Octavia Housing

SHIFT Sustainability Report

2021

SHIFT

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Welcome to your 2021 sustainability report

This report is a gap analysis between your current environmental impacts and safe levels of impact. The safe levels are science-based targets which have been derived by government institutions and reflect limits that, if attained, will have positive benefits for long term human wellbeing.

A lot has happened in the sector since SHIFT 2020 and it is all looking positive.

- Banks now requiring environmental performance metrics for loans
- Many landlords in scope of Streamlined Energy and Carbon Reporting (SECR) regulations
- The Social Housing White Paper indicating the way for enhanced environmental reporting in the next version of Decent Homes
- Future Homes Standard looking ever closer
- Energy White Paper signalling direction of travel on housing
- New technologies emerging to help with the agenda

As ever, the best way to deal with these drivers is to take a strategic approach and embed sustainability into an organisation. Having an experienced third party review the impacts each year helps ensure that the strategy is being adhered to, so that the benefits can be realised.

SHIFT's unique environmental scoring system provides a standard to attain. It can serve two purposes:

1. Provide an organisation-wide target to aim for that unites all directorates
2. Demonstrates to external stakeholders your success and enables you to encourage them to improve

As well as detailing your organisations environmental performance, this report also shows you compare against peers and science-based targets. It also gives you recommendations on how you can improve.

As always, we look forward to supporting you on your journey to sustainability.

SHIFT Team

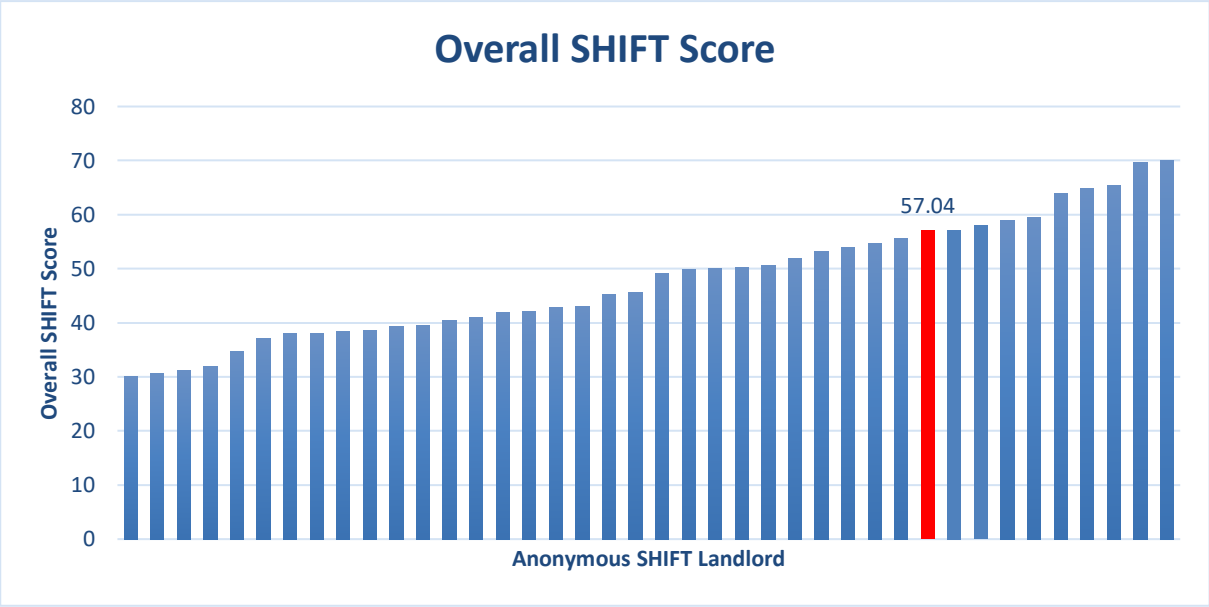
Contents

Executive summary

This report presents the sustainability performance of Octavia from 1st April 2020 – March 31st 2021 across strategy and leadership, existing homes and offices, supply chains and operations and new builds. It spans energy and resource use, transport and travel, resident engagement, climate risk, biodiversity and responsible sourcing, thereby providing a comprehensive overview of your organisation's environmental footprint.

Octavia delivers over 4,200 good quality and affordable homes to those on lower income in central and west London. Octavia aims to build and provide sustainable homes to future generations and have shown a commitment to the environmental agenda. With the residents' needs in mind, Octavia continues to perform well in key areas of the assessment but recognise the need to continually improve on current performance to reach environmentally safe levels of impact. In order to align with other reporting across Octavia, there is a slight overlap in reporting periods from the previous SHIFT 2020 Assessment.

Octavia has achieved the SHIFT Gold standard with a score of 57.04. It ranks 10th 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

Environmental issue	Absolute[1]	Intensity[2]	Intensity target for SHIFT platinum 2021[3]	Long term intensity target (by 2050 unless otherwise stated)
CO_2 – individually heated homes, regulated emissions (scope 3)	8,015.47 tonnes CO_2	SAP 71.93 1,897 kgCO_2/home managed	SAP 73.33 ×	SAP 85
CO_2 – communal heating systems – metered data (scope 1)	978 tonnes CO_2	9,204 kWh / home managed	5,430 kWh yr / home managed ×	3,500 kWh yr / home managed
CO_2 – communal areas (Scope 2 for electricity, scope 1 for gas)	1,188 tonnes CO_2	1,692 kgCO_2 / home managed	565 kgCO_2 / home managed ×	0 kgCO_2 / home managed
CO_2 – offices (gas, scope 1, electricity, scope 2)	87.8 tonnes CO_2	32.55 kg/m^2	55.9 kg/m^2 ✓	0 kgCO_2 / home managed
CO_2 – business mileage (scope 3)	4.8 tonnes CO_2	1.14 kg CO_2 / per home managed	9.85 kg CO_2 / per home managed ✓	0 kgCO_2 / home managed
CO_2 – maintenance activities (DLO scope 1 for fuels used, scope 3 for supply chain)	175 tonnes CO_2	41.35 kg CO_2 / per home managed	35.19 kg CO_2 / per home managed ×	0 kgCO_2 / home managed
Water – homes	0.5 million m^3	146.8 lpd	140.8 lpd ✓	130 lpd by 2030
Water – offices	905 m^3	6.03 m^3/employee/yr	8.43 m^3 / employee/yr ✓	3m^3/employee/yr by 2030
Waste generated – homes	1,553 tonnes	16.4% increase in resident recycling above current local authority rates	5.99% increase in resident recycling above current local authority rates ✓	45% increase in recycling above current local authority rates
Waste generated – offices	3.9 tonnes	100% of waste diverted from landfill	71.03% waste diverted from landfill ✓	100% diverted from landfill
Responsible materials –	59%	59%	45.82% responsibly sourced ×	100% responsibly sourced

maintenance & capital works				
Responsible materials - offices	47%	47%	57.90% responsibly sourced ✓	100% responsibly sourced
Adaptation to climate change – homes protected from flooding	3,000 homes	71% of homes protected from flooding	83.33% protected from flooding ×	100% protected from flooding
Adaptation to climate change – homes protected from overheating	676 homes	16% of homes protected from overheating	78% protected from overheating ×	100% protected from overheating
Biodiversity value	19.08 tonnes biomass above ground	1.71 tonnes biomass per hectare	10.3 tonnes biomass per hectare ×	12.3 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 m^2 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.

Unofficial carbon offsets [1]	Absolute CO_2 saved	Intensity
Estimated CO_2 savings from energy efficiency engagement with residents	13.8 tonnes CO_2	3.27 $kgCO_2$ / home managed
Estimated CO_2 savings from sustainable transport interventions	165 tonnes CO_2	39.17 $kgCO_2$ / home managed

1. These figures are provided for information only and should not be taken as official offset
2. Currently there is no defined way to calculate carbon sequestration across all types of green spaces. The Woodland Carbon Calculator Tool has been used to calculate the tCO_2 / tonne of biomass for woodland and this has been extrapolated across grass and shrubland.

