

Decent Homes Better Health



Sheffield Decent Homes Health Impact Assessment

Jan Gilbertson · Geoff Green · David Ormandy





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Foreword

We are pleased to present this Health Impact Assessment of the Sheffield 'Decent Homes' housing improvement programme. Previous studies have shown a link between poor standards of housing and poor health. We are therefore particularly pleased that this study demonstrates that the Sheffield 'Decent Homes' programme, the largest of its kind in the country, can make a major contribution to improving the health and quality of life of Sheffield residents. The report makes a number of recommendations for enhancing the positive impacts of the 'Decent Homes' programme on health. We are especially pleased to note that these seek to build on the already excellent partnership work within the City. The important message for the UK, and beyond, is that better housing, whatever the tenure, leads to better health.

Sir Bob Kerlake, Chief Executive Sheffield City Council and Andy Buck, Chief Executive, North Sheffield Primary Care Trust, Joint Chairs, Sheffield First for Health and Well-being Partnership

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The study and the report itself are a collective effort. Sheffield First Partnership for Health and Well-being (one of the family of Strategic Partnerships in the city) translated their 'joined-up' thinking into practice by commissioning this Health Impact Assessment. Then the four members of the Steering Group contributed creatively, assisting with design and development and honing the main messages for the policy community. We thank them for their insights and feedback as our analysis evolved; and of course for keeping our feet on or near the ground.

Managers from Sheffield City Council, Sheffield Homes and contractors Kier Construction helped us greatly. Special thanks to Robert Almond, (Assistant Manager, Sustainable Housing and Affordable Warmth Team, Sheffield City Council) and both Chris Goodacre and Simon Gunnell (Assistant Manager and Project Officer with Sheffield Homes) for help with data for the Warmth and Comfort Chapter; to Chris Lake and Wayne Stokes, both assistant investment managers with Sheffield Homes who shared their contacts, data and reflections on the Decent Homes Programme; to Sandy Walsh, Senior Occupational Therapist with Sheffield City Council who assisted with the Safety chapter; to James Crouch (Policy Officer, Strategy and Information Team, Sheffield City Council) for neighbourhood data in the chapter on the Decent Homes Programme; to Police Officers Jack Waugh and Kevin Burrows, architectural liaison officers for the Secured by Design initiative in Glasgow and Doncaster respectively, who helped with our estimates of burglary reduction for the chapter on security; to Andy Wilson (Construction Manager for Decent Homes) Phil Whitely (Business Improvement Manager) Mike Shepherd (Site Manager) from Kier Construction whose positive response helped us formulate chapters

on Warmth and Comfort, Safety and Security. Barry May from Tarkett-Marley Floors Ltd, gave us further insights into non-slip floors and secured permission for the image of the young girl with the bruised knee.

Three Focus Groups of tenants and housing officials greatly helped us in formulating the process chapter. Ably organised by staff from Sheffield Homes, Jean Grant (Housing Officer) Harvey Smith (Assistant Investment Manager) Jo Briggs (Senior Officer), Julie Jenkinson (Assistant Manager) and Sarah Norton (Senior Housing Officer), tenants from the Brushes, Stannington and Shirecliffe estates gave us their honest opinions of how the process of renewal was affecting their lives, for good or ill. We thank them all.

Thanks to CRESR research associate Ros Goudie who helped organize and analyse feedback from the Focus Groups; to research associate Ian Wilson for supplying socio-economic data on Sheffield's neighbourhoods and tenants; to John Bryson, now with the University of Warwick, 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, and 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.

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 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

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Executive Summary

Main message: *Sheffield'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 giving greater security and mental well-being.*

Messages

- *'Joined-up thinking' encouraged Sheffield City Council and Sheffield's Primary Care Trusts to jointly commission this Health Impact Assessment of the £700million Decent Homes Programme.*
- *By improving health and quality of life in Sheffield's deprived neighbourhoods, the Decent Homes Programme will further integrate the tenants of Sheffield's council dwellings into the mainstream economic and social life of the city.*
- *The national Housing Health and Safety Rating System was used innovatively to produce conservative estimates of the health impact of Sheffield's Decent Homes Programme.*
- *Despite Sheffield Council's dwellings now 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.*
- *Improved 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, promote feelings of safety and have a major impact on mental health and well-being, with cost savings to the NHS.*
- *Contractors have endeavoured to minimise the inevitable stress from works associated with the Decent Homes Programme in order to maintain tenant's mental health and well-being.*

Recommendations

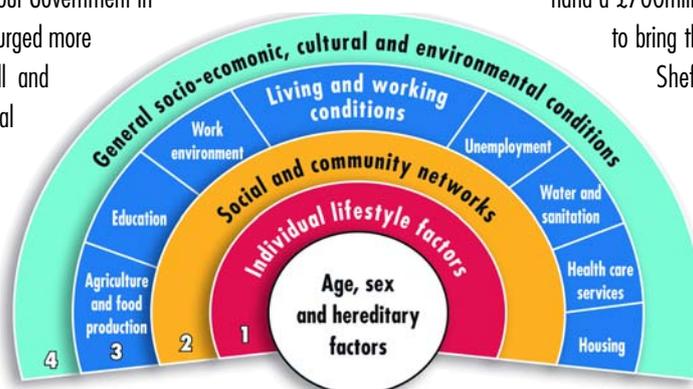
- *Key partnership agencies should jointly plan to account for the impact of 'upstream' investment in housing on the 'downstream' health of residents.*
- *Key partnership agencies should maintain their focus on the city-wide benefits of transforming health and quality of life in Sheffield's more deprived neighbourhoods.*
- *A more in-depth HIA would assist key partnership agencies assess which mix of up-front capital investment reduces long term revenue costs to public services.*
- *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 (a) to maintain a clear focus on the safety aspects of improving kitchens, and (b) to consider investing any additional funds in handrails to reduce falls on steps and stairs.*
- *It is important to maintain a focus on improved security and mental health arising from the installation of new windows. The Police Force should be asked to validate estimates of reduced crime levels.*
- *During works on site, contractors should continue to address issues of 'respect', 'control', 'disorientation', 'invasion', 'expense' and 'disruption.' Lessons can be learned from the best-performing contractors.*

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Introduction

'Joined-up thinking'

Famously, on the return of a Labour Government in 1997, Prime Minister Tony Blair urged more 'joined-up thinking' in Whitehall and more integrated action at a local level. In theory this applies to the link between housing and health. Within weeks of coming to power, the Government asked Sir Donald Acheson, Chief Medical Officer of Health, to conduct an enquiry into health inequalities across England. His commission 'adopted a socio-economic model of health and its inequalities ... in line with the weight of scientific evidence.' The semi-circular figure (above) adopted in his report¹ 'shows the main determinants of health as layers of influence one over another.'



Housing is identified as one of six key 'living and working conditions' which determine health outcomes, ranking alongside health care services. Changing Individual lifestyles is important but so are 'upstream' policies and programmes.

In Sheffield

In reality, local partnerships have found it difficult to integrate housing and public health policies and programmes. Sheffield has one of the more dynamic strategic partnerships and the overarching Sheffield City Strategy² goes further than most in integrating diverse policy and programme domains. Yet the chapter highlighting the contribution of housing to neighbourhood regeneration makes little mention of health,

and the chapter on health does not refer explicitly to housing as one of its wider determinants. Here are two big city budgets; on the one hand a £700million capital investment programme to bring the local authority housing stock in Sheffield up to Decent Homes Standard by 2010, and on the other, a National Health Service revenue budget for the city of £724 million for 2006/7. Why not orient this upstream housing investment towards reducing demands on health services? According to Sir Bob Kerslake (*refer to Foreword*) these are challenges for Sheffield but also for the UK as a whole.

Health Impact Assessment

Our Health Impact Assessment (HIA) will help Sheffield's policy community reconnect the two policy domains. We use the new Housing Health & Safety Rating System³ innovatively to give practical effect to the aspiration to 'joined-up thinking.' We hope that housing managers, though often boxed in by government-imposed objectives and targets within their own operational domain, will be persuaded also to account for and celebrate the wider health benefits. By commissioning this HIA, Sheffield leads the European policy community. We look forward to the day when one of the main targets of a housing investment strategy in Sheffield and beyond is the reduction of illness and death from sub-standard homes; and when the NHS properly acknowledges the role of housing managers in preventing illness and premature death, with significant savings in health care budgets.

¹ Acheson D. *Independent Enquiry into Inequalities in Health Report*. The Stationary Office (London 1998).

² Sheffield First Partnership. *Sheffield's Future; be part of it: Sheffield City Strategy 2005-10*. (Sheffield 2005).

³ 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.

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Sheffield's Decent Homes Programme

Key message: *By especially improving health and quality of life in the poorest neighbourhoods of Sheffield, the Decent Homes Programme will help integrate the occupiers of Sheffield Council dwellings into the mainstream economic and social life of the city.*

Sheffield Challenge

Sheffield's *Decent Homes Programme* – currently the largest single housing investment programme in the UK – 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 Sheffield City Council to rehabilitate its residual stock of 63,000 homes. 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 52,000 of the Sheffield City Council's housing stock was transferred in 2004 to Sheffield Homes Ltd, an arms length management organisation (ALMO). This stock (figure 2.1) is the focus of the *Decent Homes Programme* in Sheffield.

