

Retrofit to the Rescue

Environmental upgrading
of multi-storey estates



Foreword

ROCKWOOL has a long-standing relationship with the London School of Economics (LSE) and have worked together on a number of projects relating to the refurbishment of social housing in the UK. In 2012, we commissioned Professor Anne Power and her team at the LSE to study the refurbishment of the Edward Woods Estate in West London, which resulted in the publication of High Rise Hope and High Rise Hope Revisited.

That study aimed to better understand the social impact of the works both during and after the process. We shared the findings of High Rise Hope widely with policy-makers, social housing providers and the construction industry, with the aim of supporting improvements in future retrofit projects around the UK and beyond.

Portsmouth City Council was one of the organisations that drew on the lessons from High Rise Hope to inform their approach to the refurbishment of one of their housing blocks, Wilmcote House. It seems fitting, therefore, to have chosen Wilmcote House for a new study on the social impact of retrofit works, once again with the LSE.

The refurbishment of Wilmcote House is the one of the most ambitious of its kind. It is the largest social housing block to have been refurbished to the EnerPHiT standard, the retrofit equivalent of Passivhaus, with residents in situ. The project was fully funded by Portsmouth City Council, who believed that a whole building approach could significantly improve residents' standard of living whilst achieving a reduction in energy costs and consumption.

The research undertaken by the LSE with the residents of Wilmcote House has shown that this approach met expectations, whilst underlining the importance of meaningful engagement throughout the process. The refurbishment has resulted in a marked improvement in the quality of life for residents, with improved thermal performance of the flats alongside better interior design and exterior appearance.

The publication of this report comes at a time when Government is considering both how social housing can meet energy efficiency targets set out in the Clean Growth Strategy and how to update the Decent Homes Standard to ensure it is fit for purpose. There are enormously important lessons from Wilmcote that we hope policy-makers will take note of as part of this policy development, not least in relation to the funding, leadership and ambitions shown by Portsmouth City Council, the building design, and of course the engagement with residents.

It also comes shortly after the UN Intergovernmental Panel on Climate Change issued a stark warning to governments across the world that urgent and unprecedented changes are needed to limit the potential disruption caused by global warming, and that the global economy needs to bring its net carbon emissions down to zero by 2050.

That cannot be achieved without ambitious energy efficiency policy driving a step-change in the quality and rate of refurbishment and we hope Wilmcote House can act as inspiration for that.

Darryl Matthews
ROCKWOOL UK

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LSE Housing and Communities

LSE Housing and Communities is a research unit within the Centre for Analysis of Social Exclusion (CASE) at the London School of Economics led by Professor Anne Power. CASE is a multi-disciplinary research centre which focuses on the exploration of different dimensions of social disadvantage, particularly from longitudinal and neighbourhood perspectives, examining the impact of public policy. We aim to understand the social dynamics of disadvantaged neighbourhoods; promote models of housing and neighbourhood management; develop ways to support community and resident self-help action, especially in social housing areas; and shape government policy.

1. Executive Summary

i. The regeneration of Wilmcote House

Wilmcote House is a large bison REEMA concrete panel building in the Somerstown area of Portsmouth owned by Portsmouth City Council. The building is made up of three linked, 11 storey high rise blocks. It contains 107 units; 100 three bedroom maisonettes and seven one bedroom ground floor flats.

Wilmcote House is located very close to the city centre and is in an area with high levels of deprivation. Prior to regeneration works, many problems arose due to lack of insulation and poor energy performance of the blocks. According to the Council, in 2012 one third of tenants reported issues of damp, condensation and mould growth. Residents also found the heating very expensive to run (often using night storage heaters), the windows were draughty, and the roofs were leaking.

The £12.9 million regeneration project was funded by Portsmouth County Council. It aimed to carry out a deep retrofit to the EnerPhit standard. EnerPhit is an energy-saving standard, equivalent to the best energy performance possible for retrofitting existing buildings. The regeneration took place from summer 2015 to summer 2018. All work was done with residents in-situ. The Council considered the option of demolition but upgrading the blocks was justified as cheaper and less disruptive to the community. It also allowed the Council to convert the ground floor areas into four one bedroom flats.

The regeneration aimed to:

1. **Tackle fuel poverty.** By insulating the building, the Council expects to drastically reduce residents' demand for energy, cut their energy bills and protect them from future price increases.
2. **Improve health.** Warmer homes provide a better environment and reduce health problems. Research and monitoring of a sample of 18 resident

properties throughout the 2013-14 winter season highlighted that the majority of residents were not heating their properties to an adequate level, because the night storage heaters were inefficient and too expensive to run.

3. **Future-proof Wilmcote House for another 30 years.** The building would severely deteriorate if major works were not undertaken.

4. **Save money on day to day repairs and maintenance overtime.** Maintenance costs for the ageing building were rising steeply.

5. **Ensure that Wilmcote House remains a useable asset.** A major aim of the project is to ensure that the properties continue to be let.

6. **Reduce rent arrears.** It is in the Council's interest to help people save money on energy bills to secure rental income.

ii. Research methods

The London School of Economics (LSE) Housing and Communities carried out 15 semi structured interviews before, during and after the works, to measure the social impact of the works and understand how it affected quality of life. All interviews took place in residents' homes and lasted between half an hour to one hour. All but one of the interviews was recorded. In total, we conducted 45 tenant interviews.

We asked residents about:

- their home environment;
- the area of Wilmcote House/ Somerstown;
- their sense of security, both in their homes and in the building;
- their income and current energy bills;
- their heating strategies and the extent to which they were struggling to pay energy bills;
- levels of social interaction and community participation;
- health of themselves and their family members;

- the refurbishment project; and
- the type of energy meter, payment method and readings.

Round 1 collected residents' views before the works, Round 2 while the works were ongoing, and Round 3 focused on how residents felt about the outcomes of the works.

iii. Overview of findings

Most residents strongly support the overall approach of Portsmouth City Council to the estate renewal and are happy that the retrofit has been done. Residents like the location of Wilmcote House, its proximity to schools, shops and the station. They also like the Portsmouth area.

Portsmouth City Council has a good reputation with tenants for being responsive. The Council's Resident Liaison Officer provided a vital link for residents, for which she was strongly praised by the residents. **The building process was difficult and the Council believes it was a mistake to hand over the task of liaising with residents to the builders during the works.**

The builders did not always show respect for the residents or their homes. It would have been possible to achieve the planned timetable if builders had turned up more reliably. Residents often missed work to give builders access into their homes, only to be let down.

Flats are warmer, more comfortable and attractive, and draughts and mould have been excluded. Most people use the radiators significantly less and when they do, the heat is better retained. However, there are several outstanding issues following the works:

- The kitchens overheat and do not have windows that open to let in fresh air due to the enclosure of the external balconies. Air vents installed to address this problem are not adequate and can also cause draughts. They cannot be opened

and closed by the residents. This needs to be rectified.

- Currently there is no security control at the ground floor front entrances of the blocks.
- The stairwells and lifts still look decayed as they were not upgraded along with the internal flats and the exterior of the blocks.

The overall cost of the scheme – about £117,000 per flat – was justified as cheaper and less disruptive than the alternative of demolition and rebuilding. The flats provide a valuable asset with a 40-year extension to their life. The Passivhaus and EnerPHit standards of upgrading the properties showcase energy savings and the attraction of retrofit. This may have a powerful influence over the Government's regeneration strategy.

At the outset all interviewees had high expectations: their bills would go down; their homes would be warmer; and the block would look nicer. In spite of delays and outstanding worries, their feedback indicates that all three expectations have been met.



iv. Summary of interview findings

Round 1

- There was strong support from residents for the work.
- Portsmouth City Council's community engagement strategy worked well. 10 of the 15 interviewees felt well informed about the project, 12 felt their views were taken on board and 13 attended open days which they found useful and informative.
- 11 of the interviewees were committed to the proposals, and all but one understood why the works were being carried out. They had high hopes the work would make their homes warmer, improve comfort and reduce energy bills.
- 12 of the 15 interviewees thought their homes were too cold to be comfortable.
- 12 reported issues of damp, mould and condensation.
- 10 were in families suffering from health conditions exacerbated by cold and damp, such as asthma, arthritis, chest infections etc.
- The majority of residents were suffering from fuel poverty and struggled to pay their heating bills.

Round 2

- The works made people's day-to-day lives more difficult.
- 13 interviewees in Round 2 found their homes uncomfortable or very uncomfortable (compared to five interviewees in Round 1). The greatest impact on people's quality of life was noise due to the building works.
- Eight of the interviewees thought the works made their family's health worse, and 11 thought they had increased stress and anxiety levels, thereby affecting their mental health.

- In Round 2, 11 of the interviewees felt they were 'badly' or 'very badly' informed during the building process (compared to three in Round 1). This was mainly due to builders on site missing appointments.
- Despite some negative feelings, 13 of the interviewees were still on board with the project and supported what the Council was aiming to do.

Round 3

- The building works achieved what the Council set out to do.
- 14 of the interviewees reported their flats being warmer and 10 people noticed their bills had reduced, some significantly. Only one person had to cut back on heating to save money, while around half of the respondents had done so in Round 1.
- All the interviewees were very positive about the Council Resident Liaison Officer and felt that she had played an important role in the process.
- Feelings towards the builders were mixed. Interviewees from Block C, the last block to be worked on, were more positive towards the builders, suggesting their behaviour improved over the process. Some interviewees were frustrated with the builders for missing appointments and felt they treated their homes with a lack of respect. On reflection, the Council feels that it should have played a bigger part in resident liaison and maintained more direct influence over the builders on site.

v. Conclusions

Residents like their area, their city, their council and do not want to move.

They committed their support to the retrofit of their estate early on. However, they underestimated the level of adjustment and the potential for delays; this caused anxiety and frustration.

Portsmouth City Council did thorough calculations of the cost and the added value of retrofit compared with demolition and rebuilding. The longer time scale, the community disruption, the energy and environmental costs, and the loss of low cost social rented housing all made the alternative to demolition attractive. Retrofit was cheaper and retained popular energy efficient social housing in high rise blocks.

The prospect of achieving Passivhaus energy saving standards for retrofit, the highest achievable standard, inspired the Council and attracted support from the European Union.

Wilmcote House became part of a Europe wide experiment in retrofitting multi storey blocks.

The retrofit project on the Edwards Woods Estate, Hammersmith (2010-2014), written up in **High Rise Hope**, offered an inspiring model of how a high-rise council estate can be rescued.

Tenants' energy bills have fallen by an average of £700 a year, making bills more affordable whilst living in warmer flats. Monitoring evidence collected by Southampton University shows that **flat temperatures were significantly higher at the end of retrofit than the beginning**, despite a major reduction in energy use.

The Council has added four extra single units by converting disused council offices. This, alongside the existing seven single units already on site, has helped to balance the demographic make-up of Wilmcote House, which is predominately family units of two and three bedrooms.

Tenants speak highly of Portsmouth Council staff and particularly the Resident Liaison Officer. However, there was more limited praise for the builders who often changed appointments, delayed jobs and generally did not accommodate the needs of tenants.

In spite of impressive progress and a positive outcome, there are some outstanding tasks:

- The tenants would like secure, controlled doors on the front entrances to the blocks;
- The stairwells of the block are not yet upgraded and look neglected;
- Most importantly, tenants have asked for proper ventilation for the kitchens as there is a serious issue of overheating.

Portsmouth City Council gained valuable experience and knowledge from this regeneration scheme and aims to promote it widely as an innovative, environmental project that helps sustain communities and showcases an alternative to demolition.



2. Introduction

LSE Housing and Communities has long been involved in regeneration, an issue which particularly affects difficult estates and their communities. There is significant evidence concerning the negative impact of demolition and rebuilding estates on environmental and carbon impacts, on the existing community and surrounding areas, and on the supply of social and practically affordable housing. However, there is a clear gap in evidence on the potential benefits and real costs of the alternative of retrofit. It is often wrongly assumed that saving a difficult estate is costlier and less beneficial than the alternative of demolition.

In 2010 we were asked to conduct interviews with 50 tenants, to assess the community and social impact of retrofitting three high rise towers (23 storeys) on the Edward Woods Estate in Hammersmith and Fulham. The report, High Rise Hope, found that residents liked their community and area, expressed support for it to be saved and were happy to stay put during the works. In spite of many delays and hiccups, the final outcomes were generally extremely positive. This inspired the architects, ECD, insulation supplier ROCKWOOL and Portsmouth City Council to attempt an even more ambitious project of restoring a complex three

tower estate, housing mainly families. They aimed for the highest possible standard of energy saving described as EnerPHit/Passivhaus. LSE Housing and Communities was asked to track the process through the eyes of tenants over the course of the programme. This report is the outcome of that work.

Separately from our research, Southampton University was commissioned to monitor flat temperatures in relation to energy use over the course of the works, in order to measure the energy saving value and gain in energy efficiency.

The tenants we contacted over the five years were fully behind the project. It has made the majority of flats warmer and residents have fewer problems with damp and mould and are enjoying reduced bills. Although the tenants found the building process very difficult as it put their living rooms and kitchens out of action for a period, the outcome has generally been extremely positive and residents are still fully behind the project, even though there are still teething problems. We hope this report will help save many blocks of social housing in need of retrofitting. To lose them would bring social costs we can ill afford. To save them through energy saving retrofit will reduce our carbon emissions significantly.

Passivhaus and EnerPHit Standard definitions

Passivhaus Standard: Passivhaus buildings provide a high level of thermal comfort using minimal heating and cooling by following strict guidelines. Most of the heat demand is met by passive heaters such as the sun, human heat and heat from home electrical appliances. By definition “a Passivhaus is a building in which thermal comfort can be achieved solely by post-heating or post-cooling the fresh air flow required for a good indoor air quality, without the need for additional recirculation of air”.ⁱ

EnerPHit Standard: EnerPHit is the standard for renovation and retrofit projects wanting to achieve Passivhaus Standard. It has slightly fewer restrictions to allow for the existing architecture which may mean Passivhaus standard is not possible.ⁱⁱ This is the equivalent of the Passivhaus retrofit standard.

3. Tower block retrofit: the wider context

a. Demolition or refurbishment – costs and benefits

The UK has a long history of demolishing slum housing and replacing it with new build estates. The refurbishment of council estates gained ground in the 1970s, but in the 1990s there was a significant backwards shift towards 'urban renewal'. With not enough targeted resources available from central government, councils started entering into partnerships with private developers to regenerate their housing stock. Under this new approach, private properties for sale are being built to cross-subsidise the building of new affordable homes.

Since the early 2000s, central government has actively encouraged and incentivised local authorities to use this funding method to demolish council estates and build new mixed-income developments. Self-funded redevelopment schemes are now a mainstream approach to the regeneration of council estates. There are, however, academics, community groups, and – increasingly – council officers arguing against the wholesale clearance of council estates as the panacea to solving the housing crisis.

Demolition plans can be very contentious and community groups have powerful legal tools to use against local authorities and developers. The level of community opposition is likely to escalate to the point of jeopardising the timely delivery of the scheme, or its delivery itself.

The delivery of new replacement homes can be slow, and the rehousing process can cause disruption to local communities through displacement and loss of social networks. Research shows that several factors can impair

the smooth running of a rehousing programme, resulting in delays, displacement and multiple decant, in turn having a negative impact on residents' wellbeing and quality of life.

Redevelopment costs are considerably higher than those of refurbishment. Rehousing tenants and building new homes results in significantly higher financial costs, coupled with the temporary loss of rental revenues and the shortage of affordable housing capacity.

The environmental impact of demolition is far bigger compared to refurbishment. New build homes result in considerable CO2 emissions, given that both construction and the use of new building materials are both very energy intensive processes.

Research shows that the benefits of refurbishment are numerous and delivered more quickly, as opposed to the longer term benefits of demolition and rebuilding. Renovation of old properties is less costly and less detrimental to local communities and the environment and can achieve the same outcomes in a shorter period of time. Technological advances mean that old homes can be effectively retrofitted and subsequently compare favourably with new build homes in terms of energy efficiency. Refurbishment has a knock-on positive effect on neighbouring properties and the wider area, unlike large scale redevelopment which condemns neighbourhoods to demolition and planning blight, sometimes for decades. Social mix can be achieved by investing in an area and making it into a more attractive and desirable place to live. Additional housing can be attained by means of infill development.

b. Energy efficiency and the UK environmental agenda

Over the last two decades, climate change has become an increasingly relevant issue in public debate and has been high on the UK political agenda. Following the adoption of the Kyoto Protocol in 1997 and its enforcement in 2005, the UK Government passed the Climate Change Act in 2008, setting legally binding five yearly targets to drastically reduce CO₂ and other greenhouse gases (GHG) emissions by at least 80% by 2050 compared with 1990.

The European Union has also set targets to reduce GHG emissions by 20% by 2020, and by 40% by 2030. These targets go hand-in-hand with energy efficiency measures and an increasing reliance on renewable energy sources such as water, solar, wind and biomass, as opposed to fossil fuels. In order to achieve its long-term goals, the EU has introduced several directives to regulate the transition towards an energy efficient and low-carbon economy.

In the UK, the built environment contributes to about 80% of overall CO₂ and other GHG emissions, with housing making up 36% of the total. Increasing the energy performance of existing homes is therefore vital to achieve governmental and EU targets.

c. Fuel poverty and social deprivation

In 2000, the UK Government enacted the Warm Homes and Energy Conservation Act, three years after the term fuel poverty had been officially adopted. The Act required the Secretary of State to work on a UK Fuel Poverty Strategy and set targets towards tackling the problem.

In 2011, following an independent review by Professor John Hills at LSE, the UK Government changed its definition of fuel poverty, with the adoption of the Low Income High Cost (LIHC) indicator. Households are now classed as fuel poor if:

- a) "they have required fuel costs that are above average (the national median level)", and;
- b) "were they to spend that amount, they would be left with a residual income below the official poverty line".ⁱⁱⁱ

In other words, fuel poverty is defined as people's inability to keep the temperature in their homes at a comfortable enough level to suit their personal circumstances and allow them to enjoy an adequate standard of warmth.

