TABLE 1. DEVELOPMENT INFORMATION		NOTES
Date of Application	12/10/2022	Please provide the date the application was submitted to the Local Planning Authority.
Local Planning Authority	Surrey	Please indicate the Local Planning Authority determining the application.
Confirmed carbon offset price	05	Please confirm the agreed carbon offset price for the Local Planning Authority. Evidence of communication on the price is expected to be
(£/tonne of carbon dioxide)	95	included in the energy assessment. If no value is entered then the GLA's recommend price of £95 per tonne of carbon dioxide will be used.

TABLE 2. CARBON (CO ₂) FACTORS	5	NOTES
Fuel type	Fuel Carbon Factor (kgCO₂/kWh) SAP 10.2	
Natural Gas	0.210	SAP 10.2 carbon emission factors (Table 12).
Grid Electricity	0.136	
Enter Carbon Factor 1	0.138833	
Enter Carbon Factor 2		These factors should be used where alternative fuel is used to grid gas and electricity. Carbon emission factors used here must be taken from Table 12 and Table 12f (for CHP generated electricity) within the SAP 10.2 document.
Enter Carbon Factor 3		First time about the rindested and referenced in Column Archen additional archen fester relications have been added
Enter Carbon Factor 4		Fuel type should be updated and referenced in Column A when additional carbon factor values have been added.
Bespoke DH Factor		This should only be used for non-domestic buildings that are connecting to District Heating (DH) networks. The network carbon factor should be calculated in line with Part L requirements and separate factors should be provided using and SAP 10.2 fuel factors. Assumptions and workings should be shown below in Table 4.

TABLE 3. BESPOKE DH CARBON FACTOR CALCULATION METHODOLOGY
TABLE 3. BESPOKE DH CARBON FACTOR CALCULATION METHODOLOGY Please provide below details of the calculation methodology followed to establish the bespoke carbon factor, if applicable.

TABLE 4. DISTRIBUTION LOSSES		COMMENTS
Primary network (buried pipe)	Total pipe length (m)	
	Average heat loss rate (W/m)	
Secondary network (buried pipe)	Total pipe length (m)	
, , , , , , ,	Average heat loss rate (W/m)	
Total losses (MWh/year)		
Total heat supplied (MWh/year)		
Distribution Loss Factor (DLF)		
Calculation included in energy statement ((yes/no)	