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

² In line with the recommendation of *Decent Home Delivery: Review of the delivery of the Decent Homes Target for Social Housing (ibid).*

³ *Sustainable Communities: building for the future, ODPM, Crown Copyright, 2003.*

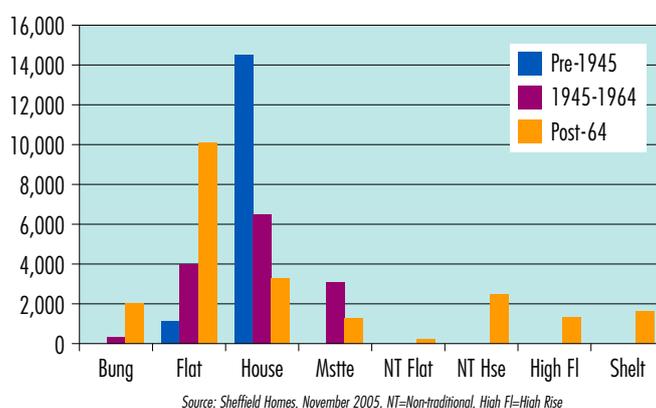
Traditionally built houses are the predominant archetype, mainly built before 1945. Following extensive demolition over the past decade, there are fewer flats, mainly built after the war. More limited demolition (of those dwellings which cannot be brought up to the Decent Homes Standard at reasonable cost²) is likely before the end of the programme period and there will be more stock transfers. So the *Decent Homes Programme* will probably take in 45,000 properties before it ends in 2010-11. At this point a steady stream of tenants buying the improved property will reduce the number of dwellings managed by Sheffield Homes to c40,000.

Sheffield Homes 'aims to provide excellent housing services to both tenants and neighbourhoods as a whole.' Working in partnership with Sheffield City Council and five building contractors, Sheffield Homes' *Decent Homes Programme* will help achieve these aims. The projected investment is £750m – the largest single programme in the UK – 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 two tranches of £171m and £285m from the ODPM.

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*³ reaffirmed the Government's commitment to provide all social housing tenants with decent homes by 2010. It recommended that investment to improve social

Figure 2.1: Stock profile of Sheffield Homes



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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*.⁴ The 2004 *Action Plan*⁵ identified the Decent Homes Standard as having an impact on the number of vulnerable fuel-poor households and the 2005 *Progress Report*⁶ 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*⁷ published in 2006 affirms the Decent Homes Programme not as 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.' Indeed government guidance states 'there should be no Class I Hazards (defined by the HHSRS) present in a Decent Home. Signalled in part I of the 2004 Housing Act and effective from April 6th 2006, the HHSRS also 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.

As well as the potential health effects underlying physical characteristics have economic importance. The latest guidance⁸ 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 all be in a reasonable state of repair, as should the internal components of a dwelling – ceilings, floors and internal walls.

The Standard provides 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

⁴ Inter-Ministerial Group on Fuel Poverty. *The UK Fuel Poverty Strategy*. DEFRA 2001.

⁵ *Fuel Poverty in England: The Government's Plan for Action*. DEFRA 2004.

⁶ *The UK Fuel Poverty Strategy: 3rd Annual Progress Report*. DEFRA/DTI.2005.

⁷ *Climate Change: the UK Programme 2006*, Crown Copyright, 2006.

⁸ *A Decent Home: the definition and guidance for implementation*, ODP, Crown Copyright, 2004.

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Energy Efficiency Commitment (EEC), Warm Front, Transco's Affordable Warmth 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 'wellbeing' and 'worth' identified by the Green Paper as the rationale behind Decent Homes.

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'⁹ 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 Arms Length Management Organisation (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.

Sustainable communities: building for the future indicated the resources to be made available to improve the social housing stock. The Office of the Deputy Prime Minister has provided details.¹⁰

- Between 1997 and 2001 there was £8.3bn capital investment in social sector stock. Plans indicate that around £16.3bn will be invested between 2001 and 2006. This spend will tackle both the existing work on the stock and also new repairs as they arise. Planned average investment per council homes is around 55% higher in real terms in 2005/06 than in 1996/97.
- These resources include ALMO funding which is expected to increase to £643m in 2004/05 from £56m in 2002/03.
- £370m in housing PFI credits are being announced now in addition to the £760m already allocated.
- Since 1997 transfer has unlocked £10.1 billion in private finance, of which £3.5 billion of this has gone to local authorities in capital receipts, and the remaining £6.6 billion is going directly into renovating and maintaining the transferred properties.

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. The ODPM estimated that 40% of non-decent homes were capable of being brought up to standard for less than £1,000, whilst 20% would require £20,000 or more.

⁹ *Decent Home Delivery: Review of the delivery of the Decent Homes Target for Social Housing*, ODPM, Crown Copyright, 2003.

¹⁰ *Fact Sheet 1 Decent Homes – the National Picture* (see <http://www.odpm.gov.uk/index.asp?id=1152794>).

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.



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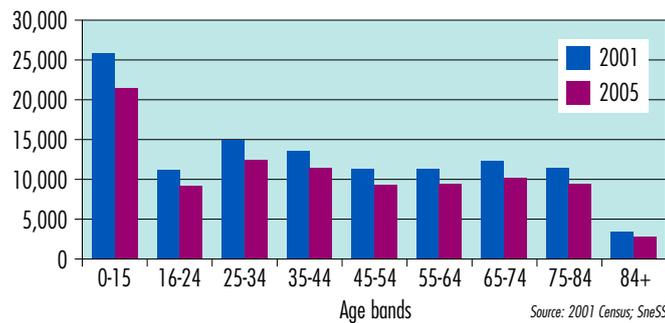
Who benefits

By 2010 this investment will benefit about 83,000 occupants of 45,000 renovated properties, 16 per cent of Sheffield's projected population of 520,000. In the frame now – and used as a basis of our calculations of health impact – are about 95,000 occupants of 52,000 Sheffield City Council properties managed by Sheffield Homes. Their age profile is older than that of Sheffield and is shown in figure 2.2.

The *Decent Homes Programme* will have a disproportionate impact on the more deprived segment of Sheffield's population. Minority ethnicity, socio-economic status and educational attainment are markers for either deprivation or prosperity.

The 2001 Census reveals (reflecting the national picture) that the 116,000 occupants of local authority housing in Sheffield were more likely to be (a) unemployed (b) with fewer qualifications and (c) with an over-representation of certain minority communities such as black and black British, and those of mixed parentage.

Figure 2.2: Age profile of occupants

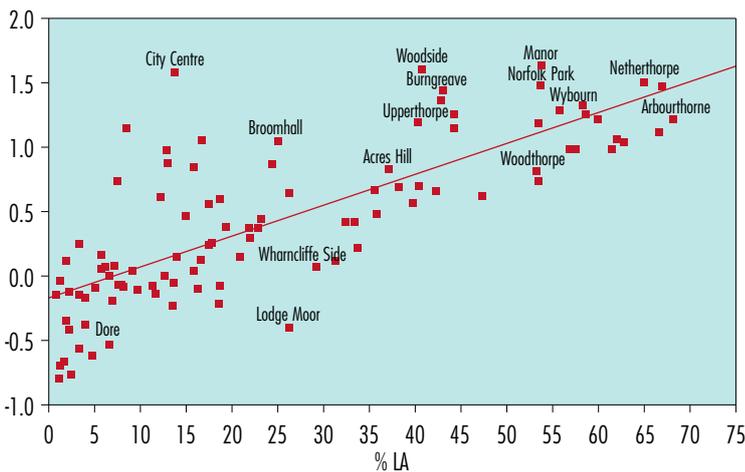


Note: Numbers are estimated by tracking back to the Census year 2001 when 116,000 men, women and children occupied 63,173 local authority houses, then tracking forward to 2005 by estimating a proportionate reduction in the numbers occupying 52,190 properties.

A disproportionate number of these occupants also have limiting long standing illness. A more rounded picture of health is shown in figure 2.3, where health deprivation¹³ is highly correlated with the neighbourhood stock of social housing in Sheffield. The unit of account is one of the

100 neighbourhoods devised by the Sheffield Neighbourhood Information System.

Figure 2.3: Health deprivation by neighbourhood stock of social housing



There is a very high correlation ($r = 0.77$) between the health deprivation score and the proportion of local authority households in a neighbourhood. Woodside, Norfolk Park, Manor and Netherthorpe, all with a high proportion of local authority housing stock, constitute 4 of the worst 5 neighbourhoods for health deprivation. We predict therefore that if the *Decent Homes Programme* is successful in improving the health of its residents, it will have made a practical contribution to the City Council Strategy of Closing the Gap between the 100 neighbourhoods of the city. This is the vision:

"Sheffield will be a city, where each neighbourhood is a pleasant place to live and visit that functions well and where residents feel proud to live. Irrespective of where people live or to which community they belong, everyone will have the opportunity and choice to benefit from and contribute to the city's growth and restructuring." Closing the Gap: A Framework for Neighbourhood Renewal in Sheffield (2001) Sheffield City Council.

¹³ The health deprivation score is the health component of the UK Government's Index of Multiple Deprivation (IMD) and has four components (a) Years of Potential Life Lost (b) Comparative Illness and Disability Ratio (c) Measures of Emergency Admissions to hospital and (d) Proportion of adults under 60 suffering from mood or anxiety disorders. The Health IMD is adjusted for age and sex so figure 2.3 is not merely an association between older people and ill health. A score of roughly zero on the health deprivation index approximates the average for English local authorities.