Key drivers behind fuel poverty are household income (after housing costs), energy prices, and fuel consumption, which is based on dwelling characteristics as much as people's choice and household characteristics. This means that poor energy performance of buildings can worsen the extent and depth of fuel poverty. Given that 60% of all fuel poor households live in poorly insulated homes,^{iv} improving energy efficiency of the existing housing stock is clearly one of the most important ways forward to eradicate fuel poverty.

According to the most recent figures,^v fuel poverty affects 2.55 million households (11.1% of the population) in England alone. Due to the sheer scale of the problem, the Government has committed to eradicating the problem by 2030.^{vi} Fuel poverty has a severe impact on people's health. Inadequate heating can exacerbate health problems such as pneumonia, asthma, and arthritis,^{vii} and can even lead to premature deaths.^{viii} Health problems are positively correlated to unemployment and underemployment, in a self-perpetuating cycle of poverty and deprivation. It puts a strain on the NHS of an estimated £1.36 billion per annum.^{ix}

In recognition of the role played by dwelling characteristics, the Government has set out to achieve its target to eradicate fuel poverty by upgrading the highest possible number of fuel poor homes to a minimum EPC rating of C by 2030.^x The Energy Company Obligation (ECO) schemes

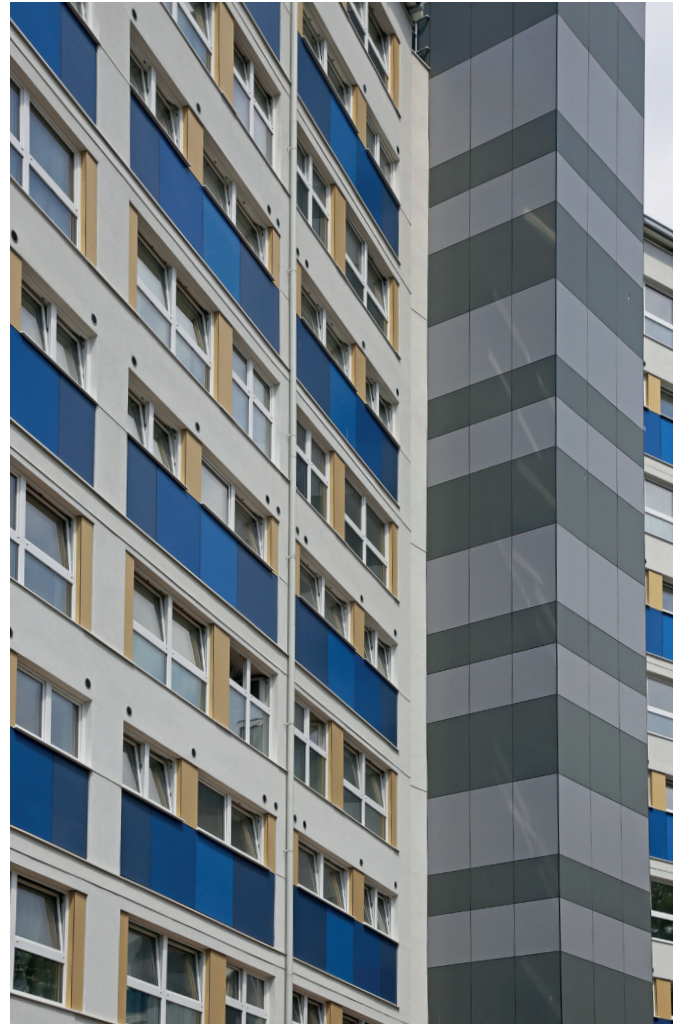
are part of the Government’s plan to incentivise the retrofit of owner-occupied and private rented homes.

Social landlords so far have been at the forefront on energy efficiency measures because of their concerns with tackling fuel poverty, to improve their residents’ quality of life but also to secure rental income.

To date, there have been a few examples of the successful retrofit of existing council buildings. As mentioned previously, the Edward Woods Estate, in the London Borough of Hammersmith and Fulham underwent substantial refurbishment works between 2011 and 2014, which involved the external cladding of the three tower blocks, the installation of solar panels to light up the communal areas and power the lifts, and other features meant to better insulate the buildings.^{xi}

Another example is the refurbishment and retrofit of Colne and Mersea Houses, two 17-storey tower blocks in the London Borough of Barking and Dagenham.^{xii} The project was delivered in 2011 and combined works to bring the flats up to the Decent Homes Standard with energy saving measures, such as external cladding, roof insulation, a new heating system and installation of smart meters.

Along the same lines is the ‘sustainable refurbishment’ project of the Ethelred Estate in the London Borough of Lambeth,^{xiii} which took place between 2008 and 2010. It was designed to increase the energy efficiency of the three tower blocks and improve residents’ quality of life in their homes. The scheme involved external cladding, a new heating system, new double glazed windows, new wiring, new boilers and other measures to reduce condensation and cut energy bills.





4. The refurbishment of Wilmcote House

Wilmcote House (Blocks A and B) before refurbishment. Source: LSE

a. Introduction to Wilmcote House

Wilmcote House is a large bison REEMA concrete panel building situated in the Somerstown area of Portsmouth. It falls within the boundaries of the Charles Dickens ward, named after the famous English writer who was born in the vicinity.

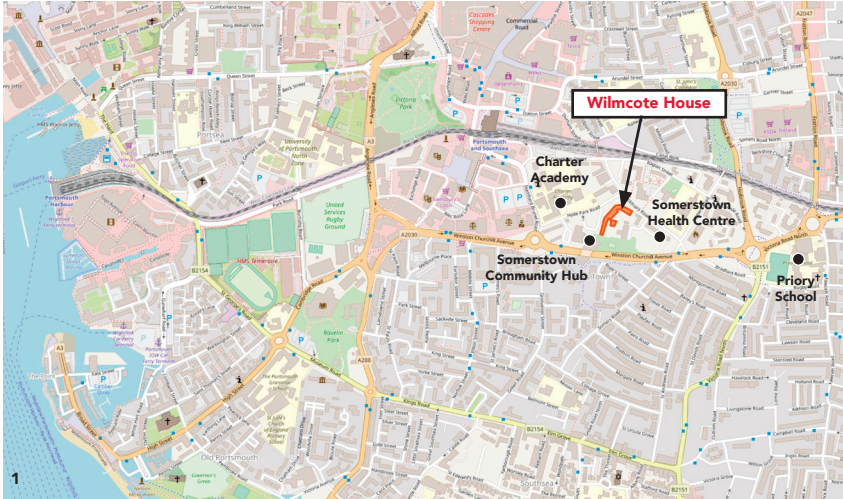
The building is made up of three adjacent 11-storey towers, named Block A, B and C. It comprises 107 units, mostly three-bedroom maisonettes, with the exception of seven ground floor flats which are one-bedroom properties. It was built in 1968, and it is owned and managed by Portsmouth City Council as part of its overall housing stock of 15,000 units.

Given the size of the properties, the block is predominantly home to families, either lone parents with children (42%) or couples with children (40%). In the two years prior to the

works 23 households moved out. Many were vulnerable households rehoused by the Council in view of the disruption expected by the refurbishment works.

Wilmcote House is conveniently located within easy reach of the city centre, as well as two rail stations (Portsmouth & Southsea and Fratton) and several bus routes. Council housing offices are local and easily accessible. Before the refurbishment works started, they were located on the ground floor of Block B. They have now moved to a newly purpose-built community centre, the Somerstown Community Hub, a facility spreading out over 4,000sq metres which is within a short walking distance of Wilmcote House. In the vicinity there are three high performing schools, the sixth form Charter Academy, ARK Ayrton Primary School, and Priory Secondary School; a Sure Start Children's Centre; and a GP practice, the Somerstown Health Centre.

Somerstown is characterised by a high concentration of council housing. Wilmcote House is surrounded by four high rise tower blocks (Handsworth House, Ladywood House, Tipton House and Edgbaston House), and several low rise blocks.

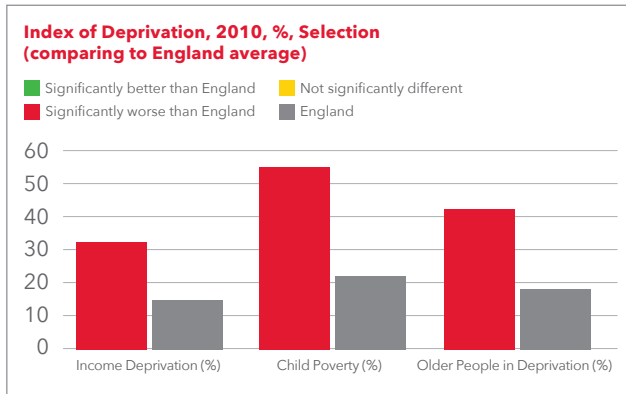


1. Bird's-eye view of Somerstown with relevant sites
Source: Open Street Map © OpenStreetMap contributors
2. Close up bird's-eye view of the area surrounding Wilmcote House
Source: Open Street Map © OpenStreetMap contributors
3. View of Wilmcote House and Handsworth House from Ladywood House
Source: LSE
4. View of Tipton House and Edgbaston House from Ladywood House
Source: LSE

b. Historic problems and remedies

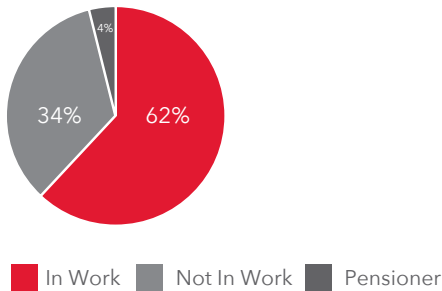
According to the Government's Index of Multiple Deprivation 2010, Wilmcote House falls within one of the most deprived areas in England, and is the most deprived in the city of Portsmouth. Charles Dickens ward has significantly above average levels of income deprivation, child poverty and older people's deprivation, coupled with high levels of unemployment and economic inactivity due to health issues, including mental health. Around two thirds of Wilmcote House residents are in receipt of Housing Benefit.

Levels of deprivation in Charles Dickens ward compared to rest of England



Source: CLG © Crown copyright

Figure 1: Employment levels in Wilmcote House



Source: LSE – Secondary analysis of administrative data provided by Portsmouth City Council 2015

Traditionally, there has been a problem in Wilmcote House with anti-social behaviour, youth gangs, Class A and B drug dealing, and acrimonious neighbourhood disputes. This helps to explain the negative reputation attached to the building and the neighbourhood, which has made Wilmcote House an unpopular place to live.

Over the years, anti-social behaviour has been effectively dealt with through partnership work involving different local agencies, and Anti-Social Behaviour Orders (ASBOs). Around eight years ago, the Council ran a community project to engage local young people in designing and painting a mural on the north facing wall of Edgbaston House. The Police Community Support Officer has been a visible presence in the building for six years and has been able to liaise closely with social services and parents to successfully tackle anti-social behaviour cases. There is a CCTV system in place in communal areas, stairwells and lifts which can help to hold people responsible for their actions, but drug dealing is still an ongoing issue.

Four years ago, the intercom system in Wilmcote House, which was installed in the 1990s, stopped working and could not be reinstated. Around the same time, in 2010, the 24/7 concierge service based in the main entrance was scrapped by Portsmouth City Council in the light of cost. While security doors had played a part in improving residents' safety, unrestricted access to the building meant that outsiders found it easier to hang around in communal areas, dealing and taking drugs, loitering and sleeping in stairwells.

Historically, many of the problems experienced by residents in Wilmcote House are associated with the poor insulation and energy performance of the building. According to the Council in 2012, at least one third of residents had been in touch in the last few years to report issues with damp, condensation and mould. Residents have long complained about the heating system, maintaining that night storage heaters are too expensive to run, inefficient, and unresponsive. Other issues frequently reported by Wilmcote House residents have been draughty windows and a leaky roof. The PVCu double glazed windows were fitted in 1988, and by 2012 they reached the end of their serviceable life.

In the absence of the implementation of an overarching improvement strategy, such as the Decent Homes Programme, the Council has always adopted a demand-led approach towards repairs and maintenance. They have reacted to residents' complaints, and carried out piecemeal interventions, such as treating black mould with anti-mould paint, replacing night storage heaters with panel heaters, fitting additional heaters, replacing windows, and fixing leaks as and when needed.

In 1991 the Council undertook a series of structural upgrades to the fabric of Wilmcote House, including strengthening works such as the fitting of bracing steel angles and gable ends, to reinforce the structure of the

blocks and reduce lateral movements. A couple of redecoration schemes were undertaken after the refurbishment works were completed, the last of which was undertaken in 2004 to the internal communal areas, but conditions quickly deteriorated due to condensation and water penetration, contributing to the overall impression of the block being run down and neglected.

c. The refurbishment project

The refurbishment of Wilmcote House fits within the wider regeneration of Somerstown and the city of Portsmouth. Somerstown in particular has been under the spotlight of regeneration since 2000, when the Labour-led Portsmouth City Council started putting the most deprived areas of the city on the political agenda.

St Luke's School, which for decades had been sitting at the bottom of league tables, was replaced in 2009 by the new Charter Academy as part of the piecemeal regeneration of Somerstown. After several years of subsequent plans, a few false starts and extensive consultation with local residents and stakeholders, new blocks and community facilities started being built on infill sites from 2012. The commencement of building works for the construction of the £10.8 million Somerstown Community Hub in 2012 marked the beginning of a new chapter for the neighbourhood.



Somerstown Community Hub, view from Wilmcote House. Tipton House in the background.
Source: LSE

Wilmcote House had historically been renowned for its poor energy performance, and residents had always complained about high energy bills and the inefficient heating system. Plans to install a local Combined Heat and Power (CHP) were looked at in 2010, but then set aside as not practical. In 2012, the Portsmouth City Council Cabinet finally passed the decision to authorise the cladding and refurbishment of Wilmcote House. The option to demolish the building was taken into consideration but was finally overruled given the sheer costs

of redevelopment, the disruption it would have caused to residents and its lengthy timescale. The Head of Building Maintenance managed to convince the Cabinet for Housing that the refurbishment would be the most cost-effective solution to deliver change. Portsmouth City Council carried out calculations which worked out that, accounting for the cost of demolition, rebuilding, disturbance allowance and rent loss, the total cost of demolition would have exceeded £20 million.

Note: See figures on spending on Portsmouth's assessment of the project in appendix 1.

Milestones of Somerstown regeneration plans and refurbishment of Wilmcote House

1990s	Major refurbishment to Wilmcote House (council office, concierge, security doors, lift towers)
2000	Somerstown Masterplan
2004	Redecoration of communal areas at Wilmcote House
2006	Portsmouth City Local Plan
2008	The Council reviews its planned maintenance service using the Vanguard Systems Thinking methodology and implements a demand led planned maintenance service
Jul 2009	Opening of Charter Academy
2010	Opening of new Adventure Playground near Tipton House
2010	Evaluation of Wilmcote House identifies windows and roof in need of replacement and highlights condensation issues
Mar 2010	Public consultation over regeneration plans for Somerstown
2011	Review of all heating options for Wilmcote House was undertaken. Plans to install a local CHP in Wilmcote House were looked at and subsequently scrapped
Sep 2011	Tender process for design consultants for Wilmcote House Cladding & Refurbishment project
2012	Building works starting for the Somerstown Community Hub
Jan 2012	Portsmouth Plan – main planning policy document in Portsmouth's Local Development Framework
Feb 2012	Appointment of ECD (Energy Conscious Design) Architects – preparation of the Feasibility Report
Jul 2012	Adoption of Somerstown & North Southsea Area Action Plan
Nov 2012	Key Cabinet decision for Wilmcote House Cladding & Refurbishment project
Sep 2012	Approval of Feasibility Report – structural survey concluded that Wilmcote House, although in need of some major repairs, was structurally sound
Jan 2013	Planning application for Wilmcote House Cladding & Refurbishment project submitted
May 2013	Approval of planning application
Nov 2013	Fire upgrading works and enabling works in Wilmcote House (new fire doors, extension of meter cupboard, over-bath electric shower)
Dec 2013	Appointment of Keepmoat
Apr 2014	Southampton University report on residents' heating patterns in Wilmcote House
Summer 2014	Opening of the Somerstown Community Hub
Jul 2014	Start of Wilmcote House Cladding & Refurbishment project
Oct 2014	Energy survey by PCC - 76 households

The ambitious cladding and refurbishment project intended to:

- **Tackle fuel poverty.** By insulating the building, the Council expected to drastically reduce residents' demand for energy, cut their energy bills and protect them from future price increases.
- **Improve residents' health.** Warmer homes provide a better environment, preventing worsening of health problems. Research and monitoring of a sample of 18 resident properties throughout the 2013-14 heating season highlighted that the majority of residents were not heating their properties to an adequate level because night storage heaters were too inefficient and expensive to run.
- **Future-proof Wilmcote House for another 30 years.** The building would severely deteriorate if major works were not undertaken.
- **Save money on day to day repairs and maintenance overtime.** Maintenance costs were becoming prohibitive.
- **Ensure that Wilmcote House is to remain a lettable asset.** An aim of the project was to ensure that the properties continue to be let.
- **Reduce rent arrears.** It is in the Council's interest to make sure that people save money on energy bills to secure rental income.

Following the Cabinet decision, the Council went out to tender to appoint an external consultant to deliver the project. Energy Conscious Design (ECD) Architects won the bid and were commissioned for the design of the cladding and refurbishment scheme. They proposed to meet the EU EnerPHit standard, the retrofit equivalent to Passivhaus, by introducing additional features to the original proposal. The Council welcomed the challenge.

The £12.9 million retrofit project was delivered delivered by Portsmouth City Council in partnership with ECD Architects, ROCKWOOL (insulation provider for works), and Keepmoat, now known as Engie (constructor).

