Decent Homes
Better Health




Ealing Decent Homes
Health Impact Assessment

Jan Gilbertson · Geoff Green · David Ormandy · Bernard Stafford

Sheffield Hallam University
SHARPENS YOUR THINKING

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Foreword

We are delighted to present the Health Impact Assessment of Ealing Homes *Decent Homes Programme*. The study builds on previous studies of the link between poor standards of Housing, poor health and crime, demonstrating that the work carried out under the programme will make a real difference to both the health and quality of life for those residents in Ealing living in properties and on estates where *Decent Homes* work is being carried out. It is hoped that by partnership working the recommendations of the report can be followed through to further enhance and sustain the impact of the *Decent Homes Programme* and to continue to improve the health and quality of life for residents of Ealing.

Colin Mayhead
Managing Director Ealing Homes (Interim)

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Acknowledgements

The study was inspired by Su Gomer, former Chief Executive of Ealing Homes, who saw the need for 'joined up' investment in the policy domains of housing, crime and health. Commissioned early in 2007, the report itself is a collective effort, drawing on the creativity and expertise of many officials in Ealing. Gail Pilides, Service Development Manager, was invaluable in opening doors and keeping us on track as the study progressed from inception to final report.

Peter Gaffikin was at the heart of our enquiry. As Ealing Home's Investment Planning and Standards Manager, he contributed his great knowledge and expertise on both the condition of the housing stock and the *Decent Homes Programme* itself. We are grateful for the data willingly extracted by Eric Owen, Decent Homes Data Manager and Trung Tran, Business Analyst Manager. Jim Whoriskey, Area Maintenance Manager, contributed to the Warmth chapter with his operational knowledge of the prevalence of cold and damp conditions; Narinder Sandhu contributed to the chapter on safety with his overview of adaptations, especially for older people.

Beyond Ealing Homes, there were helpful contributions from officials in Ealing Borough Council, the Primary Care Trust, The Metropolitan Police and private sector companies whose products are used in the *Decent Homes Programme*. We gained a good insight into health inequalities in the Borough from Evelyn Gloyn, Health Inequalities Strategy Co-ordinator with the Borough Council, her role an acknowledgement of a cross-cutting health theme. Catherine Weir, Assistant Director of Commissioning with Ealing Primary Care Trust, provided information on falls for the chapter on safety and Stewart Brooke provided data on excess winter deaths for the chapter on Warmth and Comfort. Joint Director of Public Health, Ruth Barnes, gave an erudite overview of the contribution of housing to health, drawing on her previous research in Shepherds Bush.

The report highlights the major contribution of security to health, especially mental health. An overview was provided by Police Superintendent Ian Jenkins, responsible for partnerships in Ealing. Architectural Design Officers Bob Masdin and Pat Cogan, both of the London Metropolitan Police Force, provided great insights and lots of data on how crime can be designed out of council estates. Paul Harrison, Head of the Borough Council's Community Safety Unit and Eleanor Reed, Crime Data Analyst, contributed greatly to the crime maps and profiles in the security chapter.

The private sector is heavily involved in the *Decent Homes Programme*. We received helpful advice on the non-slip quality of new kitchen floors from Barry May and Gordon Mathews, Technical Services Manager with Tarkett- Marley Floors. They gave permission to use the image of the young girl with the bruised knee in the security chapter and on the front cover. Sam Duncan, Senior Estimator with Premiere kitchens supplied specifications and the 'New Kitchen' image in the chapter on safety.

Thanks to CRESR research associate Ian Wilson for supplying socio-economic data on Ealing's neighbourhoods and tenants; to Stephen Battersby who used his environmental health expertise to survey and assess hazards in dwellings scheduled for the *Decent Homes Programme*. Principal authors of the report are Jan Gilbertson, CRESR Research Fellow, an expert on housing and health, Professor David Ormandy at the University of Warwick (who devised the Housing Health and Safety Rating System which is incorporated into the Housing Act of 2004) and Doctor Bernard Stafford, an economist who is principally responsible for the penultimate chapter on social costs and benefits. All the academic team helped draft the report, working with designer Paul Pugh to make it as accessible as possible to a wider audience in the housing, crime and health policy communities. As co-ordinator of the study, I take responsibility for any errors or omissions.

Geoff Green Professor of Urban Policy, Centre for Regional Economic and Social Research, Sheffield Hallam University

February 2008

Executive Summary

Main message: ***Ealing's Decent Homes Programme will have a major impact on the health and quality of life of residents – reducing heart and respiratory disease, reducing the number of accidents in the home and above all giving greater security and mental well-being.***

Messages

- *'Joined up thinking' encouraged Ealing Homes to commission this Health Impact Assessment of the £330 million Decent Homes Programme.*
- *By improving health and quality of life in Ealing's deprived neighbourhoods, the Decent Homes Programme will further integrate the diverse tenants of Ealing's council dwellings into the mainstream economic and social life of the city.*
- *Despite Ealing Council dwellings having energy efficiency levels better than the English average, there is scope for the Decent Homes Programme to raise energy efficiency levels further and reduce heart disease and excess winter deaths to Scandinavian levels.*
- *Raised temperatures coupled with improved ventilation planned for nearly every dwelling in the Decent Homes Programme will help reduce levels of condensation, damp and mould and the likelihood of respiratory disease.*
- *Remodelling kitchens and bathrooms as a major element of the Decent Homes Programme will reduce falls, trips, scolds and burns, with substantial savings to the NHS.*
- *New windows and doors planned for nearly every dwelling in the Decent Homes Programme will improve security, reduce crime, promote feelings of safety and have a major impact on mental health and well-being, with substantial cost savings to the NHS.*
- *Preliminary cost-benefit analysis indicates (a) that ill-health linked with crime is a much bigger problem than ill-health linked with cold or unsafe dwellings, and (b) it is much cheaper to reduce security-related ill-health.*
- *The Decent Homes Programme will help reduce health inequalities. Most beneficiaries are not working and much more likely to be on Incapacity Benefit than the Ealing population as a whole. Improvements in mental health especially will encourage tenants back into work.*

Recommendations

- *Key partnership agencies should jointly plan to account for the impact of 'upstream' investment in housing on the 'downstream' health of residents.*
- *Key partnership agencies should maintain their focus on the borough-wide benefits of transforming health and quality of life in Ealing's more deprived estates.*
- *Any additional funds available to the Decent Homes Programme could be invested in condensing boilers, reducing fuel poverty, raising temperatures further and reducing heart disease and excess winter deaths.*
- *Monitoring the impact of improved ventilation systems on levels of humidity, condensation and damp, would maximise the potential of the Decent Homes Programme for reducing childhood asthma.*
- *It is important to (a) maintain a clear focus on the safety aspects of remodelling kitchens, and (b) ensure that remodelled bathrooms reduce the risk of falls and promote independent living.*
- *It is important to maintain a focus on improved security and mental health arising from the installation of new windows. The Metropolitan Police Force should be asked to validate estimates of reduced crime levels.*
- *Further cost-benefit analysis should assist key partnership agencies assess which mix of up-front capital investment reduces long term revenue costs to public services.*
- *Further research should elaborate the pathway from improved home security, more social cohesion, better mental health and greater opportunities for people to prosper.*

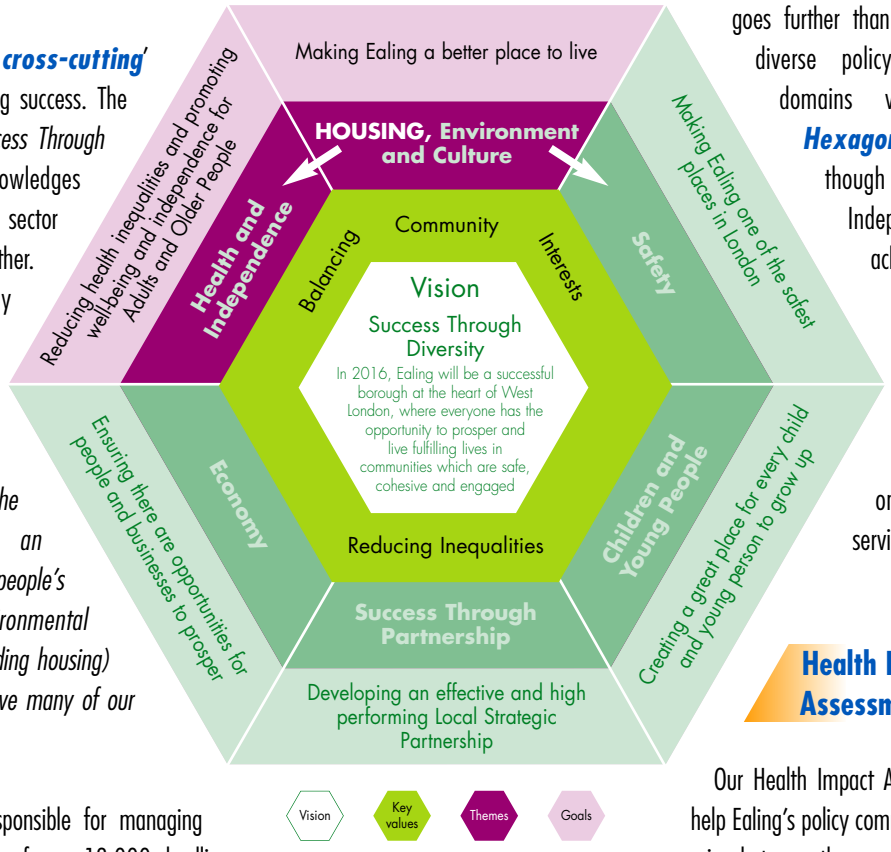
1
Introduction

'Joined up thinking'

Health is one of six themes in the vision for Ealing promoted by the Borough's Local Strategic Partnership (LSP). ***Housing*** is another and a third is ***Safety*** – aiming to make Ealing one of the safest places in London.

Ealing takes a '***cross-cutting***' approach to achieving success. The LSP strategy – *Success Through Diversity*[1] – acknowledges that action in one sector pays dividends in another. Housing, especially social housing, has a big influence on all aspects of life. As the Strategy says '*The quality of the environment has an impact on crime and people's health, so environmental improvements (including housing) should help us achieve many of our other targets.*'

Figure 1: **Ealing Hexagon**



Ealing Homes is responsible for managing Ealing Council's stock of over 13,000 dwellings, housing many vulnerable residents. Wishing to demonstrate these housing impacts, for good or ill, this active LSP partner commissioned Sheffield Hallam University to undertake a Health and Crime Impact Assessment of the *Decent Homes Programme* in the Borough. The ***key question*** is 'Does capital investment to improve the stock of social housing in the borough make a positive impact on the health and security of residents?'

Hard analysis needed

In reality, local partnerships in English cities have found it difficult to integrate housing and public health policies and programmes. Ealing has one of the more dynamic strategic partnerships and *Success Through Diversity* goes further than most in integrating diverse policy and programme domains via the '***Ealing Hexagon***' (figure 1). Yet though the 'Health and Independence' chapter acknowledges 'income, housing and crime' as key influences on 'us living longer, healthier lives,' the spotlight is on traditional health service interventions.

Health Impact Assessment

Our Health Impact Assessment (HIA) will help Ealing's policy community strengthen the connexion between three policy domains. We use the new Housing Health & Safety Rating System[2] innovatively to give practical effect to the aspiration of 'joined-up thinking.' We hope that housing managers and crime prevention officers, though often boxed in by government-imposed objectives and targets within their own operational domain, will be persuaded also to account for and celebrate relieving pressure on the National Health Service. We look forward to the day when all partners acknowledge both their potential contribution to the health of residents and the impact of better health on the prosperity of the Borough.

[1] Ealing Local Strategic Partnership (2006) *Success Through Diversity: Ealing's Sustainable Community Strategy 2006-2016.* Ealing Borough Council. London.

[2] Office of the Deputy Prime Minister. *Housing Health and Safety Rating System: Operating Guidance.* ODPM publications. (London, second edition 2006) Effective from April 6th 2006.

2

Ealing's *Decent Homes Programme*

Key message: ***The Decent Homes Programme will help reduce crime and improve the health and quality of life of residents in the poorest neighbourhoods of Ealing.***

Ealing challenge

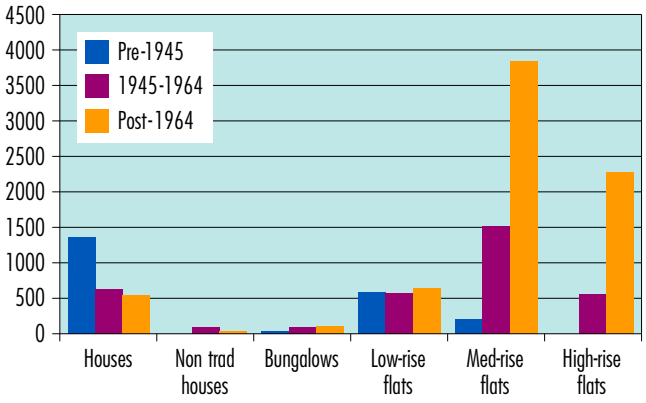
Ealing's *Decent Homes Programme* has its origins in the April 2000 Housing Green Paper. *Quality and Choice: a Decent Home for All*[1] set out the Government's commitment to bring all social housing up to a decent standard by 2010.

And health was a key consideration in the very first paragraph of the first chapter.

> *'Housing is a basic requirement for everyone. Our homes influence our well-being, our sense of worth, and our ties to our families, communities and work. If we live in decent housing we are more likely to benefit from* ***good health****, higher educational attainment and better-paid work.'*

After years of underinvestment since the high watermark of council housing in 1979, the *Decent Homes Programme* presented a great opportunity for Ealing Borough Council to rehabilitate its residual stock. But there were strings attached to government funding (of which more later). In line with Government Policy (and a ballot of tenants) the management of 13,500 of Ealing Borough Council's housing stock was transferred in 2004 to Ealing Homes, an Arms Length Management Organisation (ALMO). This stock (figure 2.1) (together with leasehold flats[2] on council estates) is the focus of the *Decent Homes Programme* in Ealing.

Figure 2.1: **Stock profile of Ealing Homes**



Flats are the predominant archetype, mainly built after 1945. Limited demolition (of those dwellings which cannot be brought up to the *Decent Homes* Standard at reasonable cost[3]) is likely before the end of the programme period and there may be more stock transfers. So the *Decent Homes Programme* will probably take in 11,000 tenanted properties before it ends in 2010-11.

Ealing Homes 'aims to achieve the highest possible level of tenant satisfaction in everything we do.' Working in partnership with Ealing Borough Council and eight main building contractors, Ealing Homes' *Decent Homes Programme* will help achieve these aims. The projected investment is £330 million translating into a substantially greater rate of improvement until 2010/11 than in the previous 7 years. Star ratings for progress so far have released £105m from the government Department of Communities and Local Government, with a further £103 million earmarked for future years. This investment will be supplemented by non-ALMO resources.'

Joined-up policy

Decent Homes are at the heart of the Government's sustainable communities' agenda and Part 1 of the policy document *Sustainable communities: building for the future*[4] reaffirmed the Government's commitment to provide all social housing tenants with *Decent Homes* by 2010. It recommended that investment to

[1] *Quality and Choice: a Decent Home for All. (The Housing Green Paper)* DETR. (2000).

[2] These flats were originally purchased from the council under the Right to Buy Scheme. The Council retains the freehold and manages the estate as a whole.

[3] Office of the Deputy Prime Minister (2003) *Review of the delivery of the Decent Homes Target for Social Housing.* The Stationary Office. London.

[4] *Sustainable Communities: building for the future,* ODPM, Crown Copyright, 2003.

Ealing's *Decent Homes Programme*

improve social housing should be part of the wider neighbourhood renewal agenda. Home improvements undertaken by authorities should be planned so that they make maximum contributions to neighbourhood renewal programmes. The first *'key fact'* in the policy document highlighted the triangular relationship between housing, health and sustainability.

> *'Homes in poor condition damage the **health** of those that live in them and can undermine the sustainability of neighbourhoods.'*

Along with the *Warm Front Scheme*, Decent Homes are identified as a means of tackling fuel poverty in the (2001) *UK Fuel Poverty Strategy.*[5] The 2004 *Action Plan*[6] identified the *Decent Homes Standard* as having an impact on the number of vulnerable fuel-poor households and the 2005 Progress Report[7] again elaborated how the *Decent Homes Programme*:

> *'contributes to the alleviation of fuel poverty in the social sector through the requirement that, to be classified as decent, a home has to provide a reasonable degree of thermal comfort – that is to have both efficient heating and insulation.'*

The *Climate Change Programme*[8] published in 2006 affirms the *Decent Homes Programme* is not the principal vehicle for action to improve energy efficiency, but rather a "trigger point" for action to improve energy efficiency, contributing to a sustained increase in the average SAP rating in the social housing sector from 48 in 1996 to 58 by 2004 and beyond.

Again the government is explicit on the link back to health. In a chapter on 'The causes and effects of fuel poverty' the original strategy document reports:

> *'Fuel poverty can damage people's quality of life and **health**, as well as impose wider costs on the community. The likelihood of ill-health is increased by cold homes, with illnesses such as influenza, heart disease, and strokes all exacerbated by the cold.'*

Typically, local authorities work closely with energy suppliers and, as reported by the Fuel Poverty Advisory Group, the *Decent Homes Programme* accounts for c£100m direct investment in energy efficiency measures to complement c£150m of funds released by the Energy Efficiency Commitment of utilities and c£190m investment by *Warm Front.* However the sequence of cause and effect is similar: invest in energy efficiency → reduce fuel poverty → improve health.

The *Decent Homes* Standard

The Housing Health and Safety Rating System (HHSRS) – which we utilise later for our Health Impact Assessment, helps define a 'Decent Home.' Signalled in part I of the 2004 Housing Act the HHSRS provides a methodology to assess housing conditions for their potential effect on health, rather than focus as before on the physical characteristics of the dwelling.

With the implementation of the Housing Act in 2006, the HHSRS replaced the Housing Fitness Standard as the 'first criterion of the *Decent Homes Standard.*' The latest *Guidance*[9] requires dwellings to be in a reasonable state of repair. All 'key components' – examples are the foundation of the building, the external walls, the windows, the roof etc. – must be in a reasonable state of repair, as should the internal components of a dwelling – ceilings, floors and internal walls.

The *Standard* provides for a reasonable degree of thermal comfort. Dwellings should have effective insulation and effective heating. All homes are required to have central heating (which can be gas, oil or electric) with timing and temperature controls, and effective insulation.