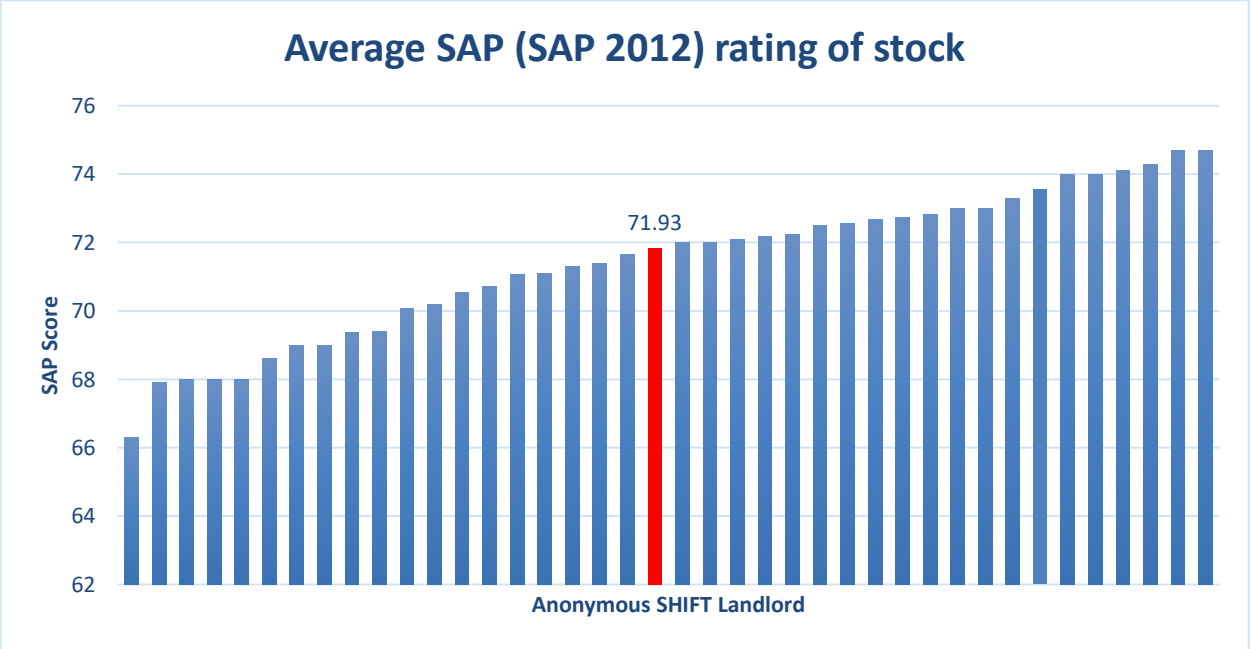
Existing Homes

Most of the homes that exist now will be in use in 2050. Therefore, it is essential to ensure that existing homes have safe levels of environmental impact. Your performance on each of these areas is presented below.

Energy and average SAP

Average SAP is a standard way of assessing energy efficiency in homes. Even though it is not a direct assessment of CO_2 it is a very good surrogate. For information, the SAP rating refers to the cost per m^2 of heating, hot water, lighting, pumps and fans. These are called regulated emissions. Unregulated emissions are appliances such as cookers, fridges and TV's. 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 Octavia's Energy and Sustainability Manager from their asset management database, CROHM, which indicated an average SAP of 71.93 has been achieved across their housing stock. The extracted data did not cover the full 4225 homes and



documented SAP ratings from 4087 homes. Nevertheless, this is considered reflective of the whole stock.

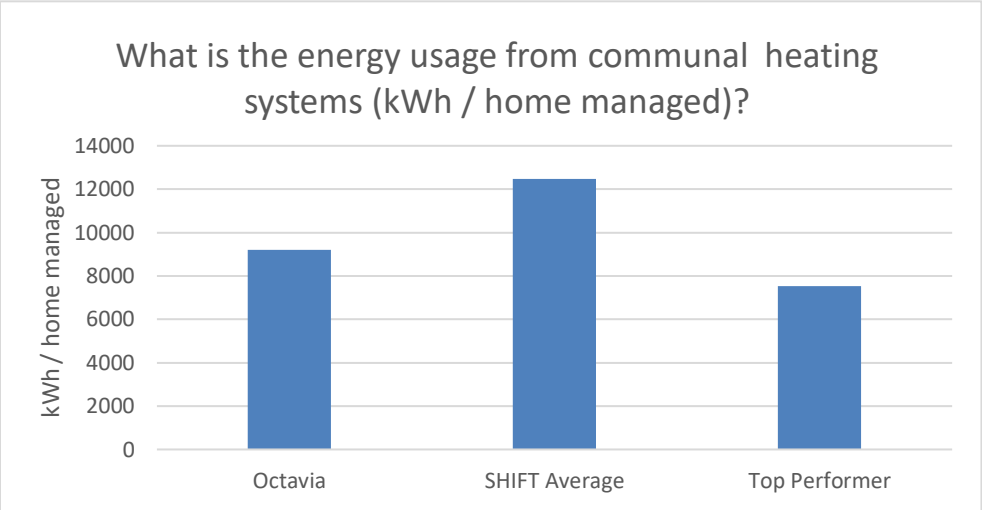
Recommended improvements:

- Octavia extracted data from CROHM detailing SAP ratings from 4087 homes. However, Octavia have Decent Homes responsibility for a total of 4225 homes. It is important that Octavia update the asset management database, ensuring a full dataset for their stock.
- Ensuring a full dataset will assist 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 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.
- At the very least, plans should be made for all homes to be EPC C or better to reduce the risk of fuel poverty – something that Octavia is already undertaking.
- Ensure plans to achieve SAP 85 average (not minimum) by 2050 – these should include fabric improvements as a priority, followed by solar PV. There should also be liaison with new build colleagues to ensure that high SAP homes are built (new build don't currently build to SAP ratings). Consider disposal or regeneration options for homes where energy efficiency improvements are particularly costly and still result in a low SAP rating. Octavia have begun developing a Retrofit Strategy aiming to target energy demand reduction and then begin a transition from fossil fuels. It is important that homes are assessed individually to ensure a pragmatic approach to decarbonisation and energy efficiency improvements, allowing Octavia to select appropriate options for low carbon homes.
- Explore and experiment with new technologies and finance mechanisms to see how they can help with improvements.
- Find further guidance in our Housing 2050 report which gives suggested annual activities - https://shiftenvironment.co.uk/publications/

District and communal heating

Energy for communal and district systems is a huge cost to landlords and 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.

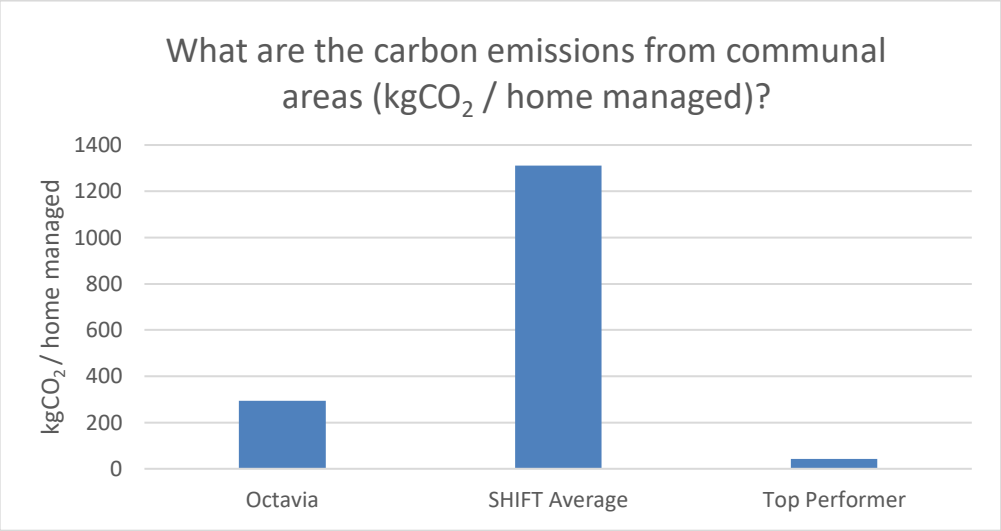
Octavia provided data for 578 communally heated properties. Using the data available it has been calculated that an average of 9,240 kWh per home managed has been achieved. The table below shows the average kWh values per communally heated home from other SHIFT landlords.



