Sustainability Statement

Town Centre West Blocks 1-3

St. Andrews Park, Hillingdon Road, Uxbridge

May 2022

Turley Sustainability

Contents

Client

St Modwen Homes

Turley Reference

STMZ3015

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1. Introduction

This Statement has been prepared to demonstrate that Blocks 1-3 Town Centre West at St. Andrews Park in Hillingdon, Uxbridge will be constructed in line with condition 52 of the approved planning application.

This Energy and Carbon Statement has been prepared by Turley Sustainability, on behalf of St Modwen Homes to support the planning application for the proposed mixed-use development at St. Andrews Park in Hillingdon Road, Uxbridge.

It provides details of how the development has responded to planning condition 52 (Application Ref. 585/APP/2015/848) which was granted in December 2015 for variation of the original planning permission (Ref: 585/APP/2009/2752, dated January 2012). This statement provides details of the carbon reduction and water efficiency measures proposed to align with the requirements of local planning policy.

The relevant energy and sustainability condition related to the residential elements of the scheme states:

- ***Condition 52 –*** *Unless otherwise agreed in writing by the Local Planning Authority, prior to commencement of each phase (with the specific exception of the 29 units in phase 2 which shall achieve Code 6 in accordance with condition 10) of the outline element of the development, or any of the elements of development for which full planning permission is hereby approved (except the Mons Barrack Blocks, Lawrence House and Sick Quarters buildings and Carpenters Building), detailed drawings and supporting documentation for the relevant phase / relevant component of the full planning element shall be submitted and approved in writing by the Local Planning Authority. The details shall include:*

  A statement demonstrating measures that will be incorporated to ensure that the residential units (Class C3) achieve a minimum standard of Code for Sustainable Homes Level 4 with reasonable endeavours to obtain higher levels in later parts, in accordance with changes to national Building Regulations.

  Thereafter the scheme shall be completed in strict accordance with the approved details and maintained for the life of the development.

For the purposes of this condition, development for which full planning permission is approved and full planning element are defined as follows:

i) The Town Houses (TH01) shown on plan 3300-21-610 Rev D

ii) The Town Houses (TH02) shown on plan 3300-21-611 Rev D

iii) The Town Houses (TH03) shown on plan 3300-21-612 Rev C

iv) The Town Houses (TH04) shown on plan 3300-21-613 Rev C

v) The Flat Block (FL01) shown on plan 3300-21-614 Rev E

vi) The Flat Block (FL02) shown on plan 3300-21-615 Rev E

vii) The Carpenters Building shown on plan 3300-21-602 Rev C

viii) Hillingdon House shown on plan 3300-21-106 Rev D

ix) The Cinema building shown on plan 3300-20-101-Rev A

x) The dwellings in Lawrence House shown on plan 3300-23-301 Rev D

xi) The dwellings in the Sick Quarters shown on plan 3300-24-301 Rev C

xii) The dwellings in the Barrack Block shown on plan 3300-25-301 Rev E

It is noted that the Town Centre West phase is not included in the list above. However Condition 52 requires a CfSH Statement to be submitted and approved prior to the commencement of each phase "*of the outline element of the development, or any of the elements of development for which full planning permission is hereby approved*". Town Centre West has been approved via a reserved matters application pursuant to the original outline consent, only the elements of the development for which full planning permission was granted are listed in the condition wording and therefore the requirement applies to both.

In the time that has passed since planning permission was originally granted, there has been substantial changes in relation to energy and carbon policy locally and nationally. The key detail with regards to Condition 52 is that the Code for Sustainable Homes (CfSH) was withdrawn in 2015.

The key minimum requirement to attain CfSH Level 4 was a 19% Improvement in Dwelling Emission Rate over the Target Emission Rate. The baseline to be used was the current version of the Building Regulations Part L1A: 2013. Whilst the CfSH scheme is now defunct, this statement demonstrates that the scheme meets the minimum carbon performance required under Code Level 4.

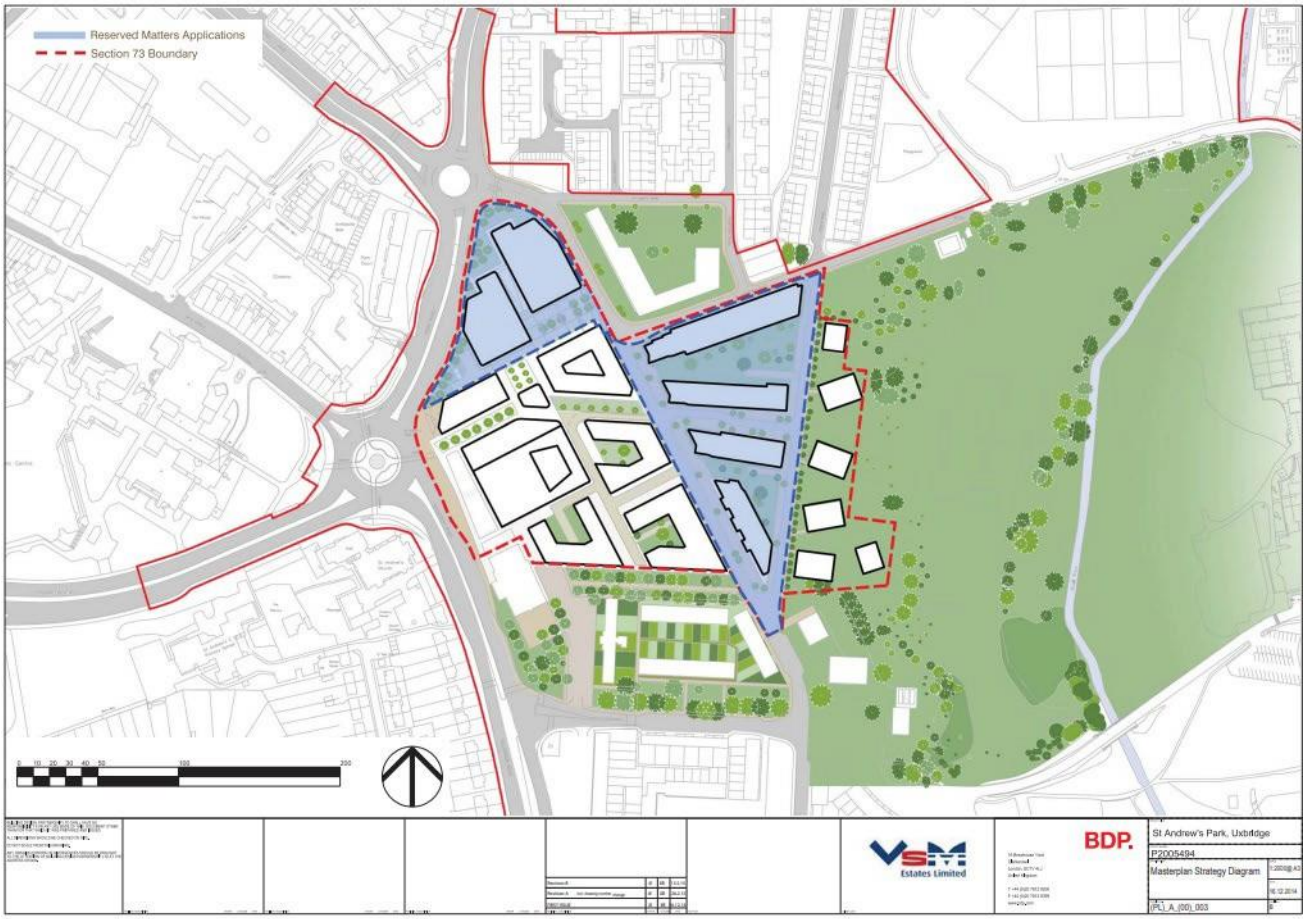
The other minimum requirement under CfSH Level 4 was the achievement of 105 litres/per person/day Indoor Water Consumption. This statement demonstrates that the development will look to achieve this limit of water consumption, exceeding requirements under the current version of the Building Regulations Part G.

