5, BACON'S LANE, HIGHGATE, N6 6BL.

Whole Life Carbon Assessment

October 2024

Client

Simon Fraser RIBA

Site Address

5, Bacon's Lane, London N6 6BL

Revision

Rev A 03.10.2024 Issued for Planning

Contents

1.0 Introduction

This report for 5 Bacon's Lane is to be read in conjunction with the following documents submitted as part of the planning application:

- Design & Access Statement
- Sustainability Statement
- Condition & Feasibility Study (Options Appraisal)
- Application Drawings

1.1 Overview

This report has been prepared in response to the Pre-Application Advice received from Camden Planning Department on 29.08.2024 (Re. 2024/0627/PRE). The advice received was as follows:

'*WLC Assessments are useful to ensure that if demolition is justified, the design of any replacement building fully considers the whole-life carbon impact and is as close as possible to the WLC impact of retaining and refurbishing the building. We do not use WLCA to consider if it is possible/feasible to retain and improve the existing building or to justify demolition due to the assumptions made as part of the assessment and as the whole-life carbon results from a proposed final scheme are likely to differ from those at an early design stage.*

If demolition is justified and we consider the Whole Life Carbon report part of an application, this would need further explanation and consideration. In this case, the GLA WLCA spreadsheet should be completed to prevent any mistakes in the presentation of the results'.

In response, a WLC assessment following RICS V2 methodology has been carried out using the AECB PHRibbon Software. This reports the same data as is normally found in the GLA's WLC spreadsheet. The proposal of the replacement house therefore considers the whole-life carbon impact.

The assessment reviews 3 scenarios over a 60 year standard life cycle:
1) Retrofit: No major work / demolition carried out to existing building, with exception of structural movement repair.
2) Partial Demolition: to achieve new proposals' layout and appearance.
3) Full Demolition (except Garage floor): complete new build of new proposals.

The Partial Demolition and Full Demolition scenarios are based on construction of the proposals shown in this planning application submission, with the PD option retaining existing structure where possible. The assessment is based on aspirational targets set with a 15% contingency, on the grounds the proposed materials are achievable at the time of construction.

1.2 Summary

The WLC assessment shows that, due to the extent of performance improvements in the new-build, the WLC operational and embodied emissions of the new build option are comparable over 60 years than that of the partial demolition option and significantly better than if the house was left in its current state with minimal internal changes. The reason why the new build is similar to the partial demolition in carbon terms is due to thermal inefficiency of the existing floor and walls and necessary rectification required should the existing structure be partially retained (see the submitted Condition & Feasibility Study Option Appraisal for further information).

Full demolition allows for the most energy efficient design to be proposed and to adopt a fabric first approach to reduce energy demand and improve thermal performance.

2.0 Whole Life Carbon Assessment

Consultant:	**Hopkins Architects**	
Street:	**27 Broadley Terrace**	
Postcode/City:	**NW1 6LG**	
Province/Country:	**London**	**United Kingdom**

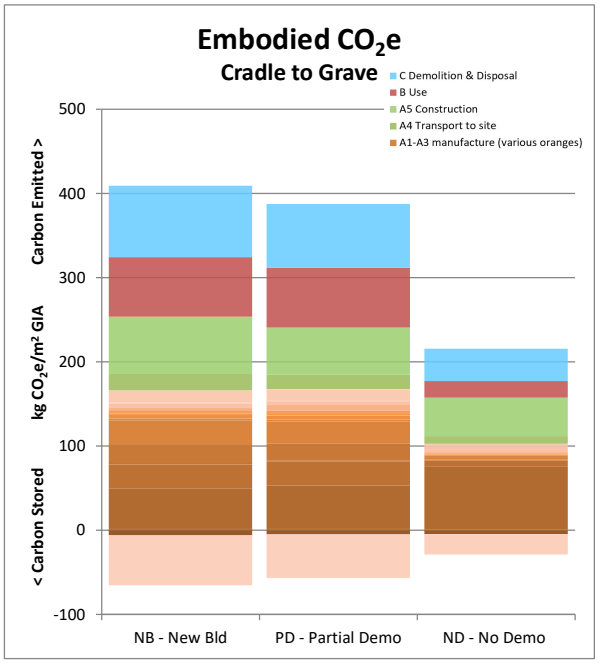
Client:	**Simon Fraser**	
Street:	**5 Bacons Lane**	
Postcode/City:	**N66BL**	
Province/Country:	**London**	**United Kingdom**

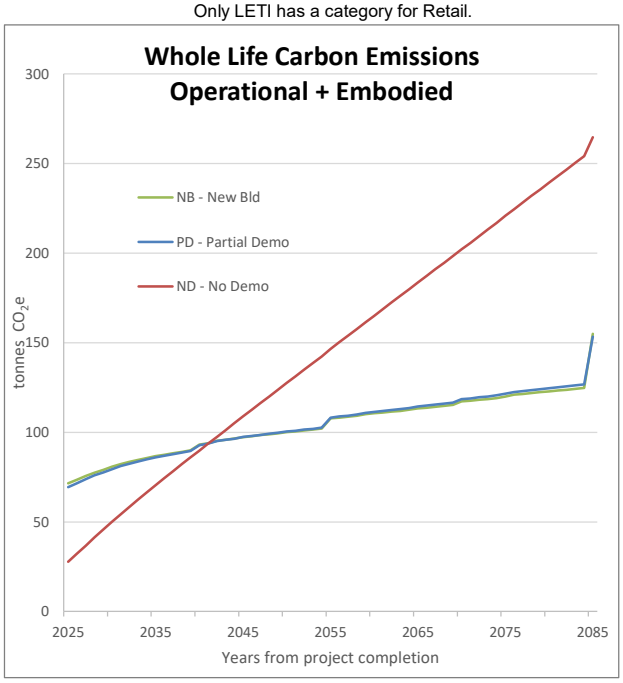
Building:	**5 Bacons Lane**	
Street:	**Bacons Lane**	
Postcode/City:	**N66BL**	
Province/Country:	**London**	**United Kingdom**
Building type:	**1-Freestanding single family house**	

AECB Embodied Carbon Assessment

C1-C4 approach	Business as usual	
Type of building	Domestic	
Year of construction:	**2025**	
No. of dwelling units:	**1**	
TFA:	**306**	m²
Reference Study Period	60	years

Both graphs show all categories, not RIBA or LETI
Only LETI has a category for Retail.





	Scenario 1	2	3	4	5	6	7	8	9	10	11	12
Operational	NB - New	PD - Parti	ND - No D									
otal Delivered Energy, kWh/m^2 GIA.a	23.7	24.8	165.8									

Embodied												
tonnes CO_2e A-C over 60yrs	120.0	114.1	33.5									
RIBA/RIAI kgCO_2e/m^2 GIA 60yrs	343.1	329.9	186.3									
LETI kgCO_2e/m^2 GIA over 60yrs	343.1	329.9	186.3									

Taking into consideration the total lifetime carbon emissions (sum of embodied and operational) for your development, please explain which option you have chosen and why.

This study compared a new build option (comprising full demolition - labelled 'NB') against a partial demolition option (labelled 'PD') and a minimal retrofit of the existing property with no demolition (Labelled 'ND'). The findings of this WLC study suggest that the difference between the whole life carbon of the NB option compared to the PD option amounts to only 1.5 tonnes CO2 over 60 years. This is because significant structural repairs and underpinning are still needed for the PD option. The PD option also assumes a 10% higher Operational energy demand compared to NB given that existing external walls are being retained with poorer thermal bridges. The NB (New build) option is therefore preferable to PD and will also provide a greater level of internal comfort. The ND (no demolition) option assumes minimal works, a change of finishes and the retention of the existing boiler, it has the highest WLC and fails the RIBA 2030 challenge for operational energy. The NB (New build) option also meets the RIBA 2030 challenge for both Embodied and Operational Carbon and achieves a LETI 'A' rating for Embodied Carbon.

I confirm that the values given herein have been determined following the RICS methodology and based on the characteristic values of the building. The PH Ribbon calculations are attached to this verification.

Name: **Hopkins Architects**

5 Bacons Lane	Issued on: **26/09/24**	City: **London**

Signature:

Calculation Scope Summary

Date of assessment	26/09/2024	Year of project completion	2025
Carried out by	Hopkins Architects		
Project type	New build		
Assessment objective	To compare new build and partial demolition scenarios against a minimal retrofit of the existing property		
Project location	London, United Kingdom		
Property type	Domestic		
Building description	A two-storey 3-bedroom family home. Comprising of steel & timber structural frame on concrete ground beams with piles and concrete slab. Limestone bricks walls in between the structural frame, timber joist construction to the floors and roof.		

Size: TFA 306 m^2 GIA 349 m^2 for scenario 1

Reference Study Period: 60 years

Assessment scope: Cradle to Grave as in RICSv2

Assessment stage: Concept stage (Design stage would require uncertainty factors not yet implemented)

Data sources: PHribbon: PHPP for external dimensions of thermal elements
Specific EPD certificates, (possibly also some ICE Database 2019

Building elements coverage

RIBA and LETI say 95% of the cost should be includec

# Building parts	Building elements	Tonnes CO2	% incl	Clarification if needed	
0 Facilitating works	0.1 Temporary/Enabling works/Preliminaries	6.3	100%	Includes full demolition	●●
1 Substructure	1.1 Substructure	28.6	100%		●●
2 Superstructure	2.1 Frame	3.0	100%		●●
	2.2 Upper floors incl. balconies	3.0	100%		●●
	2.3 Roof	3.0	100%		●●
	2.4 Stairs and ramps	3.0	100%		●●
	2.5 External Walls	38.3	100%		●●
	2.6 Windows and External Doors	38.3	100%		●●
	2.7 Internal Walls and Partitions	6.3	100%		●●
	2.8 Internal Doors	6.3	100%		●●
3 Finishes	3.1 Wall finishes	5.4	100%		●●
	3.2 Floor finishes	5.4	100%		●●
	3.3 Ceiling finishes	5.4	100%		●●
4 Fittings, furnishings and equip	Fixed (Building-related)	0.7	100%		●●
	Non Fixed (Non Building-related), excluded by LETI	0.0	n/a	Existing furniture used	●
5 Building Services/MEP	5.1 Public Health	0.6	100%		●●
	5.2 Heating, Ventilation and Cooling (HVAC) & Refrigerant	13.0	100%		●●
	5.3 Electrical installations	0.1	100%		●●
	5.4 On site renewable energy generation	0.0	n/a	None provided	●
	5.5 Systems including life safety, fuel installations, lift and conveyor	0.1	100%	No epd, allowance made	●●
6 Prefab Buildings/Units	6.1 Prefabricated Buildings and Building Units	0.0	n/a	Not applicable	●●
7 Existing Building	7.1 Minor Demolition and Alteration Works	0.0	n/a	Full demolition in item 0	●●
8 External works	Within site boundary	0.3			
	Outisde the site boundary	0.0			

RIBA/RIAI CHALLENGE includes ●
LETI includes ●

Assumptions

This is a Cradle to Grave calcuation (stages A-C) for RIBA/RIAI and LETI targets. Data is also laid out in the RICS layout, though RICS requires a lot more, for example site based emissions, estimation of plug loads (if not already in PHPP), and Module D. It follows the RICS professional statement edition 2 version3, Aug 2024 for concept design stage though is not an official RICS calculation. It is based on the external dimensions in PHPP which overestimates quantities slightly.

A0 Non material - not calculated but could be added, not needed for RIBA or LETI
A1-A3 Sequestration is only included if 100% FSC/PEFC, or it uses a proportion pro-rata
A1-A3 Manufac emissions from raw material extraction, transport and processing, these can be per m3, m2, m or kg
A4 Transport to site includes the 43% empty running factor for the return journey, except for in-situ concrete where the empty running factor is 100% (always empty)
A5.1 Preconstruction demolition is a fixed amount per m2 GIA
A5.2 Construction is calculated for totals only
A5.3 Construction waste is a fixed percentage for each material type, most are specified by RICv2

B1.1 Use, data taken from EPD if given, but factored to the RSP 60yrs, this includes carbonation by concrete during the RSP (not the life of the concrete which is much longer, 150yrs)
B1.2 Refrigerants, data taken from EPD if given, factored up to the whole RSP
B2-3 Repair, data taken from EPD if given, factored up to the whole RSP
B4 Replacement, repeats module A and C for the number of replacements
B5 Refurb, optional figures to be manually adjusted, life of product becomes the refurb interval and B4 emissions become B5.
B6.1-6.3 Operational Energy Use only the emissions in PHPP are included, the rest, e.g. plug loads could be added but are not automatically included in PHPP, so would require extra assumptions.
B7.1-7.3 Water cells are provided for you to enter the use in the Embod tab, though carbon figures are not required for RIBA or LETI.
B8.1-8.2 User Activities not reported here yet

C1 Demolition calculation based on GIA and user selection of business as usual (BAU), Good Practice or Best Practice
C2 Transport, includes empty running factor for return journey. Reuse is included only if the reuse is expected to be offsite
C3 Waste Processing, uses the RICSv2 reuse/recycling rates and user selection of business as usual (BAU), Good Practice or Best Practice. Includes incineration only if an R1 facility
C4 Waste Disposal, uses the RICSv2 landfill rates and user selection of business as usual (BAU), Good Practice or Best Practice. Includes incineration local sites not R1 facilities
D1 Potential Benefits / D2 Exported Benefits - not calculated but could be added, not needed for RIBA or LETI

RIBA/RIAI CHALLENGE
Building Type: Domestic

Scenario

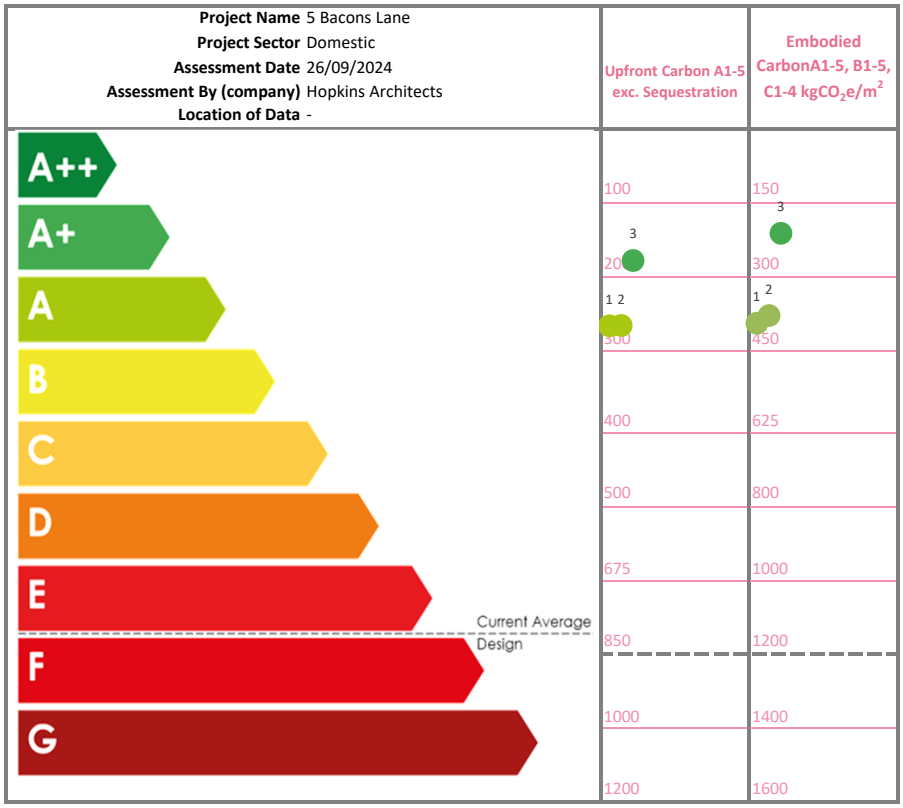
	1	2	3	4	5	6	7	8	9	10	11	12	
	NB - New	PD - Parti	ND - No D										
Operational Energy	27	29	191										kWh/m².a GIA
RIBA level met	R2030	R2030	Fail										
RIAI level met	R2030	R2030	Fail										
Embodied Carbon	394.6	379.4	214.3										kg CO_2e/m² GIA
RIBA level met	R2030	R2030	R2030										
RIAI level met	R2030	R2030	R2030										

Scenario

LETI	1	2	3	4	5	6	7	8	9	10	11	12	
	NB - New	PD - Parti	ND - No D										
Upfront Carbon A1-5 excl Sequestration	264	264	176										kg CO_2e/m_2 GIA
Embodied Carbon A1-5, B1-5, C1-4	395	379	214										kg CO_2e/m_2 GIA
Sequestered Carbon	-66	-57	-28										kg CO_2e/m_2 GIA
Module D	0	0	0										kg CO_2e/m_2 GIA

Results in the tables above and graphic below include a 15% contingency as required by RICSv2 for early design phase
Module D is complex and is only partially calculated. It is given when the WLC sheet is created, as the PV calculation is required for D2.

LETI Results graphic. Coloured dots labelled 1-12 are the results for scenarios 1-12.



Select Scenario for detailed tables below 1

RIBA and LETI targets are the main output of this spreadsheet. However we have also tried to assemble detailed results according to the RICS layout for the option number chosen (left).
Not all are needed for RIBA and LETI, nevertheless figures that are know are entered - there are some notable omissions, e.g. plug loads from electricity B6.1, not included in PHPP.

