



Southern Housing

SHIFT Environmental Report

2023



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Executive summary

This report details Southern Housing's latest environmental performance. It is based on the primary data provided by your organisation and this data is transformed using nationally established methodologies where available. Where national methodologies are not available, we have used methodologies devised by SHIFT based on our experience and available science.

Our intention is that you use the data in this report to effectively manage your way to a sustainable stock and sustainable operations. We have arranged the report to align with directorates within your organisation which will make improvements easier to identify.

We find clients use the data in SHIFT report for:

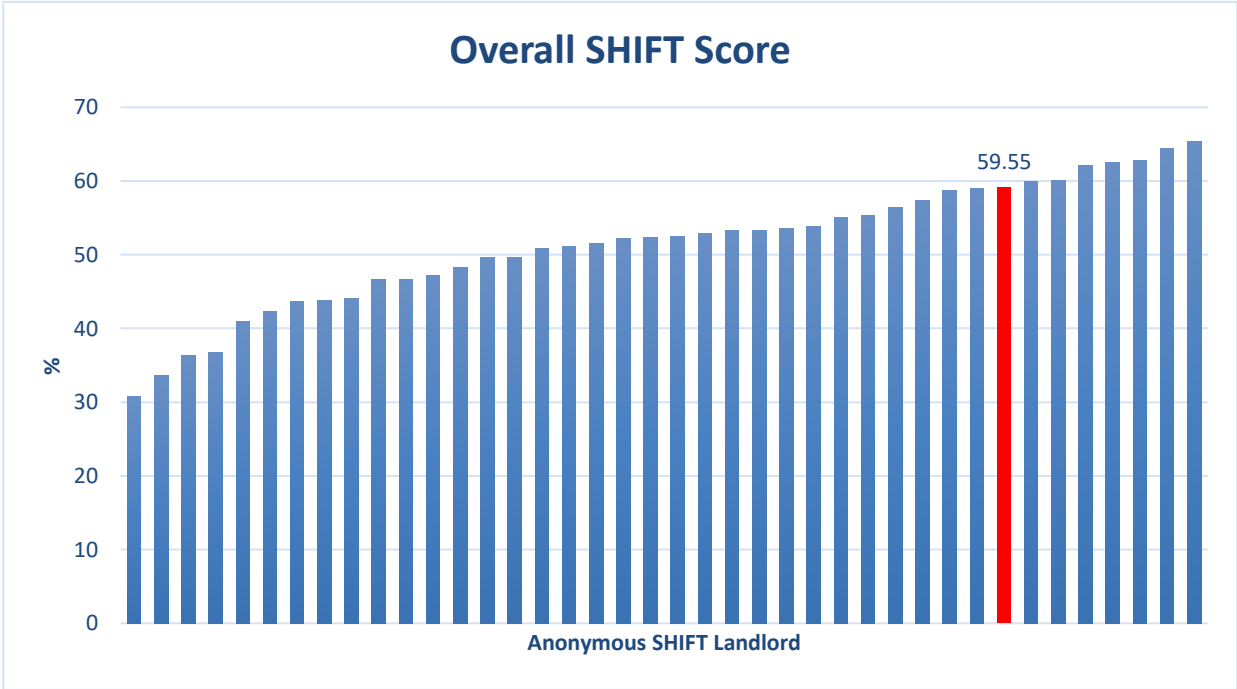
- Effective environmental strategy development
- ESG reporting
- Annual progress monitoring on environmental targets
- Compliance reporting – most recently SECR reporting

SHIFT also has the bronze, silver, gold and platinum accreditation element. Clients find this useful for having a single corporate aim for all directorates and for easy communication with stakeholders. However, clients are reminded that this is not the point of SHIFT. The purpose of SHIFT is to provide you with highly useful data to effectively manage your way to a sustainable stock and sustainable operations.

The report spans existing homes, new build, facilities, resident engagement, supply chain and strategy and management. It covers energy and resource use, transport and travel, climate risk, biodiversity and responsible sourcing, thereby providing a comprehensive overview of your organisation's environmental footprint. It will be used as a baseline following the merger of Optivo and Southern Housing Group to form Southern Housing in 2022.

Southern Housing provide and manage over 60,00 affordable homes (for which they have decent responsibility) across London, the Midlands, the Southeast, the South Coast, and the Isle of Wight. The results of this assessment will show, as best as the data allows, the gaps between Southern Housing's current environmental performance and environmentally safe levels of impact. Southern Housing are keen to understand the impacts of their current performance and to display their commitment to improving their sustainability and environmental performance. The findings of this assessment will be used to monitor Southern Housing's environmental performance progress and support the identification of targeted areas for improvement.

Southern Housing has achieved the SHIFT Gold accreditation, with a score of 59.55. It ranks 8th out of the 40 most recent SHIFT assessments.



Throughout the report you will see your organisation’s sustainability performance across key areas of your business and how it compares to that of other SHIFT landlords.

Overall performance

Carbon

Environmental issue	Absolute ¹	Intensity ²	Intensity target for SHIFT platinum 2023 ³	Long term intensity target (by 2050 unless otherwise stated)
Individually heated homes, regulated emissions Scope 3	121,833.74 tonnes CO ₂ e	SAP 72.15 2,338.73 kg CO ₂ e/ independently heated home	SAP 74.1 ✖	SAP 85
Communal heating systems metered data Scope 1	8,256.59 tonnes CO ₂ e	5,442.86 kWh / home managed	5,304 kWh yr / home managed ✖	3,600 kWh yr / home managed
metered data Scope 2 ⁵	80.84 tonnes CO ₂ e			
Other landlord supply Scope 1	1,460.00 tonnes CO ₂ e	100.07 kg CO ₂ e / home managed	109 kg CO ₂ e / home managed ✔	0 kg CO ₂ e / home managed
Scope 2 ⁵	4,609.76 tonnes CO ₂ e			
Offices Scope 1	94.11 tonnes CO ₂ e	33.51 kg CO ₂ e / m ²	52.0 kg CO ₂ e /m ² ✔	0 kg CO ₂ e / m2
Scope 2 ⁵	426.22 tonnes CO ₂ e			
Business mileage Scope 3	153.13 tonnes CO ₂ e	2.52 kg CO ₂ e / per home managed	9.1 kg CO ₂ e / per home managed ✔	0 kg CO ₂ e / home managed
Maintenance activities DLO Scope 1	1,083.08 tonnes CO ₂ e			
Scope 1-3 scaled up to represent 100% ⁶	10,432 tonnes CO ₂ e	172 kg CO ₂ e / per home managed	TBA	0 kg CO ₂ e / home managed
Embodied Carbon Repairs and Maintenance Scope 3	2,365.47 tonnes CO ₂ e	39 kg CO ₂ e / per home managed	TBA	0 kg CO ₂ e / per home managed
New Build Scope 3	43,924 tonnes CO ₂ e	35,196 kg CO ₂ e / per new home	TBA	0 kg CO ₂ e / per new home

Other environmental performance

Environmental issue	Absolute ¹	Intensity ²	Intensity target for SHIFT platinum 2023 ³	Long term intensity target (by 2050 unless otherwise stated)
Water – homes	7.34 million m ³	144.2 lpd	138.2 lpd ✖	130 lpd by 2030
Water – offices	9,342 m ³	36.92 m ³ /employee/yr	7.1 m ³ /employee/yr ✖	3m ³ /employee/yr by 2030
Waste – homes	6,642 homes with internal recycling bins	6.61 % increase in residents diverting waste from landfill	6.8% increase in residents diverting waste from landfill ✖	17.6% increase in residents diverting waste from landfill
Waste generated – offices	32.38 tonnes	47% of waste diverted from landfill	73.0% waste diverted from landfill ✖	100% diverted from landfill
Promotion of sustainable transport facilities – homes	7703 homes with cycle storage	4.05% increased likelihood of resident use	TBC	100% increased likelihood of resident use
Responsible materials – maintenance & capital works	40.54%	40.54%	49.6% responsibly sourced ✖	100% responsibly sourced
Responsible materials - offices	41%	41%	60.9% responsibly sourced ✖	100% responsibly sourced
Adaptation to climate change – homes protected from flooding	51,967 homes	85.68% of homes adapted to flood risk	84.5% adapted to flood risk ✔	100% adapted to flood risk
Adaptation to climate change – homes protected from overheating	34,875 homes	57.5% of homes adapted to overheating risk	79.6% adapted to overheating risk ✖	100% adapted to overheating risk
Biodiversity value	14,847 tonnes biomass above ground	11.28 tonnes biomass per hectare	10.5 tonnes biomass per hectare ✔	11.9 tonnes biomass per hectare by 2043

1 – in line with best practice environmental reporting, the absolute environmental impact is given here – this gives an overall assessment of impact.

2 – again, in line with best practice environmental reporting, the intensity is given. Intensity is the environmental impact per meaningful unit. E.g. per home managed or per m² of office space. Intensity allows organisations to monitor progress towards long term aims, even if they change in size e.g. gain more homes or office space. Intensity is used for SHIFT scoring and benchmarking.

3 – When '✓' is displayed, you are achieving or exceeding the platinum intensity target for the year stated. When '✗' is displayed, the platinum intensity target has not been met.

4 - 2050 targets unless otherwise stated.

5 – Scope 2 emissions shown here include Scope 3 transmission and distribution losses associated with UK electricity. To calculate just Scope 2, multiply the tonnes CO₂e by 1000, then divide by 0.23112 and then multiply by 0.21233.

6 – This figure has been derived using available carbon emission data from the DLO and external suppliers, scaled up to represent 100% of repairs and maintenance activities.

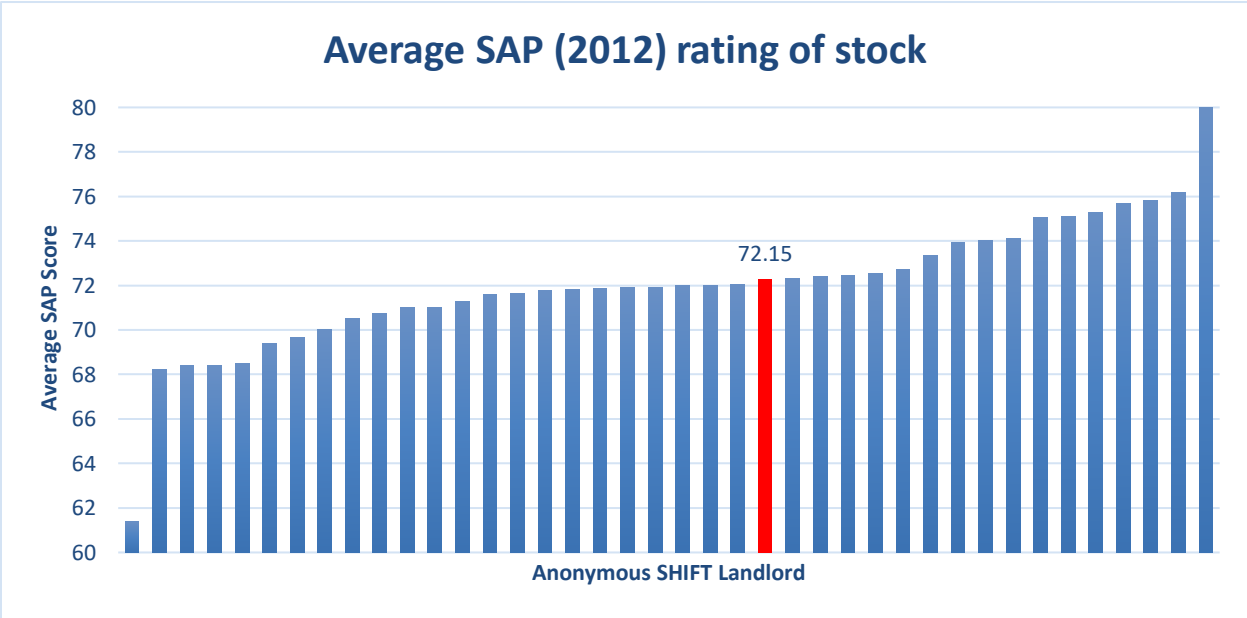
Existing Homes

Most of the homes that exist now will be in use in 2050 and the imperative to future proof them is gaining momentum. Therefore, it is essential to ensure that existing homes are truly sustainable. Your performance in each of these areas is presented below.

Energy and average SAP

Average SAP is a standard way of assessing energy efficiency in homes and provides a very good estimate of CO₂. It also remains the Government’s favoured method for assessing energy efficiency. The SAP rating refers to the cost per m² of heating, hot water, lighting, pumps and fans. These are called regulated emissions. Unregulated emissions are appliances such as cookers, fridges and TVs. SHIFT research indicates that an average SAP of 85 represents a ‘net zero housing stock’ and has been derived through a combination of achieving EPC C for all properties, shifting to electric heating (with corresponding changes to SAP methodology) and expected energy efficiency standards for new build up to 2050. Until there is an updated target for housing specifically, SHIFT recommends this as a long-term target. Please contact your SHIFT Assessor for a full explanation on how this target has been produced.

Energy performance data was extracted by Southern Housing’s Sustainability Performance and reporting Analyst from their asset management database which indicated an average SAP of 72.15 has been achieved across their housing stock.