The illustrative masterplan is shown in Figure 1.

The following chapters set out the local and national energy and carbon context, followed by details on the proposed measures incorporated into the design of the development to demonstrate that specified carbon savings will be achieved.

Please note, the terms "carbon", carbon dioxide (CO_2)" and "greenhouse gas (GHG)" are used interchangeably in this Strategy depending on the terminology of referenced documents.

Figure 1: Illustrative Masterplan



2. Policy Context

This chapter provides an overview of the relevant sustainability planning policy and guidance from a national and local perspective.

National Policy

This section sets out a summary of current national guidance and policy in relation to sustainable development.

National Planning Policy Framework

The National Planning Policy Framework (NPPF) provides a framework for the development of locally-prepared plans and the government's planning policies for England and how these are expected to be applied.

Paragraph 7 of the NPPF states that: 'the purpose of the planning system is to contribute to the achievement of sustainable development'.

It states clearly that in order to deliver sustainable development, the planning system must perform three distinct objectives, aligned to the three pillars of sustainability, which must not be taken in isolation and should be pursued jointly:

An **economic** objective to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right type is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure.

A **social** objective supporting strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering well-designed beautiful and safe places, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being; and

An **environmental** objective contributing to protecting and enhancing our natural, built and historic environment; including, making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.

These objectives are key to the development of plans and the NPPF sets out a number of key themes for consideration which guide the preparation of local plans and policies, ensuring the delivery of sustainable development.

Planning Practice Guidance

Planning Practice Guidance (PPG) provides further advice on various planning issues associated with development, including those linked to sustainability and renewable energy and underpins the policies within the NPPF.

PPG is a material consideration in planning decisions and should generally be followed unless there are clear reasons not to. It sets out how local authorities should include polices that protect the local environment and strategies to mitigate and adapt to climate change and supports

developments that are functional and adaptable for the future.

The March 2015 PPG update confirms that Local Authorities have the option to set technical requirements exceeding the minimum requirements of the Building Regulations in respect of access, water and space where sufficient evidence is produced to justify the target.

National Design Guide

The National Design Guide published in October 2019 and is based on the national planning policy practice guidance and objective for good design as set out in the NPPF. The Guide introduces ten characteristics of well-designed places which work together to create developments Character and Community, while positively addressing environmental issues affecting climate.

Building Regulations

Whilst not planning policy, in April 2014 the Part L regulations changed and it is now a requirement of the current 2013 Regulations for new homes to deliver a 6% reduction in carbon emissions compared to 2010 Part L. This change aimed to strike a balance between the commitments to reducing carbon emissions and improving energy efficiency and ensuring that the overall effect of regulation upon consumers and businesses does not stifle growth.

The October 2019 Future Homes Standard (FHS) consultation concluded in a 2021 uplift of 31% CO_2 reduction compared to 2013 Building Regulations standards. This is an interim target ahead of the 2025 implementation of the FHS which will require all new homes to reduce CO_2 emissions by at least 75% lower than current standards.

This interim target will be regulated by Part L 2021 of the Building Regulations and is due to come into effect from June 2022 with transitional arrangements applying for all homes for which works begin on site before June 2023.

Code for Sustainable Homes

The Code for Sustainable Homes (the CfSH) was introduced in England in April 2007 as a voluntary national standard to improve the overall sustainability of new homes by setting a single framework within which the home building industry can design and construct homes to higher environmental standards.

The Code set out a number of areas including Energy and Carbon Emissions, Waste and Water that a development would be assessed under and gain credits that would contribute to an overall rating (Ranging from 1 -6).

Until March 2015, the Code could be mandatory in England, Wales and Northern Ireland if it was a requirement of a local authority's local plan. In March 2014, in response to the Housing Standards Review (HSR) the government confirmed that it intended to wind down the Code for Sustainable Homes, with many of its requirements being consolidated into a national frameworkcentred on the Building Regulations.

In a written ministerial statement on 25 March 2015, the Secretary of State for Communities and Local Government Eric Pickles confirmed that from 27 March 2015, changes to the 2008 Climate Change Act would mean local authorities in England could no longer require code level 3, 4, 5 or 6 as part of the conditions imposed on planning permissions.

The statement confirmed that energy requirements for dwellings will instead be set by the Building Regulations which will be changed to be the equivalent to Code level 4.

Local Policy

The Local Development Plan in place at the time of the original application included the London Borough of Hillingdon Sustainable Community Strategy 2008 – 2018 , the RAF Uxbridge Supplementary Planning Document Jan 2009 and saved policies under the 2012 Unitary Development Plan (UDP).

Since the time of submission of the original application, the Hillingdon Local Plan Part 1: Strategic Policies was adopted in November 2012 and the Local Plan Part 2 Development Management Policies and Site Allocations and Designations was adopted on 16th January 2020.

Part 1 of the Plan sets out the long-term spatial vision and objectives for the Borough whilst Part 2 provides detailed policies that form the basis of the Council's decisions on individual planning applications.

Climate Emergency

In January 2020, the London Borough of Hillingdon declared a climate emergency pledging to work to make the Borough carbon neutral by 2030 and to achieve 100% clean energy across the Council's services by 2030.

Planning Policy Summary

Both local and national policy aim to ensure the delivery of sustainable and well-designed homes and other buildings which mitigate and adapt to the impacts of climate change.

The withdrawal of the Code for Sustainable Homes confirm development is no longer required to meet the standards set under the CfSH scheme.

Latest national planning policy and guidance confirms the Government's approach to sustainable development is being driven through updates to Building Regulations to ensure that new buildings are well designed and reduce emissions in line with the UK's national carbon targets.

Therefore, the following sections of this Energy and Carbon Statement set out the way in which the residential dwellings at St. Andrews Park meet the minimum performance targets for energy and water efficiency set under the defunct CfSH scheme as well as exceed the current version of the Building Regulations.

