle
75yr	Recycle
25yr	Recycle
30yr	Recycle
5yr	Recycle
20yr	Landfill
25yr	Recycle
25yr	Recycle
25yr	Recycle
25yr	Landfill
25yr	Recycle
25yr	Recycle
25yr	Landfill

20yr	Rec
25yr	Recycle
15yr	Recycle
20yr	Recycle
5yr	Recycle
150yr	Recycle
10yr	Landfill
200yr	Recycle
10yr	Recycle
15yr	Recycle
15yr	Recycle
20yr	Recycle
20yr	Landfill
7.5yr	Recycle
150yr	Recycle
10yr	Recycle
20yr	Recycle
50yr	Recycle
7.5yr	Recycle
20yr	Recycle
50yr	Recycle
60yr	Recycle
50yr	Landfill

2	677
Annual leakage rate %	Refrigerant GWP (kgCO₂e/kg)
15yr	Landfill
15yr	Recycle
15yr	Recycle
50yr	Reuse
30yr	Recycle
30yr	Recycle
30yr	Landfill
60yr	Recycle
15yr	Recycle
60yr	Recycle
20yr	Recycle
50yr	Landfill
50yr	Recycle

Construction process stage (kgCO ₂ e)		
Module A		
[A4]	[A5]	

79,193 kg CO2e	7,152 kg CO2e
59,461 kg CO2e	48,165 kg CO2e
72,397 kg CO2e	9,674 kg CO2e
10,387 kg CO2e	2,004 kg CO2e
1,594 kg CO2e	552 kg CO2e
69,019 kg CO2e	5,297 kg CO2e
17,914 kg CO2e	48 kg CO2e
6,362 kg CO2e	15 kg CO2e
1,027 kg CO2e	787 kg CO2e
92,988 kg CO2e	7,713 kg CO2e
10,999 kg CO2e	1,426 kg CO2e
18,022 kg CO2e	4,903 kg CO2e
11,757 kg CO2e	663 kg CO2e

451,119 kg CO2e	88,397 kg CO2e
160 kg CO2e/m2 GIA	31 kg CO2e/m2 GIA

stancy. If you choose to, you may create a second table below and complete it using
Кеу	
	Data automatically calculate
	Cells that require informatic
	N/A

Module B6-B7	Module C1-C4	Module D
1,782,653 kg CO2e	238,784 kg CO2e	-76,981 kg CO2e
633.945	84.916	-27.376

nber framing. Modules B-C very low due to longevity of chosen materials with very little maintenance

	Benefits and loads beyond the sys	stem boundary (Module D)
scenarios (Module C)	Estimated reusable materials (kg)	Estimated recyclable materials (kg)
per project's Circular Economy WLC assessment to produce C results	0 ka	25 kg
	2 kg	8 kg
	0 kg	0 kg

ycle		99,743 kg
	23,184 kg	
		105 kg
		205,925 kg
		3 kg
		12,531 kg
		143 kg
		263,375 kg
		72,128 kg
		13,671 kg
		99,836 kg
		3,942 kg
		6,099 kg
		1,420 kg
cycle		54,146 kg
		234,150 kg
		1,764 kg
ycle	251,418 kg	

	47,653 kg
	6 kg
	60,024 kg
	980,434 kg
	4,973 kg
	8,311 kg
cycle	790 kg
	3,088 kg
	143 kg
	6 kg
	21,288 kg
	17,320 kg
	23,338 kg
	260 kg

		6 kg
		128 kg
cycle		48,924 kg
		778 kg
		156 kg
cycle		0 kg
		3 kg
		32 kg
		13 kg
		51 kg
		103,183 kg
		143,874 kg
	1,330 kg	
		22,544 kg
		178 kg
		5,058 kg
		713 kg
		2,495 kg
		32 kg
		65 kg

	3,366 kg
	1,449 kg
	298 kg
	710 kg
	0 kg
	153 kg
	557 kg
cycle	9,476 kg
	18,858 kg
	232 kg
	1,133 kg
	119 kg
	123 kg
	56 kg
	3 kg
cycle	36,505 kg
	4,412 kg
cycle	127 kg