The *Guidance* outlines specific schemes which provide additional resources to help carry out energy efficiency programmes including – The Energy Efficiency Commitment (EEC), *Warm Front*, Transco's *Affordable Warmth Programme.*

5 Inter-Ministerial Group on Fuel Poverty. *The UK Fuel Poverty Strategy.* DEFRA 2001.

6 *Fuel Poverty in England: The Governments Plan for Action.* DEFRA 2004

7 *The UK Fuel Poverty Strategy: 3rd Annual Progress Report.* DEFRA/DTI 2005

8 *Climate Change: the UK Programme 2006,* Crown Copyright 2006.

9 *Communities and Local Government. (2006) A Decent Home: the definition and guidance for implementation,* Crown Copyright.

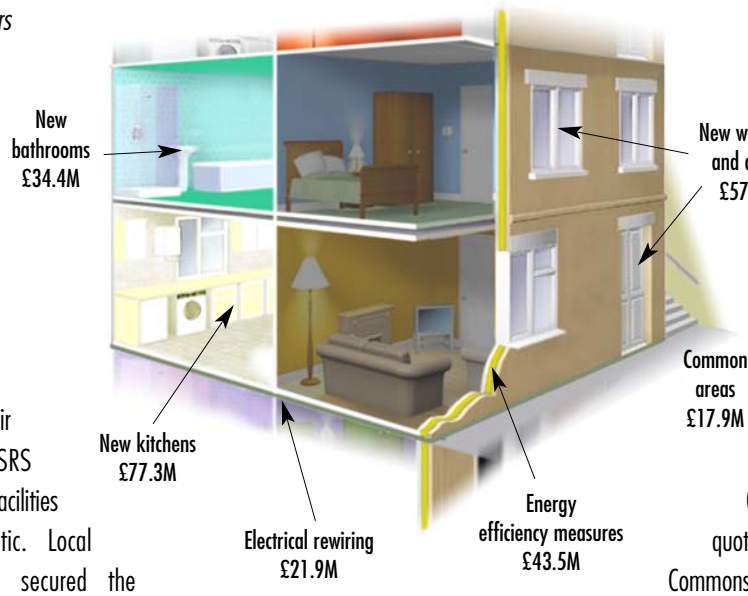
Ealing's *Decent Homes Programme*

Finally the Standard specifies reasonably modern facilities. Homes must have three or more of the following:

- *Kitchen with appropriate space and layout*
- *Appropriately located bathroom and toilet*
- *Adequate external noise insulation*
- *Adequate size and layout of communal areas in blocks of flats*
- *Kitchen of 20 years old or less*
- *Bathrooms of 30 years old or less*

The Guidance makes clear that the 'modernity' of such facilities has no direct connection to disrepair and in turn to HHSRS assessment. But modern facilities are not merely cosmetic. Local authority representatives secured the inclusion of modern kitchens and bathrooms in the Standard, presumably because these contribute to tenants identification of their 'home as a haven,' promoting the sense of 'well-being' and 'worth' identified by the Green Paper as the rationale behind *Decent Homes*.

Figure 2.2: **Components of investment in Ealing's *Decent Homes Progamme***



Management and Resources

In the Green Paper the government tied additional resources for *Decent Homes* to new forms of housing management beyond the immediate control of local authorities. Focusing on delivery, a *'PSA Plus Review'*[10] stated that authorities not choosing either (a) to utilise funds from a Private Finance Initiative (PFI) or (b) to transfer their stock to one or more to housing associations, or (c) transfer management of their stock to an ALMO could not expect to receive increased funding in their stock above that provided by their Housing Investment Programmes to ensure that the target was met. Authorities opting to retain their stock and rely on their own resources are likely to find it much more difficult to achieve the standard than those which transfer their housing.

The average cost of making a home decent was estimated at £7,200 by the ODPM (ODPM 2003)[11]. Figures quoted in evidence by the House of Commons Select Committee suggest that the cost may be up to £21, 500,[12] though there is great variation between individual properties. In Ealing the average cost is higher at £24,000, with wide variation in the mix of elements improved. Figure 2.2 gives the big picture, with a breakdown of the main components of the *Decent Homes Investment Programme*. Kitchens (£77 million) and bathrooms (£35 million) will be modernised. New windows and doors (£57 million) will provide better security. Upgraded heating systems and better insulation (£44 million) will give warmth and comfort. The external fabric will be repaired (£30 million) and common areas of estates refurbished (£18 million) benefiting both tenants and leaseholders.

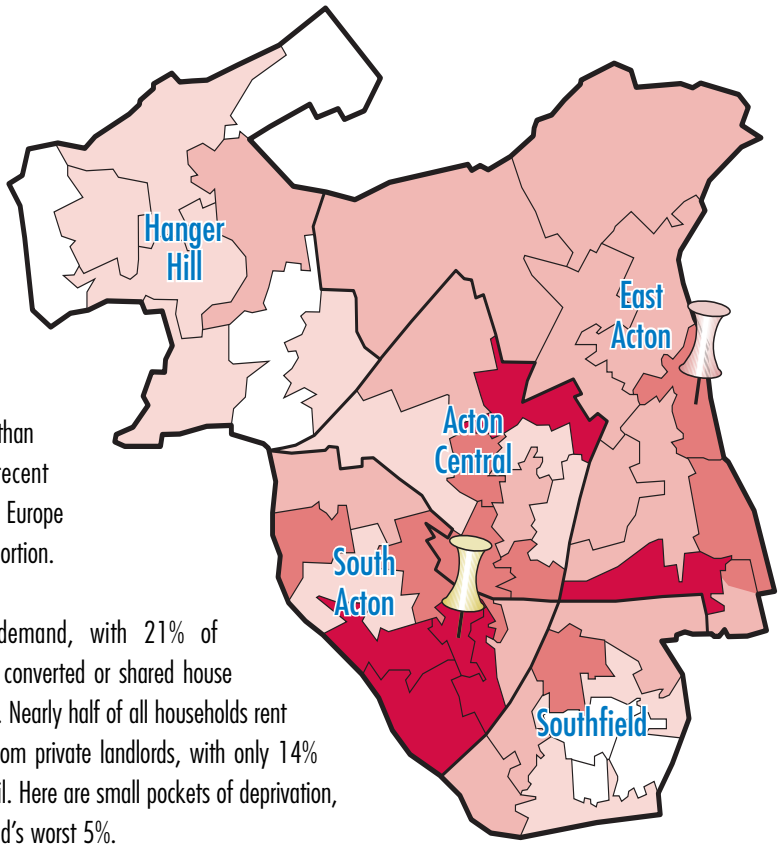
[10] *Decent Home Delivery: Review of the delivery of the Decent Homes Target for Social Housing*, ODPM, Crown Copyright, 2003.

[11] *English House Condition Survey, 2001: building the picture*, ODPM, 2003.

[12] House of Commons Select Committee (2004) *A Decent Home for all?* Fifth Report: HoCSC, ODPM.

Acton profile

Acton is a prosperous, ethnically diverse district east of the Borough. The 2001 Census reported over 40% of the population has an ethnic heritage other than white British and recent migration from central Europe has increased this proportion.



The map shows the pattern of people reporting their health was 'not good' in the 2001 Census. Residents of council estates generally have poorer health than the average population. For example in South Acton Ward, 15.7% of the population reported poor health compared with the average of 9.4%.

Percentage of all people in Acton that report 'health not good'

10.15 to 14.5	(40)
8.34 to 10.15	(40)
6.79 to 8.34	(53)
5.48 to 6.79	(36)
3.01 to 5.48	(26)

Housing is in big demand, with 21% of households living in a converted or shared house and 22% overcrowded. Nearly half of all households rent their homes, mainly from private landlords, with only 14% renting from the council. Here are small pockets of deprivation, some ranked in England's worst 5%.

South Acton Estate

This is the largest council estate in Ealing, originally with 1900 dwellings, mainly post-war tower blocks of flats. The 2003 Stock Condition Survey highlighted a poor, neglected environment, with security compromised by the design of multiple access to deck walkways, uncontrolled access to tower blocks, dark spaces between buildings and lack of defensible space.

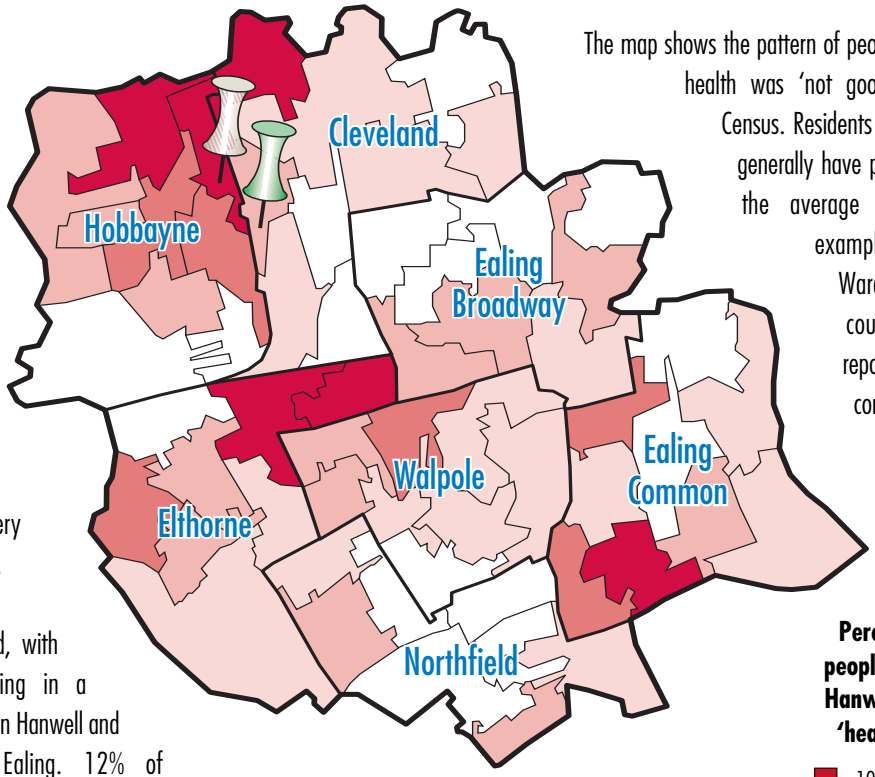
Nevertheless, 400 dwellings have been bought by occupiers under the Right to Buy Scheme. Of the 1500 rented properties managed by Ealing Homes – 996 were classified in 'poor condition', 56 with 'poor facilities,' 415 with 'poor thermal comfort' and 33 were 'unfit.' Overall 1022 were classified as 'Non-Decent.' Phase I refurbished 350 properties in six tower blocks during 2005/6. Other parts of the estate are under review.

East Acton Estate

This is a small estate of 149 dwellings, predominantly houses built between 1919 and 1944. A tenth have been bought under the Right to Buy scheme. The general environment was reported as 'fair' or 'adequate', but 11 council properties were classified as 'unfit,' 13 in 'poor condition' and the remainder 'deteriorating'. The *Decent Homes Programme* began in 2006, with an estimated investment of £4 million.

Ealing and Hanwell profile

Ealing and Hanwell are both prosperous, ethnically diverse districts south of the Borough. The 2001 Census reported over 40% of the population had an ethnic heritage other than white British, mainly originating in Ireland, India and the Caribbean. There are very high levels of employment.



The map shows the pattern of people reporting their health was 'not good' in the 2001 Census. Residents of council estates generally have poorer health than the average population. For example in Hobbayne Ward, 16.0% of council residents reported poor health compared with the ward average of 8.6%.

Percentage of all people in Ealing and Hanwell that report 'health not good'

10.15 to 14.5	(40)
8.34 to 10.15	(40)
6.79 to 8.34	(53)
5.48 to 6.79	(36)
3.01 to 5.48	(26)

Housing is in big demand, with 30% of households living in a converted or shared house in Hanwell and 20% overcrowded in Ealing. 12% of households in Ealing rent from the council or social landlords, as do 17% in Hanwell, mainly on the Cuckoo and Copley Estates. Here are small pockets of deprivation, with Hobbayne Ward and eastern Elthorne ranked in England's worst 20% for crime.

Cuckoo Estate

This is one of the two largest council estates in Hanwell with 600 dwellings – 66% pre-War houses and the remainder low-rise flats. A tenth have been bought under the Right to Buy scheme and now sell for £250,000 or more. The general environment was reported as 'fair' or 'adequate' in the 2003 Stock Condition Survey, but 50 council properties were classified then as in 'poor condition' and another 75 had 'poor thermal comfort'. Without substantial investment over 200 properties would have become unfit by 2008. Begun in 2006, the *Decent Homes Programme* will invest £10 million.

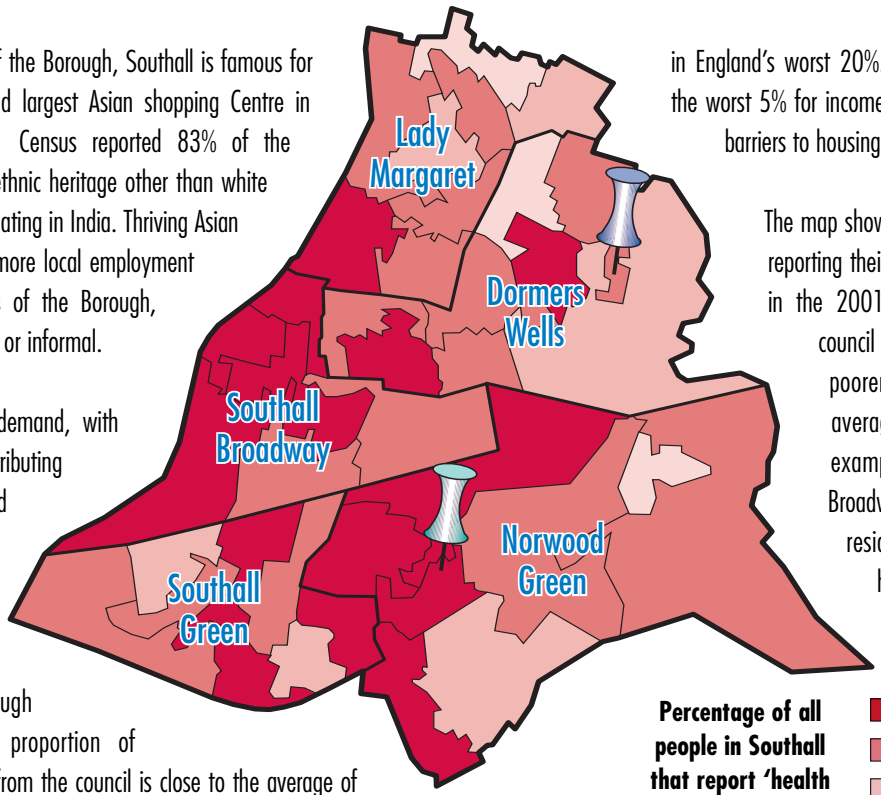
Copley Close

Just over the railway tracks from the Cuckoo Estate, Copley Close has 626 dwellings built between 1965 and 1979, mostly flats of less than 6 stories. 139 have been bought under the Right to Buy scheme. The environment of the estate was rated as 'poor' or 'inadequate', with noise from road traffic and the railway plus problems of vandalism and security. The design of deck walkways allows uncontrolled public access. Landings and stairways are dark, with a general lack of defensible space. The flats themselves were in poor condition. The *Decent Homes Programme* will invest £15 million on external and internal works.

Southall profile

In the south west of the Borough, Southall is famous for its Asian culture and largest Asian shopping Centre in London. The 2001 Census reported 83% of the population had an ethnic heritage other than white British, mainly originating in India. Thriving Asian businesses provide more local employment than in other parts of the Borough, some of it part time or informal.

Housing is in big demand, with large families contributing to 28% overcrowded households. Owner-occupation (67%) is higher than the Borough average and the proportion of households renting from the council is close to the average of 12%. Here are small pockets of deprivation, with parts of Norwood Green, Dormers Wells, Southall Broadway and Southall Green ranked in England's worst 20%. Smaller areas rank in the worst 5% for income deprivation, crime and barriers to housing and services.



The map shows the pattern of people reporting their health was 'not good' in the 2001 Census. Residents of council estates generally have poorer health than the average population. For example in Southall Broadway, 14.7% of council residents reported poor health compared with the ward average of 5.8%.

Percentage of all people in Southall that report 'health not good'

10.15 to 14.5	(40)
8.34 to 10.15	(40)
6.79 to 8.34	(53)
5.48 to 6.79	(36)
3.01 to 5.48	(26)

Golf Links Estate

This is one of the two largest council estates in Southall with 769 dwellings. Half are tower blocks of flats and half are flats in lower-rise blocks. Over 20% have been bought under the Right to Buy scheme. The general environment was reported as 'good' but over half the council properties (350) were in 'poor condition' generally and a few more had 'poor thermal comfort'. Begun in 2006, the *Decent Homes Programme* will invest £13 million improving both the flats and estate.