The applicant should complete all the light blue RESIDENTIAL ENERGY CONSUMPTION AND CO ₂			ion on the m	odelled units	, the area pe	er unit, the nu	mber of units, the ba	seline energy	consumption f	igures, the T	ER and the TR	FEE.														
TOTAL POLICE	VALIDATION CH							960	BULATED ENERGY CO	NSUMPTION PER	IINT (Whna' 94	AP TER WORKOUG	FT								RECUII ATENC	D, EMISSIONS PER UNIT	(keCO-na)			Fabric Energy
	Calculated	TFR Worksheet	Snare Heating	Final tyme	Domestic Hot	Fuel type	Snace Heating Fuel type		Hot Fuel type				Fuel factors for Si	condary Fuel ty	/pe Electrici	ity Lighting	Auxiliary	Cooling	Snare Heating Dry	estic Hot Spare He		Lighting Aus		Electricity	Part I 2021 CO.	Efficiency (FEE) Target Fabric
	TER	TER Worksheet TER	(Heat Source 1)	Fuel type Space Heating	Water	Domestic Hot	Space Heating Fuel type (Heat source 2) Space Hea	ating Water	Domestic Hot ce 2) Water	Domestic Hot	-	generated by	electricity H	iting system Secon Heating	dary generated		,		Wa	er and DHW CHP	from generated by		,	generated by	emissions	Energy
Unit identifier (e.g. plot Total area		(kgCO ₂ / m ²)			(Heat Source 1)	Water		(Heat source	ce 2) Water	Water from CHI	,	CHP (-)	generated by CHP	Heating	g renewabl	u (-)				CHP	CHP			generated by renewable technology	(kgCO ₂ p.a.)	Energy Efficiency TFEE) (kWh/m²)
number, dwelling Model total floor represented by	by																							(-)		
type etc.) area (m²) Number of units model (m²))	TER Worksheet	TER Sheet	Select fuel type	TER Sheet	Select fuel type	If applicable TER Sheet Select fue	of type TER Shee	et Select fuel typ	if applicable TER Sheet	If applicable Select fuel type	if applicable TER Sheet	if applicable Select fuel type	TER Sheet Select	t fuel type TER She	et TER Sheet	TER Sheet	N/A		if applic	able if applicable					
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			Row 211		Row 219					0.01)]																
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	Calculated TER (kgCO ₂ / m ²	BRUKL TER	Space Heating		Domestic Hot Water	Fuel type Domestic Hot Water									generated	by Lighting	Auxiliary (kWh/m² p.a.)	Cooling	Natural Gas G	d Flactricity Bespoke	DH Factor 1	Factor 2	Factor 3 generated renewab	by	emissions (kgCO ₂ p.a.)	
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NON.RESIDENTIAL ENERGY CONSUMPTION AND CO, ANALYSIS (PART L2) TOUR IFEN Building Use Model Area (m)* Number of Impustment by VLADATION CHECK REQULATED ENERGY CONSUMPTION BY END USE (NAMIN' p.a.) 'BE CLEAP' BER - SOURCE BRUK, CUTIVIT REQULATED CO, EMBSIONS BY FUEL TYPE (upCo.pm' p.a.) - BER BRUK SOURCE REQULATED CONSUMPTION BY END USE (NAMIN' p.a.) 'BER BRUK SOURCE BRUK, CUTIVIT REQULATED CO. EMBSIONS BY FUEL TYPE (upCo.pm' p.a.) - BER BRUK SOURCE BRUK, CUTIVIT REQULATED CO. EMBSIONS BY FUEL TYPE (upCo.pm' p.a.) - BER BRUK SOURCE BRUK, CUTIVIT REQULATED CO. EMBSIONS BY FUEL TYPE (upCo.pm' p.a.) - BER BRUK SOURCE BRUK, CUTIVIT REQULATED CO. EMBSIONS BY FUEL TYPE (upCo.pm' p.a.) - BER BRUK SOURCE BRUK, CUTIVIT REQULATED CO. EMBSIONS BY FUEL TYPE (upCo.pm' p.a.) - BER BRUK SOURCE BRUK, CUTIVIT REQULATED CO. EMBSIONS BY FUEL TYPE (upCo.pm' p.a.) - BER BRUK SOURCE BRUK, CUTIVIT REQULATED CO. EMBSIONS BY FUEL TYPE (upCo.pm' p.a.) - BER BRUK SOURCE BRUK, CUTIVIT REQULATED CO. EMBSIONS BY FUEL TYPE (upCo.pm' p.a.) - BER BRUK SOURCE BRUK, CUTIVIT REQULATED CO. EMBSIONS BY FUEL TYPE (upCo.pm' p.a.) - BER BRUK SOURCE BRUK, CUTIVIT REQULATED CO. EMBSIONS BY FUEL TYPE (upCo.pm' p.a.) - BER BRUK SOURCE BRUK, CUTIVIT REQULATED CO. EMBSIONS BY FUEL TYPE (upCo.pm' p.a.) - BER BRUK SOURCE BRUK, CUTIVIT REQULATED CO. EMBSIONS BY FUEL TYPE (upCo.pm' p.a.) - BER BRUK SOURCE BRUK, CUTIVIT REQULATED CO. EMBSIONS BY FUEL TYPE (upCo.pm' p.a.) - BER BRUK SOURCE BRUK, CUTIVIT REQULATED CO. EMBSIONS BY FUEL TYPE (upCo.pm' p.a.) - BER BRUK SOURCE BRUK, CUTIVIT REQULATED CO. EMBSIONS BY FUEL TYPE (upCo.pm' p.a.) - BER BRUK SOURCE BRUK, CUTIVIT REQULATED CO. EMBSIONS BY FUEL TYPE (upCo.pm' p.a.) - BER BRUK SOURCE BRUK, CUTIVIT REQULATED CO. EMBSIONS BY FUEL TYPE (upCo.pm' p.a.) - BER BRUK SOURCE BRUK, CUTIVIT REQULATED CO. EMBSIONS BY FUEL TYPE (upCo.pm' p.a.) - BER BRUK SOURCE BRUK, CUTIVIT BY FUEL TYPE (upCo.pm' p.a.) - BER BRUK SOURCE BRUK, CUTIVIT BY F		
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BER BER (Whiter p.a.) Space feating Water Committee but (Whiter p.a.) Space feating Water Committee but (Whiter p.a.) Space feating Water (Whi	ctor 3 generated by renewable technology (notional building)	emissions (kgCO ₂ p.a.)
1996 8 1 8.1 8.2 Natural Gas 8 8 Natural Gas 9 8 Natural Gas 9 8 Natural Gas 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	6	15,414
	0 -460	15,414
ARGULATED ENERGY COMBINATION		REGULATED CO ₂ EMISSION
Total Area (or) GER Spece Heating Water GER Spece Heating GE		Part L 2021 C emissions (kgCO ₂ p.a.)
(MTD p.4.)		(kgCO ₂ p.a.)