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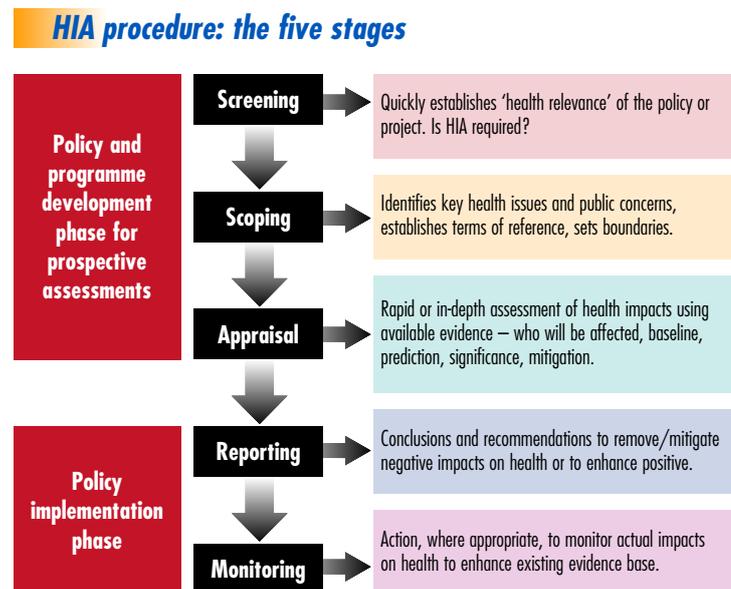
Key message: *The national Housing Health and Safety Rating System was used innovatively to estimate the health impact of Sheffield's Decent Homes Programme.*

Introduction

Following an initial 'scoping' exercise, the *Sheffield Decent Homes* HIA was commissioned in the summer of 2005. This was for the appraisal and report stage of a 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 The following chapters of the report begin with this evidence.

Our method is to apply the national Housing Health and Safety Rating System (HHSRS) to the stock of c52, 000 homes owned by Sheffield City Council and managed by Sheffield Homes. We *start* with a ballpark estimate of health impact based on national data produced to support the HHSRS, and *then* refine it as far as we can with Sheffield

Figure 3.1: The process of Health Impact Assessment



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.

The Housing Health & Safety Rating System

The national guidance³ calculates the likelihood of a hazard having a harmful effect on health, providing evidence⁴ 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 summarised in figure 3.2 on page 7.

For any cost-benefit analysis involving NHS resources, it is important to distinguish this *likelihood of actual harm* requiring medical attention (the HHSRS

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.

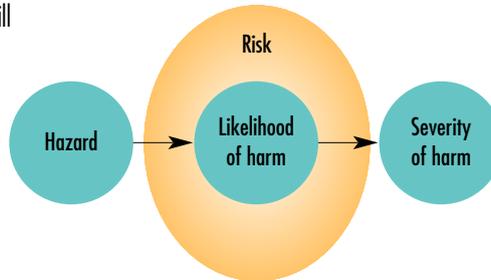
³ ODPM (2006) *Housing Health and Safety Rating System; Operating Guidance*. ODPM Publications.

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 1, ODPM 2004.

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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.

Figure 3.2: **Hazards to health**



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.

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.

The HHSRS identifies 29 hazards⁵ 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 Sheffield Homes) of the dwelling. Figure 3.3

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	

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.

Class II

This Class includes severe conditions, including:

Cardio-respiratory disease; Asthma; Non-malignant respiratory diseases; Lead poisoning; Anaphylactic shock; Cryptosporidiosis; 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-psychological impairment; Sick building syndrome; Regular and persistent dermatitis,

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



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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 psychosocial⁶ 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. We also draw on evidence gathered in three tenant focus groups in Sheffield which explored the impact on health of the *Decent Homes* redevelopment process (see Chapter 7).

Local estimates

In order to gauge the impact of the Sheffield *Decent Homes Programme* 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 5 stages illustrated using the example of falls, one of the 29 hazards identified in figure 3.3. Assuming 95,000 occupants of 52,000 homes (see Chapter 2) then figure 3.4 speculates on how the Programme will reduce the number of falls on stairs (harm 21).

The first baseline (1) for the Sheffield 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 Sheffield stock profile. The ages and archetypes of the Sheffield stock were shown in the previous chapter and the statistical base⁸ of the HHSRS is interrogated to gain a better Sheffield 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 prospectively. The estimate is derived empirically from (a) a number of HHSRS ratings of representative properties and (b) the scope of the improvement packages, as they apply to the range and number of archetypes. Then (c) we will gross-up (or 'clone' is the word used in Sheffield Homes) these data for the whole stock and Programme years 1 and 2 in particular. In the case of falling on stairs (harm 21) as an example, we do not anticipate that the mainstream *Decent Homes Programme* will contribute to a significant reduction in the potential number of falls injuries.

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 falls from stairs, if our baseline estimate is 450 and our post intervention estimate is 440 falls annually, then the impact of the Decent Homes Programme is to reduce falls by 10 annually.

Note for completeness we can refine further our estimates (5) by estimating the potential of the *Decent Homes*

Figure 3.4: Stages in estimating the example of falls on stairs

(1)	(2)	(3)	(4)	(5)
Base via English Average	Sheffield Baseline	Post-Decent Homes	impact = (2) minus (3)	Potential Impact
350	450	440	10	50

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.*



Method

Programme for reducing hazards further. Beyond the scope of our HIA is an assessment of how allocation policy might reduce the risk of harm by better matching housing needs to housing provision. For example, if all older people (who would suffer disproportionately from falls on stairs) are allocated to bungalows or flats without stairs, then we would anticipate a big reduction in falls.

Validating the estimates

Because of the limited local data available from Sheffield Homes on stock condition and improvement packages, our estimates must be treated with caution. However, in order to gauge whether we have derived estimates of the right order of magnitude, we compare them with data on deaths and illness sourced from the National Health Service via Sheffield West Primary Care Trust and The Yorkshire and Humber Public Health Observatory.



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Warmth and Comfort

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

Key message 2: Despite Sheffield 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.

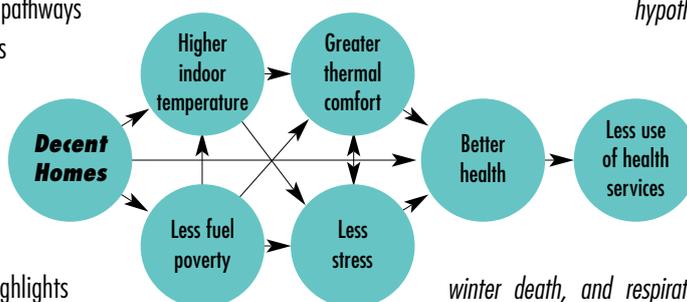
Introduction

Despite Sheffield Homes now having energy efficiency levels better than the English average, more insulation and selective improvements in heating systems are a small but significant element linked to the *Decent Homes Programme*. 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 health¹. 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. According to the Operating Guidance²:

'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.'

Figure 4.1: Possible pathways to health



'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.'

The *Decent Homes Programme* should also reduce damp and mould via the three pathways highlighted in figure 4.2. 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 Sheffield³, the principal cause of damp and mould growth is condensation rather than water penetration.

In turn condensation is caused partly by lifestyle, partly by lack of ventilation and predominantly by low temperatures. A number of epidemiological studies have

¹ Short N., Rugkasa J. (in press) "The walls were so damp and cold" fuel poverty and ill health in Northern Ireland: Results from a housing intervention, Health and Place 2006.

² Office of the Deputy Prime Minister (2006 page 60) *Housing Health and Safety Rating System: Operating Guidance*. ODP. London

³ 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.

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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. But whereas cold conditions have most impact on older people, damp conditions are strongly linked to childhood illness.

Baseline

The challenge is to establish a baseline for Sheffield Homes which builds on the national (HHSRS) benchmark likelihood of harm from **cold**. Since temperatures are strongly correlated with energy efficiency⁴, we do this by modifying the national likelihood in the light of the local profile of energy efficiency.

The *Sheffield Decent Homes Programme* started in 2004 with a relatively energy efficient stock profile, limiting the scope for further improvements. Sheffield City Council had utilized government led initiatives (principally the Energy Efficiency Commitment of Suppliers and the Home Energy Efficiency Scheme) to invest £50 million over 7 years to significantly improve energy efficiency.⁵ Between 1996 and 2002 the median rating of local authority dwellings on the National Home Energy Efficiency Rating (NHER) moved up from the range 4.0 – 4.9 (on a scale of 0-10) to 6.0 – 6.9. Then between 2000 and 2005 the mean energy efficiency rating (this time using the Standard Assessment Procedure) improved again from 57.8 to 65.8 (on a scale of 1-120). As figure 4.3 demonstrates, this is a much better energy profile than that for the English stock in 2001.

We account for the superior energy efficiency profile of the Sheffield Homes stock by reducing the HHSRS likelihood of an occurrence of harm from cold from 1 in 380 to 1 in 420. Our estimate then is of 123 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 123 residents will be harmed, most of them elderly.

