

ANNEX E Mapping Domestic Thermal Efficiency In York

Before commencing detailed work on recommendations regarding these issues the former Housing Board sought detailed – Ward by Ward – information in respect of the gauging York’s present public and private domestic thermal comfort and emissive position. At their September Meeting the Board received a full report in response to this request, the methodology and findings of this are summarised in the paragraphs below.

In an ideal world a low fly over of York with thermal imaging equipment would produce a colour picture – or thermographic map – of energy loss from all York’s homes on a red to blue scale where red represented most heat loss and blue least. Resources for this are not available and so mapping York’s thermal efficiency must rely on data sourced primarily for other purposes. The disadvantage of this technique is that the data whilst being reasonably reliable in respect of thermal comfort can only provide an indicative model of York’s domestic CO₂ emissions.

Two primary data sources were used;

Data Source 1: 2002 Private Sector Stock Condition Survey (2002): providing an account of a private sector stock conditions produced for the Local Authority City of York Council as base line data for accounting against the 1995 Home Energy Conservation Act¹.

Data Source 2: The Baker & Starling report to York, North and East Yorkshire Local Authority Support Programmes (LASP) entitled ‘**A profile of fuel poverty in York, North and East Yorkshire LASP Region and Member Districts**’: Using the Bristol University/Centre for Sustainable Energy’s fuel poverty indicator, developed with funding from electricity supplier SWEB, and based statistical modeling of cross referenced Census and House Condition Survey data.

¹ the 1995 Home Energy Conservation Act required local authorities to develop a strategy for energy conservation. See DTLR Guide HC [Volume 2, Paras 5.2 & 5.3] ‘*A domestic energy audit will normally be conducted in furtherance of the authority’s broad environmental aims as presented in the Corporate Plan. There might also be related social aims, for example, to bring reasonable thermal comfort within the reach of all households*’ In housing terms, you will need to express these aims slightly differently:

- to reduce the need for domestic energy usage or at least maintain it at a constant level;*
- to reduce the emission of greenhouse gases and pollutants from domestic energy use;*
- to reduce the wastage of energy in the home;*
- to ensure that all dwellings within the area can be adequately heated at a cost which occupants on low incomes can afford;*
- to ensure compliance with the Home Energy Conservation Act 1995.*

The main findings of data source 1 provide returns using the SAP or Standard Assessment Procedure Rating: A homes SAP rating depends upon a range of factors that contribute to energy efficiency, namely:

- thermal insulation of the building fabric
- efficiency and control of the heating system
- ventilation characteristics of the dwelling
- solar gain characteristics of the dwelling
- the price of fuels used for space and water heating

Summary of Main findings for York:

The average SAP* rating for York is 44 – equivalent to the National average (1996).

94.5% of dwellings have some central or programmable heating.

85.9% of dwellings have some double glazing.

Private rented and pre-1919 dwellings show particularly low mean SAP ratings as do converted flats. Yorks lowest SAP ratings are for converted flats (mean SAP of 37).

Households with particularly low SAP ratings also appear to show quite distinct characteristics such as single persons and the elderly.

It is estimated that households current heating systems make for an average (mean) requirement to spend £518 on space and water heating and that the average dwelling produces 6.35 tonnes of CO₂ per year.

Mean SAP ratings in York's private rented sector are below the City average (at 41). Within this group some 10.3% have a SAP of below 20.

Typically the older the dwelling, the lower the SAP rating. This is the case in York where dwellings built pre-1919 have an average SAP of 40.

Mid terraced dwellings have a mean SAP of 45.

CO₂ Emissions and cost of heating SAP calculations may be seen as indicative for the calculation of Carbon Dioxide emissions. It is estimated that households current heating systems make for an average (mean) requirement to spend £518 on space and water heating producing 6.35 tonnes of CO₂ per year. CO₂ emissions would typically show the same trends as these are heavily influenced by the amount of fuel used (and hence the cost of fuel used).

Whilst the Local Authorities own housing stock returns SAP ratings of 66pts figures across all tenures are significantly reduced when private sector stock is factored in.

The SAP summary data for York does indicate some reasons for the Local Authority to be concerned, especially in respect of performance against expectations of private sector stock. These are currently that;

a target SAP of 65 across all sectors should be achieved. Figures below triggering applicability under Warm Front. York falls below by 21 points under the Regional Housing Strategy the Local Authority should be working in line with other authorities regionally to achieve an average SAP across all

types and tenures of 65 by 2015. Requiring an annual rate of increase across the region of approximately 2 points per annum. York falls below by 21 points Regional average SAP at 2005 is 49.9, York falls below by 4.9 points.

Data contained within the LASP report data source 2. reaffirmed information provided from data source 1. Homes suffering from likely fuel poverty are most likely to show a poor SAP rating indicating a likelihood of poor thermal efficiency and potentially controllable CO₂ emissions..

The LASP report presented the Board with a breakdown by Ward bringing them closer to the objective of geographical mapping. It must be noted however that the LASP report, based on information available through the 1991 Census and 1996 English House Condition Survey data is less up to date than the 2002 Stock Condition Survey.

The (DTI's) Publication (Nov 2001) 'The UK Fuel Poverty Strategy' in comparison to those of 1996, may be taken as partially indicative of improvement when it states that nationally;

...the number of fuel poor in 2000 has only fallen from around 5.5 million to around 4 million households in the UK.'

In addition, many of the recorded improvements of 2001 may now have been offset by recent rises in fuel pricing, see also below under section 'Fuel Poverty and Thermal Comfort'. This means that a straight 22% reduction in fuel poverty in York cannot be inferred, particularly given the high percentage reductions through the specific adoption of a Fuel Poverty Strategy and/or an Energy Reduction Partnership – between the authority an energy supplier and the energy efficiency advice centres – some authorities have made.

As the City of York Council has not adopted such consolidated approaches to date it is likely that overall reductions in fuel poverty over the period fell short of 22%.

The average level of fuel poverty (reported in the LASP report) in York is identical to that of our region and the National average at 23%, (i.e. nearly one in four households live in fuel poverty). 12 wards in the LASP region feature within the 'worst' 10% of wards in England, two of which, Westfield and Clifton, are in York.

At a regional level York also presents the second highest number of Wards – 5 in total – falling within the worst 10% in the region; Westfield Clifton and Micklegate showing almost one in three households living in fuel poverty. See table below;

	Ward name	% in fuel poverty	No in fuel poverty	LASP rank lower score indicating higher

				fuel poverty
Within national worst 10%	Westfield	31	1626	10
	Clifton	31	1499	12
Within regional Worst 10%	Micklegate	30	1553	13
	Holgate	29	1245	19
	Heworth	28	1294	23
Worse than National Average	Fishergate	27	853	28
	Guildhall	27	1004	29
	Tang Hall	24	713	44
	Acomb	23	801	49
	Bishopthorpe	22	249	64
	Fulford	21	223	75
	Dringhouses & Woodth.	20	854	89
	Heslington	20	79	95
	Huntington & New Earswick.	18	776	127
	Osbaldwick	17	217	155
	Heworth Without	16	298	164
	Derwent	16	202	182
	Skelton, Rawcliffe & Clif	16	547	183
	Haxby & Wigginton	14	711	204
	Strensall	14	317	208
	Rural West	14	482	212
	Wheldrake	14	155	218