MAX FORDHAM

LEAF STREET – SUSTAINABILITY UPDATE, 2016

When applying for planning permission the heating strategy for the proposed development at Leaf Street was to provide each dwelling with a ground source heat pump feed from a communal ambient heat network.

However, since appointing a Main Contractor the scheme at Leaf Street has undergone value engineering and subsequently the heating strategy has changed. The current strategy is to now generate heat centrally with roof mounted air source heat pumps and distribute heat via a building heat network to each dwelling. Each dwelling will contain an HIU to connect to the heat network to provide the requirements for space heating and instantaneous domestic hot water.

In addition the fabric properties have changed very slightly from when planning permission was originally sought.

This sustainability update is to demonstrate that despite these changes the development will still meet the planning condition of a 19% reduction in carbon emissions beyond Part L 2013.

Table 1 **Design fabric properties comparison**

	Previously proposed	**New design**
Roof	0.13 W/m².K	0.13 W/m².K
Wall	0.14 W/m².K	0.14 W/m².K
Floor	0.13 W/m².K	0.11 W/m².K
Party wall	0.14 W/m².K	0 W/m².K
Opening	1.40 W/m².K	1.40 W/m².K
Air tightness	3 m³/h/m² at 50 Pa test pressure	3 m³/h/m² at 50 Pa test pressure
Thermal bridging	Accredited construction details	Accredited construction details

Table 2 **Fabric energy efficiency comparison**

	Previously proposed		**New design**	
	TFEE kWh/m²	DFEE	TFEE kWh/m²	DFEE
Block A average	36.48	32.73	36.73	35.16
Block B average	40.56	39.05	43.89	42.79
Block C average	36.77	33.78	38.99	37.44
Block D average	41.92	37.61	47.83	47.46
Townhouse average	52.54	50.97	59.98	48.34

Table 3 **Emission rate comparison**

	Previously proposed			**New design**		
	TER	DER	Reduction	TER	DER	Reduction
	kWh/m²			kWh/m²		
Block A average	23.71	15.72	**34%**	23.87	16.76	**30%**
Block B average	25.65	16.64	**35%**	25.87	17.80	**31%**
Block C average	24.12	13.17	**45%**	24.32	16.86	**30%**
Block D average	26.58	16.90	**36%**	27.41	18.90	**31%**
Townhouse average	25.93	16.30	**37%**	27.62	11.90	**59%**