Havelock Estate

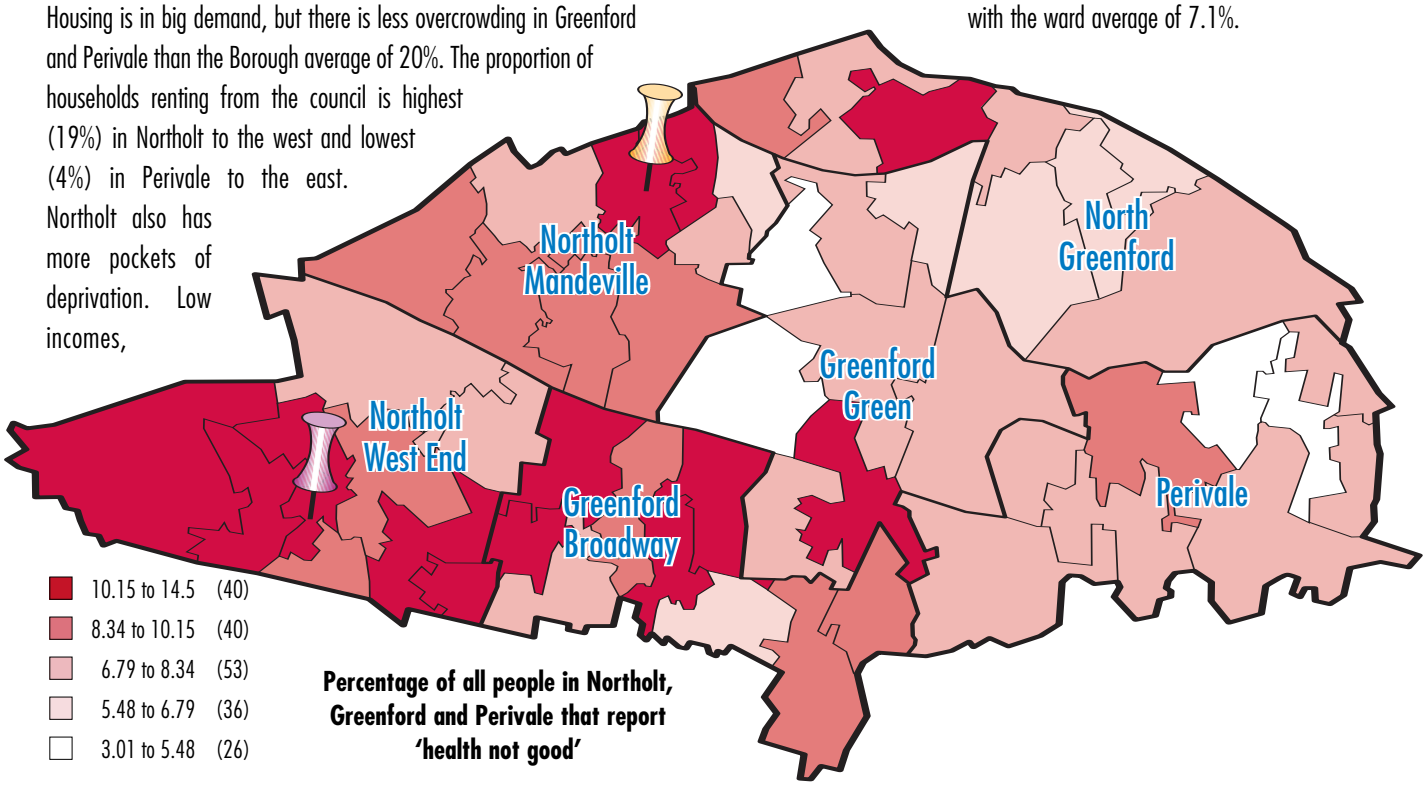
This post-War estate has 723 dwellings, mainly low rise flats with some houses. The environmental quality of the estate is 'poor' or 'inadequate' in four aspects: parking quality; walls fences and stores; play and recreation areas; security. Nevertheless, a third of dwellings have been bought under the Right to Buy scheme. Of the remaining council properties only 10 were rated in 'poor condition', 21 had 'poor thermal comfort' and 15 were 'unfit'. A substantial number were predicted to become 'non-Decent' by 2007. The *Decent Homes Programme* will invest £18 million.

Northolt, Greenford and Perivale profile

Northolt, Greenford and Perivale are prosperous, ethnically diverse districts, in a northern arc across the Borough. The 2001 Census reported over 50% of the population had an ethnic heritage other than white British, mainly originating in India, Ireland and the Caribbean. There are high levels of employment despite lower than average qualifications.

Housing is in big demand, but there is less overcrowding in Greenford and Perivale than the Borough average of 20%. The proportion of households renting from the council is highest (19%) in Northolt to the west and lowest (4%) in Perivale to the east. Northolt also has more pockets of deprivation. Low incomes, barriers to housing and services, problems with crime and quality of the environment rank some neighbourhoods in England's worst 5%.

The map shows the pattern of people reporting their health was 'not good' in the 2001 Census. Residents of council estates generally had poorer health than the average population. For example in Perivale, 13.6% of residents of council dwellings reported poor health compared with the ward average of 7.1%.



Percentage of all people in Northolt, Greenford and Perivale that report 'health not good'

Northolt Park

This is the largest council estate in Northolt with 886 dwellings. Most are low-rise flats built in the post war period, supplemented later by tower blocks. Over 40% have been bought under the Right to Buy scheme. The 2003 Stock Condition Survey rated aspects of the estate – including security – as 'poor'. A third of council properties were in 'poor condition' with a further 10% either 'unfit' or having 'poor thermal comfort'. The *Decent Homes Programme* started in 2005 with a predicted investment of £13 million on completion.

Yeading Lane 1

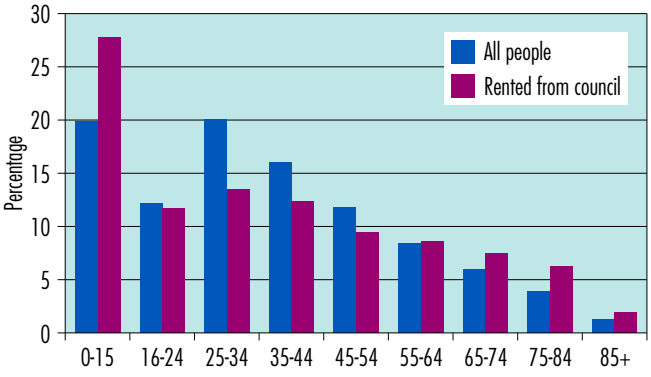
This post-War estate has 461 dwellings, mainly low rise flats with some tower blocks. A third has been bought under the Right to Buy scheme. The environmental quality of the estate is 'fair'. Of the remaining council properties 191 were rated in 'poor condition' and 11 more assessed as 'unfit'. The *Decent Homes Programme* began in 2006 with an estimated £8 million on completion.

Ealing's *Decent Homes Programme*

Who benefits

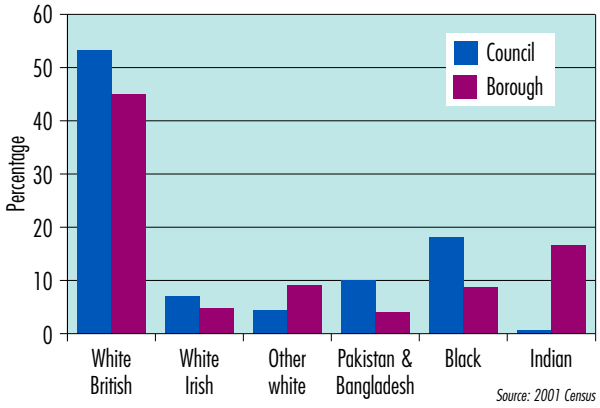
By 2011 the investment in *Decent Homes* will benefit about 32,000 occupants of 13,300 renovated council properties, 10.5% of Ealing's estimated population of 305,300.[13] The estimated number of beneficiaries is based on the 2001 Census (figure 2.3). Though there is a turnover of 1000 Ealing Homes tenancies a year[14], the number of occupants is likely to remain at 2.3 per property because of Ealing Homes' policy on overcrowding.

Figure 2.3: **Age profile of occupants**



However the age and ethnicity of occupants may change. At the time of the 2001 Census, children predominated and compared with the Ealing Borough average, more occupants were over retirement age. Given the policy of letting to vulnerable groups – half went to homeless people in 2005/6 – and the limited housing options for many retired people on low incomes, we estimate a similar profile in 2011.

Figure 2.4: **Ethnicity of council households compared**

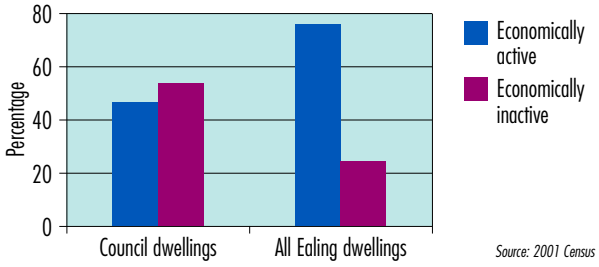


Source: 2001 Census

The *Decent Homes Programme* will have a disproportionate impact on the older more established native British and Irish residents in Ealing, on Black residents (either British or more recently arrived from Africa) but little impact on the large local community of Indian origin who generally owner-occupy or rent privately. The percentage distribution of the main ethnicities occupying council houses at the time of the 2001 Census is shown in figure 2.4. Though the turnover of 1000 tenancies a year will change the ethic complexion by 2011, the exact ratios are difficult to predict.

Compared with the average Ealing householder, tenants of Ealing Homes are much more likely be economically inactive than Ealing householders. More are retired or unemployed or incapacitated because of long-term limiting illness. The profiles highlight eight of the largest council estates, located generally where residents are not in good health. And the pattern linking poor health to council estates is repeated throughout the Borough.

Figure 2.5: **Economic activity**



Source: 2001 Census

We predict that therefore that if the *Decent Homes Programme* managed by Ealing Homes is successful in improving the health and quality of life of its tenants and their families, then it will have made a practical contribution to the ***Vision*** of Ealing Local Strategic Partnership:

> *"By 20016 Ealing will be a successful borough in the heart of west London where everyone has the opportunity to prosper and live fulfilling lives in communities that are safe, cohesive and engaged." Success Through Diversity: Ealing's Sustainable Community Strategy 2006-2016. (2006) Ealing Local Strategic Partnership.*

[13] 2004-based Subnational Population Projections (SNPP) London boroughs; population projections by sex and quinary age groups. ONS, Crown Copyright 2006.

[14] Source: Internal Communication, Ealing Homes for Financial Year 2006/7.

3
Method

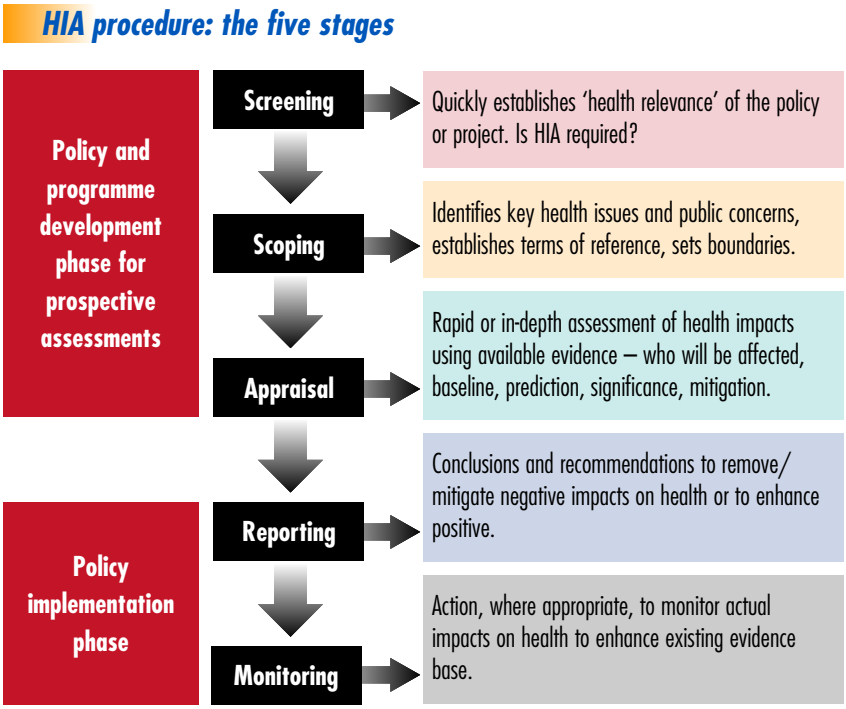
Key message 1: ***The national Housing Health and Safety Rating System was used innovatively to estimate the health impact of Ealing's Decent Homes Programme.***

Key message 2: ***A preliminary cost benefit analysis was undertaken using methods which give a monetary value to gains in personal health status, reduced costs to the NHS and criminal justice system, and reduction in working days lost through ill health.***

Introduction

Following an initial 'scoping' exercise, Ealing Homes commissioned a Health Impact Assessment (HIA) of their *Decent Homes Programme* early in 2007. This was for the appraisal stage in the five stage process (figure 3.1) recommended by the World Health Organization.[1] Our objective was to quantify the range and scale of health benefits flowing from the *Programme*. But as our proposal made clear, within the limited time and resources available these health impacts could not be measured directly. It just wasn't possible to ask large numbers of recipients whether their health had improved. Instead we proposed to estimate the effect of the *Programme* by drawing on a large body of existing evidence relating housing to health (even though there are relatively few robust intervention studies which assess the impact of housing investment).[2] Each of the following chapters of the report refers to this evidence.

Figure 3.1: **The process of Health Impact Assessment**



Our method of appraisal is to apply the national Housing Health and Safety Rating System (HHSRS) to the stock of 13,310 homes owned by Ealing Borough Council and managed by Ealing Homes. We *start* with a ballpark estimate of health impact based on national data produced to support the HHSRS, and *then* refine it is far as we can with Ealing data. The condition of the housing stock is rated for its impact on health, both before and after improvements generated by the *Decent Homes Programme*, to date and prospectively. The difference between the two estimates (pre- and post-intervention) is our assessment of the health impact.

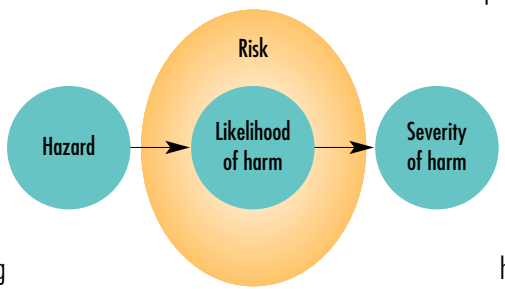
[1] http://www.who.int/hia/tools/en/ accessed 20/06/06.

[2] Thomson, R., Petticrew, M., Morrison D. *Health effects of housing improvement: systematic review of intervention studies.* BMJ 2001;323;187-190.

The Housing Health & Safety Rating System

The national guidance [3] calculates the likelihood of a hazard giving rise to a harmful occurrence, providing evidence [4] both on the likelihood of harm posed by each hazard (e.g. 1 in 250) and the scale of harm arising (e.g. from broken arm to death). The basic three-stage sequence is summarized in figure 3.2.

Figure 3.2: **Hazards to health**



For any cost-benefit analysis involving NHS resources, it is important to distinguish this ***likelihood of actual harm*** requiring medical attention (the HHSRS benchmark) from the wider risk posed by a hazardous property. Many more properties will pose a ***risk*** (for example by being cold and damp) than will give rise to an occurrence of actual harm to one of their residents (illness or death) and an even smaller number will give rise to illness which is reported or death which is attributed. Our estimates of the impact of housing improvement on health are therefore at the conservative end of the spectrum.

The HHSRS identifies 29 hazards [5] which harm health. They are grouped under 4 heads – (A) Physiological requirements (B) Psychological requirements (C) Protection against Infection (D) Protection against Accidents. Hazards relate to 'elements' (or 'attributes' as defined by Ealing Homes) of the dwelling. Figure 3.3 highlights (in blue) just 10 of the potential hazards which may be significantly reduced by the *Decent Homes Programme*. These are investigated in the following chapters.

Figure 3.3: **Potential hazards**

A. PHYSIOLOGICAL REQUIREMENTS

Hygrothermal Conditions	Pollutants (non-microbial)	
1. Damp and mould growth	*4. Asbestos*	*8. Radiation*
2. Excess cold	*5. Biocides*	*9. Uncombusted fuel gas*
3. Excess heat	*6. Carbon Monoxide*	*10. Volatile organic compounds*
	7. Lead	

B. PSYCHOLOGICAL REQUIREMENTS

Space, Security, Light and Noise

11. Crowding and space ***12. Entry by intruders*** *13. Lighting* *14. Noise*

C. PROTECTION AGAINST INFECTION

Hygiene, Sanitation and Water Supply

15. Domestic hygiene, pests and refuse *17. Personal hygiene, Sanitation and Drainage*
16. Food safety *18. Water supply*

D. PROTECTION AGAINST ACCIDENTS

Falls	Electric shocks, Fires, Burns and Scolds	Collisions, Cuts and Strains
19. Falls associated with baths etc	***23. Electrical hazards***	*26. Collision and entrapment*
20. Falling on level surfaces	***24. Fire***	*27. Explosions*
21. Falling on stairs etc	***25. Flames, hot surfaces etc***	*28. Position and operation of amenities etc*
22. Falling between levels		*29. Structural collapse and falling elements*

The HHSRS groups the range of health outcomes into four classes according to the degree of incapacity suffered. This allows physical injuries, serious health conditions and other health conditions to be compared.

Class I

This covers the most extreme harm outcomes. It includes: *Death from any cause; Lung cancer; Mesothelioma and other malignant lung tumours; Permanent paralysis below the neck; Regular severe pneumonia; Permanent loss of consciousness; 80% burn injuries.*

[3] ODPM (2006) *Housing Health and Safety Rating System; Operating Guidance.* ODPM Publications.

[4] Using data from the EHCS, the census and some commercially available datasets, a Housing and Population Database was produced. This contained information on housing and household characteristics. This was matched with data on injuries, the HASS, and mortality; and with data on Hospital Episode Statistics. Analysing these matched databases gave the national average likelihood of an occurrence, that is an event or period of exposure, which could cause harm; and the national average spread of harm outcomes from such an occurrence. This is explained in *Statistical Evidence to Support the Housing Health and Safety Rating System* Vol I, ODPM 2004.

[5] ODPM (2006) Housing Health and Safety Rating System; Operating Guidance. ODPM Publications.

Method

Class II

This Class includes severe conditions, including: *Cardio-respiratory disease; Asthma; Non-malignant respiratory diseases; Lead poisoning; Anaphylactic shock; Crytosporidiosis; Legionnaires disease; Myocardial infarction; Mild stroke; Chronic confusion; Regular severe fever; Loss of a hand or foot; Serious fractures; Serious burns; Loss of consciousness for days.*

Class III

This Class includes serious conditions such as: *Eye disorders; Rhinitis; Hypertension; Sleep disturbance; Neuro-pyschological impairment; Sick building syndrome; Regular and persistent dermatitis, including contact dermatitis; Allergy; Gastro-enteritis; Diarrhoea; Vomiting; Chronic severe stress; Mild heart attack; Malignant but treatable skin cancer; Loss of a finger; Fractured skull and severe concussion; Serious puncture wounds to head or body; Severe burns to hands; Serious strain or sprain injuries; Regular and severe migraine.*

Class IV

This Class includes moderate harm outcomes which are still significant enough to warrant medical attention. Examples are: *Pleural plaques; Occasional severe discomfort; Benign tumours; Occasional mild pneumonia; Broken finger; Slight concussion; Moderate cuts to face or body; Severe bruising to body; Regular serious coughs or colds.*

In addition there is evidence of the psychosocial[6] effects of housing improvements both from our Warm Front and Liverpool studies.[7] These relate both to improvements in mental health associated with better living conditions and to the negative impacts associated with the redevelopment process.

