



**Norman
Disney &
Young**
A TETRA TECH COMPANY

105 JUDD STREET LTD

105 Judd Street

Energy Statement – Part 3

13 April 2022

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APPENDIX E – GLA REPORTING SPREADSHEET

NON-DOMESTIC ENERGY CONSUMPTION AND CO₂ ANALYSIS

Building Use	Model Area (m²)	Number of units	Total area represented by model (m²)	VALIDATION CHECK		REGULATED ENERGY CONSUMPTION BY END USE (kWh/m² p.a.) TER - SOURCE: BRUKL OUTPUT						REGULATED ENERGY CONSUMPTION BY FUEL TYPE (kWh/m² p.a.) TER - SOURCE: BRUKL.INP or *SIM.CSV FILE				REGULATED ENERGY CONSUMPTION BY FUEL TYPE (kWh/m² p.a.) - TER BRUKL				REGULATED CO₂ EMISSIONS								
				Calculated TER 2012 (kgCO₂ / m²)	BRUKL TER 2012 (kgCO₂ / m²)	Space Heating (kWh/m² p.a.)	Fuel type Space Heating	Domestic Hot Water (kWh/m² p.a.)	Fuel type Domestic Hot Water	Lighting (kWh/m² p.a.)	Auxiliary (kWh/m² p.a.)	Cooling (kWh/m² p.a.)	Natural Gas	Grid Electricity	Equipment		2012 CO₂ emissions (kgCO₂ p.a.)	Natural Gas	Grid Electricity	Unregulated Grid Electricity		SAP10.0 CO₂ emissions (kgCO₂ p.a.)	BRUKL TER SAP10.0 (kgCO₂ / m²)					
New extension building	3145.17	1	3145.17	18.1	17.9	8.86067	Natural Gas	2.79078	Natural Gas	20.3823	2.33621	7.48853	11	30	38		56,790	11	30	38		29,409	9.4					
Existing building or	5782.64	1	5782.64	29.8	29.3	61.4571	Natural Gas	23.8065	Natural Gas	18.0008	8.51749	3.25577	61	32	42		172,319	61	32	42		117,530	20.3					
Sum				8,928	2	8,928	25.7	-	383,253	N/A	146,442	N/A	168,198	56,601	42,380	390,009	279,126	365,206	N/A	N/A	229,108	390,009	279,126	365,206	N/A	N/A	146,938	16.5

SITE-WIDE ENERGY CONSUMPTION AND CO₂ ANALYSIS

Use	Total Area (m²)	Calculated TER 2012 (kgCO ₂ / m²)	-	REGULATED ENERGY CONSUMPTION								REGULATED CO ₂ EMISSIONS		REGULATED CO ₂ EMISSIONS PER UNIT	
				Space Heating (kWh p.a.)	N/A	Domestic Hot Water (kWh p.a.)	N/A	Lighting (kWh p.a.)	Auxiliary (kWh p.a.)	Cooling (kWh p.a.)		2012 CO ₂ emissions (kgCO ₂ p.a.)		SAP 10.0 CO ₂ emissions (kgCO ₂ p.a.)	Calculated TER SAP 10.0 (kgCO ₂ / m²)
Sum	8,928	25.7	-	383,253	N/A	146,442	N/A	168,198	56,601	42,380		229,108		146,938	16.5

NON-DOMESTIC ENERGY CONSUMPTION AND CO2 ANALYSIS

				VALIDATION CHECK		REGULATED ENERGY CONSUMPTION BY END USE (kWh/m² p.a.) 'BE LEAN' BER - SOURCE: BRUKL OUTPUT							REGULATED ENERGY CONSUMPTION BY FUEL TYPE (kWh/m² p.a.) 'BE LEAN' BER - SOURCE: BRUKL.INP or *SIM.CSV FILE							REGULATED CO₂ EMISSIONS PER UNIT											
Building Use	Model Area (m²)	Number of units	Total area represented by model (m²)	Calculated BER 2012 (kgCO₂ / m²)	BRUKL BER 2012 (kgCO₂ / m²)	Space Heating (kWh/m² p.a.)	Fuel type Space Heating	Domestic Hot Water (kWh/m² p.a.)	Fuel type Domestic Hot Water		Lighting (kWh/m² p.a.)	Auxiliary (kWh/m² p.a.)	Cooling (kWh/m² p.a.)	Natural Gas	Grid Electricity	Equipment		2012 CO₂ emissions (kgCO₂ p.a.)	Natural Gas	Grid Electricity	Equipment		SAP 10.0 CO₂ emissions (kgCO₂ p.a.)	BRUKL BER SAP 10.0 (kgCO₂ / m²)							
New extension b	3145.17	1	3145.17	13.1	12.9	10.5286	Natural Gas	2.93764	Natural Gas		10.3412	6.16302	2.92685	13	20	38		41,153	13	20	38		23,009	7.3							
Existing building	5782.64	1	5782.64	23.4	23.1	40.2933	Natural Gas	21.973	Natural Gas		10.0641	6.93295	1.1041	60	20	42		135,332	60	20	42		100,250	17.3							

