

## Information note 2: Introducing the 1996 EHCS

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On 5th May 2006 the responsibilities of the Office of the Deputy Prime Minister (ODPM) transferred to the Department for Communities and Local Government.

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## **1. Introduction**

1.1 This is the second of a series of Information Notes produced by the Research Analysis and Evaluation Division for users of the 1996 English House Condition Survey (EHCS). This note provides background information on how and when the survey was conducted, sampling and grossing procedures and how some of the data collected is modelled to produce further housing indicators for analysis.

## BACKGROUND

### 2. What IS the EHCS?

2.1 The EHCS is run by the Department every five years and provides the only national picture of the condition of the housing stock and how it changes over time. The 1996 survey, the seventh to be conducted, was carried out over the course of 1996/7 on about 28,000 properties and collects a wide range of housing related information .

#### EHCS Topics

- household characteristics;
- description of the stock
- changes in stock condition - fitness, repair, modernisation, energy efficiency
- income and expenditure on rents and mortgages;
- repairs and improvements by owners , tenants, landlords;
- expenditure on repairs and improvements by owners, tenants , landlords;
- households attitudes to repairs and improvements;
- health and disability;
- landlord responsiveness to repairs;
- use of renovation grants;
- local environmental quality;
- affordable heating;
- home safety;
- property values.

2.2 All the information in the EHCS can be used independently or in combination to produce a powerful data base capable of addressing a host of current housing issues. The full contents of the EHCS and the geographic areas for which it may be analysed are described in detail in Information Note 1 'What's in the EHCS?'

2.3. This comprehensive data base is built up for a core sample of dwellings, collected by four separate but related surveys which together make up the EHCS.

2.4 The four EHCS component surveys are:

#### **i. The Interview Survey of householders**

interviews with households to determine

- . household characteristics, (including financial circumstances)

- . their repair responsibilities
- . the nature and cost of improvement and repair work undertaken
- . their awareness of repair problems and their plans and competency to deal with them;
- . the effectiveness of heating arrangements in the home;
  - . The Fuel Survey goes on to collect data on electricity and gas consumption to measure energy efficiency of the housing stock and the potential for energy savings

### **ii The Physical Survey of dwellings**

an internal and external survey of dwellings to provide a description of the stock, its present condition and its energy characteristics, conducted by over 100 specially briefed building professionals.

### **iii The Postal Survey of social landlords**

a postal survey of local authority and housing association landlords to identify the action they have taken on their stock. Local authorities are also asked about action they have taken on private sector dwellings in the sample

### **iv. The Valuation Survey**

a survey of vacant possession market values of private sector properties as at 1.4.96

### 3. How is the survey conducted?

3.1 Overall responsibility for the design, conduct and analysis of the EHCS rests with the Research Analysis and Evaluation Division of the DETR. They are supported by a team at the Building Research Establishment who set up some of the survey's complex models (calculation of repair costs and measuring the volume and nature of work carried out to the stock). They are also engaged in the analysis of the data. For the 1996 survey an external contractor, MORI, was used to manage all stages of the fieldwork, validate the data collected and assemble the data onto an SPSS database.

3.2 The planning of the EHCS is also undertaken in close co-operation with the Scottish, and Northern Ireland Offices who have undertaken similar national surveys of their housing stock in 1996. The Welsh Office are also undertaking a national house condition survey during 1997.

3.3 The Interview Survey was conducted first, from January to May 1996, carried out by a team of about 400 interviewers from both MORI and NOP. All households were asked a common core of questions with about a quarter of the sample asked further questions about energy usage and another quarter about attitudes to condition. The main purpose of the interview was to establish basic household descriptors, what work people undertook to their homes and their reasons for undertaking or not undertaking work.

3.4 The Fuel Survey collected energy consumption information from the ten local electricity companies and British Gas Trading for households who agreed in the Interview Survey that data on their use of fuel could be released. The survey adds to information collected in the Interview and Physical Surveys on energy usage by collecting actual energy consumption and expenditure figures over the last eight consecutive quarters.