Local estimates

In order to gauge the impact of the Ealing *Decent Homes Programme* for each year after completion we have selected 10 of the 29 harms for special attention. We reckon that the *Decent Homes Programme* will have no significant impact on the other 19. The estimate for each of these 10 key harms is derived in 9 stages illustrated using the example of excess cold in tables 3.4, 3.5 and 3.6 below. Assuming 32,000 occupants of 13310 homes (see Chapter 2) then table 3.4 gives a estimates how the programme will reduce the number of residents seeking medical attention because of cold housing conditions (harm 2).

Figure 3.4: **First stages in estimating the example of harm from excess cold**

	(1)	*(2)*	*(3)*	*(4)*
	Base via English Average	*Ealing Baseline*	*Post-Decent Homes*	*impact = (2) minus (3)*
Likelihood	*1 in 380*	*1 in 420*	*1 in 800*	
Persons affected	*35*	*32*	*17*	*-15*

The first baseline **(1)** for the Ealing Homes stock is derived by applying national likelihood ratios. Second **(2)** a more refined estimate of the baseline is derived by accounting for differences between the national and Ealing stock profile. The ages and archetypes of the Ealing stock were shown in the previous chapter and the statistical base[8] of the HHSRS is interrogated to gain a better Ealing comparison. More refinement was achieved by an expert in our team surveying a selection of the more typical baseline properties.

Third **(3)** expert members of our team estimate the reduction in harms (or improvement in health) likely to arise from the *Decent Homes Programme* currently being implemented and prospective. The estimate is derived empirically from (a) a number of HHSRS ratings of representative properties and (b) the scope of the improvement packages, as

[6] Hiscock R., Kearns A., Macintyre S., Ellaway A. *Ontological Security and Psycho-Social Benefits from Home: Qualitative Evidence on Issues of Tenure. Housing Theory and Society 2001: 18: 50-56.*

[7] Critchley R., Gilbertson JM., Green G., Grimsley MJ. (2004) *Housing Investment and Health in Liverpool. CRESR.* Sheffield Hallam University.

[8] ODPM (2003) Statistical Evidence to support the HHSRS. Technical Appendix. ODPM publishing.

they apply to the range and number of archetypes. These are annual grossed-up for the whole stock and assume the *Programme* is completed.

Fourth **(4)** our estimate of the harm reduction (or health impact) is the baseline estimate **(2)** minus the reduced estimate **(3)** generated by the *Decent Homes Programme*. Using again the example of harm from excess cold, if our baseline estimate is 32 residents seeking medical attention and our post intervention estimate is 17, then the impact of the *Decent Homes Programme* is to reduce harm from excess cold by 15.

Figure 3.5: **Later stages in estimating the example of harm from excess cold**

	(5) *Base via English Average*	*(6)* *Ealing Baseline*	*(7)* *Post-Decent Homes*	*(8)* *impact = (6) minus (7)*
Likelihood	*1 in 280–510*	*1 in 310–560*	*1 in 600–1100*	
Persons affected	*26–48*	*24–43*	*12–22*	*2–31*

Figure 3.4 conveys an unwarranted level of precision in our estimates. Since these are indicative only, we have adopted the approach of the *Operating Guidance* by giving a ***range*** of likelihoods. Developed primarily for environmental health practitioners assessing the condition of individual properties, the *Operating Guidance* gives a 'Representative' scale point to cover a range of estimated likelihoods. Working in reverse, we have used the underlying algebraic transformation (paragraph 2.26 and box 3) to derive a range of likelihoods from scale points, as illustrated in figure 3.4. Figure 3.5 illustrates how the formula is applied to excess cold by stages **(5-7)**. The impact **(8)** shown in figure 3.5 is derived by subtracting the estimate of harm after the *Decent Homes* measures from the baseline position before. Since both the pre- and post-intervention estimates are represented by ranges, the impact is a minima of 2 (24 minus 22) and a maxima of 31 (43 minus 12).

The final stage **(9)** is to estimate the range of health outcomes. The *Operating Guidance* gives the spread of health outcomes for each of the 29 hazards. The distribution of classes varies from hazard to hazard. In the case of harm from excess cold illustrated in figure 3.6, 34 per cent of those affected suffer serious (Class I) harm, including death, and at the other end of the spectrum 42 per cent suffer Class IV harms including 'regular serious coughs and colds.' This percentage spread is applied to the overall numbers harmed in Ealing Homes. The bottom row of figure 3.6 gives the estimated reduction in each class of health outcome.

Figure 3.6: **Final stage in estimating the range of health outcomes**

	Likelihood of an occurrence	*No. of dwellings where a person suffers harm Between*	*Spread of health outcomes (nos.)*			
			Class I 34.0%	*Class II 6.0%*	*Class III 18.0%*	*Class IV 42.0%*
Before *Decent Homes*	1 in 280–510	24–43	8–15	1–3	4–8	10–18
After *Decent Homes*	1 in 600–1100	12–22	6–7	1–1	2–4	5–9
Reduction		**2–31**	**1–11**	**0–2**	**0–6**	**1–13**

Cost-benefit

A preliminary cost benefit analysis was undertaken using methods which give a monetary value to gains in personal health status, reduced costs to the NHS and criminal justice system, and reduction in working days lost through ill health. The methodology is summarized in the '*Appendix: Sources and methods*' chapter 7.

4
Warmth and Comfort

Key message 1: ***Prior to the* Decent Homes Programme*, substantial investment raising the energy efficiency of local authority homes in Ealing probably accounts for a significant reduction in excess winter deaths and illness.***

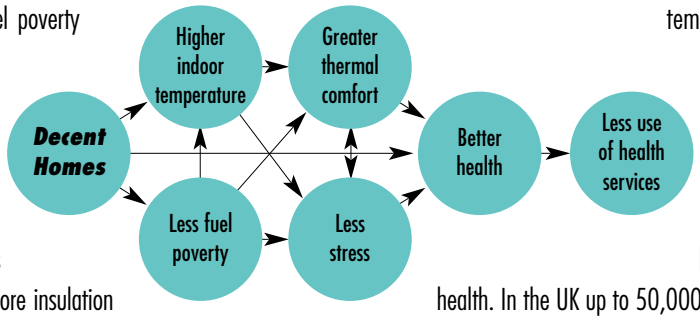
Key message 2: ***Despite Ealing Homes now having energy efficiency levels better than the English average, there is scope for the* Decent Homes Programme *to raise energy efficiency further and reduce heart disease and excess winter deaths to Scandinavian levels.***

Key message 3: ***Raised temperatures coupled with improved ventilation planned for nearly every dwelling in the* Decent Homes Programme *will help reduce levels of condensation, damp and mould and the likelihood of respiratory disease.***

Challenges

'Energy efficiency and tackling fuel poverty are key objectives' of Ealing Council's *Business Plan for Housing,*'[1] confirmed by their *Housing Strategy.*[2] Despite Ealing council dwellings now having energy efficiency levels better than the English average, more insulation and selective improvements in heating systems are required to maximise warmth and comfort.

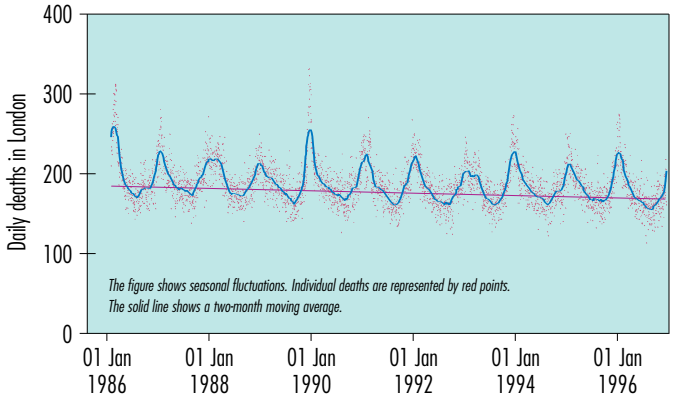
Figure 4.1: **Possible pathways to health**



Decent Homes is the main investment programme for achieving the two targets of 'a high standard of thermal comfort' and the 'eradication of fuel poverty,' both by 2010. Planned expenditure is £43.5 million on heating and energy efficiency measures and a further £57.1 million on replacement windows and doors which (besides improving safety and security) will also add to thermal comfort. Such investment should significantly improve the health of occupiers via the pathways shown in figure 4.1. Less fuel is required to maintain adequate temperatures, resulting in less stress and more comfort.

Our literature review highlights compelling evidence of a strong link between cold homes and poor health. In the UK up to 50,000 more people die in the winter compared with the summer months. These excess winter deaths (EWDs) are far higher in the UK than the European average, though as figure 4.2 shows, there is a downward trend in London over recent years.[3]

Figure 4.2: **Excess winter deaths in London**



Source: Wilkinson et al. 2001.

[1] Housing Strategy Section. (2003) *Housing Revenue Account Business Plan 2003-2008.* Ealing Borough Council.

[2] Housing Strategy Section (2004) *Housing Strategy 2004-2009: A Housing Strategy for Social Inclusion.* Ealing Borough Council.

[3] Wilkinson P., Armstrong B., Stevenson S., Pattenden S., McKee M. and Fletcher T. (2001) *Cold Comfort: the Social and Environmental Determinants of Excess Winter Deaths in England 1986-1996.* Joseph Rowntree Foundation.

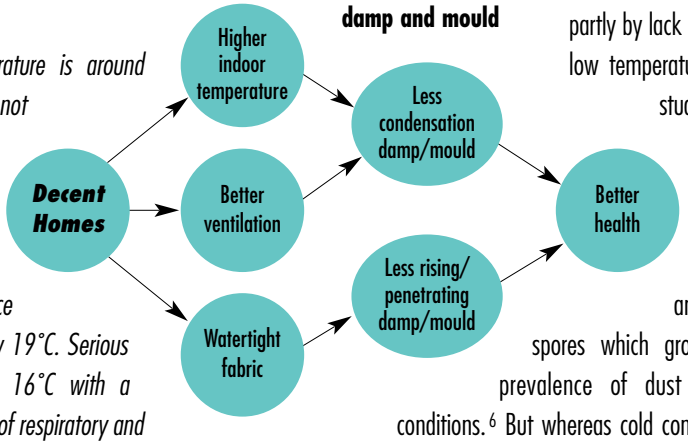
Warmth and Comfort

According to the Operating Guidance[4]:

'A healthy indoor temperature is around 21°C, although cold is not generally perceived until the temperature drops below 18°C. A small health risk of adverse health effects begins once the temperature falls below 19°C. Serious health risks occur below 16°C with a substantially increased risk of respiratory and cardiovascular conditions. Below 10°C the risk of hypothermia becomes appreciable, especially for the elderly.

'Cardiovascular conditions (e.g. heart attacks and stroke) account for half the excess winter death, and respiratory diseases (e.g. influenza, pneumonia and bronchitis) account for another third.'

Figure 4.3: **Reducing damp and mould**



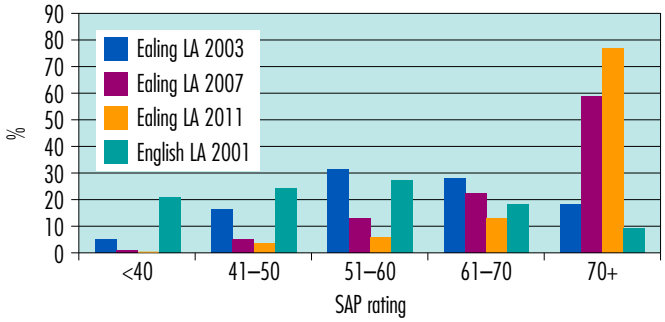
In turn condensation is caused partly by lifestyle, partly by lack of ventilation and predominantly by low temperatures. A number of epidemiological studies have demonstrated how damp is strongly associated with a range of symptoms, particularly respiratory problems, including asthma. The pathway of cause and effect is via airborne mould spores which grow in damp conditions and the prevalence of dust mites which thrive in humid conditions.[6] But whereas cold conditions have most impact on older people, damp conditions (as confirmed by the *Operating Guidance*) are strongly linked to childhood illness.

The *Decent Homes Programme* should also reduce damp and mould via the three pathways highlighted in figure 4.3. Renovation of the fabric of a dwelling will remove penetrating and rising damp. But, as revealed by our earlier study of residential tower blocks in Sheffield[5], the principal cause of damp and mould growth is condensation rather than water penetration.

Baseline

The challenge is to establish a baseline for Ealing Homes which builds on the national Housing Health and Safety Rating System (HHSRS) benchmark likelihood of harm from ***cold***. Since temperatures are strongly correlated with energy efficiency[7], we do this by modifying the national likelihood in the light of the local profile.

Figure 4.4: **Energy efficiency profiles of the Ealing stock compared with the English stock**



Source: English House Condition Survey 2001, Ealing Homes 2007

The *Ealing Decent Homes Programme* started in 2004 with a relatively energy efficient stock, limiting the scope for further improvements. Ealing Borough Council had utilized government led initiatives (principally the Energy Efficiency Commitment of Suppliers and the Housing Energy Efficiency Scheme) to invest £30 million over 7 years to significantly improve energy efficiency. As figure 4.4 demonstrates, this resulted in a much better energy profile than of the English stock in 2001. By 2003 only 22 per cent of Ealing Homes had energy efficiency scores less than 50 using the Standard

4 Office of the Deputy Prime Minister (2006 page 60) *Housing Health and Safety Rating System: Operating Guidance.* ODPM. London

5 Green G., Ormandy D., Brazier J., Gilbertson JM. (2000) *Tolerant building: the impact of energy efficiency measures on living conditions and health status,* in Rudge J & Nicol F (eds) Cutting the Cost of Cold. E&FN Spon, London.

6 Oreszczyn T, Ridley I, Hong S, Wilkinson P. *Mould and winter indoor relative humidity in low income households in England.* Indoor Built Environment 2006; 125-135.

7 Oreszczyn T, Hong S, Ridley I, Wilkinson P. and the Warm Front Study Group. *Determinants of winter indoor temperature in low income households in England.* Energy and Buildings Vol 38, issue 3, March 2006, pp245-252.

Warmth and Comfort

Figure 4.5: **Ealing Homes: baseline likelihood of harm from excess cold**

	Average likelihood range	*Spread of health outcomes*			
		Class I	*Class II*	*Class III*	*Class IV*
National Average	1 in 280–510	34.0%	6.0%	18.0%	42.0%
Ealing Homes	1 in 310–560	34.0%	6.0%	18.0%	42.0%
13,310 dwellings	No = 24–43	8–15	1–3	4–8	10–18

Figure 4.6: **Ealing Homes: baseline likelihood of harm from damp and mould growth**

	Average likelihood range	*Spread of health outcomes*			
		Class I	*Class II*	*Class III*	*Class IV*
National Average	1 in 280–510	0%	1.0%	10.0%	89.0%
Ealing Homes	1 in 220–400	0%	1.0%	10.0%	89.0%
13,310 dwellings	No = 33–61	0	0–1	3–6	29–54

Assessment Procedure (SAP), compared with 45 per cent of the English housing stock. At the other end of the spectrum, over 46 per cent of Ealing Homes had a SAP score above 50 compared with 27 per cent across the whole English housing stock.

Our first step in measuring the impact of the *Decent Homes Programme* is to estimate the likelihood of harm before the Programme started. The HHSRS gives an average risk of between 1 in 280 and 1 in 510 properties giving rise to harm from cold conditions. We account for the superior energy efficiency profile of the Ealing Homes stock by reducing the HHSRS likelihood of an occurrence of harm from cold to between 1 in 310 and 1 in 560. Our estimate then is of between 24 and 43 properties where there is likely to be an occurrence of harm, though it is likely that there will be many more cold properties posing a risk (See Chapter 2). In human terms, between 24 and 43 residents will be harmed sufficient for them to seek medical attention. Most will be elderly and about a third (between 8 and 15) risk death from cold conditions (a Class 1 harm), contributing to the Excess Winter Mortality referred to earlier in this chapter.

Survey records for the Ealing stock indicate only 3.1% of properties were affected by rising or penetrating ***damp*** compared with the English average of 4.7%. However, according to local maintenance records, condensation damp is much more prevalent, occurring in an estimated 20% of properties. This accords with our research evidence[8] on the prevalence of condensation damp in Sheffield tower blocks prior to modernization. A high proportion of the Ealing Homes stock also comprises unmodernised flats constructed by 'non-traditional' techniques and materials – notorious for cold bridging and their low insulation qualities.

Accounting for this local evidence we gauge that damp and mould was more prevalent in the Ealing Homes stock than nationally when the HHSRS estimated the likelihood of harm arising from this condition. Poorer local conditions imply a likelihood of harm greater than the range 1 in 280 to 1 in 510 derived from the national Operating Guidance. Though we cannot be sure of the risk posed by damp and mould in Ealing Homes, our estimated range is between 1 in 220 and 1 in 400.[9] On this basis, between 33 and 61 occupants of damp and mouldy properties are at risk of suffering some health outcomes requiring medical attention, the majority of which could be children affected by asthma.

Impact of *Decent Homes*

The scope for major improvements to reduce ***cold conditions*** further is limited by the big investment in energy efficiency measures before the *Decent Homes Programme* started. When transferred to Ealing Homes, over 90 per cent of the stock already had central heating, loft insulation, and in nearly all properties, cavity wall insulation.

Though the *Decent Homes Programme* will install new double-glazed windows in most properties (see Chapter 6) and top up insulation where required, the biggest

[8] Green G., Dave Ormandy D., Brazier J., Gilbertson JM. (2000) *Tolerant building: the impact of energy efficiency measures on living conditions and health status*, in Rudge J & Nicol F (eds) Cutting the Cost of Cold. E&FN Spon, London.

[9] There is an obvious disparity between (a) the prevalence of damp in an estimated 20% of properties, and (b) a likelihood of harm of 1 in 220 and 1 in 400. This is because only in a small proportion of cases is there harm sufficient to warrant medical attention.