Recommended improvements:

- The direction of travel for UK homes is:
 - All current homes brought up to EPC C (i.e., well insulated) by 2030
 - Switching to electric heating (or other non-fossil fuel heating) by 2050
 - Grid decarbonised to net zero by 2035
 - All new homes to be net zero
- There are still lots of issues to iron out (e.g., hard to treat, hydrogen fuel). For detailed guidance on net zero, download the “Net Zero carbon roadmap roundtable summary” from here: <https://shiftenvironment.co.uk/publications/>
- Ensuring a full dataset is crucial in preparing address-level upgrade plans. The idea is to gain a vision of what your organisation would like each home to be by 2050 in order to be as close as possible to net zero. Upgrade recommendations can normally be taken from the EPC data, but there is a limit. Further analysis will be needed on electrical forms of heating. At the time of writing heat pumps are low carbon but may increase residents’ bills depending on the previous heating system in the properties. There are signals emerging from the Government that electricity bills could be cut to increase the viability of replacing gas boilers with electric systems.
- Include stock analysis in retrofit plans to establish a baseline to help prepare stock improvement strategies. It will also be beneficial to estimate costs for upgrade plans. The analysis can be done on spreadsheets, but third-party software is available which makes the job much easier (ask your SHIFT assessor for more details).
- When designing annual plans, factors worth considering:
 - Identify how many homes per year you will need to upgrade to EPC C by 2030
 - Of these homes, say ~80% of them could be “worst homes first”.
 - For the remaining ~20% consider a “triggers approach” which will save costs in the long run – ideally, you can do sustainability upgrade works at the same time as other anticipated works. The benefit of doing upgrades whilst you have access and trades could reduce installation costs. This approach will involve transforming the way your repairs and maintenance teams work and may take some time to change processes within your organisation. Triggers to consider:
 - Component replacements
 - Disrepair claims
 - Voids
 - Resident engagement opportunity – some highly visible interventions are ideal for getting residents used to new technologies. If these are strategically distributed around the stock then there are more opportunities for residents to hear from each other about the new technologies, especially if they reduce bills. Example interventions that will be part of the future are:
 - Solar PV (possibly with battery storage)
 - Heat pumps
 - External wall insulation

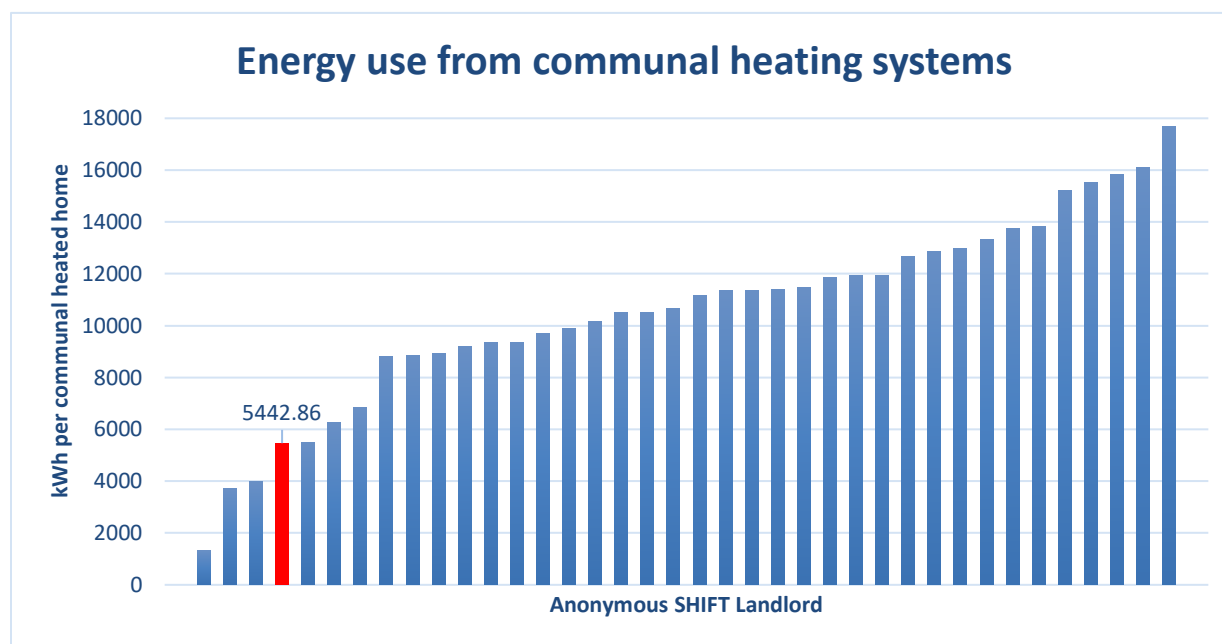
- Finance mechanisms are not fully established for achieving net zero at the time of writing. Various grant funds are available but are not sufficient. Nevertheless, many landlords are finding that achieving EPC C is manageable and are putting plans in place. In any case, it will be better to make a start even with 'stepping-stone' projects so that teams can gain knowledge.
- Retrofitting may also present opportunities to address other sustainability issues such as adapting to climate change, water efficiency, internal waste recycling bins and cycle storage.
- Monitoring progress at a strategic level is crucial. In the absence of any clearer definitions of net zero for housing, SHIFT has reviewed the roadmap and has assessed that, if the roadmap is followed, and the promise of cheaper bills for residents is kept, then by 2050 the average SAP of the stock will be SAP 85. This includes all the new builds added to the stock. Average SAP is a straightforward metric to monitor on a quarterly basis.
- Given the greater requirements for data monitoring, landlords may wish to add extra fields to their asset management databases. Estimated CO₂ emissions can be estimated using existing data and knowing the types of heating systems in place. Please ask your SHIFT assessor if you need more help with the formulas to calculate CO₂ from SAP rating.
- Landlords may also consider APIs which link their asset management database with third parties. This will enable faster and easier environmental reporting and the third parties will be able to keep the methodologies up to date in a rapidly changing environment.
- If you have over ~50 solar PV arrays in your stock it may be cost effective to monitor their performance based on actual sunlight. Third party systems are available to do this which may ensure that landlords are maximising their income from them. Please ask your SHIFT assessor for more information on this.

District and communal heating

Energy for communal and district systems is a huge cost to landlords and is highly visible. The heating systems are known to be very inefficient and are not adequately reflected in the SAP rating. They are also regulated under the Heat Metering regulations which may require retrofitting heat meters at some point in the near future. SHIFT research indicates that an efficient communal heating system, comparable with a SAP 85 property, would require only 3,600 kWh of heating and hot water energy per home.

Southern Housing identified 8,559 communally heated properties, of these 8,415 are gas, 79 electric ground source heat pumps, and 69 are served by biomass boilers. Southern Housing were unable to determine the kWh usage data for the biomass communal heat networks, and therefore the SHIFT default consumption value (17,700 kWh per home) was applied to these homes. Total energy usage from all communal heating systems totalled 46,585,470 kWh or 5,442.86 kWh per communally heated home managed. This is equivalent to 8,337.43 tonnes CO₂e from communal heating systems. These should be clearly documented under the

requirements of the Heat Networks (Metering and Billing) Regulations 2020. The table below shows the average kWh values per communally heated home from other SHIFT landlords.



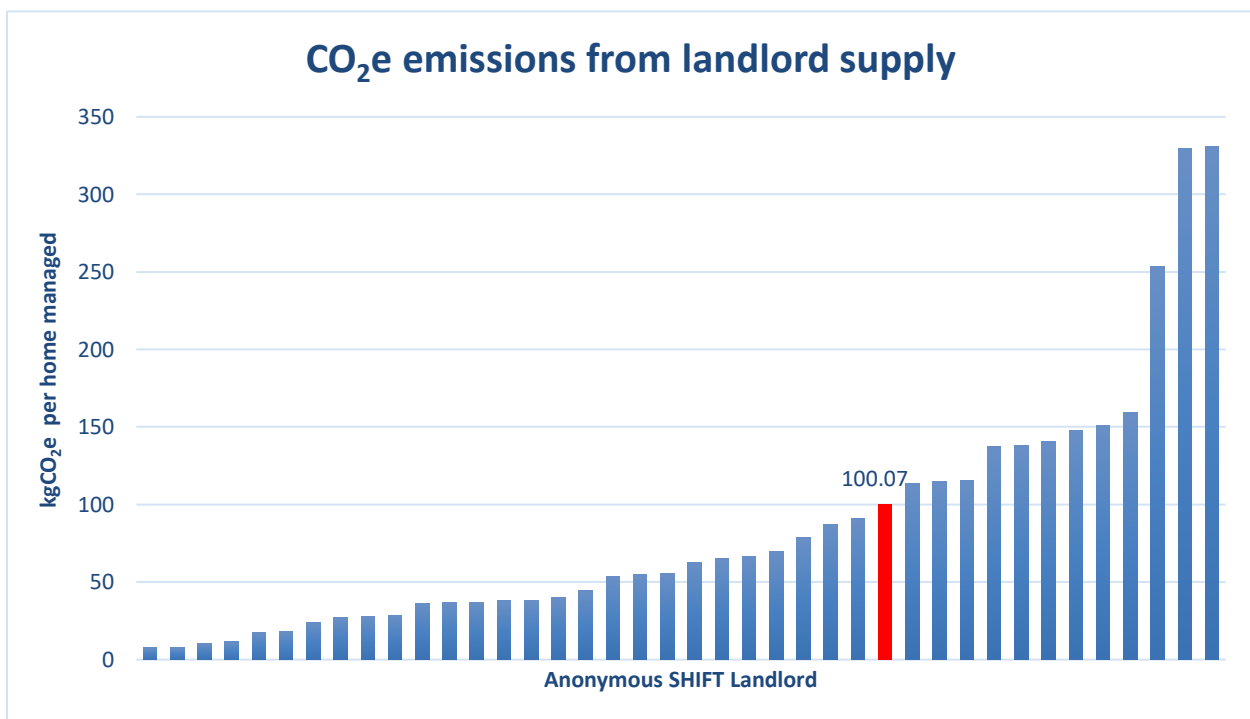
Recommended improvements:

- Continue cross referencing broker and asset data as updates are made, to enable accurate calculation of communal heating system energy consumption.
- Investigate the source and request invoices to monitor biomass consumption.
- Ensure full compliance with the Heat Networks (metering and billing) regulations and install individual meters where viable.
- Identifying communal heating systems within the stock profile has presented difficulties for many clients. We recommend that the UPRN for blocks containing communal heating systems be linked with energy broker data using the SHIFT templates provided. This will allow calculating the actual 12-month energy use for each flat and feeding this back into the asset management database. This will allow better CO₂ emission calculation.
- Review all communally heated networks for inefficiencies in heating demand. As an easy first start, clients can consider benchmarking all their communal heating systems on kWh bought/unit, to identify worst performing systems.
- Conduct a review of all communal systems in your stock – the review should include control settings, boilers, pumps and bypass valves. Contact your SHIFT assessor for more information on this.
- Ensure that replacement systems are not oversized – this can lead to excess maintenance, poor use of space and overheating in flats.
- Ensure that new build colleagues specify systems correctly – try to get input into new schemes at an early stage.

- The Climate Change Committee recommendation is for all communal heating systems to be net zero by 2040.

Other communal area energy

Southern Housing also assessed premises and homes that use communal energy. For SHIFT this is made up of communal areas in homes as well as ‘other landlord supply’ such as community centres. This totalled 6,069.76 tonnes CO₂e or 100.07 kg CO₂e/home managed. This is for the total number of homes which Southern Housing have decent homes responsibility. In previous assessments this intensity ratio has been calculated for the homes served by communal areas and the energy use from them. However, this intensity ratio aims to provide an indication of the energy consumption relative to the size of the organisation.



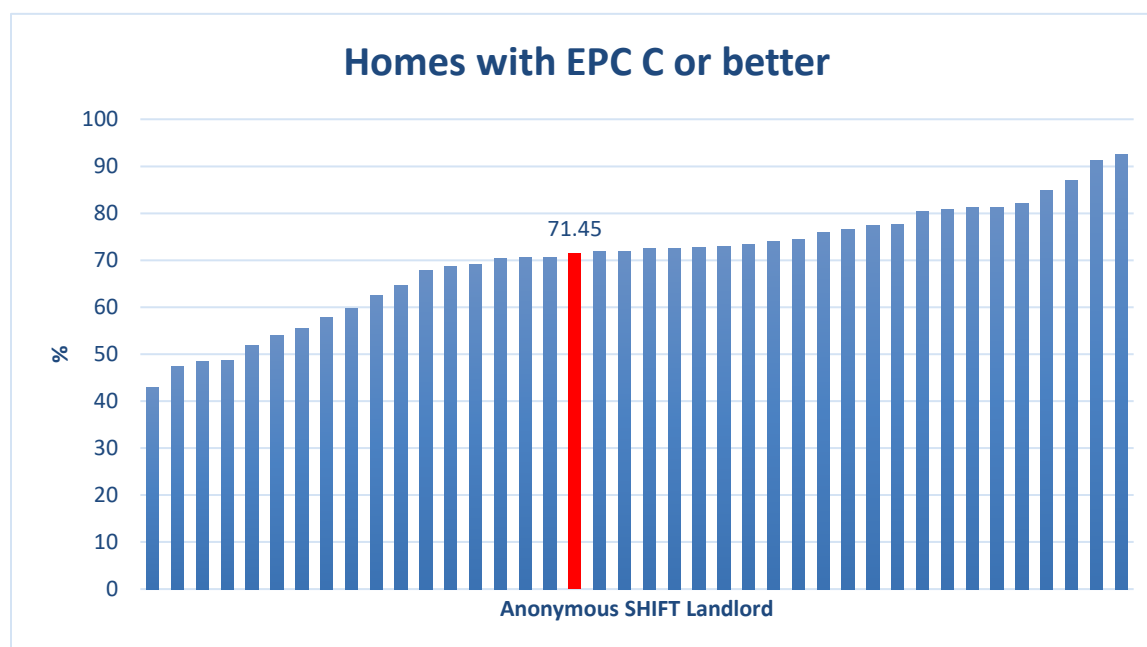
Recommended improvements:

- Switch communal area lighting to LED and automatic lighting within blocks and outside areas.
- Consider low energy street lighting.
- For other buildings the roadmap to net zero is similar for domestic in that energy efficiency should be pursued and then ultimately switch to electric forms of heating.

Fuel poverty

Tackling fuel poverty now aligns with the UK's net zero pathway. As well as significantly improving environmental performance, achieving EPC C / SAP 69 will dramatically improve the lives of residents in both health and financial terms.

Consulting Southern Housing's asset management database, 43,337 properties are believed to be EPC C or above, this equates to 71.45% of Southern Housing's stock. Including leaseholders and shared ownership properties may bring this figure up but as Southern Housing are not responsible for major works for these properties, they have been excluded from the SHIFT assessment.