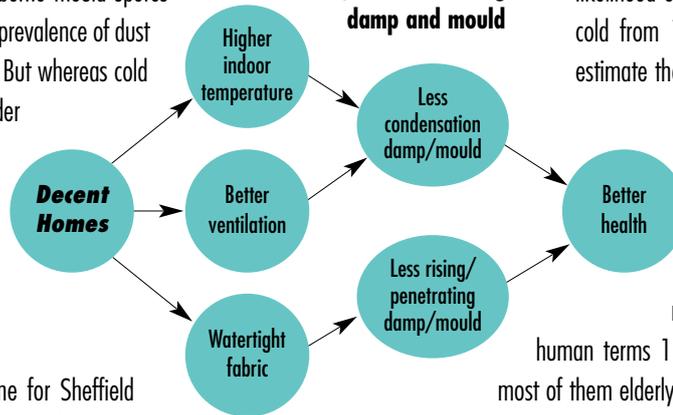
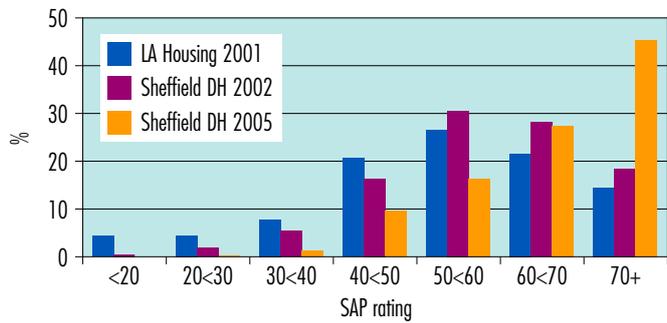


Figure 4.2: Reducing damp and mould

Figure 4.3: Energy efficiency profiles of the Sheffield stock compared with the English stock



Source: English House Condition Survey 2001, FDP Savills, Sheffield Homes

Figure 4.4: Sheffield Homes: baseline likelihood of harm from excess cold

	Average likelihood	Spread of health outcomes			
		Class I	Class II	Class III	Class IV
National Average	1 in 380	34.0%	6.0%	18.0%	42.0%
Sheffield Homes	1 in 560	34.0%	6.0%	18.0%	42.0%
52,000 properties	No = 123	42	7	22	52

Though the likelihood of harm is small, the health consequences can be grave; we estimate there are 42 occupants likely to suffer a Class I outcome, probably death.

Condensation **damp** is much more prevalent in the stock of Sheffield Homes than rising and penetrating damp.

⁴ 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.

⁵ Directorate of Neighbourhoods and Community Care. (22/02/06) *Environmentally Sustainable Housing Strategy*. Report to Cabinet. Sheffield City Council.



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Maintenance records for the financial year 2005/6 indicate 500 repairs to remedy faults in the fabric of properties, affecting only about 1% of the stock. Site managers surveying 900 properties for the 2006/7 *Decent Homes Programme* also confirm very few cases of rising or penetrating damp. However, these same site managers report condensation damp in 30% of properties surveyed and this accords with our research evidence⁶ on the prevalence of condensation damp in Sheffield tower blocks prior to modernization.

Overall damp is more prevalent in the Sheffield Homes stock now 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 1 in 464 used in the Operating Guidance. On the other hand, this national estimate is for the most vulnerable group of children, who constitute only a quarter of the occupants of Sheffield Homes. Without further investigation we cannot be sure which of these local factors exerts the greater pull, so have reverted to default position of the national likelihood of 1 in 464.⁷

Figure 4.5: **Sheffield Homes: baseline likelihood of harm from damp and mould growth**

	Average likelihood	Spread of health outcomes			
		Class I	Class II	Class III	Class IV
National Average	1 in 464	0%	1.0%	10.0%	89.0%
Sheffield Homes	1 in 464	0%	1.0%	10.0%	89.0%
52,000 properties	No = 112	0	1	11	100

On this basis, 112 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 Sheffield 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 impact will be made by replacing inefficient boilers with high energy efficient condensing boilers to meet the Sheffield Decent Homes Standard. Their major advantage is the fuel cost saving for tenants, in the order of 40% or an average of £190 – £240 off a typical fuel bill.⁸ As figure 4.1 indicates, this is especially important to tenants who cannot maintain healthy temperatures because of fuel poverty.

Estimates of the reduction in harm to health from excess cold will depend on the extent of the boiler replacement programme. And Sheffield Homes is currently debating what is affordable. Under agreed provisions condensing boilers will be installed (a) in properties without central heating or (b) to replace back-boilers and floor-standing boilers. In a typical programme for 2006/7 covering 1000 properties in 15 phases, a third of properties require a new system under current criteria. However, the Energy Saving Trust recommends replacement of boilers older than 15 years. If these are included in the *Decent Homes Programme*, then in the typical sample of 1000 properties, all will require new energy efficient boilers. Figure 4.6 gives two estimates of the reduction in harm: both assume new window replacement and full insulation but differ depending on whether 33 or 100 per cent of boilers are replaced.

The impact is confined to a relatively small group of occupants. Even with comprehensive boiler replacement, we estimate only 66 fewer people will be harmed by exposure to excess cold within their dwellings, though this represents a possible 23 fewer Class I health outcomes (including death) per annum once the *Decent Homes*

⁶ 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.

⁷ There is an obvious disparity between (a) the prevalence of damp in an estimated 30% of properties, and (b) a likelihood of harm of 1 in 464. This is because only in a small proportion of cases is there harm sufficient to warrant medical attention.

⁸ *Energy Saving Trust*. www.est.org.uk/myhome/efficientproducts/boilers/what accessed 06/06/06



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Figure 4.6: **Sheffield Homes: reduced likelihood of harm from excess cold**

	Average likelihood	Spread of health outcomes			
		Class I	Class II	Class III	Class IV
Sheffield Homes (base)	1 in 420	34.0%	6.0%	18.0%	42.0%
Sheffield Homes (33% boiler replace)	1 in 700	34.0%	6.0%	18.0%	42.0%
Sheffield Homes (100% boiler replace)	1 in 900	34.0%	6.0%	18.0%	42.0%
Occupants at risk	base = 123	42	7	22	52
	33% = 80	27	5	14	34
	100% = 57	19	3	10	25

112 in the baseline year to 74 annually when the Programme is complete. 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 4.8 shows, it is possible to reduce headline excess winter deaths in Sheffield.

Figure 4.7: **Sheffield Homes: reduced likelihood of harm from damp and mould growth**

	Average likelihood	Spread of health outcomes			
		Class I	Class II	Class III	Class IV
Sheffield Homes (before DH)	1 in 464	0%	1.0%	10.0%	89.0%
Sheffield Homes (after DH)	1 in 700	0%	1.0%	10.0%	89.0%
Number of occupiers harmed (before) & after	(112) 74	(0) 0	(1) 1	(11) 7	(100) 66

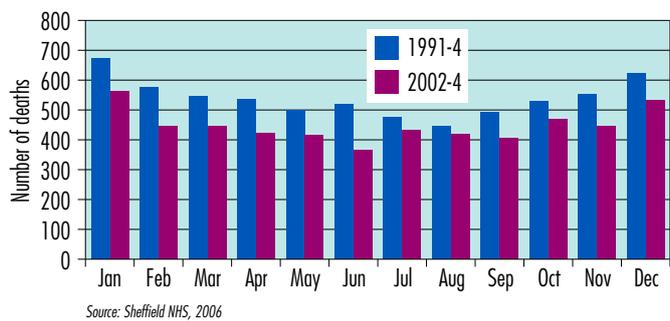
It is probable that improved living conditions (partly attributable to energy efficiency measures and partly to reduced fuel costs) had an impact on health. Though Sheffield's population was stable during the period 1991 to 2004, annual deaths in the city fell from an average of 6501 to 5382 and excess winter deaths fell from 380 to 308. Another £50 million investment in energy efficiency measures by Sheffield Homes (an estimated £2000 per property) will probably reduce headline deaths from excess cold to 290 annually. Or at least prevent winter deaths from rising since fuel poverty generally increases in

Programme is complete. These conservative estimates are in line with evidence (from our evaluation of Warm Front) that a significant minority of residents prefer to maintain low temperatures even after the installation of new heating systems.

Besides trickle vents in new windows (see Chapter 6) the *Decent Homes Programme* aims to reduce condensation by installing (a) extractor fans in kitchens and (b) automatic ventilation in bathrooms which are activated when the light is switched on and only switch off when relative humidity falls. The rise in temperatures brought about by energy efficiency measures will also reduce condensation. We estimate this combination of measures will reduce the proportion of properties suffering **condensation damp** from 30 to 15 per cent and the likelihood of an occurrence of harm from 1 in 464 to 1 in 700.

The number of occupants likely to suffer harm from damp conditions, sufficient to warrant medical attention, falls from

Figure 4.8: **Change in seasonal variation in deaths in Sheffield**



line with fuel price rises in the UK. A target to aim for is the 200 excess winter deaths in Gothenburg, a similar sized city in Sweden with a colder climate but much higher home energy efficiency.

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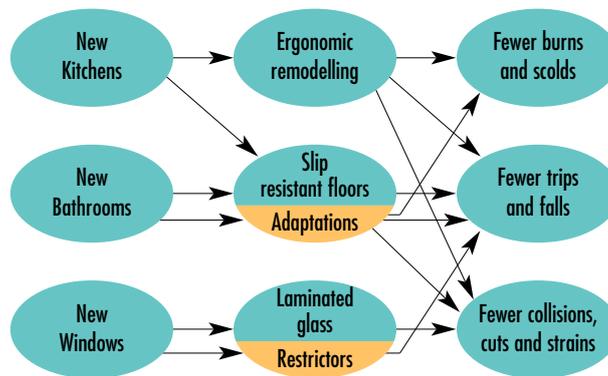
5 Safety

Key Message: Improving 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. More could be invested to reduce falls on stairs and steps.