Warmth and Comfort

Figure 4.7: **Programme of upgrading boilers**

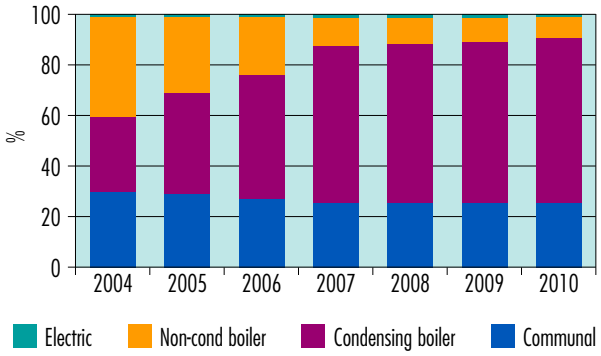


Figure 4.8: **Reduction in fuel bills**

impact will be made by replacing inefficient boilers with high energy efficient condensing boilers to meet the Ealing *Decent Homes Standard*. Figure 4.7 shows the programme for upgrading boilers. Their major advantage is the fuel cost saving for tenants. Figure 4.8 compares typical annual fuel bills for similar properties. Space heating the home with a condensing boiler in Burlington Gardens costs only £96 annually compared with £137 for the home in Beechwood Gardens with a traditional boiler. Hot water is cheaper too. As figure 4.1 indicates, these cost reductions are especially important to tenants who cannot maintain healthy temperatures because of fuel poverty.

Figure 4.9: **Ealing Homes: reduced likelihood of harm from excess cold**

	Likelihood of an occurrence	*No. of dwellings where a person suffers harm*	*Spread of health outcomes*			
			Class I	*Class II*	*Class III*	*Class IV*
		Between	*34.0%*	*6.0%*	*18.0%*	*42.0%*
Before *Decent Homes*	1 in 310–560	24–43	8–15	1–3	4–8	10–18
After *Decent Homes*	1 in 600–1100	12–22	4–7	1–1	2–4	5–9
Reduction		**2–31**	**1–11**	**0–2**	**0–6**	**1–13**

Figure 4.10: **Ealing Homes: reduced likelihood of harm from damp and mould growth**

	Likelihood of an occurrence	*No. of dwellings where a person suffers harm*	*Spread of health outcomes*			
			Class I	*Class II*	*Class III*	*Class IV*
		Between	*0%*	*1.0%*	*10.0%*	*89.0%*
Before *Decent Homes*	1 in 220–400	33–61	0	0–1	3–6	29–54
After *Decent Homes*	1 in 600–1100	12–22	0	0	1–2	11–20
Reduction		**11–49**	**–**	**0–1**	**1–5**	**9–43**

Estimates of the reduction in harm to health from excess cold will depend on the timing of the boiler replacement programme. Figure 4.9 summarizes the position in 2010 when nearly all non-condensing boilers have been replaced. The impact is confined to a relatively small group of occupants. Even with comprehensive boiler replacement, we estimate only between 2 and 31 fewer people will be harmed by exposure to excess cold within their dwellings, though this represents a possible 11 fewer Class I health outcomes (including death) per annum once the *Decent Homes Programme* is complete. These conservative estimates are in line with evidence (from our evaluation of *Warm Front*[10]) that a significant minority of residents prefer to maintain low temperatures even after the installation of new heating systems.

The rise in temperatures brought about by energy efficiency measures and external works to the tower blocks will reduce

[10] Critchley, R., Gilbertson, J., Grimsley, M. and Green, G. (And the *Warm Front* Study Group) Living In Cold Homes After Heating Improvements Evidence From *Warm Front*, England's Home Energy Efficiency Scheme. Applied Energy: 84, pp147-158.

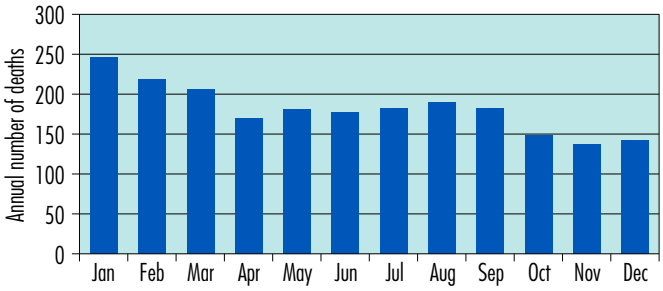
condensation, and in turn the prevalence of damp and mould. Trickle vents in new windows (*see Chapter 6*) supplied by the *Decent Homes Programme* will also reduce condensation as will extractor fans in kitchens and automatic ventilation in bathrooms. We estimate this combination of measures will reduce the proportion of properties suffering condensation damp and the likelihood of an occurrence of harm from between 1 in 220 and 400 to between 1 in 600 to 1 in 1100.

The number of occupants likely to suffer harm from damp conditions sufficient to warrant medical attention falls by a maximum of 49 annually from the baseline year to between 12 and 22. Children will be the main beneficiaries, with a reduction in the likely incidence of cases of asthma.

Cost-benefit

The health benefits of improved energy efficiency may appear modest, but as Figure 4.11 shows, there is scope for reducing headline excess winter deaths (EWD) in Ealing. Figures supplied by Ealing's Director of Public Health show more deaths in the Winter months (January, February and March) compared with the rest of the year. The high end

Figure 4.11: **Seasonal variation in deaths in Ealing**



Source: ONS PH Mortality File (Ealing PCT)

estimate of 11 deaths saved by the *Decent Homes Programme* would help reduce the excess.

Chapter 7 compares costs and benefits more systematically; concluding that lifetime benefits of £7.1m are substantially outweighed by the £56.9m invested in energy efficiency measures. However health benefits also flow to those whose poor health is unrecorded. Death is only the tip of an iceberg of residents submerged by impoverished lives. An enduring legacy of the *Decent Homes Programme* energy efficiency improvements will probably be the alleviation of stress caused by fuel poverty, increased thermal comfort and the subsequent improvement in mental health.

5
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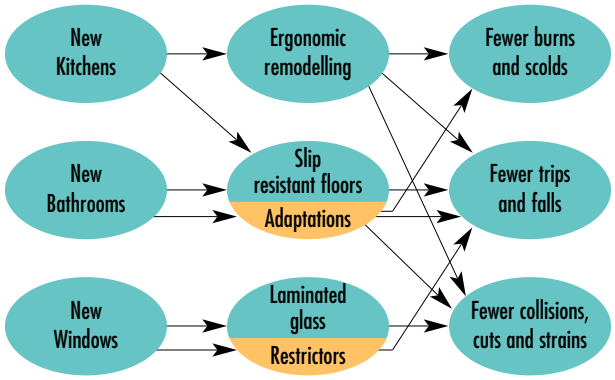
Key message 1: ***Remodelling kitchens and bathrooms as a major element of the Decent Homes Programme will reduce falls, trips, scolds and burns, with substantial savings to the NHS.***

Key message 2: ***Preventing accidents in the home should be a key element of Ealing's Integrated Falls Strategy and service.***

Introduction

New kitchens and bathrooms are a major element of the *Decent Homes Programme*, accounting respectively for investments of approximately £77.3 million and £35.4 million. Together with new windows they should have a major impact (figure 5.1) on improving safety in the home, reducing burns and scolds, trips and falls, collisions, cuts and strains, trips and falls. In addition, the risk of trips and falls should be reduced by estate investment of £5.3 million in access and lifts plus £17.9 million in lighting and securing common areas.

Figure 5.1: **Reducing accidents**



Older people are major beneficiaries. Published in 2001, the UK Government's *National Service Framework for Older People*[1] emphasised falls as a major cause of disability and the leading cause of mortality due to injury in older people aged over 75. Standard 6 aimed to '*Reduce the number of falls which result in serious injury and ensure effective treatment and rehabilitation for those who have fallen.*' Primary Care Trusts and Local Authorities are required to work together on an Integrated Falls Strategy and an integrated service. Government advice[2] [3] emphasises person-centred prevention and care, though also acknowledging the wider housing context. Unlike Energy efficiency and fuel poverty (highlighted in the previous chapter) accidents in the home is not a key objective of Ealing's Housing Strategy.[4]

Accidents

By far the greatest number of accidents in the UK occurs in the home. Approximately 2.8 million a year warrant a visit to an accident and emergency department of the NHS.[5] Inside the home, most accidents occur in the living/dining room (315,000) followed by 266,000 in the kitchen. However there are more accidents in the garden, on paths and driveways and in garden sheds (469,000).[6]

Eleven of all the 29 hazards identified in the Housing Health and Rating System[7] lead to accidents. Of these 1,248,000 falls (figure 5.2) are the biggest sub-group,[8] accounting for 46% of all home accidents for which medical

1 Department of Health (2001) *National Service Framework for Older People.* Department of Health. London.

2 Department of Health (2003) *How can we help older people not to fall again? Implementing the Older People's NSF Falls Standard: Support for commissioning good services.* Department of Health. London.

3 National Collaborating Centre for Nursing and Supportive Care (2004) *Falls: the assessment and prevention of falls in older people.* National Institute for Clinical Excellence. London.

4 Housing Strategy Section (2004) *Housing Strategy 2004-9: A Housing Strategy for Social Inclusion.* Ealing Borough Council.

5 Royal Society for the Prevention of Accidents www.rospa.com/factsheets/general_accidents PDF (accessed 11/06/06).

6 Department of Trade and Industry. (2001) *Home Accident Surveillance System: 23rd Annual Report: Accident Data and Safety Research Home, Garden and Leisure.* DTI London.

7 Office of the Deputy Prime Minister. (2006) *Housing Health and safety Rating System: Operating Guidance.* ODPM Publications.

8 Department of Trade and Industry. (2002) *24th (Final Report) of the Home Accident Surveillance System:2000, 2001,2002 data.* DTI London.

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attention was sought. The great majority of these relate to the design, construction and maintenance of the dwelling. In Ealing there is no robust record of accidents in the home requiring medical attention, though approximately 230 falls annually result in hospital admission requiring nearly 5000 bed days.[9]

Figure 5.2: **Annual UK falls in the home**

	Type of fall	*Annual number*
1.	On same level (slip/trip/tumble)	417,893
2.	On/from stairs/steps	306,168
3.	On/from ladder/step ladder	35,281
4.	4. From building/structure	11,624
5.	Other fall[6]	476,994
Total		**1,247,960**

Source: HASS Table 1. DTI. 24th (Final Report) of the Home Accident Surveillance System:2000, 2001,2002 data.

Most identifiable falls are on the same level. The ODPM *Operating Guidance* distinguishes falls in bathrooms (hazard 19) from other falls on the level (hazard 20) with the main cause as *'slipping when getting into and out of the bath. Thus the slip resistance of the internal surfaces of the baths and showers when wet will affect the likelihood of an incidence occurring.'* The most common injuries are cuts or lacerations (27 per cent), swelling or bruising (26 per cent) or fractures (11 per cent). For falls on the level, the *Guidance* identifies '*the construction, evenness, inherent slip resistance, drainage (for outdoor path surfaces) and maintenance of the floor or path surface as affecting the likelihood of an occurrence' and the severity of an outcome.*' As with bathrooms, functional space and ergonomics also affect likelihood. These falls usually result in relatively minor injuries, though about 15 per cent can result in Class I or Class II injury such as fractures to head, brain and spine.

Figure 5.3: **Children more likely to fall on the level**

Image: Tarkett-Marley Floors Ltd.

The second most common occurrence – accounting for around 25 per cent of home falls, is falling on steps and stairs, both inside and outside the home. The likelihood is greater on narrow and winding stairs, with irregular treads, without handrails or carpets. Though stair falls are not as common as falls on the level, the likelihood of a fatal accident is higher and fractures may lead to deterioration in health over the ensuing weeks and months. Falls between levels, generally out of windows, are a rare event, but can prove fatal especially from the first floor and above.

There is a second cluster of three hazards associated with electric shocks, fires, burns and scalds. ***First***, electric shocks are rare and caused by deficiencies in electric wiring, plugs, leads and appliances, most often in the living/dining room and kitchen. The majority of injuries are not severe and about half result in burns as well as shock. ***Second***, according to the Guidance there are around 70,000 dwelling fires reported to the Fire Brigades in the UK each year, with an additional 280,000 (small scale) fires going unreported. Over 80 per cent of accidental fires result from occupier carelessness or misuse of equipment or appliances. About half relate to cooking appliances, with a minority of these caused by deficiencies in equipment or how the cooker is sited.

Though over 90 per cent of fires do not result in injury, death can result from burns and being overcome by gas or smoke. ***Third***, the likelihood of scalds and burns is influenced by 'the design and layout of kitchens, the relationship between the kitchen and living/dining areas, the cooker location, the design or adjustment of fixed heating appliances, and the means of heating water.' There is a relatively high risk of scalds and burns from flames or hot surfaces in homes with unfixed heaters

[9] Ealing PCT Local Delivery Plan 2006-2008: Draft 2, page 36 (2005). Ealing Primary Care Trust.

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and poor kitchen layout, resulting in spills from cups, kettles, tea and coffee pots, saucepans, chip pans and deep fryers. Consequently around 112,000 people visit hospital accident and emergency units and a further 250,000 visit GP surgeries for burns and scald injuries, incurred principally in the home.

Reviewing the whole range of hazards, sometimes children are most at risk; sometimes older people. Older people are more likely to be injured in bathrooms and to fall down stairs. Though children under five are more likely to trip, stumble or fall on the level, the impact on older people is generally more severe, with immediate physical injury and longer term loss of confidence. Children are more likely to fall out of windows, to receive an electric shock or suffer scalds and burns from other sources. And though a household with children is twice as likely to experience a fire as one without, it is older people with impaired mobility who are least likely to escape.

Figure 5.4: **Average likelihood of an occurrence of harm from accidents in the home**

HAZARD	*Ealing v UK average*	*Average likelihood Range between*	*Spread of health outcomes*			
			Class I %	*Class II %*	*Class III %*	*Class IV %*
Falls associated with bathrooms	National average Ealing Homes	1 in 3000–5400 **1 in 3000–5400**	1.9	3.6	10.3	84.2
Falling on the level	National average Ealing Homes	1 in 100–180 **1 in 75–130**	0.2	13.8	27.3	58.7
Falling on stairs and steps etc	National average Ealing Homes	1 in 180–330 **1 in 160–280**	1.9	6.7	21.7	69.7
Falling between levels	National average Ealing Homes	1 in 1300–2300 **1 in 1100–2000**	0.2	1.8	9.9	88.1
Electrical hazards	National average Ealing Homes	1 in 13,000–22,000 **1 in 11,000–20,000**	0.6	8.2	49.2	42.0
Fire	National average Ealing Homes	1 in 3600–6300 **1 in 3600–6300**	7.0	2.6	29.1	61.3
Flames and hot surfaces	National average Ealing Homes	1 in 140–240 **1 in 120–210**	0.0	1.3	17.8	80.9

Baseline

Surveyors for the *Decent Homes Programme* assess that over 85 per cent of kitchens, bathrooms and windows are in need of replacement. Much of the impetus is to modernise these facilities to bring them into line with the rest of society. But there is an important safety issue. In 95 per cent of properties, kitchens require complete rewiring to bring them up to modern safety standards, reducing overloaded sockets and trailing leads. Over 85 per cent of kitchens need remodelling to improve ergonomics and minimise accidents resulting in falls, scalds and burns. Over 80 per cent of the kitchen floors are uneven and often covered with layers of damaged and slippery linoleum or carpets, increasing the likelihood of falls.

Many bathrooms have a cramped and inefficient layout, with old floor covering which increases the likelihood of slips and falls; baths are old fashioned and slippery. The special needs of disabled people are only partially met, with a requirement for more walk-in showers, grab rails and other adaptations which reduce the likelihood of falls and promote independence. Windows are old fashioned with very few meeting the BS standard for restricting opening and reducing falls.

These local conditions, coupled with data on the age structure of tenants, are used to vary our estimates from the national likelihood of harm arising from a number of hazards. Figure 5.4 shows how the likelihood of an occurrence of harm in Ealing Borough Council dwellings compares with the national average.

For falls on stairs or steps we have assumed more likelihood of harm (typically between 1 chance in 160 and 1 in 280) compared with the national average (typically between 1 chance in 180 and 1 in 330).

Most Ealing Council homes are flats without stairs or steps, but many of their occupiers use external stairwells, often poorly lit and in poor condition. For falls on the level we assess that the typically poor condition of floors and poor layout of kitchens will increase likelihood of

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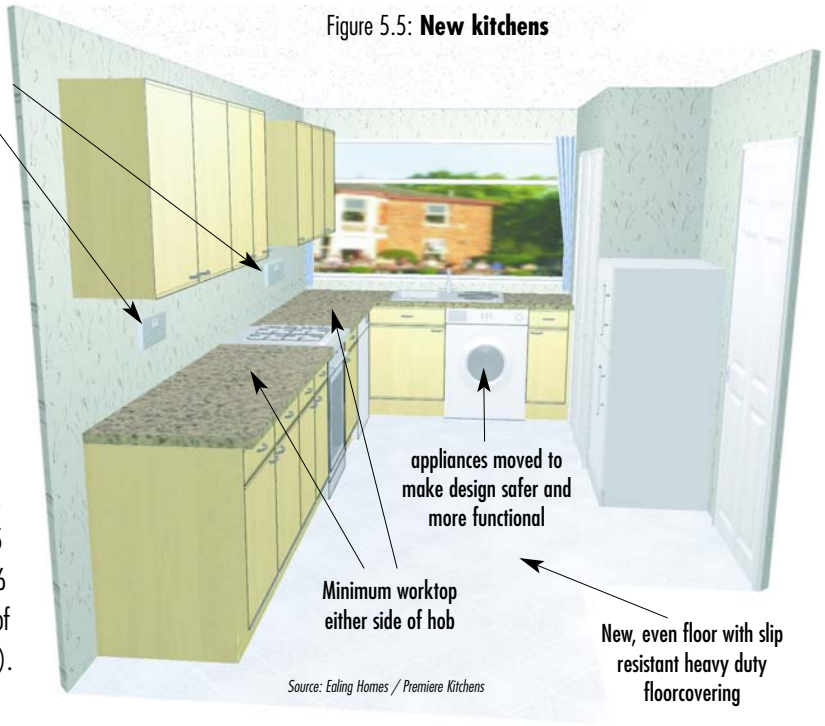
harm to between 1 in 75 and 1 in 130 compared with the national average, typically between 1 in 100 and 1 in 180. Falls between levels, principally from windows, will also be higher than the national average because many fewer windows will have restrictors. The likelihood of harm from electrical hazards will be greater than average because kitchens require complete rewiring. The likelihood of scalds and burns is also higher because of the poor layout of kitchens.