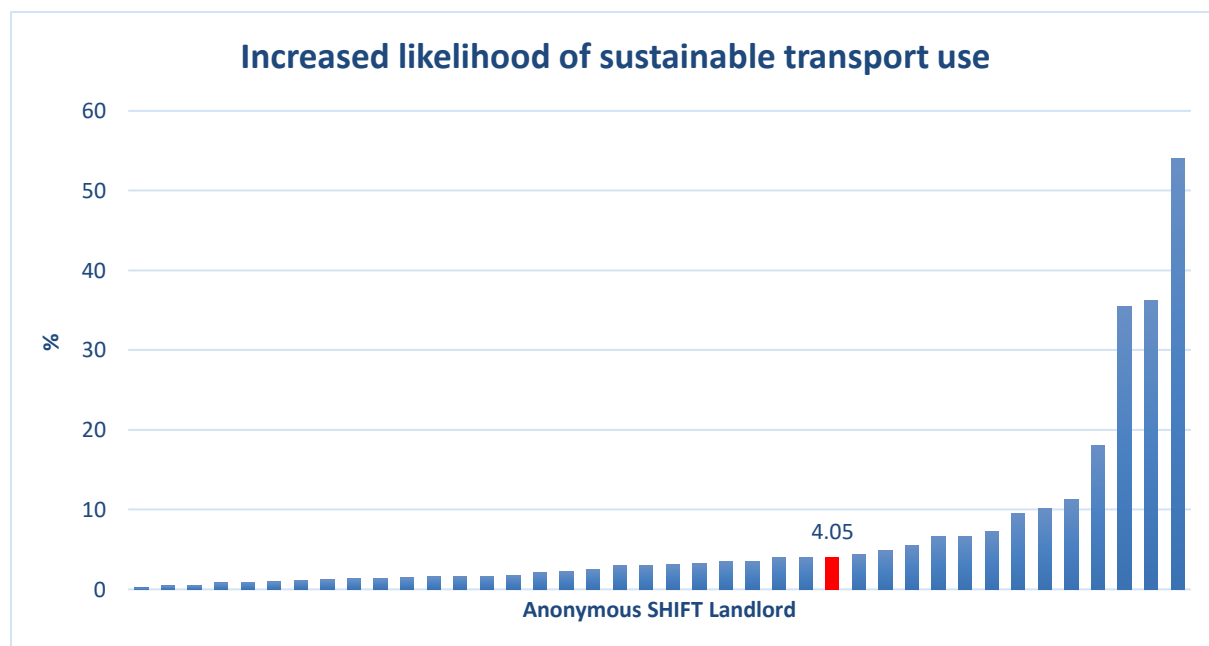
Recommended improvements:

- Investigate Portfolio's methodology used to calculate scope 3 housing emissions. The figure reached is significantly higher than using the latest SHIFT methodology.
- The government target is minimum EPC C by 2030. Landlords should ensure this is identified in their strategies and develop upgrade plans to reach this.
- Some interventions such as "rent a roof PV schemes" improve EPC but do not necessarily lead to big cost savings for residents as the scheme often sells the generated energy at normal prices to recoup their investment. The current version of SAP gives generous rewards for solar PV. This may not be the case when the new version of SAP is issued, so it would be wise to concentrate on improvements that reduce energy demand such as insulation.

Sustainable transport

Transport facilities and initiatives for residents can help to encourage sustainable travel choices which reduce carbon emissions and improve local air quality. This metric is based on the provision of cycle storage facilities as well as transport advice, from travel maps and timetables to cycling and eco-driving training. The national plan for transport is to encourage residents to switch to walking and cycling, coupled with moving to electric vehicles. It is recognised that poor air quality is an issue to residents across the UK and that inequalities exist; air pollution can disproportionately impact less affluent areas. Attempts to improve local air quality will be essential and promoting active transport and low emission travel is a priority.

For sustainable transport facilities it has been estimated that 12.7% of Southern Housing's homes have cycle storage facilities provided based on build date assumptions. Southern Housing have electric vehicle charging infrastructure installed at 645 homes, this represents 1.1% of Southern Housing homes that have access to these facilities. Residents do have access to address specific transport advice, Southern Housing provides address specific sustainable transport information to their new residents as part of their New Home Welcome Packs. These include local travel maps, public transport timetables, cycle training, car sharing clubs and personal face-to-face advice. A number of Southern Housing's new build developments are designed to be 'vehicle free'. As a result of Southern Housing's sustainable transport interventions, the increased likelihood of residents using sustainable transport is 4.05%. Below you can see how your performance compares to other SHIFT landlords.



Recommended improvements:

- Address specific transport advice could be provided via new tenancy packs for example and should include the service provided and proximity of public transport links to the specific address.
- You may wish to include data on sustainable transport in the asset management database (e.g., cycle storage provision or EV charge points). This will allow easier and faster reporting on this issue. You can ask your SHIFT assessor for a list of which UPRNs we think may have cycle storage to use as a first pass. Liaise with your new build department so they can also provide this data ready to go into the asset management database.
- Working with new build colleagues to ensure that cycle storage is included at all new builds will aid the transition to more sustainable modes of transport. New building regulations require EV charge points.
- Consider installing EV charging points at places where staff can use them during the day, but out of hours, these can be used by residents (for a fee). There is potential that local councils will have initiatives to support businesses and organisations to invest as part of local transport plans.
- The national net zero transport plan indicates that all drives should have EV chargers, so this may be worth prioritising.
- It may be beneficial for residents to engage in cycle training and workshops. This may offer an opportunity to provide additional face-to-face travel advice. It is also an opportunity for community outreach work, improving residents' experience.
- You may facilitate partnering to integrate car clubs, cycle hire and shared transport facilities.
- Promote the health and wellbeing benefits of improved active modes of transport. Consider asking for feedback on resident satisfaction surveys about the facilities you provide for active modes of transport.

Water

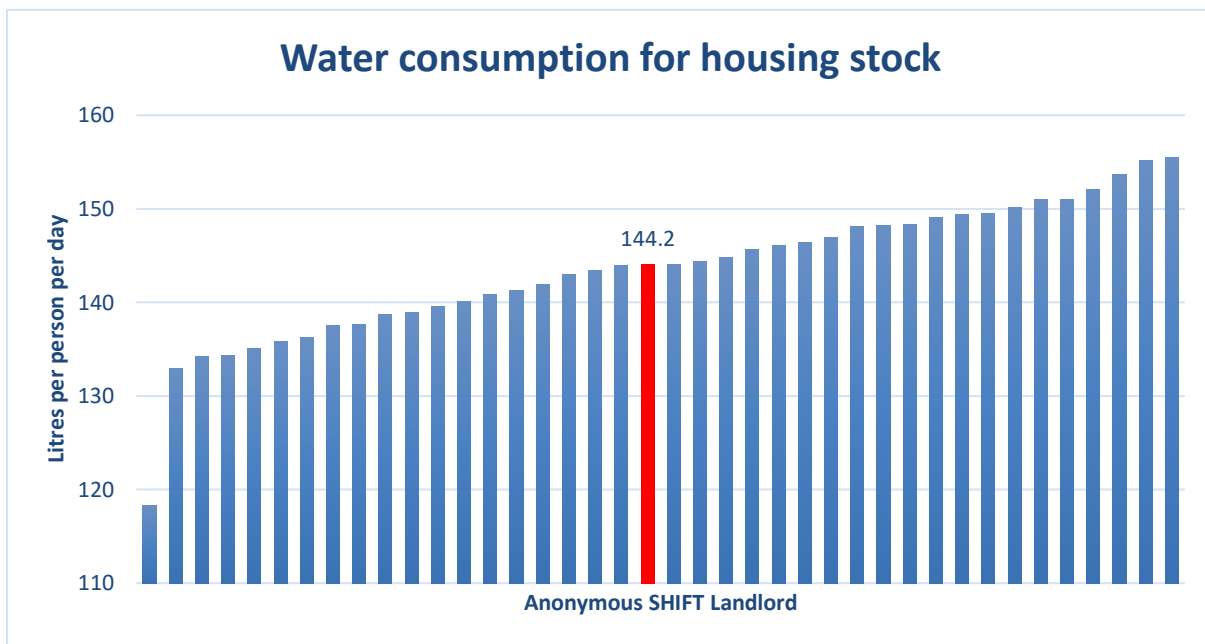
At the time of writing Environment Agency research suggests that UK domestic water efficiency should be 130 litres per person per day (lpd) by 2030 to adapt to forthcoming climate change. However new national strategies are emerging which may mean this target is reduced to 110 lpd¹. Water efficiency saves residents money too if they are on meters and if hot water is used efficiently.

As with most landlords no complete assessment has been made of water efficiency in Southern Housing's stock. Therefore, the SHIFT water efficiency estimator tool has been used. The

¹ <https://shiftenvironment.co.uk/news/water-efficiency-targets-for-uk-housing/>

estimator uses build age data to identify the likely water efficiency measures in Southern Housing's stock. Using build date information, the percentage of homes with each water efficient feature is:

- Smaller than 180L bath: 16.9%
- Low flow taps: 16.9%
- Low flow showers: 19.2%
- Dual flush toilets: 64.46%
- Flats (representing less water usage in garden): 60.69%
- Water butts: 0%
- Water meters: 48.34%
- Greywater/rainwater harvesting systems: 0%
- This gave a result of an estimated 144.2 litres per person per day (lppd) using the SHIFT water efficiency calculator tool.



Recommended improvements:

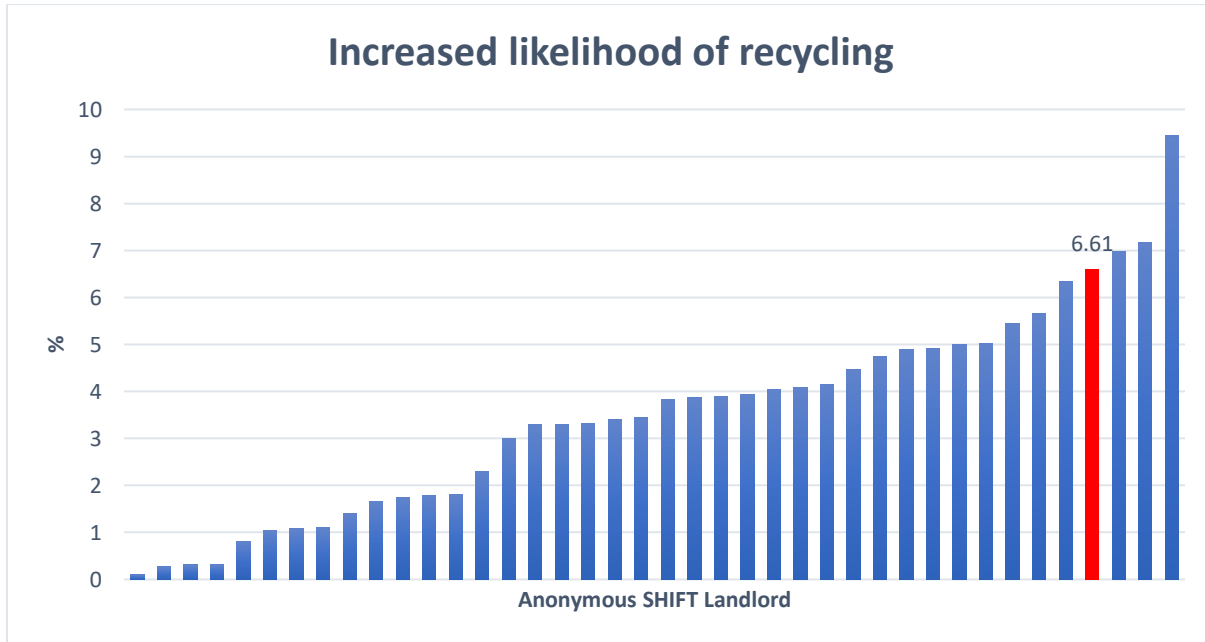
- Include water efficient fitting information on your asset management system. SHIFT can provide a “first pass” likelihood of certain features to help populate your database, but stock condition surveys can confirm these details.
- Incorporate the recording of water efficiency measures in stock condition surveys. This will allow upgrade plans to be developed.
- Water efficient showers reduce the amount of steam in bathrooms which may reduce the risk of mould growth.

- Develop a formalised water efficient specification for kitchen and bathrooms replacements could be created which prompts installation of water meters and other components when plumbing work is undertaken at a home or during a void period for example.
- Consider engaging with your local water supplier as some landlords have found that their local water companies are willing to provide free water efficiency devices, home visits and other engagement work with your residents.
- Ensure that fittings and appliances offer reduced water consumption beyond normal principles- this may include white goods such as washing machines. Ensure that there is a high energy efficiency rating on these products. The water-efficient product labelling schemes further simplify the task of procurement.
- Ensure effective use of installed water-efficiency information- liaise with installers and residents to ensure this happens. For all installations, you may wish to make providing advice to residents a standard for all work completed on the homes, ensuring there is monitoring of these conversations will help with future SHIFT assessments.

Domestic recycling

This SHIFT metric reflects the measures that landlords can take to encourage additional recycling by residents, above and beyond what local authorities are doing to boost recycling rates.

12.6% of Southern Housing's homes are believed to have internal recycle bins fitted using build date assumptions. 100% of residents were passively engaged in domestic or bulky waste advice over the reporting period. A further 0.05% were actively engaged on waste initiatives. Two litter picking events were held as part of 'Estate Action Days'. There were also resident consultations ahead of community waste upgrades across 14 estates. Unfortunately, no numbers of participants were provided, and therefore this engagement has not been measured as part of this SHIFT assessment. These measures encouraged an estimated 6.61% increase in the likelihood of residents diverting waste from landfill.