SAP 2012 methodology assumes 67% efficiency of heat networks through distribution loss factors, but this may reduce to 50% efficiency in SAP 10.1. Assuming a 50% efficiency in Octavia's communally heated properties, homes still demand 4600 kWh per home. Although, communal areas are included within this so there may be a further reduction in kWh. This still highlights the inefficiencies in the heat networks, driving up kWh usage.

SHIFT research indicates that an efficient communal heating system, comparable with a SAP 85 property, would require only 3,500 kWh of heating and hot water energy per home. Octavia were not able to identify the energy used directly in these properties as no submetering was available which has made it difficult to compare Octavia's performance against this long-term target. However, it does provide an indication of performance.

Octavia also assessed schemes that used communal energy and identified 4,030 homes are served with some form of landlord supply. A total of 1,188 tonnes of CO_2 has been emitted from communal gas and electricity supplies which equates to 295 kgCO_2 / home managed.



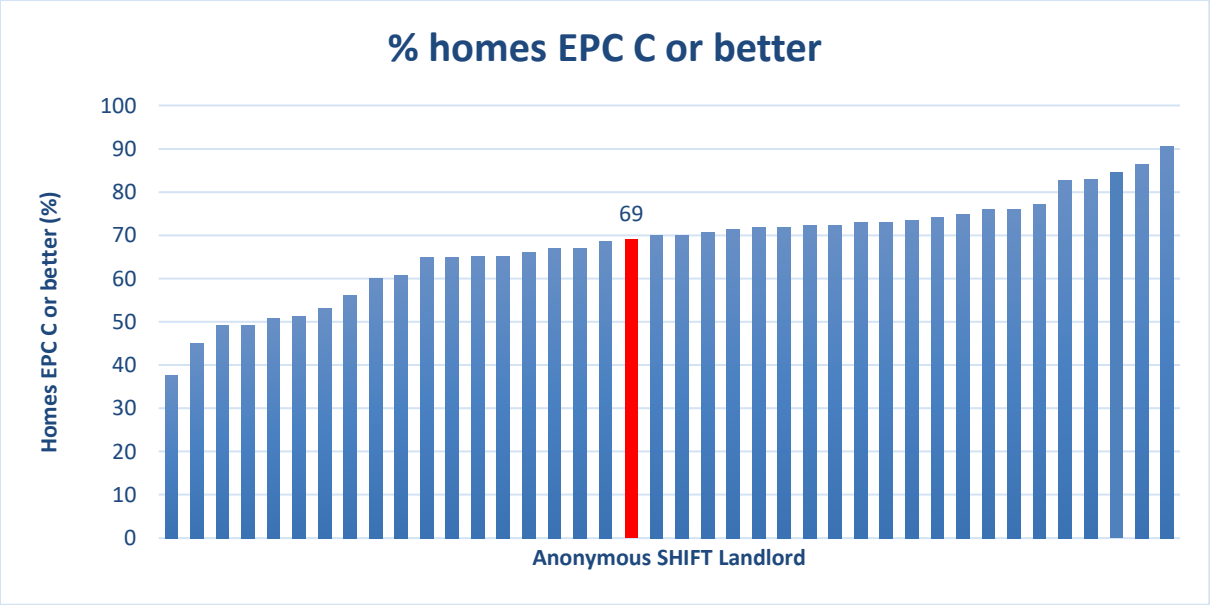
Recommended improvements:

- Octavia do not currently use a sub-metering systems for communal heating as it is not a legislative requirement, but by November 2021, all heat networks will have to be assessed under the Metering & Billing Regs to see if individual meters or HCAs should be installed. As a landlord, tracking energy use in your communal heating systems will highlight inefficiencies and offer cost and carbon savings for your organisation.
- Review all communally heated networks for inefficiencies in heating demand.
- Conduct a review of all communal systems in your stock – the review should include control settings, boilers, pumps and bypass valves.
- 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.
- Consider whether communal electricity supply could be switched to a 100% renewable supplier – this would cut CO_2 emissions.
- Other improvements may include communal area lighting switched to LED and automatic lighting within blocks and outside areas.

Fuel poverty

Homes with the lowest SAP scores are those most difficult to heat, so to minimise the risk of fuel poverty it is particularly important to tackle these least efficient homes. This SHIFT question aligns with the Government's fuel poverty strategy. In essence, the strategy aims for all homes to be EPC C (equivalent to SAP 69) or better by 2030.

Consulting Octavia's asset management database, 2,820 properties are believed to be EPC C or above, this equates to 69% of Octavia's stock. It is noted that CROHM asset management had SAP/EPC information for 4,087 and not the total 4,225. Including leaseholders and shared ownership properties may bring this figure up but as Octavia are not responsible for major works for these properties, they have been excluded from the SHIFT assessment.



Recommended improvements:

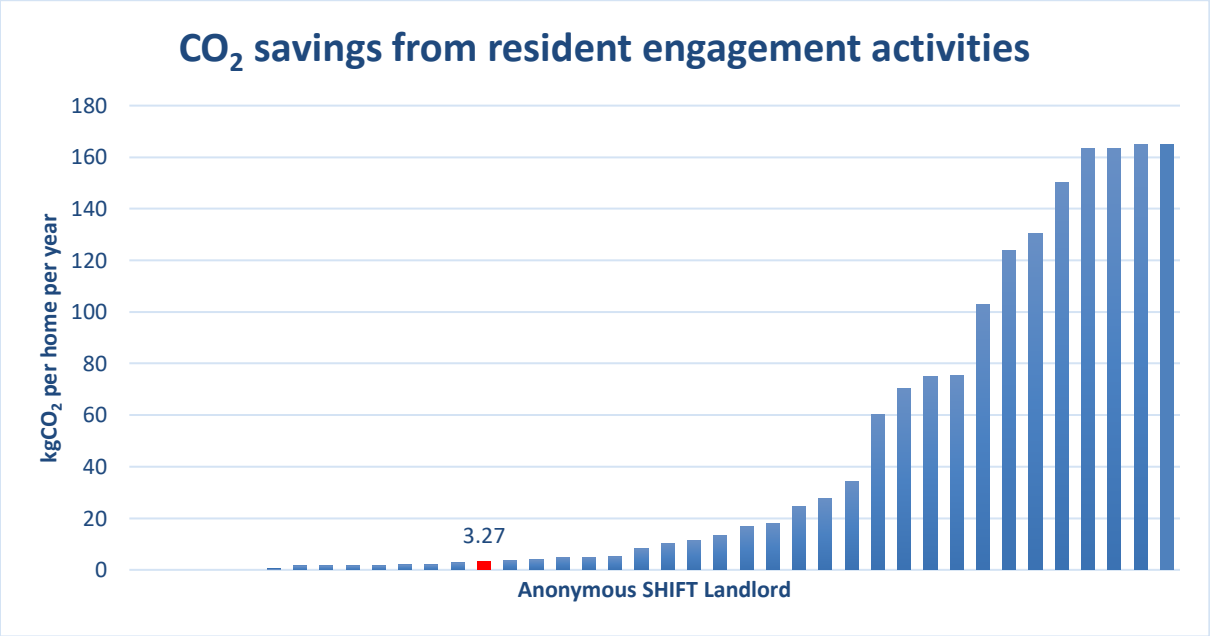
- Similar plans to improving to average SAP 85 except target is minimum SAP 69 by 2030. Many landlords have identified this target within their respective Sustainability Strategy's but this data demonstrates that most of the sector have some way to go for this to be achieved.
- Octavia have a small number of properties in EPC bands E and F, with no G rated properties which is good to see. For these homes and those that remain in EPC D (~31% of stock), Octavia have begun to identify a plan of improvement works to ensure fuel poverty targets are met. The focus should be on fabric measures first, followed by electric heating upgrades and then renewable energy technologies.
- Beware, 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.