Figure 5.5: **New kitchens**



Impact of the *Decent Homes Programme*

Generally, investment in new kitchens, bathrooms and windows will improve safety. Figure 5.5 illustrates measures to improve kitchens. Figure 5.6 gives our estimates of the reduction in likelihood of harm from six hazards (fire remaining the same). These likelihoods apply to 13100 properties.

We estimate that ***falls on the level*** requiring medical attention will reduce significantly from between 102 to 177 to between 74 to133 as a result of a major investment in remodelling kitchens. Complete rewiring will eliminate trailing leads and better ergonomics will reduce stumbles and trips. Uneven surfaces are rectified and in all cases new Marley Safetred Dimension[10] floor heavy duty covering with a higher slip resistance (R10[11]) replaces previous, often damaged floor covering, with a lower slip resistance (R9) reducing the likelihood of slips. Though the main impact will be to reduce minor injuries, we also estimate a reduction of up to 14 serious (class II) injuries.

We also estimate a reduction of up to 43 ***falls on steps or stairs*** as a result (a) of remodelling kitchens and bathrooms and (b) of upgrading common areas outside properties. Though ***falls between levels*** are uncommon, we estimate the new window systems with restrictors (See Chapter 6) will result in a marginal reduction of up to 6 annually. More in-depth empirical research may reveal a greater impact.

The estimated number of ***falls in bathrooms*** is small and will reduce slightly as a result of the installation of (a) standard non-slip baths, (b) Safetred floor covering with a higher slip resistance (R10) than the previous floor covering (R9) and (c) special adaptations and equipment recommended by the Occupational Therapy Service (OT). Surveyors report that on average 250 households are referred to the OT service annually. Most residents using the OT service receive a combination of equipment and adaptations. Many referrals result in the provision of bathing equipment though approximately a quarter result in the installation of showers with level access to replace baths. The main objective of the OT service is to maintain the independence of persons with a

[10] Tarkett Sommer. *Appropriate specification for slip resistant floor covering.* COM028 01/03. Tarkett Sommer.

[11] Health and Safety Executive (2004) *The assessment of pedestrian health risk.* HMSO. London.

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disability and though this is beyond the remit of this HIA, our Liverpool study showed it is possible to increase activities of daily living (ADL).[12]

In the second cluster of three hazards, we estimate a minor reduction in ***electric shocks*** (as a result of rewiring the kitchen) and, provisionally, no reduction in harm from fire. There is evidence however that the risk of harm from ***fire*** is decreased by the routine installation or refurbishment of fire alarms.[13] On the other hand, further in-depth empirical research may reveal that the new window design (see chapter 6) may limit easy egress in case of fire. However we do estimate that better kitchen ergonomics will reduce contact with ***flames, hot surfaces*** and hot water, resulting in a major reduction of up to 58 individuals suffering from burns and/or scalds.

Figure 5.6: **Impact of *Decent Homes Programme* to reduce accidents**

HAZARD		Likelihood of occurrence Range between	Dwellings where person suffers harm	Spread of health outcomes Class I	Class II	Class III	Class IV
Falls associated with baths	Before	1 in 3000–5400	3	0	0	0	3
	After	1 in 3700–6700	3	0	0	0	3
	Reduction		0	0	0	0	0
Falling on the level	Before	1 in 75–130	102–177	0	14–24	28–48	60–104
	After	1 in 100–180	74–133	0	10–18	20–36	43–78
	Reduction		0–103	0	0–14	0–28	0–61
Falling on stairs and steps etc	Before	1 in 160–280	48–83	1–2	3–6	10–18	33–58
	After	1 in 180–330	40–74	1–1	3–5	9–16	28–52
	Reduction		0–43	0–1	0–3	0–9	0–30
Falling between levels	Before	1 in 1100–2000	7–12	0	0	1–1	6–11
	After	1 in 1300–2300	6–10	0	0	1–1	5–9
	Reduction		0–6	0	0	0	0–6
Electrical hazards	Before	1 in 11,000–20,000	1	0	0	1–1	0
	After	1 in 15,000–27,000	1	0	0	0–1	0
	Reduction		0	0	0	0–1	0
Fire	Before	1 in 3600–6300	2–4	0	0	1	1–2
	After	1 in 3700–6700	2–4	0	0	1	1–2
	Reduction		0	0	0	0	0–1
Flames and hot surfaces	Before	1 in 120–210	63–111	0	1–1	11–20	51–90
	After	1 in 140–250	53–95	0	1–1	9–17	43–77
	Reduction		0–58	0	0	0–11	0–47

Cost-benefit

New kitchens, doors and windows are major components of Ealing's *Decent Homes Programme*. Together costing over £150 million, they constitute over half the investment package. The principal benefit of this investment in modern facilities is bringing tenants into the mainstream expectations of society, with this wider sense of inclusion contributing to mental health and well-being. A spin off is the reduction of up to 220 accidents a year requiring medical attention. An analysis by Ealing PCT shows that in 2003/4, 233 patients were admitted to hospital with falls (including but not exclusively in the home) with an average length of stay of 20 days, equivalent to 4714 bed days.[14]

Savings to the NHS are estimated in the cost-benefit analysis in chapter 7 of this report. Costs will depend upon the length of stay in hospital and as *Scuffam et al* argue *'in addition, because a fall may be a catalyst for older people to move into long term nursing home care, we assumed a conservative estimate (£9594 at 2000 prices) for six months long term care costs could be attributed to inpatients transferred to long term care.'*[15]

[12] Critchley R., Gilbertson J., Green., Grimsley MJ. (2004) *Housing Investment and Health in Liverpool.* CRESR. Sheffield Hallam University.

[13] Office of the Deputy Prime Minister (2005) *Fire Statistics.* United Kingdom 2003. ODPM. London.

[14] Ealing PCT Local Delivery Plan 2006-2008: Draft 2, page 36 (2005). Ealing Primary Care Trust.

[15] Scuffam P., Chaplin S and Legood R. *Incidence and costs of unintentional falls in older people in the United Kingdom.* J. Epidemiol. Community Health 2003;57;740-744.

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Key message: ***Investment in the redesign of Ealing Council Estates together with new windows and doors planned for nearly every dwelling in the Decent Homes Programme, will improve security, promote feelings of safety and have a major impact on mental health and well-being, with cost savings to the NHS.***

Challenges

Freedom from crime and the fear of crime is a priority for the people of Ealing, reflected by the Local Strategic Partnership in their *Vision* for Ealing in 2016 as 'one of the safest places in London.'[1] Though crime has fallen in recent years, it is still a major concern. According to Ealing's Housing Strategy *'The Ealing Annual Residents Surveys and the 2002 Crime and Disorder Audit show crime and the fear of crime as a principal concern of the community.'*[2]

Crime is a problem on most council estates where the map (figure 6.1) locates many burglary hotspots. South Acton, the biggest estate, presents one of the biggest challenges. In their *Crime Opportunity Profile*,[3] Crime Prevention Design Advisors Patrick Cogan and Bob Masdin refer to a consensus 'that the original architectural design, landscaping and subsequent management and maintenance of the estate have contributed to crime and disorder problems for residents and impeded the development of social cohesion.' In the financial year 2002/3 there were 1066 allegations of crime on an estate of just over 1000 dwellings, including 92 common assaults, 79 robberies, 77 cases of actual bodily harm and 70 residential burglaries. Lesser but still significant levels of crime blight many other council estates.

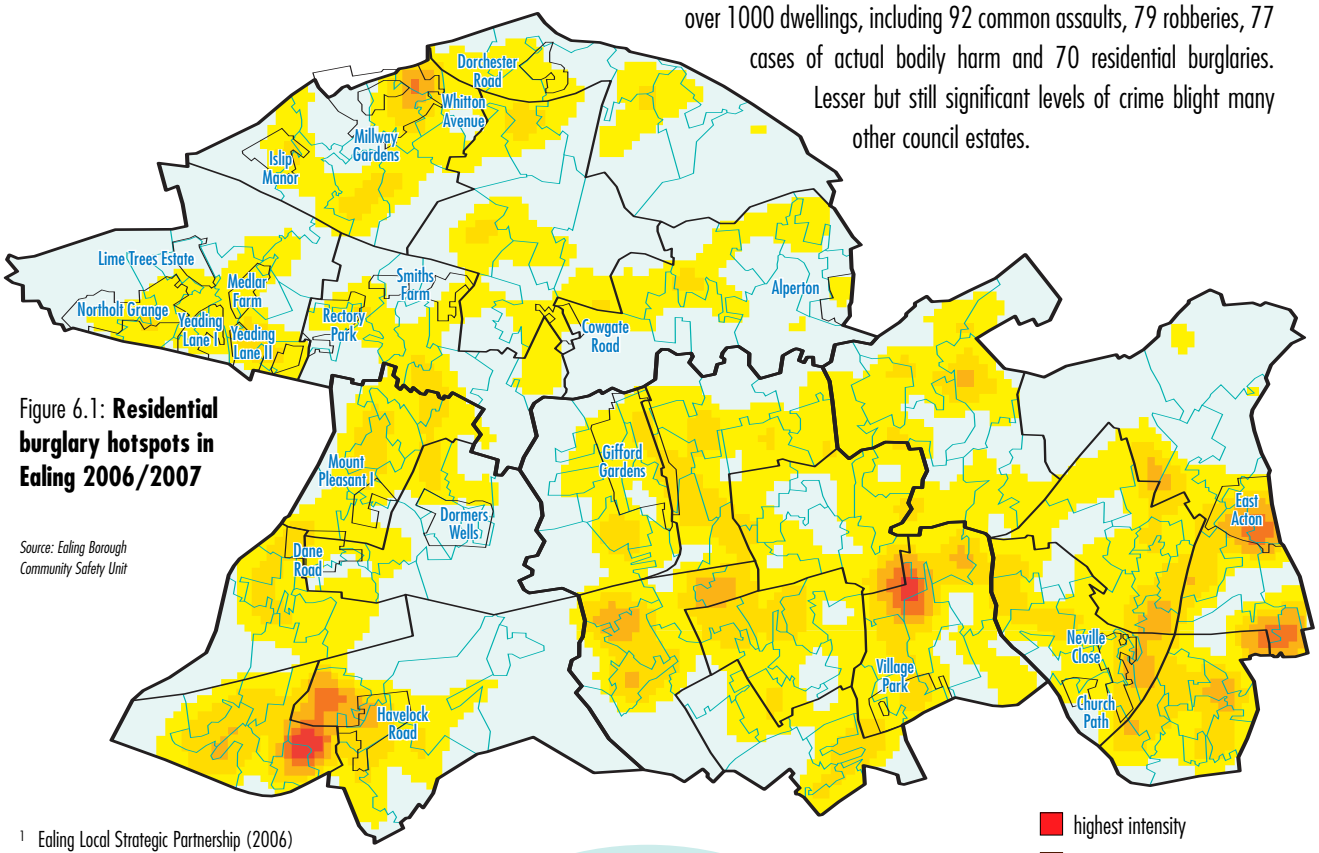

Figure 6.1: **Residential burglary hotspots in Ealing 2006/2007**

Source: Ealing Borough Community Safety Unit

1 Ealing Local Strategic Partnership (2006) *Success through Diversity.* Ealing Borough Council

2 Ealing Housing Strategy Section. (2003) *A Housing Strategy 2004-9: A Housing Strategy for Social Inclusion.* Ealing Borough Council.

3 Patrick Cogan & Bob Masdin (2003) The South Acton Estate: *A Crime Opportunity Profile.* London Metropolitan Police.

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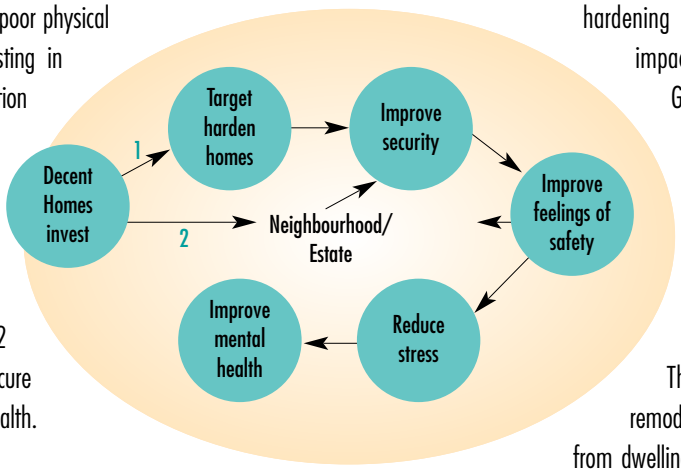
Opportunities

'Housing is a key player in meeting the strategic objectives of Ealing's Crime and Disorder Reduction Strategy' says the Borough Housing Strategy: and the *Decent Homes Programme* gives a realistic prospect of success. For if poor physical design contributes to crime, then reinvesting in good design can contribute to crime reduction and help to alleviate fear of crime. Ealing Homes is committed to the Secured by Design (SbD) initiative of the Association of Chief Police Constables[4] which addresses both individual dwellings and the estate environment. Figure 6.2 illustrates probable pathways from (1) secure homes and (2) estates to better mental health.

Figure 6.2: **Secure by Design**



There is considerable research evidence (of variable quality) to show that installing home security measures (within a variety of neighbourhood contexts) reduces the chances of burglary. The Home Office reports:

> *'Households where there are no home security measures were far more likely to have been victims of burglary (14.7%) than those where there were simple security measures such as deadlocks on doors and window locks (2.8%).'*[5]

In a wide ranging review[6] for the Suzy Lamplugh Trust Research Institute at the University of Glamorgan, Paul Cozens and others take a critical review of the evidence on the impact of SbD, distinguishing target hardening of properties from the design of housing estates. Target hardening has a more evident impact: an evaluation for Glasgow Housing Association concludes that installing doors and windows to SbD standards reduces burglaries by 75%.[7]

The benefits from remodelling estates (as distinct from dwellings) are more difficult to evaluate, for at least three reasons. *First*, Richard Schneider and Ted Kitchen highlight the difficulty of disentangling the various elements of estate design and then distinguishing their impact from that of complementary initiatives, for example to improve social cohesion.[8] Rachel Armitage, who detected a reduction of 50% in burglary rates in West Yorkshire in 2000,[9] has recently attempted[10] to address the controversial issue of permeability – in short concluding that a layout which encourages non-residents to pass through an estate compromises security, despite claims that such activity provides natural surveillance.

Second, flawed estate layouts may be irreversible according to Barry Poyner's final book,[11] with improvements often bringing only a temporary regeneration 'bounce.' *Third*, again highlighted by Schneider and Kitchen, the local Architectural Liaison (Police) Officers have considerable discretion in the local interpretation of SbD. In Ealing the prospects appear higher than average because of the meticulous background research undertaken by the two 'Crime Prevention Design Advisors' (ALOs by another name) and their formal and systematic involvement with the *Decent Homes Programme*.

The ***emotional impact*** of burglary is well documented by the British Crime Survey. Figure 6.3 reproduced from the British Crime Survey of 2002/03 shows 83%

4 www.securedbydesign.com (accessed 20/11/2007)

5 Nicholas S., Povey D., Walker A and Kershaw C (2005) (Table 4.01) *Crime in England and Wales 2004/5* Home Office Statistical Bulletin, National Statistics, London.

6 Cozens P.M., Pascoe, T., Hillier D. *Critically Reviewing the Theory and Practice of Secured-By-Design for Residential New Build in Britain.* Crime Prevention and Community Safety: An International Journal. Volume 6, Issue Number 1, pages 13-29 (2004)

7 Strathclyde Police. (2004) *Summary Evaluation: Secured by Design Installations in GHA Communities.* Glasgow Housing Association.

8 Schneider RH and Kitchen T (2007) *Crime Prevention and the Built Environment*, Routledge, Abingdon.

9 Armitage R (2000) An *Evaluation of Secured by Design Housing within West Yorkshire.* Briefing Note 7/00. Policing and Reducing Crime Unit. Home Office.

10 Armitage R (2006) Predicting and preventing: developing a risk assessment mechanism for residential housing. *Crime Prevention and Community Safety.* Vol 8. 137-149.

11 Poyner B (2006) *Crime-free Housing in the 21st Century.* University College London. Jill Dando Institute of Crime Science, London.

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Figure 6.3: **Emotional impact of burglary, England 2002/03**

	All burglary	*Burglary with entry*	*Attempted burglary*
% Respondent was emotionally affected	*83*	*85*	*81*
% Not affected	17	15	19
Type of emotional response from those affected*			
Anger	*49*	*57*	*39*
Shock	*32*	*40*	*21*
Fear	*24*	*25*	*24*
Difficulty sleeping	*25*	*29*	*20*
Crying/tears	*14*	*19*	*6*
Depression	*11*	*15*	*5*
Anxiety or panic attacks	*12*	*15*	*10*
Loss of confidence or feeling vulnerable	*25*	*29*	*21*
Annoyance	*39*	*38*	*41*

Source: British Crime Survey 2002/3; table 4e, Crime in England & Wales, 2002/03 [12]
** more than one response was allowed. Figures shown are percentages.*

of all respondents who were victims of burglary were emotionally affected in some way, with attempted burglary also having a significant affect. Additionally the HHSRS takes account of the harmful impact on victims' neighbours, who may experience a heightened sense of insecurity.

Reaction to burglary ranges from stomach churning fear to mild annoyance, and no doubt feeds raised levels of stress.[13] Our own study[14] of residents transferring from Liverpool tower blocks identifies a significant relationship between fear of crime, stress and mental and emotional health. Stressed residents scored 10 percentage points lower than non-stressed residents on a Mental Health Index scale (MHI5) of 1-100; those who feared crime were 11 percentage points lower than those not fearful of crime.

Baseline

Though council estates suffer a variety of crimes, we have pragmatically confined this Health Impact Assessment to the harm associated with intruders intending to burgle. This is because by definition, domestic burglaries are confined to the home (rather than extending to the public realm) and we can be reasonably confident of determining the impact of home security measures. It is much more difficult to calibrate the potential for reducing the wide variety of crimes illustrated by the South Action Estate.

From the onset we distinguish the likelihood of harm to health because of intruders from the prevalence of burglaries, successful or attempted. The HHSRS (page 95 of the *Operating Guidance*) identifies flats on council estates as the special combination of tenure and archetype *most* likely to be harmful to health as a result of intruders. This is of course the predominant combination in dwellings managed by Ealing Homes. For every 8 flats on council estates there is likelihood that one person will suffer harm to health as a result of intruders. This harm, which is predominantly to mental health, may arise from the insecurities engendered by burglaries to neighbours' dwellings.