SITE-WIDE ENERGY CONSUMPTION AND CO2 ANALYSIS

Use	Total Area (m²)	Calculated BER 2012 (kgCO₂ / m²)	-	REGULATED ENERGY CONSUMPTION											REGULATED CO₂ EMISSIONS					REGULATED CO₂ EMISSIONS	
				Space Heating (kWh p.a.)	N/A	Domestic Hot Water (kWh p.a.)	N/A	Secondary Heating System (kWh p.a.)	N/A		Lighting (kWh p.a.)	Auxiliary (kWh p.a.)	Cooling (kWh p.a.)							SAP 10.0 CO₂ emissions (kgCO₂ p.a.)	Calculated BER SAP 10.0 (kgCO₂ / m²)
															2012 CO₂ emissions (kgCO₂ p.a.)						
Sum	8,928	19.8	-	266,116		136,301		0			90,722	59,474	15,590		176,485					123,259	13.8

NON-DOMESTIC ENERGY CONSUMPTION AND CO₂ ANALYSIS

				VALIDATION CHECK		REGULATED ENERGY CONSUMPTION BY END USE (kWh/m² p.a.) 'BE CLEAN' BER - SOURCE: BRUKL OUTPUT										REGULATED ENERGY CONSUMPTION BY FUEL TYPE (kWh/m² p.a.) 'BE CLEAN' BER - SOURCE: BRUKL.INP or *SIM.CSV FILE											
Building Use	Model Area (m²)	Number of units	Total area represented by model (m²)	Calculated BER 2012 (kgCO₂ / m²)	BRUKL BER 2012 (kgCO₂ / m²)	Space Heating (kWh/m² p.a.)	Fuel type Space Heating	Domestic Hot Water (kWh/m² p.a.)	Fuel type Domestic Hot Water	Electricity generated by CHP (-) <i>if applicable</i>				Lighting (kWh/m² p.a.)	Auxiliary (kWh/m² p.a.)	Cooling (kWh/m² p.a.)	Natural Gas	Grid Electricity	Bespoke DH Factor	Electricity generated by CHP (-) <i>if applicable</i>	Equipment			2012 CO₂ emissions (kgCO₂ p.a.)			
				13.1	12.9	10.5286	Natural Gas	2.93764	Natural Gas								0.216 kgCO₂/kWh	0.519 kgCO₂/kWh	0.000 kgCO₂/kWh	0.519 kgCO₂/kWh	0.519 kgCO₂/kWh						
						23.4	23.1	40.2933	Natural Gas								21.973	Natural Gas	13	20					38		
New extension l	3145.17	1	3145.17	13.1	12.9	10.5286	Natural Gas	2.93764	Natural Gas	<i>if applicable</i>				10.3412	6.16302	2.92685	10.3412	6.16302	2.92685						41,153		
Existing building	5782.64	1	5782.64	23.4	23.1	40.2933	Natural Gas	21.973	Natural Gas					10.0641	6.93295	1.1041	60	20		38							135,332

SITE-WIDE ENERGY CONSUMPTION AND CO₂ ANALYSIS

Use	Total Area (m²)	Calculated BER 2012 (kgCO ₂ / m²)	REGULATED ENERGY CONSUMPTION											REGULATED CO ₂ EMISSIONS	
			Space Heating (kWh p.a.)	N/A	Domestic Hot Water (kWh p.a.)	N/A	Space and Domestic Hot Water from CHP (kWh p.a.)	N/A	Electricity generated by CHP (kWh p.a.) <i>if applicable</i>	Secondary Heating System (kWh p.a.)	N/A	Lighting (kWh p.a.)	Auxiliary (kWh p.a.)		Cooling (kWh p.a.)
Sum	8,928	19.8	-	266,116		136,301		0	0		90,722	59,474	15,590	176,485	