3. Energy and Carbon at St. Andrews Park

This section summarises the Energy and Carbon Strategy for the Proposed Development at St. Andrews Park.

This section of the report details the Energy and Carbon strategy for Blocks 1-3 Town Centre West, demonstrating how the development will achieve the 19% carbon reduction requirement over the current version of the Building Regulations Part L1A: 2013. The calculations that underpin these results are provided in Appendix 1.

Table 1: Energy Performance of dwellings in Block 1-3 Town Centre West [1]

Proposed Dwellings	Average dwelling emission rate CO_2 Emissions ($kgCO_2/m^2/yr$)	Average dwelling emission rate Target Emission Rate CO_2 Emissions ($kgCO_2/m^2/yr$)	Average % Carbon Reduction ($kgCO_2/m^2/yr$)
Block 1 (100 dwellings)	9.66	17.04	43.3%
Block 2 (65 dwellings)	10.14	18.07	43.88%
Block 3 (102 dwellings)	9.62	16.92	43.14%

As Table 1 shows, the dwellings achieve a carbon reduction far beyond that of the 19% Code Level 4 requirement. The full results, located in Appendix 1, show that all dwellings achieve a minimum of 36% beyond Part L1A:2013.

Table 2: U Value Comparison [2]

Element	U Values W/m^2K	Part L 2013 Backstop	% reduction beyond Part L 2013
Roof (average)	0.12	0.2	**40%**
External Walls	0.16	0.3	**47%**
Ground Floor	0.2	0.25	**20%**
Windows	1.5	2.0	**25%**
Doors	1.2	2.0	**40%**
Air Tightness ($m^3/h@50Pa$)	3	10	**70%**

Table 2 above shows the substantial reductions in the u-values achieved at the development beyond Part L 2013 backstop values.

The SAP outputs confirm achievement of the Code Level 4 requirements set out in the Energy Strategy submitted at Outline Planning stage[3].

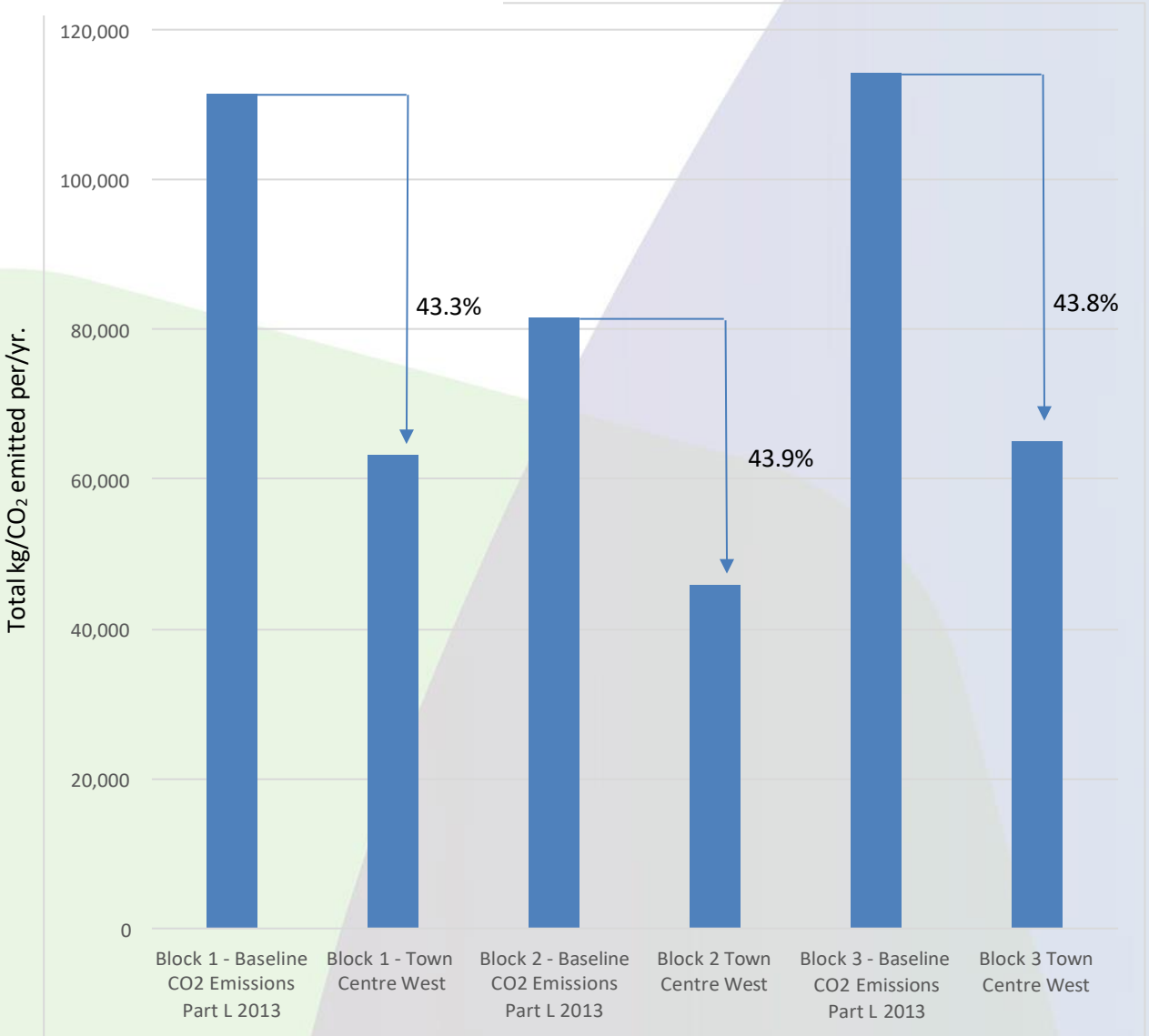
Figure 2 Overleaf shows the reduction beyond the Part LA:2013 baseline for each block.

[1] SAP Regulations Compliance Report Blocks 1-3 Town Centre West St Andrews Park - Energist
[2] Developer Statement Blocks 1-3 Town Centre West St Andrews Park - Energist
[3] Energy Strategy RAF Uxbridge Doc. No: PDFMRU039 - Halcrow Yolles, 2009

Energy and Carbon Strategy at Blocks 1-3 Town Centre West

The graph below shows how homes achieve a reduction in CO2 emissions substantially beyond the 19% reduction in carbon emissions required by Code 4.

Figure 2: Carbon Emission Reduction



4. Water Efficiency at St. Andrews Park

This section summarises the water efficiency measures for the Proposed Development at St. Andrews Park.

The proposed dwellings are being designed to achieve a maximum performance of 105 litres / person / day meeting the requirements of the now defunct CfSH Level 4 and exceeding requirements under the current version of the Building Regulations Part G. The full water efficiency calculation will be submitted to Building Control under regulation 37 of the Building Regulations and regulation 20(1) and (4) of the Building Regulations prior to occupation.