Introduction

New kitchens and bathrooms are a major element of the *Decent Homes Programme*, accounting respectively for approximately £4000 and £2000 of the £14,500 average investment per property. 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.

Figure 5.1: Reducing accidents



(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).²

Eleven of all the 29 hazards identified in the Housing Health and Rating System³ lead to accidents. Of these 1,248,000 falls (figure 5.2) are the biggest sub-group,⁴ accounting for 46% of all home accidents for which medical attention was sought. With the exception of falls from ladders, these relate to the design, construction and maintenance of the dwelling. In Sheffield there is no robust record of accidents in the home requiring medical attention, though annually approximately 1000 falls in the home result in hospital admission.⁵

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.¹ Inside the home, most accidents occur in the living/dining room

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. 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 properly recorded falls⁶ 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

¹ Royal Society for the Prevention of Accidents www.rospa.com/factsheets/general_accidents PDF (accessed 11/06/06).

² Department of Trade and Industry. (2001) *Home Accident Surveillance System: 23rd Annual Report: Accident Data and Safety Research Home, Garden and Leisure*. DTI London.

³ Office of the Deputy Prime Minister. (2006) *Housing Health and safety Rating System: Operating Guidance*. ODPM Publications.

⁴ Department of Trade and Industry. (2002) *24th (Final Report) of the Home Accident Surveillance System:2000, 2001,2002 data*. DTI London.

⁵ The ratio of A&E episodes in in-house admissions is calculated in 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. The 1068 hospital admissions for the Financial Year 2003/4 is derived from Hospital Episode Statistics (HES) Department of Health and accessed via the Yorkshire and Humber Public Health Observatory.

⁶ The large 'other falls' category represents principally a failure in the NHS reporting System.

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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 and spine.

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.

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.

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.

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 and poor kitchen layout, resulting in spills from cups, kettles, tea and coffee pots, saucepans, chop pans and deep fryers.

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.

Over 90 per cent of 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

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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 Sheffield City Council dwellings either matches the national average or is higher.

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

HAZARD	Sheffield v UK average	Average likelihood	Spread of health outcomes			
			Class I	Class II	Class III	Class IV
Falls in bathrooms	National average Sheffield Homes	1 in 4026 1 in 4026	1.9	3.6	10.3	84.2
Falls on level	National average Sheffield Homes	1 in 135 1 in 100	0.2	13.8	27.3	58.7
Falls on stairs and steps	National average Sheffield Homes	1 in 245 1 in 120	1.9	6.7	21.7	69.7
Falls between levels	National average Sheffield Homes	1 in 1693 1 in 1500	0.2	1.8	9.9	88.1
Electrical hazards	National average Sheffield Homes	1 in 16,869 1 in 10,000	0.6	8.2	49.2	42.0
Fire	National average Sheffield Homes	1 in 4760 1 in 4760	7.0	2.6	29.1	61.3
Flames, hot surfaces	National average Sheffield Homes	1 in 182 1 in 150	0.0	1.3	17.8	80.9

For falls on stairs or steps we have assumed a much greater likelihood of harm because of Sheffield's hilly terrain. For falls on the level we assess that the typically poor condition of floors and poor layout of kitchens will increase likelihood of harm to 1 in 100. Falls between levels, principally from windows, will 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.

Impact of the Decent Homes Programme

Generally, investment in new kitchens, bathrooms and windows will improve safety. Figure 5.5 gives our estimates of the reduction in likelihood of harm from six hazards (fire remaining the same). These likelihoods apply to 52,000 properties occupied by 95,000 persons.⁷

We estimate that **falls on the level** requiring medical attention will reduce significantly from approximately 520 to 385 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 Tapiflex⁸ floor covering with a higher slip resistance (R10⁹) replaces previous, often damaged floor covering, with a lower slip resistance (R9) reducing the likelihood of slips. Tapiflex also provides a cushioning effect, reducing the severity of harm from a fall. Though the main impact will be to reduce minor injuries, we also estimate a reduction of 19 serious physical injuries (Class II) such as fractures to head or spine.

We also estimate a reduction of 87 **falls on steps or stairs** as a result (a) of remodelling kitchens and bathrooms and (b) of installing new handrails both inside and outside properties on the recommendation of the Occupational Therapy (OT) Service. In inter-war properties the *Decent Homes Programme* is removing steps between kitchen and downstairs WC's, and then installing upstairs bathrooms and WCs, both measures reducing the likelihood of a fall. However there is potential for further reducing the likelihood of harm to the national average. If handrails were fitted routinely on the exterior steps

⁷ The number of persons likely to be affected is estimated by multiplying the number of properties where harm is likely by 1.826 (95,000/52,000).

⁸ Tarkett. *Appropriate specification for slip resistant floor covering*. COM028 01/03. Tarkett.

⁹ Health and Safety Executive (2004) *The assessment of pedestrian health risk*. HMSO. London.



Figure 5.5: **Health impact of Decent Homes Programme to reduce accidents**

HAZARD	Average likelihood before and after Decent Homes		Persons affected	Spread of health outcomes			
	Before	After		Class I	Class II	Class III	Class IV
Falls in bathrooms	Before	1 in 4026	13	0	0	1	12
	After	1 in 5000	10	0	0	1	9
Falls on level	Before	1 in 100	520	1	72	142	305
	After	1 in 135	385	1	53	105	226
Falls on stairs and steps	Before	1 in 120	433	8	29	94	302
	After	1 in 150	346	7	23	75	214
	Potential	1 in 245	212	4	14	46	148
Falls between levels	Before	1 in 1500	35	0	1	3	31
	After	1 in 1700	31	0	1	3	27
Electrical hazards	Before	1 in 10,000	5	0	0	3	2
	After	1 in 17,000	3	0	0	2	1
Fire	Before	1 in 4760	11	1	0	3	7
	After	1 in 4760	11	1	0	3	7
Flames, hot surfaces	Before	1 in 150	346	0	4	62	280
	After	1 in 190	274	0	3	49	222

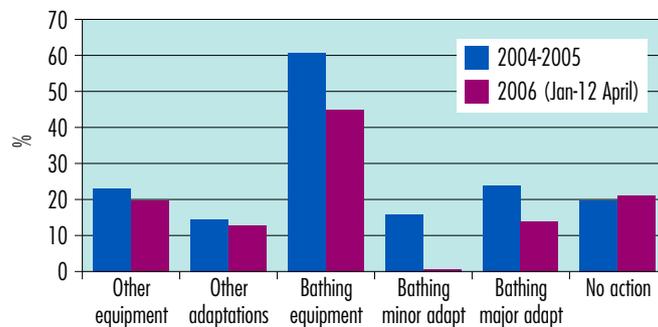
Surveyors report that on average 10 per cent of households are referred to the OT service, though this proportion can be up to 35 per cent in phases of the Programme where there are a high proportion of older people. Based on 1200 referrals spanning an 18 month period, figure 5.6, shows most referrals result in the provision of bathing equipment though approximately a quarter result in the installation of showers with level access to replace baths. The percentages add up to more than 100 because most residents using the OT service receive a combination of equipment and adaptations. For example, of 676 households receiving bathing equipment, only 220 received bathing equipment alone; for 112 it was a supplement to a major adaptation, usually a level access shower.

which characterise Sheffield’s hilly terrain, then we estimate another significant reduction of 135 falls. Though **falls between levels** are uncommon, we estimate the new window systems with restrictors (see Chapter 6) will result in a marginal reduction from 35 to 31. More in-depth empirical research may reveal a greater impact.

The main objective of the OT service is to maintain the independence of persons with a 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).¹⁰

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) Tapiflex floor covering with a higher slip resistance (R10) than the previous floor covering (R9) and (c) special adaptations and equipment recommended by the OT service.

Figure 5.6: **Adaptations and equipment supplied following OT referral**



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.¹¹ 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

¹⁰ Critchley R., Gilbertson J., Green., Grimsley MJ. (2004) *Housing Investment and Health in Liverpool*. CRESR. Sheffield Hallam University.



Safety

with **flames, hot surfaces** and hot water, resulting in a major reduction of 72 individuals suffering from burns and/or scalds. There is potential for further improvement. Though contractors made it clear to us that their new kitchen designs took account of safety issues (for example 300mm surface either side of the hob) it is not evident how safety standards are applied or that they feature significantly as designs are developed.

Cost benefit

New kitchens, doors and windows are major components of Sheffield's *Decent Homes Programme*. Costing on average £4000, £1000 and £2500 respectively, they constitute over half the investment package for an average property (see *Summary Chapter 8*) or £400 million over the entire *Programme*. 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 approximately 300 accidents a year (including 229 falls) requiring medical attention.

Savings to the NHS cannot be estimated without more in-depth research. The probable reduction of 229 falls will reduce demands on both GP and hospital services. Almost all falls requiring medical attention are processed via an Accident and Emergency Department where the unit cost of initial consultation is modest, but a third of all these A&E cases of people over 60 are then admitted into hospital.¹² For Sheffield Primary Care Trusts, tariffs for such a non-elective spell in hospital range from £1322 for a minor fracture or dislocation to £4339 for a closed pelvis or lower limb fracture for a person aged over 69. Ultimately 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.'