Scenario 1: NB - New Bld

Reporting Set 1: WLC design decision-making (Concept stage)

NO DECARBONISATION

(using present day figures, a worst case but similar to RICSv1 calculations)

Code		A					B											C				D	
		D3#Qrq#p dwhuldo	A1-A3 Sequestered	A1-A3 Manufac	A4 Transp to site	A5.1-4 Construction	B1.1 In use	B1.2 Fugitive emiss, Refrigerants	B2-B3 Maint & Repair	B4 Replacement	B5 Refurbishment	B5 Refurb Sequestration	B6.1-B6.3 Energy	B7.1 Water1	B7.2 Water2	B7.3 Water3	B8.1-B8.2 User activities	C1 Demolition	C2 Transport	C3 Waste Processing	C4 Waste Disposal	D1 Potential Benefits	D2 Potential ben from export
Code	Zkroh#hqwlw|#+dq|wklqj#wkdw#fdq*w#eh#eurnhq#grzq#lqwr#pruh#ghwdlo#wkhq#wkh#zkroh#dvvhw,																						
p1	Pre-construction - whole development	0																					
p2	Site emissions - whole development					0																	
p3	Emissions associated with energy in-use and renewable generation - building						0	0					148177										0
p4	Emissions associated with energy in-use and renewable generation - external						0	0					0										0
p5	Water in-use - building													0	0								
p6	Water in-use - external works (within project boundary)													0	0	0							
p7	User carbon - whole development																0						
	Zkroh#hqwlw|#+dq|wklqj#wkdw#fdq*w#eh#eurnhq#grzq#lqwr#pruh#ghwdlo#wkhq#wkh#zkroh#dvvhw,																						
0.1	Treatment and demolition works Facilitating works		0	0	0	6265																	
1	Sub-Structure		0	21946	3106	1471	-207	0	0	0	0	0							1605	623	13	0	0
2.1-4	Super structure: Frame, Upper floors, Roof, Stairs and ramps		-7121	2283	267	252	0	0	0	0	0	0							66	7169	110	0	0
2.5-6	Super structure: External envelope incl roof finishes, Windows and ext doors		-7383	22633	686	1110	0	0	693	10928	0	0							180	9325	149	0	0
2.7-8	Super structure: Internal walls and partitions, Internal doors		-608	2961	1482	356	0	0	0	1012	0	0							361	683	15	0	0
3	Finishes		-3123	2916	332	297	0	0	0	1676	0	0							94	3116	62	0	0
4.1	FF&E Fixed		-1671	321	380	68	0	0	0	0	0	0							5	1577	26	0	0
4.2	FF&E Non-Fixed		0	0	0	0	0	0	0	0	0	0							0	0	0	0	0
5.1	Public Health		0	194	3	11	0	0	0	420	0	0							1	0	0	0	0
5.2	Heating, Ventilation and Cooling (HVAC) **& Refrigerant**		0	2946	16	30	0	3053	98	6809	0	0						76	3	5	0	0	0
5.3	Electrical installations		0	27	0	1	0	0	0	28	0	0							0	0	0	0	0
5.4	On site renewable energy generation		0	0	0	0	0	0	0	0	0	0							0	0	0	0	0
5.5	Systems including life safety, fuel installations, lift and conveyor installations,		0	21	0	0	0	0	0	43	0	0							0	0	0	0	0
6	Pre-fabricated buildings and units		0	0	0	0	0	0	0	0	0	0							0	0	0	0	0
7	Works to existing buildings		0	0	0	0	0	0	0	0	0	0							0	0	0	0	0
8a	External works (within the site boundary)		-358	-348	462	9	0	0	0	0	0	0							123	363	6	0	0
8b	External works (outside the site boundary)		0	0	0	0																	
	Sub-totals kgCO2e	0	-20264	55900	6735	23831	-207	3053	791	20916	0	0	148177	0	0	0	0	3566	2437	22862	382	0	0

Scenario 1: NB - New Bld

Reporting Set 1: WLC design decision-making (Concept stage)

WITH DECARBONISATION

(assuming some areas could decarbonise by 50% and electricity decarbonises according to average over next 60yrs from FES

Code		A					B											C				D	
		D3#Qrq#p dwhuldo	A1-A3 Sequestered	A1-A3 Manufac	A4 Transp to site	A5.1-4 Construction	B1.1 In use	B1.2 Fugitive emiss, Refrigerants	B2-B3 Maint & Repair	B4 Replacement	B5 Refurbishment	B5 Refurb Sequestration	B6.1-B6.3 Energy	B7.1 Water1	B7.2 Water2	B7.3 Water3	B8.1-B8.2 User activities	C1 Demolition	C2 Transport	C3 Waste Processing	C4 Waste Disposal	D1 Potential Benefits	D2 Potential ben from export
Code	Zkroh#hqwlw|#+dq|wklqj#wkdw#fdq*w#eh#eurnhq#grzq#lqwr#pruh#ghwdlo#wkhq#wkh#zkroh#dvvhw,																						
p1	Pre-construction - whole development	0																					
p2	Site emissions - whole development					0																	
p3	Emissions associated with energy in-use and renewable generation - building						0	0					45196										0
p4	Emissions associated with energy in-use and renewable generation - external						0	0					0										0
p5	Water in-use - building													0	0								
p6	Water in-use - external works (within project boundary)													0	0	0							
p7	User carbon - whole development																0						
	Zkroh#hqwlw|#+dq|wklqj#wkdw#fdq*w#eh#eurnhq#grzq#lqwr#pruh#ghwdlo#wkhq#wkh#zkroh#dvvhw,																						
0.1	Treatment and demolition works Facilitating works		0	0	0	6265																	
1	Sub-Structure		0	21946	3106	1471	-207	0	0	0	0	0							803	623	13	0	0
2.1-4	Super structure: Frame, Upper floors, Roof, Stairs and ramps		-7121	2283	267	252	0	0	0	0	0	0							33	7169	110	0	0
2.5-6	Super structure: External envelope incl roof finishes, Windows and ext doors		-7383	22633	686	1110	0	0	347	5464	0	0							90	9325	149	0	0
2.7-8	Super structure: Internal walls and partitions, Internal doors		-608	2961	1482	356	0	0	0	506	0	0							180	683	15	0	0
3	Finishes		-3123	2916	332	297	0	0	0	838	0	0							47	3116	62	0	0
4.1	FF&E Fixed		-1671	321	380	68	0	0	0	0	0	0							2	1577	26	0	0
4.2	FF&E Non-Fixed		0	0	0	0	0	0	0	0	0	0							0	0	0	0	0
5.1	Public Health		0	194	3	11	0	0	0	210	0	0							0	0	0	0	0
5.2	Heating, Ventilation and Cooling (HVAC) **& Refrigerant**		0	2946	16	30	0	1527	49	3405	0	0						38	2	5	0	0	0
5.3	Electrical installations		0	27	0	1	0	0	0	14	0	0							0	0	0	0	0
5.4	On site renewable energy generation		0	0	0	0	0	0	0	0	0	0							0	0	0	0	0
5.5	Systems including life safety, fuel installations, lift and conveyor installations,		0	21	0	0	0	0	0	22	0	0							0	0	0	0	0
6	Pre-fabricated buildings and units		0	0	0	0	0	0	0	0	0	0							0	0	0	0	0
7	Works to existing buildings		0	0	0	0	0	0	0	0	0	0							0	0	0	0	0
8a	External works (within the site boundary)		-358	-348	462	9	0	0	0	0	0	0							61	363	6	0	0
8b	External works (outside the site boundary)		0	0	0	0																	
	Sub-totals kgCO2e	0	-20264	55900	6735	23831	-207	1527	396	10458	0	0	45196	0	0	0	0	1783	1219	22862	382	0	0

decarbonised figures

Scenario 1: NB - New Bld

Reporting Set 1: WLC design decision-making (Concept stage)

NET ZERO COMPATIBLE ELECTRICITY

		B6.1-6.3
	Is this option all electric? Calculation only done if it is	Y
	LETI EUI Limit for this building	35
	Total Delivered Energy for this building	24
	Non-decarbonised electricity factor for the grid	0.2956
	Decarbonised electricity factor for the grid	0.0902
	GIA for this building, m2	349
p3	Emissions associated with energy in-use and renewable generation - building	-67

	LETI EUI target
Domestic	35
Offices	55
Schools	65
Retail	55

Split elctricity factor means that emissions below the LETI target are use
the decarbonised electricity factor, emissions above use the the non-decarbonised
This calculation must only be used when the building is supplied with electricity only.

Select Scenario for detailed tables below 2

RIBA and LETI targets are the main output of this spreadsheet. However we have also tried to assemble detailed results according to the RICS layout for the option number chosen (left).
Not all are needed for RIBA and LETI, nevertheless figures that are know are entered - there are some notable omissions, e.g. plug loads from electricity B6.1, not included in PHPP.

Scenario 2: PD - Partial Demo

Reporting Set 1: WLC design decision-making (Concept stage)

NO DECARBONISATION

(using present day figures, a worst case but similar to RICSv1 calculations)

		A					B											C				D	
		D3#Qrq#dwhuldo	A1-A3 Sequestered	A1-A3 Manufac	A4 Transp to site	A5.1-4 Construction	B1.1 In use	B1.2 Fugitive emiss, Refrigerants	B2-B3 Maint & Repair	B4 Replacement	B5 Refurbishment	B5 Refurb Sequestration	B6.1-B6.3 Energy	B7.1 Water1	B7.2 Water2	B7.3 Water3	B8.1-B8.2 User activities	C1 Demolition	C2 Transport	C3 Waste Processing	C4 Waste Disposal	D1 Potential Benefits	D2 Potential ben from export
Code	Zkroh#hqwlw|#+dq|wklqj#wkdw#fdq*w#eh#eurnhq#grzq#lqwr#pruh#ghwdlo#wkhq#wkh#zkroh#dvvhw,																						
p1	Pre-construction - whole development	0																					
p2	Site emissions - whole development					0																	
p3	Emissions associated with energy in-use and renewable generation - building						0	0					162994										0
p4	Emissions associated with energy in-use and renewable generation - external						0	0					0										0
p5	Water in-use - building													0	0								
p6	Water in-use - external works (within project boundary)													0	0	0							
p7	User carbon - whole development																0						
	Zkroh#hqwlw|#+dq|wklqj#wkdw#fdq*w#eh#eurnhq#grzq#lqwr#pruh#ghwdlo#wkhq#wkh#zkroh#dvvhw,																						
0.1	Treatment and demolition works Facilitating works		0	0	0	2100																	
1	Sub-Structure		0	21736	2232	1357	-207	0	0	0	0	0							1072	506	7	0	0
2.1-4	Super structure: Frame, Upper floors, Roof, Stairs and ramps		-4344	1601	229	164	0	0	0	0	0	0							56	4382	66	0	0
2.5-6	Super structure: External envelope incl roof finishes, Windows and ext doors		-7383	22633	686	1110	0	0	693	10928	0	0							180	9325	149	0	0
2.7-8	Super structure: Internal walls and partitions, Internal doors		-608	4113	1496	368	0	0	0	1012	0	0							363	683	15	0	0
3	Finishes		-3123	2916	332	297	0	0	0	1676	0	0							94	3116	62	0	0
4.1	FF&E Fixed		-1671	321	380	68	0	0	0	0	0	0							5	1577	26	0	0
4.2	FF&E Non-Fixed		0	0	0	0	0	0	0	0	0	0							0	0	0	0	0
5.1	Public Health		0	194	3	11	0	0	0	420	0	0							1	0	0	0	0
5.2	Heating, Ventilation and Cooling (HVAC) **& Refrigerant**		0	2946	16	30	0	3053	98	6809	0	0						76	3	5	0	0	0
5.3	Electrical installations		0	27	0	1	0	0	0	28	0	0							0	0	0	0	0
5.4	On site renewable energy generation		0	0	0	0	0	0	0	0	0	0							0	0	0	0	0
5.5	Systems including life safety, fuel installations, lift and conveyor installations,		0	21	0	0	0	0	0	43	0	0							0	0	0	0	0
6	Pre-fabricated buildings and units		0	0	0	0	0	0	0	0	0	0							0	0	0	0	0
7	Works to existing buildings		0	0	0	0	0	0	0	0	0	0							0	0	0	0	0
8a	External works (within the site boundary)		-358	-348	462	9	0	0	0	0	0	0							123	363	6	0	0
8b	External works (outside the site boundary)		0	0	0	0																	
	Sub-totals kgCO2e	0	-17487	56159	5837	19476	-207	3053	791	20916	0	0	162994	0	0	0	0	3526	1896	19958	332	0	0

Scenario 2: PD - Partial Demo

Reporting Set 1: WLC design decision-making (Concept stage)

WITH DECARBONISATION

(assuming some areas could decarbonise by 50% and electricity decarbonises according to average over next 60yrs from FES

		A					B											C				D	
		D3#Qrq#dwhuldo	A1-A3 Sequestered	A1-A3 Manufac	A4 Transp to site	A5.1-4 Construction	B1.1 In use	B1.2 Fugitive emiss, Refrigerants	B2-B3 Maint & Repair	B4 Replacement	B5 Refurbishment	B5 Refurb Sequestration	B6.1-B6.3 Energy	B7.1 Water1	B7.2 Water2	B7.3 Water3	B8.1-B8.2 User activities	C1 Demolition	C2 Transport	C3 Waste Processing	C4 Waste Disposal	D1 Potential Benefits	D2 Potential ben from export
Code	Zkroh#hqwlw|#+dq|wklqj#wkdw#fdq*w#eh#eurnhq#grzq#lqwr#pruh#ghwdlo#wkhq#wkh#zkroh#dvvhw,																						
p1	Pre-construction - whole development	0																					
p2	Site emissions - whole development					0																	
p3	Emissions associated with energy in-use and renewable generation - building						0	0					49715										0
p4	Emissions associated with energy in-use and renewable generation - external						0	0					0										0
p5	Water in-use - building													0	0								
p6	Water in-use - external works (within project boundary)													0	0	0							
p7	User carbon - whole development																0						
	Zkroh#hqwlw|#+dq|wklqj#wkdw#fdq*w#eh#eurnhq#grzq#lqwr#pruh#ghwdlo#wkhq#wkh#zkroh#dvvhw,																						
0.1	Treatment and demolition works Facilitating works		0	0	0	2100																	
1	Sub-Structure		0	21736	2232	1357	-207	0	0	0	0	0							536	506	7	0	0
2.1-4	Super structure: Frame, Upper floors, Roof, Stairs and ramps		-4344	1601	229	164	0	0	0	0	0	0							28	4382	66	0	0
2.5-6	Super structure: External envelope incl roof finishes, Windows and ext doors		-7383	22633	686	1110	0	0	347	5464	0	0							90	9325	149	0	0
2.7-8	Super structure: Internal walls and partitions, Internal doors		-608	4113	1496	368	0	0	0	506	0	0							181	683	15	0	0
3	Finishes		-3123	2916	332	297	0	0	0	838	0	0							47	3116	62	0	0
4.1	FF&E Fixed		-1671	321	380	68	0	0	0	0	0	0							2	1577	26	0	0
4.2	FF&E Non-Fixed		0	0	0	0	0	0	0	0	0	0							0	0	0	0	0
5.1	Public Health		0	194	3	11	0	0	0	210	0	0							0	0	0	0	0
5.2	Heating, Ventilation and Cooling (HVAC) **& Refrigerant**		0	2946	16	30	0	1527	49	3405	0	0						38	2	5	0	0	0
5.3	Electrical installations		0	27	0	1	0	0	0	14	0	0							0	0	0	0	0
5.4	On site renewable energy generation		0	0	0	0	0	0	0	0	0	0							0	0	0	0	0
5.5	Systems including life safety, fuel installations, lift and conveyor installations,		0	21	0	0	0	0	0	22	0	0							0	0	0	0	0
6	Pre-fabricated buildings and units		0	0	0	0	0	0	0	0	0	0							0	0	0	0	0
7	Works to existing buildings		0	0	0	0	0	0	0	0	0	0							0	0	0	0	0
8a	External works (within the site boundary)		-358	-348	462	9	0	0	0	0	0	0							61	363	6	0	0
8b	External works (outside the site boundary)		0	0	0	0																	
	Sub-totals kgCO2e	0	-17487	56159	5837	19476	-207	1527	396	10458	0	0	49715	0	0	0	0	1763	948	19958	332	0	0

decarbonised figures

Scenario 2: PD - Partial Demo

Reporting Set 1: WLC design decision-making (Concept stage)

NET ZERO COMPATIBLE ELECTRICITY

		B6.1-6.3
	Is this option all electric? Calculation only done if it is	Y
	LETI EUI Limit for this building	35
	Total Delivered Energy for this building	25
	Non-decarbonised electricity factor for the grid	0.2956
	Decarbonised electricity factor for the grid	0.0902
	GIA for this building, m2	345
p3	Emissions associated with energy in-use and renewable generation - building	52

	LETI EUI target
Domestic	35
Offices	55
Schools	65
Retail	55

Split elctricity factor means that emissions below the LETI target are use
the decarbonised electricity factor, emissions above use the the non-decarbonised
This calculation must only be used when the building is supplied with electricity only.

Select Scenario for detailed tables below 3

RIBA and LETI targets are the main output of this spreadsheet. However we have also tried to assemble detailed results according to the RICS layout for the option number chosen (left). Not all are needed for RIBA and LETI, nevertheless figures that are know are entered - there are some notable omissions, e.g. plug loads from electricity B6.1, not included in PHPP.

Scenario 3: ND - No Demo
Reporting Set 1: WLC design decision-making (Concept stage)
NO DECARBONISATION
(using present day figures, a worst case but similar to RICSv1 calculations)

Code		A					B										C				D	
		Product stage	A1-A3 Sequestered	A1-A3 Manufac	A4 Transp to site	A5.1-4 Construction	B1.1 In use	B1.2 Fugitive emiss, Refrigerants	B2-B3 Maint & Repair	B4 Replacement	B5 Refurbishment	B5 Refurb Sequestration	B6.1-B6.3 Energy	B7.1 Water1	B7.2 Water2	B7.3 Water3	B8.1-B8.2 User activities	C1 Demolition	C2 Transport	C3 Waste Processing	C4 Waste Disposal	D1 Potential Benefits	D2 Potential ben from export
	Zkroh#hqw1w|#+dq|wklqj#wkdw#fdq*w#eh#eurnhq#grzq#lqwr#pruh#ghwdlo#wkhq#wkh#zkroh#dvvhw,																					
p1	Pre-construction - whole development	0																					
p2	Site emissions - whole development					0																	
p3	Emissions associated with energy in-use and renewable generation - building						0	0					83578										0
p4	Emissions associated with energy in-use and renewable generation - external						0	0					0										0
p5	Water in-use - building													0	0								
p6	Water in-use - external works (within project boundary)													0	0	0							
p7	User carbon - whole development																0						
	Zkroh#hqw1w|#+dq|wklqj#wkdw#fdq*w#eh#eurnhq#grzq#lqwr#pruh#ghwdlo#wkhq#wkh#zkroh#dvvhw,																						
0.1	Treatment and demolition works Facilitating works		0	0	0	0																	
1	Sub-Structure		0	13440	663	735	0	0	0	0	0	0							469	97	3	0	0
2.1-4	Super structure: Frame, Upper floors, Roof, Stairs and ramps		0	452	6	5	0	0	0	0	0	0							1	0	0	0	0
2.5-6	Super structure: External envelope incl roof finishes, Windows and ext doors		-11	1387	11	14	0	0	65	1417	0	0							4	7	5	0	0
2.7-8	Super structure: Internal walls and partitions, Internal doors		-406	294	6	31	0	0	0	675	0	0							1	404	7	0	0
3	Finishes		-2260	1966	159	203	0	0	0	1012	0	0							44	2247	41	0	0
4.1	FF&E Fixed		-1671	321	380	68	0	0	0	0	0	0							5	1577	26	0	0
4.2	FF&E Non-Fixed		0	0	0	0	0	0	0	0	0	0							0	0	0	0	0
5.1	Public Health		0	154	3	11	0	0	0	336	0	0							1	0	0	0	0
5.2	Heating, Ventilation and Cooling (HVAC)& Refrigerant		0	0	0	0	0	0	0	0	0	0						0	0	0	0	0	0
5.3	Electrical installations		0	0	0	0	0	0	0	0	0	0							0	0	0	0	0
5.4	On site renewable energy generation		0	0	0	0	0	0	0	0	0	0							0	0	0	0	0
5.5	Systems including life safety, fuel installations, lift and conveyor installations,		0	0	0	0	0	0	0	0	0	0							0	0	0	0	0
6	Pre-fabricated buildings and units		0	0	0	0	0	0	0	0	0	0							0	0	0	0	0
7	Works to existing buildings		0	0	0	0	0	0	0	0	0	0							0	0	0	0	0
8a	External works (within the site boundary)		0	-416	381	-5	0	0	0	0	0	0							122	25	1	0	0
8b	External works (outside the site boundary)		0	0	0	0																	
	Sub-totals kgCO2e	0	-4348	17596	1608	15020	0	0	65	3440	0	0	83578	0				1790	647	4356	83	0	0