Whilst slight variations exist across the units, below is a sample specification to achieve the water efficiency target.

Table 3: Sample Water Specification

Fittings Installation	Unit of Measure	Capacity / Flow Rate	Litres/ person/day
WC (dual flush)	Full flush volume (litres)	6	8.76
	Part flush volume (litres_	3	8.88
Taps (excluding kitchen / utility room taps)	Flow rate (litres / min)	6	11.06
Bath (where shower also present)	Capacity to overflow (in ltres)	110	12.10
Shower (where bath also present)	Flow rate (litres / min)	9	39.33
Kitchen / Utility room sink taps	Flow rate (litres / min)	8	13.88
Washing Machine	Litres / kg dry load	8	16.80
Dishwasher	Litres / place setting	1.25	4.5
Normalisation factor			0.91
Total Internal Water Consumption (l/p/d)			104.93

Water scarcity is a key issue in Uxbridge, with the water supplier, Affinity Water, categorised by the environment agency as in serious water stress. The scheme responds to this through the achievement of circa 105 litres/person/day. This will be achieved through low flow fixtures and fittings as set out in Table 3.

These measures will help place less burden on the freshwater infrastructure and reduce water bills for residents and occupiers.

5. Conclusions

This Statement has been prepared to demonstrate how the Proposed Development responds to Condition 52 of the planning permission.

St Modwen Homes are committed to the delivery of sustainable buildings which are fit for the future and reduce carbon emissions in line with Local and National Policy Guidance.

The new dwellings at St. Andrews Park have been designed to achieve a 19% carbon reduction beyond that of current Building Regulations. As discussed, the Conditions were set out prior to the removal of the Code for Sustainable Homes (CfSH) by the Deregulation Act in 2015. Nevertheless, the dwellings achieve the energy and carbon performance equivalent to CfSH Level 4.

The dwellings also meet the water efficiency standards of 105 litres / person / day equivalent to that of the CfSH Level 4 requirements and exceeding current Building Regulation Part G requirements.

The Council will be provided with the final SAP Modelling results. The full water efficiency calculation will be submitted to Building Control prior to occupation.

Appendix 1: SAP Output Calculations

	Block 1				
	Plot ref		Dwelling Emission Rate	Target Emission Rate	% Carbon Reduction
		m2	CO_2 Emissions ($kgCO_2$/yr)	CO_2 Emissions ($kgCO_2$/yr)	
1	2 04 G	73.99	9.17	15.66	
			678.4883	1,158.68	-41.4432
2	2 04 G	73.99	9.74	17.25	
			720.6626	1,276.33	-43.5362
3	1 04 D	52.66	12.58	23.65	
			662.4628	1,245.41	-46.8076
4	1 00 A	74.27	10.61	18.45	
			788.0047	1,370.28	-42.4932
5	1 00 B	53.13	11.76	20.96	
			624.8088	1113.6048	-43.8931
6	1 00 D	52.66	13.25	23.46	
			697.745	1235.4036	-43.5209
7	1 00 M	81.9	10.98	19.76	
			899.262	1618.344	-44.4332
8	1 01 E1	52.37	10.51	19.81	
			550.4087	1037.4497	-46.946
9	1 01 F3	68.13	10.8	18.83	
			884.52	1542.177	-42.6447
10	1 01 A	74.27	8.73	15.49	
			648.3771	1150.4423	-43.6411
11	1 01 D	52.66	12.1	20.56	
			637.186	1082.6896	-41.1479
12	1 01 E1	52.37	10.82	19.81	
			566.6434	1037.4497	-45.3811
13	1 01 A	74.27	8.42	14.17	
			625.3534	1052.4059	-40.5787
14	1 01 B1	59.57	10.32	18.59	
			614.7624	1107.4063	-44.4863
15	1 01 B2	53.13	9.3	16.52	
			494.109	877.7076	-43.7046
16	1 01 C	78.9	10.17	17.95	
			802.413	1416.255	-43.3426
17	1 01 D	52.66	10.62	18.28	
			559.2492	962.6248	-41.9037
18	1 01 F3	68.13	12.54	19.66	
			854.3502	1339.4358	-36.2157
19	1 01 F	73.8	10.44	18.85	
			770.472	1391.13	-44.6154
20	1 01 G2	76.19	9.69	18.08	
			738.2811	1377.5152	-46.4049
21	1 01 G	73.01	9.48	17.47	
			692.1348	1275.4847	-45.7355
22	1 02 E1	52.37	9.71	16.84	
			508.5127	881.9108	-42.3397
23	1 02 A	74.27	8.27	13.7	
			614.2129	1017.499	-39.635
24	1 02 F2	77.67	8.65	15.33	
			671.8455	1190.6811	-43.5747
25	1 02 G2	76.19	9.01	15.83	
			686.4719	1206.0877	-43.0828
26	1 02 G	73.01	8.87	16.11	
			647.5987	1176.1911	-44.941
27	1 02 A	74.27	8.42	14.17	
			625.3534	1052.4059	-40.5787
28	1 02 B2	53.13	9.3	16.52	
			494.109	877.7076	-43.7046
29	1 02 C	78.9	8.45	15.23	
			666.705	1201.647	-44.5174
30	1 02 D	52.66	10.62	18.28	
			559.2492	962.6248	-41.9037
31	1 02 F3	68.13	10.25	16.98	
			698.3325	1156.8474	-39.6349
32	1 02 G	59.57	8.78	15.68	
			523.0246	934.0576	-44.0051
33	1 03 D	52.66	10.9	18.82	
			573.994	991.0612	-42.0829
34	1 03 F3	68.13	9.36	16	
			637.6968	1090.08	-41.5
35	1 03 A	74.27	8.27	13.7	
			614.2129	1017.499	-39.635
36	1 03 E1	52.37	9.71	16.84	
			508.5127	881.9108	-42.3397
37	1 03 G	73.01	8.89	16.11	
			649.0589	1176.1911	-44.8169
38	1 03 A	74.27	8.42	14.17	
			625.3534	1052.4059	-40.5787
39	1 03 B2	53.13	9.3	16.52	
			494.109	877.7076	-43.7046
40	1 03 C	78.9	8.45	15.23	
			666.705	1201.647	-44.5174
41	1 03 D	52.66	10.62	18.28	
			559.2492	962.6248	-41.9037
42	1 03 E1	52.37	9.71	16.84	
			508.5127	881.9108	-42.3397
43	1 03 F2	77.67	8.65	15.33	
			671.8455	1190.6811	-43.5747