The scheme did not rely on government funding or private investment, and was fully funded by Portsmouth City Council. EuroPHit funding was secured to promote the project as a leading exemplar retrofit project, together with funding for training to help the scheme achieve EnerPHit standards.

The Wilmcote House Cladding & Refurbishment project took place with residents in situ. It involved a series of ambitious internal and external works, and the use of Passivhaus technology for all building components to achieve high levels of thermal efficiency and energy performance. Works started in summer 2014 and were completed in August 2018, nearly two years after the planned completion date of November 2016.

A Resident Liaison Officer was appointed in 2012 to carry out community consultation and provide constant support to individuals. The Council carried out very intensive community engagement work before the building works began, and has done extensive consultation through newsletters, community events, door knocking, show flat, open days, to make sure that residents' needs were met and their views were taken on board.

The project aims to deliver energy savings for each household of up to £750 per annum, a reduction of 75% from current estimated energy costs. The energy rating of the flats will rise from Band E to Band C, meaning a change from below to above the average efficiency rate of English housing stock at Band D.

Wilmcote House refurbishment scheme - a “whole building” approach

<p>Fire upgrading works and enabling works (internal) – 2013-14</p> <ul style="list-style-type: none"> ■ Internal fire doors ■ Fitting of over-bath electric showers ■ Extension of meter cupboards and asbestos removal to make space for MHVR (Mechanical Ventilation with Heat Recovery) unit
<p>Internal works – 2014-2018</p> <ul style="list-style-type: none"> ■ MVHR unit with booster in kitchen ■ New water cylinder – current water cylinder has a capacity of 80/90 litres. It will be replaced with a three times capacity water tank (180/210 litres) which will allow for 2/3 baths. The new water tank was first supposed to be fitted in a cupboard in the main bedroom upstairs, but the Council had very negative feedback from residents, who were worried about losing precious storage space. In order to address residents’ concerns they came up with a slimmer model, narrower but smaller, which can be fitted in a different storage cupboard and so there would be no overall loss of storage space in the property. ■ Bigger lounge (floor extension) ■ Replacement of hot water pipes ■ Fitting of cooker extractor in kitchen ■ New front doors
<p>External works – 2015-2018</p> <ul style="list-style-type: none"> ■ Treatment to front elevation and external envelop (cladding on steel frame) to insulate the blocks; community walkways to be enclosed and glazed; kitchen windows to be fixed ■ Replacement of existing PVCu windows with high performance triple glazed windows ■ Private balconies enclosed and converted into glazed sun spaces, to minimise heat loss ■ Conversion of ex-council offices into two 1 bedroom and two 3 bedroom additional flats ■ Decoration of communal areas ■ New Proximity Access Control (PAC) system at each landing ■ Storage areas on intermediate landings converted into lockable cycle racks ■ Re-roofing including insulation
<p>Further works – post-2019</p> <ul style="list-style-type: none"> ■ There are further plans to introduce smart heaters once the refurbishment scheme has been completed. Decisions will be made on the basis of the internal living conditions of the flats and residents’ heating strategies post-refurbishment ■ Help to get residents off prepayment meters (whenever best option for them) and to get from Economy 7 to single tariff (eventually switching provider) ■ Educational work to further strengthen energy savings by teaching residents how to use smart meters and implement energy saving strategies <hr/> <ul style="list-style-type: none"> ■ Portsmouth City Council will carry out another consultation in a year to see how residents are finding their homes and Southampton University are committed to continuing to monitor temperatures beyond 2019 to inform further resident engagement. <hr/> <ul style="list-style-type: none"> ■ Portsmouth City Council have committed to undertaking decorations and associated repairs to the areas that were not decorated, such as the stairwell; landscaping to the courtyard area; and the creation of additional carparking spaces.

5. Methodology

a. Research framework

In recognition of the uniqueness and ground-breaking nature of the Wilmcote House Cladding & Refurbishment project, progress and outcomes were being closely monitored by different research institutions, including Southampton University, Portsmouth University, AgilityEco and LSE.

This research has a qualitative focus on social impacts and outcomes of the project from a residents' perspective, looking specifically at quality of life, community relations and fuel poverty. It draws heavily on previous LSE research undertaken on the retrofit of the Edward Woods Estate in Hammersmith and Fulham.^{xiv} The health questions are adapted from the two CASE Neighbourhood studies (CASereport 9 and CASereport 18), and the HACT's Wellbeing Valuation Approach (2014). The new definition of Fuel Poverty informs the understanding of the concept, and the angle from which the issue has been looked at.

b. Research methods

The LSE research project involved three rounds of interviews: Round 1 (before work commenced), Round 2 (soon after completion of internal works), and Round 3 (at the end of project). The aim of this three-stage process was to provide longitudinal evidence of how living conditions have changed for Wilmcote House residents over the course of the project, and to be able to assess the benefits of the retrofit from a people's perspective.

15 residents (five in Block A, five in Block B, and five in Block C) were selected using a stratified sampling technique to broadly reflect the demographic and ethnic composition of Wilmcote House. 11 interviews with key informants and local stakeholders were carried out, as well as a number of site visits.

A semi-structured questionnaire was used at each stage, each one comprising around 50 mostly open-ended questions.

All interviews took place in the residents' homes. All interviews (but one) were recorded with residents' permission.

The questionnaires covered:

1. their home environment;
2. Wilmcote House/Somerstown;
3. their sense of security, both in their homes and in the building;
4. their current energy bills;
5. income, their heating strategies and the extent to which they were struggling to pay energy bills;
6. levels of social interaction or community participation;
7. health and that of their family members;
8. the refurbishment project; and
9. which meter they were on (prepayment or credit) and their meter reading.

Round 3 also asked people how their feelings toward their home and Wilmcote House had changed since the works had been completed.

Block	Round 1 (before works)	Round 2 (soon after works, i.e. 2 weeks after completion)	Round 3 (end of project, i.e. first winter post-works)
A	Dec 2014-Feb 2015	May 2017	September 2018
B	February 2015	May 2017	September/October 2018
C	February 2015	May 2017	January 2019

6. Findings from interviews 2015-2018

Interviewee characteristics

All the residents who took part in the research were council tenants living in three bedroom maisonettes in Wilmcote House. We interviewed 15 people in each round. We spoke to four tenants in all three rounds, nine tenants in two of the rounds, and six we interviewed once.

In all three stages there were a majority of females.

We spoke with one person in each round who lived alone; everyone else had children.

Two thirds of interviewees were aged 40-59.

The majority of the interviewees were White British/European.

Figure 2: Gender of interviewees

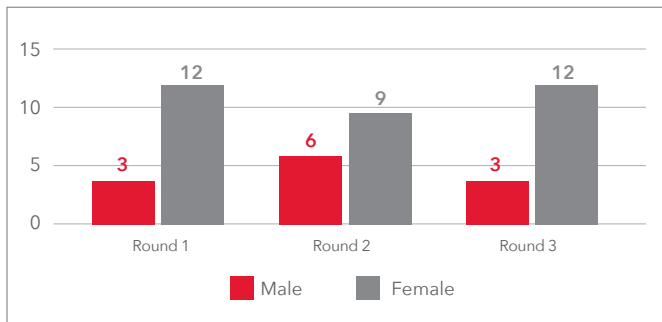


Figure 4: Age of interviewees

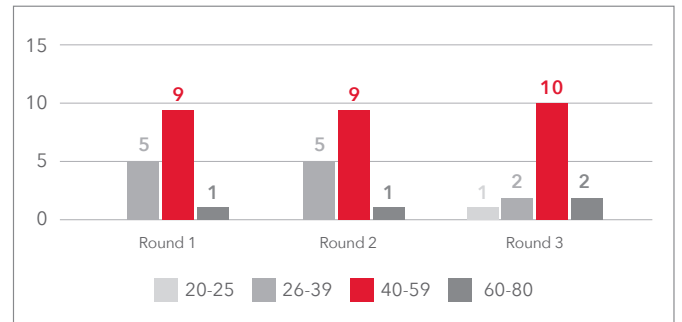


Figure 3: Household composition

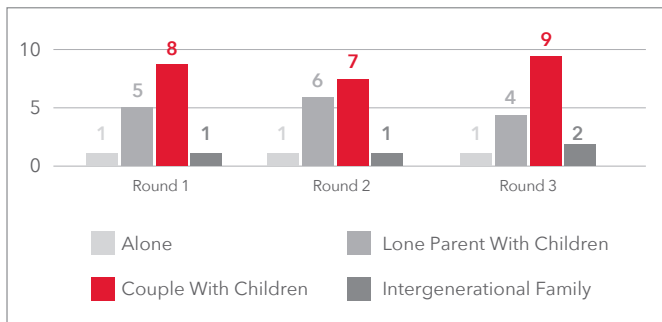
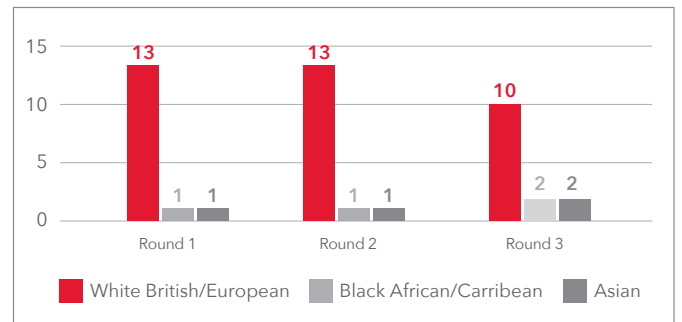


Figure 5: Ethnicity of interviewees

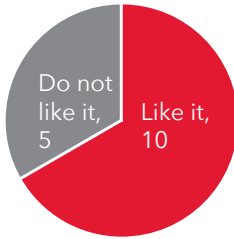


Key findings from Round 1 (December 2014 - March 2015)

i. Interviewees' feelings about home

Two thirds (ten) of the interviewees like their homes and are proud of the effort they have put into making their flat into a home.

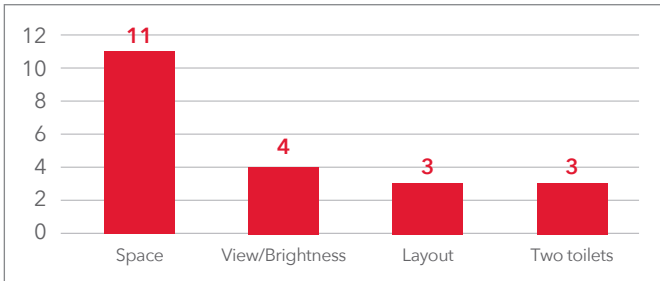
Figure 6: How do you feel about your home?



"If my friends come I'm proud because they say oh you've got a lovely view, you've got a lovely house just like a penthouse! Because they say the way I've decorated it upstairs it's nice."

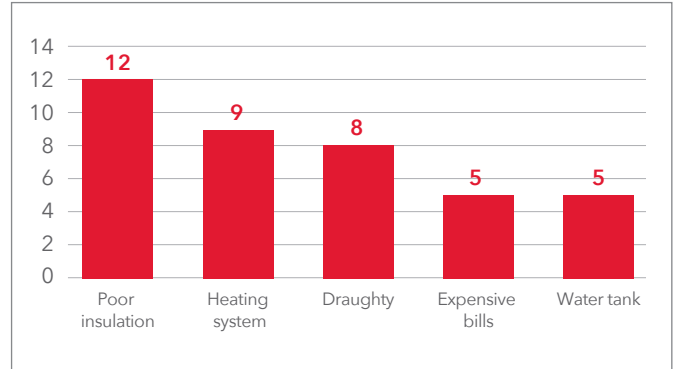
The majority of those interviewed (11) like how spacious their homes are, especially the size of the lounge.

Figure 7: What people liked the most about their homes



However, 12 out of 15 interviewees report having problems with mould, condensation, and damp. Nine out of 15 think that storage heaters are "rubbish" – not controllable, inefficient, and very expensive to run. A majority (eight) of those interviewed complained about the draughty windows.

Figure 8: What people identified as the worst things about their homes (top 5)



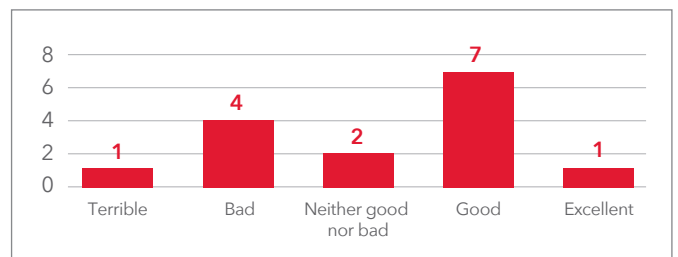
"I hate it [the mould], I mean I've got pictures at one side of my bed and one picture now is... it gets mould spores all over it. I had like little mushrooms growing on the window out there, in the inside, little tiny mould mushrooms, and I called the Environmental Health for that, and they said once these flats have been done it will be fine."

"I hate storage heaters they are crap, they burn a lot of electricity, and to keep the flat warm you'd have to have them on otherwise it's just freezing."

"The windows they don't shut properly and you get cold through the windows, you can feel the draught especially in the winter. And the big window in the living room is terrible, the floor gets absolutely soaked, 'cause it's got tiles it can get wet up to three tiles in. I can't carpet it upstairs, I can't carpet the whole room because it just floods...All the windows are the same – the windows are rubbish."

Weighing up the pros and cons, eight out of 15 interviewees still rated their quality of life in their homes as either good or excellent, while one third (five) rated it as either bad or terrible.

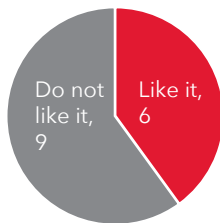
Figure 9: How people rated their quality of life in their homes



ii. Interviewees' feelings about Wilmcote House

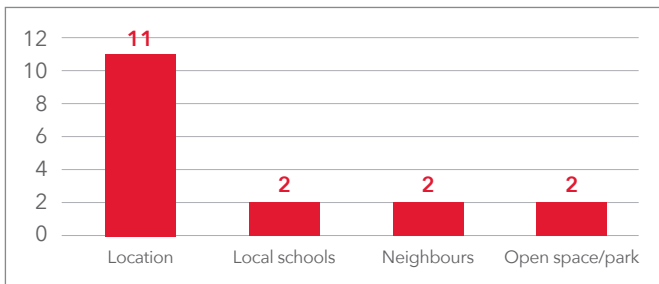
Nine interviewees do not like Wilmcote House, which is exactly the opposite of what people said about their homes.

Figure 10: How do you feel about Wilmcote House?



The majority of those interviewed (11), including those who say they do not like Wilmcote House, recognise that the building is conveniently located in a central location, within easy reach of the city centre, train stations and bus stops. Two interviewees explicitly mention local schools as significant community assets.

Figure 11: What people liked the most about Wilmcote House

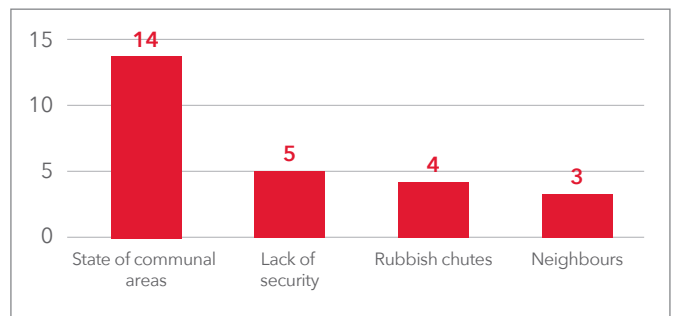


“The best thing about Wilmcote House is being within walking distance from everything, train station, buses, shopping centres, the supermarkets, work, I mean you don’t really need a car, you’ve got everything around you, the beach is walking distance...and it’s got a fantastic school across the road.”

“My son’s school [is great]. My eldest was very quiet and very socially awkward at his old school, he used to just having one friend and he used to be really sad and angry all the time, and when we moved here because he doesn’t like change and obviously that was a big change, we didn’t make him move school immediately [...] but then he decided over the summer holiday that he wanted to do it, so we did it, we organised it, he started, and the second week in he was a different boy – he loves it, he loves going to school, I wouldn’t say that he is in love with going to school but he doesn’t mind going to school whereas he cried and cried and we used to feel bad about actually sending him to school, but the teachers there are so supportive – he is a lot happier and that makes us happier, and to be honest me and husband have always said that if by moving here his happiness improved so much, than that’s all we care about. That’s the cherry on the cake, that something that we were dreading him moving school has actually ended up being the big plus of us moving.”

However, almost all those interviewed (14) thought that the maintenance of communal areas and the standard of cleanliness were big drawbacks of living in Wilmcote House. They said the building was badly abused by tenants, and described lifts, stairwells, and communal walkways as being in an appalling condition. One third of interviewees reported the lack of security doors as being a problem, as everyone can walk in and out. Four of those interviewed said the bin chutes were often blocked, and as a result residents were dumping rubbish everywhere, which in turn caused bad smells and fly tipping.

Figure 12: What people identified as the worst things about Wilmcote House



"I'm ashamed, people are so surprised when they visit me, they can see that there are other people who live in this block who don't keep this place as nice as I do – for anybody who is visiting, to be coming into a communal space that is that bad, I would be tempted to say 'I'm not going up to see that person, I've seen enough, I'm off'."

"I wouldn't invite people I didn't know that well back here, because the embarrassment of them coming in through the block, walking along, getting into the lifts...it's the disgust they see before they get here."

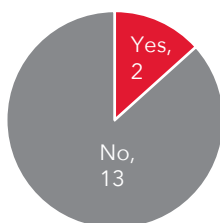
"When I moved here eight years ago it was quite smart, it was quite tidy, for a council property it was kept clean, I have been to visit friends and everything smells of urine and drugs and things, but since they took the concierge away four or five years ago it has gone down, the graffiti and everything..."

"There is no safety, everyone can come in without ringing, somebody even stole our bike! And it's dirty, there are water ponds on the balconies as the floor is not smooth... this house is lot lot lot of problems! This is completely wrong."