Scenario 3: ND - No Demo
Reporting Set 1: WLC design decision-making (Concept stage)
WITH DECARBONISATION
(assuming some areas could decarbonise by 50% and electricity decarbonises according to average over next 60yrs from FES

Code		A					B										C				D	
		Product stage	A1-A3 Sequestered	A1-A3 Manufac	A4 Transp to site	A5.1-4 Construction	B1.1 In use	B1.2 Fugitive emiss, Refrigerants	B2-B3 Maint & Repair	B4 Replacement	B5 Refurbishment	B5 Refurb Sequestration	B6.1-B6.3 Energy	B7.1 Water1	B7.2 Water2	B7.3 Water3	B8.1-B8.2 User activities	C1 Demolition	C2 Transport	C3 Waste Processing	C4 Waste Disposal	D1 Potential Benefits	D2 Potential ben from export
	Zkroh#hqw1w|#+dq|wklqj#wkdw#fdq*w#eh#eurnhq#grzq#lqwr#pruh#ghwdlo#wkhq#wkh#zkroh#dvvhw,																					
p1	Pre-construction - whole development	0																					
p2	Site emissions - whole development					0																	
p3	Emissions associated with energy in-use and renewable generation - building						0	0					25492										0
p4	Emissions associated with energy in-use and renewable generation - external						0	0					0										0
p5	Water in-use - building													0	0								
p6	Water in-use - external works (within project boundary)													0	0	0							
p7	User carbon - whole development																0						
	Zkroh#hqw1w|#+dq|wklqj#wkdw#fdq*w#eh#eurnhq#grzq#lqwr#pruh#ghwdlo#wkhq#wkh#zkroh#dvvhw,																						
0.1	Treatment and demolition works Facilitating works		0	0	0	0																	
1	Sub-Structure		0	13440	663	735	0	0	0	0	0	0							235	97	3	0	0
2.1-4	Super structure: Frame, Upper floors, Roof, Stairs and ramps		0	452	6	5	0	0	0	0	0	0							0	0	0	0	0
2.5-6	Super structure: External envelope incl roof finishes, Windows and ext doors		-11	1387	11	14	0	0	33	709	0	0							2	7	5	0	0
2.7-8	Super structure: Internal walls and partitions, Internal doors		-406	294	6	31	0	0	0	337	0	0							1	404	7	0	0
3	Finishes		-2260	1966	159	203	0	0	0	506	0	0							22	2247	41	0	0
4.1	FF&E Fixed		-1671	321	380	68	0	0	0	0	0	0							2	1577	26	0	0
4.2	FF&E Non-Fixed		0	0	0	0	0	0	0	0	0	0							0	0	0	0	0
5.1	Public Health		0	154	3	11	0	0	0	168	0	0							0	0	0	0	0
5.2	Heating, Ventilation and Cooling (HVAC)& Refrigerant		0	0	0	0	0	0	0	0	0	0						0	0	0	0	0	0
5.3	Electrical installations		0	0	0	0	0	0	0	0	0	0							0	0	0	0	0
5.4	On site renewable energy generation		0	0	0	0	0	0	0	0	0	0							0	0	0	0	0
5.5	Systems including life safety, fuel installations, lift and conveyor installations,		0	0	0	0	0	0	0	0	0	0							0	0	0	0	0
6	Pre-fabricated buildings and units		0	0	0	0	0	0	0	0	0	0							0	0	0	0	0
7	Works to existing buildings		0	0	0	0	0	0	0	0	0	0							0	0	0	0	0
8a	External works (within the site boundary)		0	-416	381	-5	0	0	0	0	0	0							61	25	1	0	0
8b	External works (outside the site boundary)		0	0	0	0																	
	Sub-totals kgCO2e	0	-4348	17596	1608	15020	0	0	33	1720	0	0	25492	0				895	324	4356	83	0	0

decarbonised figures

Scenario 3: ND - No Demo
Reporting Set 1: WLC design decision-making (Concept stage)
NET ZERO COMPATIBLE ELECTRICITY

	B6.1-6.3
Is this option all electric? Calculation only done if it is	N
LETI EUI Limit for this building	35
Total Delivered Energy for this building	166
Non-decarbonised electricity factor for the grid	
Decarbonised electricity factor for the grid	
GIA for this building, m2	
p3 Emissions associated with energy in-use and renewable generation - building	

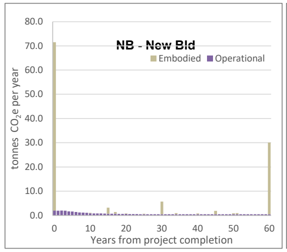
LETI EUI target	
Domestic	35
Offices	55
Schools	65
Retail	55

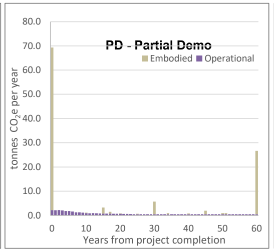
Split elctricity factor means that emissions below the LETI target are use
the decarbonised electricity factor, emissions above use the the non-decarbonised
This calculation must only be used when the building is supplied with electricity only.

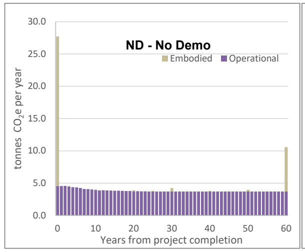
Total CO_2 Calculation

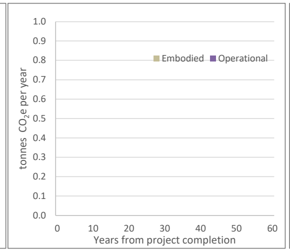
This sheet calculates the Operational CO2 using the table below and adds it to the Embodied (large table to the right) to give total CO2. It graphs it and a copy is transfered to the 'Embod' tab. Changes you make to the heating, hot water or other energy systems that change the PER tab automatically update here too. You can have different Operation CO2 figures using different PHPPs, or variations of this PHPP, see video and/or help manual.

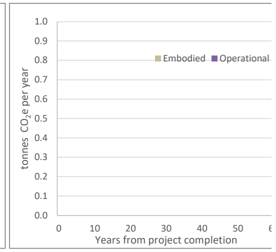
	$kWh/m^{2\,TFA}.yr$	kWh/yr
Heating		
Electricity (HP compact unit)		0
Electricity (heat pump)	6.8	2081
Electricity (direct)		0
Boiler		0
District heating		0
		0
Solar thermal system		0
Aux. electricity (heating, wintertime ventilation)	5.2	1591
Cooling and dehumidification		
Electricity cooling (HP)		0
Electricity dehumidification (HP)		0
Auxiliary electricity cooling, ventilation summer	2.0	612
Auxiliary electricity (dehumidification)		0
DHW generation		
Electricity (HP compact unit)		0
Electricity (heat pump)		0
Electricity (direct)		0
Boiler		0
District heating		0
		0
Solar thermal system		0
Aux. electricity (DHW + solar DHW)		0
Household electricity + Auxiliary electricity (other)		
Household electricity (lighting, electrical devices, etc.)	13.3	4070
Auxiliary electricity (other)		0
Additional gas demand		
Drying/Cooking	0.0	0
Energy generation		
PV electricity		0
Solar thermal system		0

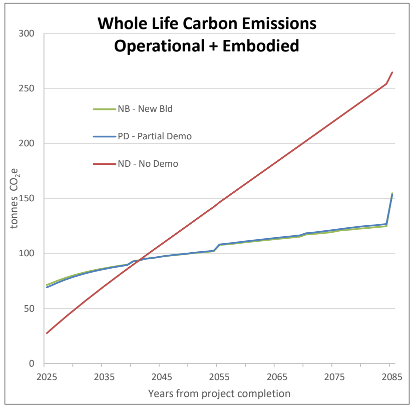


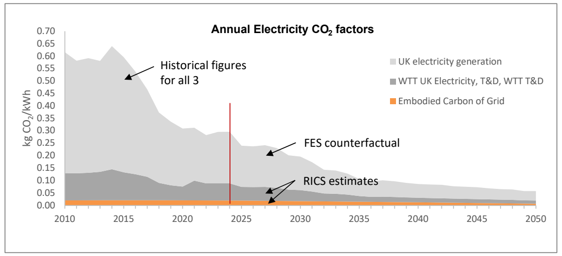












If Operational CO2 varies, copy and paste **as values**, either by changing the variant or by copying from another spreadsheet

Scenario

			NB - New E	Partial D	- No Dei									
		kWh/a	kWh/a	kWh/a	kWh/a	kWh/a	kWh/a	kWh/a	kWh/a	kWh/a	kWh/a	kWh/a	kWh/a	kWh/a
	Electricity used Total	8354	8354	9189	4712									
	PV or renewables generated Total	0												
	Total wood logs, wood chips or wood pellets													
	Total natural gas	0			16050									
	Total heating oil													
	Exter your own, e.g. for District Heating (don't add solar thermal)													
	Total Delivered Energy, $kWh/m^{2\,TFA}.a$	27	27	28	97									
	Combined Non-Electric result, tonnes CO2/year	0	0	0	3	0	0	0	0	0	0	0	0	0
Percentages % — Of all energy used by building	% generated by onsite renewables	0	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	% from the grid		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Of all renewables generated	% used onsite at time of generation		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	% exported and reimported later		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	% exported over the course of a year		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
RICSv2 Non Decarbonised figures	Electricity used from Grid		2470	2717	1393	0	0	0	0	0	0	0	0	0
kgCO2/yr	Renewables exported and reimported later		0	0	0	0	0	0	0	0	0	0	0	0
	D2 Renewables exported		0	0	0	0	0	0	0	0	0	0	0	0
RICSv2 Decarbonised figures	Electricity used from Grid		753	829	425	0	0	0	0	0	0	0	0	0
kgCO2/yr	Renewables exported and reimported later		0	0	0	0	0	0	0	0	0	0	0	0
	D2 Renewables exported		0	0	0	0	0	0	0	0	0	0	0	0
	Reference Study Period, years	60												
	Year of project completion	2025												

CO_2 factors

$kgCO_2/kWh$

0.024	wood logs	wood type (if applicable)
0.2131	incl WTT	
0.2983	incl WTT	
	100% means PV generates as much as building uses, can be over 100%	
	100% means all energy supplied by grid, none of it previously from PV or renewables from this site	
	Overwrite these figures if you have hourly measurements	
0.2956	Gov reporting with generation WTT, T&D and T&D WTT	
0.0227	T&D and T&D WTT with embodied of distribution	
-0.2730	Benefit is that generation emissions are avoided, for each kWh exported	
0.0902	FES Counterfactual with decarb generation WTT, T&D and T&D WTT	
0.0068	T&D and T&D WTT with embodied of distribution	
-0.0849	Benefit is that generation emissions are avoided, for each kWh exported	

Years from project completion
0
1
2
3

Years from project completion	Year	Embodied Decarbonisation factor	CO2 factor, Electricity used from grid	CO2 factor, Electricity exported and reimported	Operational tonnes CO2 for WLC graph (for info only), not used in RICS, RIBA or LETI results											Embodied tonnes CO2 including first replacement											Cumulative Total tonnes CO2 incl all replacements										
					NB - New Bld	PD - Partial Demo	ND - No Demo									NB - New Bld	PD - Partial Demo	ND - No Demo										NB - New Bld	PD - Partial Demo	ND - No Demo								
0	2025	0.975	0.240	0.018	2.0	2.2	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	69.5	67.1	23.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	71.5	69.3	27.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	2026	0.949	0.237	0.018	2.0	2.2	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	73.5	71.5	32.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	2027	0.924	0.241	0.018	2.0	2.2	4.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	75.5	73.7	36.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	2028	0.899	0.230	0.017	1.9	2.1	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	77.4	75.8	41.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	2029	0.873	0.201	0.015	1.7	1.8	4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	79.1	77.7	45.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	2030	0.848	0.196	0.015	1.6	1.8	4.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	80.7	79.5	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	2031	0.822	0.174	0.013	1.4	1.6	4.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	82.2	81.1	54.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	2032	0.797	0.143	0.011	1.2	1.3	4.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	83.4	82.4	58.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	2033	0.772	0.140	0.010	1.2	1.3	4.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	84.5	83.7	62.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	2034	0.746	0.128	0.009	1.1	1.2	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	85.6	84.8	66.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	2035	0.721	0.106	0.008	0.9	1.0	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	86.7	86.0	70.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	2036	0.696	0.097	0.007	0.8	0.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	87.5	86.9	74.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	2037	0.670	0.101	0.007	0.8	0.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	88.3	87.8	78.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	2038	0.645	0.097	0.007	0.8	0.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	89.1	88.7	82.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	2039	0.620	0.090	0.007	0.8	0.8	3.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	89.9	89.5	85.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	2040	0.594	0.086	0.006	0.7	0.8	3.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	93.1	92.8	89.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	2041	0.569	0.084	0.006	0.7	0.8	3.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	93.8	93.6	93.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	2042	0.544	0.083	0.006	0.7	0.8	3.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	95.2	95.1	97.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	2043	0.518	0.077	0.006	0.6	0.7	3.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	95.8	95.8	101.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	2044	0.493	0.075	0.005	0.6	0.7	3.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	96.5	96.5	105.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	2045	0.467	0.073	0.005	0.6	0.7	3.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	97.3	97.3	108.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	2046	0.442	0.068	0.005	0.6	0.6	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	97.9	98.0	112.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	2047	0.417	0.065	0.005	0.5	0.6	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	98.4	98.5	116.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	2048	0.391	0.064	0.005	0.5	0.6	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	98.9	99.1	120.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	2049	0.366	0.058	0.004	0.5	0.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	99.4	99.7	123.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	2050	0.341	0.058	0.004	0.5	0.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.1	100.4	127.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	2051	0.341	0.058	0.004	0.5	0.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.6	100.9	131.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	2052	0.341	0.058	0.004	0.5	0.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	101.1	101.5	134.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	2053	0.341	0.058	0.004	0.5	0.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	101.5	102.0	138.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29	2054	0.341	0.058	0.004	0.5	0.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	102.0	102.5	142.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	2055	0.341	0.058	0.004	0.5	0.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2	5.2	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	107.7	108.3	146.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	2056	0.341	0.058	0.004	0.5	0.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	108.2	108.8	150.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32	2057	0.341	0.058	0.004	0.5	0.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	108.7	109.3	153.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
33	2058	0.341	0.058	0.004	0.5	0.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	109.2	109.8	157.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
34	2059	0.341	0.058	0.004	0.5	0.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	110.1	110.8	161.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
35	2060	0.341	0.058	0.004	0.5	0.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	110.6	111.4	165.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
36	2061	0.341	0.058	0.004	0.5	0.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	111.1	111.9	168.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
37	2062	0.341	0.058	0.004	0.5	0.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	111.5	112.4	172.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
38	2063	0.341	0.058	0.004	0.5	0.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	112.0	113.0	176.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
39	2064	0.341	0.058	0.004	0.5	0.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	112.5	113.5	179.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40	2065	0.341	0.058	0.004	0.5	0.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	113.3	114.3	183.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41	2066	0.341	0.058	0.004	0.5	0.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	113.8	114.9	187.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
42	2067	0.341	0.058	0.004	0.5	0.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	114.3	115.4	191.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
43	2068	0.341	0.058	0.004	0.5	0.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	114.8	115.9	194.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
44	2069	0.341	0.058	0.004	0.5	0.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	115.2	116.5	198.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
45	2070	0.341	0.058	0.004	0.5	0.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	117.1	118.4	202.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
46	2071	0.341	0.058	0.004	0.5	0.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	117.6	118.9	205.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
47	2072	0.341	0.058	0.004	0.5	0.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	118.1	119.5	209.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
48	2073	0.341	0.058	0.004	0.5	0.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	118.6	120.0	213.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
49	2074	0.341	0.058	0.004	0.5	0.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	119.1	120.5	216.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50	2075	0.341	0.058	0.004	0.5	0.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	120.0	121.5	220.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
51	2076	0.341	0.058	0.004	0.5	0.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	120.9	122.5	224.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
52	2077	0.341	0.058	0.004	0.5	0.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	121.4	123.0	228.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53	2078	0.341	0.058	0.004	0.5	0.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	121.9	123.5	231.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
54	2079	0.341	0.058	0.004	0.5	0.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	122.4	124.1	235.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55	2080	0.341	0.058	0.004	0.5	0.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	122.8	124.6	239.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
56	2081	0.341	0.058	0.004	0.5	0.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	123.3	125.1	243.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
57	2082	0.341	0.058	0.004	0.5	0.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	123.8	125.7	246.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
58	2083	0.341	0.058	0.004	0.5	0.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	124.3	126.2	250.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
59	2084	0.341	0.058	0.004	0.5	0.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	124.8	126.7	254.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
60	2085	0.341	0.058	0.004	0.5	0.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	29.6	26.1	6.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	154.9	153.3	264.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total, tonnes				43.7	48.1	233.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0																						

Embodied CO_2 Calculation

template v6.04

Quantities, thicknesses and volumes will update if you change your PHPP. To add new materials use the Embod button in PHribbon.
Any changes to this sheet will be automatically used in totals and the graph.