	Block 2				
	Plot ref		Dwelling Emission Rate	Target Emission Rate	% Carbon Reduction
		m2	CO_2 Emissions ($kgCO_2$/yr)	CO_2 Emissions ($kgCO_2$/yr)	
1	2 01 G	73.99	11.09	20.05	
			820.5491	1,483.50	-44.6883
2	2 01 G	73.99	10.54	18.72	
			779.8546	1,385.09	-43.6966
3	2 02 G	73.99	9.64	17.13	
			713.2636	1,267.45	-43.7245
4	2 02 G	73.99	9.07	15.55	
			671.0893	1,150.54	-41.672
5	2 03 G	73.99	9.74	17.25	
			720.6626	1,276.33	-43.5362
6	2 03 G	73.99	9.17	15.66	
			678.4883	1,158.68	-41.4432
7	2 05 G	73.99	9.64	17.13	
			713.2636	1,267.45	-43.7245
8	2 05 G	73.99	9.07	15.55	
			671.0893	1,150.54	-41.672
9	2 06 G	73.99	11.31	21.88	
			836.8269	1,618.90	-48.309
10	2 06 G	73.99	10.83	20.26	
			801.3117	1,499.04	-46.5449
11	2 00 F	74.79	11.7	20.45	
			875.043	1,529.46	-42.7873
12	2 00 G	73.99	10.44	17.86	
			772.4556	1,321.46	-41.5454
13	2 00 F	74.79	11.22	19.52	
			839.1438	1,459.90	-42.5205
14	2 00 G	73.99	10.5	18.04	
			776.895	1,334.78	-41.796
15	2 00 H	56.66	12.26	21.18	
			694.6516	1,200.06	-42.1152
16	2 00 J	61.81	12.6	21.01	
			778.806	1,298.63	-40.0286
17	2 00 K	62.95	11.39	19.7	
			717.0005	1,240.12	-42.1827
18	2 01 F	74.79	9.95	18.1	
			744.1605	1,353.70	-45.0276
19	2 01 G	73.99	9.14	15.76	
			676.2686	1,166.08	-42.0051
20	2 01 F	74.79	9.65	17.28	
			721.7235	1,292.37	-44.1551
21	2 01 G	73.99	9.22	15.99	
			682.1878	1,183.10	-42.339
22	2 01 H	56.66	10.71	19.03	
			606.8286	1,078.24	-43.7204
23	2 01 I	73.99	8.97	16.23	
			663.6903	1,200.86	-44.732
24	2 01 J	61.81	11.05	18.81	
			683.0005	1,162.65	-41.2547
25	2 01 K	62.95	9.88	17.6	
			621.946	1,107.92	-43.8636
26	2 02 F	74.79	10	18.16	
			747.9	1,358.19	-44.9339
27	2 02 G	73.99	9.14	15.76	
			676.2686	1,166.08	-42.0051
28	2 02 F	74.79	9.65	17.28	
			721.7235	1,292.37	-44.1551
29	2 02 G	73.99	9.22	15.99	
			682.1878	1,183.10	-42.339
30	2 02 H	56.66	10.71	19.03	
			606.8286	1,078.24	-43.7204
31	2 02 I	73.99	7.66	13.84	
			566.7634	1,024.02	-44.6532
32	2 02 J	61.81	11.05	18.81	
			683.0005	1,162.65	-41.2547
33	2 02 K	62.95	9.88	17.6	
			621.946	1,107.92	-43.8636
34	2 03 F	74.79	10	18.16	
			747.9	1,358.19	-44.9339
35	2 03 G	73.99	9.25	15.88	
			684.4075	1,174.96	-41.7506
36	2 03 F	74.79	9.65	17.28	
			721.7235	1,292.37	-44.1551
37	2 03 G	73.99	9.22	15.99	
			682.1878	1,183.10	-42.339
38	2 03 H	56.66	10.71	19.03	
			606.8286	1,078.24	-43.7204
39	2 03 I	73.99	7.66	13.84	
			566.7634	1,024.02	-44.6532
40	2 03 J	61.81	11.05	18.81	
			683.0005	1,162.65	-41.2547
41	2 03 K	62.95	9.88	17.6	
			621.946	1,107.92	-43.8636
42	2 04 F	74.79	10	18.16	
			747.9	1,358.19	-44.9339
43	2 04 G	73.99	9.25	15.88	
			684.4075	1,174.96	-41.7506

	Block 3				
	Plot ref		Dwelling Emission Rate	Target Emission Rate	% Carbon Reduction
		m2	CO_2 Emissions ($kgCO_2$/yr)	CO_2 Emissions ($kgCO_2$/yr)	
1	3a 00 A	74.27	10.1	16.82	
			750.127	1,249.22	-39.9524
2	3a 00 D	52.66	12.01	20.49	
			632.4466	1,079.00	-41.386
3	3a 00 A	74.27	9.77	16.13	
			725.6179	1,197.98	-39.4296
4	3a 00 B1	59.57	10.24	17.8	
			609.9968	1,060.35	-42.4719
5	3a 00 B2	53.13	10.76	18.67	
			571.6788	991.94	-42.3674
6	3a 00 D	52.66	12.01	20.49	
			632.4466	1,079.00	-41.386
7	3a 00 G	73.99	10.08	17.05	
			745.8192	1,261.53	-40.8798
8	3a 01 A	74.27	8.64	14.78	
			641.6928	1,097.71	-41.5426
9	3a 01 D	52.66	10.62	18.28	
			559.2492	962.62	-41.9037
10	3a 01 G	73.99	10.17	17.87	
			752.4783	1,322.20	-43.089
11	3a 01 A	74.27	8.42	14.17	
			625.3534	1,052.41	-40.5787
12	3a 01 B1	59.57	8.79	15.68	
			523.6203	934.06	-43.9413
13	3a 01 B2	53.13	9.3	16.52	
			494.109	877.71	-43.7046
14	3a 01 D	52.66	10.62	18.28	
			559.2492	962.62	-41.9037
15	3a 01 G	73.99	8.84	15.02	
			654.0716	1,111.33	-41.1451
16	3a 02 A	74.27	8.64	14.78	
			641.6928	1,097.71	-41.5426
17	3a 02 D	52.66	10.62	18.28	
			559.2492	962.62	-41.9037
18	3a 02 G	73.99	8.84	15.02	
			654.0716	1,111.33	-41.1451
19	3a 02 A	74.27	8.42	14.17	
			625.3534	1,052.41	-40.5787
20	3a 02 B1	59.57	8.79	15.68	
			523.6203	934.06	-43.9413
21	3a 02 B2	53.13	9.3	16.52	
			494.109	877.71	-43.7046
22	3a 02 D	52.66	10.62	18.28	
			559.2492	962.62	-41.9037
23	3a 02 G	73.99	8.84	15.02	
			654.0716	1,111.33	-41.1451
24	3a 03 A	74.27	8.64	14.78	
			641.6928	1,097.71	-41.5426
25	3a 03 G	73.99	8.84	15.02	
			654.0716	1,111.33	-41.1451
26	3a 03 A	74.27	8.42	14.17	
			625.3534	1,052.41	-40.5787
27	3a 03 B1	59.57	8.79	15.68	
			523.6203	934.06	-43.9413
28	3a 03 B2	53.13	9.3	16.52	
			494.109	877.71	-43.7046
29	3a 03 D	52.66	10.62	18.28	
			559.2492	962.62	-41.9037
30	3a 03 G	73.99	8.84	15.02	
			654.0716	1,111.33	-41.1451
31	3a 04 A	74.27	8.64	14.78	
			641.6928	1,097.71	-41.5426
32	3a 04 D	52.66	10.62	18.28	
			559.2492	962.62	-41.9037
33	3a 04 G	73.99	8.84	15.02	
			654.0716	1,111.33	-41.1451
34	3a 04 A	74.27	8.42	14.17	
			625.3534	1,052.41	-40.5787
35	3a 04 B1	59.57	8.79	15.68	
			523.6203	934.06	-43.9413
36	3a 04 B2	53.13	9.3	16.52	
			494.109	877.71	-43.7046
37	3a 04 D	52.66	10.62	18.28	
			559.2492	962.62	-41.9037
38	3a 04 G	73.99	8.84	15.02	
			654.0716	1,111.33	-41.1451
39	3a 05 A	74.27	10.17	18.26	
			755.3259	1,356.17	-44.3045
40	3a 05 D	52.66	12.54	23.73	
			660.3564	1,249.62	-47.1555
41	3a 05 G	73.99	10.55	19.7	
			780.5945	1,457.60	-46.4467
42	3a 05 A	74.27	9.94	17.55	
			738.2438	1,303.44	-43.3618
43	3a 05 B1	59.57	10.17	18.7	
			605.8269	1,113.96	-45.615

