THE DEVELOPMENT OF A HOUSING ENERGY STRATEGY

AT

THE LONDON BOROUGH OF CROYDON

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THE DEVELOPMENT OF A HOUSING ENERGY STRATEGY

THE PRIORITIES OF THE HOUSING CLIENT

The management and client role of the maintenance of the housing stock of the London Borough of Croydon is undertaken by the Housing Department. They view themselves primarily as housing managers and not as providers of a welfare service, and as such their priorities are:-

- The collection of rent.
- The reduction of arrears.
- Handling disputes race relation and other tenancy matters.
- Minimising voids.
- Maintenance and improvement of housing stock.

The importance of energy efficiency within this context can be quite considerable. In particular the Housing Department have adopted an energy strategy in the preparation of their Housing Investment and Maintenance Programmes on sound management reasoning:

- Ability to attract resources for the Housing Investment Programme.
- Lower energy bills for tenants in a climate of rising rent levels.
- High on the tenants list of priorities.
- Reduction in maintenance and management costs.

This list deserves some elaboration.

There is now some incentive for housing stock owners to include energy efficiency in any refurbishment works. The Department of Environment have recently produced a guidance manual for Local Authorities entitled "Energy Efficiency in Council Housing" which is intended to encourage stock owners (including Housing Associations) to include energy efficiency in any schemes submitted to the government for funding approval. The contents of this manual are a direct result of the two year Green House Programme under which the Department of Environment awarded supplementary credit approvals to Local Authorities for demonstration energy efficiency projects. Even though this programme is now complete, applications for additional resources under the Estate Action Programme and City Challenge stress the importance of an energy efficient scheme.

The Housing Department is also sensitive to the impact of rent increases, and view energy efficient refurbishment works as a way of ameliorating them. It is true that for the comprehensive refurbishment works carried out in 1993/94 the decrease in the prospective energy costs faced by the tenants will far outweigh any likely rent increase.

THE DEVELOPMENT OF A HOUSING ENERGY STRATEGY

Tenant consultation has also highlighted the importance that tenants place on reducing their fuel bills. Apart from the obvious repair items (such as fixing a leaking roof) reduced fuel bills and the installation of central heating ranks the highest among tenants priorities. There is also a high level of satisfaction following the completion of works. In a recent survey of tenants who had recently been included in the cavity wall insulation programme, 47% remarked that their homes were warmer and 19% perceived a reduction in their energy bills.

The Housing Department are also anxious to reduce the cost of their ad-hoc repairs. Recent work by the Building Research Energy Conservation Support Unit (BRECSU) has shown that savings due to the reduction in maintenance and management costs following an energy efficient refurbishment can actually outweigh the savings in fuel bills to the tenants.

THE HOUSING ENERGY STRATEGY

There are four components of the London Borough of Croydon energy strategy:-

- Responsible person.
- Clearly defined objectives.
- Method of delivery.
- Method of measuring.

RESPONSIBILITY FOR THE ENERGY STRATEGY

There must be a clearly identified person responsible for the delivery of the energy strategy. In the case of the London Borough of Croydon this responsibility is shared between an officer in the Development and Strategy Directorate of the Housing Department, and Environmental Services of the Building and Architectural Services Department. Environmental Services act as an energy consultant, developing the strategy to the requirements of the Housing Department. There must also be available the tools to evaluate and report progress, and the resources to maintain a database of energy related information. Without these the success of the overall strategy cannot be assessed, and particular tactics within the strategy evaluated for their effectiveness.

OBJECTIVES OF THE HOUSING ENERGY STRATEGY

There are five main objectives of the housing energy strategy.

- To ensure that adequate heating and hot water can be provided in all Council homes at reasonable cost.
- To eliminate, as far as practicable, the incidents of condensation and mould growth in Council homes.
- To reduce the cost of the reactive maintenance.
- To reduce the management costs associated with homes that are hard to heat.
- To meet tenants concern.