KEY
- mandatory
- optional
- not applicable

Table1

Code	Assembly/ substage	Your Description	Matched Material	m2 (Quantity)		Thick mm	Qty	Units (Material)	kg/unit (or kg/m3 if units kg)	% FSC/ PEFC certified	Life, yrs	Material Category	Category (Transport)	Road km	Sea km
	Whole entity (anything that can't be broken down into more detail than the whole asset)														
p1	Pre-construction												-	-	-
p1	- whole development												-	-	-
p1													-	-	-
p2	Site emissions - whole development												-	-	-
p2													-	-	-
p2													-	-	-
p3	Emissions associated with energy												-	-	-
p3	in-use and renewable generation												-	-	-
p3	- building												-	-	-
p4	Emissions associated with energy												-	-	-
p4	in-use and renewable generation												-	-	-
p4	- external works (within project boundary)												-	-	-
p5	Water in-use - building												-	-	-
p5													-	-	-
p5													-	-	-
p6	Water in-use - external works												-	-	-
p6	(within project boundary)												-	-	-
p6													-	-	-
p7	User carbon - whole development												-	-	-
p7													-	-	-
	Carbon emissions where they can be broken down into elements														
0.1	0.1 Treatment and demolition		Full Demolition								life		-	-	-
0.1	Facilitating works												-	-	-
0.1			Partial Demolition (Method 1)								life		-	-	-
0.1	Follow the instructions in the												-	-	-
0.1	cells for method 1 or method 2												-	-	-
0.1													-	-	-
1	1 Sub-structure	Piling (New Build NB)	concrete, GGBS 50%, RC 28/35 (28/35MPa), ground floors	31.8	m2	1000	31.80	m3	2385	0%	life	concrete, in situ	local readymix	20	0
1		Concrete foundations (NB)	concrete, GGBS 70%, RC 28/35 (28/35MPa), ground floors	37.7	m2	1000	37.70	m3	2385	0%	life	concrete, in situ	local readymix	20	0
1		External block below DPC (NB) (PD)	block, concrete typical medium, dense, British Precast Association	47.09	m2	100	4.71	m3	1425	0%	150	masonry	regional	80	0
1		External Brick below DPC (NB)	brick, with mortar, generic UK /kg Brick Development Assn	20.54	m2	102	3111.19	kg	1485	0%	150	masonry	regional	80	0
1		DPM External Wall (NB) (PD)	DPM Damp proof membrane, polythene, (polyethylene) 1200 gauge, 0.3mm				54.76	m2	0.265	0%	life	plastics	national	120	0
1		Block Sleeper Wall as cost report (NB) (PD)	block, concrete typical medium, dense, British Precast Association	38.45	m2	215	8.27	m3	1425	0%	150	masonry	regional	80	0
1		DPM Sleeper Wall (NB) (PD)	DPM Damp proof membrane, polythene, (polyethylene) 1200 gauge, 0.3mm				44.71	m2	0.265	0%	life	plastics	national	120	0
1		Hardcore (NB)	aggregate, O.C.O. M-LS 16mm blockmix, carbon negative aggregate	190	m2	150	28.50	m3	1100	0%	life	aggregate	local	50	0
1		Blinding (NB)	aggregate, granite 2-200mm Aggregate Industries, Glensanda Quarry, S	190	m2	50	9.50	m3	2610	0%	life	aggregate	local	50	0
1		DPM Ground Floor Slab (NB)	DPM Damp proof membrane, polythene, (polyethylene) 1200 gauge, 0.3mm				190	m2	0.265	0%	life	plastics	national	120	0
1		Ground Floor Slab (NB)	concrete, GGBS 50%, RC 28/35 (28/35MPa), ground floors	190	m2	150	28.50	m3	2385	0%	life	concrete, in situ	local readymix	20	0
1		Floor Insulation (NB)	PIR, Quinn Therm insulation boards QF/QW/QR λ 0.022	190	m2	100	19.00	m3	31	0%	life	insulation, hydrocarbon	regional	80	0
1		Perimeter Insulation (NB) (PD)	phenolic, Kingspan Kooltherm K5 framing board, λ 0.020, no foil, Netherl	60	m2	50	3.00	m3	35	0%	life	insulation, hydrocarbon	regional	80	0
1		DPM, Garage (NB) (PD)	DPM Damp proof membrane, polythene, (polyethylene) 1200 gauge, 0.3mm				190	m2	0.265	0%	life	plastics	national	120	0
1		Screed for UF Heating (NB) (PD)	screed, SMET Calcium Sulphate screed (500kg binder, 1300kg sand per	190	m2	75	14.25	m3	1500	0%	life	masonry	regional	80	0
1		Hardcore Garage (NB) (PD)	aggregate, O.C.O. M-LS 16mm blockmix, carbon negative aggregate	15	m2	150	2.25	m3	1100	0%	life	aggregate	local	50	0
1		Blinding Garage (NB) (PD)	aggregate, granite 2-200mm Aggregate Industries, Glensanda Quarry, S	15	m2	50	0.75	m3	2610	0%	life	aggregate	local	50	0
1		DPM Garage (NB) (PD)	DPM Damp proof membrane, polythene, (polyethylene) 1200 gauge, 0.3mm				15	m2	0.265	0%	life	plastics	national	120	0
1		Concrete Slab Garage (NB) (PD)	concrete, GGBS 50%, RC 28/35 (28/35MPa), ground floors	15	m2	150	2.25	m3	2385	0%	life	concrete, in situ	local readymix	20	0
1													-	-	-
1		Underpinning works & strip footings 600mm wide x 1.9m deep per structural eng advice (PD)	concrete, reinforced 28/35 foundations, ground floors (28/35 MPa)	22	m2	1900	41.80	m3	2250	0%	life	concrete, in situ	local readymix	20	0
1		Hardcore (PD)	aggregate, O.C.O. M-LS 16mm blockmix, carbon negative aggregate	130	m2	150	19.50	m3	1100	0%	life	aggregate	local	50	0
1		Blinding (PD)	aggregate, granite 2-200mm Aggregate Industries, Glensanda Quarry, S	130	m2	50	6.50	m3	2610	0%	life	aggregate	local	50	0
1		DPM Ground floor Slab (PD)	DPM Damp proof membrane, polythene, (polyethylene) 1200 gauge, 0.3mm				130	m2	0.265	0%	life	plastics	national	120	0
1		Floor Insulation (PD)	PIR, Quinn Therm insulation boards QF/QW/QR λ 0.022	130	m2	100	13.00	m3	31	0%	life	insulation, hydrocarbon	regional	80	0
1		Concrete Slab (PD)	concrete, GGBS 50%, RC 28/35 (28/35MPa), ground floors	130	m2	150	19.50	m3	2385	0%	life	concrete, in situ	local readymix	20	0
1		DPM Separating Layer (PD)	DPM Damp proof membrane, polythene, (polyethylene) 1200 gauge, 0.3mm				130	m2	0.265	0%	life	plastics	national	120	0
1													-	-	-
1		Underpinning repair works (ND)	concrete, reinforced 25/30 foundations (25/30 MPa)	22	m2	1900	41.80	m3	2250	0%	life	concrete, in situ	local readymix	20	0
1		Hardcore for repairs (ND)	aggregate, O.C.O. M-LS 16mm blockmix, carbon negative aggregate	10	m2	150	1.50	m3	1100	0%	life	aggregate	local	50	0
1		Blinding for repair work (ND)	aggregate, granite 2-200mm Aggregate Industries, Glensanda Quarry, S	10	m2	50	0.50	m3	2610	0%	life	aggregate	local	50	0
1		Concrete slab partial repairs (ND)	concrete, reinforced 25/30 foundations (25/30 MPa)	10	m2	150	1.50	m3	2250	0%	life	concrete, in situ	local readymix	20	0
1		Insulation for repaired area (ND)	PIR, Quinn Therm insulation boards QF/QW/QR λ 0.022	10	m2	100	1.00	m3	31	0%	life	insulation, hydrocarbon	regional	80	0
1		DPM for repaired areas (ND)	DPM Damp proof membrane, polythene, (polyethylene) 1200 gauge, 0.3mm				10	m2	0.265	0%	life	plastics	national	120	0
1		Separating Layer for repaired areas (ND)	DPM Damp proof membrane, polythene, (polyethylene) 1200 gauge, 0.3mm				10	m2	0.265	0%	life	plastics	national	120	0
2.1-4	Super structure	Timber Frame, First Floor (NB)	timber, batten, stud or beam, preservative treated, give dims	41.61	m2	145	0.50	m3	483	100%	life	timber treated	regional	80	0
2.1-4	2.1 Frame	Timber Frame, Ground Floor (NB)	timber, batten, stud or beam, preservative treated, give dims	99.4	m2	145	1.20	m3	483	100%	life	timber treated	regional	80	0
2.1-4	2.2 Upper floors	Timber Floor Joists (NB)	timber, batten, stud or beam, preservative treated, give dims	118	m2	145	1.43	m3	483	100%	life	timber treated	regional	80	0
2.1-4	2.3 Roof	Insulation Timber Floor (NB)	mineral wool, Knauf λ 0.032-λ 0.033W/mK ECOSE slabs	118	m2	100	342.20	kg	29	0%	life	insulation, mineral	regional	80	0
2.1-4	2.4 Stairs and ramps	Chipboard Liner (NB)	timber, chipboard, Timber Development UK, UK ave	118	m2	22	2.60	m3	660	100%	life	timber panel	regional	80	0
2.1-4		Screed for UF Heating (NB)	screed, SMET Calcium Sulphate screed (500kg binder, 1300kg sand per	118	m2	25	2.95	m3	1500	0%	life	masonry	regional	80	0
2.1-4		Stone slabs between Joists (NB)	stone, sandstone	60.9	m2	25	1.52	m3	2350	0%	life	masonry	regional	80	0
2.1-4													-	-	-
2.1-4		Timber Frame, First Floor (PD)	timber, batten, stud or beam, preservative treated, give dims	40	m2	145	0.48	m3	483	100%	life	timber treated	regional	80	0
2.1-4		Timber Frame, Ground Floor (PD)	timber, batten, stud or beam, preservative treated, give dims	45	m2	145	0.54	m3	483	100%	life	timber treated	regional	80	0
2.1-4		Timber Floor Joists (PD)	timber, batten, stud or beam, preservative treated, give dims	58	m2	145	0.70	m3	483	100%	life	timber treated	regional	80	0
2.1-4		Insulation Timber Floor (PD)	mineral wool, blown, Knauf Supafil Frame λ 0.032-0.033 W/mK	58	m2	100	174.00	kg	30	0%	life	insulation, mineral	regional	80	0
2.1-4		Chipboard Liner (PD)	timber, chipboard, Timber Development UK, UK ave	58	m2	22	1.28	m3	660	100%	life	timber panel	regional	80	0
2.1-4		Screed for UF Heating (PD)	screed, SMET Calcium Sulphate screed (500kg binder, 1300kg sand per	118.00	m2	25	2.95	m3	1500	0%	life	masonry	regional	80	0
2.1-4		Stone Slabs between Joists (PD)	stone, sandstone	60.9	m2	25	1.52	m3	2350	0%	life	masonry	regional	80	0
2.1-4													-	-	-
2.1-4		New Staircase Allowance	steel, structural	5	m2	5	0.03	m3	7900	0%	life	steel, hot rolled	national	120	0
2.1-4		New GF Steps	stone, sandstone	5	m2	50	0.25	m3	2350	0%	life	masonry	regional	80	0
2.1-4													-	-	-
2.1-4		Roof Joists (NB)	timber, batten, stud or beam, preservative treated, give dims	197	m2	145	2.38	m3	483	100%	life	timber treated	regional	80	0
2.1-4		Roof Joists, Garage (NB)	timber, batten, stud or beam, preservative treated, give dims	21.5	m2	145	0.26	m3	483	100%	life	timber treated	regional	80	0
2.1-4		Roof Joists, Larger Members (NB)	timber, batten, stud or beam, preservative treated, give dims	18	m2	245	0.37	m3	483	100%	life	timber treated	regional	80	0
2.1-4													-	-	-
2.1-4		Roof Joists (PD)	timber, batten, stud or beam, preservative treated, give dims	150	m2	145	1.81	m3	483	100%	life	timber treated	regional	80	0
2.1-4		Roof joists, Garage (PD)	timber, batten, stud or beam, preservative treated, give dims	21.5	m2	145	0.26	m3	483	100%	life	timber treated	regional	80	0
2.1-4		Roof Joists, Larger Members (PD)	timber, batten, stud or beam, preservative treated, give dims	18	m2	245	0.37	m3	483	100%	life	timber treated	regional	80	0
2.1-4													-	-	-
2.1-5		Timber Frame, Garage (NB) (PD)	timber, batten, stud or beam, preservative treated, give dims	43.96	m2	140	0.51	m3	483	100%	life	timber treated	regional	80	0
2.1-4													-	-	-
2.1-4													-	-	-
2.5-6	Super structure	External Wall Insulation Ground Floor (NB) (PD)	PIR, Xtratherm / Unilin Cavity Therm CT Thin-R foil-faced + HIPS facer	67.36	m2	145	9.77	m3	32	0%	life	insulation, hydrocarbon	regional	80	0
2.5-6	2.5 External envelope including	External Wall outer Leaf Ground Floor (NB) (PD)	brick, with mortar, generic UK /kg Brick Development Assn	67.36	m2	102	10203.02	kg	1485	0%	150	masonry	regional	80	0
2.5-6	roof finishes	External Wall inner leaf garage (NB) (PD)	stone, shale or similar sedimentary rock	16.1	m2	100	1.61	m3	2600	0%	life	masonry	regional	80	0
2.5-6	2.6 Windows and ext doors	External Wall Insulation, Garage (NB) (PD)	PIR, Quinn Therm insulation boards IsoSheild Full Fill Cavity (embossed	43.96	m2	145	6.37	m3	31	0%	life	insulation, hydrocarbon	regional	80	0
2.5-6		Timber Lining (NB) (PD)	timber, OSB, Timber Development UK, UK ave	43.96	m2	19	0.84	m3	605	100%	life	timber panel	regional	80	0
2.5-6		Timber Cladding, Garage (NB) (PD)	timber, plywood hardwood, Timber Development UK, imported ave	43.96	m2	15	0.66	m3	584	100%	life	timber panel	regional	80	0
2.5-6		External Wall Timber Lining First Floor (NB) (PD)	timber, OSB, Timber Development UK, UK ave	97.73	m2	12	1.17	m3	605	100%	life	timber panel	regional	80	0
2.5-6		External Wall Insulation First Floor (NB) (PD)	mineral wool, blown, Knauf Supafil Frame λ 0.032-0.033 W/mK	97.73	m2	100	293.19	kg	30	0%	life	insulation, mineral	regional	80	0
2.5-6		External Wall Timber Cladding First Floor (NB) (PD)	timber, plywood hardwood, Timber Development UK, imported ave	97.73	m2	50	4.89	m3	584	100%	life	timber panel	regional	80	0
2.5-6													-	-	-
2.5-6		Roofing Membrane (NB) (PD)	EPDM roofing 1.2mm, Firestone Giscolene				215	m2	1.23	0%	30	plastics	national	120	0
2.5-6		Roof Paving (NB) (PD)	stone, shale or similar sedimentary rock	19	m2	50	0.95	m3	2600	0%	life	masonry	regional	80	0
2.5-6		Roof Insulation (NB) (PD)	Kingspan TR27 Flat Roof Insulation (Scaled/Factored to 150mm)				215	m2	37.5	0%	life	insulation, hydrocarbon	regional	80	0
2.5-6		Beather Membrane (NB) (PD)	membrane, VCL, Partel Vara Plus Smart Vapour Control Layer, SD 0.4m to >60m				215	m2	0.11	0%	life	plastics	national	120	0
2.5-6		Allowance for Metal Copings (NB) (PD)	aluminium, sheet European mix inc imports	10	m2	1.8	0.02	m3	2700	0%	life	aluminium	national	120	0
2.5-6													-	-	-
2.5-6		All Windows (NB) (PD)	windows, double glazed, Alu 45-50mm, generic (Assn ave)				76.00	m2	48.8	0%	30	glass	regional	80	0
2.5-6		Rooflight (NB) (PD)	roof window, double glazed, timber Fakro				6.00	m2	35.01	100%	30	glass	regional	80	0
2.5-6		Allowance for External Doors (NB) (PD)	glazed doors, triple glazed, timber Alu clad, Nordan NTech Villa Balcony door TE 105/80				5.00	m2	55.47	0%	60	glass	regional	80	0
2.5-6													-	-	-
2.5-6		Replacement Windows (ND)	windows, double glazed, Alu 45-50mm, generic (Assn ave)				11.00	m2	48.8	0%	30	glass	regional	80	0
2.5-6		Replacement Rooflight (ND)	roof window, double glazed, timber Fakro				1.50	m2	35.01	100%	30	glass	regional	80	0
2.5-6													-	-	-
2.5-6		Ground Floor West Elevation OSB Sheathing (NB) (PD)	timber, OSB, Timber Development UK, UK ave	30	m2	19	0.57	m3	605	100%	life	timber panel	regional	80	0
2.5-6		Ground Floor West Elevation Insulation (NB) (PD)	Cavity Therm PIR Unilin	30	m2	145	4.35	m3	30	0%	life	insulation, hydrocarbon	regional	80	0
2.5-6		Ground Floor West Elevation Render Board and Finish (NB) (PD)	render carrier board, StoVentec R 16mm full system inc. fixing screws, mesh and plaster				30	m2	13.29	0%	40	masonry	regional	80	0
2.5-6													-	-	-
2.5-6													-	-	-
2.7-8	Super structure	Internal Walls (NB) (PD)	stone, shale or similar sedimentary rock	180.56	m2	100	18.06	m3	2600	0%	life	masonry	regional	80	0
2.7-8	2.7 Internal walls and partitions	External Wall Inner Stone Cladding (NB) (PD)	stone, limestone - λ SPAB in situ, ave of 9 cases 170-625mm thick	129.5	m2	100	12.95	m3	2160	0%	life	masonry	regional	80	0
2.7-8	2.8 Internal doors	Internal Walls, Brick areas) (NB) (PD)	brick, with mortar, generic UK /kg Brick Development Assn	11.83	m2	102	1791.89	kg	1485	0%	150	masonry	regional	80	0
2.7-8		Internal Doors (NB) (PD)	door - single, wood with timber frame, av of 3 finishes. Daloc (est 2.1x0.75m)				9	each	53	100%	25	timber panel	regional	80	0
2.7-8													-	-	-
2.7-8		Structural Supporting Frame on retained external walls (PD)	steel, structural	12.75	m2	5	0.06	m3	7900	0%	life	steel, hot rolled	national	120	0
2.7-8													-	-	-
2.7-8		Internal Doors (ND)	door - single, wood with timber frame, av of 3 finishes. Daloc (est 2.1x0.75m)				6	each	53	100%	25	timber panel	regional	80	0
2.7-8													-	-	-
2.7-8													-	-	-
2.7-8													-	-	-
2.7-8													-	-	-
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2.7-8													-	-	-
2.7-8													-	-	-
2.7-8													-	-	-
2.7-8													-	-	-
3	3 Finishes	Stone Flooring (NB) (PD)	stone, shale or similar sedimentary rock	162	m2	25	4.05	m3	2600	0%	life	masonry	regional	80	0
3		Timber Flooring (NB) (PD)	timber, parquet	123	m2	19	2.34	m3	825	100%	life	timber, solid	national	120	0
3		Ceramic Tiling (NB) (PD)	ceramic tile, ave of 76 Italian companies, per m2				34	m2	19.9	0%	50	masonry	regional	80	0
3		Plasterboard Walls (NB) (PD)	plasterboard, Gyproc Wallboard 12.5mm, UK (incl. fixings and filling)	100	m2	12.5	1.25	m3	675	0%	60	plasterboard	regional	80	0
3		Paint to Walls (NB) (PD)	paint, water based, 2 coats, 3.33m2 per kg				100	m2	0.3	0%	10	coatings	national	120	0
3		Plasterboard to Ceilings (NB) (PD)	plasterboard, Gyproc FireLine 12.5mm, UK (incl. fixings and filling)	210	m2	12.5	2.63	m3	843	0%	60	plasterboard	regional	80	0
3		Paint to Ceilings (NB) (PD)	paint, water based, 2 coats, 3.33m2 per kg				210	m2	0.3	0%	10	coatings	national	120	0
3													-	-	-
3		Stone Flooring (ND)	stone, shale or similar sedimentary rock	60	m2	25	1.50	m3	2600	0%	life	masonry	regional	80	0
3		Timber Flooring (ND)	timber, parquet	89	m2	19	1.69	m3	825	100%	life	timber, solid	national	120	0
3		Ceramic Tiling (ND)	ceramic tile, ave of 76 Italian companies, per m2				30	m2	19.9	0%	50	masonry	regional	80	0
3		Plasterboard to Walls (ND)	plasterboard, Gyproc Wallboard 12.5mm, UK (incl. fixings and filling)	40	m2	12.5	0.50	m3	675	0%	60	plasterboard	regional	80	0
3		Paint to walls (ND)	paint, water based, 2 coats, 3.33m2 per kg				40	m2	0.3	0%	10	coatings	national	120	0
3		Plasterboard to Ceilings (ND)	plasterboard, Gyproc FireLine 12.5mm, UK (incl. fixings and filling)	120	m2	12.5	1.50	m3	843	0%	60	plasterboard	regional	80	0
3		Paint to Ceilings (ND)	paint, water based, 2 coats, 3.33m2 per kg				120	m2	0.3	0%	10	coatings	national	120	0
3													-	-	-
3													-	-	-
3													-	-	-
3													-	-	-
3													-	-	-
4.1	4 FF&E	Kitchen Cabinetry (NB) (PD) (ND)	timber, hardwood	16	m2	50	0.80	m3	750	100%	life	timber, eng	europe	1500	100
4.1	Furniture, Fittings and Equip	Wardrobes (NB) (PD) (ND)	timber, hardwood	20	m2	30	0.60	m3	750	100%	life	timber, eng	europe	1500	100
4.1	that **ARE** fixed to the building												-	-	-
4.1													-	-	-
4.1													-	-	-
4.2	4 FF&E												-	-	-
4.2	Furniture, Fittings and Equip												-	-	-
4.2	that are **NOT** fixed to the building												-	-	-
4.2	(Excluded by LETI)												-	-	-
5.1	5.1 Public Health	Sanitaryware (NB) (PD) (ND)	ceramic, eg enter weight of sinks (8kg), WCs(22kg), Kale Turkey				150	kg		0%	20	masonry	regional	80	0
5.1		Primary pipework	copper, pipe 22mm				30	m	0.5	0%	25	MEP, pipes	national	120	0
5.1		Secondary Pipework	copper, pipe 15mm				10	m	0.258	0%	25	MEP, pipes	national	120	0
5.1													-	-	-
5.1													-	-	-
5.2	5.2 Heating, Ventilation and	ASHP (NB) (PD)	ASHP A2W 14kW outdoor unit, Mitsubishi PUZ-HWM140VHA				1	each	129	0%	15	MEP, heat gen	national	120	0
5.2	Cooling (HVAC)	Refrigerant (NB) (PD)	Refrigerant Leakage R32 (HFC)				3.3	kg			15		-	-	-
5.2	including Refrigerant Leakage	MVHR (NB) (PD)	MVHR residential, Zhender Comfoair 200 (ave of that and 4 others) scalable				725	m3/hr	0.248	0%	17	MEP, ventilation	national	120	0
5.2		Ventilation Ductwork allowance (NB) (PD)	steel spiral duct 200mm, Lindab, Aldes, France Air, VIM, Uniclima				40	m	5.75	0%	life	steel, hot rolled	national	120	0
5.2													-	-	-
5.2													-	-	-
5.3	5.3 Electrical installations	Allowance for Electrical Rewiring (NB) (PD)	mains cable (includes copper and PVC ins) 11A, lighting				30	m	0.074	0%	30	MEP, cables	national	120	0
5.3		Allowance for Electrical Rewiring (NB) (PD)	mains cable (includes copper and PVC ins) 20A, power ring main				30	m	0.15	0%	30	MEP, cables	national	120	0
5.3		Allowance for Electrical Rewiring (NB) (PD)	mains cable (includes copper and PVC ins) 34A, shower, cooker				10	m	0.259	0%	30	MEP, cables	national	120	0
5.3													-	-	-
5.3													-	-	-
5.4	5.4 On site renewable energy												-	-	-
5.4	generation												-	-	-
5.4													-	-	-
5.5	5.5 Systems including life safety,	Allowance for Sprinkler System (NB) (PD)	copper, pipe 15mm				30	m	0.258	0%	25	MEP, pipes	national	120	0
5.5	fuel installations, lift and												-	-	-
5.5	conveyor installations, services												-	-	-
5.5	equipment, disposal installations,												-	-	-
5.5	specialist installations, builders												-	-	-
5.5	work in connection with services												-	-	-
6	6 Pre-fabricated buildings												-	-	-
6	and units												-	-	-
6													-	-	-
7	7 Works to existing buildings												-	-	-
7													-	-	-
7													-	-	-
8a	8 External works	Aggregate below paving (NB) (PD) (ND)	aggregate, O.C.O. M-LS 16mm blockmix, carbon negative aggregate	100	m2	150	15.00	m3	1100	0%	life	aggregate	local	50	0
8a	(within the site boundary)	Stone Paving (NB) (PD) (ND)	stone, shale or similar sedimentary rock	50	m2	30	1.50	m3	2600	0%	life	masonry	regional	80	0
8a		Rear Paving (NB) (PD) (ND)	stone, sandstone	48	m2	50	2.40	m3	2350	0%	life	masonry	regional	80	0
8a		Bin Store and ASHP Enclosure (NB) (PD)	timber, hardwood	10	m2	30	0.30	m3	750	100%	life	timber, eng	europe	1500	100
8a													-	-	-
8a													-	-	-
8a													-	-	-
8a													-	-	-
8a													-	-	-
8a													-	-	-
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8a													-	-	-
8a													-	-	-
8a													-	-	-
8a													-	-	-
8a													-	-	-
8a													-	-	-
8a													-	-	-
8b	8 External works												-	-	-
8b	(outside the site boundary)												-	-	-
8b													-	-	-
8b													-	-	-
8b													-	-	-
8b													-	-	-
8b													-	-	-
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Scenarios / Results, kg CO_2e