NON-DOMESTIC ENERGY CONSUMPTION AND CO ₂ ANALYSIS																															
				VALIDATION CHECK		REGULATED ENERGY CONSUMPTION BY END USE (kWh/m² p.a.) 'BE GREEN' BER - SOURCE: BRUKL OUTPUT												REGULATED ENERGY CONSUMPTION BY FUEL TYPE (kWh/m² p.a.) 'BE GREEN' BER - SOURCE: BRUKLINP or 'SIM.CSV FILE													
Use	Area per unit (m²)	Number of units	Total area represented by model (m²)	Calculated BER 2012 (kgCO ₂ / m²)	BRUKL BER 2012 (kgCO ₂ / m²)	Space Heating (kWh/m² p.a.)	Fuel type Space Heating	Domestic Hot Water (kWh/m² p.a.)	Fuel type Domestic Hot Water				Electricity generated by CHP (-)			Electricity generated by renewable technology (-)	Lighting (kWh/m² p.a.)	Auxiliary (kWh/m² p.a.)	Cooling (kWh/m² p.a.)	Natural Gas	Grid Electricity	Bespoke DH Factor	Electricity generated by CHP (-)	Electricity generated by renewable technology (-)	Enter Carbon Factor 1	Enter Carbon Factor 2	Enter Carbon Factor 3	Equipment	2012 CO ₂ emissions (kgCO ₂ p.a.)		
New extension I	3145.17	1	3145.17	13.2	12.9	2.70677	Grid Electricity	3.30033	Grid Electricity				If applicable			If applicable															
	5782.64	1	5782.64	18.8	18.4	10.5901	Grid Electricity	7.5937	Grid Electricity										10.3412	6.16302	2.92685	0.216 kgCO ₂ /kWh	0.519 kgCO ₂ /kWh	0.000 kgCO ₂ /kWh	0.519 kgCO ₂ /kWh	0.519 kgCO ₂ /kWh	0.000 kgCO ₂ /kWh	0.000 kgCO ₂ /kWh	0.000 kgCO ₂ /kWh	0.519 kgCO ₂ /kWh	36
Existing building																	10.0641	6.93295	1.1041												108,906
										N/A	N/A	N/A	N/A	N/A	N/A																
Sum	8,928	2	8,928	16.8	-	69,752	N/A	54,292	N/A				0			0	90,722	59,474	15,590	0	289,840	0	0	0	0	0	0	0	120,140	150,427	
SITE-WIDE ENERGY CONSUMPTION AND CO ₂ ANALYSIS																															
Use	Total Area (m²)	Calculated BER 2012 (kgCO ₂ / m²)	-	Space Heating (kWh p.a.)	N/A	Domestic Hot Water (kWh p.a.)	N/A	Space Heating (Heat source 2) (kWh p.a.)	N/A	Domestic Hot Water (Heat source 2) (kWh p.a.)	N/A	Space and Domestic Hot Water from CHP (kWh p.a.)	N/A	Electricity generated by CHP (kWh p.a.) If applicable	Secondary Heating system (kWh p.a.)	N/A	Electricity generated by renewable (kWh p.a.) If applicable	Lighting (kWh p.a.)	Auxiliary (kWh p.a.)	Cooling (kWh p.a.)						2012 CO ₂ emissions					
Sum	8,928	16.8	-	69,752		54,292		0		0		0		0	0		0	90,722	59,474	15,590						150,427					

Non-domestic

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

	Carbon Dioxide Emissions for non-domestic buildings (Tonnes CO ₂ per annum)	
	Regulated	Unregulated
Baseline: Part L 2013 of the Building Regulations Compliant Development	229.1	
After energy demand reduction (be lean)	176.5	
After heat network connection (be clean)	176.5	
After renewable energy (be green)	150.4	

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

	Regulated non-domestic carbon dioxide savings	
	(Tonnes CO ₂ per annum)	(%)
Be lean: savings from energy demand reduction	52.6	23%
Be clean: savings from heat network	0.0	0%
Be green: savings from renewable energy	26.1	11%
Total Cumulative Savings	78.7	34%
Annual savings from off-set payment	150.4	-
	(Tonnes CO ₂)	
Cumulative savings for off-set payment	4,513	-
Cash in-lieu contribution (£)	428,716	

*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 2013 baseline	229.1		
Be lean	176.5	52.6	23%
Be clean	176.5	0.0	0%
Be green	150.4	26.1	11%
Total Savings	-	78.7	34%
	-	CO ₂ savings off-set (Tonnes CO ₂)	-
Off-set	-	4,512.8	-

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

	Carbon Dioxide Emissions for non-domestic buildings (Tonnes CO ₂ per annum)	
	Regulated	Unregulated
Baseline: Part L 2013 of the Building Regulations Compliant Development	146.9	28.0
After energy demand reduction (be lean)	123.3	28.0
After heat network connection (be clean)	123.3	28.0
After renewable energy (be green)	67.5	28.0

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

	Regulated non-domestic carbon dioxide savings	
	(Tonnes CO ₂ per annum)	(%)
Be lean: savings from energy demand reduction	23.7	16%
Be clean: savings from heat network	0.0	0%
Be green: savings from renewable energy	55.7	38%
Total Cumulative Savings	79.4	54%
Annual savings from off-set payment	67.5	-
	(Tonnes CO ₂)	
Cumulative savings for off-set payment	2,026	-
Cash in-lieu contribution (£)*	192,468	

*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

	Total regulated emissions (Tonnes CO ₂ / year)	CO ₂ savings (Tonnes CO ₂ / year)	Percentage savings (%)
Part L 2013 baseline	146.9		
Be lean	123.3	23.7	16%
Be clean	123.3	0.0	0%
Be green	67.5	55.7	38%
Total Savings	-	79.4	54%
	-	CO ₂ savings off-set (Tonnes CO ₂)	-
Off-set	-	2,026.0	-



APPENDIX F – BE SEEN ENERGY MONITORING SPREADSHEET



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