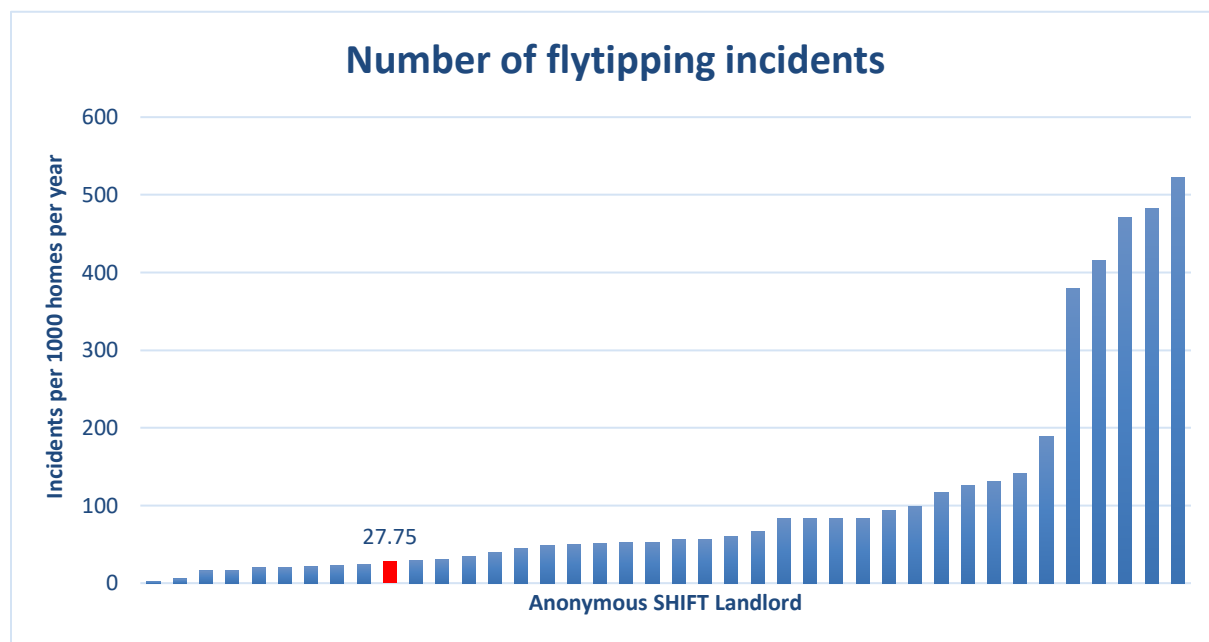
Recommended improvements:

- Keep records of numbers involved with consultations, not only will it be useful for future SHIFT assessments, but it will also enable better planning for future meetings.
- Consider installing internal recycling bins into kitchen refurbishment works for resident recycling ease.
- Include a new field on asset management databases to show recycling facilities. This will make easier environmental reporting. Ask your SHIFT assessor for a list of UPRNs that we believe may have internal recycling bins.
- Liaise with new builds colleagues and ensure that all homes have internal recycling facilities and ensure this remains a standard in all new builds. Ensure this data is transferred to asset management database.
- Ensure active engagement with residents on waste management. Top performing landlords in this area make regular efforts to engage with resident groups, caretakers, and estate teams to keep track of waste issues throughout your stock. Consider arranging a quarterly estate clean up involving residents and staff.
- Engage with recycling and reuse community schemes. For example, hosting second hand/exchange events for household items. Another example is working with upcycling groups/community projects to fix household items and support a circular economy.
- Make residents aware of the local arrangements for bulky waste collection.
- 'Skip days' where landlords provide free bulky waste collection are a popular way for landlords to reduce fly tipping issues and offer an opportunity to engage directly with residents on waste issues their estate may be facing.

Fly tipping

Fly tipping is unsightly, presents a potential fire hazard and is costly for landlords to deal with. Landlords have reported an increase in the prevalence of fly tipping since the Covid-19 pandemic began, possibly due to the closure of tips and collection services for bulky waste and reduced resident engagement in dealing with bulky waste.

Southern Housing recorded fly-tipping based on number of enquiries from the legacy Optivo area. Over the reporting period, 988 fly tipping incidents were recorded over the 12-month reporting period. This figure was then extrapolated to be representative of legacy SHG homes. It was estimated that the total number of fly-tipping incidents totalled 1,683 equating to 27.75 per 1,000 homes.



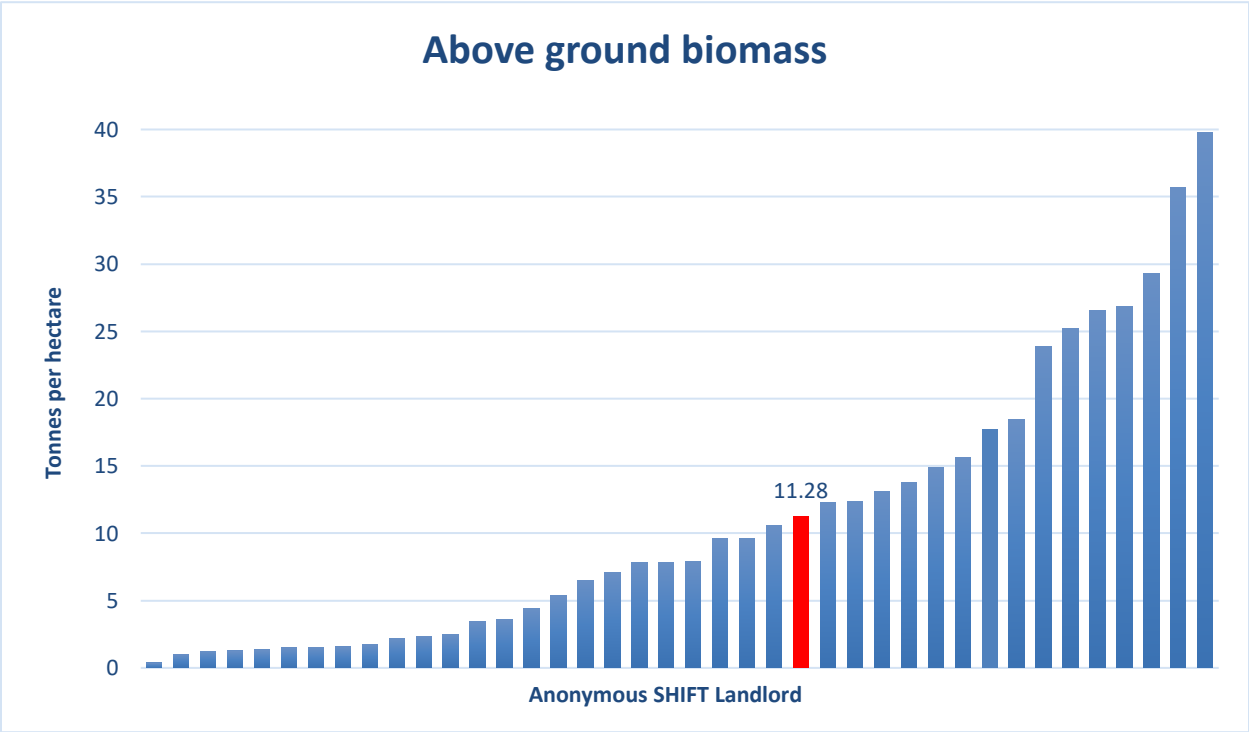
Recommended improvements:

- Expand data collection and recording to include legacy SHG homes.
- Make it easy for residents to report fly-tipping.
- Signpost residents to correct ways to deal with waste and contextualise the fly tipping clearing costs through comparison a with number of home improvements that could be completed instead. Providing clear information about new 'green pages' on the website will support this.
- SHIFT landlords have found that leaving notices on fly tipped waste, to show that you are investigating the source, results in local residents coming forward with information.
- Improvements to facilities may include increasing communal bin capacity, install CCTV in fly tipping hotspots, purchasing internal recycle bins for residents etc.

Biodiversity and green spaces

Green spaces and biodiversity can deliver major benefits to our health and wellbeing. These include air quality improvement, flood attenuation and cooling during heatwaves. SHIFT research indicates that there should be 11.9 tonnes of above ground biomass per hectare of landlord land by 2043. This metric aligns with ESG reporting and provides an estimate of above ground biomass per hectare from land coverage data on all land holdings, including gardens as well as communally maintained land. In response to the Environment Bill new biodiversity metrics are emerging, most notably Biodiversity 3.0 for new build and biodiversity offsetting. At SHIFT we are keeping a close eye on this and assessing its applicability to existing homes.

Southern Housing’s Sustainability Reporting Manager provided a summary extract of the land use within their stock. Recorded in this was the appropriate land uses to fit the SHIFT tool. In addition to this, from tree survey’s, it was reported that Southern Housing have 13,579 trees on their land (not including designated woodland). The SHIFT average crown spread 20m² was applied to estimate coverage. The SHIFT biodiversity tool estimated that 11.28 tonnes of above ground biomass per hectare of land owned. Southern Housing have already made progress towards biodiversity enhancements across their grounds with several community engagement projects.



Recommended improvements:

- Expand the GIS garden data that is in place for legacy Optivo homes. Once this is in place, it will allow accurate year-on-year comparisons.

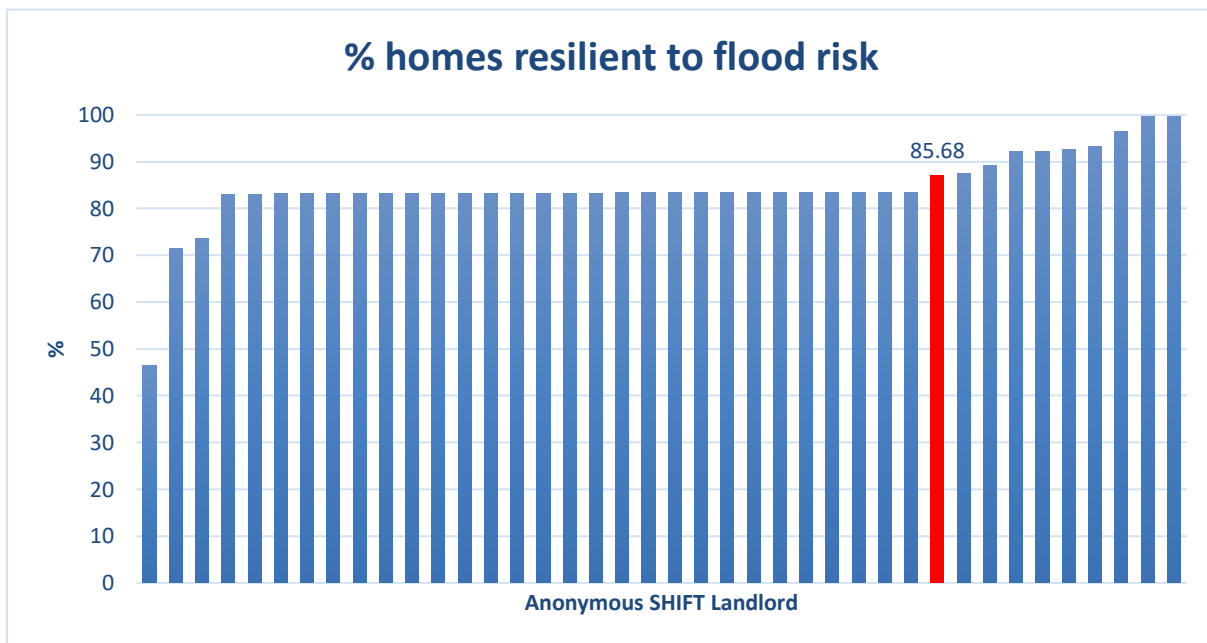
- Consider planting higher density biomass areas in existing green spaces.
- Ensure you know much land you own and the vegetation type. It may be possible to record this on asset management databases to allow easier biodiversity reporting in future. If you do not have this information, contact your SHIFT assessor for some “first pass” estimates of garden sizes and typical vegetation types.
- Consider including in asset management databases the land area and vegetation types for each UPRN. Special consideration will need to be given for blocks of flats.
- Mown areas are common in most communal spaces but require time, money and carbon emissions to maintain. It may be beneficial for you to allow ‘wilder’ gardens and communal spaces that do not require as much maintenance and can improve biodiversity.
- Ensure crown spread data is included when conducting tree surveys. It is also possible that, when conducting these surveys, it be assessed if denser tree planting can occur in these areas.
- Liaise with new build colleagues to ensure that they maximise biodiversity within their schemes. Forthcoming biodiversity ambitions may help with this- the recent Social Housing White Paper makes considerable mention of improving green space provision for example and biodiversity offsetting is being introduced for new build in 2023.
- Above ground biomass can be increased by the addition of green roofs, green walls, and street trees can increase sequestration potential, air quality, water management, and heat regulation. Sustainable Urban Drainage (SuDS) and other biodiversity enhancements are encouraged for new builds. Consider these and additional enhancement potential for supporting broader biodiversity and amenity aims.
- Work with local community groups to enhance biodiversity features across the organisation. Consider whether a biodiversity fund for residents to do wildflower planting could be achieved by partnering with contractors. This will provide good examples for their Corporate Social Responsibility and help you convert more of their underutilised green/grey spaces into high biodiversity areas. Creating community gardens, tree planting and introducing wildflower planters are potential projects.

Homes adapted to risk of flooding

Met Office projections indicate more flood events. The Environment Agency states over 3 million properties in England are at risk of surface water flooding, even more than those at risk from rivers and the sea (2.7 million). The ideal is to have 100% of homes at low risk or adapted to flooding. For SHIFT purposes, we define adapted as homes that are in locations at low risk of flooding or homes that have responsive actions in place to quickly react to a flood event or

flood warning. Homes may still flood, but they can be quickly occupied again after a flood event.

Southern Housing carried out a thorough flood risk assessment of their housing stock. The report examined the risk from both fluvial and surface water flooding using Environment Agency flood risk maps. Surface water flooding is especially important to assess in urban areas as it is projected to be the most likely form of flooding in future years. Overall, the report found that 85.68% of Southern Housing's homes were either at 'no risk' or 'very low' risk of flooding.