"The rubbish chute, I frequently go to the rubbish chute and some people just throw their rubbish on the floor because they can't be bothered to walk that extra yard just to put it down the chute. And sometimes the rubbish chute is full, there is food all over the floor..."

As a result, the majority (13) of the interviewees did not feel proud of living in Wilmcote House. The building has a bad reputation, and as a result it is difficult for some people to swap flats.

Figure 13: Are you proud of living in Wilmcote House?



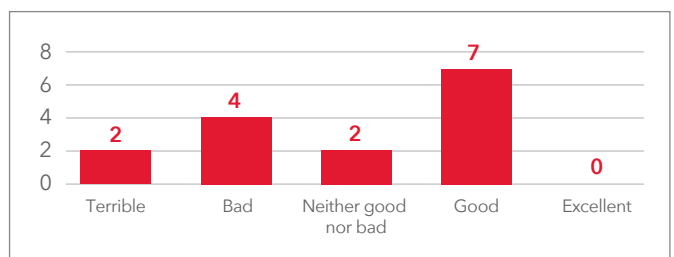
"I think 'cause of the reputation, if someone asks me where I live I always say Southsea, I never say Somerstown or Wilmcote House. And they go 'Oh, whereabouts?', and I go 'In Southsea' and then I change the subject. 'Cause people frown, they go: 'Ohhhh, Wilmcote!'. It's a thing from years ago. People instantly assume that you don't work [cause you live here] – now, I don't claim benefits, I work, but they'll tar you with that brush, because you live here, you are all on benefits."



"Because of the reputation. I don't even say I live in Wilmcote House, I'd say I live down nearby the school. I'm embarrassed because I decorate cakes, and sometimes when people come to collect it I feel embarrassed that they have to come through up to here. [...] And that looks bad upon me because then they can think 'Oh she lives there, what is she like?'. Because people do make an impression, they think that if you live in a council block like this you're gonna be a stereotype, you're on benefit, you drink, you smoke, you are unruly and...and we are not like that at all."

Taking all the above into account, it is interesting to note that around half (seven) of those interviewed still rated their quality of life in Wilmcote House as good, while six out of 15 rated it as either bad or terrible, broadly mirroring what they said previously about quality of life in their homes.

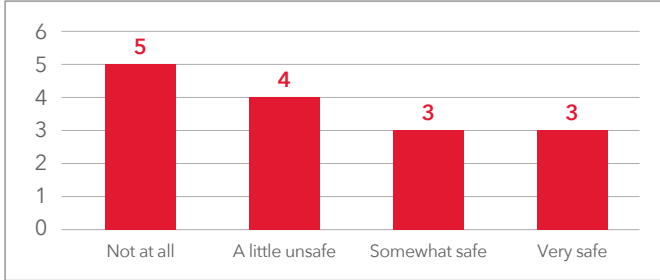
Figure 14: How people rated their quality of life in Wilmcote House



iii. Interviewees' feelings about safety

Nine out of 15 interviewees said they feel either not at all safe or a little unsafe living in Wilmcote House. They do not feel at ease walking around or taking the lifts, especially at night.

Figure 15: Do you feel safe in Wilmcote House?

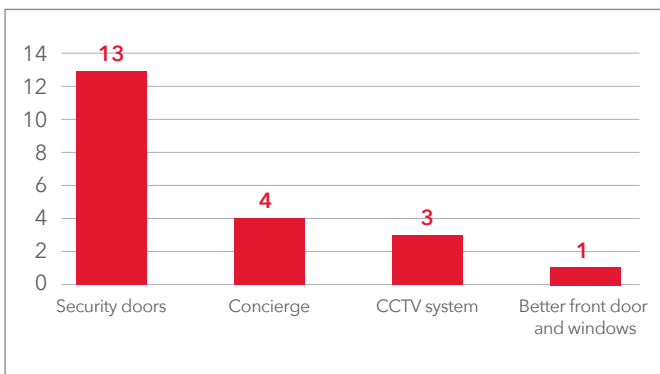


"I wouldn't walk around this estate on my own at night, I wouldn't go out on my own because of the situation there's in the block."

"I just don't feel safe at all. I don't go out at night, as soon as it gets dark I don't go out, I avoid going out at all 'cause you get the teenagers down there, people shouting at each other...so I stay in, safer!"

The overwhelming majority (13) of the interviewees believed that security doors on each landing would greatly contribute to better security and feeling of safety. Four out of 15 of those interviewed would like the concierge service to be reinstated, to make sure that people are better behaved and promptly address residents' concerns.

Figure 16: What would help you to feel more secure?



"The problem is that we don't have security doors, I think there should be a security door on each landing, like we've got here but the doors are not working, so anyone can come and go and you don't know who is it..."

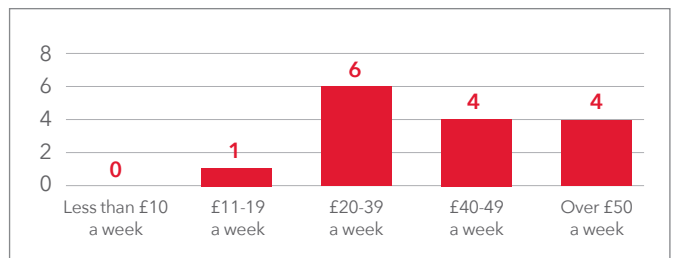
"[I would change] the security doors, definitely, especially on the balconies as well I think. And I'd really love the concierge to come back – it's only a couple of years since they got rid of them. If there were people who were annoying you or neighbours you used to be able to press the buzzer and they'd come up and sort them out so you didn't have that confrontation, but now that doesn't happen anymore 'cause there is no one there. They were brilliant they were, absolutely brilliant."

"Do the CCTV cameras work in this block? I don't think so at all. When the concierge was down the bottom they worked, because you could see on the monitor, 'cause you could see them zooming in on the monitors...since they've taken them off, it's gone downhill."

iv. Income and energy

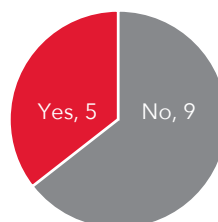
Over half (eight out of 15) of those interviewed were spending between £40 and over £50 a week for their electricity, which works out at between £173 and over £216 a month.

Figure 17: How much do you spend on electricity per week (in winter)?



Nine out of 15 interviewees thought there were paying a disproportionately high amount of money on their electricity bill.

Figure 18: Do you think the amount you pay is reasonable?



"The rent is £430 a month...so the energy cost is half the rent, so if you add that we would pay the mortgage easily!"

"Bills have always been extortionately high."

The majority (13) of the interviewees fall within the lower end of the income distribution, with a yearly income of less than £20,000. Around two thirds (11) said they would struggle if energy prices were to go up.

Figure 19: Yearly income

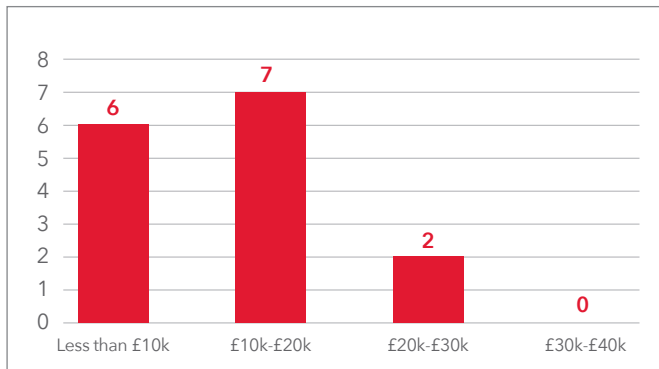
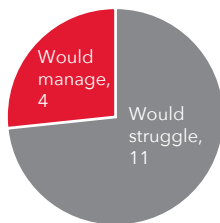


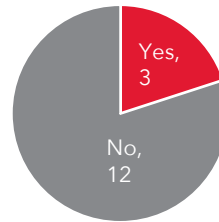
Figure 20: Would you manage if energy prices increased?



"I know most of my friends in the block are struggling, quite often they knock at the door 'can I borrow a tenner for the electric?' – most weekends I'm lending at least £20 out so they can go and get the electric, there is two who come and knock at the door, it's most weeks during the winter. I went to my friend's house and I had to borrow a coat to put on when I went in, on the third floor, because she doesn't have any heating on at all, she can't afford it."

The vast majority (12) of those interviewed did not think they were getting their money's worth. They thought the temperature in their homes was not enough to make it a comfortable place to live. The flats were extremely cold in winter, and it proved very difficult to keep damp and mould at bay.

Figure 21: Is the temperature in your flat high enough to make it a comfortable place to live?



"We've only got three [storage heaters] at the moment. [...] they are not hot enough and the kitchen is cold, we have bought an oil radiator for the kitchen...in the morning there it's around 16 degrees...it's cold!"

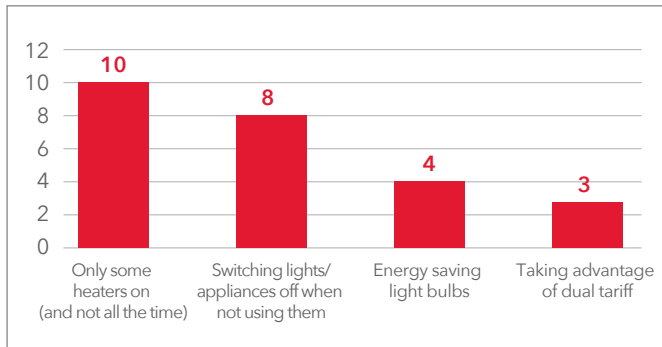
"When the temperature drops these places are like bloody freezers aren't they? Sometimes we go to bed and I've got the socks on, pyjamas on, my dressing gown on...and it's still so cold!"

"They saw yesterday that it was wet everywhere, the wall paper was completely wet, and the mould was on the baby's mattress, everywhere."

"[I feel bad] in the winter when it's cold and it gets very damp in the living room... 'cause that's where I sleep, 'cause I've got three bedrooms but I've left them to my children so they've got one each and then I've got a sofa bed in the living room. I was quite ill before Christmas so it could have been because it gets really really damp, and the mould...it's trying to keep up with it because the mould you should wipe it every day but when I work I don't always do it, I don't get the time."

Two thirds (ten) of interviewees cut back on heating by only using some of the night storage heaters, keeping the use of 'extra' heaters (controllable heaters such as oil radiators, halogen heaters etc.) to a minimum, and putting extra layers of clothing on instead.

Figure 22: Methods to save energy (and money)

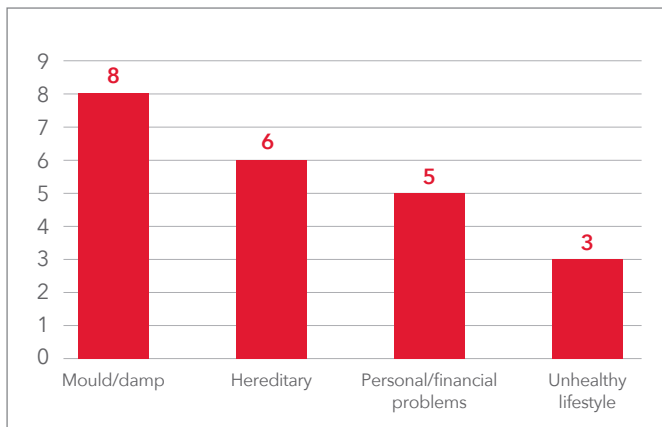


V. Health

Poor physical and/or mental health is a relevant issue in Wilmcote House. A majority (13 out of 15) of interviewees suffered, or had a family member suffering from, a longstanding illness or disability, which in nine out of 13 cases was of such a nature as to limit their daily activities. 11 out of 15 of those interviewed took medicines regularly.

Two thirds (ten) of interviewees suffered, or had a family member suffering from, health conditions that were made worse by cold and damp (such as asthma, arthritis, chest infections etc.). Eight out of 15 think that mould and damp caused or worsened health problems in their families.

Figure 23: What is causing health issues in your family?



“I have hypermobility, that’s why I need the heat – when it’s cold I do struggle a lot, my joints really play up, sometimes I take strong painkillers, when it gets really bad I go to the doctor and he gives me stronger ones to take.”

“My husband takes the inhaler every day, and when he is poorly he has to go and get steroids and antibiotics...when he has a cold his asthma gets worse.”

“We are all asthmatic, all of us. My daughter has just come out of hospital, about eight weeks ago, she had an asthma attack.”

“I’m really disappointed [about this place] because it’s cold...it’s very bad for us because me and my two year old daughter suffer from asthma, and my husband has got sinusitis.”

Six of the interviewees cut back on heating despite having health conditions which were made worse by the cold. Two interviewees cut back on heating although they had young kids at home.

“I’m supposed to have a warm environment for the arthritis that there’s in my back, [but sometimes I have to cut back on heating] so the cold will affect it even more.”

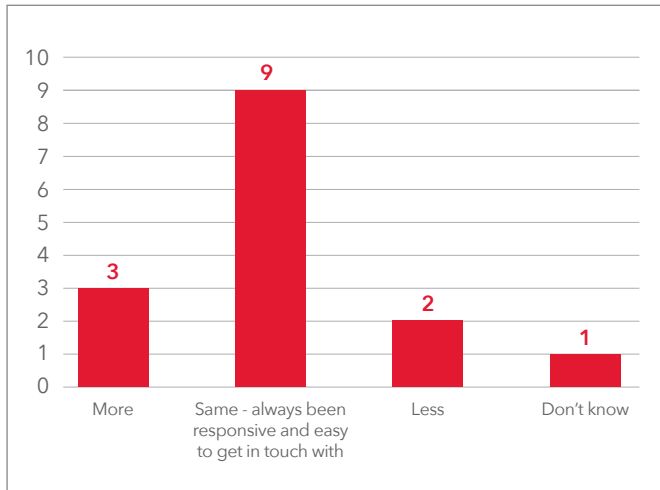
“[Sometimes we cut back on heating], we don’t turn it on and put extra clothing on. I need it for my health, yeah, ‘cause when it’s cold it affects the airways and the lungs, I have to be careful because if I do get a cold...the last time I had a cold I ended up with pneumonia, I had to go to hospital, and now ‘cause of the pneumonia I’ve lost half the function in my right lung, only half of the right lung is working.”

“There is no heating in the children’s bedrooms, they have to leave their bedrooms doors open to get a bit of heat because I’ve only got two heaters, one in the hallway, one in the lounge. [...] My daughter only has one little infrared heater in her bedroom for when she is doing homework, because I went in once and she is in bed, with gloves on, woolly hat on, doing her homework, and I said you cannot do that!”

vi. Refurbishment works

The Council was seen as a good landlord by the majority (12) of interviewees. Three out of 15 thought the Council had become more responsive since the refurbishment work started, while nine maintained the Council has always been quick to respond and easy to get in touch with.

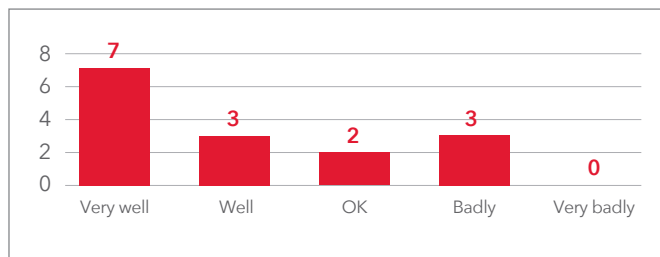
Figure 24: Has the Council become more or less responsive since the work started?



Two thirds (ten) of interviewees felt they were being informed well or very well on progress so far. One third (five) of those interviewed were not happy with the Council’s communication strategy, and would like to:

- have more personal contact with the Resident Liaison Officers, instead of receiving newsletters. This way they would be able to ask questions, clarify matters and get more detailed information; and
- be kept on top of things – in particular, a couple of residents were disappointed about the last minute decision to change the location of the new water tank from the cupboard to the wardrobe, and resented not being notified of the reasons in advance.

Figure 25: How well have you been informed on progress so far?



“Every time something happens we are either told or we get a letter through explaining everything, and whatever they are gonna do we know beforehand...”

“From time to time we get some letters from the Council and we can read what’s going on the board – information and pictures. We feel very informed, we can go to see the show flat...”

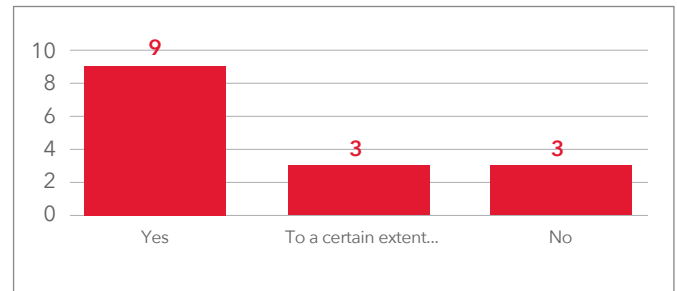
“Not very well, to be honest. I only know that they’ve started the bottom bit through somebody that lives on the bottom, but people were talking saying they were starting at the top...They give us newsletters through the post, and I do read them, but I’d rather have someone coming around...”

“At first it was pretty good until they started doing things they didn’t tell you, like changing and swapping things around. Communication is very good from the people that are doing the works, it’s the Council that are changing things because the workers only do what the Council tell them to do, so it’s the Council that’s changing things without telling us. If they are going to change anything they need to let everybody knows, not just write a bit in the thing [newsletter] and say oh by the way we are doing this.”

“I think with me it’s understanding what they are doing: I’m a woman, I’m not a workman and I’m not a man so when I get a letter through the door saying we will be doing piling...there is a lack of communication.”

Three quarters (12) believed their views have been taken on board, either fully or to a certain extent.