Code	Your Description	2nd hand material used	Reused/Recycled, used ON SITE?	NB - New Bld	PD - Partial Demo	ND - No Demo	Mfr Locn or Ref	Ref2	Ref3	A0 Non material	A1-A3 Sequestered	A1-A3 Manufac	A4 Transp to site	A5.1-4 Construction	B1.1 In use	B1.2 Refrigerants	B2-B3 Maint & Repair	B4 Replacement	B5 Refurbishment	B5 Refurb Sequestration	B6.1-B6.3 Energy	B7.1 Water1	B7.2 Water2	B7.3 Water3	B8.1-B8.2 User activities	C1 Demolition	C2 Transport	C3 Waste Processing	C4 Waste Disposal	D1 Potential Benefits	D2 Potential ben from export	Total A-C	End of life method used
p1																																0	
p1																																0	
p1																																0	
p2																																0	
p2																																0	
p2																																0	
p3																																0	
p3																																0	
p3																																0	
p4																																0	
p4																																0	
p4																																0	
p5																						0	0									0	
p5																																0	
p5																																0	
p6																																0	
p6																																0	
p6																																0	
p7																																0	
p7																																0	
0.1				✓										6265	method 1: C1-C4																	6265	RICS est
0.1														0	method 2: the C1 part																	0	
0.1					✓									2100																		2100	RICS est
0.1																																0	
0.1																																0	
0.1																																0	
1	Piling (New Build NB)			✓								5915	488	341				0									354	73	2			7173	RICS est
1	Concrete foundations (NB)			✓								5278	578	318				0									420	86	3			6683	RICS est
1	External block below DPC (NB) (PD)			✓	✓				EPD			612	129	56	-75			0									31	27	0			780	EPD
1	External Brick below DPC (NB)			✓					EPD			663	60	52				0									15	10	3			802	EPD
1	DPM External Wall (NB) (PD)			✓	✓							37	0	1				0									0	0	0			38	RICS est
1	Block Sleeper Wall as cost report (NB) (PD)			✓	✓				EPD			1075	226	98	-132			0									55	47	0			1369	EPD
1	DPM Sleeper Wall (NB) (PD)			✓	✓							30	0	1				0									0	0	0			31	RICS est
1	Hardcore (NB)			✓					EPD			-1379	376	-83				0									146	30	1			-908	RICS est
1	Blinding (NB)			✓			1		EPD			124	298	56				0									116	24	1			619	RICS est
1	DPM Ground Floor Slab (NB)			✓								128	1	3				0									0	0	0			132	RICS est
1	Ground Floor Slab (NB)			✓								5301	437	306				0									318	65	2			6429	RICS est
1	Floor Insulation (NB)			✓			1		EPD			2489	11	175				0									3	4	0			2682	RICS est
1	Perimeter Insulation (NB) (PD)			✓	✓		1		EPD			231	2	16				0									1	227	0			477	EPD
1	DPM, Garage (NB) (PD)			✓	✓							128	1	3				0									0	0	0			132	RICS est
1	Screed for UF Heating (NB) (PD)			✓	✓				EPD			985	410	106				0									100	21	1			1622	RICS est
1	Hardcore Garage (NB) (PD)			✓	✓				EPD			-109	30	-7				0									12	2	0			-72	RICS est
1	Blinding Garage (NB) (PD)			✓	✓		1		EPD			10	23	4				0									9	2	0			49	RICS est
1	DPM Garage (NB) (PD)			✓	✓							10	0	0				0									0	0	0			10	RICS est
1	Concrete Slab Garage (NB) (PD)			✓	✓							419	34	24				0									25	5	0			508	RICS est
1																																0	
1	Underpinning works & strip footings 600mm wide x 1.9m deep per structural eng advice (PD)				✓							13662	605	740				0									439	90	3			####	RICS est
1	Hardcore (PD)				✓				EPD			-944	257	-57				0									100	21	1			-622	RICS est
1	Blinding (PD)				✓		1		EPD			85	204	38				0									79	16	1			423	RICS est
1	DPM Ground floor Slab (PD)				✓							88	1	2				0									0	0	0			91	RICS est
1	Floor Insulation (PD)				✓		1		EPD			1703	8	120				0									2	2	0			1835	RICS est
1	Concrete Slab (PD)				✓							3627	299	209				0									217	45	1			4399	RICS est
1	DPM Separating Layer (PD)				✓							88	1	2				0									0	0	0			91	RICS est
1																																0	
1	Underpinning repair works (ND)					✓						12898	605	702				0									439	90	3			####	RICS est
1	Hardcore for repairs (ND)					✓			EPD			-73	20	-4				0									8	2	0			-48	RICS est
1	Blinding for repair work (ND)					✓	1		EPD			7	16	3				0									6	1	0			33	RICS est
1	Concrete slab partial repairs (ND)					✓						463	22	25				0									16	3	0			529	RICS est
1	Insulation for repaired area (ND)					✓	1		EPD			131	1	9				0									0	0	0			141	RICS est
1	DPM for repaired areas (ND)					✓						7	0	0				0									0	0	0			7	RICS est
1	Separating Layer for repaired areas (ND)					✓						7	0	0				0									0	0	0			7	RICS est
2.1-4	Timber Frame, First Floor (NB)			✓							-369	17	5	7				0									1	373	5			40	% scena
2.1-4	Timber Frame, Ground Floor (NB)			✓							-880	42	11	17				0									3	891	13			96	% scena
2.1-4	Timber Floor Joists (NB)			✓							-1045	49	13	20				0									3	1058	15			113	% scena
2.1-4	Insulation Timber Floor (NB)			✓			1	2	EPD			361	7	26				0									4	0	2			399	EPD
2.1-4	Chipboard Liner (NB)			✓					EPD		-2622	831	33	91				0									8	2607	42			990	RICS est
2.1-4	Screed for UF Heating (NB)			✓					EPD			204	85	22				0									21	4	0			336	RICS est
2.1-4	Stone slabs between Joists (NB)			✓								192	69	20				0									17	3	0			300	RICS est
2.1-4																																0	
2.1-4	Timber Frame, First Floor (PD)				✓						-354	17	4	7				0									1	359	5			38	% scena
2.1-4	Timber Frame, Ground Floor (PD)				✓						-399	19	5	8				0									1	403	6			43	% scena
2.1-4	Timber Floor Joists (PD)				✓						-514	24	6	10				0									2	520	7			56	% scena
2.1-4	Insulation Timber Floor (PD)				✓		1	2	EPD			169	3	12				0									2	0	1			188	EPD
2.1-4	Chipboard Liner (PD)				✓				EPD		-1289	408	16	45				0									4	1281	21			486	RICS est
2.1-4	Screed for UF Heating (PD)				✓				EPD			204	85	22				0									21	4	0			336	RICS est
2.1-4	Stone Slabs between Joists (PD)				✓							192	69	20				0									17	3	0			300	RICS est
2.1-4																																0	
2.1-4	New Staircase Allowance			✓	✓	✓						452	6	5				0									1	0	0			463	RICS est
2.1-4	New GF Steps			✓	✓							32	11	3				0									3	1	0			49	RICS est
2.1-4																																0	
2.1-4	Roof Joists (NB)			✓							-1745	82	22	33				0									5	1766	25			189	% scena
2.1-4	Roof Joists, Garage (NB)			✓							-190	9	2	4				0									1	193	3			21	% scena
2.1-4	Roof Joists, Larger Members (NB)			✓							-269	13	3	5				0									1	273	4			29	% scena
2.1-4																																0	
2.1-4	Roof Joists (PD)				✓						-1329	63	17	25				0									4	1345	19			144	% scena
2.1-4	Roof joists, Garage (PD)				✓						-190	9	2	4				0									1	193	3			21	% scena
2.1-4	Roof Joists, Larger Members (PD)				✓						-269	13	3	5				0									1	273	4			29	% scena
2.1-4																																0	
2.1-5	Timber Frame, Garage (NB) (PD)			✓	✓						-376	18	5	7				0									1	381	5			41	% scena
2.1-4																																0	
2.1-4																																0	
2.5-6	External Wall Insulation Ground Floor (NB) (PD)			✓	✓		1		EPD			1053	6	74				0									2	2	0			1136	RICS est
2.5-6	External Wall outer Leaf Ground Floor (NB) (PD)			✓	✓				EPD			2173	196	171				0									48	33	11			2631	EPD
2.5-6	External Wall inner leaf garage (NB) (PD)			✓	✓							8	80	8				0									20	4	0			120	RICS est
2.5-6	External Wall Insulation, Garage (NB) (PD)			✓	✓		1		EPD			887	4	62				0									1	1	0			956	RICS est
2.5-6	Timber Lining (NB) (PD)			✓	✓				EPD		-813	94	10	12				0									2	808	13			125	RICS est
2.5-6	Timber Cladding, Garage (NB) (PD)			✓	✓				EPD		-574	393	7	41				0									2	571	9			449	RICS est
2.5-6	External Wall Timber Lining First Floor (NB) (PD)			✓	✓				EPD		-1141	131	14	17				0									3	1134	18			176	RICS est
2.5-6	External Wall Insulation First Floor (NB) (PD)			✓	✓		1	2	EPD			285	6	21				0									3	0	2			317	EPD
2.5-6	External Wall Timber Cladding First Floor (NB) (PD)			✓	✓				EPD		-4256	2912	55	305				0									13	4232	69			3330	RICS est
2.5-6																																0	
2.5-6	Roofing Membrane (NB) (PD)			✓	✓		1		EPD			890	8	18				919									1	2	0			1837	RICS est
2.5-6	Roof Paving (NB) (PD)			✓	✓							5	47	5				0									12	2	0			71	RICS est
2.5-6	Roof Insulation (NB) (PD)			✓	✓		1	2	EPD			2588	155	195				0									39	1954	0			4931	EPD
2.5-6	Beather Membrane (NB) (PD)			✓	✓		1		EPD			89	1	2				0									0	0	0			92	RICS est
2.5-6	Allowance for Metal Copings (NB) (PD)			✓	✓							320	1	3				0									0	0	0			325	RICS est
2.5-6																																0	
2.5-6	All Windows (NB) (PD)			✓	✓				EPD			8892	71	90			395	9084									27	2	2			####	RICS est
2.5-6	Rooflight (NB) (PD)			✓	✓		1		EPD		-44	400	4	4			31	410									2	27	17			851	RICS est
2.5-6	Allowance for External Doors (NB) (PD)			✓	✓		1		EPD			464	5	5			267	0									2	0	0			743	RICS est
2.5-6																																0	
2.5-6	Replacement Windows (ND)					✓			EPD			1287	10	13			57	1315									4	0	0			2687	RICS est
2.5-6	Replacement Rooflight (ND)					✓	1		EPD		-11	100	1	1			8	102									0	7	4			213	RICS est
2.5-6																																0	
2.5-6	Ground Floor West Elevation OSB Sheathing (NB) (PD)			✓	✓				EPD		-555	64	7	8				0									2	551	9			85	RICS est
2.5-6	Ground Floor West Elevation Insulation (NB) (PD)			✓	✓		1		EPD			513	3	36				0									1	1	0			553	RICS est
2.5-6	Ground Floor West Elevation Render Board and Finish (NB) (PD)			✓	✓				EPD			472	8	34				516									2	0	0			1032	RICS est
2.5-6																																0	
2.5-6																																0	
2.7-8	Internal Walls (NB) (PD)			✓	✓							87	901	88				0									219	45	1			1341	RICS est
2.7-8	External Wall Inner Stone Cladding (NB) (PD)			✓	✓							2051	537	192				0									131	27	1			2939	RICS est
2.7-8	Internal Walls, Brick areas) (NB) (PD)			✓	✓				EPD			382	34	30				0									8	6	2			462	EPD
2.7-8	Internal Doors (NB) (PD)			✓	✓				EPD		-608	441	9	46				1012									2	605	10			1518	RICS est
2.7-8																																0	
2.7-8	Structural Supporting Frame on retained external walls (PD)				✓							1152	15	12				0									2	0	0			1181	RICS est
2.7-8																																0	
2.7-8	Internal Doors (ND)					✓			EPD		-406	294	6	31				675									1	404	7			1012	RICS est
2.7-8																																0	
2.7-8																																0	
2.7-8																																0	
2.7-8																																0	
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2.7-8																																0	
2.7-8																																0	
2.7-8																																0	
3	Stone Flooring (NB) (PD)			✓	✓							19	202	20				0									49	10	0			301	RICS est
3	Timber Flooring (NB) (PD)			✓	✓						-3123	1564	56	203				0									9	3073	49			1830	RICS est
3	Ceramic Tiling (NB) (PD)			✓	✓		1					357	13	26			0	402									3	2	0			804	% scena
3	Plasterboard Walls (NB) (PD)			✓	✓		1	2	EPD			189	16	9				0									9	0	12			235	EPD
3	Paint to Walls (NB) (PD)			✓	✓							76	1	5				411									0	0	0			493	RICS est
3	Plasterboard to Ceilings (NB) (PD)			✓	✓		1		EPD			550	42	25				0									23	31	0			671	EPD
3	Paint to Ceilings (NB) (PD)			✓	✓							160	2	10				863									1	0	0			1035	RICS est
3																																0	
3	Stone Flooring (ND)					✓						7	75	7				0									18	4	0			111	RICS est
3	Timber Flooring (ND)					✓					-2260	1132	40	147				0									6	2224	36			1324	RICS est
3	Ceramic Tiling (ND)					✓	1					315	11	23			0	355									3	2	0			709	% scena
3	Plasterboard to Walls (ND)					✓	1	2	EPD			76	6	4				0									3	0	5			94	EPD
3	Paint to walls (ND)					✓						31	0	2				164									0	0	0			197	RICS est
3	Plasterboard to Ceilings (ND)					✓	1		EPD			314	24	14				0									13	17	0			383	EPD
3	Paint to Ceilings (ND)					✓						92	1	6				493									0	0	0			592	RICS est
3																																0	
3																																0	
3																																0	
3																																0	
3																																0	
4.1	Kitchen Cabinetry (NB) (PD) (ND)			✓	✓	✓					-955	183	217	39				0									3	901	15			403	RICS est
4.1	Wardrobes (NB) (PD) (ND)			✓	✓	✓					-716	138	163	29				0									2	676	11			302	RICS est
4.1																																0	
4.1																																0	
4.1																																0	
4.2																																0	
4.2																																0	
4.2																																0	
4.2																																0	
5.1	Sanitaryware (NB) (PD) (ND)			✓	✓	✓			EPD			147	3	11				322									1	0	0			483	RICS est
5.1	Primary pipework			✓	✓							41	0	1				84									0	0	0			126	RICS est
5.1	Secondary Pipework			✓	✓	✓						7	0	0				14									0	0	0			22	RICS est
5.1																																0	
5.1																																0	
5.2	ASHP (NB) (PD)			✓	✓				EPD			926	4	9			98	2834									1	5	0			3876	EPD
5.2	Refrigerant (NB) (PD)			✓	✓											3053										76						3129	
5.2	MVHR (NB) (PD)			✓	✓				EPD			1305	5	13				3975									2	0	0			5300	RICS est
5.2	Ventilation Ductwork allowance (NB) (PD)			✓	✓				EPD			715	7	7				0									1	0	0			730	RICS est
5.2																																0	
5.2																																0	
5.3	Allowance for Electrical Rewiring (NB) (PD)			✓	✓							7	0	0				7									0	0	0			13	RICS est
5.3	Allowance for Electrical Rewiring (NB) (PD)			✓	✓							13	0	0				14									0	0	0			27	RICS est
5.3	Allowance for Electrical Rewiring (NB) (PD)			✓	✓							7	0	0				8									0	0	0			15	RICS est
5.3																																0	
5.3																																0	
5.4																																0	
5.4																																0	
5.4																																0	
5.5	Allowance for Sprinkler System (NB) (PD)			✓	✓							21	0	0				43									0	0	0			65	RICS est
5.5																																0	
5.5																																0	
5.5																																0	
5.5																																0	
5.5																																0	
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7																																0	
7																																0	
7																																0	
8a	Aggregate below paving (NB) (PD) (ND)			✓	✓	✓			EPD			-726	198	-44				0									77	16	1			-478	RICS est
8a	Stone Paving (NB) (PD) (ND)			✓	✓	✓						7	75	7				0									18	4	0			111	RICS est
8a	Rear Paving (NB) (PD) (ND)			✓	✓	✓						302	108	31				0									26	5	0			474	RICS est
8a	Bin Store and ASHP Enclosure (NB) (PD)			✓	✓						-358	69	81	14				0									1	338	6			151	RICS est
8a																																0	
8a																																0	
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	Description	m²	A5.2	C1
Table 2. Scenario 1	NB - New Bld	349.0	13960	3490
Scenario 2	PD - Partial Demo	345.0	13800	3450
Scenario 3	ND - No Demo	179.0	7160	1790
Scenario 4			0	0
Scenario 5			0	0
Scenario 6			0	0
Scenario 7			0	0
Scenario 8			0	0
Scenario 9			0	0
Scenario 10			0	0
Scenario 11			0	0
Scenario 12			0	0
Select C1-C4 Approach	Business as usual	25%	% of A5.2	