Recommended improvements:

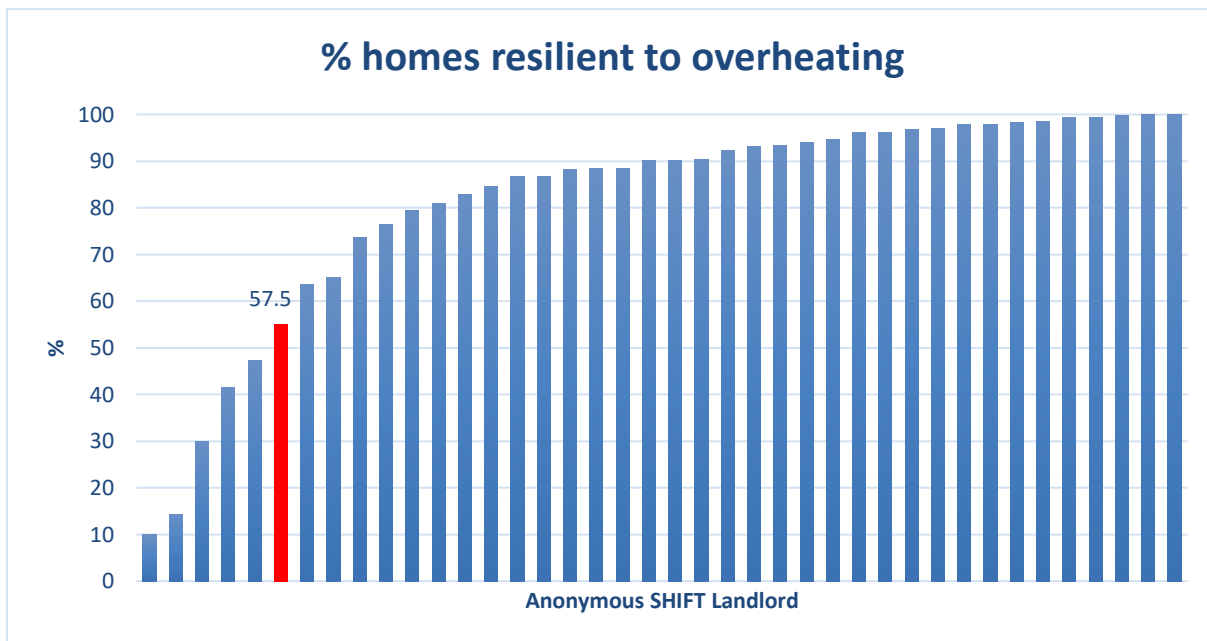
- Ensure future flood risk assessments are assessed annually. Use the Environment Agency's long term projection maps which are updated regularly.
- Include both fluvial and surface water run-off.
- Include flood risk levels to UPRN level in asset management databases for easier management and reporting.
- For homes in medium or high-risk areas devise a risk management approach so that these homes can be protected and/or upgraded before, during and after a flood event or warning. Ask your SHIFT assessor for our climate resilience assessment methodology which describes such a system and was devised with SHIFT clients.
- Remain vigilant for funding opportunities through local government and other agencies for flood mitigation works.
- Confirm with new build colleagues that all new homes are low flood risk, and that relevant flood risk assessments and subsequent mitigation works are undertaken. Transfer this data onto asset management systems.

- Ensure good quality green areas, especially in urban areas, to increase flood attenuation.

Homes adapted to risk of overheating

Met Office data (and recent experience) indicate that heat waves will become more prevalent in coming years. Landlords will need to adapt and manage their stock such that residents are protected from adverse effects. For SHIFT purposes, we define adapted as homes that are either at low risk of overheating or homes that have responsive actions in place to quickly react to overheating events or overheating warnings. Homes may still overheat, but they can quickly be occupied again after a heat wave event.

Information provided from Southern Housing’s asset management database was used in the SHIFT overheating risk assessment tool to estimate that 57.5% of homes to be at low risk of overheating. The SHIFT overheating risk assessment uses information on housing stock property types, postcodes, communal heating and build dates. The SHIFT overheating risk assessment also uses SHIFT sourced data on risk factors such as the Urban Heat Island effect and population density to estimate overheating risk in 57.5’s housing stock.



Recommended improvements:

- Ensure any overheating risk assessments cover the risk factors addressed in the SHIFT overheating estimator tool.
- Consider including overheating data in asset management systems. First pass assumptions of risk factors for each address are available from your SHIFT assessor to

help you populate your database. In future surveys, you may replace the assumptions with better data. For example, SHIFT assumptions on whether or not a flat is a single aspect or not may require updating.

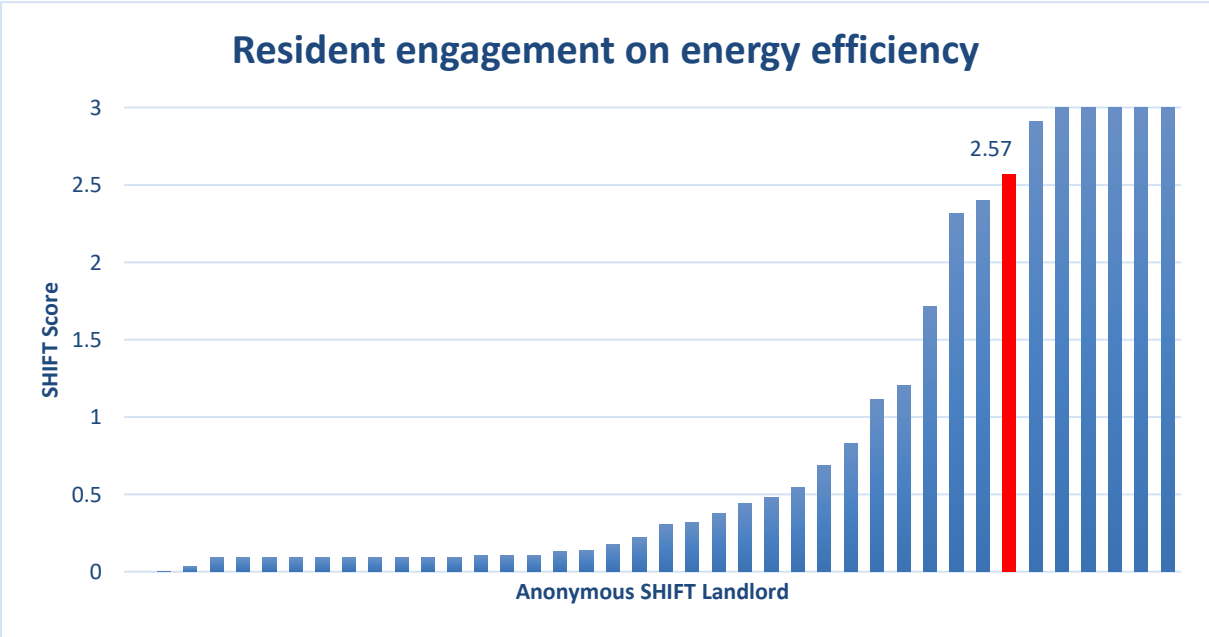
- Liaise with new build colleagues to ensure that all new homes address all risk factors and have suitable measures to prevent overheating if necessary. Ensure this data is entered into asset management database.
- Incorporating assessments of risk factors, i.e., single aspect, shading facilities, ability to open windows etc, within stock condition surveys will help identify higher risk properties and allow for adaption measures.
- For homes identified at high risk, and have condensation and mould issues, install adequate ventilation measures which will go some way to reducing both risks.
- Ensure good quality green areas to increase shading and reduce the urban heat island effect.
- For homes in medium or high-risk areas, devise a risk management approach so that these homes can be protected and/or upgraded before, during and after a heat wave event or warning. Ask your SHIFT assessor for our climate resilience assessment methodology which describes such a system and was devised with SHIFT clients.

Resident engagement

Resident engagement

Resident engagement is an important way of informing residents about how they can make a difference and empowering them to save both energy and money. There is an emerging nuance with resident engagement as it is recognised that there will be huge disruption as each home is transformed to net zero. Explaining and demonstrating the benefits of net zero will also be vitally important.

100% of residents have access to energy efficiency advice through Southern Housing’s various social media posts as well as through resident newsletters and are considered passively engaged. While it is important for residents have access to this information, it is difficult to monitor the effectiveness/interaction of this engagement. It is considered that more active engagement with residents can have the greatest impact. At present, it is considered that 29.02% of Southern Housing’s residents had been actively engaged on energy efficiency. Southern Housing have completed 1,200 retrofit assessments and 5,089 EPC surveys. As well as planned upgrades, Southern Housing’s Financial Inclusion Team has helped 6,000 tenants. These measures resulted in a SHIFT score of 2.57 out of 3 for performance on resident engagement on energy efficiency. This is benchmarked against other SHIFT landlords below.



Recommended improvements:

- Environmental pages or similar on your website will be an easy way to refer residents to top tips and also for staff to refer to. Ways to use heating systems efficiently should be included, especially for newer types of systems. This may also be an ideal space to advise on water saving, waste recycling, adapting to climate change and sustainable transport. The pages will need to be promoted to residents to ensure engagement.
- Include energy advice in all contact with residents – gas safety checks, refurbishments, heating upgrades, rent arrears activities, new sign-ups.
- As part of procurement, you may wish to make providing advice to residents a standard requirement for any contractors carrying out work on the homes, (i.e., gas servicing). This will be particularly important as new retrofit measures be added to the homes. Ensuring that there is a record of these conversations will not only help with future SHIFT assessments, but also ensure that your organisation’s expected standards are met.
- Consider developing an active engagement programme. SHIFT landlords have found this the most effective way to influence behaviour. Community engagement teams may host drop-in sessions for staff to discuss energy efficiency in homes and wider sustainability concerns with residents.
- Encourage all staff members to receive carbon literacy and sustainability training. It is hoped that they will then be able to provide sufficient advice to residents when completing other key tasks. For example, if home inspections are conducted, staff can advise residents on energy efficiency improvements in their homes.
- When an energy efficiency visit occurs, attempt to undertake small works such as installing radiator reflectors, hot water saving devices and draught proofing.
- When a new heating system is installed, you should also provide a full tutorial for the tenant as complaints can often be raised about bills going up after a new system goes in – potentially you could introduce an option where tenants with new heating systems can report energy use within the first 12 months of usage to you. If bills seem significantly higher than expected this could trigger a request to visit and discuss heating use.

New build

It is critically important to ensure that homes built now are 100% sustainable. Retrofitting sub-standard homes at a later date incurs higher whole life costs for the landlord. Welsh landlords have done considerable research on this due to their unique funding system. They find that the uplift to build to EPC A is far cheaper than the costs to upgrade the same home to net zero at a later stage. In addition, when good quality new homes are added to the asset register, they improve the average environmental performance in a cost-effective manner.

The SHIFT metric factors in a range of measures to determine the sustainability of new builds, including energy efficiency, above ground biomass, flood risk, overheating risk, recycling support, use responsibly sourced materials and sustainable transport support. We also encourage the use of some form of third-party verification to ensure that the so-called “performance gap” between design and final home, is minimised. Ask you SHIFT assessor for effective ways on carrying out “Post-Occupancy Evaluation”.

Figures provided for this assessment by Southern Housing’s Sustainability Performance and Reporting Analyst indicated that 0.88% of homes achieved an EPC A (SAP 92+), 14.5% a high EPC B (SAP 86-91), 79.65% of homes were rated as a low EPC B (SAP 81 – 85) rating, and 4.97% as an EPC C (SAP 69-80). It is highly recommended that Southern Housing builds more homes to an EPC Grade A (SAP 92+ minimum). Southern Housing recognise that this will help bring up its average energy efficiency closer to environmentally safe levels and reduce the level of investment needed in its existing stock in order to achieve the net-zero 2050 target.

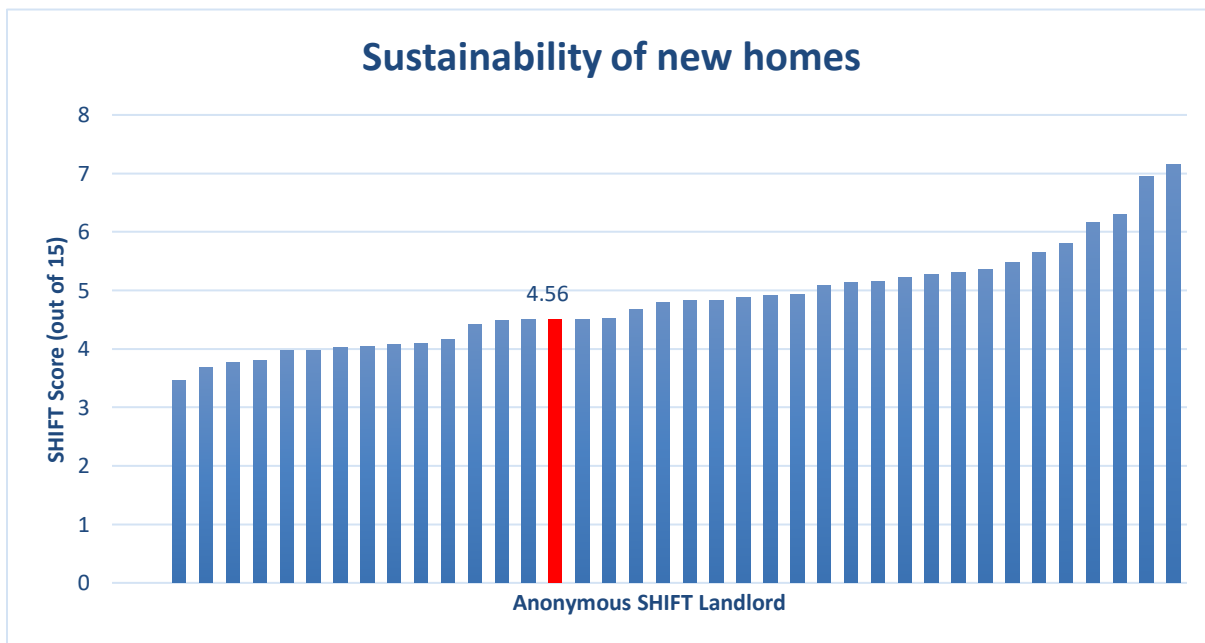
Data was also collected for additional sustainability measures for all new homes. The percentage of homes with each sustainability feature is:

- Internal recycling bins: 60.98%
- Low risk of flooding: 75.32%
- Low risk of overheating: 21.23%
- Sufficient biomass/biodiversity: 73.40%
- Cycle storage: 91.67%
- Responsibly sourced materials: 0.72%

Southern Housing were not able to provide detail regarding the embodied carbon of their new build homes, therefore the SHIFT default of 35,196 kg CO₂e per home has been applied to estimate a total of 43,924.61 tonnes CO₂e for the 1,248 homes built.