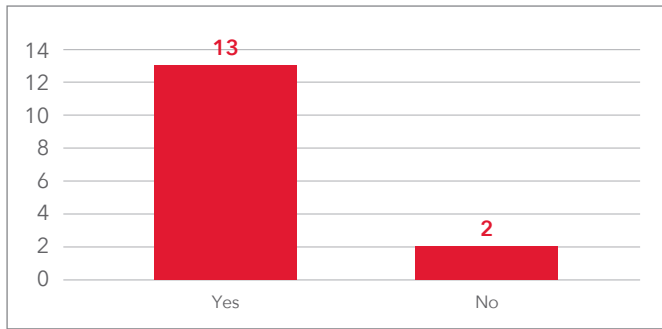
Figure 26: Do you feel you have been consulted?



“Yes, I think they’ve listened, especially with the heating system, the one that they were going to put in was awful again, but the one they’re putting in now it’s slim line, it looks better and it’s more efficient, so I think they have listened.”

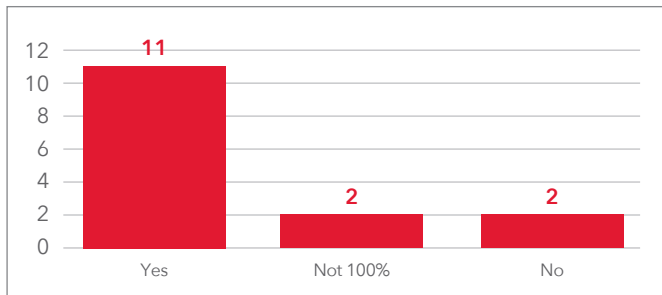
The majority (13) of those interviewed attended open days, and found them useful and informative.

Figure 27: Do you ever attend open days?



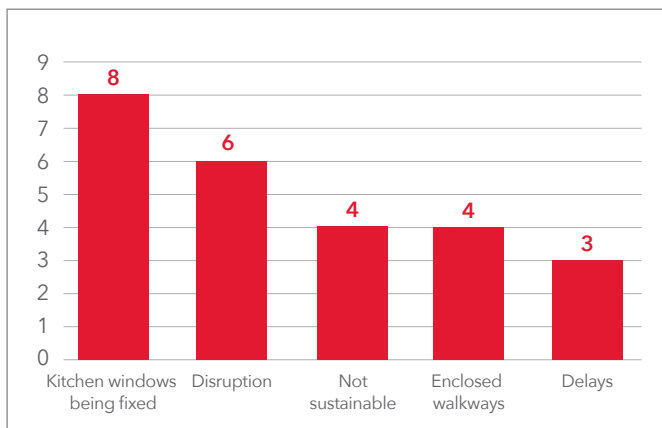
All interviewees but one were aware of why the refurbishment of Wilmcote was being implemented. In particular, they were conscious of the energy saving element. The majority (11) of interviewees were on board with the project, and were looking forward to the finished product.

Figure 28: Are you on board with the project?



The interviewees' major concern about the work was kitchen windows being fixed, followed by disruption to the flat whilst works were being carried out. Some interviewees (four) were worried that the improvements to communal areas would not be sustainable because of people's behaviour. Another four mentioned the communal walkway being enclosed as a minus.

Figure 29: Have you got any concerns about the refurbishment work?



"The kitchen windows being fixed – that's the only thing I don't like, I don't like the idea that I can't open the windows, that's the only one thing. I don't know why you can't open it.... And I will miss out on the balcony because I sit there in the summer."

"It will be nice, but it has to be maintained because the first month everything will be fine but the second month it will start [getting dirty again]. I want continuity of cleanliness."

Overall, all interviewees but one had high expectations. They expected the bills to go down considerably, their homes to feel warmer, and the block to look nicer and cleaner.

"I spoke to the architect and he was explaining everything to me, and he asked me what floor I lived on, and I said the 9th, and he did say to me that come the winter I'd be very surprised if I even had to put the heating on. That would be brilliant, wouldn't it?"

"I've been told to expect that I probably won't need to use the electric heaters that they are putting in [...] I said well that is a Godsend, that would put £1,000 at least a year back in my pocket."

"[...] I know they will be changing the windows to triple glazing, so everything will be nice and warm here, so it will be well worth the improvement. All they changes they will do they all seem very good, so it's gonna be worth waiting for them."

"I think cold and damp have definitely made things worse, but it's more now, now I'm getting older, I think I'm more vulnerable and this project, probably, for me personally, will make a difference...if what they say about the heating is true it's definitely going to make a big difference to how comfortable I am in the house, 'cause aesthetically I'm happy with the house, it's just the warmth and the cost of keeping it warm, now that I'm getting older it could be a matter of life and death – you know, pneumonia, hypothermia, mobility, you know, all these types of things are affected by low temperatures."

"Apparently it's supposed to go really down because it's gonna be smart heating, better windows, the enclosure of the walkways is gonna help with the warmth of our hallway, and the kitchen and things downstairs should be a hell of a lot warmer, and I really can't wait because my kids they've all got coughs all the time, which you can imagine because of the mould – we clean it, but obviously you still get the spores there once you've disturbed them and things, but having the heaters on sometimes makes their cough worse because it dries the air, so not having to use the heaters as much will be beneficial as well."

Round 1 summary

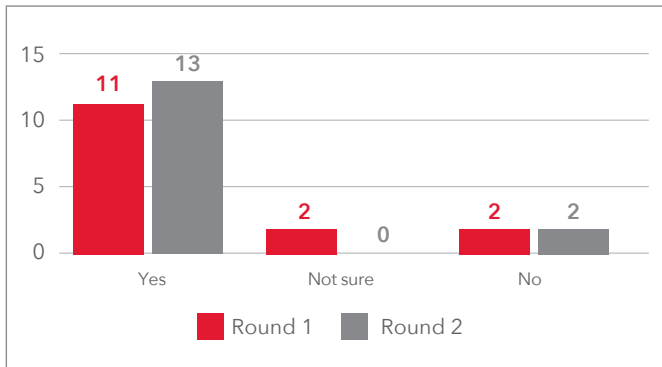
- The **refurbishment and cladding project of Wilmcote House was very timely and offered an important model**. If successful, the project could offer many other social landlords a useful model for implementation. The Council's "whole building" approach would be effective in tackling residents' major issues (draughty windows, leaky roof, condensation, damp, mould, lack of security doors, poor maintenance of the blocks).
- The vast majority of interviewees (12) thought the temperature in their home was not adequate enough to make their homes comfortable. Their flats got very cold in winter and it was difficult to keep mould at bay. 12 out of 15 interviewees reported issues with damp, mould, condensation, while nine out of 15 explicitly mentioned storage heaters as something they particularly disliked about their homes – stating they were uncontrollable, inefficient, and very expensive to run (so they are not getting their money's worth). Eight out of 15 complained about draughty windows.
- The project was much needed: **cold, damp and mould were affecting people's quality of life** in their homes to a great extent, and were contributing to worsening health conditions. Two thirds (ten out of 15) of interviewees were suffering from, or had a family member suffering from, health conditions that were exacerbated by cold and damp such as asthma, arthritis, chest infections etc. Those who need proper heating on health grounds were those mostly likely to cut back on it because they could not afford it.
- The **majority of Wilmcote House residents were suffering from fuel poverty** and were struggling to pay their bills. Over half (eight out of 15) were spending between £173 and £216 a month on electricity (which is around half the rent). 13 out of 15 of interviewees fell within the lower end of the income distribution, with yearly incomes less than £20,000 (and they were mainly families with dependent children).
- Portsmouth City Council's **community engagement strategy was considered to be good**. Two thirds (ten) of interviewees felt they had been informed well on progress so far, while three quarters (12) of interviewees felt their views had been taken on board. The majority of those interviewed (13) attended open days and found them useful and informative.
- The extensive consultation carried out by the Council proved effective, and the Council should be praised for the effort put into adjusting the plans to take into account residents' feedback.
- The open days held at show flat 65 seemed to be very effective as residents could have a first-hand understanding of how their flats will change. The one-to-one work carried out by the Resident Liaison Officers was especially valuable.
- The majority of interviewees (11) were 100% on board with the project. They all (but one) knew what it was about (including the energy saving element) and had very high expectations about what the project would deliver, in terms of improved comfort at home and lower energy bills – they expected the bills to go down considerably, their homes to feel warmer, and Wilmcote House to be **nicer and cleaner**.
- The rubbish chutes getting blocked on a regular basis contributed to the poor cleaning standards of Wilmcote House. Having a recycling system in place would have helped to reduce this problem, which was caused partly by tenants failing to report bulky items, but also by the fact that the chutes were too small for the increase in waste production in this day and age.
- Residents expected the new intercom system to greatly improve their safety and standards of cleanliness. The interviewees reported conditions going downhill since the previous system stopped functioning, particularly in the context of the concierge service being removed. The longer term maintenance of tower blocks required intensive on site management. Having on site presence on the estate helped to sustain improvements to communal areas, as well as increasing residents' sense of safety.
- At the time of the interviews, 97% of residents still had night storage heaters, 83% were on prepayment meters, and 93% were on dual tariff/Economy 7, according to the Council's energy survey 2014. These factors all contributed to pushing up their energy bills. Portsmouth City Council planned to replace night storage heaters, advise residents on how to swap from prepayment meters to credit meters (whenever suitable), and help them choose a better tariff as a necessary next step.

Key findings from Round 2 (May 2017 - September 2017)

i. Do the residents still support the overall project in Round 2?

Despite some negative feelings towards the Council and the builders, 13 of the interviewees were still on board with the project and supported the works. This is an increase of two from the Round 1 interviews.

Figure 30: Are you on board with the project?



"The scheme is great. In terms of the end product it's going to be great, yes brilliant, Council thank you very much, but we aren't there yet, and I think they've got the wrong way of doing it."

"I know that when the flat is finished it is going to be lovely."

"Yes, absolutely! Anything they can do to try and improve Wilmcote House is a good idea."

"Yes I think it's worth investing to make really big improvement in Wilmcote House because we know how we can feel now – the permanent cold, the damp, the mould...now if you go down the hall in Block A you can feel the difference, and the people who live there are nice and comfy, so that's worth it."

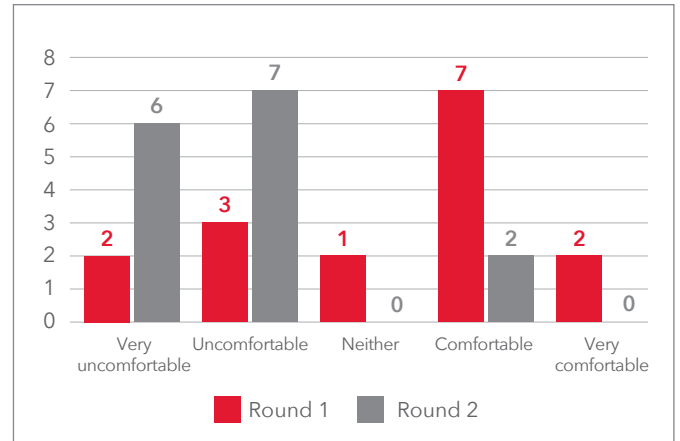
"Yes, it's not just about the insulation and the reduction of bills to make it more affordable, but it's also cosmetic, because when people see the building they are not going to see an old-fashioned concrete block which they associate with past concepts of Wilmcote – they used to call it Alcatraz, or Beirut sometimes. Hopefully it will change people's perceptions of life in Wilmcote."

"Yes – it looks much better than it did. And I like the living room now, it's bigger. I like the idea that it will get warmer, because in winter it can get quite chilly...in the living room I already feel warmer."

ii. Interviewees feelings about their home

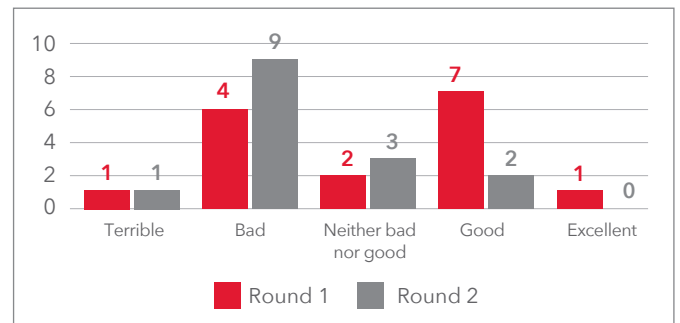
A majority of interviewees in Round 2 (13) found their home an 'uncomfortable' or 'very uncomfortable' place to live. This was an increase of nine from Round 1, suggesting the building works had made the homes more uncomfortable.

Figure 31: How comfortable is your home?



Overall quality of life was 'terrible' or 'bad' for 10 of the interviewees – only two said it was 'good'. Five less people said their quality of life was good in Round 2, compared to seven in Round 1, and five more people said their quality of life was bad in Round 2, compared to Round 1. This suggests the works had a negative impact on people's quality of life.

Figure 32: How is your quality of life in your home?



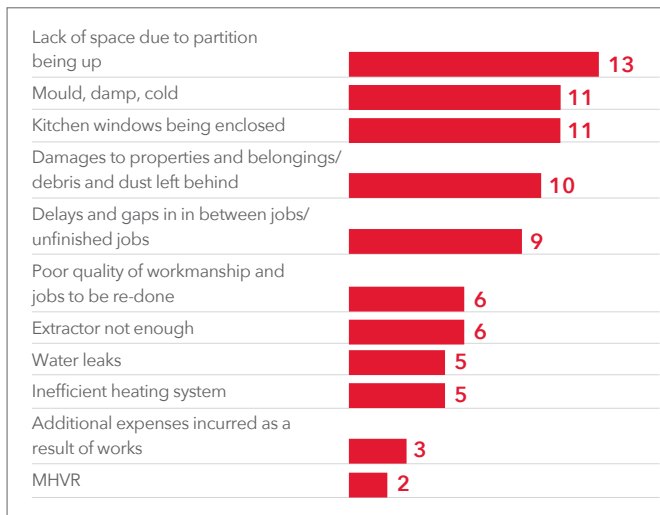
“Stressful, cramped and cold – colder in the living room with the partition up because it is not well insulated.”

“OK, there are a lot of memories here because I shared it with my husband...I don’t feel uncomfortable, it’s just a pain when they have to come in and do the works because I can’t get on and do what I need to do.”

Strikingly one interviewee, who had been living in Block A but had been forced to move into the completed show flat when her flat flooded, had a higher and more positive opinion of the works than the other interviewees.

The things that most affected quality of life were “lack of space due to the partition being up” and “missed appointments/last minute shows/ lack of communication with the contractor.”

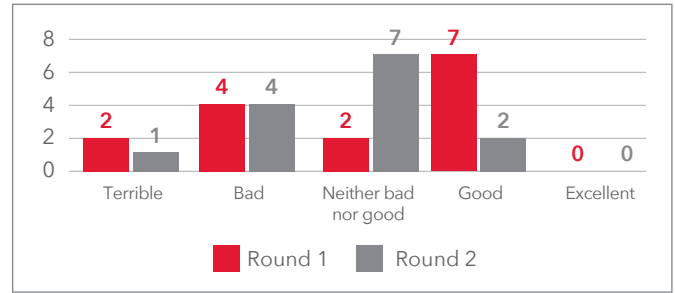
Figure 33: Issues most affecting quality of life



iii. Interviewees’ feelings about Wilmcote House

Seven people said their quality of life in Wilmcote house was neither good nor bad, and similar to when asked about quality of life in their homes, only two said good and nobody excellent. This was a decrease from Round 1 interviews where seven people rated their quality of life as good. The same amount of people said they had a bad quality of life in both rounds of interviews.

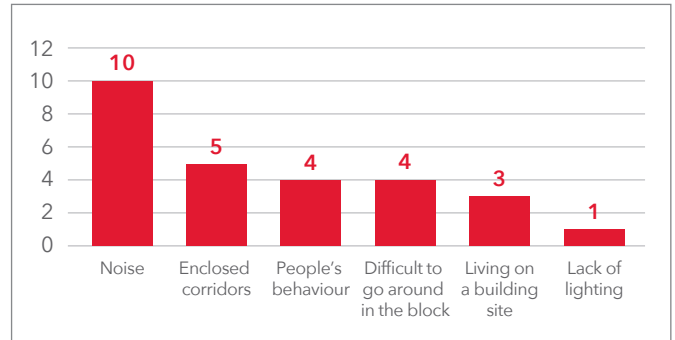
Figure 34: How is your quality of life in Wilmcote House?



Note: one person in Round 2 did not answer the question.

The biggest issue affecting people’s quality of life was the noise caused by the building works. In practice, everyone’s life was affected by the building works in different ways.

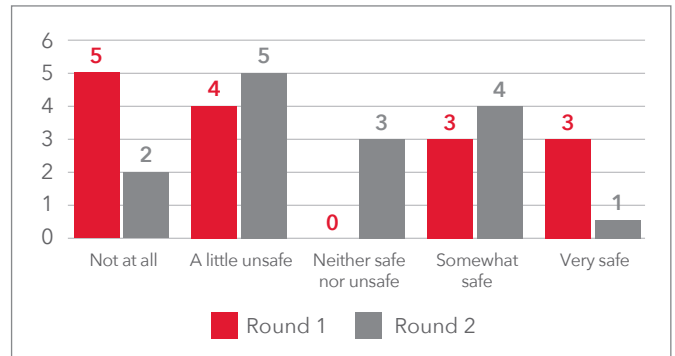
Figure 35: What is most affecting quality of life in Wilmcote House?



iv. Security

In Round 2, five people felt somewhat safe or very safe, a decrease of one from Round 1. However, seven people felt not at all safe or a little unsafe, compared to nine in Round 1.

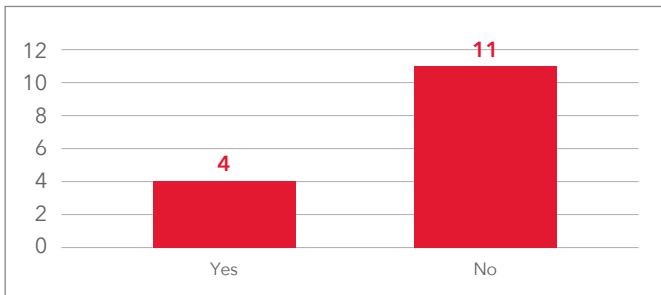
Figure 36: Do you feel safe in Wilmcote House?