44	1 03 F3	68.13	10.25	16.98	
			698.3325	1156.8474	-39.6349
45	1 03 G2	76.19	9.01	15.83	
			686.4719	1206.0877	-43.0828
46	1 03 G	59.57	8.79	15.68	
			523.6203	934.0576	-43.9413
47	1 04 A	74.27	8.27	13.7	
			614.2129	1017.499	-39.635
48	1 04 E1	52.37	9.88	16.84	
			517.4156	881.9108	-41.3302
49	1 04 F2	77.67	8.65	15.33	
			671.8455	1190.6811	-43.5747
50	1 04 G	73.01	8.87	16.11	
			647.5987	1176.1911	-44.941
51	1 04 A	74.27	8.42	14.17	
			625.3534	1052.4059	-40.5787
52	1 04 B2	53.13	9.3	16.52	
			494.109	877.7076	-43.7046
53	1 04 C	78.9	8.45	15.23	
			666.705	1201.647	-44.5174
54	1 04 D	52.66	10.62	18.28	
			559.2492	962.6248	-41.9037
55	1 04 E1	52.37	9.71	16.84	
			508.5127	881.9108	-42.3397
56	1 04 F3	68.13	10.25	16.98	
			698.3325	1156.8474	-39.6349
57	1 04 G2	76.19	9.01	15.83	
			686.4719	1206.0877	-43.0828
58	1 04 G	59.57	8.78	15.68	
			523.0246	934.0576	-44.0051
59	1 05 A	74.27	8.27	13.7	
			614.2129	1017.499	-39.635
60	1 05 E1	52.37	9.71	16.84	
			508.5127	881.9108	-42.3397
61	1 05 F2	77.67	8.65	15.33	
			671.8455	1190.6811	-43.5747
62	1 05 G	73.01	8.87	16.11	
			647.5987	1176.1911	-44.941
63	1 05 A	74.27	8.42	14.17	
			625.3534	1052.4059	-40.5787
64	1 05 B2	53.13	9.3	16.52	
			494.109	877.7076	-43.7046
65	1 05 C	78.9	8.45	15.23	
			666.705	1201.647	-44.5174
66	1 05 D	52.66	10.62	18.28	
			559.2492	962.6248	-41.9037
67	1 05 E1	52.37	9.71	16.84	
			508.5127	881.9108	-42.3397
68	1 05 F3	68.13	10.25	16.98	
			698.3325	1156.8474	-39.6349
69	1 05 G2	76.19	9.01	15.83	
			686.4719	1206.0877	-43.0828
70	1 05 G	59.57	8.78	15.68	
			523.0246	934.0576	-44.0051
71	1 06 A	74.27	8.27	13.7	
			614.2129	1017.499	-39.635
72	1 06 E1	52.37	9.71	16.84	
			508.5127	881.9108	-42.3397
73	1 06 G	73.01	8.87	16.11	
			647.5987	1176.1911	-44.941
74	1 06 A	74.27	8.42	14.17	
			625.3534	1052.4059	-40.5787
75	1 06 B2	53.13	9.3	16.52	
			494.109	877.7076	-43.7046
76	1 06 C	78.9	8.45	15.23	
			666.705	1201.647	-44.5174
77	1 06 D	52.66	10.62	18.28	
			559.2492	962.6248	-41.9037
78	1 06 E1	52.37	9.71	16.84	
			508.5127	881.9108	-42.3397
79	1 06 G	73.01	8.87	16.11	
			647.5987	1176.1911	-44.941
80	1 06 A	74.27	8.42	14.17	
			625.3534	1052.4059	-40.5787
81	1 06 B2	53.13	9.3	16.52	
			494.109	877.7076	-43.7046
82	1 06 C	78.9	8.45	15.23	
			666.705	1201.647	-44.5174
83	1 06 D	52.66	10.62	18.28	
			559.2492	962.6248	-41.9037
84	1 06 E1	52.37	9.71	16.84	
			508.5127	881.9108	-42.3397
85	1 06 F2	77.67	8.65	15.33	
			671.8455	1190.6811	-43.5747
86	1 06 F3	68.13	10.25	16.98	
			698.3325	1156.8474	-39.6349
87	1 06 G2	76.19	9.01	15.83	
			686.4719	1206.0877	-43.0828
88	1 06 G	59.57	8.78	15.68	
			523.0246	934.0576	-44.0051
89	1 07 A	74.27	9.52	16.84	
			707.0504	1250.7068	-43.4679
90	1 07 G	73.01	10.76	21.33	
			785.5876	1557.3033	-49.5546
91	1 07 E1	52.37	11.26	20.96	