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.

Energy efficiency improvements to homes were documented and included the installation of External Wall Insulation (EWI) and new windows to 141 homes. Octavia upgrades 161 boilers over the reporting period. It will be important that residents are fully informed on the correct use of these new systems. Octavia have consistently engaged their residents on energy efficiency despite Covid-19 restrictions limiting some service provision. 100% of residents have

been passively engaged with energy efficiency advice using several media channels including resident newsletters, Green Doctor advice, through detailed website information offering sustainability advice. New tenancies receive information on energy efficiency in their Home user guides. In addition, several active engagements with residents occurred over the reporting period. As home visits were restricted, Green Doctors consultations (where experts give residents energy efficiency advice) were conducted through telephone calls reaching 28 residents. 4 residents from Octavia attended a Placeshapers and net zero carbon workshop which investigated residents' opinions on net zero targets and the updating of their new sustainability strategy. It is consequently considered that 1% of Octavia's residents had been actively engaged on energy efficiency. This results in an estimated to save 13.8 tonnes of CO_2 or 3.27 $kgCO_2$ / home managed.



Recommended improvements:

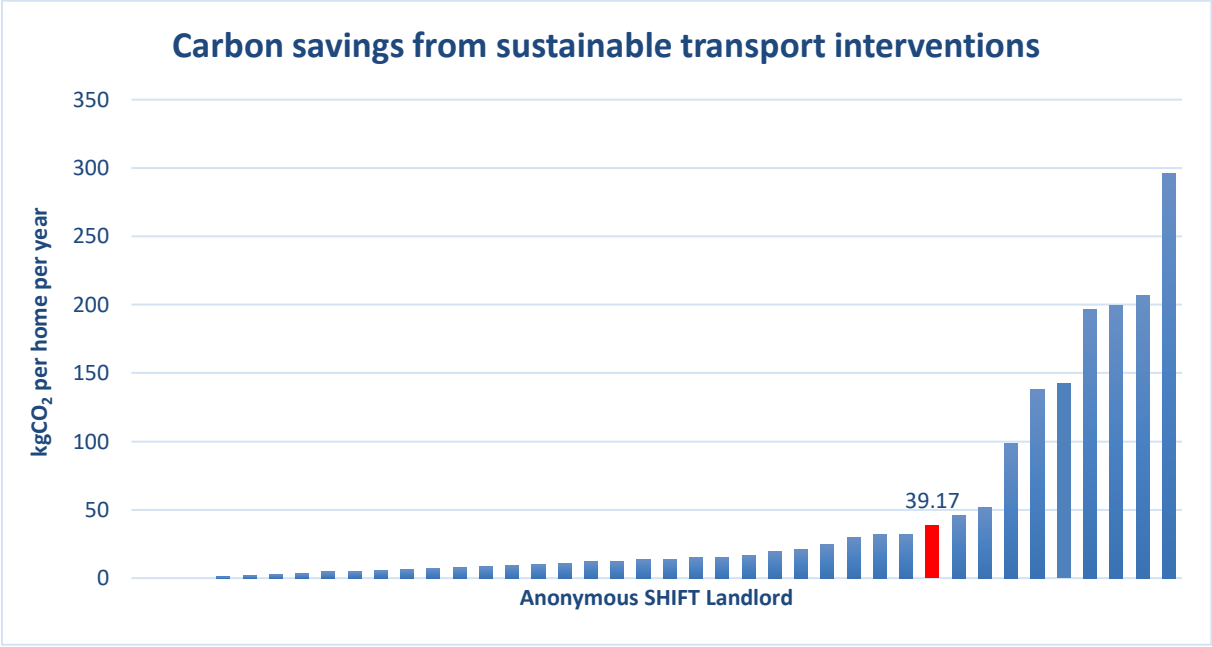
- Octavia offer extensive energy efficiency advice on their website but the page to access this information is difficult to find. Consider grouping all environmental and sustainability information in one headline section of the website. A suggestion is a 'Green' page with tips on environmental improvements (energy, water, gardening, recycling, transport, buying sustainably). Promoting this new feature/section is likely to improve engagement. These pages could be made accessible in newsletters and other media to residents.
- Include energy advice in all contact with residents – gas safe checks, refurbishments, heating upgrades, rent arrears activities, new sign-ups
- The introduction of 'My Octavia' app for residents offers potential for targeted energy efficiency information/campaigns.

- Directing residents to energy supplier's apps (or developing a system on the 'My Octavia' app) which allows for an energy monitoring service. I.e., creating a place where residents can document the costs of bills easily on an app may help residents reduce energy usage. Costs to residents are important, particularly when considering fuel poverty.
- Continue promoting Green Doctors as they can encourage smart meter installation- many energy companies are installing these at no cost to customer.
- As lockdown restrictions are easing, consider increasing the number of active engagements. SHIFT landlords have found this the most effective way to influence behaviour. Promotion of the Green Doctors may assist in this.
- Some landlords are switching void properties to green energy tariffs/suppliers and making it easy for new tenants to continue being supplied by them
- When an energy efficiency visit occurs, attempt to undertake small works such as installing radiator reflectors, hot water saving devices and draught proofing. Octavia could set annual targets for number of homes receiving these measures
- When a new heating system is installed, Octavia should also provide a full tutorial for tenant as complaints can often be raised about bills going up after a new system goes in – potentially Octavia could introduce an option where tenants with new heating systems can report energy use within the first 12 months of usage to Octavia. If bills seem significantly higher than what Octavia expect this could trigger a request to visit and discuss heating use.

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.

Building upon previously reported data on cycle storage, it is believed that 27% of Octavia's homes have cycle storage facilities provided. Octavia do not currently have electric vehicle charging infrastructure, so it is reported that no homes have access to these facilities. The London Plan recognises that poor air quality is an issue to residents in London. Attempts to improve local air quality will be essential and promoting active transport and low emission travel is a priority. Octavia also provide sustainable transport information in new home user guides. These measures are estimated to save around 39.17 kgCO_2 per home. Below you can see how your performance compares to other SHIFT landlords.



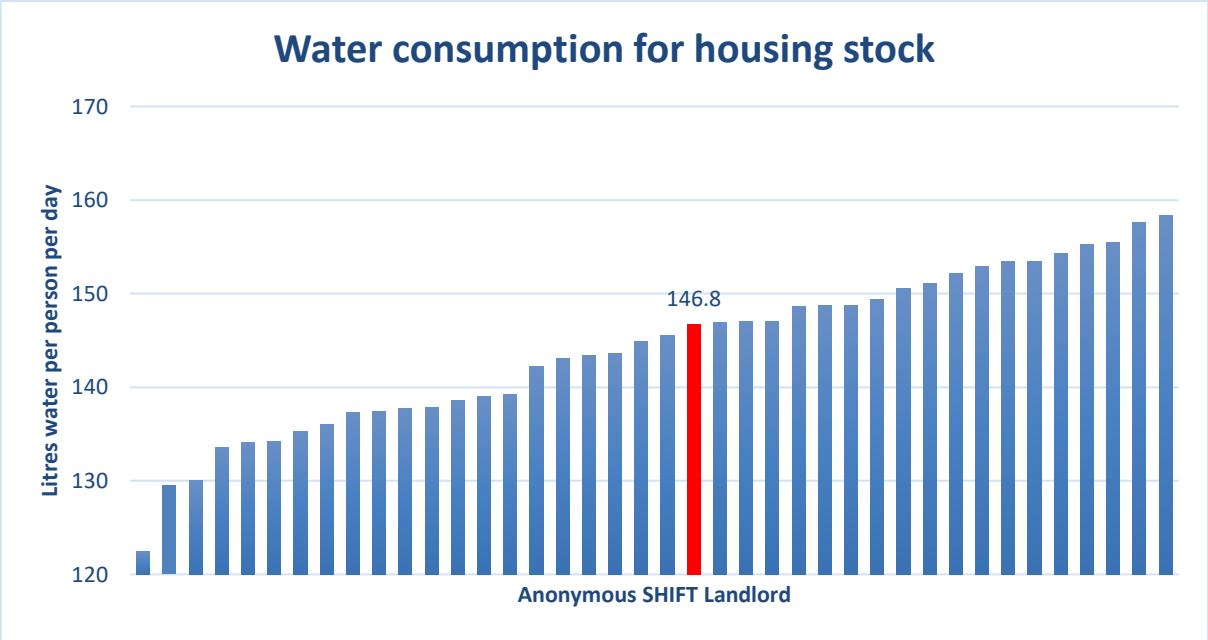
Recommended improvements:

- Work with new build colleagues to ensure that cycle storage is included at all new builds
- Consider installing EV charging points at places where staff can use then during the day, but out of hours these can be used by residents (for a fee)
- Include links to Sustrans cycle maps and additional public transport information on green web pages.
- Cycle storage data was estimated from build dates. Octavia may want to consider including cycle storage within stock condition surveys. This would offer Octavia a baseline to work from which could then be supplemented with data from new developments and future surveys. This will help identify improvement works and support residents through the provision of secure storage facilities which may encourage bike use.
- Continue to work with new build colleagues to ensure that cycle storage is included at all new builds.
- Consider installing EV charging points at places where staff can use then during the day, but out of hours these can be used by residents (for a fee).
- As lockdown restrictions begin to ease, 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 with Octavia.

Water

Environment Agency research suggests that UK domestic water efficiency should be 130 litres per person per day by 2030 to adapt to forthcoming climate change. 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 Octavia's stock. Therefore, the SHIFT water efficiency estimator tool has been used. The estimator predominantly uses build age data to identify the likely water efficiency measures in Octavia's stock but also incorporates data from new build programmes. Building upon previously reported data, it is estimated that 14% of Octavia's homes now have baths smaller than 180l, low flow taps and low flow showers. 28% of homes also have dual flush toilets installed. 92% of Octavia's properties are believed to have water butts installed or are flats which do not use water for external purposes so have been included in this section. Octavia also identified the number of homes built since 1989 to estimate that 28% of homes have water meters installed. Octavia have evidenced that half of their residents have access to water efficiency advice provided by Octavia. This gave a result of 146.8 litres per person per day (lpd) using the SHIFT water efficiency calculator tool.



Recommended improvements:

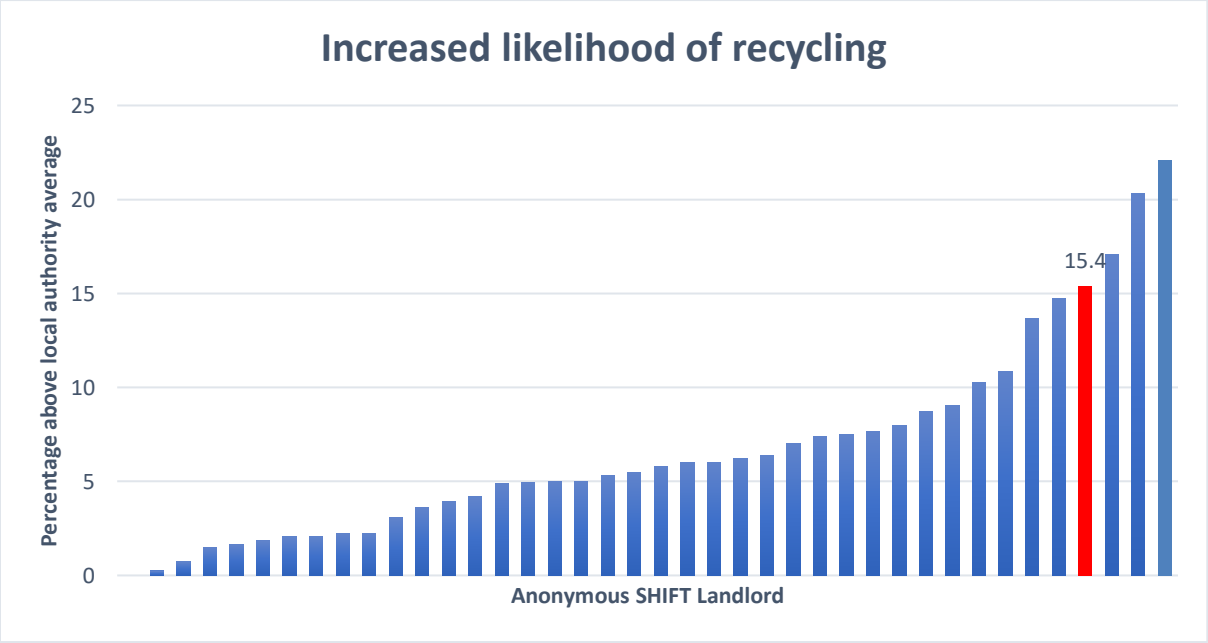
- Incorporate the recording of water efficiency measures in stock condition surveys. This will allow upgrade plans to be developed.

- For the next SHIFT, Octavia may provide bathroom and kitchen specification information and detailed refurbishment numbers which could be used to identify and verify the water efficiency measures in the stock rather than depend on estimates from build age. Octavia should consider whether a formalised water efficient specification for kitchen and bathrooms replacements could be created which prompts of water meters and other components when plumbing work is undertaken at a home or during a void period for example.
- Consider engaging with Thames Water as some landlords have found that their local water company 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 high rating on these products. This water-efficient product labelling schemes further simplify the task of procurement.
- Ensure effective use of installed water-efficiency information a liaise with installers and residents to ensure this happens.

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.

17% of Octavia's homes are believed to have internal recycle bins fitted using previously reported performance and adding in new build information. Consistent with last year, 44% of residents have access to a residential caretaker who offer direct information on recycling facilities, as well as detail appropriate bulky collection removal. 100% have been passively engaged during the reporting period and these measures encouraged an estimated 15.4% increase in recycling over and above local authority average.

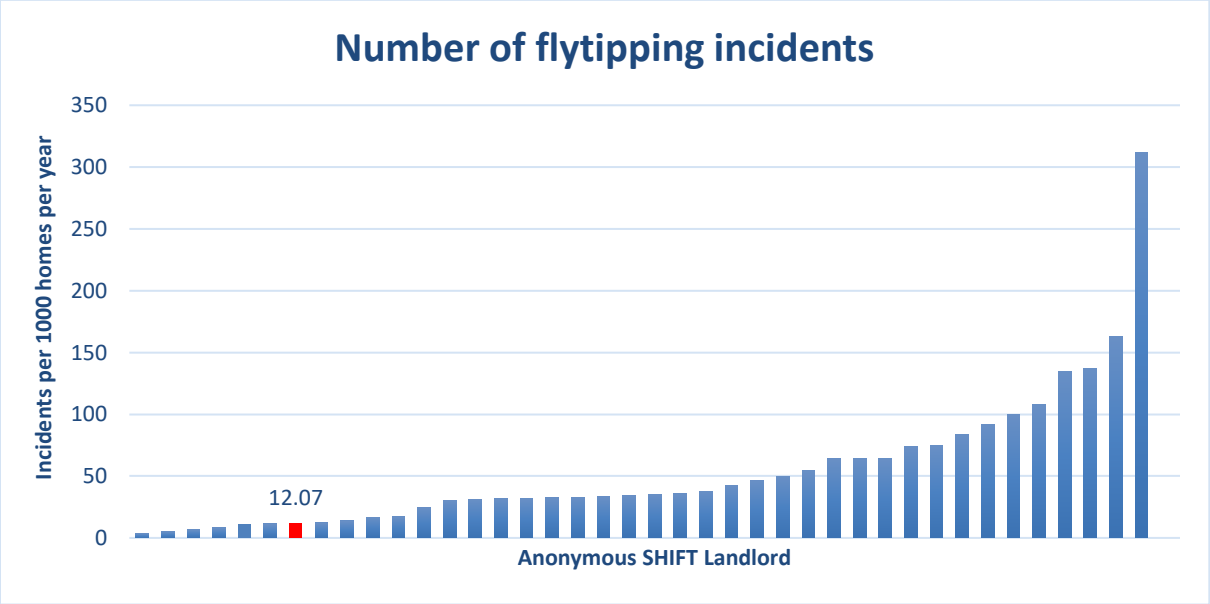


Recommended improvements:

- 100% of new builds are reported to have internal recycling facilities and it will be important that Octavia continue this as a standard in all new builds. It is possible that internal recycling be incorporated into kitchen refurbishment works for resident recycling ease.
- Octavia are keen to increase their 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. The resident caretakers are an asset to Octavia and potential increase in homes with caretakers are likely to be beneficial to the stock. This will allow Octavia to proactively take action to rectify issues.
- Improvements to facilities may include increasing communal bin capacity, install CCTV in fly tipping hotspots, changing caretaker visit days, purchasing recycle bins for residents etc. Previous SHIFT data reported that Octavia's residents would like to see improvements to their bin areas (including recycling facilities).
- Consider arranging a quarterly estate clean ups involving residents and Octavia staff.
- 'Skip days' where landlords provide free bulky waste collection are a popular way for landlords to reduce fly tipping issues and also 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. Octavia were unable to update the number of fly-tipping incidents from last years figures so the previous data has been used. 51 fly tipping incidents were recorded over the 12-month reporting period equating to 12.07 per 1,000 homes.



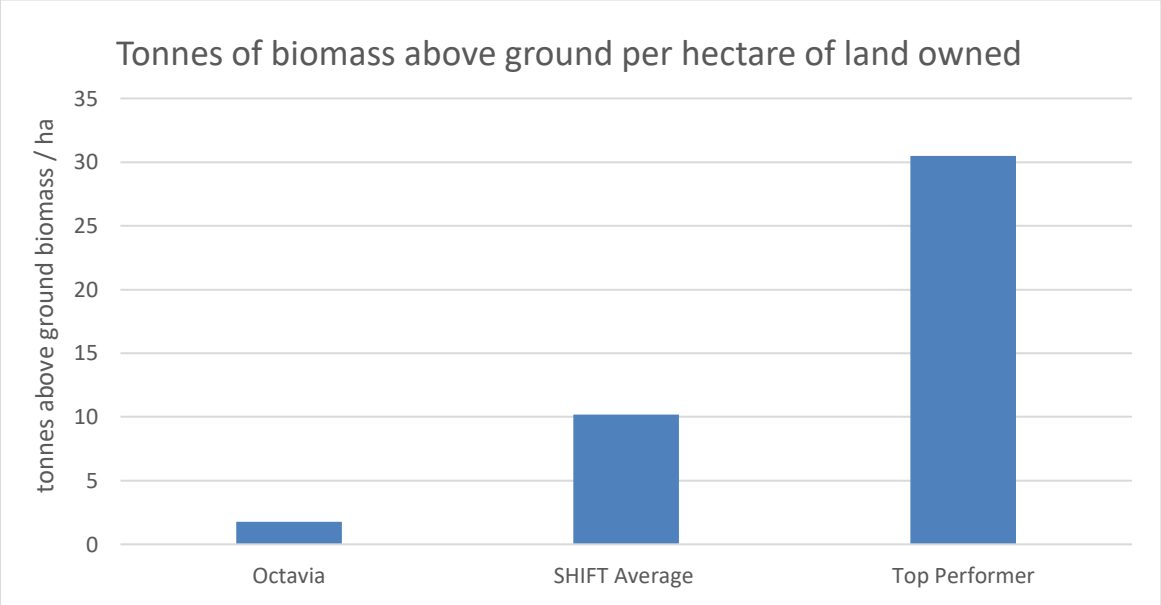
Recommended improvements:

- Nationally, fly tipping has increased due to COVID lockdowns. Octavia should be aware that this previously reported figure is likely to have increased.
- As the previously reported data was based on resident experience of fly-tipping, it is likely that this is an underestimation of fly-tipping incidents. Octavia should consider whether introducing a more comprehensive system for logging fly tipping including location and type of waste could help devise a strategy for reducing the number of incidents in hotspot areas. Plans can then be devised to address and reduce to the number of incidents.
- Convert unused land (where fly-tipping is a problem) into different productive land, i.e. nature areas, may deter those from leaving waste.
- Signpost residents to correct ways to deal with waste and contextualise the fly tipping clearing costs through comparison with number of home improvements that could be completed instead.
- 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

Biodiversity and green spaces

Access to 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 47.3 tonnes of above ground biomass per hectare of landlord land by 2043. In line with our annual consultation exercise held at the end of 2020, SHIFT has updated its methodology to reflect this new target and the new data is presented in SHIFT 2021. The new metric aligns with ESG reporting and provides an estimate of above ground biomass per hectare.

Octavia provided previously acquired grounds maintenance information for the areas of gardens and communal grounds across numerous flats and homes in their housing stock. Using this information, a breakdown of areas of lawn, planted areas and hedging area was documented. Using the SHIFT biodiversity tool, it was estimated that 1.71 tonnes of above ground biomass per hectare of land owned.



Recommended improvements:

- Consider planting higher density biomass areas in existing green spaces. ~54 % of Octavia's green space is grassland. Mown areas are common in most communal spaces but require time, money and carbon emissions to maintain. It may be beneficial for Octavia to allow 'wilder' garden and communal spaces that do not require as much maintenance and can improve biodiversity.
- Consider conducting tree surveys and ensure they include crown spread data. It is also possible that, when conducting these surveys, it be assessed if denser tree planting can occur in these areas.

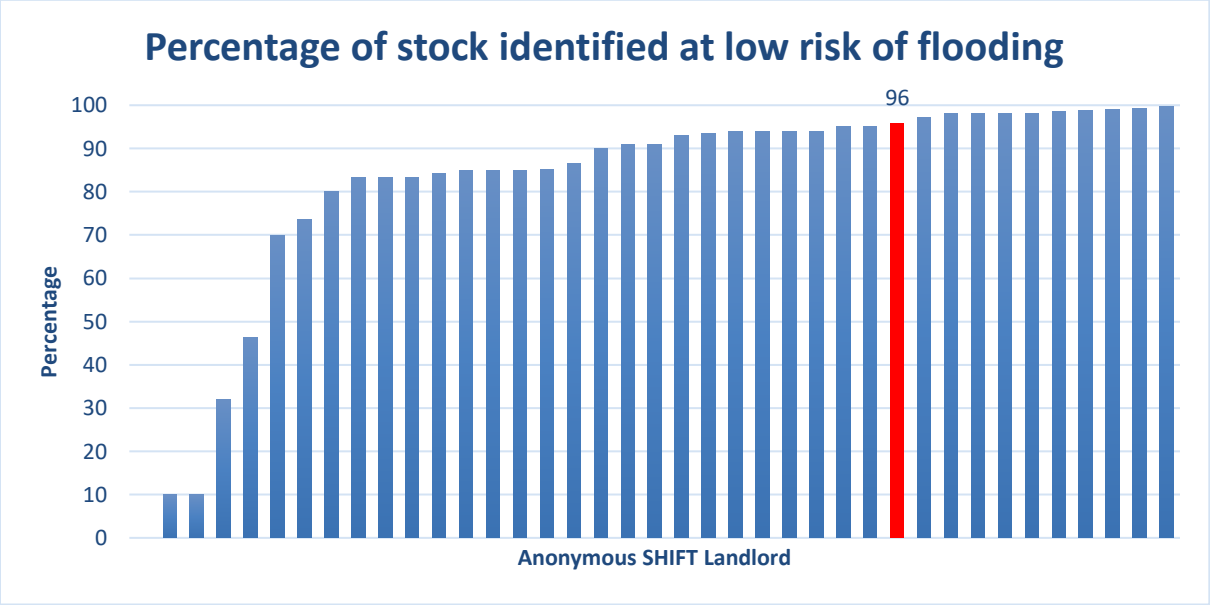
- Liaise with new build colleagues to ensure that they maximise biodiversity within their schemes. This is likely to go beyond Octavia's existing new build ecological enhancements but pointing out forthcoming biodiversity ambitions may help with this- the recent Social Housing White Paper makes considerable mention of improving green space provision for example.
- Above ground biomass can be increased from 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 mentioned in the London Plan 2021 and are encouraged for new builds. Octavia should consider these and additional enhancement potential for supporting broader biodiversity and amenity aims.
- Derive efficient measurement of green space quality as this issue is increasingly being assessed by lending institutes as part of their ESG requirements. GIS assessments may provide mapping and analytics associated with the land and properties owned by Octavia- this will not only allow for calculation of total land owned but can also help identify land types within communal spaces. This may help provide a better representation of performance. Combining known spaces and examining any new potential biodiversity areas is possible with GIS.
- Work with local community groups to enhance biodiversity features across the organisation. Consider whether a biodiversity fund for residents to do wildlife planting could be achieved by partnering with contractors. This will provide good examples for their Corporate Social Responsibility and help Octavia convert more of their underutilised green/grey spaces into high biodiversity areas. Creating community growing gardens, tree planting and introducing wildflower planters are potential projects.