Five of the interviewees said they would feel safer when the new security doors and intercom systems were fitted.

The majority (11) of interviewees didn't feel the works impacted on their feelings of safety. However, for the four people whose feelings did change, they feel less safe. In three cases this was to do with unknown people being around the building and it wasn't always clear who they were or what their role was. One person said they felt less safe because there wasn't a proper fire escape out of the building.

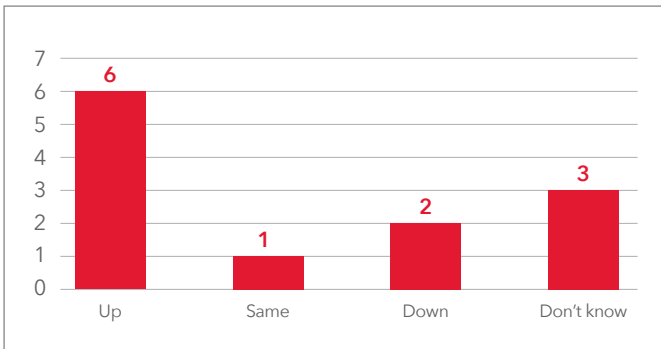
Figure 37: Have your feelings of safety changed because of the works?



v. Energy bills/ comfort in home

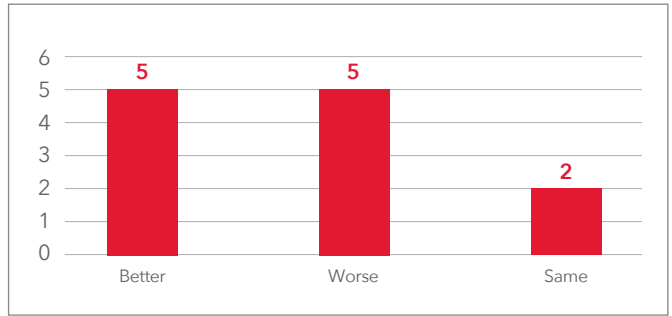
Six interviewees noticed their energy consumption increasing since the works started and could not explain why.

Figure 38: Have your bills gone up or down?



Interviewees talked about changes in mould growth and the temperature of the flats. Five interviewees reported the mould and damp getting worse, while five reported it improving. Six people's flats had got warmer and four colder.

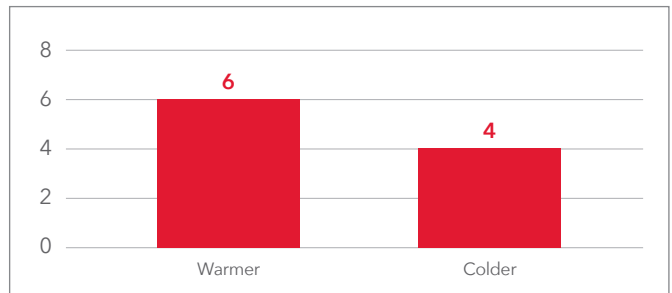
Figure 39: How mould has changed in the interviewees' flats



"Most of my furniture has gone mouldy, I've had to put in claims with the insurance people. I've had to replace three mattresses through mould and damp conditions – because of the working conditions, because when they were coming in and doing all the rooms and messing around. So they've taken away three mattresses which were ruined by mould and I bought three new mattresses which they know about."

"Mould is an issue since they've started the works – because before they started I had never had any mould at all. It's mainly in my daughters' bedroom, we found it behind the bed."

Figure 40: How temperature has changed in the interviewees' flats



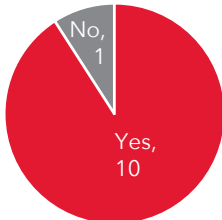
"The extractor fan is not enough, and the extractor hood takes out the steam but not the heat – and there is no ventilation."

"It gets hot. My mum hates it...she stood with the fridge door open the other day, and stood in front of the freezer for ages! I'm used to it now, but I'm dreading the summer I'll be honest."

vi. Health

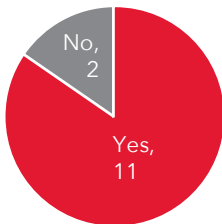
Ten of the interviewees said their or their family's health had deteriorated since Round 1 interviewees.

Figure 41: Has anything significant changed with regard to your own health and that of your family?



11 of the interviewees thought the works had had a negative impact on mental health by increasing stress and anxiety levels, and worsening other symptoms of mental ill-health such as depression.

Figure 42: Have the works impacted your mental health?



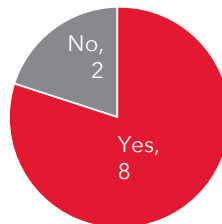
"There is actually a big problem: since the works have been going on, my son has suffered psychosis. He had a thing with the builders, and it got to the stage where he was hearing voices and he was thinking that it was the builders, and he was put into hospital for six weeks and he has just come out, he was discharged yesterday. I think because everyone was coming in and out, there were works going on with people out and about..."

"Not normally, but I've been very down with these people. That's why the housing officer stepped in, because I got to breaking point. I got to a point where I wanted to snap one of them. It takes a lot for me to get to this point. I hate ignorant people, and some of the building people are ignorant and very rude. One of the builders' senior managers was very rude. This is our home! They are not looking at the residents. They don't show any respect at all – no consideration for the people who live here.

"I feel very stressed – and being tired make it worse. The noise means that I can't rest. But it's not depression."

8 interviewees say the works have had an impact on their physical health.

Figure 43: Have the works impacted your physical health?



"My son's asthma has got worse – he has been in and out of hospital all the time due to the mould and the damp and the dust in here. Living in this building hasn't helped, and it's cold."

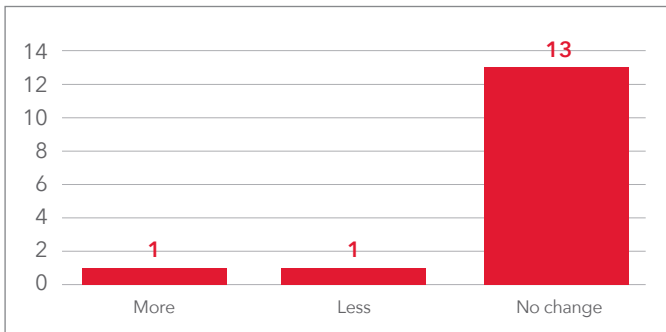
"Dust is bad for our chests. I'm using my inhalers more! My daughter is using tablets now as well because since the works have started she got worse."

vii. Social interaction/community participation

Nine people said they had friendly relations with their neighbours, whilst six said they kept to themselves.

Almost all (13) of the interviewees said the building works had not had any impact on their likelihood to get involved in the community.

Figure 44: Have the building works made you more or less likely to get involved in the community?



13 of the interviewees attended open days in Round 2; this is the same finding as in Round 1. This reflects the high level of involvement and contact.

Figure 45: Do you attend open days?

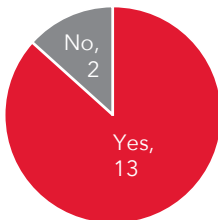
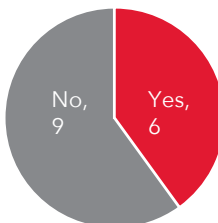


Figure 46: Do you ever go to the Omega Centre?

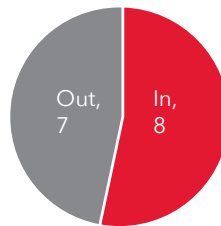


Six of the interviewees had been to the Omega centre but to attend meetings, not as a respite room. The Omega centre was a centre made available to tenants as a place they could go to get away from the building works.

viii. Refurbishment works

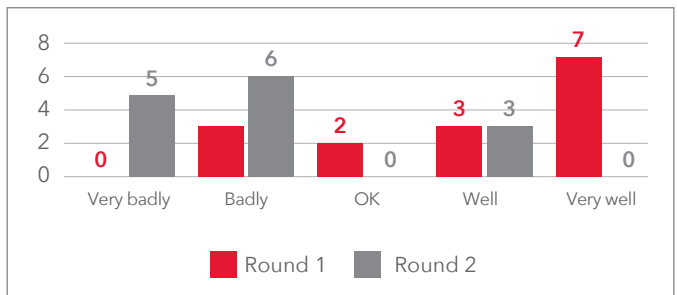
Eight of the interviewees were in during the day when the works were being carried out; two of them worked night shifts. This had a big impact on their views of the work and workmen.

Figure 47: Are you at home during the day?



In Round 2, 11 of the interviewees felt they had been 'badly' or 'very badly' informed during the process. This was a big change from Round 1, when the process had just started, where ten interviewees felt they had been 'well' or 'very well' informed.

Figure 48: How well have you been informed of the progress so far?



Note: One person in Round 2 did not answer the question.

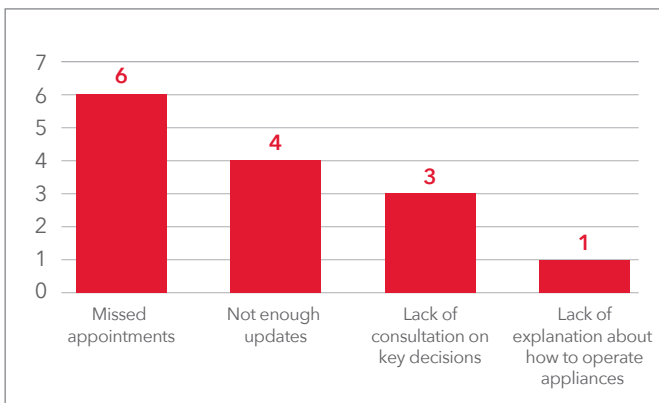
Judging by what people told us, LSE Housing and Communities, the Council explained very clearly what was actually being done.

"We were consulted before they started but the end result is nothing that even resembles what we voted for and what was originally offered 5 years ago – like the colour of the building for instance. We were going to have nice opening windows, and suddenly we have wired glass – why have we got wired glass?"

"Communication has been rubbish. We know the kitchen windows would be fixed, but we didn't know there would be metal in the middle. We don't want the metal in the middle, because it feels like prison, it feels more closed in, it feels like you've got bars on it. That's not what we were told. You complain with them, but you don't get anywhere. The sun lounge – they said we could put a table and chairs in it, but obviously you can't, it's too small in there. And now they are saying you can hang your washing in there, but that's not what was said at the beginning."

The main reason people felt they were badly informed was because of the contractors missing appointments.

Figure 49: In what ways have you been badly informed?



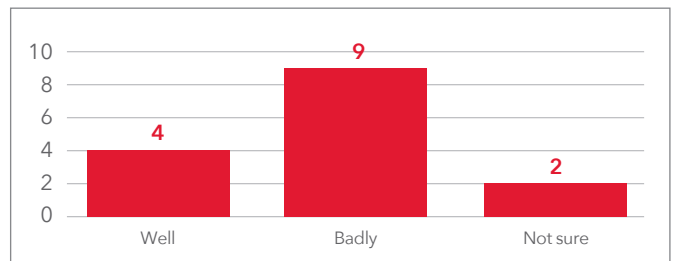
"They don't turn up when they said they would, or they cancel. And they think when they send all these letters out saying 'sorry for the inconvenience', and that's on every headed letter, that that's OK – it's not OK. When they say, this has got to be done, it's got to be done. We want everything to be done and finished – we want our life back."

Only four people gave examples of being properly informed, with the main reason (three) being due to having a very good Resident Liaison Officer.

"The new RLO has been quite good with me, I will sing her praises. Previous RLO was also very good. She is probably the only person who has been honest and straightforward with me. I might not like sometimes what she says but she is honest and she is good at her job. She understands how we are living and she empathises with us."

Nine of the interviewees felt Portsmouth City Council had handled things badly, compared with six who thought they handled things well or were not sure.

Figure 50: How has the Council handled things?



"There's been no input from them, they should have had someone on site overseeing everything."

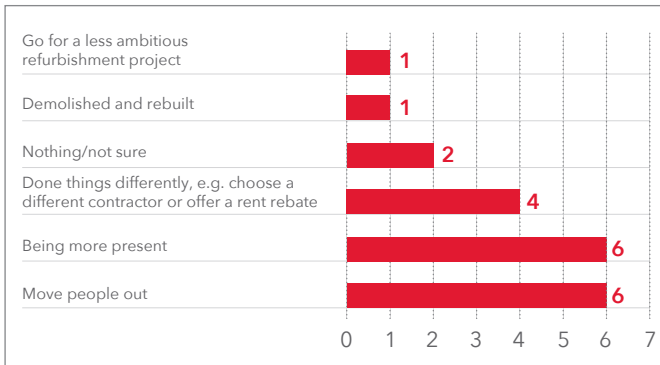
"I haven't spoken to the Council at all, because they fob it off onto the builders."

"Poorly, they haven't looked or asked at all... They are well aware of what's going on but you never see them, they never come over, knock at the door and make sure everything is OK. They think that giving us £150 into our rent account for the inconvenience of it is enough – and the tumble-dryer. And they are decorating the living room and carpet. But they won't paint bits and pieces when works have been done and paint has been peeled off."

"They did nothing. Obviously before the building works started we were seeing them walking around but since then they haven't done nothing."

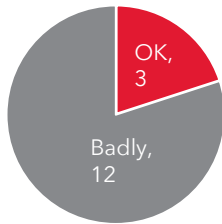
When asked what the Council could have done differently, people were evenly divided between thinking they should have moved people out (six) or been more present in the process (six). Four thought they could have done things differently e.g. offer a rent rebate or chosen a different building company.

Figure 51: What could the Council have done differently?



12 people thought the builders had handled things badly, three thought they had handled it okay and no one thought they handled the works well.

Figure 52: How have the builders handled things?



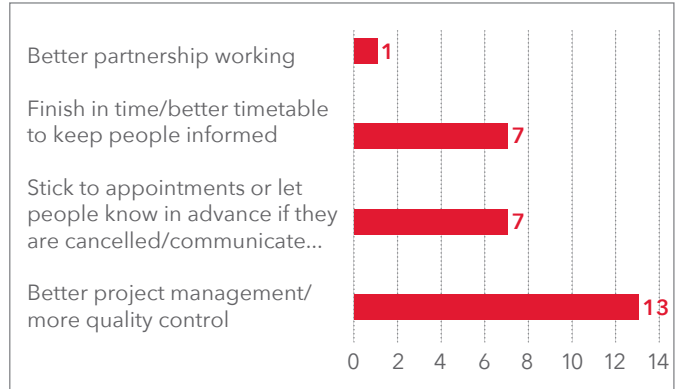
“Not very well, I think there is a lack of communication. I don’t think half the time they know what they are doing.”

“We shouldn’t have to keep contacting them complaining and to get things sorted out.”

“What’s worse is the lack of communication – they say they are coming in or they never do, you need to constantly chase them – lack of communication as to when it’s going to finish and what’s going to happen next – it’s all good giving me these letters saying what they are doing but there are no dates as to when they are going to do them or finish them by. It’s a bit frustrating because sometimes they show up at our door saying they need to do something but we haven’t been told!”

When asked what the builders could do differently, residents thought there should have been better project management and they should have stuck to appointments or told tenants further in advance if there was a change.

Figure 53: What could the builders have done differently?



Round 2 summary

- Despite some negative feelings towards the works, **the majority (11) of interviewees were still supportive of the project** and recognised its importance.
- **13 of the interviewees felt uncomfortable in their homes, and felt their quality of life had been affected.** This was mainly due to the intrusive nature of the internal works, exacerbated by delays, the missed appointments, the miscommunication, and the poor workmanship.
- **People felt like the Council and the builders had handled things badly** and there should have been better ways of doing things. Interviewees felt the works had had a negative impact on their physical and mental health.
- **Communication and trust are key.** Tenants valued the Council Resident Liaison Officer who they had good contact with. It is important that this level of communication is followed by all people involved in the project.
- There should have been **better project management of the retrofit**, a floor by floor approach could have been taken as opposed to jumping from one block to the other.

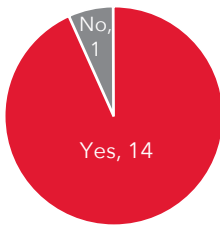


3. Key findings from Round 3 (September 2018-January 2019)

i. How the flats improved for residents

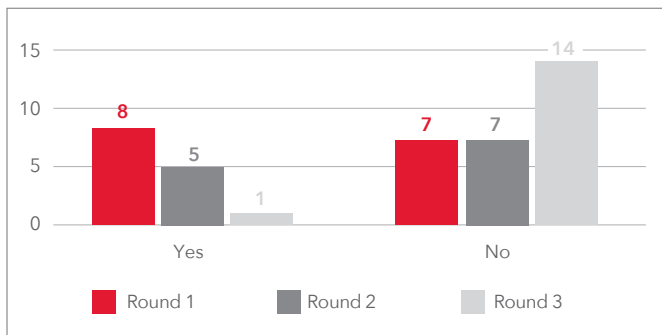
The work set out what it wanted to achieve in terms of making the flats a more comfortable place to live. 14 out of 15 people said their flats were warmer, with the exception of one person saying they never had any problems with the flat being cold before the works started. People reported needing to use their heating less and their heaters being more effective. This was a big improvement from the Round 1 interviews, where 12 out of the 15 said the flat was not warm enough to make it a comfortable place to live.

Figure 54: Is your flat warmer?



There was significant reduction in people who felt they had to cut back on heating. From eight in Round 1, before the works were carried out, to one in Round 3.

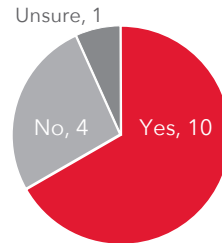
Figure 55: Do you ever have to cut back on heating?



Note: three people in Round 2 did not answer the question.

Ten out of 15 people said their bills had reduced by between £10 to £30.

Figure 56: Have your bills reduced?