DELIVERY OF THE HOUSING ENERGY STRATEGY

The delivery of the housing energy strategy is ensured by firstly formulating the Housing Investment Programme using energy performance as one of the indicators of need. Having identified those properties that require energy efficient refurbishment, works are specified to meet an energy performance target. To ensure that the risk of condensation is kept to a minimum, all refurbishment schemes also include anti-condensation measures, and tenant consultation covers the predicted energy costs following refurbishment.

An initial rating of the entire housing stock was completed in April 1992 and this data is used as the energy indicator to target resources to those homes most in need. The profile of energy ratings for the entire housing stock is discussed in the section "Measuring the Effectiveness of the Housing Energy Strategy" below.

There are three strands to the delivery of the Housing Energy Strategy.

- The target approach.
- The opportunistic approach.
- The energy efficiency programme.

The Target Approach

A performance target for all major refurbishment works was set on an energy rating of 7, based on the NHER system. It is not a true NHER as various assumptions are made to standardise the calculation. These particularly relate to non-heating uses of energy.

NEHR of 7 corresponds to an annual energy bill for a three person dwelling (60m²) of £410. This relates very well to alternative weekly cost targets as shown in the table below.

	FLOOR AREA IN SQUARE METRES			
	40	60	80	100
NHER = 7	£6.25	£7.88	£9.42	£19.96
NFHA	£4.92 (1/2 person)	£7.75 (3 person)	£8.42 (4/5 person)	£10.00 (6 person)
"Affordable Warmth"	£5.65 (1/2 person)	£8.88 (3 person)	£10.87 (4 person)	-

It can be seen that for a typical dwelling the NHER Target is very close to that given by the National Federations of Housing Associations and the "Affordable Warmth" calculation based on 10% of disposable income.

THE DEVELOPMENT OF A HOUSING ENERGY STRATEGY

To ensure that the target rating is achieved all homes are surveyed and certified by Environmental Services, and where works that are deemed necessary to achieve a target are unable to be carried out as part of the current scheme, they are identified and costed for inclusion in the following years programme.

The system of producing an internal certificate is a useful check to ensure that all major schemes have been assessed.

Guidance Notes are produced for each scheme prior to a full survey being carried out. This was deemed as the most effective way to ensure that the initial specifications were likely to achieve the target, as full survey work could not be completed on all schemes until some six months after the beginning of the financial year. When full surveys have been completed the schemes will be certificated.

The Opportunistic Approach

Included in the brief for all programmed work (Capital or Revenue) is the requirement for energy efficiency works as opportunities arise. This includes, in particular, cavity wall insulation on the renewal of windows.

This part of the strategy has not been fully developed, but contained in the Department of the Environment Guidance is a table which offers an example of this approach, (included as Figure 1).

The Energy Efficiency Programme

The third and final strand to the Housing Energy Efficiency Strategy is a programme of highly effective and low cost energy efficiency works. At present this mainly consists of a cavity wall insulation programme, and this year a programme of top-up loft insulation to 200mm (previously insulated to 100mm) will begin.

Some use is also made of the Home Energy Efficiency Scheme. This is mainly in conjunction with the heating refurbishment works, as the Council would be reluctant to carry out draught-stripping in an inadequately heated home.

Programmes will also be developed to insulate building details that have led to particular condensation problems, for example, exposed soffitts over walkways and panel infills below windows.

Finally the programme would revisit properties that had previously been refurbished to improve their rating to the current target.

An example of the use of the initial energy surveys is in the formulation of the cavity wall insulation programme. It has been a simple matter to identify all properties built after 1930 and to categorise them into houses, maisonettes and flats below 5 storeys in height. This has totalled around 13,000 homes of which, after three years of the programme 4,000 will have received cavity wall insulation. Given that some homes will be unsuitable for such works, it is envisaged that the programme will run for another five or six years to completion.