¹¹ Office of the Deputy Prime Minister (2005) *Fire Statistics*. United Kingdom 2003. ODPM. London.

¹² 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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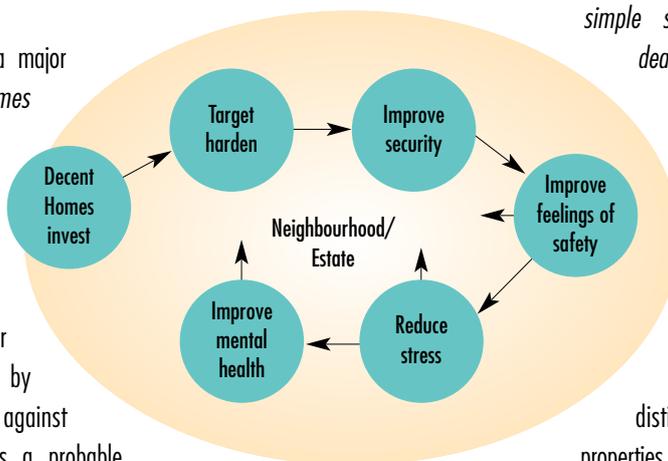
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Key message: *New windows and doors, planned for nearly every dwelling in the Decent Homes Programme, will improve security, promote feelings of safety and have a major impact on mental health and well-being, with cost savings to the NHS.*

Introduction

New windows and doors are a major element in the *Decent Homes Programme*, accounting for approximately £3500 of the £14,500 average investment per property. Besides improving energy efficiency, these measures will make a major contribution to home security by 'target hardening' properties against intruders. Figure 6.1 illustrates a probable pathway from more secure homes to better mental health.

Figure 6.1: **Target hardening**



(14.7%) than those where there were simple security measures such as deadlocks on doors and window locks (2.8%).'³

In a wide ranging review⁴ for the Suzy Lamplugh Trust Research Institute at the University of Glamorgan, Paul Cozens and others take a critical review of the evidence, distinguishing target hardening of properties from the design of housing estates.

The *Decent Homes Programme* focuses on improving the security of dwellings, whereas the Secured by Design initiative developed by the Association of Chief Police Constables¹ (and incorporated into government guidance²) takes a holistic approach to designing a secure neighbourhood environment. Nevertheless 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

Figure 6.2: **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
* more than one response was allowed. Figures shown are percentages.

¹ www.securedbydesign.com/news/index.aspx (accessed 17/05/2006).
² Office of the Deputy Prime Minister. (2004) *Safer Places: The Planning System and Crime Prevention*. ODPM Publications. London.
³ 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.
⁴ 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).
⁵ Strathclyde Police. (2004) *Summary Evaluation: Secured by Design Installations in GHA Communities*. Glasgow Housing Association.
⁶ Nicholas S. and Wood M. (2003) Chapter 4. *Property Crime in England and Wales*. Crime in England & Wales, 2002/03. Home Office. London.

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Another key evaluation of target hardening of properties owned by Glasgow Housing Association concludes that installing doors and windows to Secured By Design standards reduces burglaries by 75%.⁵

Security

The **emotional impact** of burglary is well documented by the British Crime Survey. Figure 6.2 reproduced from the British Crime Survey of 2002/03 shows 83% of all respondents who were victims of burglary were emotionally affected in some way, with attempted burglary also having a significant affect.

Reaction to burglary ranges from stomach churning fear to mild annoyance, and no doubt feeds raised levels of stress.⁷ Our own study⁸ 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 (MHIS) of 1-100; those who feared crime were 11 percentage points lower.

Baseline

In recent years burglary rates have fallen across England and Wales and in South Yorkshire too. So in order to estimate a reduction attributable to Decent Homes, we have chosen the first year of the *Programme* (2004/5) as the base year. A number of variables influence the estimate. **First**, are spatial variations. The people in the South Yorkshire Police District reported one of the highest level of burglaries (195 per 10,000 households) compared with the average of 144 per 10,000 households in 44 Police Districts.⁹ However, from the interviews conducted by the British Crime Survey (where respondents invariably report higher prevalence) the

burglary rate was 404 per 10,000 households in the Yorkshire and Humber Region compared with the national average of 331. **Second**, dwellings on council estates were much more likely to be burgled – 4.0% was the English average for all social housing compared with 2.7% in a typical English suburb. In the base year this differential was as likely to be true for Sheffield as it was for England.

Tenure per se is not significant – the transfer of management to Sheffield Homes will not have reduced these differentials. Instead, council estates tend to have a number of enduring features which are all associated with higher levels of property crime: (a) a high proportion of flats (3.9% likelihood of burglary) (b) household income less than £5000 (4.4% likelihood) (c) economically inactive tenants (4.5% likelihood) and (d) unemployed (4.7% likelihood).

However, **third**, a number of physical characteristics of both area and dwelling can be changed to reduce levels of crime. According to the 2004/5 British Crime Survey, where residents felt their

Figure 6.3: **Average likelihood harm from intruders and health outcomes for persons of all ages 2004/5**

	Average likelihood	Spread of health outcomes			
		Class I	Class II	Class III	Class IV
National Average	1 in 40	0.0	0.1	9.1	90.8
Sheffield Homes	1 in 18	0.1	0.2	10.0	89.7
Occupiers likely to be harmed	2889	3	6	289	2591

neighbourhoods were in poor physical shape (graffiti, vandalism and homes in poor condition) the likelihood of burglaries was higher (6.0%) than average (2.7%). Dwellings without security measures to windows and doors or without burglar alarms, have a very high likelihood of burglary (14.7%) compared with the average of 2.7%.

All these factors feed into our modification of the 1 in 40 average likelihood of harm from intruders shown in the Operating Guidance of the Housing Health and Safety Rating System.¹⁰ Our best estimate for the Sheffield City Council stock in 2004/5 is 1 in 18, shown in figure 6.3.

⁷ 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.

⁸ 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.

⁹ Nicholas S., Povey D., Walker A and Kershaw C (2005) (Table 6.04) *Crime in England and Wales 2004/5* Home Office Statistical Bulletin, National Statistics, London.

¹⁰ Office of the Deputy Prime Minister. (2006) *Housing Health and safety Rating System: Operating Guidance.* ODPM Publications.



Security

The estimate for Sheffield City Council dwellings is derived from the national average of 4.0% (1 in 25) likelihood of burglary for social housing, increased by a factor of 1.35 to account for higher burglary rates in South Yorkshire compared with the national average. This increases the likelihood of burglary and increases the likelihood of an occurrence resulting in harm to 1 in 18. Of course, as shown in figure 6.2, not everyone who is burgled suffers emotional distress. But on the other hand, a proportion of neighbours of those burgled may well be affected. So we have maintained the likelihood at 1 in 18.

How many residents are affected? We estimate **2889** in the 52,000 Council properties. Following analysis by Bristol City Council¹¹, we have slightly raised the proportion of harms to health above the national average to account for higher than average numbers of people aged 60+ in the stock of Sheffield Homes. On the basis of additional Home Office evidence we estimate 3 Class I harms and 6 Class II harms. A small survey by Roger Donaldson¹² 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.'*¹³ Class III and IV harms include depression and anxiety, of varying severity.

Impact of the Decent Homes Programme

Prior to the *Decent Homes Programme* (and unlike the case with energy efficiency measures) only a small proportion of Sheffield Homes had windows and doors of the highest standard. Officials estimate that 95% are being replaced with a specification close to

Figure 6.4: **Health impact of the Decent Homes Programme to limit intruders**

Sheffield Homes	Average likelihood	Spread of health outcomes			
		Class I	Class II	Class III	Class IV
Before Decent Homes Programme	1 in 18 No = 2889	3	6	289	2591
After Decent Homes Programme	1 in 34 No = 1529	2	4	153	1370
Reduction	No = 1360	1	2	136	1221

Secured by Design (SBD) standards. Contractors are required to source strong doors (composite on a hardwood frame) from JELD-WEN. Besides complying with enhanced security requirements (SBD Pass 124-1) these meet the enhanced security British Standard 7950. Windows are sourced through Sharrow Industries (part of the Kier Group) to a high specification which (according to General Manager Philip Darlow) meets the enhanced security standard BS 7950 including double laminate glazing, automatic locking and push button (rather than key) release.

These high specification doors and windows will considerably reduce the risk of burglary. We assume that the baseline risk assessment of 1 in 18 likelihood of burglary is averaged across a mix of council properties, many with no security measures (where according to the 2004/5 British Crime Survey the risk averages 1 in 7 nationally) and a minority with some security measures including homes with deadlocks on doors, window locks and security chains where the risk averages 1 in 38 nationally. Few Sheffield Council properties will have high security measures such as burglar alarms, external security lights or bars on doors and windows, where the risk is reduced to 1 in 77.

¹¹ Marion Roderick. *Housing Health and Safety Rating System: Hazard 12 – Entry by Intruders: A local evaluation of the hazard.* Bristol City Council. 2005.

¹² Roger Donaldson. *Experiences of older burglary victims.* Home Office Findings 198. (2003).

¹³ Cookley D., Woodford-Williams E. *Effects of burglary and vandalism on the health of old people.* *Lancet* 1979 Nov 17;(2) (8151):1066-7.