3.5 The Physical Survey began in mid April. Surveyors were requested to conduct a full internal and external inspection of all addresses at which a successful interview had been obtained plus all vacant properties. They also visited a proportion of those at which the interviewers had not been able to make any contact in order to establish whether they were vacant or occupied. The Physical Survey is designed to obtain basic descriptors of the stock, its present condition and its energy characteristics. It also establishes the presence and condition of shared facilities and services in blocks of flats or on estates and an assessment of the environment in which the dwelling is located.

3.6 The Postal Survey was carried out in parallel to the Physical Survey. Local authorities and Registered Social Landlords (RSLs) were asked to provide information on the dwellings they owned where there had been a successful interview or where the dwelling was vacant. The information collected covered property transfers, recent lettings, disabled adaptations, management regimes as well as full details of the type, frequency and cost of responsive and planned work to the dwelling. Information was also collected on condition of common facilities within blocks of flats and on estates. In addition local authorities were also asked about action they had taken in the form of grants or area based action on older private sector properties.

3.7 The Valuation Survey covered all privately owned dwellings for which there was a full Physical survey. It was undertaken by Colleys Professional Services based on photographs and written descriptions of the dwelling and its condition. Valuations were obtained for 1.4.96

for dwellings in their current state of repair and if all faults were rectified.



#### 4. How large are the samples?

4.1 The sample for the EHCS has to include enough properties to provide for accurate analyses of particular groups of dwellings – local authority flats, unfit dwellings, RSL dwellings etc. However some of these groups exist in small numbers nationally so that a very large random sample would be needed to ensure enough properties from these small groups were included. In order to maximise the efficiency of the sample a stratified sample is therefore selected which

- over represents some of the smaller groups
- under represents more common groups of dwellings

The initial sample of dwellings is randomly selected from a sampling frame stratified by age, tenure (public/private), type (house/flat) and region. This sampling strategy ensures that small but important sectors of the housing stock, are adequately represented, that reliable regional level data is available and that the sample still accurately represents the stock as a whole. Half the addresses in the sample are taken from the 1991 EHCS to enable gross changes to the stock to be monitored.

4.2 . The new addresses to be used in 1996 were selected primarily from the 1995 Postcode Address File and supplemented with top ups for stock owned by RSLs and local authorities.

4.3 The whole sample of around 28,500 addresses were issued for the Interview Survey. Of these household data were collected for about 15,800 addresses, almost 1,300 were identified as vacant/derelict and 1,100 had other outcomes including demolished. The addresses with successful interviews plus those which were vacant were then issued for the Physical Survey. The information contained in the main EHCS report and the supplementary tabulations comes mainly from combining the information for addresses with both a full Physical and Interview Survey and the vacant addresses with a full survey which is defined as the 'Combined Sample'; 12,131 cases in total.

4.4 Samples for the postal, fuel and market value surveys were also sub-samples selected from those addresses where a successful interview was obtained plus vacant properties.

EHCS SAMPLE SIZES		
Survey		Achieved sample size
Interview		15,800
Physical		12,131
Combined sample		12,131
Postal survey	- LA	3,500
	- RSL	1,000
	- private	6,700
Fuel survey		3,320
Market value survey		6,967

4.5 Full details of the sampling methodology are at Appendix A to the main EHCS report<sup>1</sup>

<sup>1</sup> 'English House Condition Survey 1996' TSO price £50 ISBN 0-110-753458 7) tel 0171 873 0011

## 5. Grossing to national totals

5.1 National results are needed from the EHCS. To ensure each group of dwellings contributes correctly to the national totals it is necessary to 'undo' the effect of the stratified sampling described in 4 above. This is done by calculating a grossing weight for each address to scale the whole sample back to a national population and to remove any biases arising from the sample design and the pattern of non-response. The grossing also took into account the number of dwellings that existed at each sampled address and the number of households that lived at each dwelling.

5.2 The basic grossing procedure adopted:

- reversed the steps used to produce the sample
- adjusted individual subsets of dwellings to national/regional totals
- adjusted for non-response and response bias

A weight was attached to each address to produce results based on dwelling numbers and a different weight was attached to produce household numbers.