THE DEVELOPMENT OF A HOUSING ENERGY STRATEGY

MEASURING THE EFFECTIVENESS OF THE HOUSING ENERGY STRATEGY

To measure the effectiveness of the Housing Energy Strategy there must first be an initial survey of the complete housing stock to build a profile of the current energy performance. At the London Borough of Croydon this work was completed within three months by surveying the stock at a basic level. As more complete information is gathered through our on-going stock condition survey, so the data will be upgraded to give greater accuracy. Figure 2 shows the stock profile as at April 1992.

Having completed the initial stock profile, some thought must be given to the method by which the information is updated. The detailed information required by the Energy Rating software is not always recorded by the scheme specifiers; for example, the thickness of hot water cylinder jacket insulation, the provision of draught-stripping, and even the thickness of loft insulation. The production of certificates is one way of ensuring that the database is updated as schemes proceed.

There must also be a method of identifying the cost of the energy efficiency works, as apart from the overall scheme costs. This will allow the effective reporting on progress towards overall targets and the cost effectiveness of the works. This method of costs is not yet full developed, but in Figures 3 and 4 some attempt has been made to identify these costs and to generate an "Effectiveness Index" which can be interpreted simply as the improvement in energy rating for every £1 million spent. It will be noted that the Effectiveness Index for the three year cavity wall insulation programme of 0.65 is over 10 times that of the index for all energy works in 1993/94. This demonstrates the highly effective nature of the cavity wall insulation programme.

The improvement in the average Rating from 4.28 to 4.78 have been achieved by a total expenditure of £10.7 million. If current progress is maintained it will require a programme of £50 million to achieve an overall stock rating of 7.

THE FUTURE OF THE HOUSING ENERGY STRATEGY

Experience from this first year is building up steadily. A matrix of energy conservation measures by construction type is currently being evaluated, based on the surveys done on the scheme properties in 1993/94.

It is expected that this matrix will reveal common works applicable to the whole building stock and will provide initial guidance to scheme specifiers without the need to refer to an energy survey. The initial costings of programmes can be based on the matrix and verified once the full surveys are carried out.

It is this matrix that brings together the three strands of the overall housing energy strategy. It will allow cost effective programmes to be developed across a number of properties for specific items of insulation or ventilation, it will allow opportunities for energy efficiency works to be carried out, for example on renewal of a roof, and it will ensure that major refurbishment will achieve the stated energy target of 7.

FIGURE 1:

MATRIX OF OPPORTUNITIES FOR ENERGY EFFICIENCY WORKS

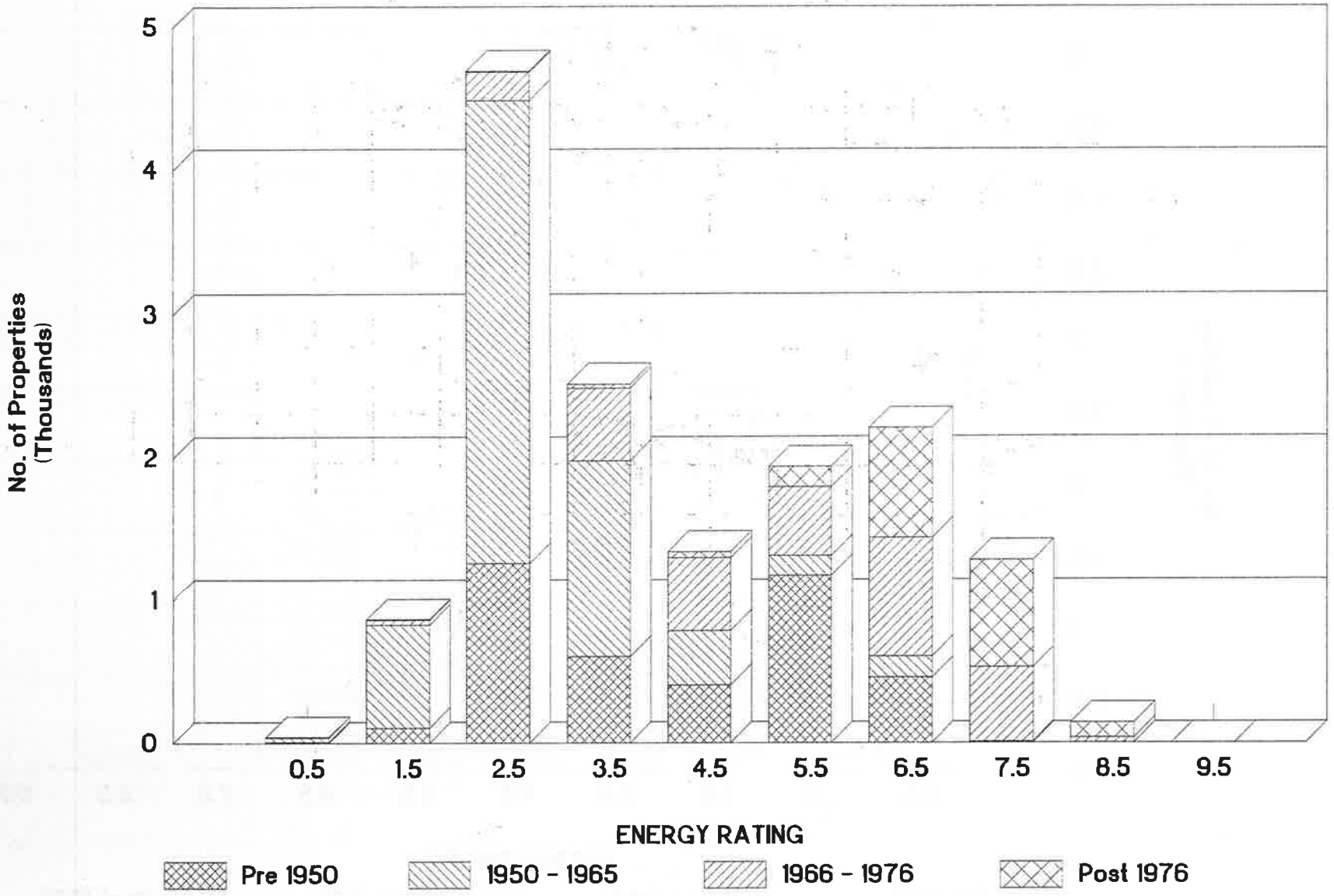
OPPORTUNITY IMPROVEMENT	Internal wall insulation	Double glazing	Cavity wall insulation	External wall insulation	Extract ventilation	Draught-proofing	Trickle ventilation	Add insulation	Insulate loft	Insulate water tank and pipes	Ventilate loft space	Insulate doors	Insulate floors	Add porch or vestibule	Low energy lighting	Insulate hot water cylinder	Improve controls
Refitting kitchens and bathrooms	■	■			■	■		■		■							■
Repointing of walls			■														
Repairing frost damaged walls or render/Upgrading external appearance				■													
Replace wall ties			■														
Rewiring	■														■		■
Replacement windows		■				■	■	■									
Repairing cladding								■									
Re-roofing/roof repairs									■	■	■						
Replacing external doors						■						■		■			
Repairing ground floors						■							■				
Heating and hot water repairs										■						■	■
Plumbing repairs																■	
Increase security						■									■		

Source: **Energy Efficiency in Council Houses, DoE 1993**

FIGURE 2 :