Southern Housing do not currently carry out formal post-occupancy verification of their new builds to determine whether the above sustainability features have been installed as expected by the developers. They do however invite staff members from across the organisation to visit completed new builds. Southern Housing build their new homes to meet and exceed the London Housing Design Standards.

Using the SHIFT calculator for new build and the data above, the sustainability score for Southern Housing's new build homes was 4.56 out of 15.



Recommended improvements:

- Create your own design specification- picture how you want your homes to perform by 2050. Some SHIFT landlords are developing their own technical specifications for new developments which will consider sustainable building, heating, insulation, ventilation, travel, greenspace, waste, responsible materials and adaptation to flooding and overheating.
- SHIFT recommends that you ensure all new builds that are on land-led schemes are EPC A rated, have non-fossil fuel heating systems ahead of the anticipated 2025 building regulations, and have additional sustainability features.
- Obtain full documentation of above ground biomass and other sustainability features to ensure new builds meet your expected standards. Design specifications may provide evidence for this in the absence of post-occupancy verification.
- Homes built today are going to have at least one heating system renewal before net zero (2050) targets, so it is recommended that building design considers what this heating system will likely be. For example, providing a storage space now that could

then be used for a water cylinder as part of an air source heat pump system could save time and money in the future.

- Establish third party checks on sustainability features. You can use existing sustainability standards, carry out Post-Occupancy Evaluation (particularly good to influence future design), or arrange for asset management to sign off on sustainability features.
- Experiment with new technologies and finance mechanisms to ensure that high quality new build can be achieved cost effectively.
- For homes where 3rd party verification may be more difficult such as Section 106 acquisitions asset management could arrange to sign off on sustainability features that are easier to identify/install such as cycle storage and internal recycle bins.
- We have found that landlords are having more success with smaller and medium sized builders when preparing for the future. These builders are keen to explore readiness for forthcoming building standards.
- Very few schemes have verifiable responsible sourcing information available so it would be beneficial to gather further information from development contractors on their responsible sourcing practices and whether they adhere to any responsible sourcing frameworks such as BES 6001. SHIFT has developed an environmental survey that can be used for this purpose – please ask your SHIFT assessor for the “Supply chain environmental survey”.
- Consider excluding gas boilers from new homes now, well in advance of Future Homes Standard.

Offices & Operations

Although offices and operations have a minor impact on the organisation's overall environmental performance there are several advantages to focussing on improving their environmental qualities. Utility bills reduce, staff can see a tangible commitment to sustainability and facilities teams gain first-hand experience in environmental technologies.

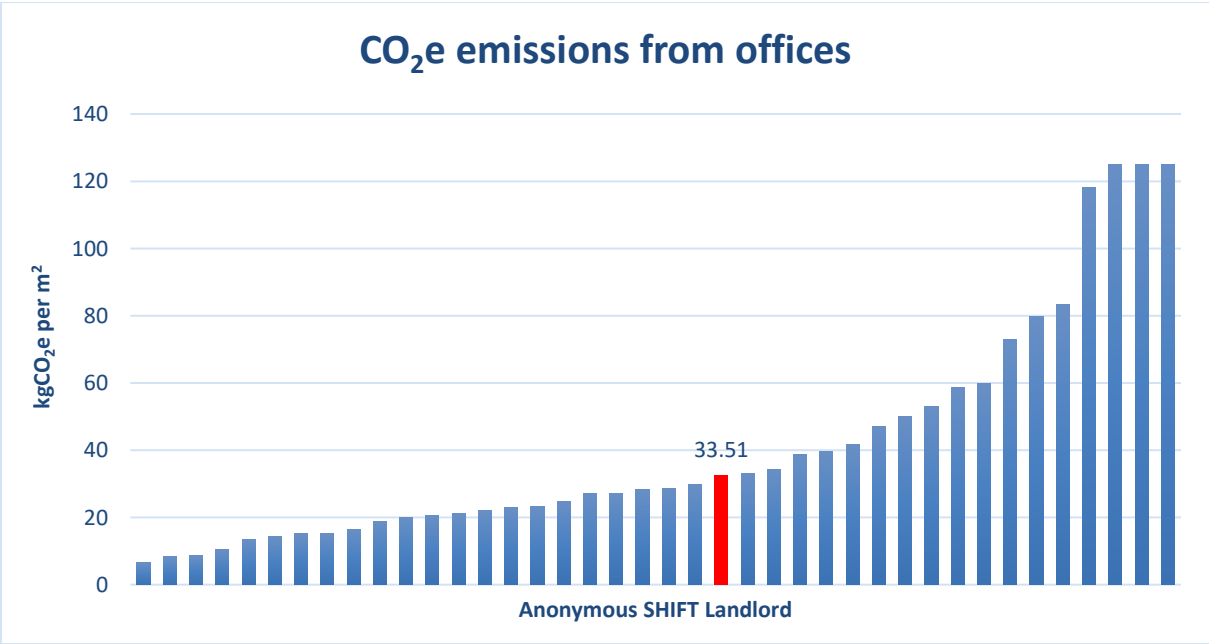
Energy usage

The ultimate target is net zero emissions by 2050 through low energy demand buildings and a decarbonised grid. The Government states a target of rented, non-domestic properties to be EPC B by 2030. Similar to homes, office buildings are expected to have non-fossil fuel heating systems.

During the SHIFT visit to Southern Housing's modern Fleet House office (it was refurbished during the Covid19 pandemic), several great sustainability features were observed/noted. The office has a solar PV array, a green roof, individual heating zone/room controls and motion-controlled LED lighting. Shading and blinds are installed on the windows and heating was provided by an air-to-air heat pump. For transport, the office is vehicle free and has cycle storage.

SHIFT also carried out an audit of Southern Housing's office consumables. Paper and notepads were all FSC certified and had the Euro Ecolabel accreditation. Teabags were biodegradable, as were the takeaway style cups. Throughout the office there were recycling bins for paper and food waste bins were present in the kitchenette area.

Southern Housing documented the energy use at 8 main office spaces, which were reported to have used 2,534,917 kWh of energy. In total, 520.34 tonnes CO₂e were emitted in the assessment period which equates to 33.51 kg CO₂e per m² of office space.



Recommended improvements:

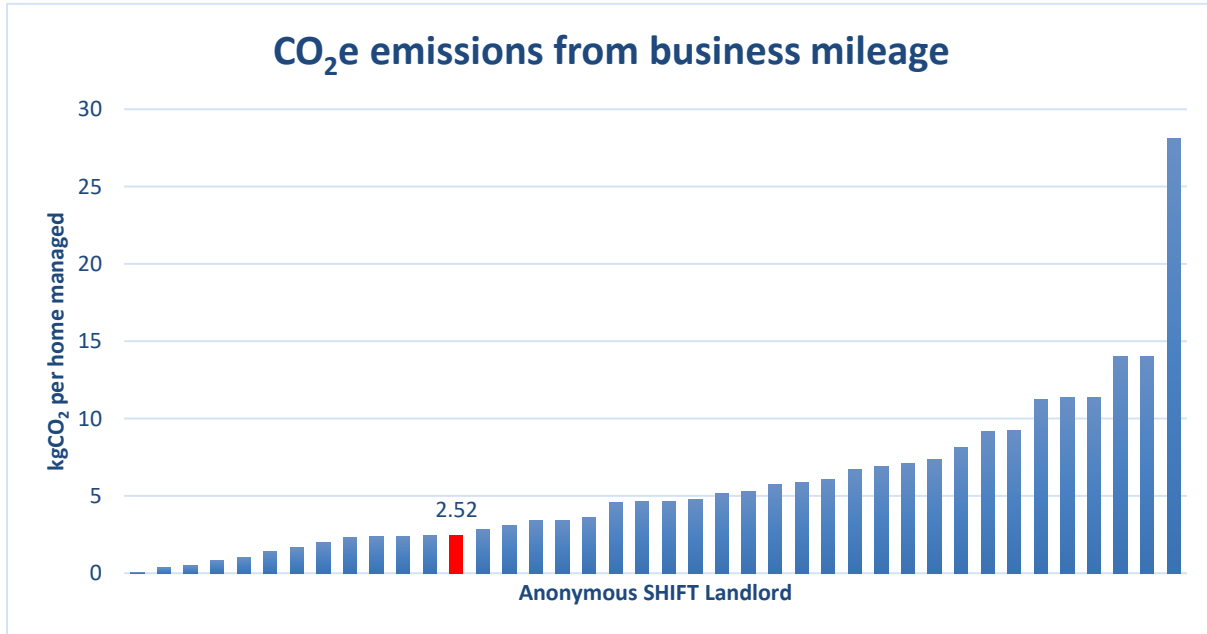
- Part of Grosvenor House office is sub-let. For future carbon reporting purposes, document the area sub-let to enable only office emissions attributable to Southern Housing.
- Depending on the uptake of home working, consider restructuring office space in the future. A new hybrid working environment is likely to show a reduction in energy demand at the Head Office but a consideration for home working emissions (Scope 3) should be made.
- Consider the installation of solar PV and battery storage at large offices. Switching to LED lighting will also help reduce consumption.
- Encourage staff to carry out good housekeeping such as turning off lights and computers. It is important that energy demand is reduced to accompany the renewable energy provision.
- Smart systems are a possibility in office spaces monitoring and providing usage of appropriate lighting and heating in certain areas.

Business mileage

Controlling business mileage expenditure can make a real difference to landlords. The SHIFT metric for business mileage looks at car claims, public transport usage and air miles (if applicable).

Business mileage data was collected by Southern Housing’s Sustainability Performance and Reporting Analyst for the 22/23 financial year. This included petrol, diesel, hybrid and electric vehicle mileage from employee-owned vehicles, as well as diesel and petrol that was used in

company pool cars. Public transport expenditure was reported as £36,266.90 spent on rail travel. Appropriate Defra carbon conversion factors were used to calculate that 153.13 tonnes CO₂e or 2.52 kg CO₂e per home managed was emitted through business travel.

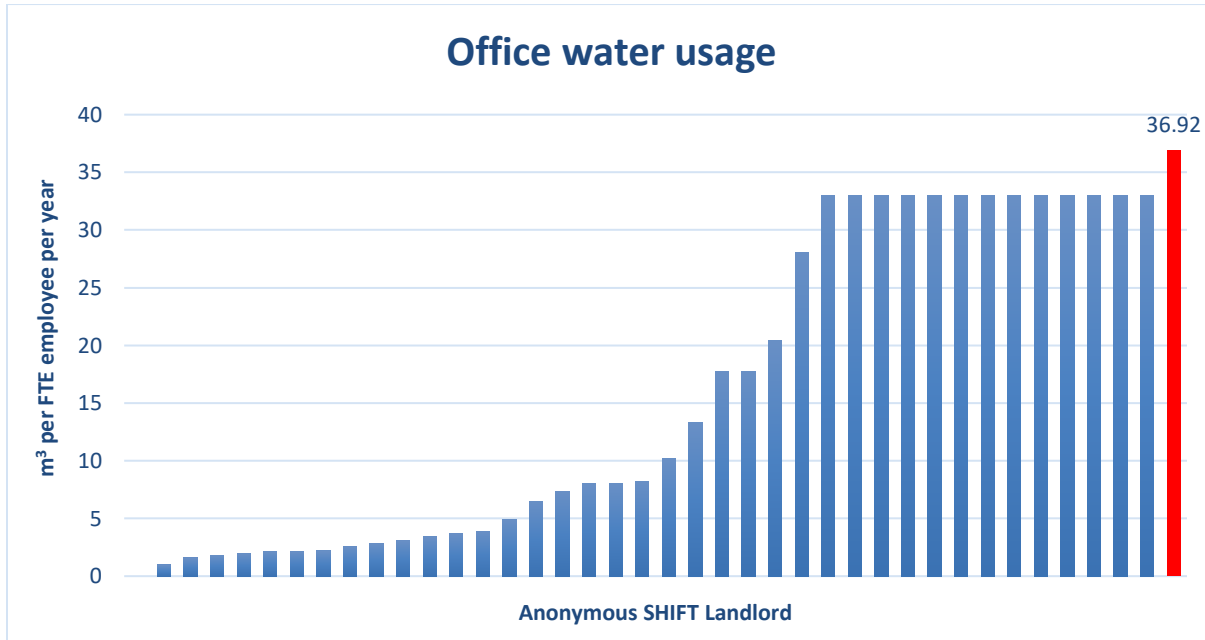


Recommended improvements:

- Document the split of diesel, petrol or any hybrid/electric vehicle use so the appropriate conversion factor can be used for calculating carbon emissions.
- Consider different budget codes for petrol/diesel/hybrid. Review this regularly to ensure that only essential journeys are taking place. This may also emphasise the emissions implications of each form transport.
- Setting mileage targets for teams and individual drivers, not to prevent staff from doing their jobs, but to help them work in a cost-effective and environmentally aware way.
- Consider if electric pool cars are viable. They could be stored and charged at the Head Office if charging infrastructure is installed. This may reduce fuel costs and discourage the use of personal vehicles for business travel.
- Incentivising use of other modes of transport through engagement with cycle to work schemes or salary sacrifice car schemes to encourage more fuel-efficient or electric vehicle use.

Water

Water use was reported as 9,342 m³ across Southern Housing's 8 offices. This equates to 36.92 m³ per full-time, office-based employees. This usage is high when compared with other SHIFT landlords. This was brought to the attention of Southern Housing, who are in the process of switching to a water broker.