44	2 04 F	74.79	9.65	17.28	
			721.7235	1,292.37	-44.1551
45	2 04 G	73.99	9.22	15.99	
			682.1878	1,183.10	-42.339
46	2 04 H	56.66	10.71	19.03	
			606.8286	1,078.24	-43.7204
47	2 04 I	73.99	7.66	13.84	
			566.7634	1,024.02	-44.6532
48	2 04 J	61.81	11.05	18.81	
			683.0005	1,162.65	-41.2547
49	2 04 K	62.95	9.88	17.6	
			621.946	1,107.92	-43.8636
50	2 05 F	74.79	10	18.16	
			747.9	1,358.19	-44.9339
51	2 05 G	73.99	9.14	15.76	
			676.2686	1,166.08	-42.0051
52	2 05 F	74.79	9.65	17.28	
			721.7235	1,292.37	-44.1551
53	2 05 G	73.99	9.22	15.99	
			682.1878	1,183.10	-42.339
54	2 05 H	56.66	10.71	19.03	
			606.8286	1,078.24	-43.7204
55	2 05 I	73.99	7.66	13.84	
			566.7634	1,024.02	-44.6532
56	2 05 J	61.81	11.05	18.81	
			683.0005	1,162.65	-41.2547
57	2 05 K	62.95	9.88	17.6	
			621.946	1,107.92	-43.8636
58	2 06 F	74.79	11.63	22.99	
			869.8077	1,719.42	-49.4128
59	2 06 G	73.99	10.86	20.43	
			803.5314	1,511.62	-46.8429
60	2 06 F	74.79	11.35	22.09	
			848.8665	1,652.11	-48.6193
61	2 06 G	73.99	10.93	20.67	
			808.7107	1,529.37	-47.1214
62	2 06 H	56.66	12.63	23.81	
			715.6158	1,349.07	-46.9551
63	2 06 I	73.99	9.15	16.9	
			677.0085	1,250.43	-45.858
64	2 06 J	61.81	12.74	23.78	
			787.4594	1,469.84	-46.4256
65	2 06 K	62.95	11.8	22.4	
			742.81	1,410.08	-47.3214
	Average Carbon Reduction				-43.7666

44	3a 05 B2	53.13	11.08	20.57	
			588.6804	1092.884	-46.1351
45	3a 05 D	52.66	12.54	23.73	
			660.3564	1249.622	-47.1555
46	3a 05 G	73.99	9.93	18.13	
			734.7207	1341.439	-45.2289
47	3b 00 G	73.99	11.05	19.61	
			817.5895	1450.944	-43.6512
48	3b 00 A	74.27	10.43	17.59	
			774.6361	1306.409	-40.7049
49	3b 00 D	52.66	12.62	21.84	
			664.5692	1150.094	-42.2161
50	3b 00 F	74.79	10.95	19.35	
			818.9505	1447.187	-43.4109
51	3b 00 G	73.99	11.05	19.61	
			817.5895	1450.944	-43.6512
52	3b 00 L	113.75	8.83	14.52	
			1004.413	1651.65	-39.1873
53	3b 01 G	73.99	9.32	16.89	
			689.5868	1249.691	-44.8194
54	3b 01 A	74.27	8.68	14.88	
			644.6636	1105.138	-41.6667
55	3b 01 B1	59.57	10.76	19.19	
			640.9732	1143.148	-43.9291
56	3b 01 D	52.66	10.88	18.94	
			572.9408	997.3804	-42.5554
57	3b 01 F	74.79	9.12	16.5	
			682.0848	1234.035	-44.7273
58	3b 01 G	73.99	9.31	16.89	
			688.8469	1249.691	-44.8786
59	3b 01 L	113.75	7.28	11.97	
			828.1	1361.588	-39.1813
60	3b 02 G	73.99	9.32	16.89	
			689.5868	1249.691	-44.8194
61	3b 02 B1	59.57	9.21	16.2	
			548.6397	965.034	-43.1481
62	3b 02 D	52.66	10.88	18.94	
			572.9408	997.3804	-42.5554
63	3b 02 F	74.79	9.12	16.5	
			682.0848	1234.035	-44.7273
64	3b 02 G	73.99	9.31	16.89	
			688.8469	1249.691	-44.8786
65	3b 02 L	113.75	7.28	11.97	
			828.1	1361.588	-39.1813
66	3b 03 G	73.99	9.32	16.89	
			689.5868	1249.691	-44.8194
67	3b 03 A	74.27	8.68	14.88	
			644.6636	1105.138	-41.6667
68	3b 03 B1	59.57	9.21	16.2	
			548.6397	965.034	-43.1481
69	3b 03 D	52.66	10.88	18.94	
			572.9408	997.3804	-42.5554
70	3b 03 F	74.79	9.12	16.5	
			682.0848	1234.035	-44.7273
71	3b 03 G	73.99	9.31	16.89	
			688.8469	1249.691	-44.8786
72	3b 03 L	113.75	7.28	11.97	
			828.1	1361.588	-39.1813
73	3b 04 G	73.99	9.32	16.89	
			689.5868	1249.691	-44.8194
74	3b 04 A	74.27	8.68	14.88	
			644.6636	1105.138	-41.6667
75	3b 04 B1	59.57	9.21	16.2	
			548.6397	965.034	-43.1481
76	3b 04 D	52.66	10.88	18.94	
			572.9408	997.3804	-42.5554
77	3b 04 F	74.79	9.12	16.5	
			682.0848	1234.035	-44.7273
78	3b 04 G	73.99	9.31	16.89	
			688.8469	1249.691	-44.8786
79	3b 04 L	113.75	7.28	11.97	
			828.1	1361.588	-39.1813
80	3b 05 G	73.99	11.05	21.65	
			817.5895	1601.884	-48.9607
81	3b 05 A	74.27	10.21	18.38	
			758.2967	1365.083	-44.4505
82	3b 05 B1	59.57	10.89	20.13	
			648.7173	1199.144	-45.9016
83	3b 05 D	52.66	12.8	24.43	
			674.048	1286.484	-47.6054
84	3b 05 F	74.79	10.88	21.3	
			813.7152	1593.027	-48.9202
85	3b 05 G	73.99	10.78	20.73	
			797.6122	1533.813	-47.9981
86	3b 05 L	113.75	8.21	13.81	
			933.8875	1570.888	-40.5503
87	3c 00 E3b	52.37	11.06	18.91	
			579.2122	990.3167	-41.5124
88	3c 01 E3b	52.37	10.05	17.64	
			526.3185	923.8068	-43.0272
89	3c 01 E3b	52.37	9.48	16.31	
			496.4676	854.1547	-41.8761
90	3c 00 E3b	52.37	11.06	18.91	
			579.2122	990.3167	-41.5124
91	3c 02 E3b	52.37	10.05	17.64	

			589.6862	1097.6752	-46.2786
92	1 07 A	74.27	9.42	16.61	
			699.6234	1233.6247	-43.2872
93	1 07 B2	53.13	10.73	20.16	
			570.0849	1071.1008	-46.7758
94	1 07 C	78.9	9.67	18.39	
			762.963	1450.971	-47.4171
95	1 07 D	52.66	12.2	22.82	
			642.452	1201.7012	-46.5381
96	1 07 E1	52.37	11.26	20.96	
			589.6862	1097.6752	-46.2786
97	1 07 F2	77.67	10.18	19.13	
			790.6806	1485.8271	-46.7852
98	1 07 F3	68.13	11.49	20.78	
			782.8137	1415.7414	-44.7064
99	1 07 G2	76.19	10.84	20.83	
			825.8996	1587.0377	-47.9597
100	1 07 G	59.57	10.17	19.16	
			605.8269	1141.3612	-46.9207
Average Carbon Reduction					-43.1816