LONDON BOROUGH OF CROYDON

LEVEL 0 PROFILE AS AT APRIL 1992

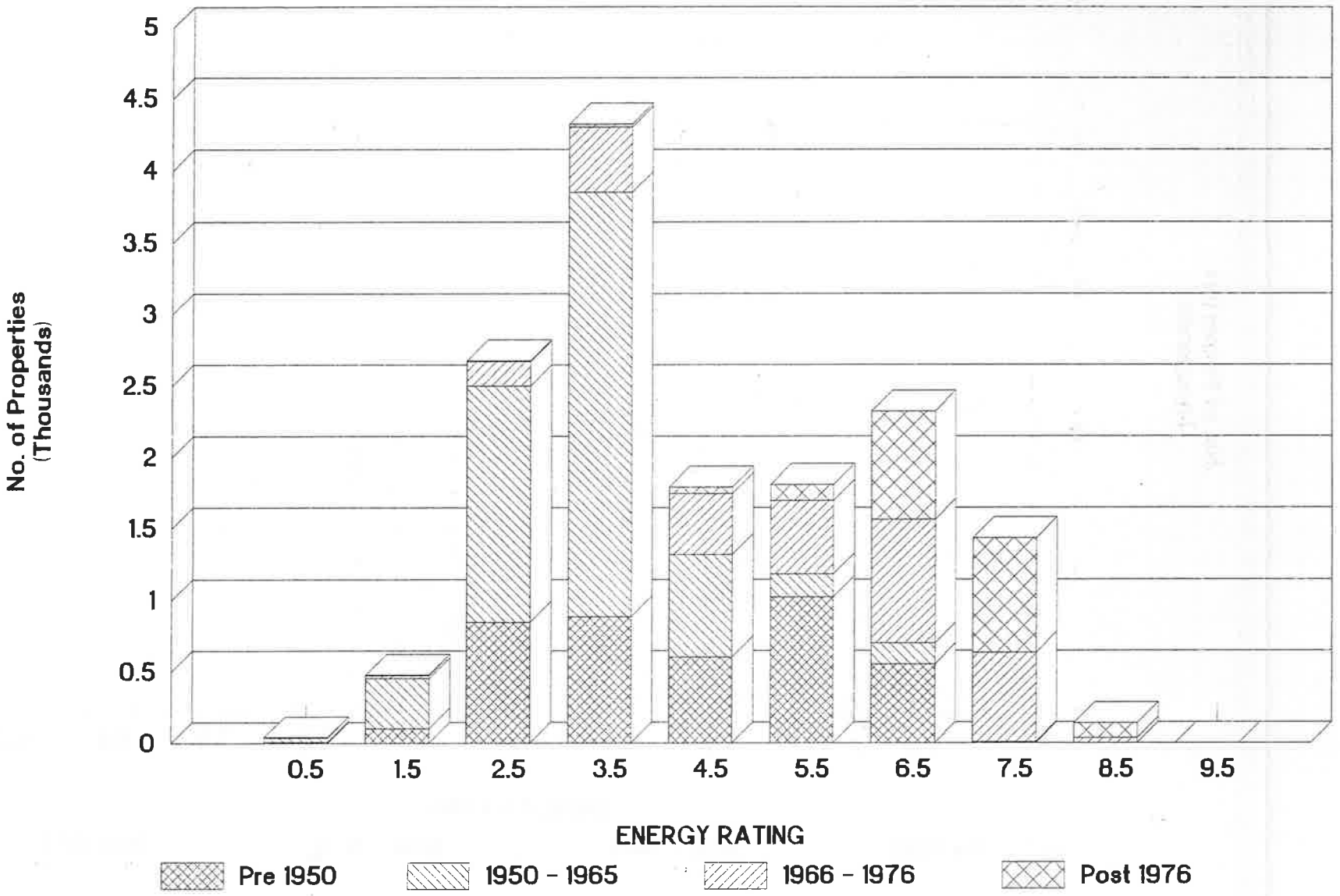


Average Rating : 4,28

FIGURE 3 :

LONDON BOROUGH OF CROYDON

LEVEL 0 PROFILE FOLLOWING CWI PROG.