Included in our analysis are both 13,300 tenanted dwellings (wholly owned by the borough council) and 5000 leasehold dwellings originally bought by occupants under the Right to Buy scheme, where the freehold and common areas remain in the ownership of the borough council. Using the method developed in chapter 3, (based the Housing Health and Safety Rating System and providing a probable range of outcomes) figure 6.4 estimates the number of persons whose health is affected by burglary sufficient for them to seek medical attention.

Estimating the baseline likelihood of harm to health in Ealing's 10,428 council flats is relatively straightforward. Applying a coefficient of between 1 in 6 and 1 in 11 derived from the Operating Guidance gives between 948 and 1738 dwellings where a person suffers harm. The likelihood of harm for council houses on council estates is assessed as between 1 in 9 and 1 in 16 to reflect national tenure differentials in the prevalence of burglary.[15]

[12] Nicholas S. and Wood M. (2003) Chapter 4. *Property Crime in England and Wales.* Crime in England & Wales, 2002/03. Home Office. London

[13] East L. *The quality of social relationships as a public health issue: exploring the relationship between health and community in a disadvantaged neighbourhood. Health Soc Care Community* 1998: 6(3): 189-95

[14] Green G., Gilbertson JM., Grimsley MFJ. *Fear of Crime and Health in residential tower blocks: A case study of Liverpool, UK.* European Journal of Public Health 2002; 12: 10-15

[15] Nicholas S., Povey D., Walker A and Kershaw C (2005) (Table 4.01) *Crime in England and Wales 2004/5* Home Office Statistical Bulletin, National Statistics, London.

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The likelihood of harm for leaseholders (those who have bought their properties from the council) is assessed as between 1 in 6 and 1 in 11. Nearly all leasehold dwellings are on council estates; are flats rather than houses; and though the original shift in tenure to owner-occupation may have reduced the risk of burglary, subsequent letting to private tenants will have increased the risk again.

Figure 6.4: **Average likelihood and health outcomes from actual, and fear of, entry by intruders for persons of all ages 2004**

	Likelihood of an occurrence that could cause harm	*No. of dwellings where a person suffers harm*	*Spread of health outcomes (Nos.)*			
			Class I	*Class II 0.1%*	*Class III 9.1%*	*Class IV 90.8%*
Ealing Council flats	1 in 6–11 (of 10,428)	948–1738	0	1–2	86–158	860–1578
Ealing Council houses	1 in 9–16 (of 2882)	180–320	0	0	16–29	163–291
Total Ealing Council dwellings	**1 in 7–12 (of 13,310)**	**1109–1901**	**0**	**1–2**	**101–173**	**1007–1726**
Ealing Council leaseholders	1 in 6–11 (of 5014)	455–836	0	0–1	41–76	413–759

In total, how many residents are harmed? We estimate between 1109 and 1901 tenants and between 455 and 836 leaseholders; overall up to 2737 occupants with a spread of health outcomes based on the statistical profile given in the Operating Guidance. A small survey by Roger Donaldson[16] concludes that residents over 65 who were burgled were significantly more likely to be dead (Class I) or have become dependent than their (non-burgled) neighbours two years after the event. The Bristol study also reported *'the stress of burglary or vandalism can precipitate a major health crisis in old age* (Class II) *necessitating urgent admission to hospital. Despite reassurance and appropriate treatment, many patients never regain enough confidence to return home.'*[17] Class III and IV harms include depression and anxiety, of varying severity.

Impact of the *Decent Homes Programme* on tenanted dwellings

Prior to the *Decent Homes Programme* (and unlike the case with energy efficiency measures) only a small proportion of Ealing Homes had windows and doors of the highest standard. Officials estimate that all windows and half the doors (those in the poorest condition) will be upgraded to SbD standards. Contractors are required to source strong composite doors which meet enhanced security requirements (SbD Pass 124-1 and British Standard 7950). Windows are sourced to a high specification which meets the enhanced security standard BS 7950 including double laminate glazing, automatic locking and push button release.

These high specification doors and windows will considerably reduce the risk of burglary. Then security should be further enhanced by addressing problems identified in the profiles in chapter two – multiple access to deck walkways, uncontrolled access to tower blocks, dark spaces between buildings and lack of defensible space. The combined effect of these measures on mental health is shown schematically in figure 6.2.

The average cost of all these external works – windows and doors plus communal areas – is estimated at £8000. The estimated impact on occupiers of council tenanted dwellings is shown in figure 6.5. The reduction in occupants whose health is affected by intruders is up to 1618 annually on completion of the *Decent Homes Programme* on December 31st 2010.

Our estimate of the reduced likelihood of harm in tenanted property is derived by multiplying the baseline likelihood by a ratio reflecting the reduced risk of burglary. Most risk factors such as location and tenure remain

[16] Roger Donaldson. *Experiences of older burglary victims.* Home Office Findings 198. (2003).

[17] Coakley D., Woodford-Williams E. *Effects of burglary and vandalism on the health of old people.* Lancet 1979 Nov 17;(2) (8151):1066-7.

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constant. The critical changes are improvements to the physical design of dwellings and their environment.

Our preferred method is to apply the 75% reduction in burglary post SbD evidenced by the Glaswegian evaluation referred to earlier. This calculation reduces the 1 in 7 to 12 likelihood of harm in the baseline assessment to a likelihood of between 1 in 26 and 1 in 47. A similar reduction in likelihood of harm can be derived by applying the national differentials in burglary rates relating to varying levels of security.[18]

Figure 6.5: **Impact on occupiers of council tenanted dwellings**

	Likelihood of an occurrence that could cause harm	*No. of dwellings where a person suffers harm*	*Spread of health outcomes (Nos.)*			
			Class I	*Class II*	*Class III*	*Class IV*
Before *Decent Homes*	1 in 7–12 (of 13,310)	1109–1901	0	1–2	101–173	1007–1726
After *Decent Homes*	1 in 26–47 (of 13,310)	283–512	0	0	26–47	257–465
Reduction		**597–1618**	**0**	**0–2**	**54–147**	**542–1469**

Impact of the *Decent Homes Programme* on leasehold dwellings

With leasehold property, the *Decent Homes Programme* will cover the communal fabric of flatted property and the common areas of the estate including communal doors. It covers all windows and doorframes (which count as the common fabric) but not the doors themselves. Insofar as leaseholders choose not to replace their doors to SbD standards, their occupants will be more vulnerable to burglary than their neighbours in council properties whose doors have been upgraded to meet SbD standards.

Generally, occupiers of leasehold dwellings, as with tenants, benefit from security measures to their property and the wider estate. Both the risk of burglary and the likelihood of harm will reduce in line with tenants' risk. However there is greater risk of burglary when doors are not improved to SbD. Since the mix of secured and non-secured is difficult to predict, we roughly estimate the overall likelihood of harm as between 1 in 22 and 1 in 40. We estimate (figure 6.6) that after the *Decent Homes Programme* is completed, up to 711 fewer occupants will be harmed as a result of intruders.

Figure 6.6: **Impact on occupants of dwellings leased from the council**

	Likelihood of an occurrence that could cause harm	*No. of dwellings where a person suffers harm*	*Spread of health outcomes (Nos.)*			
			Class I	*Class II*	*Class III*	*Class IV*
Before *Decent Homes*	1 in 6–11 (of 5014)	455–836	0	0–1	41–76	413–759
After *Decent Homes*	1 in 22–40 (of 5014)	125–228	0	0	11–21	114–207
Reduction		**227–711**	**0**	**0–1**	**20–65**	**206–645**

[18] Prevalence rates are taken from table 4.01 in the Home Office Report referred to earlier. For the baseline position, half the dwellings are assumed to have no security measures, and a 14.7% chance of being burgled in a year; half are assumed to have some security measures and a 2.8% chance of being burgled. Overall the risk of burglary declines by almost 75%, giving a reduced 1 in 35 likelihood of harm.

[19] Office for National Statistics (2000) *Psychiatric Morbidity Survey*. London. ONS

[20] Christine M Thomas and Stephen Morris. *Cost of depression among adults in England in 2000. British Journal of Psychiatry* Check figure and Ealing.

Overall impact of security measures

The combined impact of security improvements to both tenanted and leasehold dwellings is to reduce the number where an occupant suffers harm to health by between 824 and 2329. Figure 6.7 shows that most harms are moderate (Class IV) and linked to the emotional impacts summarised in figure 6.3. There is a smaller reduction in severe (Class I) harms than secured by measures to improve warmth and safety. Neverthless, security measures appear to have much the larger impact overall.

Figure 6.7: **Combined impact of improvements in security on occupants of tenanted and leasehold dwellings**

	No. of dwellings where a person suffers harm	*Spread of health outcomes (Nos.)*			
		Class I	*Class II*	*Class III*	*Class IV*
Before *Decent Homes*	1564–2737	0	0–3	142–249	1420–2485
After *Decent Homes*	408–740	0	0	37–68	371–672
Reduction	**824–2329**	**0**	**0–3**	**74–212**	**748–2114**

Figure 6.8: **Components of the direct NHS treatment cost of depression: England 2000**

Direct costs	*£k*	*%*
In-patient care	28,660	7.7
Day care	476	0.1
Out-patient care	22,133	6.0
General practitioner consultations	8,217	2.2
Antidepressant medication	310,378	84.0
Total	369,865	100

Source: Thomas & Morris

Cost benefit

Chapter 7 provides some preliminary estimates of direct cost savings to the NHS in Ealing and the indirect cost savings to the local economy and criminal justice system. The emotional consequences of burglary will feed into the prevalence rates for depression (28 per 1000 in women over 15 and 24 per 1000 for men) reported by the Office of National Statistics. According to Thomas and Morris this translated into 2.6 million cases referred to the NHS in England during the base year 2737. Ealing would have 16,000 cases a year if these same prevalence rates applied. There will be a significant overlap with the estimated maximum of 2330 occupiers of Ealing Borough Council dwellings so emotionally affected by burglary as to contact the NHS. The national breakdown of NHS costs for those with depression is shown in figure 6.8, with the majority of expenditure on antidepressant drugs.

7
Social Costs and Benefits

Key messages: ***Burglary crime on Ealing council estates is a bigger social problem than ill health arising from cold, damp or unsafe accommodation. Improving security is probably the most cost-effective investment for improving the health of council tenants and members of their households.***

Background

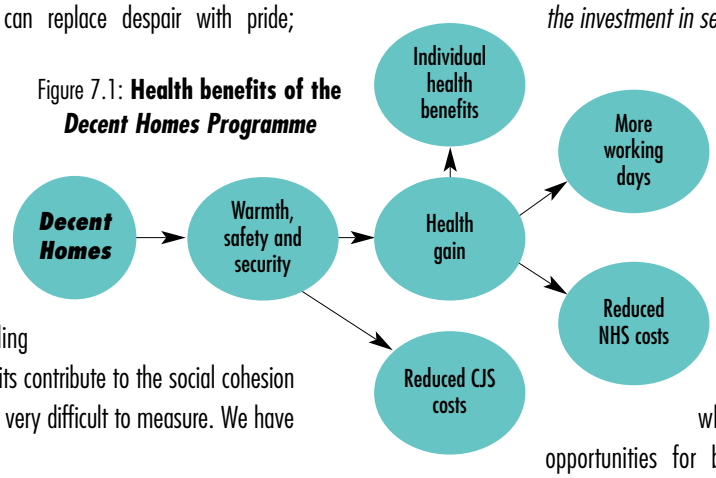
Previous chapters estimate gains in physical and psychological health stemming from improvements in warmth, safety and security generated by Ealing's *Decent Homes Programme*. In order to assist the intersectoral work of the Ealing Local Strategic Partnership, this chapter gives a very broad indication of social costs and benefits in monetary terms.

Here the focus is health gains and their money value to individuals, service providers and the economy. Our remit does not extend to all the benefits of interest to the LSP and highlighted in Ealing's *Housing Strategy*.[1] A refurbished estate can replace despair with pride; improved dwellings may promote council housing as tenure of choice rather than last resort; modern facilities change perceptions of council tenants as first rather than second class citizens, integrated into the mainstream social life of Ealing Borough. These less tangible benefits contribute to the social cohesion of the Borough as a whole, but are very difficult to measure. We have not attempted to do so here.

There are three types of measurable benefits derived from health gains in addition to the reduced costs of operating the criminal justice system stemming from improvements in household security. These are shown schematically in figure 7.1 and listed as follows:

- *the gains in physical and psychological health enjoyed by individuals as a result of greater warmth, comfort, safety and security*
- *the reduction in working days lost through physical and psychological ill-health*
- *the reduction of NHS treatment costs resulting from gains in physical and psychological health*
- *the reduction of cost in the criminal justice system stemming from the reduction in household burglaries caused by the investment in security*

Figure 7.1: **Health benefits of the *Decent Homes Programme***



The estimates below show how the most important measurable benefits derive from increased security. However a major caveat is the possibility of "crime displacement." The essential question is whether by removing the opportunities for burglary on Ealing council estates, crime is displaced elsewhere, to neighbourhoods nearby or even to leaseholders on the same estate who have declined to pay for new 'secured by design' doors.

Though the issue was not addressed by the local crime opportunities profiles[2] referred to in the security chapter, the Metropolitan Police point to a reduction in overall burglary over the past five years, maybe attributable to greater security measures in the private sector. Crime displacement has been analysed and vigorously debated since the early

[1] Housing Strategy Section (2004) *Housing Strategy 2004-2009: A Housing Strategy for Social Inclusion.* Ealing Borough Council.

[2] Patrick Cogan & Bob Masdin (2003) *The South Acton Estate: A Crime Opportunity Profile.* London Metropolitan Police.

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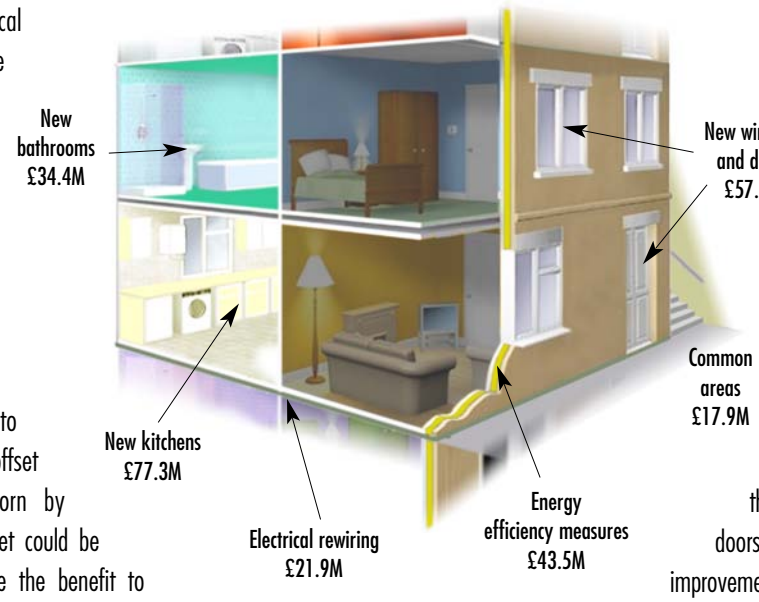
1990s but without any consensus emerging about its nature and extent.[3] [4] Researchers are currently investigating local crime displacement effects in the UK using more rigorous analytical and statistical methods than those typical of earlier studies[5] but results are not yet available.

The displacement issue is clearly critical when estimating the overall social benefits of the security programme. If there was complete geographical displacement – if the reduction of offences in area A (such as the South Acton Estate) resulted in an increase of same number and same type of offences in area B (such as Ealing Common) – then the benefits accruing to residents of A would be offset by additional costs born by residents of B. The offset could be complete, in which case the benefit to residents of A and B taken together would be zero.

We emphasise that the computation of social benefits from the security programme assumes a zero displacement effect – even though this assumption maybe modified by evidence from ongoing research. The results for the security programme should not be read or presented on any other basis.

Figure 7.2: **Components of investment in Ealing's *Decent Homes Progamme***



Estimation

Within resources available it has not been possible to undertake a full-scale cost-benefit analysis. Our estimates are provisional and the figures are indicative only. We must emphasise that the triangulation exercise by which these results are derived means that they are to be read only as illustrative estimates of very broad orders of magnitude.

The costs of the key elements of the programme are shown in figure 7.2 and enumerated more precisely in the appendix to this chapter. Health gains from greater warmth and comfort are assumed to stem from the £43.5 million to be invested in energy efficiency measures and a proportion of the £57.1 million to be invested in doors and windows. Health gains from improvements in safety are assumed to stem mainly from the £77.3 million investment in kitchens and the £35.4 million in bathrooms, though electrical rewiring costing £21.9 million will also contribute. Health gains from greater security will come the £57 million invested in doors and windows and £17.9 million in common areas. Though the investment programme of £330 million is confined to the seven year period from 2004/5 to 2010/11, the legacy will extend to 2030 and beyond.

The benefits

In the chapters on warmth, safety and security, our estimates of health gain were derived indirectly using evidence from the *Housing Health and Safety Rating System*. Those chapters presented a probable range of health gains. In order to simplify computation, this chapter

[3] S Town (2001) "Crime Displacement: The Perception, Problems, Evidence and Supporting Theory" (at www.crimereduction.gov.uk).

[4] Home Office (2002) "Displacement Theory" (at www.crimereduction.gov.uk).

[5] D McLennan and A Whitworth (2007) "Problem of Displacement or Diffusion of Benefit? Spatial Analysis of Crime Outcomes and Resultant Implications for the New Deal for Communities Programme." (at www.cscs.ucl.ac.uk/events-1/cmc-2007).

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assumes mid-range estimates for each domain. Then, the four types of benefit flowing from these health gains are also derived indirectly using relevant published studies and sources. The computational methods are fully described in the Appendix which also identifies the studies and sources. Again it should be stressed that estimates derived by this indirect method can only be illustrative of broad orders of magnitude.

Coefficients derived from these studies are applied to each of the key components of warmth, safety and security. For health benefits, well established Quality Adjusted Life-years (QALYs) are applied to the four classes of harm. The number of working days saved is derived from Home Office estimates[6] as are the reduced costs of the Criminal Justice System. Savings to the NHS are derived by multiplying the average treatment cost per case[7] by the estimated annual reduction in cases by class of harm to health. These benefits will accrue over the 15 year life of heating measures to improve warmth and the 30 year life of measures to improve safety and security.