The applicant should compl	olete all the light blu	e cells incl	uding informa	tion on the 'I	be green' en	ergy consum	ption figures	and the 'be gr	een' DER.																			
RESIDENTIAL ENERGY CONS	ISUMPTION AND CO																											
		VALIDATION Calculated	DER Workshee	Space Heating	Fuel type	Domestic Hot	Fuel type	Space Heating	Fuel type D	omestic Hot Fuel	Y CONSUMPTION PER UP type Space at	IT (kWh p.a.) - 'BE G d Fuel type CH	Total Flactricity	Fuel factors for	Secondary	Fuel type	Electricity	Lighting	Auxiliary	Cooling	Space Heating Dome	stic Hot Space H	Harrison Char	ATED CO ₂ EMISSION tricity Lighting		Cooling	Electricity	Part L 2021 CO ₂
11-14-14		DER (kgCO ₁ / m ²)	DER (kgCO ₂ / m ²)	(Heat Source 1)	Space Heating	Water (Heat Source 1)	Domestic Hot Water	(Heat source 2)	Space Heating (H	Water Dom leat source 2) Water	estic Hot Domestic er Water from	d Fuel type CH lot CHP	generated by CHP (-)	electricity generated by CHP	Heating system	Secondary Heating	generated by renewable (-)				Wate	and DH	IW from genera HP C	ated by HP	,	•	generated by renewable	emissions (kgCO ₂ p.a.)
Unit identifier (e.g. plot number, dwelling Model total floor type etc.) area (m²) Num	Total area													CHP														
type etc.) area (m²) Num	represented i mber of units model (m²)	,	DER Sheet (Row 384)	DER Sheet	Select fuel typ	pe DER Sheet	Select fuel type	if applicable DER Sheet	Select fuel type	f applicable DER Sheet Sek	if applica act fuel type DER She	if applicable at Select fuel typ	if applicable e DER Sheet	if applicable Select fuel type	DER Sheet	Select fuel type	if applicable DER Sheet	DER Sheet	DER Sheet (Row 313 + 33	DER Sheet 1) Row 315		if appl	licable if app	olicable			if applicable	
			(Row 384)	DER Sheet [Row 307b + (Row 367b x 0.0	11))	pe DER Sheet [Row 310b + (Row 367b x 0.0	1)]	DER Sheet [Row 307c + (Row 367c x 0.01)]	(Ros	DER Sheet Sele Row 310c + w 367c x 0.01)]	((Row 307 310a) 1	Select fuel typ	((Row 307a + 310a) × (Row 36	1	Row 309		Row 333	Row 332	(Row 313 + 33	1) Row 315								
											(Row 36)	×	+ 362)]															
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NON-RESIDENTIAL ENERGY		0.0 D CO ₂ ANAL	YSIS (PART L	0	NA		N/A	۰	N/A	0	N/A 0	NA	0	۰	0	NA		•	•	۰	0		,	, ,		•	0	
		VALIDATION		i i					REGULA	TED ENERGY CONS	LUMPTION BY END USE (I	Wh/m² p.a.) 'BE GRE	EN BER - SOURCE	BRUKL OUTPUT							RE	BULATED CO. EMISS	SIONS BY FUEL T	YPE (kgCO-/m² p.a.)	- BER BRUKL - SC	URCE: *SIM.CSV FILE		
(m²)	nter of units represented by model (m²)	Calculated BER		Space Heating	Fuel type	Domestic Hot	Fuel type		REGUEA	TED EMERGY COM	IOMF HOW BY END OSE (I	William p.a., De Gre		BROKE GOTFOT			Electricity	Lighting	Auxiliary	Cooling	, ni		Elect					Part L 2021 CO ₂
		BER (kgCO ₂ / m ²)	BRUKL BER (kgCO ₂ / m ²)	Space Heating (kWh/m² p.a.)	Space Heating	Domestic Hot Water (kWh/m² p.a.)	Fuel type Domestic Hot Water	N/A	N/A N/A	N/A	N/A	N/A	Electricity generated by CHP (-)	N/A	N/A	N/A	Electricity generated by renewable technology if applicable	Lighting (kWh/m² p.a.)	(kWh/m² p.a.)	Cooling (kWhim ² p.a.)	Natural Gas Grid	Electricity Bespo	Elect oke DH genera ctor Ci	tricity Enter C ated by Facto :HP	arbon Enter Ca or 1 Factor	rbon Enter Carbon 2 Factor 3	generated by	emissions (kgCO ₂ p.a.)
													(-) if applicable				technology if applicable					if anni	Ecable If ann	(-)	rable if anotic	able if annlinable	technology if applicable	
1956.6	1 1956.6	-3.2	-3.2	6.44	Grid Electricity	5.73	Grid Electricity										-46.76	5.99	3.97	1.2	0	3					-6	-6,235
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Sum SITE-WIDE ENERGY CONSUM	1 1,957	-3.2	-	12,601	N/A	11,211	N/A						0				-91,491	11,720	7,768	2,348	0	6,208	0	0 0	0	0	-12,443	-6,235
	INTELLION AND CO2 A	NALYSIS																										
STE-WIDE ENERGY CONSUM																												BEOUL ATEC
SITE-WIDE ENERGY CONSU		Calculated									REGULATED ENE	RGY CONSUMPTION																REGULATED CO, EMISSIONS
STEWISE ENERGY CONSUM	Total Area (n	Calculated) BER (kgCO ₂ / mi		Space Hertine		Domestic Hot		Space Heating	D	omestic Hot			Flactricity		Secondary		Electricity generated by	Lighting	horito	Confer								Part L 2021 CO ₂
SHE-WIDE ENERGY-CONSUM		Calculated 7) BER (kgCO ₂ / mi		Space Heating (kWh p.a.)	N/A	Domestic Hot Water (kWh p.e.)	NIA	Space Heating (Heat source 2) (kWh p.a.)	N/A (He	omestic Hot Water east source 2)			Flactricity	NGA	Secondary Heating system (kWh p.a.)	N/A	Electricity generated by renewable (kWh p.a.)	Lighting (kWh p.a.)	Auxiliary (kWh p.a.)	Cooling (kWh p.a.)								
Sun		Calculated BER (kgCO ₂ / mi		Space Heating (kWh p.e.)	N/A	Domestic Hot Water (kWh p.a.)	N/A	Space Heating (Heat source 2) (kWh p.a.)	N/A (He	omestic Hot Water eat source 2) (kWh p.a.)	REGULATED ENE Space as Domestic Water from (kWh p.4			NIA	Secondary Heating system (kWh p.a.)	N/A	generated by renewable	Lighting (kWh p.a.)	Auxiliary (NWh p.e.)	Cooling (kWh p.a.) 2,348								Part L 2021 CO ₂