Homes at risk of flooding and overheating

Met Office projections indicate more flood events and more heatwaves. The ideal is to have 100% of homes at low risk or adapted to climate change.

Flood risk data was assessed by SHIFT Environment at individual properties across the whole stock using GIS analysis and Environment Agency flood risk maps. This included the risk of fluvial and surface water flooding. It is recorded that 71% of homes were at low risk to flooding, 9% at medium risk, and 20% at high risk. Octavia recently experienced flooding in some of their properties and have been working hard to assess and provide mitigation measures to various

properties in their stock. 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. Octavia have an understanding of the long-term flood risk to their stock.

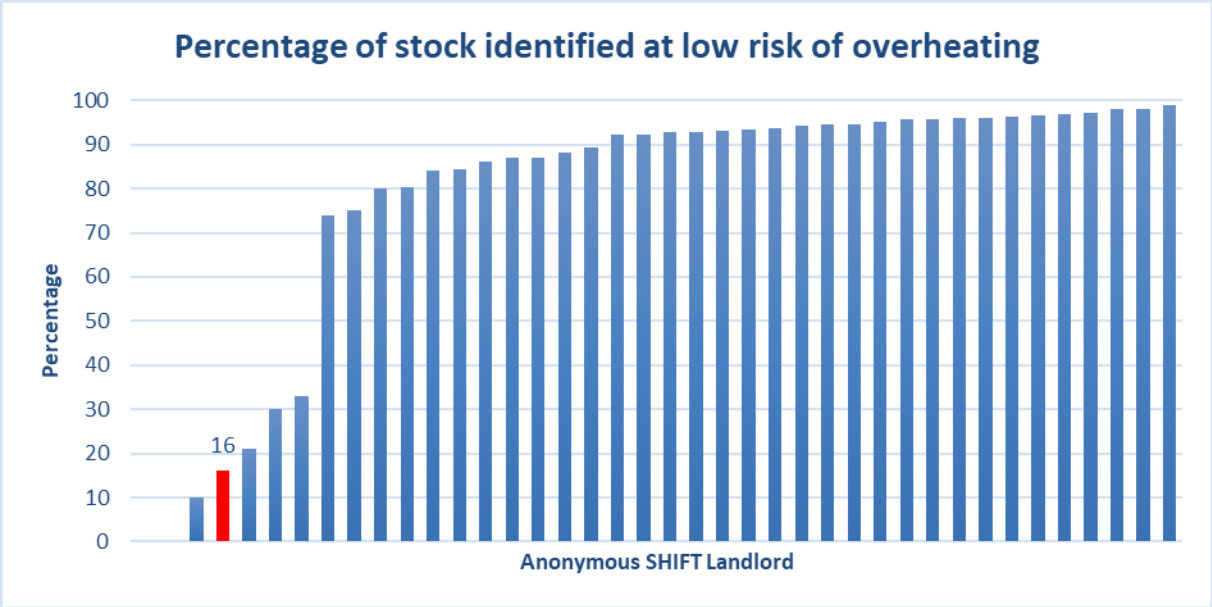


Recommended improvements:

- Octavia have ensured flood risk assessments use long term projections and also include surface water run-off risk – 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). They have and continue to assess properties at high risk, and those that recently flooded, to identify specific mitigation measures to minimise the flooding impacts.
- Octavia have been provided with the facilities to develop their own Flood Action Plan with work completed previously with SHIFT. It will help to improve the resilience to flooding and minimise damage- this will include adaption and mitigation measures necessary prior to flooding and measures necessary during and after a flood event. Octavia should ensure that preventative and responsive actions are in place in the event of flooding.
- Property Flood Resilience Surveys may be necessary to identify flood resilience and adaption measures at properties identified as high risk to flooding.
- Ensure homes and residents at medium or high risk are notified of actions necessary in flood events. These may include turning off gas, water and electricity mains, gathering emergency supplies or evacuation protocols. This may be communicated to residents in a resident welcome pack/handbook or on Octavia's website.
- Residents should be encouraged to take up contents insurance if their homes are at risk.
- In areas of surface water flooding liaise with the relevant drainage authority to ensure drains are fully functional and maintained.

- 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 being undertaken
- Ensure good quality green areas (see biodiversity above)

Information provided from Octavia's asset management database was used in the SHIFT overheating risk assessment tool to estimate that 16% 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 along with SHIFT sourced data on risk factors such as the Urban Heat Island effect and population density to estimate overheating risk in Octavia's housing stock. This is a dramatic decrease from last year's results. There are a possible number of reasons for this change. The SHIFT overheating risk assessment tool is updated annually to include the most recent dwelling densities, Urban Heat Island effect and projected temperature change data. Many of Octavia's stock were identified as single aspect; the Energy and Sustainability Manager is certain that this is not the case. The risk factors assessed in this tool could be better informed through stock condition surveys.



Recommended improvements:

- Ensure any overheating risk assessments cover the risk factors addressed in the SHIFT overheating estimator tool – especially using projected summer temperature data
- Liaise with new build colleagues to ensure that all new homes address all risk factors and have suitable measures to prevent overheating if necessary.

- Octavia's Energy and Sustainability Manager has considered developing a way to assess housing stock for overheating risk. 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. These may include the installation of energy efficient, low emission air-conditioning and promoting the use of passive cooling techniques for sustainable cooling.
- For homes identified at high risk, and have condensation issues, install adequate ventilation measures which will go some way to reducing both risks
- Ensure good quality green areas (see biodiversity above)
- Design reactive actions in the event of heatwaves (e.g. sourcing fans)

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. Research by the Committee on Climate Change believe that achieving 15 kWh/m^2/yr for space heat demand in new builds could be achieved for an extra £4800 per home whereas retrofitting to the same standard is likely to cost £26,300 per home[1] [2]. 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, ecological enhancements, 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.

Figures provided for this assessment by Octavia's Energy and Sustainability Manager indicated that 98% achieved low EPC B (SAP 81 – 85) and the remaining 2% of homes only achieved EPC C (SAP 69 – 81). It is highly recommended that Octavia start trialling building to an EPC Grade (e.g. "A") or SAP rating (e.g. SAP 92+ minimum). This will help Octavia 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. Assuming Octavia's current build rate of ~2% continues up to 2050 and that all new homes achieve EPC A in this time, ~45% of your stock would be built to EPC A which will contribute massively to achieving SAP 85 average across all your stock and cheaper than retrofitting to the same result.