5.3 Further details of the grossing procedures are given in Appendix A to the main report.

## 6. New developments for the 1996 survey

6.1 The 1996 survey method was broadly the same as that used in 1991 but some changes were introduced to incorporate demands for new information and to improve the quality of the data. The main changes made were to:

- reorder the survey with the Interview Survey preceding the Physical Survey in an effort to improve response rates and give the surveyors more daylight hours during their fieldwork period.
- add questions to the Interview Survey on extent of disability and long term illness to assess eligibility for Disabled Facilities Grants; and to establish respective responsibilities of householder and landlord/freeholder for repair.
- introduce limited modifications to the Physical Survey schedule and a reduction in number of rooms surveyed to reduce surveyor workload;
- require surveyors to gain access to vacant dwellings to improve the quality of vacancy data as figures on vacant dwellings in 1991 were thought to have been underestimated particularly the count of unfit vacant dwellings.
- completely revise repair cost model using new schedule of rates and improved methodology. This model translates specifications of work supplied by the surveyor into a cost to repair, taking into account both the size of the dwelling and how the work may be commissioned. A full description of the new repair cost model and its impact on measuring disrepair is given in Appendix D to the main report and a summary is given in EHCS Information Note 5.
- include questions in the Postal Survey on condition of common services to supplement data collected in the Physical survey and so to provide improved repair cost figures for blocks of flats and estates.

## 7. Processing the data

7.1 While the information that is collected in the field provides all the base variables needed, a considerable amount of further processing and modelling is needed to fully validate the results and produce secondary variables needed for detailed analysis. The main areas where further major work is involved are

- estimating changes in unfitness
- deriving repair costs and estimating change
- deriving gross and net income
- deriving measures of work done
- energy modelling

7.2 Each of these areas is described in more detail below.

## 8. Measuring unfitness

8.1 The rate of unfitness is the most quoted statistic from the EHCS. The 1996 survey estimated that the unfitness rate has remained at about the same level as in 1991 at 7.6 % of the stock. Unfitness, however, is difficult to measure accurately. It is a subjective assessment of the effect that a variety of defects have on the suitability of a dwelling for occupation. Two surveyors inspecting a given dwelling can have different views on whether or not it is unfit, despite there being guidance laid down over interpretation of the fitness standard. In measuring changes in unfitness 1991 to 1996, it is important to be sure that any change in the fitness rate is real, and not simply a product of sample error, surveyor variability or a general shift in what is considered acceptable over the 5 year period.

- Sample error- The EHCS is based on a sample of dwellings. There is therefore a margin of error in how far this sample is representative of the whole. The 1991 survey estimated that there was a 95% chance that the number of unfit dwellings was between 1,414,000 and 1,582,000. The 1996 estimate of 1,498 dwellings lies within this range so there has been no statistically significant change in unfitness.
- Controlling surveyor variability- Surveyor variability cannot be completely eliminated, but precautions were taken to reduce its impact and to try and ensure that the 1996 results would be directly comparable with those from 1991, by:
  - o using predominantly the same surveyors and supervisors in both years;
  - o using the same rigorous briefing provided by the Planning Inspectorate.
  
- Validating the survey results- Exercises have been carried out to ensure that any apparent change in unfitness reported between 1991 and 1996 is real, notably:
  - o a regression analysis to establish whether the fitness standard was being applied in the same way;
  - o sensitivity tests to assess the impact on the results of surveyors whose judgements differ significantly from the average ('strictest' and 'weakest');
  - o a comparison of the fitness assessments of Environmental Health Officers with those of other professions to see if there is a difference in the application of the standard between those using it in their everyday work and those only using it in the EHCS;

o an analysis to establish a measure of surveyor variability by comparing the judgement of the original surveyor with that of another surveyor who revisited a sample of properties as part of the EHCS quality control procedure.