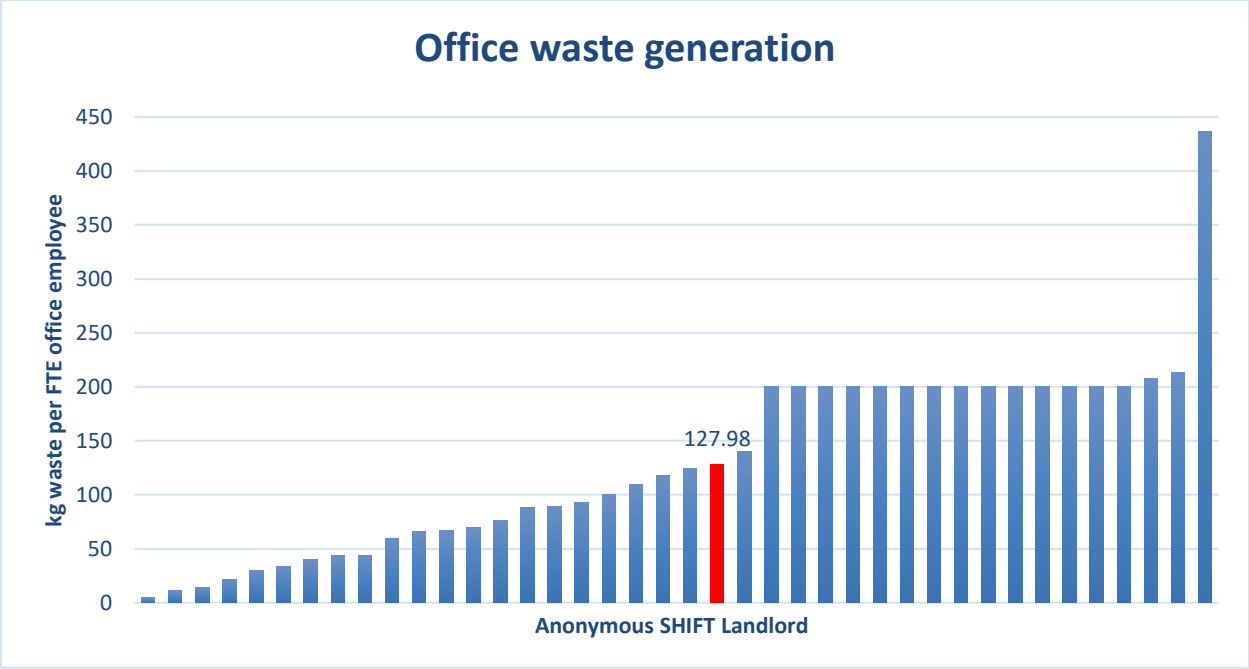
Recommended improvements:

- Southern Housing already have plans in place to transition water usage billing/data to a broker. Improved billing data will enable identification of any possible leaks and alongside desk booking data, enable accurate office usage reporting.
- Consider setting up a quarterly utility reporting system for your offices to keep a consistent track of data. This will also help identify leaks at an early stage.
- Carry out a water audit as this could identify further environmental and cost savings.
- Engage staff on water efficiency initiatives and water saving measures. Incorporating these into water savings policies and procedures i.e., ensuring the dishwasher is full before turning it on.
- Incorporate a ‘water champion’ to regularly check meters and monitor water use into an organisational role.

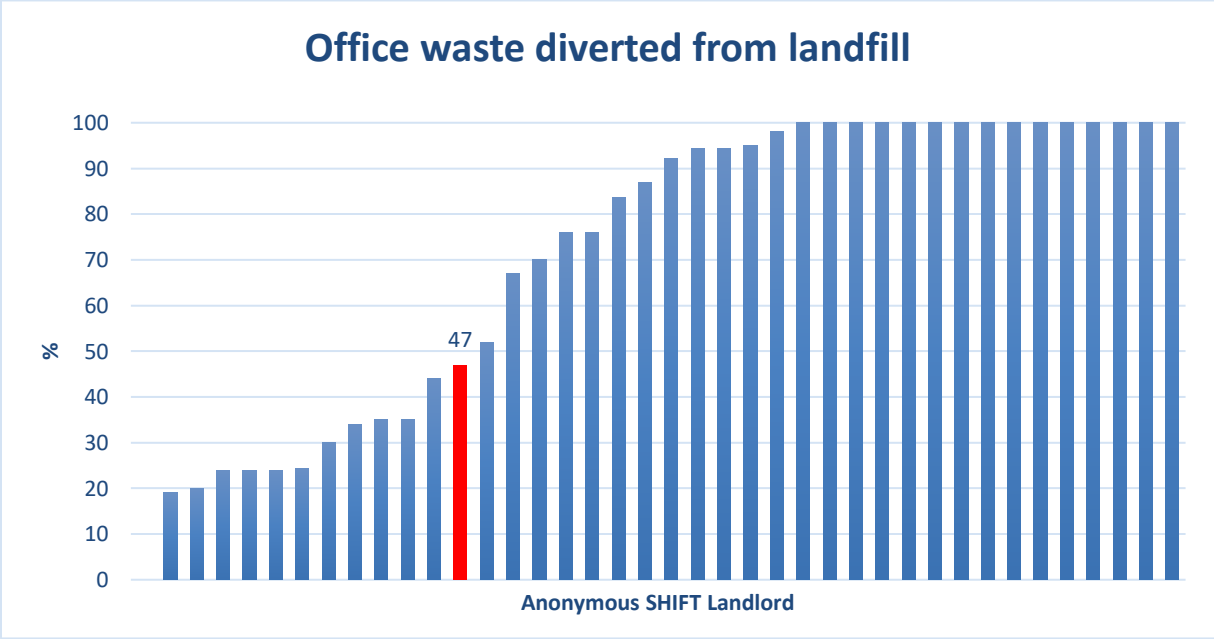
Waste

As interest rises in the circular economy, alongside an awareness of the damaging impacts of plastic pollution, companies from all sectors are ramping up efforts to tackle waste. Quantifying total waste outputs and treatment is an important first step.

The waste generated at Southern Housing’s offices was estimated using data from Biffa dashboard data and estimates where data was not available. The total estimated waste generated in Southern Housing’s offices was 32.38 tonnes, which is equivalent to 127.98 kgs waste per full-time office-based employee.



Southern Housing have reported a recycling rate based off the fact that Kent has a 'zero waste to landfill' policy, and therefore, the offices located in the county are assumed to have 100% waste diverted. Biffa data indicated that Kings Heath office had a 93% waste diversion rate. No data was available for Fleet House, Spire Court, and The Courtyard, and therefore are assumed to divert 0% of waste from landfill. It should be noted that there are several recycle bins at Fleet House office. Overall, the result is that an estimated that 47% of waste diverted from landfill.

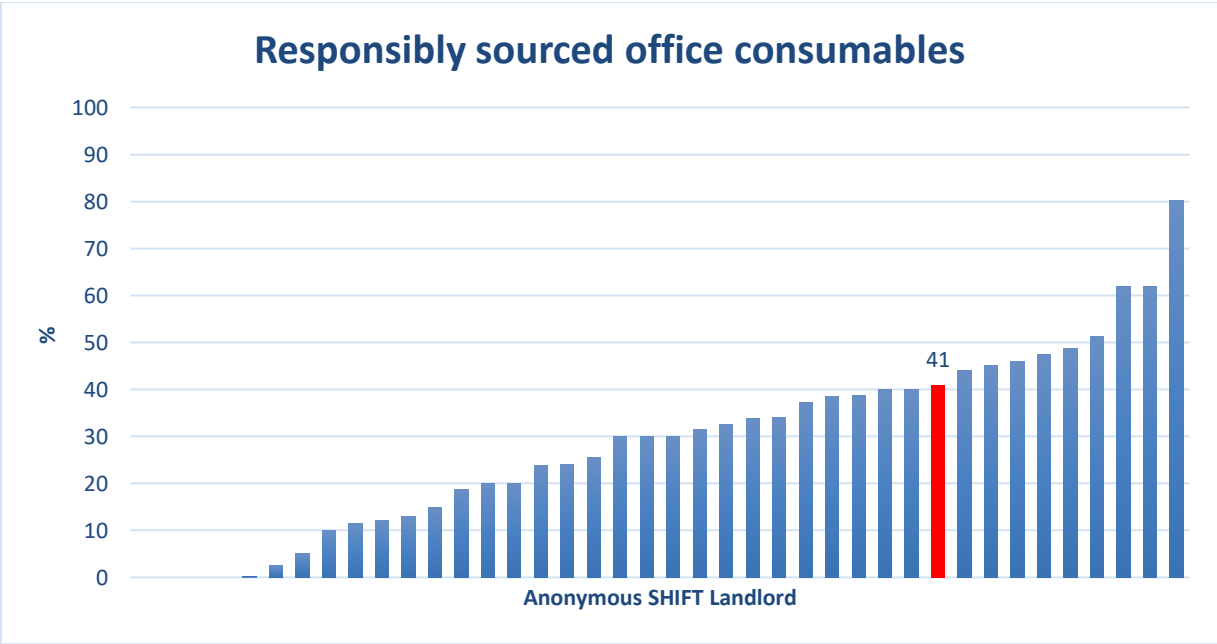


Recommended improvements:

- For future SHIFT assessments and general monitoring of office waste disposal, request waste reports from your waste contractors.
- Your waste contractors should provide a breakdown of waste flows (landfill, recycling) as a minimum requirement.
- Develop your own waste monitoring system to begin developing waste reduction targets across various teams.
- Some office waste is likely to be related to employee lunch and office food and drink facilities. Providing team members with reusable cups and lunch boxes may limit single use items and reduce the amount of waste in the office. Encouraging staff to bring their own lunches rather than single use packaged products may assist in reducing waste. This is also an opportunity to improve staff wellbeing.
- If printing is necessary, consider double sided printing.
- Provide clearly labelled/information on bins to encourage the correct recycling, making it easy for staff members and visitors.

Office consumables

Southern Housing provided office consumables eco/green report from Lyreco, but this did not cover legacy SHG offices. From the data available, it is estimated that 41% of office supplies are responsibly sourced. However, it was noted during the SHIFT office visit to Fleet House that paper was FSC certified and had the Euro Ecolabel, tea and coffee were sustainably sourced and biodegradable. Developing a system at Southern Housing to document all green spending for office consumables or requesting that all products from suppliers are clearly labelled as 'green' will not only save time for future SHIFT assessments, but also allow for easy selection and targeting an increase of future sustainable product procurement.



Recommended improvements:

- Standardise sustainable office procurement across all offices to include legacy SHG.
- Certain suppliers are committed to providing easily identifiable green alternatives through clear labelling when ordering products. They can also provide a breakdown of spend for green/eco-label purchased products compared to those that are not. Increasing the use of these products over the next few years should be incorporated into your strategy. You can also request this from their current provider or consider a switch of suppliers if it is financially suitable.

Offices adapted to flooding and overheating risk

Climate change will affect offices as well as homes. The same flood and overheating risk precautions should be taken for offices as for homes. This will ensure business continuity.

Southern Housing analysed the Environment Agency’s Flood Risk maps and identified that all office spaces apart from Fleet House are at very low risk to flooding. Fleet house was identified as at being at medium risk to surface flooding.

No official overheating survey of Southern Housing’s offices has been conducted, but it is documented that all legacy Optivo offices are at low risk to overheating. In addition to this, zonal air con, blinds and shades were present at Fleet House.

Recommended improvements:

- Conduct overheating assessments for Legacy SHG offices.
- Consider if additional passive measures for mitigating overheating risk could be included (i.e., the addition of Brise soleil, additional film glazing on windows).

- Additional shading is also possible through urban greening. Street trees are known to contribute to a reduction in air temperatures. Consider the possibility of intensifying tree planting around the office space.
- If air conditioning is installed ensure it is the most efficient available, low-emission and that it is well maintained.
- Make considerations for staff overheating on particularly hot days. Consider providing refillable water bottles for staff to stay hydrated and consider the potential for flexibility of working hours.
- Continue to monitor Environment Agency flood maps and install adequate protection, if necessary, especially for surface water run-off which is often neglected and yet projected to increase.

Strategy & Management

A strong sustainability strategy underpins robust environmental monitoring and performance at any organisation, by setting out a clear direction of travel in both the short and long term, as well as SMART KPIs to measure progress against. When assessing strategies for likely effectivity we look for specific, measurable, achievable, realistic and time-bound targets only, for a range of areas including energy efficiency, waste, water and climate adaptation. In addition, senior level commitment and defined responsibilities help ensure the likely efficacy of the strategy.

Southern Housing have scored 15 out of 15 for an effective strategy. During this assessment period (2022-23) both Opivo's Sustainability Strategy 2021-2025 and SHG's Environmental Sustainability and Net Zero Carbon Strategy 2021 - 2024 were in place and available online. These are both comprehensive sustainability strategies, that show clear organisational commitment at board level. The sustainability strategies identify targets and objectives cover all environmental areas assessed in SHIFT including energy efficiency, flood risk, overheating risk, waste, water, materials etc. SMART targets allow for interim and long-term ambition to be monitored and analysed. These are thoroughly researched and detailed strategies which offers various scenarios for net zero, options for reduced fuel poverty, and targets to support high environmental performance.

Southern Housing have been have invested greatly into their exciting new sustainability strategy that will take the best of both legacy strategies. This is set to raise the standard of Southern Housing's sustainability strategy further still. Southern Housing have developed a system to monitor progress towards achieving targets with clear KPIs. This is a thorough and well thought out Sustainability Strategy, with clear responsibilities from staff members and senior responsibility.



Recommended improvements:

- Monitor the progress of existing actions within the new strategy. Use the findings from this SHIFT assessment to establish new measurable long-term and interim targets. Interim targets may assist with keeping progress on track.
- Clear communication of targets across the organisation to staff and residents, accompanied by educational support, will ensure that people understand the importance of these strategies and the clear commitment to meeting net zero targets. It is hoped that those who understand the importance of these environmental targets will be more willing to contribute and make changes towards their attainment.
- In the existing homes section, we have made several recommendations for including sustainability data on asset management databases. This data will significantly improve regular sustainability reporting.
- Consider quarterly scorecard style reporting of environmental metrics to Senior Management Teams. By adapting the advice given in earlier sections to include data in asset management systems, this may become an easier task.
- Further advice on developing an environmental strategy can be found by downloading “Developing an environmental strategy for social landlords” from here: <https://shiftenvironment.co.uk/publications/>
- When we develop corporate environmental strategies for clients, we tend to split the strategy into directorate areas and then actions relevant for all environmental areas are listed. We also make reference to the overall corporate strategy.