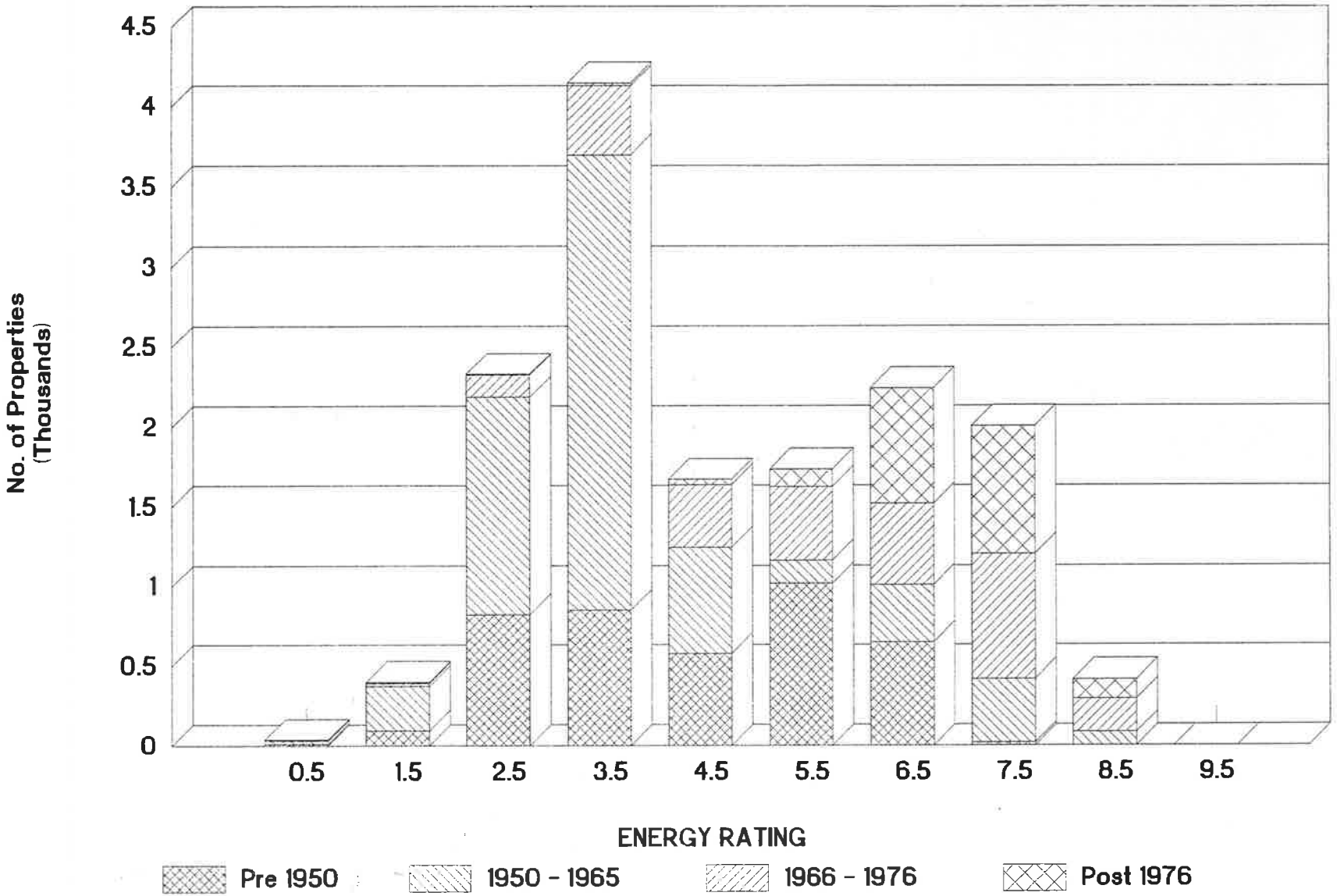


Average Rating : 4.54 Cost to Date : £400,000 Effectiveness Index : 0.65

FIGURE 4 :

LONDON BOROUGH OF CROYDON

LEVEL 0 PROFILE FOLLOWING 1993/94 PROG.



Average Rating 4.78 Cost to Date : £10.7m Effectiveness Index 0.05