8.2 This work has shown that, overall, surveyors are assessing fitness in the same way in 1996 as in 1991.

## 9. Measuring changes in disrepair

9.1 All the problems associated with measuring changes in unfitness also apply to the measurement of change in the level of disrepair ie the problems of sampling error and surveyor variability. In 1996 however two additional features have further complicated the measurement of disrepair:

- The introduction of a revised repair cost model which uses a different schedule of rates to that used in previous surveys and a revised methodology. The new model and the impact it has had on estimating repair costs are described in Appendix D of the main report and in Information Note 5.
- A shift has been observed in the way in which surveyors recorded work that needed doing for a given fault. In general surveyors were recording less work needed for a given fault than they were in 1991 although the extent of the shift varied with different building elements. This same shift has been observed between the 1991 and 1996 Scottish House Condition Surveys which are carried out independently of the EHCS<sup>2</sup>. This shift in repair standards makes measures of change difficult but the extent of this shift has been quantified by using the results of a 'video calibration exercise' and estimates have been made of the amount of change in repair costs which is due to surveyor shift and how much is real change. The results presented in the report and supporting tables have therefore been adjusted to provide estimates of disrepair which as far as possible eliminate the impact of this shift in surveyor standard.

9.2 One important outcome of these two changes to the methodology for estimating repair costs is that figures for 1996 *cannot* be directly compared with figures published in 1991. To overcome this problem figures and tabulations have been included in the report and supplementary tables which present 1991 and 1996 figures on a common basis and therefore provide meaningful comparisons. It is important these tables are used for all comparative studies rather than ad hoc comparisons with figures published in 1991.

<sup>2</sup> Scottish House Condition survey 1996, Scottish Homes, Edinburgh EH12 5HE 1997



## **10 Income modelling**

10.1 A computer model is used to generate gross and net incomes from data collected in the Interview Survey. This information is central to much analysis on grant eligibility and the impact of income on state of repair and volume /type of repair work undertaken. A gross income variable will be available early in 1998 followed by net income later in the year.

10.2 The model will also be used to derive variables on the receipt of benefits.

## **11. Modelling information on work done to dwellings**

11.1 Information is collected in the Interview Survey on work done by occupants and in the Postal Survey on work done by landlords to both dwellings and common areas and estate facilities. These data require careful validation followed by modelling to break down the total costs provided into individual job categories, to generate missing data and to allocate a cost value to work undertaken on a DIY basis. This enables information to be presented on expenditure on the stock by job type by both households and landlords and a description of the type and frequency of work undertaken. This data can then be used with information on condition to assess the impact of different types of expenditure on the changing condition of the stock.

11.2 It is hoped this information will be available during the second half of 1998

## **12. Energy modelling**

12.1 The EHCS collects detailed information on energy usage, use and types of heating, insulation, achieved temperatures and damp and mould growth. This data is used in a variety of ways including use within the energy model (BREDEM) to calculate energy efficiency ratings comparable with those of the Standard Assessment Procedure.

12.2 The data will be used to test the assumptions used in the Governments energy model, assessing energy savings since 1991 and the potential for savings from further housing improvements. The impact of these savings on CO<sub>2</sub> emissions can also be calculated. When used in conjunction with household characteristics from the interview survey the data can be used to assess the extent of affordable warmth and measure changes in thermal performance of properties following tenure transfers.

### 13. Disseminating the EHCS

13.1 The Department wishes to make the EHCS information available to as wide an audience as possible both internally and externally. Full details of ways of accessing the EHCS data are given in EHCS Information Note 3. In summary:

- Main results published by the Stationary Office
- EHCS summary and supporting tabulations are available on DETR web site and via Department's internal Infonet
- All EHCS Information Notes to be available on web site and Infonet
- Extracts of 1996 data will be lodged at the Data Archive at Essex University for free use by publicly funded bodies
- Bespoke tabulation and analysis service available from the Building Research Establishment .Minimum charge £65 +VAT (tel 01923 664140)

Users will be kept up to date of new developments and further results through bulletins on both the Internet and Infonet.

## **14. Further information**

14.1 Please contact RAE division for further information on any of the issues covered in this note or copies of other information notes. (tel 0171 890 3528)