DLO & Supply Chain

Engaging with your supply chain is a way to encourage improved environmental performance. As well as bringing an enhanced local environment for staff and residents, there are also financial benefits for your organisation. For example, if a maintenance contractor uses more efficient transport, they save costs which could be passed on to you. We have also noticed that more clients are saying that ESG investors are asking about supply chain emissions. Our calculations so far indicate that supply chain emissions are a significant proportion of a landlord's overall carbon footprint.

For SHIFT purposes, we include in-house maintenance team data in with the supply chain questions. This allows better comparability between organisations. For example, we can compare maintenance CO₂e emissions per home between organisations that do their own maintenance, with organisations that subcontract out all maintenance.

Maintenance CO₂e emissions

In-house and subcontracted maintenance teams emit CO₂e from their fleets, offices, and other operations. Importantly, maintenance fleets also emit air pollutants which contribute to localised poor air quality and consequential health issues.

Figures are based on survey requests to larger contractors requesting their figures for organisational emissions. Where a landlord has its own maintenance fleet, these figures are included too. This metric indicates the total CO₂e emitted due to maintenance activities.

Southern Housing provided their DLO fleet fuel usage which included 418,417 litres of diesel, 5,813 litres of petrol, 71 litres of LPG, as well as 1,886 miles of battery EV usage. Defra CO₂e conversion factors were used to calculate a figure of 1,083.08 tonnes CO₂e for Southern Housing's DLO.

In addition to this, six of Southern Housing's external contractors, Axis Europe, Pilon Ltd, Booker and Best, Fire Systems Ltd, Seville and ABCA Systems Ltd supplied emissions data to the supply chain survey. They provided carbon emission figures attributable to Southern Housing totalling 2,151,018 kgCO₂e (15% of total spend). When these emissions, along those from Southern Housing's DLO are scaled up to represent 100% of the organisation, maintenance activities equate to 10,432.06 tonnes CO₂e or 171.99 kg CO₂e per home managed.

In previous assessments this intensity ratio has been calculated for the CO₂e emissions provided. However, this intensity ratio aims to provide an indication of the energy consumption

for 100% of the repairs and maintenance budget. Due to this change in methodology, intensity ratios from previous SHIFT assessments are not available to provide comparison graphs for SHIFT 2023.

As part of SHIFT 2023 embodied carbon figures for repairs and maintenance are being included. The aim is to encourage landlords to request this information from external suppliers and gain detailed waste reports for their in-house maintenance to facilitate these calculations. It is expected that most external suppliers will not be able to provide embodied carbon figures at this stage. However, landlords should demonstrate demand for this data and request this information as early as possible.

Southern Housing were able to provide their legacy Optivo DLO's summary waste reports data along with Axis Europe's embodied carbon attributable to Southern Housing to allow embodied carbon to be calculated. The SHIFT assumption is that any material disposed of by the repairs and maintenance teams is replaced by like materials, therefore the embodied carbon can be calculated based on this. Unfortunately, the Suez summary report, (which by volume, was by far the largest) contained waste not associated with refurbishments such as green and food waste. Therefore, for this year's assessment, the total embodied carbon for Southern Housing's DLO has been calculated using SHIFT default data (39 kgs per home managed). Southern Housing's total embodied carbon from repairs, maintenance and refurbishments is estimated to be 2,365.47 tonnes CO₂e.

Recommended improvements:

- CO₂ emissions for DLOs should be considered standard now.
- We recommend putting the onus of environmental reporting onto the supply chain in a proportional manner. It is likely they are already being pressured to improve environmental performance and, by adding to that pressure, landlords can encourage the supply chain to improve.
- To encourage engagement, we recommend including a clause in procurement contracts to the effect that suppliers must answer the annual environmental survey. At SHIFT we believe it is currently far too early to start imposing CO₂ targets on the supply chain, but with better data, this may become a reality in the near future.
- We recommend identifying your top suppliers via a Pareto analysis or similar. Include responsive repairs, planned maintenance and any other refurbishment suppliers. Then surveying them for scope 1 and 2 emissions plus embodied carbon of materials they have used in maintaining your homes. It may take some time for the supply chain to respond, but, at the time of writing, there are ~60 SHIFT landlords asking the supply chain for this information and there is evidence that this pressure is beginning to work.
- Additionally, some SHIFT landlords have found that benchmarking contractors' carbon emissions per £1,000 contract value can be a good way of identifying anomalies – where

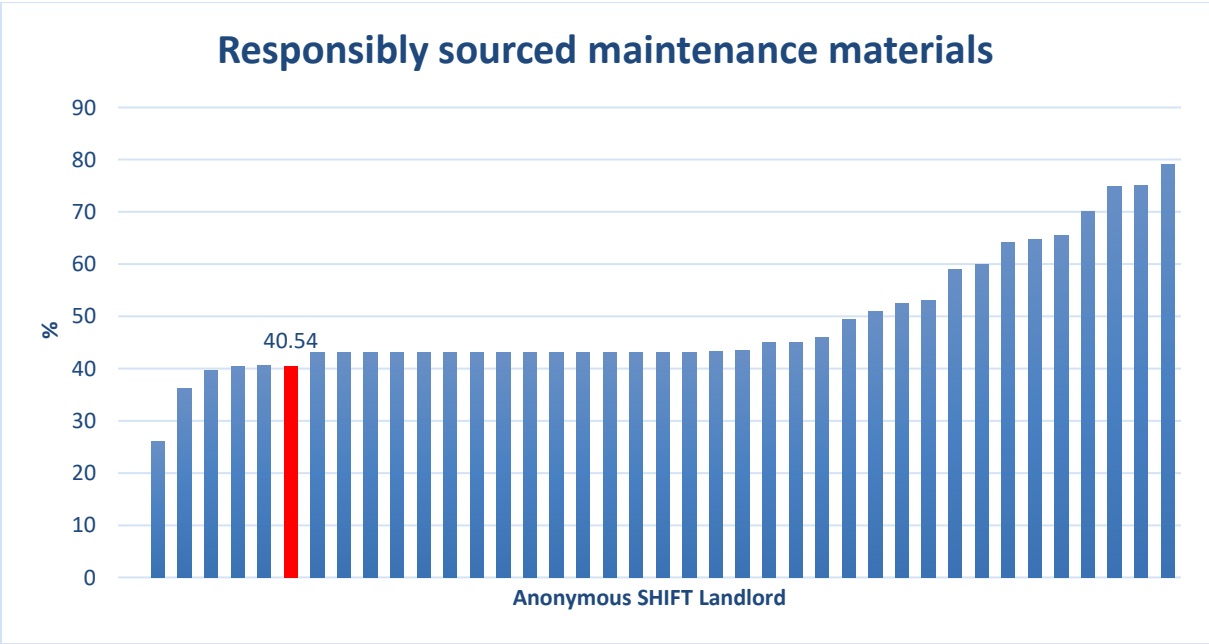
a contractor's CO₂e per £1,000 spend is much lower or higher than the average, you can seek that their calculations are verified.

- Explain to your contractors the importance of carbon emission reductions and identify if they are partaking in SECR (Streamlined Energy and Carbon Reporting). This should ensure that you receive whole business carbon emission data.
- For your own fleet, vehicle tracking, benchmarking between drivers and fuel-efficient driving training have been shown to reduce emissions.
- Some landlords are experimenting with small electric vans. Currently, these seem suitable for densely populated areas where range isn't an issue. Trial the experience of drivers with various journey times and different frequencies of travel during the day. This will ensure you gather knowledge on the successes and challenges. To note, some landlords have experienced difficulties when emergency call outs are required, and drivers were restricted by EV use.
- Some landlords have arranged with suppliers to have dispersed stores of materials which means drivers do not have to waste time/fuel queuing at central depots.

Responsibly sourced maintenance materials

Responsibly sourced materials have been manufactured in an environmentally sound way and where the producers treat their workers well. Although there are many eco-labelling schemes for maintenance materials, this remains a difficult area to assess. Nevertheless, SHIFT encourages maintenance teams and contractors to devise ways to assess this themselves using a methodical approach.

Southern Housing engaged with several major suppliers on their responsible sourcing of materials. Due to time constraints, there was very little data provided. For this assessment, the SHIFT default value of 40.54%. This percentage will likely increase with future SHIFT assessments as this is a recent request for Southern Housing's suppliers. Southern Housing have produced a supply chain sustainability audit. This tool covers carbon, responsible sourcing, sustainability, and waste. This proactive measure will aid supply chain procurement sourcing data and improve supply chain carbon and waste data collection.



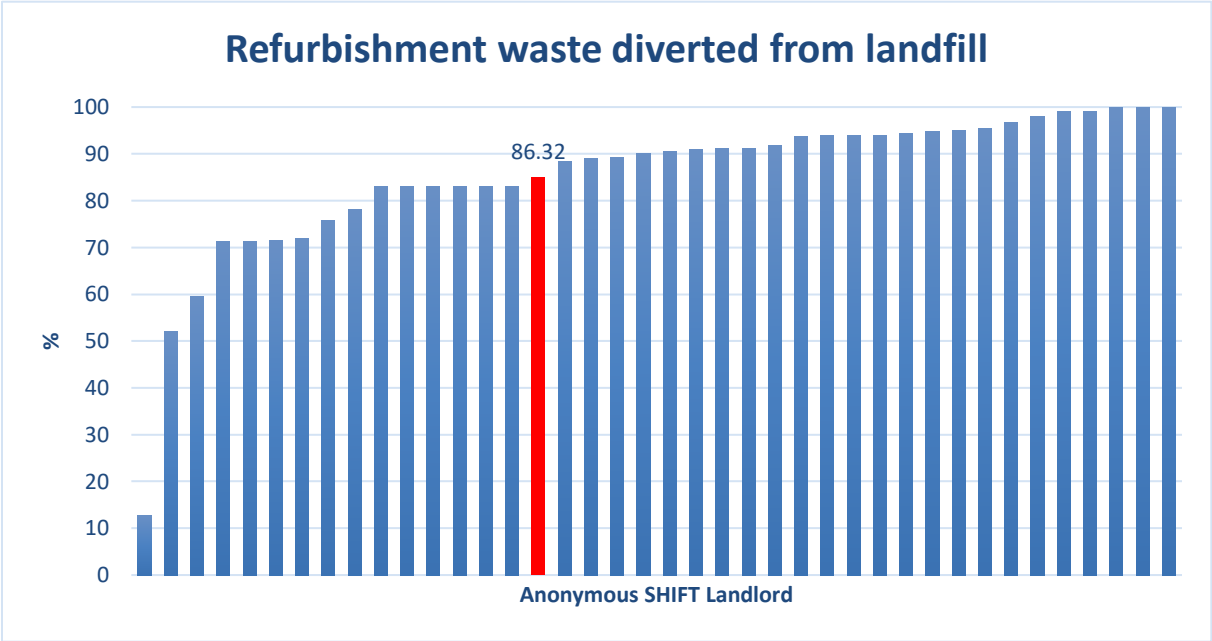
Recommended improvements:

- To gain further detail from all suppliers, it may be useful to host supply chain ‘engagement’ days focussing on sustainability – they provide a great opportunity to clearly explain the environmental data required for SHIFT and your own monitoring strategy. Establishing a point of contact within each supplier/contractor for sourcing this data will save you time and frustration during the data collection process.
- Consider making it a requirement within contracts for suppliers to devise their own responsible materials scoring methodologies. At SHIFT we are exploring a metric along the lines of “the degree to which BES6001 is met”. BES6001 is a catch all standard that deals with both environmental and social aspects of the supply chain. Note, we will not require formal accreditation on this, but each supplier should demonstrate how they believe they are achieving this, even if it is on a voluntary basis. Examples of verification include monitoring visits to suppliers to ensure they are operating responsibly.

Refurbishment recycling

Detailed breakdowns of waste treatment are normally available from contractors and DLO’s. Good reporting and recycling practices should be factored into the decision-making when contractors are selected. Knowing the total amount of waste generated is proving useful for embodied carbon calculations, especially where the quantity of new materials used is unknown, which is often the case. Our thought process is that if a tonne of waste is generated, e.g. from a roof replacement, then approximately a tonne of new materials is used, e.g. in the replacement of that roof. From this data we can begin to approximate embodied CO₂ of materials used in maintenance.

Southern Housing sourced data from their legacy Optivo waste contractors, Suez, and Lowe Brothers, who reported that 100% of waste is recycled/diverted from landfill. Southern Housing’s suppliers Axis Europe, Pilon Ltd, Seville and Booker and Best reported landfill diversion rates, where suppliers provided no data, the SHIFT default was applied. Overall, the average waste diverted from landfill average was estimated to be 86.32%



Recommended improvements:

- Require subcontracted maintenance firms to report their recycling rates to you and provide supporting evidence in the form of waste reports. Eventually these will improve once the supplier sees the importance of recording high recycle rates to your organisation. Organising more frequent reporting will embed this much more quickly in these organisations.
- Consider implementing subcontractor KPIs for this impact aiming for 100% diverted from landfill by 2050.

SHIFT

SHIFT carries out a full range of environmental reporting specialising in the social housing sector. We do:

- SHIFT standard – environmental reporting and accreditation for existing homes, new build, supply chain and offices
- Post-Occupancy Evaluation – comparing actual performance in retrofit and new build with design performance
- Environmental road mapping and strategy development – creating a path from a baseline to a truly sustainable housing stock whilst maximising financial benefits to the landlord
- Related consultancy and compliance e.g., ESG, ESOS and SECR reporting

Please be in touch for a free consultation on any of the above. Contact Richard on 07718 647117 or richard@SHIFTenvironment.co.uk

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