			526.3185	923.8068	-43.0272
92	3c 02 E3b	52.37	9.48	16.31	
			496.4676	854.1547	-41.8761
93	3c 03 E3b	52.37	11.4	20.8	
			597.018	1089.296	-45.1923
94	3c 03 E3b	52.37	11.01	19.59	
			576.5937	1025.928	-43.7979
95	3c 00 E3b	52.37	11.06	18.91	
			579.2122	990.3167	-41.5124
96	3c 00 E3b	52.37	11.71	20.47	
			613.2527	1072.014	-42.7943
97	3c 01 E3b	52.37	9.48	16.31	
			496.4676	854.1547	-41.8761
98	3c 01 E3b	52.37	9.48	16.31	
			496.4676	854.1547	-41.8761
99	3c 02 E3b	52.37	9.48	16.31	
			496.4676	854.1547	-41.8761
100	3c 02 E3b	52.37	9.48	16.31	
			496.4676	854.1547	-41.8761
101	3c 03 E3b	52.37	10.95	19.51	
			573.4515	1021.739	-43.8749
102	3c 03 E3b	52.37	11.01	19.59	
			576.5937	1025.928	-43.7979
Average Carbon Reduction					-42.9697

Appendix 2: Developer Statement

energist
Developer Statement

Developer Statement for Block 1-3 , Uxbridge Town Centre West, London, UB8

Our reference: ST.UT.UB8 | **Assessor:Mubarak Shaubi**

Regulation: AD L (2013) England | **Date issued: 26-4-2022. Revision: 1**

This sheet summarises the specification we have used in our SAP modelling.
It is your responsibility to provide us with accurate information and to ensure the details we have used are correct.

Building fabric

Opaque Element	U-Value	Description	Evidence
Floor; Ground level	**0.2**	As per planning. Full specification to be provided	ⓘ
Floor; Over Unheated	**0.2**	As per planning. Full specification to be provided	ⓘ
Floor; Over Retail	**0.2**	As per planning. Full specification to be provided	ⓘ
Wall; External	**0.16**	As per planning. Full specification to be provided	ⓘ
Wall; Corridor	**0.17**	As per planning. Full specification to be provided	ⓘ
Wall; Core	**0.17**	As per planning. Full specification to be provided	ⓘ
Wall; Party	**0**	All party walls between dwellings are fully insulated and suitably sealed	ⓘ
Roof; Flat	**0.12**	As per planning. Full specification to be provided	ⓘ
Note: Corridors		All corridors and stairwells are treated as unheated spaces	

Opening	U-Value	g-value	Frame %	Description	
Window; Double	**1.5**	**0.4**	**0.8**	4-16-4 double glazed windows. Metal frame. Low-e glass. Argon filled	ⓘ
Solid Door; to flats	**1.2**	**-**	**-**	Doors between flats and corridors will be solid, insulated and timber	ⓘ

Thermal Bridging

Summary	Psi-values for key thermal bridging junction details have been calculated based on the following method:	ⓘ

E01	**Steel lintels**	Energist Uxbridge 7111	**E18**	**Party wall to external**	SFW-IW-01			
E05	**Ground floor**	SFW-GF-01	**E15**	**Flat roof with parapet**	Energist Uxbridge 6111			
E03	**Window sill**	SFW-WD-02	**E23**	**Balcony (slab)**	Energist Uxbridge 6620			
E04	**Window jamb**	SFW-WD-03	**E20**	**Exposed floor**	Energist Uxbridge 8200			
E07	**Intermediate floor (flat)**	SFW-IF-01						
E16	**Corner**	Energist Uxbridge 6103						

Air Tightness Testing

L1A - 100% Testing	**3.0**	All plots on this development will be air leakage tested upon completion. To achieve compliance a test result of 3 is required.	✔

Ventilation

Heat recovery ventilation	Supply and extract ventilation with heat recovery is present. Model: Nuaire- MRBOXEC03.	ⓘ
Overheating risk	In line with SAP Conventions, the SAP model assumes windows of dwellings will be fitted with dark curtains which will be closed during daylight hours. This setting does not impact the emission rate results or EPC score.	

Air change rate	Air change rates are based on an assumption that cross ventilation air flow is possble, and that windows can be opened without concern over security and pollution risks.	

Lighting

Lighting	All internal lighting is low energy	✔

Heating

DHN System	Heating will be provided by a District Heat Network (DHN). System will feed into radiators. Users will be charged based on individual meter readings. Heat losses from the system will be no greater than 20%.	ⓘ
DHN: CHP	The DHN system will include a Combined Heat and Power unit (CHP) which is expected to provide 59% of the heat demand. Thermal efficiency: 56%. Electrical efficiency: 38.5%.	✔
DHN: Gas	The DHN system will also include a series of gas boilers to meet additional heating demand. Efficiency: 97%.	ⓘ

Hot Water

DHN System	Hot water will be provided by the DHN system. See 'Heating' for efficiency details.	ⓘ
Water Heat Recovery	No hot water heat recovery systems have been included.	

Renewable Technology

None	No renewable technologies have been included.	

Key to Evidence:

✔	Evidence received and confirmed	
ⓘ	No evidence received, but confirmed through discussions	
✘	Information has been assumed. Please confirm.	

energist
Developer Statement

As Built Declaration for Block 1-3 , Uxbridge Town Centre West, London, UB8

Our reference: ST.UT.UB8 | **Assessor:Mubarak Shaubi**
Regulation: AD L (2013) England | **Date issued: 26-4-2022. Revision: 1**

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1) Please review the previous pages to ensure all details are accurate and up to date.

We (Energist) understand the specification listed on the previous page is accurate and does not contain assumed values. If you are aware that any information shown on the previous pages has changed since we completed your design calculations, the SAP models will need to be updated.

Let us know about elements of the specification that need to be udpated.

(A recalculation charge may be included for significant alterations. If that is the case we will notify you before proceeding).

2) Details of your air leakage test

If we are completing the air testing on this site, our teams will relay information between themselves.
If not, we will need you to provide air test reports for all applicable plots before we can issue your As Built documents.

If a third party company is completing your air tests, please send us a copy of their reports.

See the 'Air Leakage Testing' section above for more details.
If Air Leakage Tests are not being completed on this development, no supplementary evidence is required.

3) Switching from Plot to Postal addresses

Before we can create your As Built reports, we need to remove all references to plot numbers and site names, and replace them with the official postal address.

Write the official postal address for your development in this space
(or for multiple plots, send us a list on email).

Nearly finished! We just need you to read and accept this declaration:

I hereby declare this development has been constructed in accordance with the specification above, and any changes to these details have been notified to Energist accordingly. I understand the Energy Performance Certificate (EPC) and associated Building Regulations documents will be issued on this basis.

Signed:

Name: Date:

Job title and company:

Turley Birmingham

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Turley
Sustainability