Security

Our best estimate is that the high security windows and doors installed under the *Decent Homes Programme* will nearly halve the risk of harm from intruders, from 1 in 18 to 1 in 34.¹⁴ Our estimate (figure 6.4) is derived by multiplying the reduced risk to a property with enhanced security measures (1 in 50) by the greater socio-economic risk of living on a council estate.

Our estimate of the impact of the *Decent Homes Programme* is an annual reduction of harm to **1360** occupants (down from 2889 to 1529) of Sheffield Homes when the *programme* is completed. This estimate is conservative. We have steered a course between, on the one hand, the claims of some window and door manufacturers to dramatically reduce risk (supported by the Glasgow study¹⁵ reported earlier) and on the other, the residual likelihood of burglary of 1.3% (1 in 77) reported by the British Crime Survey even for properties with a very high level of security, partly a reflection of human fallibility.

We estimate that these works will lessen the **impact on health** in the Sheffield Council dwellings by reducing from 3 to 2 the estimated number of occupants likely to suffer traumatic harm which could lead to early death (Class I health outcome) reducing from 6 to 4 the number of occupants who are likely to suffer a major health crisis (Class II health outcome), reducing from 289 to 153 those who are likely to suffer acute anxiety and depression leading to sleepless nights (Class III health outcomes), and reducing by over 1000 those who are likely to suffer milder forms of anxiety and depression but still important enough for the victims to seek medical attention (Class IV health outcomes).

Cost benefit

Without more investigation it is difficult to estimate to direct cost savings to the NHS in Sheffield and the indirect cost savings to the local economy. 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.¹⁶ According to Thomas and Morris¹⁷ this translated into 2.6 million cases referred to the NHS in England during 2000. Sheffield would have 30,000 cases a year if these same prevalence rates applied. There will be a significant overlap with the estimated 2890 occupiers of Sheffield City 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 6.5, with the majority of expenditure on antidepressant drugs.

Figure 6.5: **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

Proportionately, depression would cost the NHS £4 million annually for the adult Sheffield population and approximately £670,000 for those affected by burglary to Sheffield Homes prior to the *Decent Homes Programme*. Of course this is very much a ballpark figure, but on this basis (and using 2005 prices) the enhanced security provided by the *Decent Homes Programme* would save the NHS in the order of £300,000 annually once the *programme* is completed.

¹⁴ The likelihood of 1 in 50 (2%) is about midway between the English average of 1 in 77 for dwellings with high level of security and 1 in 36 those with some security. This is increased by 48% to reflect the likelihood on council estates/English average (4.0/2.7). British Crime Survey 2004/5.¹⁵ The likelihood of 1 in 50 (2%) is about midway between the English average of 1 in 77 for dwellings with high level of security and 1 in 36 those with some security. This is increased by 48% to reflect the likelihood on council estates/English average (4.0/2.7). British Crime Survey 2004/5.

¹⁵ The impact evaluation of new SBD doors and (key-locking) windows in Glasgow revealed a 75% reduction in burglary. But there is debate in Sheffield and elsewhere about whether push button release windows are quite as secure as key locking windows. According to Doncaster's SBD Architectural liaison Officer, whereas a key-lockable window requires an intruder to enter through the frame (with risk of injury from smashed glass) a push button lock can be released by putting a hand inside.

¹⁶ Office for National Statistics (2000) *Psychiatric Morbidity Survey*. London. ONS.

¹⁷ Christine M Thomas and Stephen Morris. *Cost of depression among adults in England in 2000*. *British Journal of Psychiatry* (2003), 183, 514-519.



The Process of Renewal

Key message: *There is scope for improving the process of renewal in the Decent Homes Programme to minimise stress and anxiety and maintain mental health and well-being.*

Introduction

Though family death and divorce cause most stress in life, the process of renovating a house is high on the list: wherever you live and in almost all circumstances. For public housing and regeneration agencies it goes with the territory and the best that can be achieved is to mitigate these stresses and strains by sensitive management of the process. Even so, as we discovered in our Liverpool study,¹ investing in a 'Rolls Royce' redevelopment process was no guarantee of avoiding stress. Indeed for many residents the experience cast a long shadow over significant improvements in warmth, comfort and security – usually associated with better health and well-being.

Our findings are confirmed by Terry Allen's investigation of a council estate near Bradford which was undergoing physical renewal through Estate Action.² The refurbishment package there was very similar to the *Decent Homes* package in Sheffield – 'replacing doors and windows, rewiring, remodelling the kitchen and bathroom, complete redecoration and, where necessary, installing or replacing central heating.' In his article *Housing Renewal – Doesn't it make you sick?* he highlights how personal tenant control over the process is linked to health, but also how difficult it is to achieve this with 'monolithic' programmes on large council estates. Nevertheless there was a significant correlation between feeling well informed about the renewal process and not experiencing adverse health effects.

Decent Homes Process

The *Decent Homes* process is often news in Sheffield newspapers, for better or worse. Sheffield Homes and their five contractor partners have responded to adverse publicity by strengthening consultation and complaints procedures, and introducing safety measures to minimise the likelihood of physical harm to tenants during the period of on-site works. Within our limited resources and timescale it has not been possible for the research team to evaluate these enhanced procedures. However from three focus groups of tenants we have extracted a number of emotional responses which have a bearing on health (Figure 7.1).

Figure 7.1: **Emotional reactions to stages of the *Decent Homes* process**

1 <i>Planning</i>	2 <i>Consultation</i>	3 <i>Works</i>	4 <i>Settling in</i>
Agree scope and phases	Set up project group	Signal timescale	Post-renewal survey
Survey properties	Fit out show home	Arrange decant if necessary	Snagging defects
Decide project plan and team	Visit each tenant	Contractor moves in	
Tenant Responses			
* expectation ✓	* choice ✓	* respect ✓	* reorientation ✓
* optimism ✓	* empowerment ✓	* disorientation ✗	* relaxation ✓
* uncertainty ✗	* scepticism ✗	* control ✓	* recovery ✓
* apprehension ✗	* control ✓	* invasion ✗	* frustration ✗
* inclusion ✓	* disempowerment ✗	* expense ✗	* home as haven ✓
		* disruption ✗	
		* informed ✓	
stress · worry · anxiety · depression · well-being · health			

From previous studies it is clear that negative emotions can lead to worry and stress, anxiety and depression, and ill health – especially poorer mental health. Positive emotions usually lead to a greater sense of well-being and better health.

¹ Critchley R., Gilbertson JM., Green G., Grimsley MJ. (2004) *Housing Investment and Health in Liverpool*. CRESR. Sheffield Hallam University.

² Allen T. *Housing Renewal – Doesn't it make you sick?* *Housing Studies*, Vol. 15, No. 3, 443-461, 2000.

The Process of Renewal

Stage 1: Planning

The process starts with converting the citywide *Decent Homes* commitment into an investment plan for a specific council estate – what is to be done to how many houses in any one financial year by which contractor and for what cost? Typically the investment plan is formulated by an Area Investment Working Group comprising representatives from the Tenants and Residents Association (TARA), members of Sheffield Homes’ investment team, local councillors and board members of Sheffield Homes. Individual tenants are given notice of intent to refurbish their home via a formal letter from Sheffield Homes and informally from their TARA or council representatives or from seeing activity nearby “We knew it was coming because of what had gone on before down here.”



Expectations could be high “It will be wonderful” in relation to current conditions “Its 20 years since my house was upgraded and it’s about time it was done again.” And there is also a sense of *inclusion*

because facilities (as distinct from the fabric) are being brought up to a standard enjoyed by the rest of society. Tenants singled out “Windows for a start – I can’t wait (*anticipation*) – and the kitchen,” just the kind of improvements incorporated into the national *Decent Homes Standard* by local authority representatives. All these emotions contributed to a feel-good factor associated with health and well-being.

The other side of the coin was *apprehension*, especially from older and vulnerable people, about the disruption of major building works and *uncertainty* about precisely when it would happen. These emotions are associated with anxiety, worry and stress. But some were more phlegmatic “At the end of the day they have got to do it and there is no use getting upset about it.”

Stage 2: Consultation

After agreeing the broad shape of a *Decent Homes* package, a project team is set up to oversee the consultation and implementation stages for each phase of between 80 and 120 homes. The team now includes the contractor who surveys every property and feeds requirements into a



design solution. Tenants are sent an ‘investment pack’ and encouraged to visit a show home or caravan nearby and choose (from a range of options) how their bathrooms and kitchens are to be improved. Generic designs are adapted (with cost and logistical constraints) to accommodate tenant preferences for colour and ergonomics. Tenants could choose not to have work done.



Tenants receiving the investment pack and a visit from Sheffield Homes’ staff tended to be positive about the process; they felt listened to (*empowered*). The options presented by the show house or caravan allowed some *choice* – “The caravan gives you a good idea” “We got the chance to view stuff.” Some were impressed by what was on offer “I could have walked in there (show house) and bought it straight away” Others thought the offer of less quality than the facilities they had installed themselves. So there was variable *control* over the quality and content of facilities, but relatively little *control* over the timing of the works.

Stage 3: Works

This phase is predictably the most disruptive and can be emotionally draining and stressful over a typical period of 6-8 weeks. Some tenants did not feel in *control*, others only partly so, because of an underlying asymmetry in power (*disempowerment*) between themselves and the landlord. They compared this with a contract between an owner-occupier and builder “You have the say, you have the power, you are paying, telling them,” whereas “here (with the *Decent Homes Programme*) you are given.”