esidential predicte	ed energy ι	ise																	
					EUI & space	heating dema	nd (kWh/year)				Has the follouse been	owing energy included?	Re	sults	Table 4 of the gu	idance comparison		Method	ology used
Building type	GIA	Space heating demand	Annual Electricity Use	Annual Gas Use	Annual Oil Use if applicable	Biomass Use	Annual District Htg Use if applicable	Annual District Clg Use if applicable	Elec Generation, Gross if applicable	Solar Thermal Generation if applicable	Regulated	Unregulated	EUI (kWh/m²/year) (excluding renewable energy)	Space heating demand (kWh/m²/year) (excluding renewable energy)	EUI value from Table 4 of the guidance (kWh/m²/year) (excluding renewable	Space heating demand from Table 4 of the guidance (kWh/m²/year) (excluding renewable	Software	Operational energy use assessment	notes (if expected performance differs from the Table 4 values in the guidance or other software used)
relling (total)															energy)	energy)			
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on-residential pre	dicted ener	gy use																	
					EUI & space	heating dema	nd (kWh/year)				Has the follouse been	owing energy included?	Re	sults	Table 4 of the gu	idance comparison		Method	ology used
Building type	GIA	Space heating demand	Annual Electricity Use	Annual Gas Use	Annual Oil Use		Annual District Htg Use if applicable	Annual District Clg Use if applicable	Elec Generation, Gross	Solar Thermal Generation	Regulated	Unregulated	EUI (kWh/m²/year) (excluding renewable	Space heating demand (kWh/m²/year)	EUI value from Table 4 of the guidance	Space heating demand from Table 4 of the guidance	Software	Operational energy use assessment	notes (if expected performance differs from the Tab 4 values in the guidance or other software
								,					energy)	(excluding renewable energy)	(kWh/m²/year) (excluding renewable energy)	(kWh/m ² /year) (excluding renewable energy)			used)
other non-residential	1956.6	9880.83	177522.318	0					101608		Yes	Yes	142.6609005	5.05	55	15	Part L2 - approved DSM	CIBSE TM54	Early stage design. To be reviewed at detailed design.
															1				