Figure 7.3: **Warmth Programme: Social costs and benefits**

Discounted present value of costs £ million 2005/06 prices		*Discounted present value of lifetime benefits (15 years) £ million 2005/06 prices*	
Improved heating systems plus insulation and the double glazing of windows		*Health gains*	*£4.7*
		Reduction in working days lost	*£1.7*
		Reduction in NHS costs	*£1.0*
Total	**£56.9**	**Total**	**£7.4**

Figure 7.4: **Safety Programme: Social costs and benefits**

Discounted present value of costs £ million 2005/06 prices		*Discounted present value of lifetime benefits (30 years) £ million 2005/06 prices*	
Ergonomic improvements and non-slip floors in kitchens and bathrooms, electrical rewiring, renewed internal fabric and common areas, adaptations to improve activities of daily living		*Health gains*	*£7.7*
		Reduction in working days lost	*£0.2*
		Reduction in NHS costs	*£1.4*
Total	**£153.5**	**Total**	**£9.3**

Warmth Programme: Social costs and benefits

The illustrative estimates of social benefit and the estimate of costs are shown in figure 7.3. All estimates are derived using the sources and methods described in the appendix. All figures are discounted present values (see Appendix section 5). The cost figure does not include any estimate of the disruption caused to residents.

The unfavourable ratio of social benefits to cost of 0.13 to 1 reflects two factors:

- *the very small number of annual beneficiaries under the warmth programme – as figures 4.9 and 4.10 show, only an average of 42 individuals per year benefit from the warmth programme*
- *the relatively short length of life of the warmth programme (15 years)*

Safety Programme: Social costs and benefits

Figure 7.4 shows the illustrative estimates of social benefit and the estimate of costs, all of which are computed on the same basis as the estimates in figure 7.3.

This programme shows an even more unfavourable ratio of social benefit to costs than the warmth programme (of .06 to 1). This is a reflection of two factors:

- *the reduction in ill health which this programme achieves is predominantly in health outcome Classes III and IV and thus at the mild end of the ill health spectrum (see figure 5.5) – this accounts for the fact that although this programme has 33% more annual beneficiaries than the warmth programme (average 56 compared to 43), it generates only 18% more annual QALYS (12.75 compared to 10.75); and also explains why the savings in working days lost and in NHS costs are modest*
- *the programme is more than two and a half times more expensive than the warmth programme*

[6] Home Office (2005) *"The Economic and Social Costs of Crime Against Individuals and Households"* Online Report 30/05 (at www.homeoffice.gov.uk/rds/pdfs05/rdsolr3005.pdf).

[7] Department of Health (2006) "The NHS Reference Costs 2005/06" (at www.dh.gov.uk/en/Publicationsandstatistics).

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Security Programme: Social costs and benefits

The illustrative estimates of social benefit and the estimate of costs are shown in figure 7.5, and are computed on the same basis as the estimates in figure 7.3. But specific to this table is:

- *an assumption of zero crime displacement*
- *the inclusion of savings in the cost of the criminal justice system as a social benefit*

The (spectacularly) favourable ratio of benefits to costs in this programme of 15.3 to 1 is largely driven by the scale of estimated health gains. In fact it derives from the following combination of specific factors:

- *the high number of annual beneficiaries – 1 634 (figures 6.5 and 6.6)*
- *the greater seriousness of the health loss caused by crime (see Appendix sections 1 and 2)*
- *the low cost of the programme*
- *the extended (30 year) length of life of the programme*

Figure 7.5: **Security Programme: Social costs and benefits**

Discounted present value of costs £ million 2005/06 prices		*Discounted present value of lifetime benefits (15 years) £ million 2005/06 prices*	
'Secured by Design' windows and doors, more secure common areas, better control of access		*Health gains*	*£404.5*
		Reduction in working days lost	*£1.8*
		Reduction in NHS costs	*£23.5*
		Reduction in CJS costs	*£33.3*
Total	**£30.2**	**Total**	**£463.1**

In comparison to the warmth programme the security programme has 40 times more beneficiaries per year (average 1634 as against 43); yields 54 times more QALYS per year (591 as against 10.75); and runs for twice as long (30 years rather than 15 years). Thus as a rough rule-of-thumb it should yield something less than 54 x 2 = 108 times the health gain of the warmth programme (less because of the discounting of health benefits over the extra years 15–30). In fact it yields 404.5/4.7 = 86 times the benefit. On top of this it costs only just over half of the warmth programme (53%).

But as is emphasised above the assumption of zero crime displacement must be born in mind in reading these results. An assumption of complete displacement (as defined above) would reduce the estimate of benefits to more-or-less zero.

Conclusions

Although the illustrative nature of the estimates presented above does not allow precise conclusions to be drawn, the very approximate and *prima facie* evidence suggests that:

- *burglary crime in Ealing is a much more serious social problem than is ill health arising from cold and damp and from unsafe accommodation*
- *reducing ill health caused by cold, damp and unsafe accommodation is expensive, whereas reducing ill health associated with burglary crime is probably relatively cheap*

It would be well worth investing time and resources in a full-scale cost benefit analysis in order to confirm or disprove the tentative finding of this commentary that the warmth and safety programmes are a relatively expensive way of tackling a relatively small social problem, whereas the reverse is the case for the security programme. Especially prominent amongst the important issues deserving further analysis is the issue of crime displacement – which if present would severely undermine the effectiveness of any local investment in security.

Appendix: Sources and Methods

The estimation of the money value of annual health gains

QALY is an acronym for a "quality adjusted life-year" which is a measure of health taking into account both the quantity and quality of life. Thus one year of perfect health scores a QALY value of 1, a year of less than perfect health scores a QALY value of less than 1, and death is considered to be equivalent to a score of 0. QALY measures are widely used in the evaluation of the health effects of medical treatments and many other public investments effecting health. For an overview of the definition, measurement and uses of the QALY concept see Phillips and Thompson (2004).[1]

The annual monetary value of the gain in the *well-being* of beneficiaries stemming from the programmes' health gains is estimated in three stages:

- *By converting the health classes I-IV into QALY equivalents*
- *By multiplying the QALY gains thus derived by the number of beneficiaries – which gives the total number of QALYS gained per annum*
- *By multiplying the number of QALYS gained per annum by an estimate of the monetary value of a QALY – which gives the monetary value of health gains per annum*

The health class-QALY conversions are as follows:

	QALY score Warmth and Safety Programmes	*QALY score Security Programme*
Class I	*0.125*	*0.05*
Class II	*0.375*	*0.25*
Class III	*0.625*	*0.52*
Class IV	*0.875*	*0.65*

These conversions are presented as no more than plausible orders of magnitude. The ascending QALY score across classes I-IV reflect the diminishing seriousness of the ill health states described by those classes. The lower QALY score for a given health class under the security programme reflects the greater prevalence of losses of emotional and psychological health – rather than physical health – caused by burglaries, and the greater impact on wellbeing of psychological ill health. This follows the differential treatment of physical and psychological conditions in the estimation of health losses caused by crime (see Home Office (2005) section 3).[2]

The monetary value of a QALY is taken as £40,000, which is within the range of values estimated by Mason et al. (2005).[3]

An example of the estimation is as follows:

The warmth programme delivers an annual reduction of 5 cases of class I Ill health which equates to an annual QALY gain of 5 x (1 minus 0.125) which equals 4.375 – the programmes delivers a reduction of 5 cases of class I ill health annually which equates to an annual QALY gain of 4.375. The monetary value of this annual health gain is 4.375 x £40,000 which equals £175 000.

The estimation of the money value of working days saved

Because ill health causes working days to be lost a second social benefit of the programme is the reduction working days lost. The monetary value of working days saved is estimated in three stages:

- *By converting the health classes I-IV into estimated working days lost per case (per person)*

The health class-working days lost conversion is as follows:

	Working days lost Warmth and Safety Programmes	*Working days lost Security Programme*
Class I	*5000*	*6420*
Class II	*400*	*500*
Class III	*30*	*40*
Class IV	*3*	*8*

These conversions are derived from Home Office (2005) table 3.1 and are presented as no more than plausible broad orders of magnitude. The greater loss for a given health class under the security programme reflects the greater prevalence of losses of emotional and psychological health – rather than physical health – caused by burglaries, and the greater impact of psychological ill health on the ability to work (see Home Office (2005) section 3). As in the Home Office exercise these estimates are discounted rather than annual values – estimates of the present value of an annual sequence of working days lost derived by applying the HM Treasury discount rate of 3.5% (see section 5 below).[4]

- *By multiplying working days lost per person by the estimated number of beneficiaries – to give an estimate of the total reduction in working days lost*
- *By multiplying the estimate of total reduction in working days by an estimate of average daily output per head in London in 2005/06. In 2005/06 Gross Value Added per capita in London was £24,100 (National Statistics (2006))[5] which gives a daily figure of £66 per capita. Calculating the value of working days saved in this way assumes that beneficiaries are drawn from the entire population at random. It does not imply that all beneficiaries are employed*

[1] C Philips and G. Thomson (2004)"What is a QALY?" Evidence Based Medicine Vol.1 No. 6 (at http://www.evidence-based-medicine.co.uk).

[2] Home Office (2005) "The Economic and Social Costs of Crime Against Individuals and Households" Online Report 30/05 (at http://www.homeoffice.gov.uk/rds/pdfs05/rdsolr3005.pdf).

[3] H. Mason, A Marshall, M Jones-Lee and C Donaldson (2005) "Estimating a Value of a QALY from Existing UK Values of Preventable Fatalities" (at http://www.ncl.ac.uk/chsr/abstactfull.htm).

[4] The time horizon over which the discounting exercise is carried out is not stated in Home Office Report). We assume that the discounted working days lost in the conversion table apply to the 15 year warmth programme , and that 1.5 times these estimates apply to the 30 year safety and security programmes.

[5] National Statistics (2006) "Regional, Sub Regional and Local Gross Value Added" (at http://www.statistics.gov.uk/pdfdir/lgva1205.pdf).

Appendix: Sources and Methods

An example of the estimation is as follows:

The warmth programme delivers an annual reduction of 5 cases of class I Ill health which generates an reduction of working days lost of 5 x 5000 = 25,000. The present discounted monetary value of this saving is 25,000 x £66 = £1,650,000.

An alternative method (method 2) of carrying out the stage 1 and 2 computations is to assume that the annual number of working days lost through sickness per person (aged 16+) resident in the Ealing estates is some proportion of that in the UK as a whole (for the same age group). In the UK in 2004 working days lost due to sickness per person aged 16+ was .035. If we suppose that residents of the Ealing estates suffer, say, twice the national rate of sickness absence from work we end up with broadly similar results for the warmth and security programmes to those produced by applying the method described above (method 1), but with a higher estimate for the safety programme (a gain of £1.2 million rather than the £0.2 million gain shown in table 2). For all programmes method 1 has been used to estimates the reduction in working days lost.

The estimation of the annual savings in NHS costs

A third element of social benefit is the reduction in NHS costs arising from the programmes' health gains. The annual NHS savings are estimated in two stages:

- *By assigning an average treatment cost per case to Class I-IV ill health states. These are as follows:*

These unit costs are taken from appendix NSRC4 – combined NHS and PC Trusts – of "NHS Reference Costs 2005/06" (Department of Health (2006))[6], as being broadly appropriate for the ill health states described under the class I-IV headings.

	NHS treatment costs per case 2005/06
Class I	*£10,000*
Class II	*£5000*
Class III	*£2250*
Class IV	*£700*

- *By multiplying the average treatment cost per case by the estimated annual reduction in cases by health class*

An example of the estimation is as follows:

The warmth programme delivers an annual reduction of 5 cases of class I Ill health which generates an annual savings of NHS costs of 5 x £10,000 = £50,000.

The estimation of the annual cost savings in the Criminal Justice System

A social benefit specific to the security programme is the reduction in the costs of the criminal justice system stemming from the estimated reduction in burglaries. The Home Office estimate of the criminal justice system costs per burglary is £1,137 in 2003 prices (Home Office (2005) table 2.1). This figure was up-rated by the UK GDP deflator to produce an estimate of £1,192 in 2005/06 prices. The total annual savings in CJS costs is the product of this figure and the estimated annual reduction in cases of burglary – which is 1,634.

Adjusting for the Timing of Costs and Benefits

The elemental costs of the programmes are apportioned between warmth, safety and security and spread out in time over the period 2005/06 to 2010/11 (see chapter 2), whereas the benefits flow over the entire length of life of the programmes. The following assumptions are made about the length of life of the programmes: Warmth 15 years; Safety 30 years; and Security 30 years. It's also assumed that benefits flow at a constant annual rate from 2010/11 onwards, and the time profile of benefits between 2005/06 and 210/11 matches the time profile of programme costs as shown in Chapter 2.

The estimates of the total financial cost of each programme are as follows (all in 2005/06 prices):

Warmth	*Heating/energy efficiency*	*£43.5M*
	Windows and doors	*£19.0M*
	Total	***£62.5M***
Safety	*Kitchens*	*£77.3M*
	Bathrooms	*£35.4M*
	Windows and doors	*£19.0M*
	Electricals	*£21.9M*
	Internal fabric	*£5.7M*
	Common areas	*£9.0M*
	Adaptations	*£0.3M*
	Total	***£168.6M***
Security	*Windows and doors*	*£19.0M*
	Common areas	*£9.0M*
	Access/lifts	*£5.3M*
	Total	***£33.3M***

In order that costs and benefits accruing at different times are placed on a comparable basis they are computed as a sum of discounted present values, using the conventional discount formula where the present value at mid year 0 of a payment of £1 made at the middle of year n is given by

$$D_n = 1/(1+r)^n$$

Where r is the discount rate and D_n is the discount factor. r is set at 3.5% according to the HM Treasury Green Book (HM Treasury (2003))[7]. The effect of discounting is to reduce the value of more distant costs and benefits.

[6] Department of Health (2006) "NHS Reference Costs 2005/06" (at http://www.dh.gov.uk/en/Publicationsandstatistics).

[7] HM Treasury (2003) "Green Book 2003" at (http://www.greenbook.treasury.gov.uk).

8
Summary

Introducing this report we asked 'Does the *Decent Homes Programme* make a positive impact on the health and security of Ealing residents?' We conclude 'yes': such investment does have an impact, with more significant benefits flowing from improved security.

Figure 8.1: **Components of investment in Ealing's *Decent Homes Progamme***

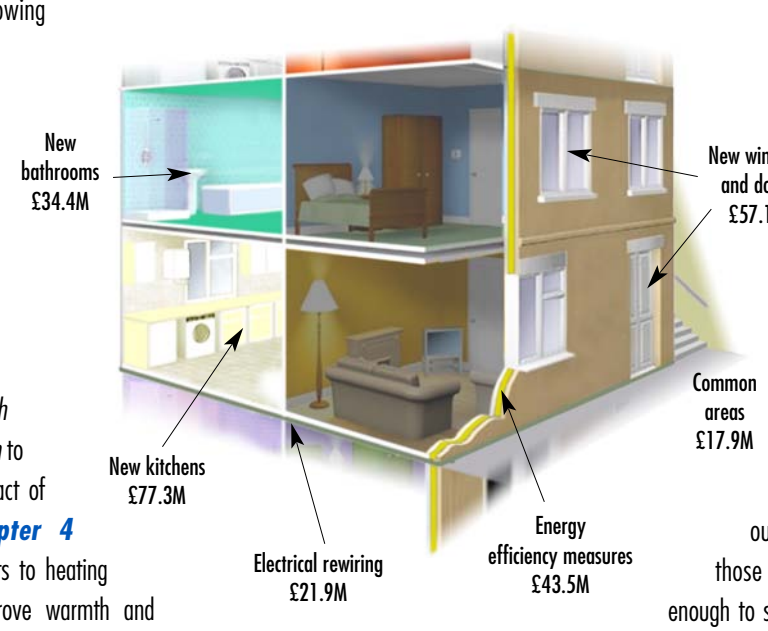


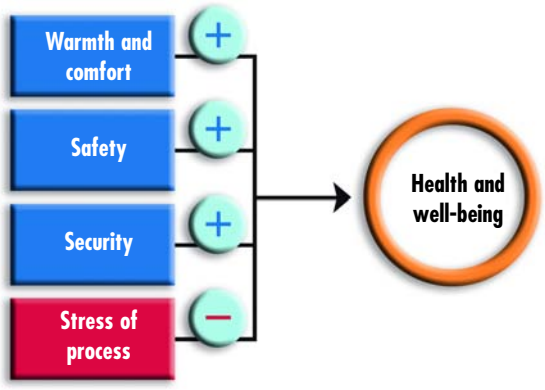
Figure 8.1 shows the principal components of the £330 million *Decent Homes Programme* managed by Ealing Homes. In three key chapters 4 – 6 we use the *Housing Health and Safety Rating System* to estimate the health impact of each component. ***Chapter 4*** shows how improvements to heating and insulation will improve warmth and comfort and reduce the likelihood of heart disease and winter deaths of older people. Raised temperatures and better ventilation will reduce damp and mould and the likelihood of respiratory problems, especially childhood asthma.

Chapter 5 shows how investment in remodelling bathrooms and especially kitchens will reduce the likelihood of accidents – falls, slips, burns and scolds. ***Chapter 6*** shows investment in doors and windows will reduce the likelihood of burglary and have a positive impact on the mental health and well-being of occupants and their neighbours. However, we have not reported on the sometimes stressful refurbishment process.

A preliminary cost-benefit analysis in ***chapter 7*** identifies (a) improvements in residents' health (b) savings to the National Health Service (c) fewer working days lost through ill-health (d) savings in the criminal justice system. For making a health impact, improving home security is probably the most cost-effective component of the *Decent Homes Programme*.

Two final points about the relatively modest improvements to ***physical*** health revealed in chapters 4 and 5. *First*, to facilitate cost-benefit analysis, our estimates are confined to those residents previously harmed enough to seek medical attention from the NHS. There will be many more beneficiaries who have not sought attention.

Figure 8.2: **Impacts on health**



Second, ***physical*** improvements in warmth, safety and security give residents a greater sense of '*Home as a haven*,' contributing predominantly to their ***mental*** health and well-being. In turn better mental health enhances the economic and social prospects of social housing estates, helping their integration into the mainstream life of the city. Such is the 'joined up' thinking pursued by Ealing's Local Strategic Partnership in their strategy *'Success Through Diversity.'*

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SHARPENS YOUR THINKING

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