Southampton University's independent monitoring of the thermal efficiency of the flats throughout the process, from the beginning to the end of the works, showed a significant increase in thermal comfort and reductions in energy use. This has the potential to have a significant impact on people's health. Significant gains were made between 2017 and 2018, in spite of early 2018 being considerably colder than the previous year. This is a separate study and will be reported on later.

In addition to the flats being warmer, the works had other positive impacts. Five people said they had seen a reduction in mould since the works and four tenants said their family's health had improved because of the reduction in mould and draughts.

Three people said they liked the new heating system because it gave them more control over when they turned the heating on.

"It's much more comfortable the bills have reduced and it's warmer."

"It is better because before all this was old. We had draughts, condensation and mould everywhere but now because of the new windows that's gone, it's a lot better."

"Before you had heaters in every room and it was storage heaters which has cost a lot."

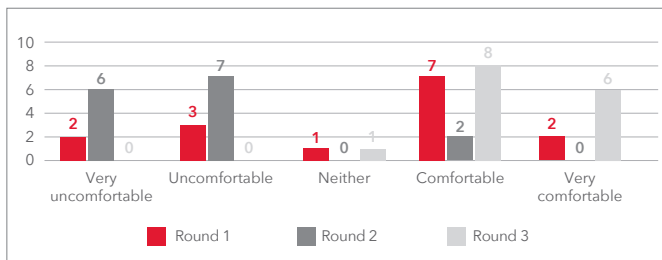
As well as improving the temperature of the flats, interviewees mentioned liking other improvements. Four out of ten liked the bigger living rooms and two people liked having the enclosed balcony because it gave them an extra room. Residents liked the new kitchens – they had some control over the decoration – and the new corridors. One interviewee mentioned how the flats were now a lot quieter because of the new windows which made it easier to study.

“I like having the balconies enclosed because before it was just wasted space. It’s nice having the sun room because I have turned that into my craft room.”

“The house is lovely now it has had the refurbishment, I got a new floor and lovely white walls and windows.”

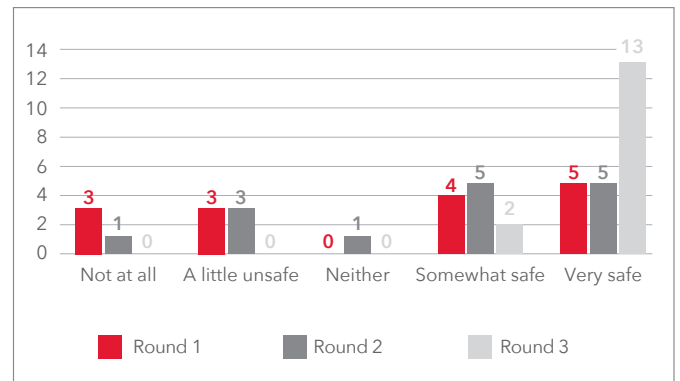
14 of the 15 found their flat either comfortable or very comfortable. This is an increase of five from Round 1 and ten from Round 2. This shows the positive impact the works have had but also the negative impact the works had whilst they were being carried out.

Figure 57: How comfortable do you find your home?



The majority (13) felt very safe in their homes, an increase from five in Round 1 and Round 2. No one in Round 3 felt unsafe in their homes. People said the new front doors on the flats and the doors dividing up the corridors had helped them feel safer.

Figure 58: Do you feel safe in your home?



ii. Challenges

Despite the positive overall impact, some challenges remain. Eight out of 15 people complained that it wasn’t possible to open the kitchen window and this made the flats too hot. This was a concern raised by people before the works began.

“I like it all apart from the kitchen is too hot because we can’t open the window. We have stopped eating at the dining table because it’s too hot. You have to prop the front door open and then you have people peering in the house.”

Three tenants mentioned they were concerned about fire exits out of the flats due to the new kitchen windows and enclosed balconies.

“I worry because you can’t smash kitchen windows anymore. They say they will talk to the fire brigade about the windows but I don’t think they did.”

Four out of 15 people said their bills increased in the summer because they had to use the tumble dryer to dry their clothes. The alternative drying methods needed to be made clear.

"I think the bills have gone up in summer. It's because they have taken the balconies away so I need to be using the tumble dryer and the fans. I just don't understand why they had to do away with our washing lines."

iii. How has Wilmcote House improved for residents?

Nearly all residents (14 out of the 15) thought the works had improved Wilmcote House and liked the new enclosed corridors, which are well kept. One person said they thought the new corridors made the block safer, alleviating her fears that her children would fall through previous gaps.

"The corridors are warm and dry whereas before they were terrible."

"It's much better than it was, especially the corridor now it's covered up. It's stopped all the water coming in and it's made it much better."

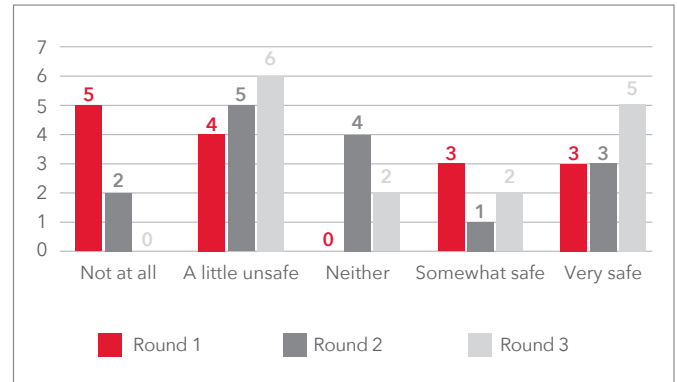
"It's much, much nicer. Before it was quite depressing and dirty. It was so tired. Now it is much lighter and cleaner with nice colours."

"It's a lot safer in the corridor, it wasn't blocked in before there was gaps in between the balconies. The little ones used to put their heads through or try and climb up which was pretty scary."

There were mixed results towards feelings of safety. Seven people felt very safe or somewhat safe in Wilmcote House, an increase of three from Round 2 and six from Round 1. People said they felt safer in the blocks than they did before the works because of the new security doors and better lighting in the public areas.

In Round 3, five people felt very safe, as opposed to Round 1 where three people felt very safe. In Round 3 six out of 15 people said they often felt a little unsafe around the block. This an increase of one from Round 2 but no one felt not at all safe, suggesting an overall improvement in feelings of safety. People felt unsafe because of the lack of security on the front door; they felt the concierge should be reinstated or a fob system should be introduced to stop people coming in off the streets. From the Round 1 interviews, 13 of the 15 said they would feel safer if they had security doors on the front of the block - this problem still exists.

Figure 59: Do you feel safe in Wilmcote House?



"I don't feel safe early in the mornings coming out of here because you don't know who is around."

"The corridor is fine, but the stairs don't feel safe because people hang out there who you don't know."

iv. Performance of the Council

Eight out of 15 thought the Council handled things well and five out of the 15 thought there were good and bad aspects.

Figure 60: How did the Council handle things?



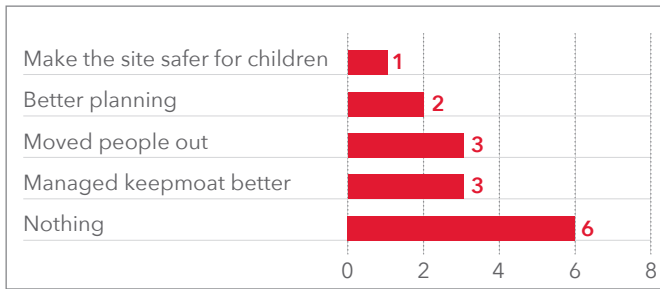
"It's been out of their control – there wasn't a lot they could do. The Resident Liaison Officer you could talk to easily, she could help with anything."

All the interviewees really liked the Resident Liaison Officer and thought she was very helpful in the process, even when she had to give them bad news. Throughout Round 1 and Round 2 interviews, the Council had a good reputation with tenants for being responsive.

“The RLO was really good and you could get hold of her at anytime.”

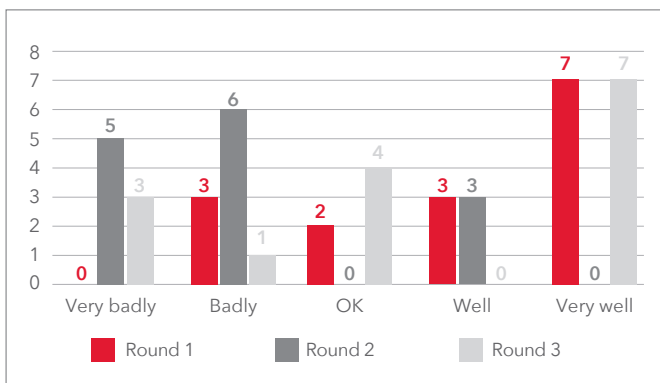
When asked what the Council could have done differently, six people said they thought there was nothing they could have done differently, two of which thought most things that went wrong over the project were out of the Council’s control.

Figure 61: What could the Council have done differently?



The majority (seven) felt they had been well informed during the process in Round 3, compared to none in Round 2. This suggests communication improved throughout the process. However, it may also be linked to people starting to feel more positive about the works once they were completed.

Figure 62: Have you felt well informed during the process?



v. Performance of builders

There were varied feelings towards the builders. Six people thought there were good and bad aspects, five people thought they had performed well and three thought they had performed badly. Everyone in Block C thought the builders had performed well or there were good or bad aspects – this is likely to be because this feedback was given during the later stage of the works and once the builders had received initial reports of bad feedback. Everyone interviewed in December held more positive views of the builders, suggesting as time passed people started to feel more positively about the work.

Figure 63: How have the builders performed?



“When they came in even to do the smallest of jobs they made sure everything was sheeted up and kept things really clean.”

When asked what the builders could have done differently, four people thought there was nothing they could change. Seven out of 15 thought the builders weren’t respectful of their homes e.g. treading mud into the carpets and going into bedrooms without asking.

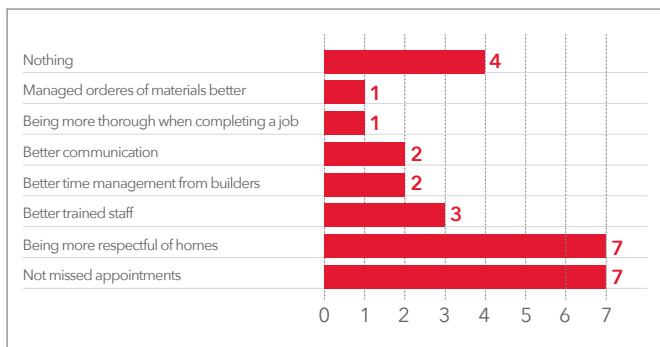
“We had to wait all those years to decorate, we were living in a building site. Hardly any of them put things on their feet, they trod mud all up my carpet.”

Seven out of the 15 tenants booked time off work to let the builders in, who then didn’t show up.

“It was horrendous, the thing that impacted me the most was they would say they were going to come. We would book appointments off work and they wouldn’t come. That was the worst part because no one ever reimbursed us the money for having the time off work. Numerous occasions they made appointments and never showed. My parents had to sometimes sit and wait and eventually the Resident Liaison Officer from the Council had to sit in and she waited for 18 days. They would come and say they would be back in a minute and then they wouldn’t be back for hours, no wonder it took so long.”

It is important that builders are carefully managed and treat the tenants with a high level of respect. The Council should have managed the tenant liaison aspect between the builders and tenants more closely.

Figure 64: What could the builders have done differently?



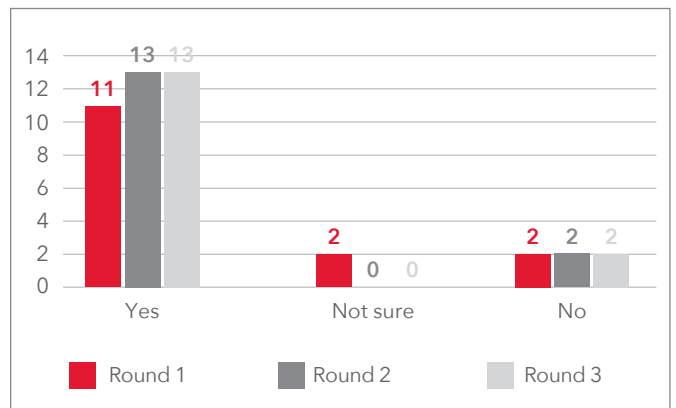
Seven people said the building works caused themselves or family members to suffer from stress, anxiety and depression due to the constant noise, the stress of having people in their houses and the way the builders treated them. All of these issues have improved since the work has been completed.

“My husband was really depressed because of all the works and the stress of it all, it all just got on top of him. My husband never cries and even he got tearful.”

vi. Tenants’ feelings about the overall scheme

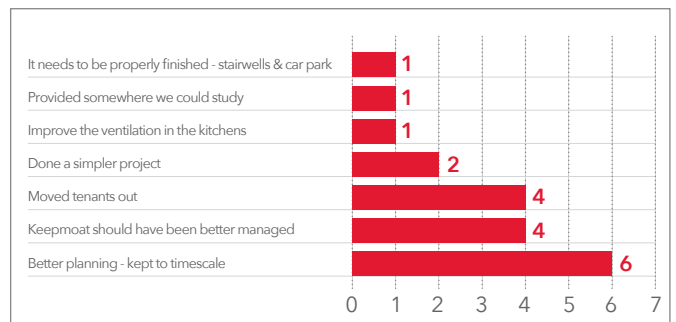
13 out of 15 interviewees were still on board with the project and were pleased with the work that had been done. This is the same level support as Round 2, suggesting it had lived up to people’s expectations.

Figure 65: Are you still on board with the project?



The vast majority of residents were still on board with the project but some people had recommendations for improvements. Six people thought the project should have been better managed and not over run as much as it did. Four people thought the builders should have been managed better and four people thought tenants should have been moved out.

Figure 66: What would you change about the project?



No one mentioned any concerns about fire safety due to the cladding which suggests they were well informed about the properties of ROCKWOOL.

One interviewee said she was pleased the project had been completed but was unaware of the exact reasons it had been done. She was also the only resident who said she was a bit unclear on how the ventilation system worked. She moved in at the start of the building works so it is important new residents are given clear information in future.

Round 3 summary

- **Overall the building works have accomplished what Portsmouth City Council wanted to achieve.** The vast majority (14) of the interviewees' flats are warmer and ten people's bills have decreased. Only one person in Round 3 felt they had to cut back on heating, unlike the first stage of interviews where more than half of people had to. The works also reduced damp and mould in the flats.
- All of the interviewees bar **one found their flats comfortable or very comfortable**, an increase from two from Round 2 when the works were being carried out.
- The works have improved the appearance of the corridors and **people feel they are safer** because of the doors between corridors and the enclosed balconies.
- **There are still some outstanding issues which need to be addressed.** The stairwells need to be upgraded to the standard of the rest of the building and the car park area needs completing. Six of the interviewees continue to feel unsafe around Wilmcote House and believe security doors at the two front entrances of the building would improve things. This was raised as an issue in Round 1 interviews, so it is important this is addressed.
- Seven of the interviewees felt the kitchens were too hot. The ventilation systems should be adjusted to remove this problem.
- **Overall people felt the Council performed well** and the Council Resident Liaison Officer played an important role in the process.
- There were mixed feelings towards the builders. Residents in Block C, the last stage of works, were the most positive about the performance, suggesting lessons about how the builders should treat tenants were taken on board. **It is important builders are well managed to ensure they turn up on time and treat residents and their homes with respect.**
- The builders were given responsibility for tenant liaison, although the Council Resident Liaison Officer continued to contact tenants and broker discussions between the builders and tenants. **The Council felt they should have kept closer control on the builders and played a bigger role in the resident liaison.**
- The interviewees we spoke to later on were more positive about the process, suggesting that people may have become more comfortable the longer they have had to experience the benefits of the works.
- 13 of the interviewees were **still on board with the project**, an increase of two from Round 1.

7. Conclusions

- **Most residents strongly support the overall approach of Portsmouth City Council** to the estate renewal and are glad it has been done. Residents like the location of Wilmcote House, near to schools, shops and the station. They also like Portsmouth.
- **Overall flats are warmer, more comfortable and attractive**, and draughts and mould have been excluded. Most people use the radiators less and when they do the heat is retained.
- **The building process was difficult** and the Council believes it was a mistake to hand over the task of resident liaison to the builders during the works.
- **The timescale could have been compressed** if the builders had turned up more reliably and done what they promised on time. Residents often missed work to give builders access into their homes but were then let down.
- The Council's **Resident Liaison Officer provided a vital line of communication** with residents. She was strongly praised by residents. Unfortunately, she did not have enough control over builders. Portsmouth City Council has a good reputation with tenants for being responsive.
- There are several outstanding issues:
 - Residents reported **overheating in the kitchens** as they now do not have windows that open to let in fresh air due to the enclosure of the external balconies. The air vents installed to address this problem are not adequate and can cause draughts. They cannot be opened and closed by the residents. This must be rectified.
 - As of yet, there is **no security control on ground floor front entrances** of the blocks.
 - The **stairwells and lifts** were not upgraded along with the internal flats and the exterior of the blocks, so they look decayed.
 - Inevitably in such a tight community there are occasional frictions which the Council does take up and try to resolve.
- The overall cost of the scheme – about £117,000 per flat – **was justified as cheaper and less disruptive than the alternative of demolition** and rebuilding. The flats provide a valuable asset with a 40-year extension to their life.
- The **Passivhaus and EnerPHit standards of upgrading the properties showcase energy saving and the attraction of retrofit**. This may have a powerful influence over the Government's regeneration strategy.
- At the outset all interviewees had high expectations; their bills would go down, their homes would be warmer and the block would look nicer. In spite of delays and outstanding worries, **all three expectations have been met**.

8. Portsmouth's assessment of the project

Background

Wilmcote House is situated in the Somerstown area of Portsmouth, one of the most deprived areas of Portsmouth, with low levels of employment, skills, and income. The existing 11 storey Large Panel REEMA blocks of flats was built in 1968, containing 100 three-bedroom maisonettes and seven one-bedroom ground floor flats together with an area housing office located on the ground floor.