	8 kg
cycle	12,248 kg
	363 kg
	99 kg
	71,266 kg
	1,395 kg
	412 kg
	562 kg
	300 kg
	66 kg
	2,323 kg
	0 kg
	2 kg
	228 kg
	5,641 kg

cycle	396 kg
	1,155 kg
	1,650 kg
	88 kg
	53 kg
	2,495 kg
	154 kg
	5 kg
	158 kg
	184 kg
	7 kg
	3,832 kg
	93 kg

ycle	462 kg
	210 kg
	315 kg
	297 kg
	83 kg
	725 kg
	51 kg
	13 kg
	2,875 kg
	66 kg
	202 kg
	3 kg
	1,627 kg
	1,294 kg
	4 kg
	651 kg
	2 kg
	1 kg
	2 kg
	67 kg

		1 kg
		6 kg
		106 kg
		2 kg
		2,362 kg
		25 kg
		13,398 kg
	91,512 kg	
		2,509 kg
		2 kg
End of Life recovery rate %		
98		
	367,444 kg	2,774,964 kg
	131 kg/m2 GIA	987 kg/m2 GIA

[B1] [B2] [B3]	[B1]	[B2]	[B3]

-2 kg CO2e	0 kg CO2e	
	0 kg CO2e	
	5,580 kg CO2e	
	962 kg CO2e	

-2 kg CO2e	6,541 kg CO2e	0 kg CO2e
0 kg CO2e/m2 GIA	2 kg CO2e/m2 GIA	0 kg CO2e/m2 GIA

the actual assumed life expectancy. This should be clearly labelled.

ed - no direct input required

Please add rows where more than 1 material type exists per building element category

Please add rows if required

Use stage (kgCO₂e)

Module B		
[B4]	[B5]	

0 kg CO2e	
0 kg CO2e	
2,566 kg CO2e	
1,548 kg CO2e	
0 kg CO2e	
0 kg CO2e	
97,582 kg CO2e	
954 kg CO2e	
39,153 kg CO2e	1,122,000 kg CO2e
2,251 kg CO2e	

144,054 kg CO2e	0 kg CO2e	1,734,0
51 kg CO2e/m2 GIA	0 kg CO2e/m2 GIA	617 kg C



00 kg CO2e	48,653 kg CO2e	21,063 kg CO2e	
O2e/m2 GIA	17 kg CO2e/m2 GIA	7 kg CO2e/m2 GIA	
.ife (EoL) stage (kg	TOTAL Modules A-C		
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Module C			kgCO ₂ e
[C2]	[C3]	[C4]	
			21,063 kg CO2e
			0 kg CO2e
			0 kg CO2e
			0 kg CO2e
			0 kg CO2e
23,078 kg CO2e	0 kg CO2e	10,650 kg CO2e	254,837 kg CO2e
28,024 kg CO2e	0 kg CO2e	6,109 kg CO2e	443,710 kg CO2e
44,647 kg CO2e	0 kg CO2e	33,287 kg CO2e	469,085 kg CO2e
2,019 kg CO2e	0 kg CO2e	10,057 kg CO2e	37,967 kg CO2e
1,228 kg CO2e	0 kg CO2e	1,068 kg CO2e	13,253 kg CO2e
9,704 kg CO2e	0 kg CO2e	2,214 kg CO2e	207,881 kg CO2e
1,408 kg CO2e	0 kg CO2e	270 kg CO2e	27,890 kg CO2e
0 kg CO2e	0 kg CO2e	279 kg CO2e	14,469 kg CO2e
0 kg CO2e	0 kg CO2e	4,939 kg CO2e	-5,669 kg CO2e
3,958 kg CO2e	0 kg CO2e	19,395 kg CO2e	284,087 kg CO2e
542 kg CO2e	15 kg CO2e	6,175 kg CO2e	19,390 kg CO2e
2,825 kg CO2e	0 kg CO2e	2,853 kg CO2e	1,900,187 kg CO2e
			0 kg CO2e
			0 kg CO2e
2,288 kg CO2e	0 kg CO2e	688 kg CO2e	21,268 kg CO2e

			0 kg CO2e
119,721 kg CO2e	15 kg CO2e	97,985 kg CO2e	3,709,419 kg CO2e
#######################################	#######################################	#######################################	1,319 kg CO2e/m2 GIA

Benefits and loads beyond the system boundary (kgCO₂e)			
Module D			
5,455 kg CO2e			
-91,809 kg CO2e			
21,991 kg CO2e			
-7 kg CO2e			
213 kg CO2e			
-4,008 kg CO2e			
-2,574 kg CO2e			
0 kg CO2e			
352 kg CO2e			
1,156 kg CO2e			
57 kg CO2e			
-7,809 kg CO2e			

-76,981 kg CO2e

-27 kg CO2e/m2 GIA