	km Recycling	km Incin	km Landfill
Dist of nearest facility	13	13	33
Dist of 2nd nearest facility	15	15	38
Average Dist used for module C2	14	14	35.5
Local incinerator likley to be R1 (Energy Recovery)		Y	

Website for list of R1 Incinerators England

Scenario	Impact on C1		% of A5.2
Business as usual	Standard practice, minimal attempt at deconstruction and recovery	1	25%
Good practice	Deconstruction carried out to recover key elements/materials for reuse	2	30%
Best practice	Deconstruction carried out to recover a majority of elements and materials for reuse	3	50%
	Selected	1	

Reference Study Period (must be 60yrs UK, 50 for Ireland) 60 years

Table 3. Assumptions for A4 and A5.3

	A4 Travel distances in km			A5.3 Waste	
	Category	Road*	Sea**	Rate	
aggregate	local	50	0	10%	
aluminium	national	120	0	1%	
asphalt	local	50	0	6%	
coatings	national	120	0	6%	
concrete, in situ	local readymix	20	0	5%	
concrete, precast	national	120	0	1%	5.3 defines more
glass	regional	80	0	1%	material types
insulation, mineral	regional	80	0	7%	than we have
insulation, hydrocarbon	regional	80	0	7%	
insulation, bio based	regional	80	0	7%	
lead	national	120	0	5%	
lithium	world	500	10000	0%	
masonry	regional	80	0	7%	5-10%
MEP, heat gen	national	120	0	1%	
MEP, pipes	national	120	0	2%	
MEP, lights	national	120	0	1%	
MEP, ventilation	national	120	0	1%	
MEP, radiators	national	120	0	1%	
MEP, cables	national	120	0	2%	
plasterboard	regional	80	0	4%	
plastics	national	120	0	2%	
inert	national	120	0	2%	
soils	local	50	0	0%	
PV	world	500	10000	0%	
steel, hot rolled	national	120	0	1%	
steel, galvanised	national	120	0	5%	
steel, piles	national	120	0	1%	
steel, rebar	national	120	0	5%	
timber, solid	national	120	0	5%	
timber, eng	europe	1500	100	5%	
timber panel	regional	80	0	10%	
timber treated	regional	80	0	5%	
Average laden kgCO2e per tonne.km		0.179	0.016		

factor to include empty return journey 43% of time 1.3442

factor to include empty return journey 100% of time for readymix and waste disposal trucks 1.8005

* average rigid HGV, average laden **average container ship

red entries are reasonable assumptions not set by RICS

Lookup table		
local readymix	20	0
local	50	0
regional	80	0
national	120	0
world	500	10000

Carbon figures are from

Table 4. Results by End of Life Category (Column M) and Scenario

	Results for each Scenario, kg CO_2e/m^2 GIA												End of life rate% selected D513				C4 emissions
Stage A1-A3	1	2	3	4	5	6	7	8	9	10	11	12	reuse	recycle	incin	landfill	kgCO2e per tonne
aggregate	-6.0	-4.9	-4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		97.5%		2.5%	1.234
aluminium	0.9	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		96%		4%	1.264
asphalt	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		97.5%		2.5%	1.234
coatings	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				100%	1.234
concrete, in situ	48.5	51.3	74.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		97.5%		2.5%	1.234
concrete, precast	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1%	96.5%		2.5%	1.234
glass	28.0	28.3	7.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		61%		39%	1.234
insulation, mineral	1.9	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		1%		99%	1.234
insulation, hydrocarbon	22.2	20.2	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			95%	5%	1.234
insulation, bio based	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			95%	5%	1.234
lead	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		90%		10%	1.264
lithium	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25%	75%			1.264
masonry	28.0	26.4	4.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		97.5%		2.5%	1.234
MEP, heat gen	2.7	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		70%		30%	1.264
MEP, pipes	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		90%		10%	1.264
MEP, lights	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		45%		55%	1.264
MEP, ventilation	3.7	3.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		40%		60%	1.264
MEP, radiators	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		80%		20%	1.264
MEP, cables	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		50%		50%	1.264
plasterboard	2.1	2.1	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		17%		83%	71.950
plastics	3.8	3.9	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			100%		1.234
inert	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				100%	1.234
soils	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		97.5%		2.5%	19.517
PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		10%		90%	1.234
steel, hot rolled	3.3	6.7	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7%	93%			1.264
steel, galvanised	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5%	93%		2%	1.264
steel, piles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15%	71%		14%	1.264
steel, rebar	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		98%		2%	1.264
timber, solid	4.5	4.5	6.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1%	78%	20%	1%	######
timber, eng	1.1	1.1	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5%	35%	59%	1%	######
timber panel	13.9	12.9	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			99%	1%	######
timber treated	0.7	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		30%	69%	1%	######
sequestration	-59.1	-51.8	-24.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					6.411
A4 Transport to site	19.3	16.9	9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					0.985
A5 Construction	68.3	56.0	45.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
B Use	70.4	71.2	19.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
C Demolition & Disposal	84.9	75.6	38.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
D Benefits	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					