The building was failing, with residents complaining about the excessive costs of the existing electric night storage heating. A large proportion of residents were regularly reporting condensation issues. The maintenance of the building was costly with the windows and roof at the end of their serviceable life, and broken restricted access doors creating ineffective security. Decorations were required throughout and water penetration issues existed within properties and communal areas. The average EPC SAP rating for the properties was 55 (Band D).

We engaged with the University of Southampton, which installed data loggers into a number of properties at Wilmcote House and the results were compelling, demonstrating that residents weren't heating their homes to World Health Organisation comfort levels that stipulates that the temperature should be 18°C inside a home. The internal temperature of some properties was as low as 12.5°C over the winter months, with more than 50% of properties failing to reach minimum indoor temperatures for an acceptable thermal environment and 80% failing to reach the standard for the lounge. Residents were making a stark choice, forced to not use their heating due to expense. This demonstrated that residents were living in fuel poverty as they simply couldn't afford to heat their homes.

We conducted a thorough options appraisal, which included extensive tenant consultation, before taking the decision to refurbish rather than demolish the block. The feasibility study in 2012 was to determine the best way to proceed: either apply a traditional approach to the building refurbishment to achieve current building regulations requirements or future proof the building and aim much higher.

We decided to undertake a scheme to the ambitious EnerPHiT standard and adopt a fabric first approach.

What Portsmouth County Council set out to achieve

The extent of the £13 million contract included insulating the external envelope with cladding and External Wall Insulation, replacing the roof, installing triple glazed windows, fitting new hot water cylinders, electric showers and Mechanical Ventilation with Heat Recovery (MVHR), extending the lounge and enclosing the communal balconies, as well as decorations throughout and converting the existing office area into four new additional flats.

The objectives for the project were:

- Convert redundant office space and provide additional ground floor flats
- Improve thermal performance of the building and reduce resident energy bills
- Undertake structural repairs and extend the life for at least 30 years
- Replace defective building elements, address known building defects and reduce maintenance costs
- Improve aesthetics of the block and create a better living environment that residents feel secure to live in
- Learn lessons from the project assessing the actual impact on building performance and resident engagement by working with various universities and sharing our experience

How the process has worked

The project was very complex and undertaking the largest EnerPHit project with residents in occupation in the world created its own challenges and issues that had to be overcome. However, there were also benefits from residents remaining in occupation in that they could input into and influence the project design and outcomes, value that would have been lost if the block had been empty.

There were extensive delays to the project that were the result of poor project management by the principle contractor which also had issues with its own supply chain. This was further exacerbated by a sub-contractor going into liquidation during the early phases of the scheme and various unforeseen issues that were found.

The delays have impacted on the perception of the project experienced by the residents, who understandably were dissatisfied during the work on site. It has also resulted in the Council having to spend more time managing the project than originally envisaged.

Outcomes that have been achieved

Residents are benefiting from a better living environment, larger living space, a more secure environment, improved insulation, refurbished bathroom with showering facilities, cheaper energy and better use of communal space.

The properties are much warmer and provide a more comfortable environment than before the works. Initial feedback from residents is that they do not need to use their heating as much as they did before the project and are benefiting from saving in the region of £10-£15 per week (or £700 per year) compared to previous electric bills prior to the works commencing.

Four new flats have been created out of the former area housing office space within the block. This is in addition to an aesthetically more pleasing modern building. There will be a positive impact on maintenance costs in the future as we should see less maintenance requests regarding draughts, damp, and mould and we've extended the life of the building by approximately 40 years.

Valuable research has been undertaken throughout the project to evaluate the actual performance of the building. This will continue beyond the completion to assess if the benefits of the whole building approach and standards implemented are realised. In addition, the resident surveys and engagement have been vital to inform how the Council engages with its residents with lessons learnt being used on future projects.



Wider implications of the work

1. Residents

We have learnt from the challenges the project created and it has informed how we undertake resident liaison and consultation on future projects. Whilst there have been times that the residents have been dissatisfied with the progress, they have continued to support the overall objectives and have genuinely informed the design through effective resident consultation events and been pleased with the completed works.

Engagement with residents and communication at all stages during and after project completed utilising one to one meetings and informal open days as opposed to formal meetings. The 'Pilot' flat was particularly useful to get feedback and demonstrate options with resident feedback informing design

2. Contractor procurement

We are reflecting on how we procure larger more complex projects in the future and consider how we select and engage with contractors so we can gain a commercially competitive tender that provides value for money whilst also minimising the risk for contractors.

3. Client roles

We have a clearer view on what our role as a client to manage similar refurbishment schemes should be, particularly the roles of resident liaison and clerk of works that proved to be more effective when we provided the roles directly, as opposed to using a contractor or consultant respectively. As a client, the Council are now more capable and feel better placed to provide these roles to liaise with residents more effectively and ensure quality through day to day management of such projects.

4. Sharing experiences

We have been keen to share best practice and evaluate the project's success and have continued to engage with the University of Southampton to monitor the building throughout the retrofit process and beyond. We have also involved LSE, which has studied the social impact of the refurbishment of Wilmcote House on residents.

We have delivered lectures and been visited by students from the University of Portsmouth and University of Brighton. There have also been presentations to other local authorities and the MHCLG regarding the learnings from the project. There has been national interest, as well as interest outside of the UK, as the project was chosen as a EuroPhit project. In addition, there have been a number of published articles sharing our experiences.

5. Resident standard of living

The EnerPHit standard and whole building approach is trying to raise residents out of fuel poverty and improve health. This should have a knock-on impact on indirect costs, such as improving local public health budgets in the long term, and improving residents' financial stability as they should no longer face excessive energy bills.

6. Refurbishment projects

The impact of the scheme has demonstrated the benefits of the fabric first approach and a whole building approach. This will impact on how the Council approaches future planned refurbishment projects of its housing stock, particularly non-traditional construction that is approximately a third of the overall stock and is typically the worst performing assets in terms of energy performance as well as potentially the shorter life span.

9. ROCKWOOL's assessment of the project

The policy perspective

In October 2018, the UN Intergovernmental Panel on Climate Change (IPCC) issued the starkest warning yet to governments across the world that urgent and unprecedented changes are needed to limit the potential disruption caused by global warming and that the global economy needs to bring its net carbon emissions down to zero by mid-century.

The UK has ambitious targets to meet carbon emissions. In 2008, the Government passed the Climate Change Act, setting a legal target for the UK to reduce greenhouse gas emissions to 80% of 1990 levels by 2050, and in October 2018 the Minister for Energy and Green Growth has asked the Committee for Climate Change to advise on setting a date for the UK to move to a net zero emissions target.

To meet these emissions targets there will need to be a strong focus on reducing emissions from the UK's building stock. In 2017 greenhouse gas emissions from buildings made up about 20% of the UK's total, with around half of these emissions resulting from the use of fossil fuels for heating. The Committee on Climate Change says building emissions will need to be reduced by around 20% between 2016 and 2030 and to near-zero emissions by 2050 to meet targets. Using less fuel to heat the building stock will be a crucial component to reducing building emissions and improving insulation is one of the most cost-effective ways of doing that.

It is estimated that around 80% of buildings that will make up our built environment in 2050 are already built now. Improving the thermal performance of existing buildings, i.e. through retrofitting with durable insulation in the building envelope, will be crucial to reducing overall building emissions.

The UK Government is currently developing policy to encourage energy efficiency measures within the building stock and reduce carbon emissions. Further to the emissions targets set out in the Climate Change Act, the Government's Clean Growth Strategy sets out ambitions to improve the energy efficiency of our homes, bringing as many homes as possible to EPC Band C by 2035. This includes the private rented sector but does not yet go as far to include the social housing sector. However, the Government plans to consult on how social housing can meet similar standards over this period. Social housing makes up around 17%^{xv} of households in the England and as around half of social rented homes currently have an EPC rating of D or worse, it is clear this sector will need to be addressed alongside owner-occupied and privately rented homes if we are to meet emissions targets.

This is particularly the case for larger social housing blocks like Wilmcote House. The Energy Company Obligation (ECO) is the Government's flagship programme to fund energy efficiency measures in homes. Though social housing is eligible for ECO, it is not well suited to delivering ambitious, holistic projects such as Wilmcote House.

Similarly, recent changes to social housing budgets mean that local authorities and housing associations are now limited in their ability to fund projects such as Wilmcote House directly. In fact, Portsmouth City Council are now unable to roll out the retrofit to housing blocks neighbouring Wilmcote House – as had been the intention at the outset of the project – as they don't have sufficient funds.

How then to resolve this gap between the ambition to drastically reduce emissions in the UK and the ability for social housing to meet the standards that will be required to do so?

As Government develops energy efficiency policies to underpin the Clean Growth Strategy, the following should be under consideration:

- Schemes should support holistic energy efficiency measures and drive ambitious levels of in-use building performance, including driving social housing minimum standards to tackle fuel poverty and support good health and well-being.
- As an indication of the financial commitment required, the National Infrastructure Commission recommended in its 2018 National Infrastructure Assessment that £3.8 billion should be allocated for energy efficiency improvements in social housing between now and 2030.
- Well-considered refurbishment projects such as Wilmcote House, which approach buildings holistically, can be extremely effective in tackling a variety of issues beyond thermal performance, including fire safety, internal space and fittings, external appearance and improvements to communal areas; all making marked improvements to quality of life for the residents.
- Ensuring that there is proper control and accountability over the aims, design, and materials used for regeneration projects. Following the Grenfell Fire and the recommendations of the Hackitt Report there should be a renewed focus on safety, quality and resilience in buildings, and energy efficiency policy and measures must be implemented with these three things in mind.
- Promoting proper engagement with residents on policy and decisions that will impact their own homes. The flats in Wilmcote House were designed in genuine collaboration with the residents, whose feedback led to significant amendments to the flats and who will receive ongoing support to maintain the outcomes of the refurbishment. It is encouraging that the Government has included resident engagement as a key pillar in its recent Social Housing Green paper.

What ROCKWOOL set out to achieve

ROCKWOOL is a leading manufacturer of non-combustible stone wool insulation, with our materials being used in domestic, public, commercial and industrial applications around the world to improve energy efficiency, acoustics and fire safety.

Since ROCKWOOL's arrival in the UK in 1979, we have been closely involved in the retrofitting of social homes to tackle both carbon reduction needs and fuel poverty, working across successive government energy efficiency programmes such as CERT, CESP and ECO as well as Local Authority and Housing Association-driven initiatives. Alongside this, ROCKWOOL has supported research and policy development to help drive both the pace and the quality of retrofit works around the UK, including working with the UK Green Building Council and the Energy Efficiency Infrastructure Group.

In 2012, ROCKWOOL commissioned LSE to undertake a study of the regeneration of the Edward Woods Estate in West London, which resulted in the publication of High Rise Hope and High Rise Hope Revisited. The study aimed to better understand the social impact of the works both during and after the process, and the results highlighted the critical importance of meaningful community engagement to the success of energy efficiency works, from the design details of the proposed measures themselves, through to the way that works are undertaken and the results they ultimately deliver.

We shared the findings of High Rise Hope widely with policy-makers, social housing providers and the construction industry with the aim of highlighting the lessons learnt and supporting improvements in future retrofit projects around the UK and beyond. One of the projects that benefitted from this study was Wilmcote House, with Portsmouth City Council having drawn significantly from High Rise Hope to inform their approach to this ambitious retrofit project. It seemed fitting, therefore, to choose Wilmcote House for a new study on the social impact of retrofit works, building on the lessons from Edward Woods.

Wilmcote House is a flagship project in every respect, from the funding model through to the holistic approach to the building taken by Portsmouth City Council, and the ambitious energy efficiency standards the architects and contractors have worked towards. We hope that through the detailed research undertaken by LSE with the residents of Wilmcote House, we can provide fresh insight to feed in both at a policy and practical level, and that Wilmcote House will serve as a model of success in terms of the extraordinary results it is already delivering.

How the process

has worked

ECD Architects drove a whole building EnerPHiT solution at Wilmcote House, centred on deep retrofit. This involved the super-insulation of Wilmcote House using a combination of several products and systems, including a combination of ROCKWOOL external wall and flat roof insulation together with a selection of ROCKWOOL firestopping and fire protection products, and a Rockpanel cladding façade system.

The ROCKWOOL external insulation was fitted as a 300/400mm zone fixed to newly assembled, external steel frames to insulate and wrap the entire building. The result is excellent thermal performance and exceptional air tightness, reducing draughts, condensation and mould growth.

Other works at Wilmcote House included roof replacement, installation of triple glazed windows, extension of the living areas, and more efficient heating and hot water and adjustment of the ventilation with heat recovery system.

Wilmcote House is the largest residential EnerPHiT project delivered with residents in-situ in the world and is a testament to what can be achieved by taking a holistic, fabric first, people-focused approach to building refurbishment.

Outcomes that have been achieved

In August 2018, the ROCKWOOL team visited Wilmcote House to see the results of the renovation. The works to the exterior walls had an immediate impact and the building now looks entirely tenure-blind as well as having a local touch with the yellow and blue fins that have been added to one façade, in keeping with Portsmouth Football Club's colours.

A tour of the building's interior highlighted the important role that meaningful and ongoing engagement with residents played, with design features having been amended to incorporate feedback. For example, the outward extension of the living rooms of the upper floors of the flats had created more internal space at the expense of outdoor balconies. Residents had welcomed the increased floor space but highlighted the need for somewhere to dry laundry, resulting in the creation of 'sun rooms' in one corner of the living rooms. Touring the flats also highlighted how the use of ROCKWOOL insulation had made a significant impact in reducing external noise within the flats, with outside construction noise reduced to silence when windows were shut in the flats.

Portsmouth City Council also invited the University of Southampton to install data loggers into a number of properties to measure the effectiveness of the intervention works and the impact on heating usage. The results emerging from this research are also extremely encouraging. Thanks to the ambitious and holistic approach taken to the building's upgrade, residents enjoyed significantly warmer flats in the winter of 2017/18, even during the extreme weather experienced in March 2018 where outside temperatures plummeted to -4°C. Even with minimal or no heating, flats were achieving temperatures inside parameters required for a healthy living environment.

Resident engagement also indicated that prior to the works, residents tended to stay in one room with the heating on and not really use the whole flat. Now they are using the whole flat and some have already reported improvements in terms of health. Further, such is the success of the scheme that Portsmouth City Council is planning to take out some of the existing storage heaters so that there is a maximum of two per property — one in the lounge and one in the downstairs hall – freeing up more internal space for residents.

These results are particularly significant in light of the fact that thermal upgrades to social housing often result in either warmer, healthier living conditions or energy savings, but not both. This is because building improvements are typically sufficient to enable residents to reach warmth comfort levels if they continue to use the same level of energy as prior to the works, or to save money on energy whilst maintaining existing conditions. However they are not sufficient to enable comfort levels to be achieved on reduced levels of energy consumption.

The ambitious EnerPHiT standard pursued in the upgrade of Wilmcote House has therefore enabled residents both to heat their homes to healthy levels whilst also delivering reductions in energy usage and thereby helping government to meet its carbon reduction targets.

In recognition of the flagship nature of the project, Wilmcote House received two RICS awards in 2018 – for Design Through Innovation and Regeneration – and has also secured a Constructing Excellence Award for Sustainability.

Wider implications of the work

The works undertaken by Portsmouth City

Council demonstrate the importance of a holistic approach to renovation in delivering a step-change in building performance – both in terms of energy usage as well and health and well-being outcomes for residents.

However, Portsmouth City Council has been clear that such an approach would not have been possible under policy initiatives such as ECO, which drive siloed rather than holistic building measures and tend to operate under tight timescales which do not support meaningful resident engagement. Further, cuts to social housing budgets mean that the PCC no longer has the funds to roll the renovation approach taken at Wilmcote House out to its wider building stock – as had been its intention at the outset of the project.

As the Government considers the future of energy efficiency policy under the Clean Growth Strategy and the 2008 Climate Act targets, it is therefore imperative that the lessons from Wilmcote House are taken on board and used to inform the design of future energy efficiency programmes and drivers if we are to be successful in tackling both fuel poverty and carbon reduction targets.

The lessons from Wilmcote House have also been shared at an international level, feeding into ROCKWOOL's work with European partners and showcased at a conference of think tanks, energy efficiency experts and industry in Denmark in May 2018.

Footnotes

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- xii. <http://www.building4change.com/article.jsp?id=956#.VZPzE03bK70>
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- xiv. LSE Housing and Communities (2012), High Rise Hope
- xv. English Housing Survey (2016-17), available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/705821/2016-17_EHS_Headline_Report.pdf



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10. Appendix

Portsmouth City Councils – calculations on the cost of demolition

The demolition and rebuilding of Wilmcote House was rejected due to the prohibitive costs, detrimental impact to existing residents and detrimental impact on the housing stock in general.

The estimated budget costs for demolition of Wilmcote House and rebuilding 107 dwellings are:

Demolition Costs (inc. Fees).....	£2,750,000
Disturbance Allowance & Home Loss Costs ...	£663,400
Rebuilding Costs (inc. Fees).....	£14,124,000
Rent Loss	£1,900,000
Total Project Cost (Exc PCC Costs).....	£19,437,400

The estimated cost of demolition of the building including asbestos removal and service disconnections based on a ground floor area of 1670 m2 is likely to be approximately £2.5M plus fees of £250k.

The initial consequence of decanting and demolition would result in approximately 18 months lost rent and service charges totalling approximately £717,000.

The costs per household of a disturbance allowance would be approximately £1,500.00 per property for removals, carpets, curtains, disconnection etc. The residents would also qualify for a Home Loss payment of approximately £4,700.00 per property as the block would be demolished. The total cost of the disturbance allowance and home loss payment would be approximately £663,400.00.

Note - These costs are based on 2012 levels of rents and costs.



Source: LSE



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