Contractors made efforts to minimise the invariable *disruption*, noise, dirt and sense of *invasion*, but tenants still reported problems. Boxes were supplied to store belongings but were sometimes insufficient “I can have three boxes for 40 years of stuff” or “My front room was absolutely choc-o-block (storing things) and there was nowhere for me to sit.” Normal routine could be disrupted, *disorienting* tenants. “With everything that has gone on we have been lost, half the time you are on another planet, don’t know where you are,

The Process of Renewal

trying to get things sorted.” For some, family life was pressurised, with more arguments, more takeaways and more **expense** “living off junk food all the time.” Having contractors in their home led to a sense of **invasion** “we were **invaded** and put the kettle on .. but it got to the point when they were using the house like a cafe” and it “makes you feel your privacy is **invaded** ‘cos you don’t know who these people are and what they are doing.” All these emotions could cause stress and anxiety. “I take tablets for anxiety, and this (the works) made me more anxious; at times I had to get away as I couldn’t take any more.”

The works could also impact on **physical** as well as emotional aspects of health because “everything was filthy all the time” and however well a site is managed, there is always potential danger from equipment and renovation activity. Sheffield Homes has recently redeveloped their Health and Safety systems. Joint audits of sites by Health and Safety representatives of both Sheffield Homes and the contractors are carried out on a monthly basis as usual and early in 2006 a new ‘traffic light’ system was introduced to rate each hazard on sites. The scoring system of 1-4 (red, two amber ratings and green) allows Sheffield Homes to monitor the performance of their contractors more effectively and helps to quickly signal up changes in contractors’ performance or highlight persistent problems. If a particular problem re-occurs on a site the rating system progressively reduces so the fall in performance can be picked up and acted upon. This transparent system is shared with all Sheffield Homes’ contractors at Health and Safety steering group meetings so that they can learn from each other’s performance and information on both good and bad practice can be shared.

Sheffield Homes also continue to issue tenants with a reference document which includes a section on health and safety and provides necessary guidance and advice for tenants whilst work is undertaken in their homes. Following the death of a tenant, contractors have also been advised to reduce risks to tenants. If a tenant persistently enters a working area against health and safety advice, then contractors have been instructed to clear up and leave the site. The Area Office will be

informed and take the issue up with the tenant. In addition Sheffield Homes, in partnership with the contractors, conduct safety talks in local schools to inform children of the health and safety risks associated with the Decent Homes works.³

Stage 4: Settling back in

This is a period of **recovery**, readjustment after the work is done. Tenants needed time to get things back to how they were (**reorientation**), to **relax** again – “settling down.” They were “glad to be back to normal.” One participant described feeling “shattered and exhausted” by the process, and that they were only now starting to **recover** and build themselves up again “only within the last month”, and after 6 months “only in the last two weeks that I have had any time for me – it’s taken me all that time”.



Some tenants implied the stresses were subsiding, “going behind me”. “Now it is different – at first it was like going into someone else’s house”.

Others said they were putting the house back together so it felt like home again. “It is getting decorated now; it is starting to feel more homely, so comfortable now, so at night-time I can relax.” As our evaluation of Warm Front shows, home is not simply a house but a haven. Being comfortable and at ease is an important influence on health and well-being.⁴

Perspective

The impact of the Decent Homes process on **physical** health is almost certainly confined to stage 3, during the 6-8 weeks when contractors are in the house. As the Liverpool study showed, the **emotional** impact can be longer lasting, casting a shadow over the benefits of warmer and more secure homes. Without further research we cannot be sure of how it is panning out in Sheffield. However, official records provide context and these show a modest but significant level of complaints about the process (Figure 7.2).

³ The Stay Safe in Sheffield campaign targets children aged 5-11 to warn them of the dangers of playing on building sites.

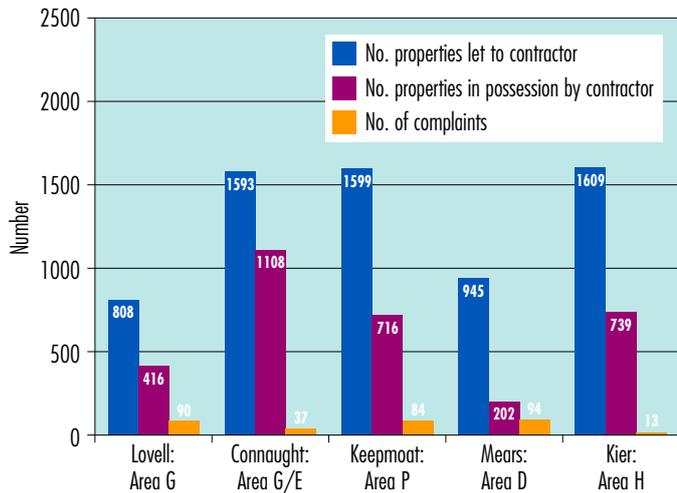
⁴ Gilbertson J., Stevens M., Sniell B., and Thorogood N. and the Warm Front Study Group. *Home is where the hearth is: Grant recipients’ views of England’s Home Energy Efficiency Scheme (Warm Front)*. Soc Sci Med 2006 (in press).

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The Process of Renewal

These percentages give perspective to the stresses and strains reported in this chapter. The number of complaints relates to a significant number of properties where work was undertaken, but varies between contractors. Other in-house surveys show levels of satisfaction generally between 70 and 80 per cent. There is scope for improvement and there is evidence of improvement in the latest phases of works. In the short term this will result in less stress; in the longer term it will allow the benefits of warm and comfortable homes to shine through more readily. And high levels of satisfaction overall are associated with better health and well-being.

Figure 7.2: **Decent Homes complaints from tenants**
20/06/05 to 28/02/06



Source: Sheffield Homes, 2006

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Summary

Introducing this report we asked whether 'upstream' capital investment by the *Decent Homes Programme* could reduce 'downstream' demands on the NHS revenue budget. In our initial Health Impact Assessment we have only shown the way, rather than produced a detailed cost benefit analysis.

Figure 8.1 shows how a typical *Decent Homes* package of £14,500 is split into component parts. In three key chapters 4 – 6 we use the *Housing Health and Safety Rating System* to estimate the health impact of each of these components. **Chapter 4** shows how further improvements to heating and insulation will improve warm 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. But **chapter 7** reports how the process of refurbishment is almost invariably stressful and in the short term can erode mental health.

Figure 8.1: **Decent Homes package**

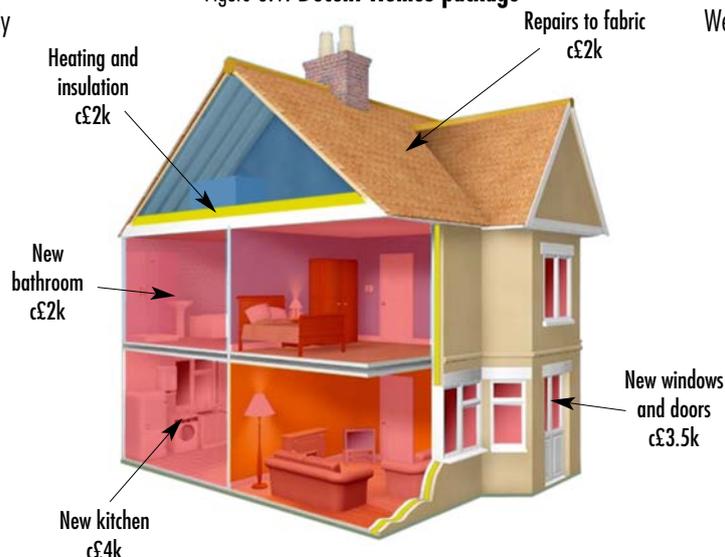
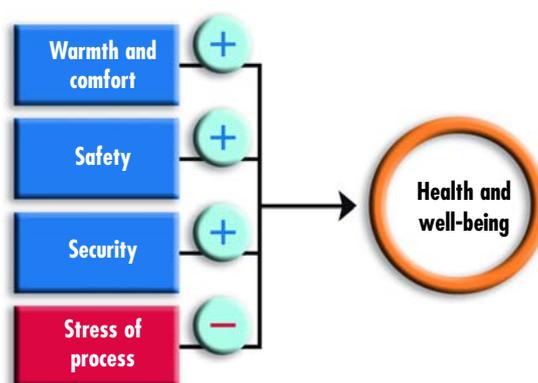


Figure 8.2: **Impacts on health**



We make two final points about the relatively modest improvements to **physical** health revealed in chapters 4 and 5. **First**, returning to the Methods **chapter 2** (figure 3.2) we make an important distinction between the reduction of **risk** to the health of occupiers arising from housing improvements and the much smaller reduction in numbers **actually harmed**. Our conservative estimates relate to this latter group and more specifically to those who are sufficiently harmed to seek medical attention from the NHS. Such a specific focus facilitates cost-benefit analysis.

Second, as our earlier research demonstrates, improvements in the physical fabric and facilities of a dwelling may have a greater impact on **mental** health. 'Home as a haven,' with a sense of security and modern facilities which promote inclusion into mainstream society – all contribute to an individual's health and well-being. In turn better health enhances the economic and social prospects of social housing estates, helping their integration into the mainstream life of the city.



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