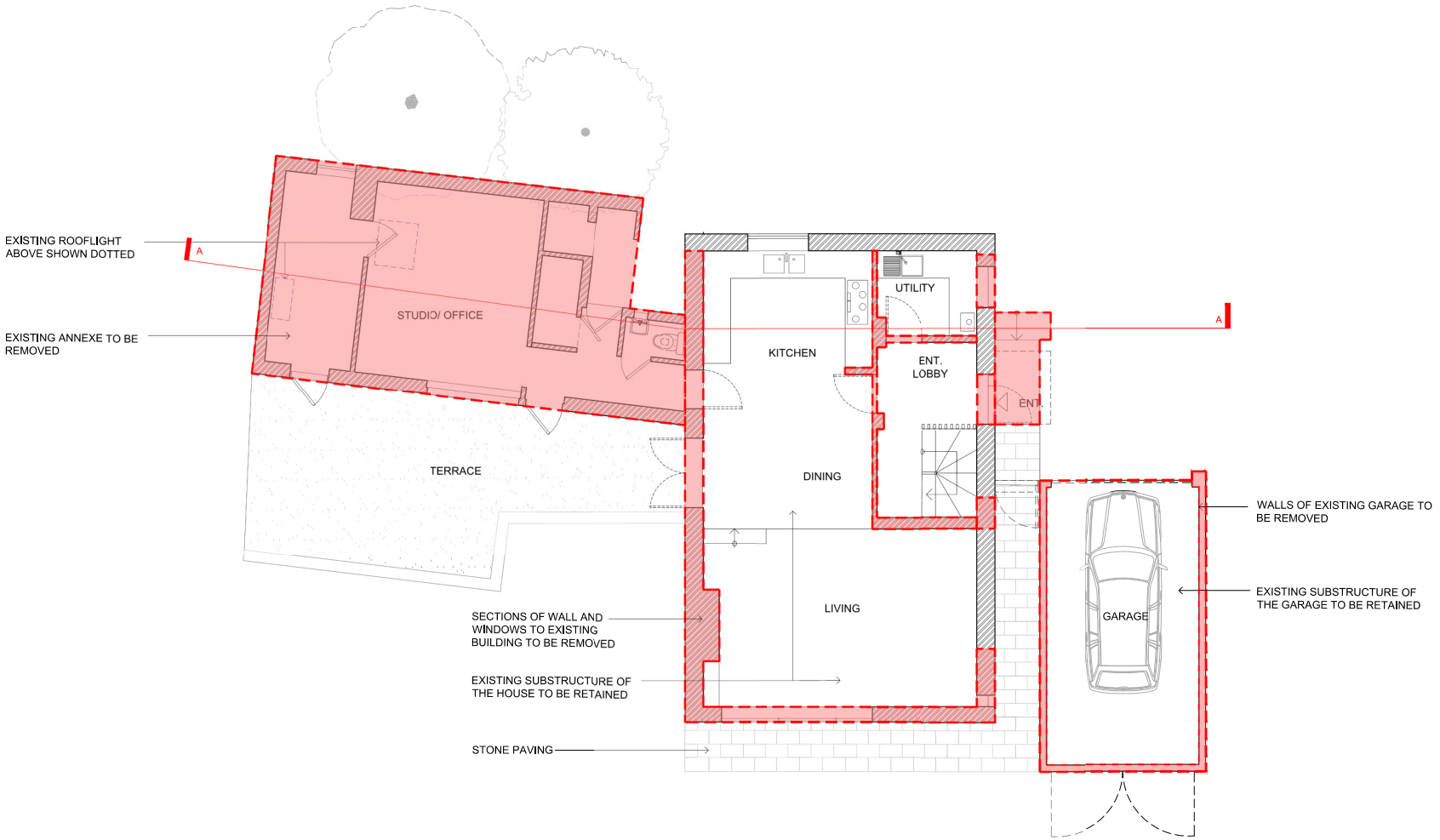
landfill

recycling wood, plasterboard or incineration

recycling of other products

3.0 Appendices

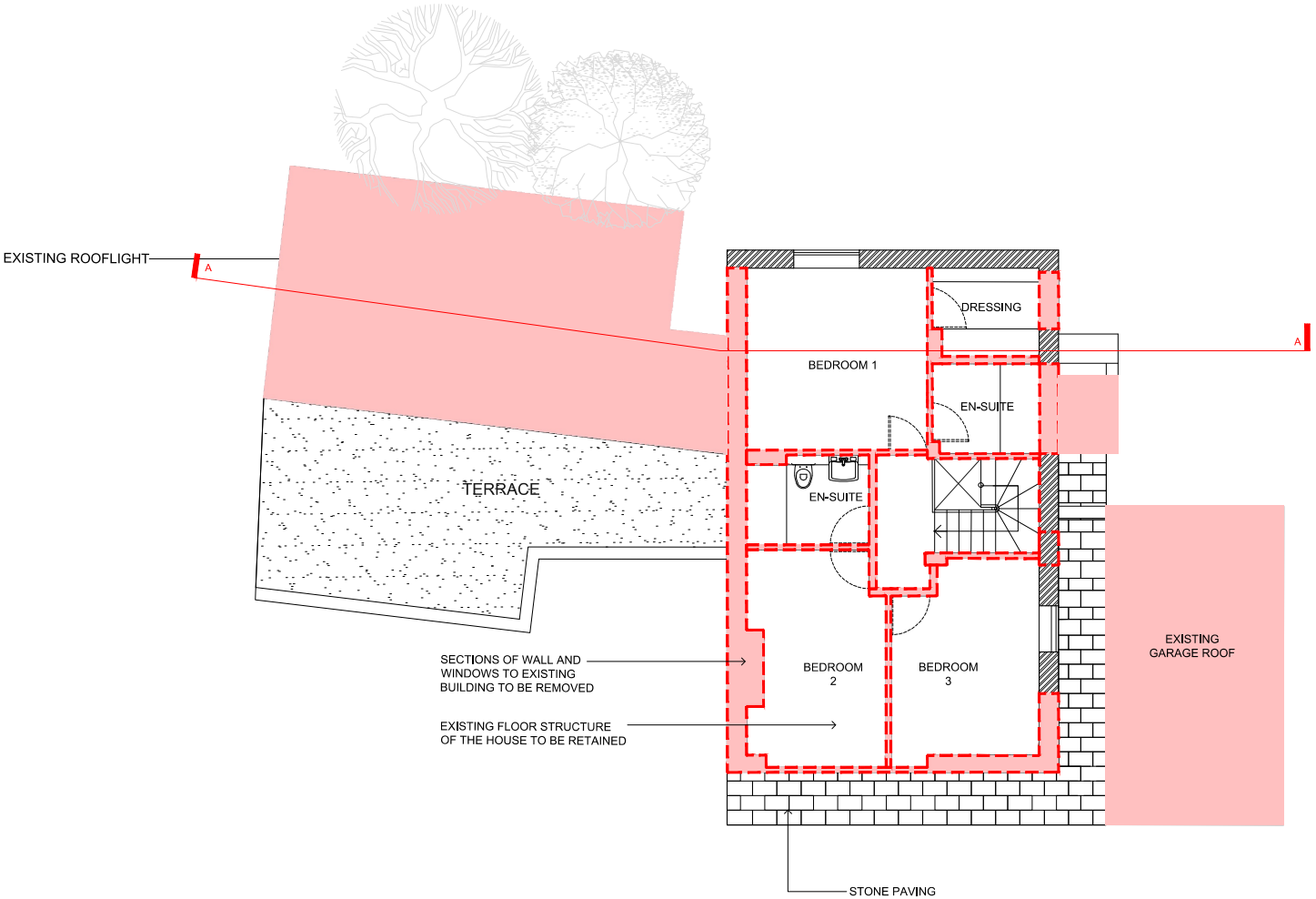
3.1 Partial Demolition Drawings



PROJECT: PROPOSED EXTENSION TO 5 BACON'S LANE N6 6BL

DRAWING NO: 1223-PP-200
DRAWING TITLE: EXISTING GROUND FLOOR

DATE: 29/01/2024
SCALE 1:100@A3



LAND OWNED BY APPLICANT

AREA TO BE DEMOLISHED

N

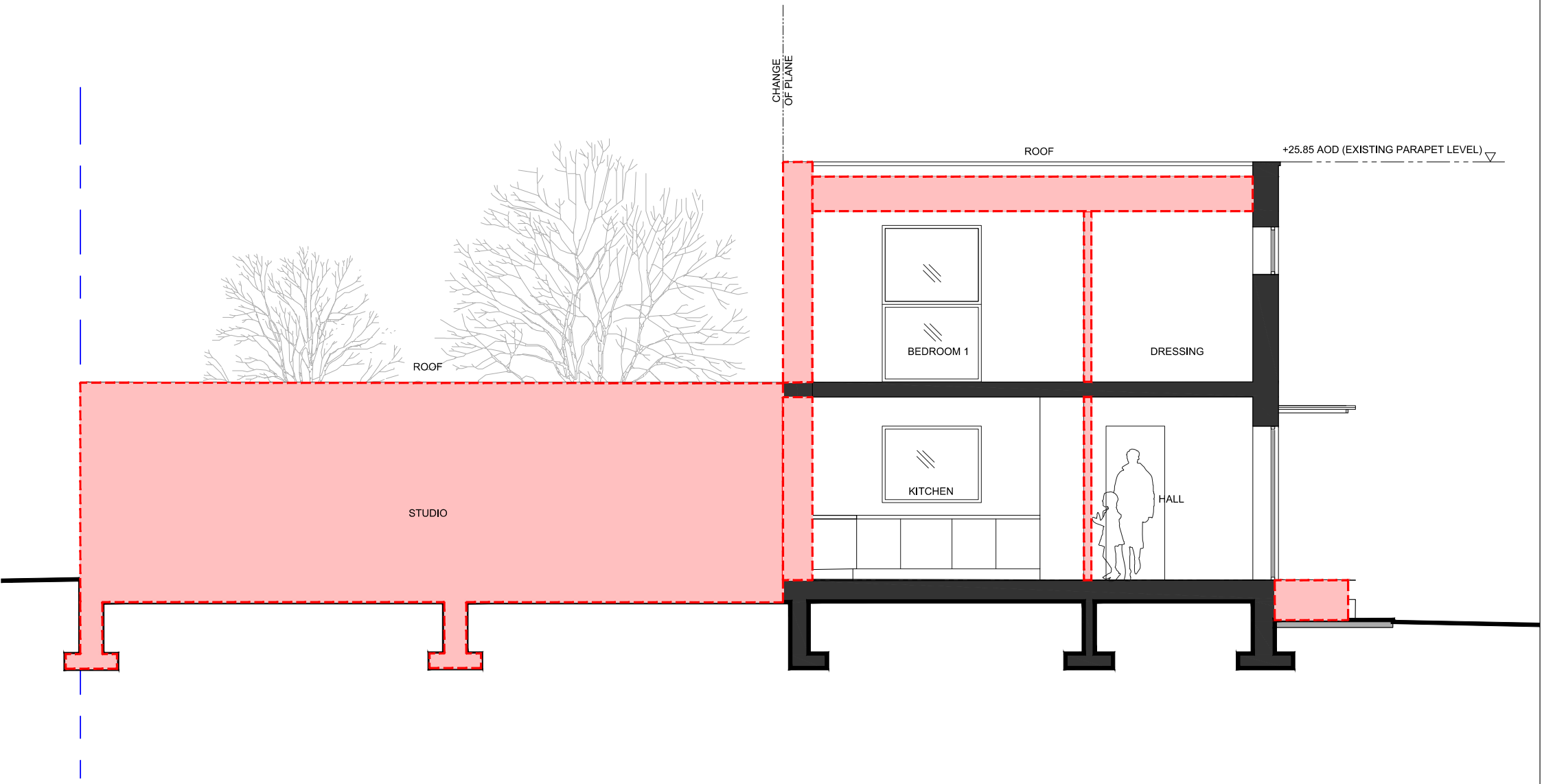
0 5 10 M

PROJECT: PROPOSED EXTENSION TO
5 BACON'S LANE N6 6BL

DRAWING NO: 1223-PP-201
DRAWING TITLE: EXISTING FIRST FLOOR

DATE: 29/01/2024
SCALE 1:100@A3

01 EXISTING FIRST FLOOR PLAN
1:100



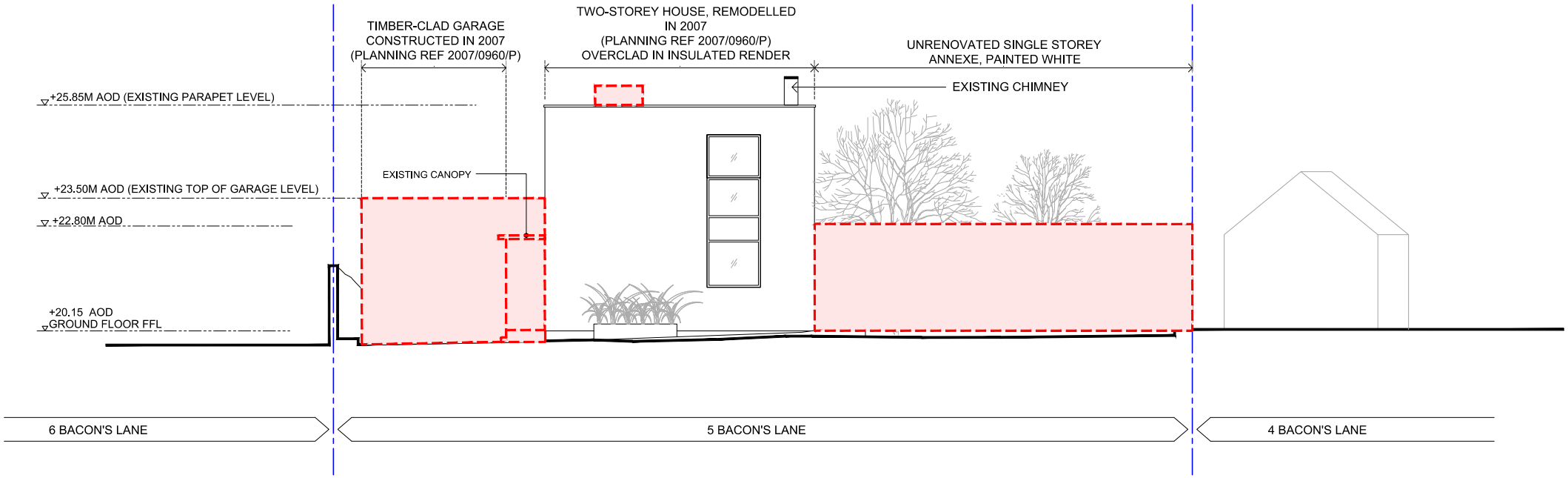
PROJECT: PROPOSED EXTENSION TO 5 BACON'S LANE N6 6BL

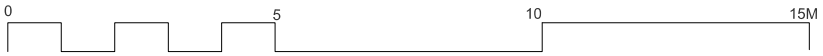
DRAWING NO: 1223-PP-300
DRAWING TITLE: EXISTING BUILDING SECTION AA

DATE: 29/01/2024
SCALE 1:50@A3

LAND OWNED BY APPLICANT

AREA TO BE DEMOLISHED



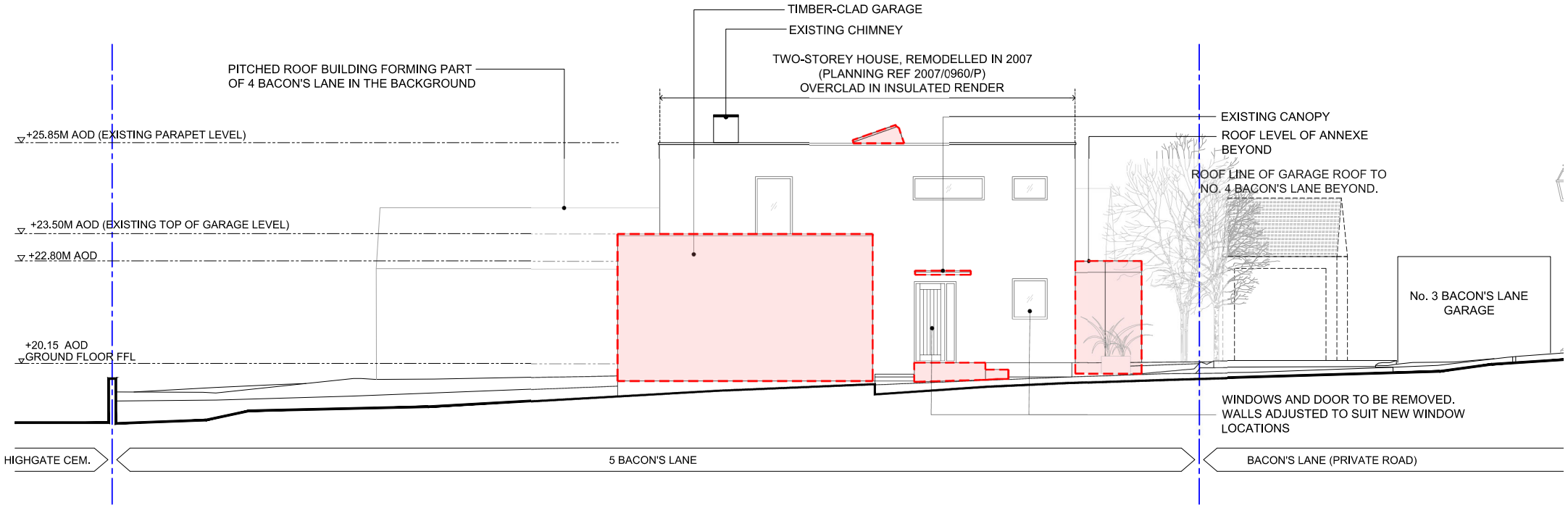


PROJECT: PROPOSED EXTENSION TO
5 BACON'S LANE N6 6BL

DRAWING NO: 1223-PP-400
DRAWING TITLE: EXISTING NORTH ELEVATION

DATE: 29/01/2024
SCALE 1:100@A3

LAND OWNED BY APPLICANT
AREA TO BE DEMOLISHED

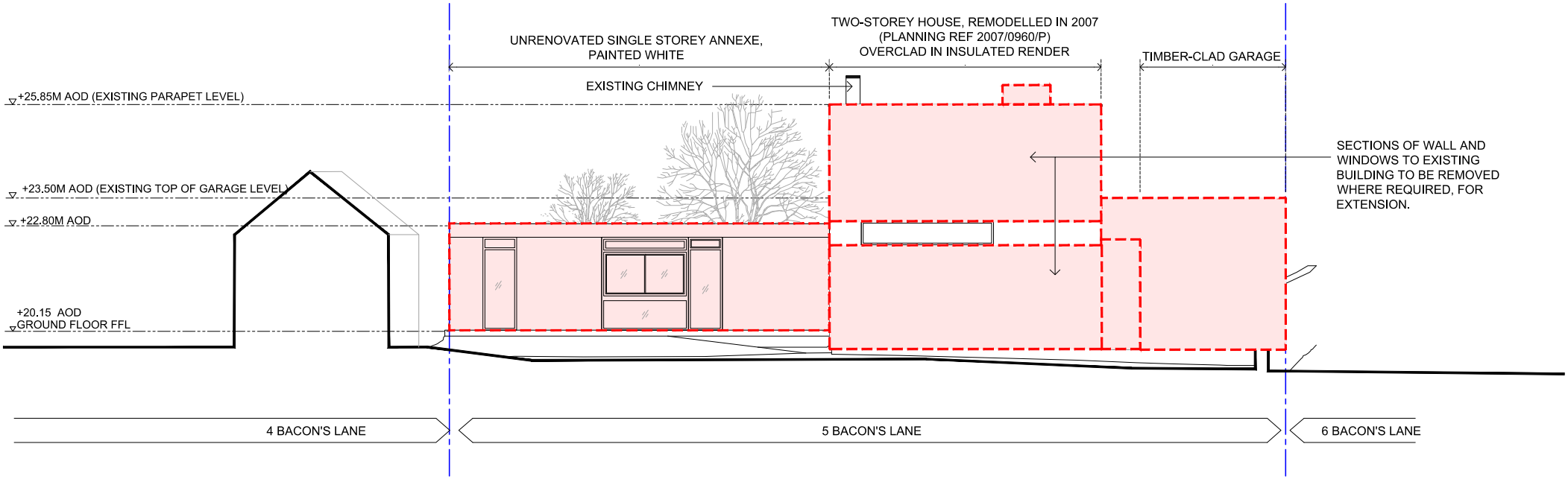


PROJECT: PROPOSED EXTENSION TO 5 BACON'S LANE N6 6BL

DRAWING NO: 1223-PP-401
DRAWING TITLE: EXISTING EAST ELEVATION

DATE: 29/01/2024
SCALE 1:100@A3

LAND OWNED BY APPLICANT
AREA TO BE DEMOLISHED

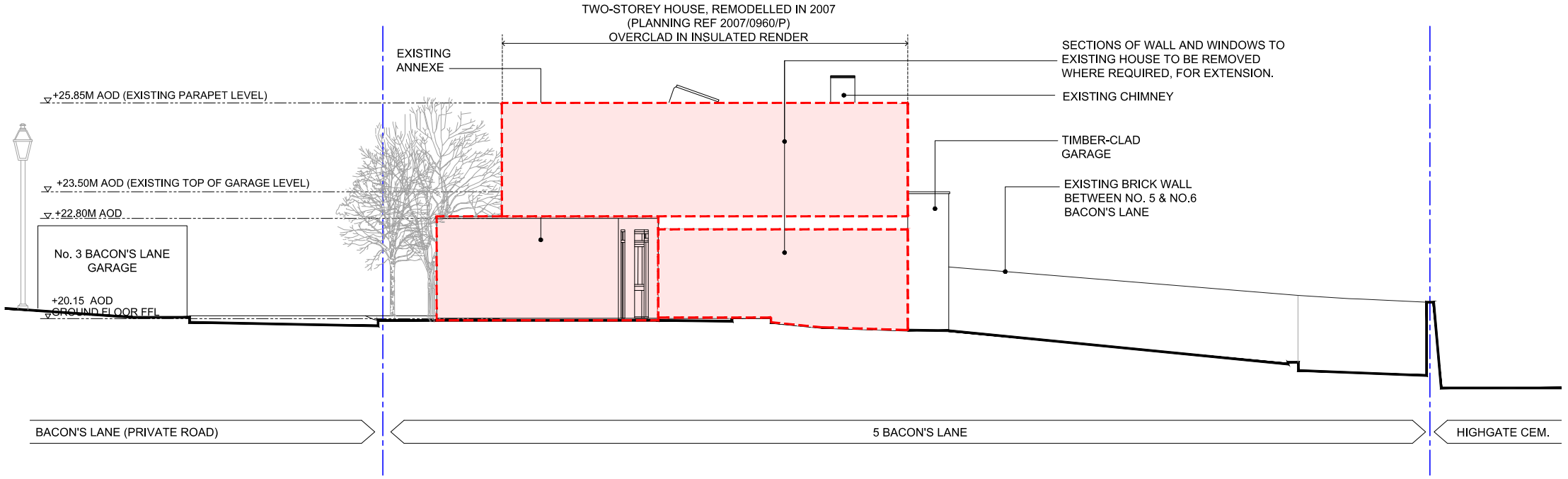


PROJECT: PROPOSED EXTENSION TO 5 BACON'S LANE N6 6BL

DRAWING NO: 1223-PP-402
DRAWING TITLE: EXISTING SOUTH ELEVATION

DATE: 29/01/2024
SCALE 1:100@A3

LAND OWNED BY APPLICANT
AREA TO BE DEMOLISHED



PROJECT: PROPOSED EXTENSION TO
5 BACON'S LANE N6 6BL

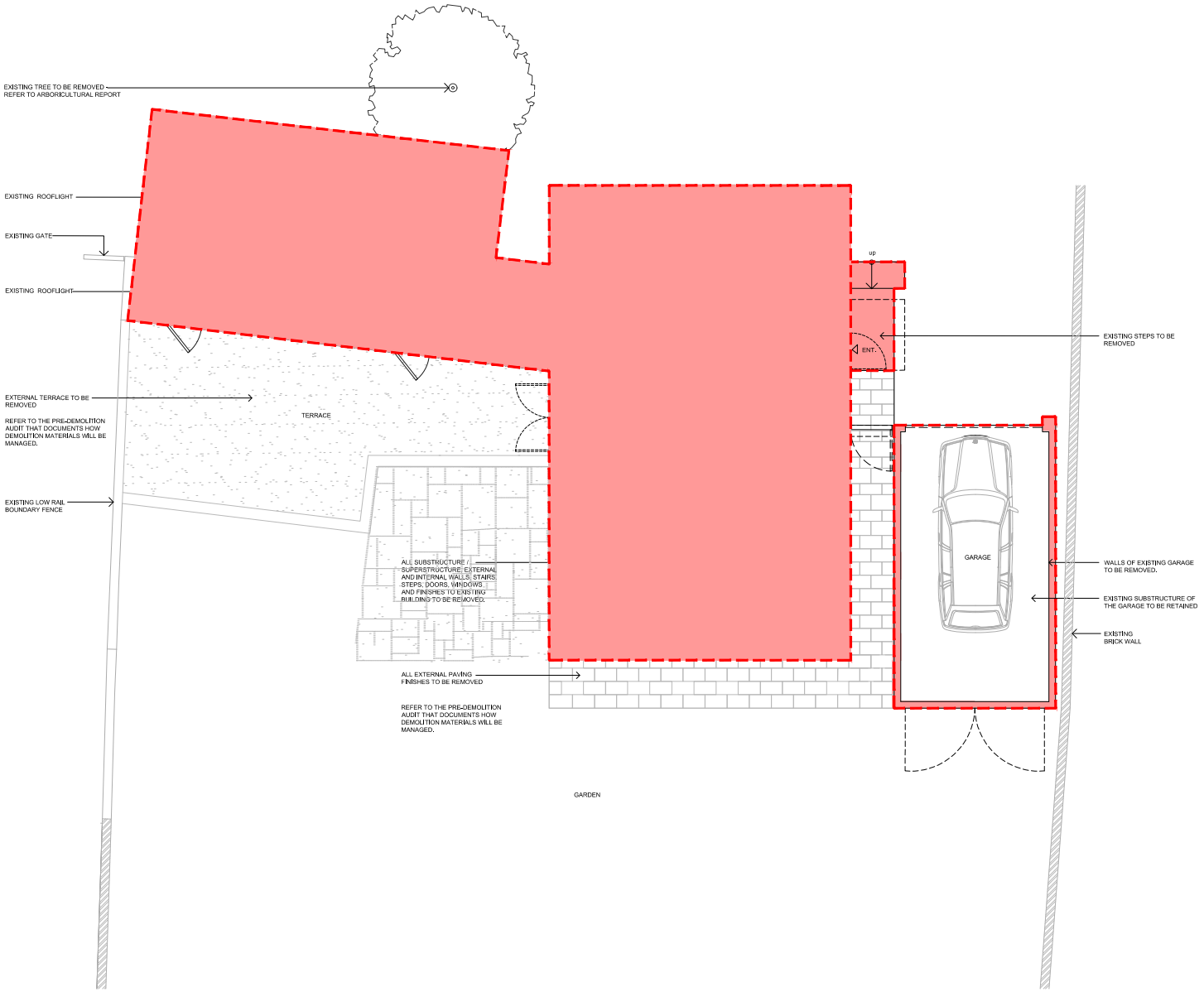
DRAWING NO: 1223-PP-403
DRAWING TITLE: EXISTING WEST ELEVATION

DATE: 29/01/2024
SCALE 1:100@A3

LAND OWNED BY APPLICANT

AREA TO BE DEMOLISHED

3.2 Full Demolition Drawings



LEGEND:

LAND OWNED BY APPLICANT

EXISTING STRUCTURE TO BE DEMOLISHED

0.0 1.0 2.0 2.5

DESCRIPTION:	DATE:	APPROVED BY:	REV:
ISSUED FOR PLANNING APPLICATION	03.10.2024	SF	A

EXISTING GROUND FLOOR PLAN: DEMOLITION

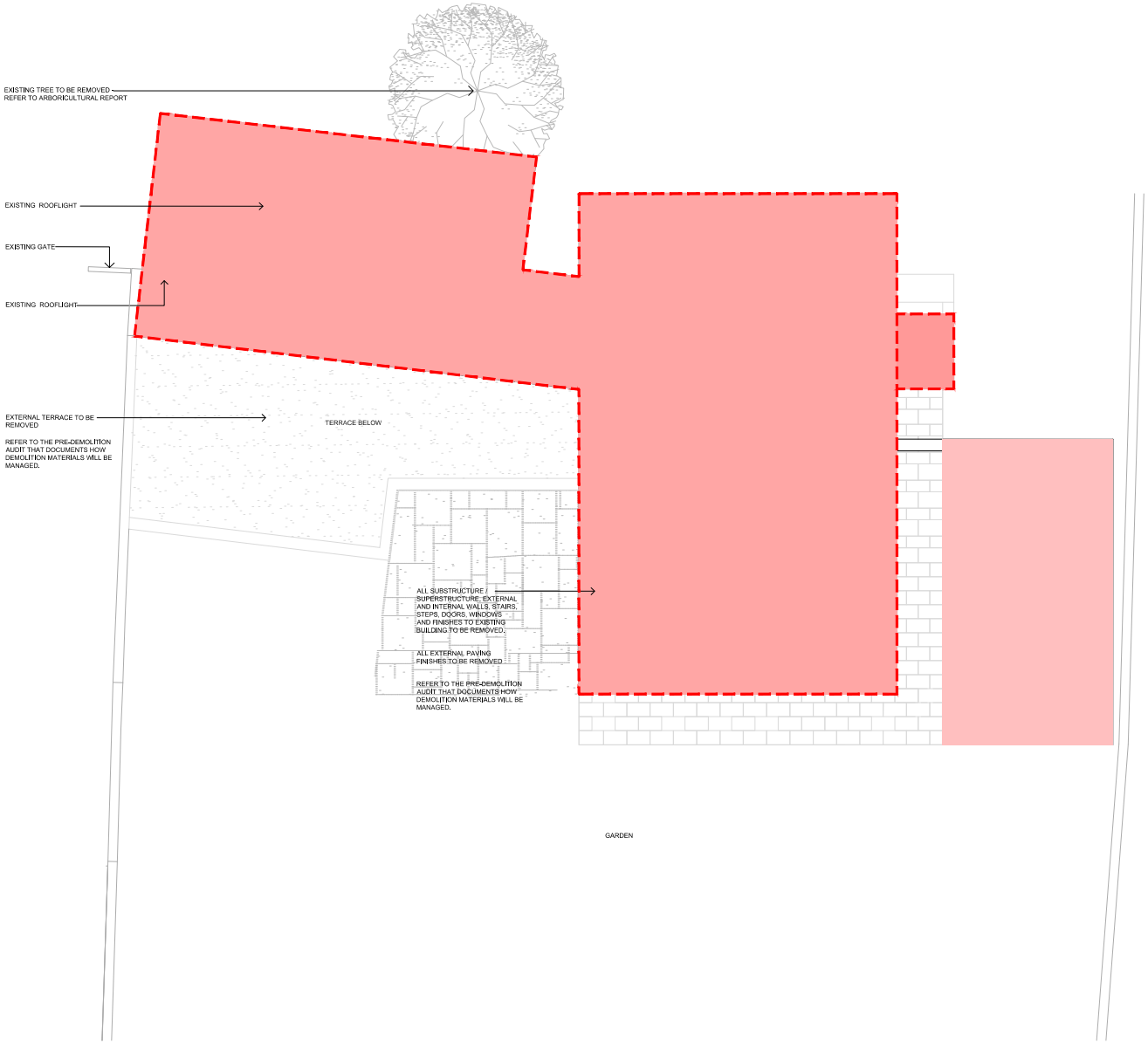
NO. 5 BACON'S LANE

SCALE: **1:50** @A1

NO.	REV.	A	SF
1223-PP-120	A	DATE: 03.10.2024	

ARCHITECT:
SIMON FRASER
RIBA, ARB
CHARTERED ARCHITECT

5BL



LEGEND:

LAND OWNED BY APPLICANT

EXISTING STRUCTURE TO BE DEMOLISHED

0.0 1.0 2.0 2.5

N

DESCRIPTION:	DATE:	APPROVED BY:	REV:
ISSUED FOR PLANNING APPLICATION	03.10.2024	SF	A

EXISTING FIRST FLOOR PLAN: DEMOLITION

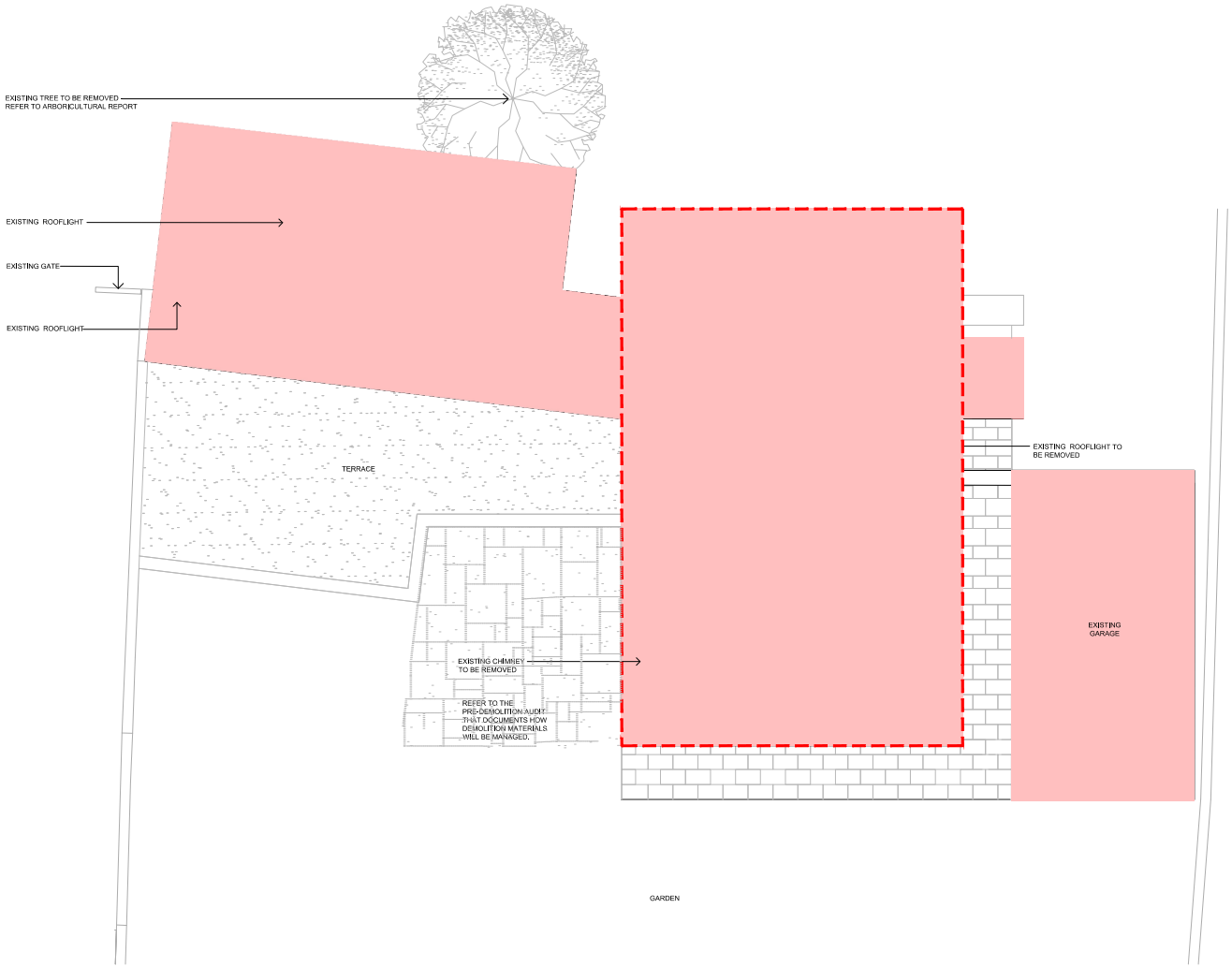
NO. 5 BACON'S LANE

SCALE: **1:50** @A1

NO.	REV.	A	SF
1223-PP-121	A	DATE: 03.10.2024	

ARCHITECT:
SIMON FRASER
RIBA, ARB
CHARTERED ARCHITECT

5BL



LEGEND:

LAND OWNED BY APPLICANT

EXISTING STRUCTURE TO BE DEMOLISHED

0.0 1.0 2.0 2.5

N

DESCRIPTION:	DATE:	APPROVED BY:	REV:
ISSUED FOR PLANNING APPLICATION	03.10.2024	SF	A

EXISTING ROOF PLAN: DEMOLITION

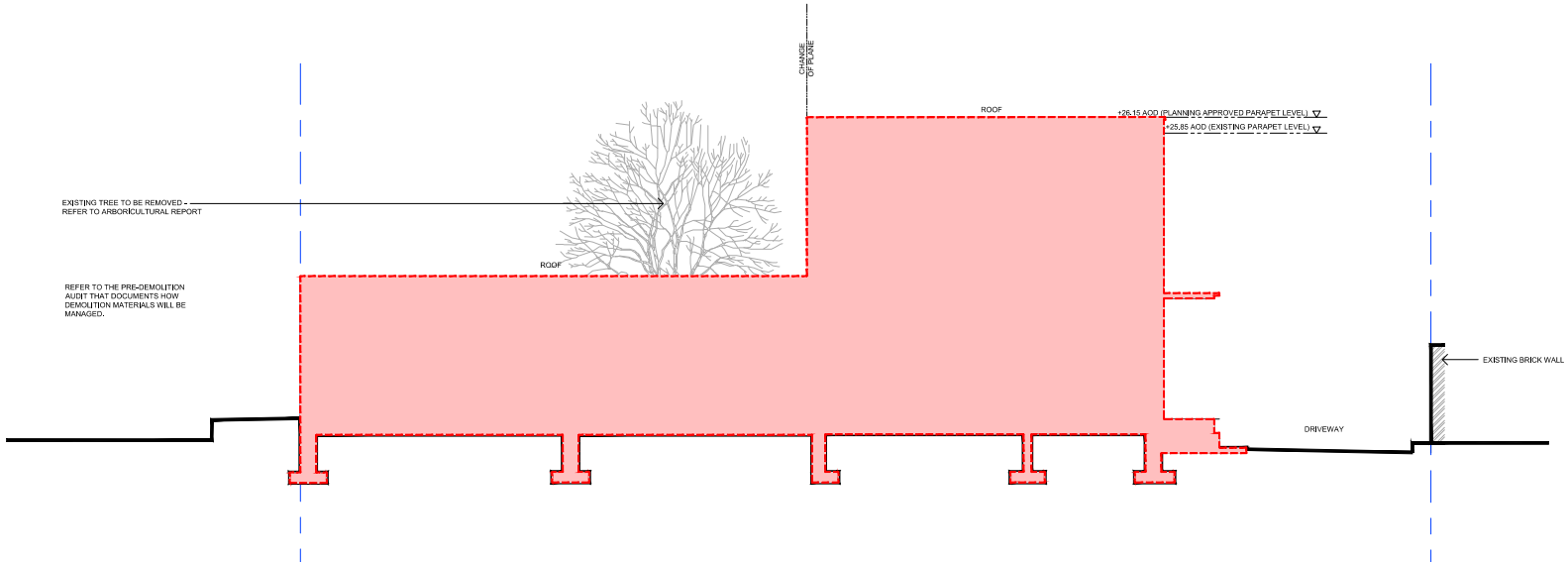
NO. 5 BACON'S LANE

SCALE: **1:50** @A1

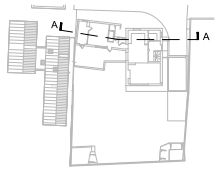
NO.	REV.	A	SF
1223-PP-122	A	DATE: 03.10.2024	

ARCHITECT:
SIMON FRASER
RIBA, ARB
CHARTERED ARCHITECT

5BL



KEY PLAN:



LEGEND:

LAND OWNED BY APPLICANT

EXISTING STRUCTURE TO BE DEMOLISHED

0.0 1.0 2.0 2.5

DESCRIPTION:	DATE:	APPROVED BY:	REV:
ISSUED FOR PLANNING APPLICATION	03.10.2024	SF	A

EXISTING SECTION A-A : DEMOLITION

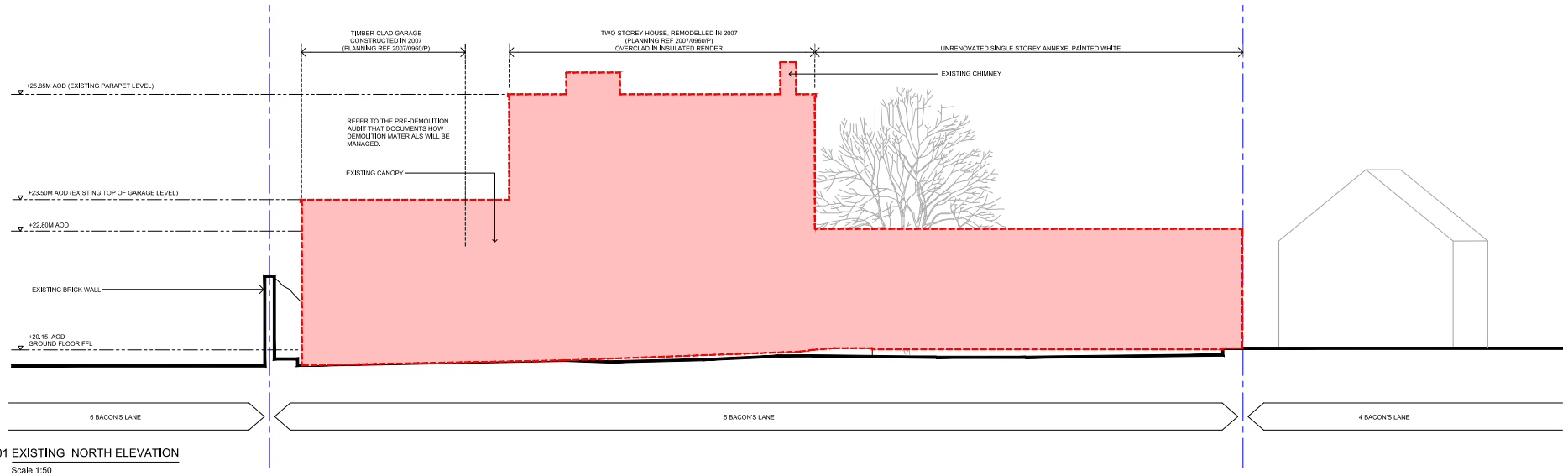
NO. 5 BACON'S LANE

SCALE: **1:50** @A1

NO.	REV.	A	SF
1223-PP-130	A	DATE: 03.10.2024	

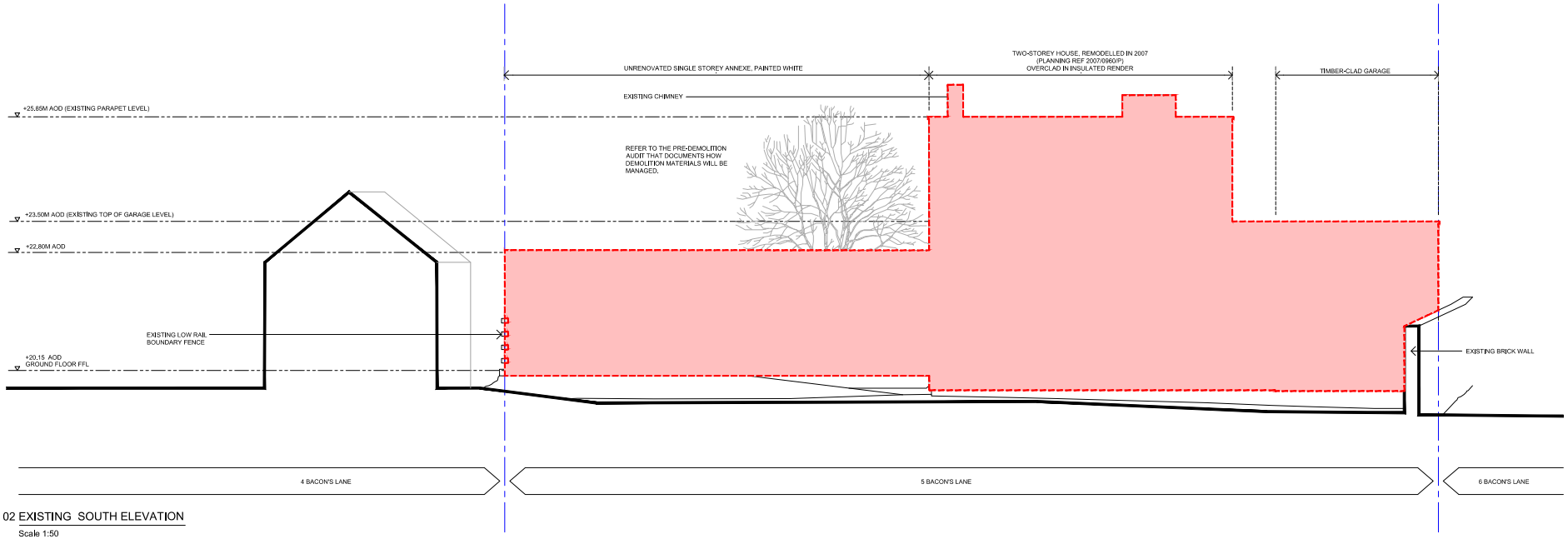
ARCHITECT:
SIMON FRASER
RIBA, ARB
CHARTERED ARCHITECT

5BL



01 EXISTING NORTH ELEVATION

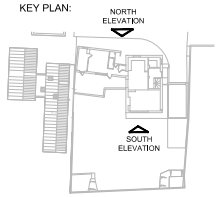
Scale 1:50



02 EXISTING SOUTH ELEVATION

Scale 1:50

KEY PLAN:



LEGEND:

LAND OWNED BY APPLICANT

EXISTING STRUCTURE
TO BE DEMOLISHED

0.0 1.0 2.0 2.5

DESCRIPTION:	DATE:	APPROVED BY:	REV:
ISSUED FOR PLANNING APPLICATION	03.10.2024	SF	A

EXISTING NORTH & SOUTH ELEVATION : DEMOLITION

NO. 5 BACON'S LANE

SCALE: **1:50** @ A1

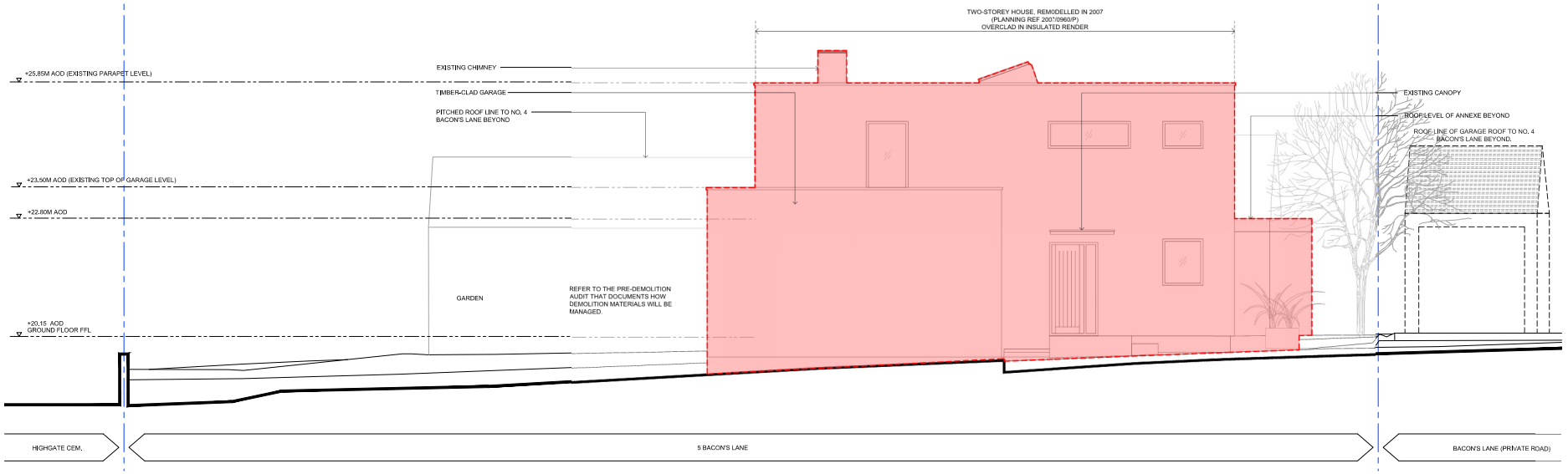
NO. 1223-PP-140 REV. A

A SF

DATE: 03.10.2024

ARCHITECT:
SIMON FRASER
RIBA, ARB
CHARTERED ARCHITECT

5BL



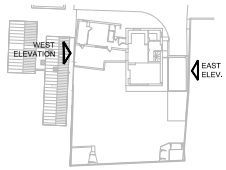
01 EXISTING EAST ELEVATION

Scale 1:50

02 EXISTING WEST ELEVATION

Scale 1:50

KEY PLAN:



LEGEND:

LAND OWNED BY APPLICANT

EXISTING STRUCTURE
TO BE DEMOLISHED

0.0 1.0 2.0 2.5

DESCRIPTION:	DATE:	APPROVED BY:	REV:
ISSUED FOR PLANNING APPLICATION	03.10.2024	SF	A

EXISTING EAST & WEST
ELEVATION : DEMOLITION

NO. 5 BACON'S LANE

SCALE: **1:50** @ A1

NO. 1223-PP-141 REV. A

A SF

DATE: 03.10.2024

ARCHITECT:
SIMON FRASER
RIBA, ARB
CHARTERED ARCHITECT

5BL