Part L 2021 Performance

Residentia

Table 1: Carbon Dioxide Emissions after each stage of the Energy Hierarchy for residential buildings

	Carbon Dioxide Emission (Tonnes CO	s for residential buildings per annum)
	Regulated	Unregulated
Baseline: Part L 2021 of the Building Regulations Compliant Development	0.0	
After energy demand reduction (be lean)	0.0	
After heat network connection (be clean)	0.0	
After renewable energy (be green)	0.0	

Table 2: Regulated Carbon Dioxide savings from each stage of the Energy Hierarchy for residential buildings

	Regulated residential of	carbon dioxide savings
	(Tonnes CO ₂ per annum)	(%)
Be lean: savings from energy demand reduction	0.0	0%
Be clean: savings from heat network	0.0	0%
Be green: savings from renewable energy	0.0	0%
Cumulative on site savings	0.0	0%
Annual savings from off-set payment	0.0	-
	(Tonne	es CO ₂)
Cumulative savings for off- set payment	0	-
Cash in-lieu contribution (£)	0	

*carbon price is based on GLA recommended price of £95 per tonne of carbon dioxide unless Local Planning Authority price is inputted in the 'Development Information' tab

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Table 3: Carbon Dioxide Emissions after each stage of the Energy Hierarchy for non-residential buildings

	Carbon Dioxide Emissions for non-residential buildings (Tonnes CO ₂ per annum)		
	Regulated	Unregulated	
Baseline: Part L 2021 of the Building Regulations Compliant Development	23.3	12.4	
After energy demand reduction (be lean)	15.4	12.4	
After heat network connection (be clean)	15.4	12.4	
After renewable energy (be green)	-6.2	12.4	

 Table 4: Regulated Carbon Dioxide savings from each stage of the Energy Hierarchy for non-residential buildings

	Regulated non-residential carbon dioxide savings		
	(Tonnes CO ₂ per annum)	(%)	
Be lean: savings from energy demand reduction	7.9	34%	
Be clean: savings from heat network	0.0	0%	
Be green: savings from renewable energy	21.6	93%	
Total Cumulative Savings	29.5	127%	
Annual savings from off-set payment	-6.2	-	
	(Tonnes CO ₂)		
Cumulative savings for off- set payment	-187	-	
Cash in-lieu contribution (£)	-17,769		

*carbon price is based on GLA recommended price of £95 per tonne of carbon dioxide unless Local Planning Authority price is inputted in the 'Development Information' tab

SITE-WIDE

	Total regulated emissions (Tonnes CO ₂ / year)	CO ₂ savings (Tonnes CO ₂ / year)	Percentage savings (%)
Part L 2021 baseline	23.3		
Be lean	15.4	7.9	34%
Be clean	15.4	0.0	0%
Be green	-6.2	21.6	93%
Total Savings	-	29.5	127%
	-	CO ₂ savings off-set (Tonnes CO ₂)	-
Off-set		-187.0	-

	Target Fabric Energy Efficiency (kWh/m²)	Dwelling Fabric Energy Efficiency (kWh/m²)	Improvement (%)	
Development total	0.00	0.00		

	Area weighted non-residential cooling demand (MJ/m²)	Total area weighted non-residential cooling demand (MJ/year)	
Actual	96.2	37,518	
Notional	33.7	13,143	

EUI & space heating demand (predicted energy use)

Building type	EUI (kWh/m²/year) (excluding renewable energy)	Space heating demand (kWh/m²/year) (excluding renewable energy)	EUI value from Table 4 of the guidance (kWh/m²/year) (excluding renewable energy)	Space heating demand from Table 4 of the guidance(kWh/m²/ye ar) (excluding renewable energy)		Explanatory notes (if expected performance differs from the Table 4 values in the guidance)
Residential						
All other non-residential	142.6609005	5.05	55	15	Part L2 - approved DSM & CIBSE TM54	Early stage design. To be reviewed at detailed design stage