369-377 Kentish Town Road

Supplementary Energy Statement.

April 2019

Peter Deer and Associates Ltd
Solar House, 282 Chase Road, Southgate, London N14 6HA
T: 020 3232 0080 • **E:** post pd-a.co.uk
Registered in England No. 3022343

Document Control

Revision History

Number	Reason	Date
1	Issue v1	18 April 2019
2		
3		
4		

Quality Assurance

Written by:	Checked by:
Adrian Holmes	Michael Humphries

Contact Author

Adrian Holmes

Solar House, 282 Chase Road, Southgate, London N14 6HA

T: 020 3232 0080 • E: post@pd-a.co.uk

Contents

Introduction

This note is written to accompany revisions to the planning application for the redevelopment of 369-377 Kentish Town Road taking into account the results of a detailed AQA and re-consideration of services proposal for the development in line with suggestions by LBC.

Existing Energy and Sustainability Report

An Energy and Sustainability Statement has already been submitted with the planning application with details related to a scheme utilising: -

- Central ultra-low NOx gas fired boilers
- Heat interface units
- Ventilation by MVHR with carbon and particulate filtration
- Overheat resolved by increased mechanical ventilation in line with details provided.

This report remains valid and is the baseline proposal for the development.

Air Quality

A separate detailed AQA assessment has been prepared by XCO2 (Ref: 9.337 April 2019). Refer to the complete report for full information. This detailed report confirms that: -

- Central ultra-low NOx gas fired boilers do not provide unacceptable local air quality.
- Ventilation by MVHR with carbon and particulate filtration is required to the first floor only.

In line with this more detailed analysis and recommendation the M&E scheme as submitted is compliant with the requirement of LBC.

Air Source Heat Pumps (ASHP)

In email correspondence between David Peres de Costa (Senior Planning offices) and Nigel Dexter (Planning Consultant) it was suggested that the design team should revisit the scheme with a view to the potential use of Air Source Heat Pumps (ASHP) in lieu of central boilers and heat interface units. An evaluation exercise has been carried out that confirms it would be possible to adopt an alternative M&E scheme as follows: -

- Each dwelling to have multi-split ASHP with condensers located in a plant enclosure at GF level.
- Boilers and LPHW heating schemes to be omitted.
- Overheating to be controlled by MVHR and ASHP
- HWS to be electric shower with point of use HWS in basins and sinks.

Carbon Emissions

Appendix A (of this report) sets out the anticipated carbon emissions given in the April 2019 Energy and Sustainability statement. Appendix B (of this report) shows the emissions that would occur with the alternative ASHP scheme. Carbon savings from vary from 25% with district heating to 17% with ASHP.

The ASHP scheme reduces the local emissions of NOx to zero. Continued decarbonisation of the grid will further reduce the local emission over time.

Summary

Calculation indicates an increase in Carbon emissions but with the omission of NOx to the local environment. There is an increase in Carbon Offset payments estimated to be around £12,000. (Carbon offset: £37437 - £25440 = £11,997).

Both central plant with HIU and ASHP would be acceptable M&E solutions to heating at this development however, it is likely that running costs with heat pumps, taking into account the standing losses, will be lower than with District Heating.

Appendices

District Heating: Scheme A - As Energy Report February 2019

Domestic

	Carbon Dioxide Emissions for domestic buildings (Tonnes CO2 per annum)	
	Regulated	Unregulated
Baseline: Part L 2013 of the Building Regulations Compliant Development	18	18
After energy demand reduction	17	18
After heat network / CHP	16	18
After renewable energy	14	18

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

	Regulated domestic carbon dioxide savings	
	(Tonnes CO2 per annum)	(%)
Savings from energy demand reduction	0	3%
Savings from heat network / CHP	1	8%
Savings from renewable energy	2	14%
Cumulative on site savings	4	25%
Annual savings from off-set payment	13	-
	(Tonnes CO2)	
Cumulative savings for off-set payment	424	-
Cash in-lieu contribution (£)	£25,440	

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

Non Domestic

	Carbon Dioxide Emissions for non-domestic buildings (Tonnes CO2 per annum)	
	Regulated	Unregulated
Baseline: Part L 2013 of the Building Regulations Compliant Development	10	2
After energy demand reduction	8	2
After heat network / CHP	8	2
After renewable energy	8	2

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

	Regulated non-domestic carbon dioxide savings	
	(Tonnes CO2 per annum)	(%)
Savings from energy demand reduction	1	14%
Savings from heat network / CHP	0	0%
Savings from renewable energy	0	0%
Total Cumulative Savings	1	14%

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

	Annual Shortfall (Tonnes CO2)	Cumulative Shortfall (Tonnes CO2)
Total Target Savings	3	-
Shortfall	2	61
Cash-in lieu contribution	£3,685	-

Table 5: Shortfall in regulated carbon dioxide savings

ASHP (Multi Split) & Electric HWS Scheme B – Alternative Option

Domestic

	Carbon Dioxide Emissions for domestic buildings (Tonnes CO2 per annum)	
	Regulated	Unregulated
Baseline: Part L 2013 of the Building Regulations Compliant Development	25	18
After energy demand reduction	22	18
After heat network / CHP	22	18
After renewable energy	21	18

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

	Regulated domestic carbon dioxide savings	
	(Tonnes CO2 per annum)	(%)
Savings from energy demand reduction	3	11%
Savings from heat network / CHP	0	0%
Savings from renewable energy	1	6%
Cumulative on site savings	4	17%
Annual savings from off-set payment	21	-
	(Tonnes CO2)	
Cumulative savings for off-set payment	624	-
Cash in-lieu contribution (£)	£37,437	

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

Non Domestic

	Carbon Dioxide Emissions for non-domestic buildings (Tonnes CO2 per annum)	
	Regulated	Unregulated
Baseline: Part L 2013 of the Building Regulations Compliant Development	10	2
After energy demand reduction	8	2
After heat network / CHP	8	2
After renewable energy	8	2

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

	Regulated non-domestic carbon dioxide savings	
	(Tonnes CO2 per annum)	(%)
Savings from energy demand reduction	1	14%
Savings from heat network / CHP	0	0%
Savings from renewable energy	0	0%
Total Cumulative Savings	1	14%

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

	Annual Shortfall (Tonnes CO2)	Cumulative Shortfall (Tonnes CO2)
Total Target Savings	3	-
Shortfall	2	61
Cash-in lieu contribution	£3,685	-

Table 5: Shortfall in regulated carbon dioxide savings