Data was also collected for additional sustainability measures. All sites were reported as having flood risk checks completed and are assessed to be at low risk of flooding. Low overheating risk was reported across all schemes using SAP calculations, but it is unclear if the overheating risk assessment accounted for projected increases in summer temperatures due to climate change. All new builds are thought to have the inclusion of urban greening measures as this is dictated

[1] Committee on Climate Change, 2019, pg 42 https://www.theccc.org.uk/wp-content/uploads/2019/02/UK-housing-Fit-for-the-future-CCC-2019.pdf

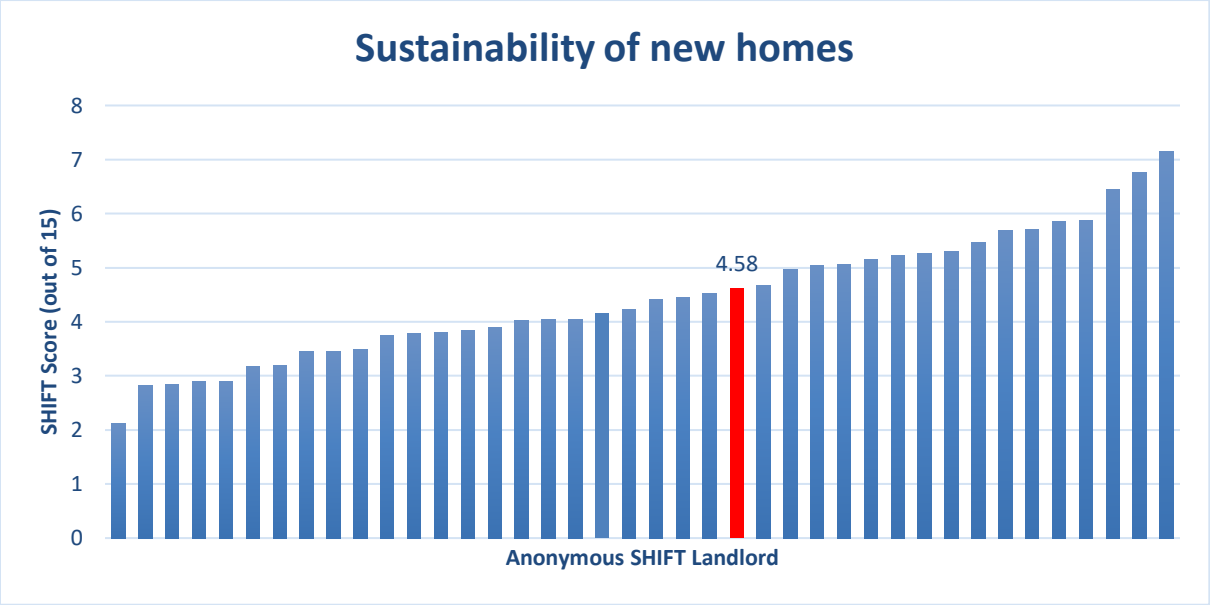
[2] Currie & Brown, AECOM, 2019, pg 102 onwards https://www.theccc.org.uk/publication/the-costs-and-benefits-of-tighter-standards-for-new-buildings-currie-brown-and-aecom/

in the London Plan. It indicates that all new buildings and developments should increase green cover, and this is integral to planning the layout and design[3]. As with last year's assessment, no evidence was available to document the ecological enhancements. The score of 100% for ecological enhancements has been carried through but Octavia should document all greening measures within their new schemes for future SHIFT assessments. All new homes in London must comply with the London Plan, it is therefore indicated that 25% of sites had used responsibly sourced building materials but no further information was provided to verify this claim. The London Plan aims to minimise the use of new materials within builds, taking a circular approach, where high-quality materials are considered along with the embodied carbon. As no further documentation, besides aligning to the London Plan, only 25% has been scored. It was reported that 100% homes received cycle storage and 100% homes had internal recycle bins fitted in their kitchens.

Verifying that the expected energy performance and sustainability measures of new homes is essential otherwise Octavia runs the risk of creating a "performance gap" between what they are expecting from their new homes and what is actually being achieved. Octavia did provide evidence for a 'New Build Energy and Sustainability Report' completed at the design stage. However, it is important that verification systems consider the performance post-build such as the Home Quality Mark (HQM) or developing a verification process for other sustainability measures such as having a representative sample of post-occupancy energy performance monitoring within new schemes and have the sustainable requirements signed off by asset management before handover is fully completed. It will be important that there is some resident feedback within the POE.

Using the SHIFT calculator for new build and the data above, the sustainability score for Octavia's new build homes was 4.58 out of 15.

[3] London Plan. https://www.london.gov.uk/what-we-do/planning/london-plan/new-london-plan/london-plan-2021



Recommended improvements:

- Ensure all new builds that are on land-led schemes are EPC A rated and have additional sustainability features: internal recycling bins, cycle storage, used responsible materials, low risk of flood and overheating, maximise biodiversity in green spaces.
- For future SHIFT assessments, ensure full documentation of ecological features and other sustainability features. Design specifications may provide evidence for this.
- Homes built today are going to have at least one heating system renewal 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 sign off on sustainability features that are easier to identify/install such as cycle storage and internal recycle bins.
- No scheme had 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 or ISO 20400.
- Consider excluding gas boilers from new homes now, well in advance of Future Homes Standard.

Offices

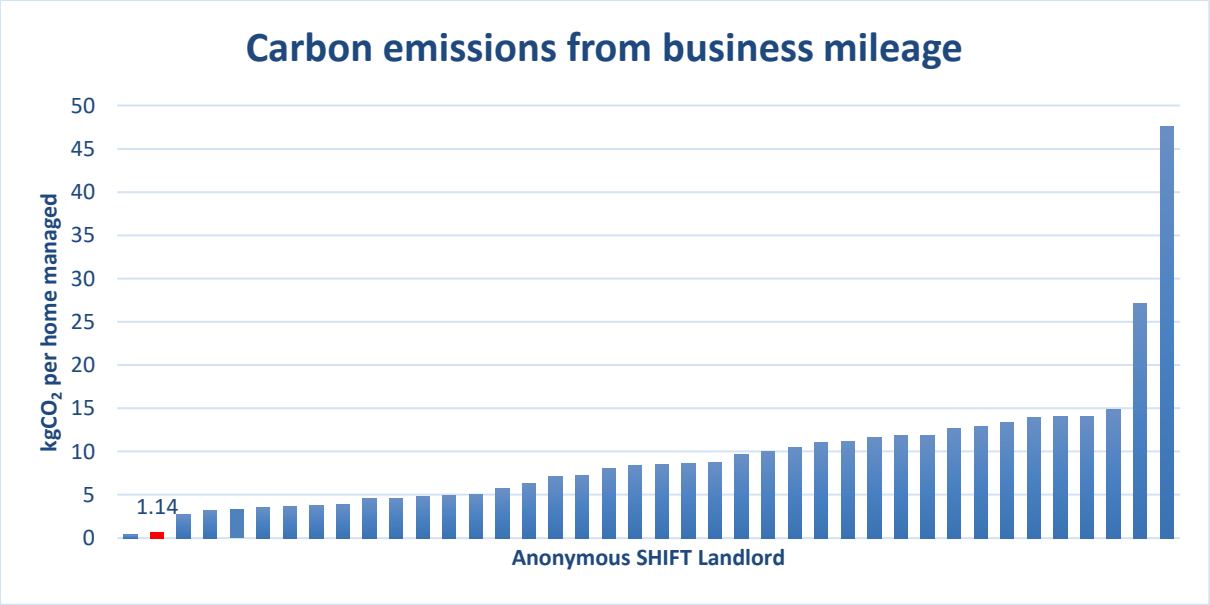
Although offices have a minor impact on the organisations overall environmental performance there are several advantages from focussing on improving their environmental qualities. Utility bills reduce, staff can see a tangible commitment to sustainability and facilities teams gain first-hand experience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

COVID Note: During the Covid period many offices were vacated. This may result in lower impacts than on previous years. No corrections have been made for this in this report, so subsequent years may show higher impacts as offices begin to get re-occupied. Also note, that impacts from offices may now be transferred to homes where staff are working from home. E.g. more energy, water and waste impacts will happen at home. These are not recorded in SHIFT as they are out of the normal scope.

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).

Data was collected by Octavia's Energy and Sustainability Manager for the total carbon emissions from business mileage from April 1st 2020 – March 31st 2021 using their expenses database. Car mileage claims were collected and split across diesel and petrol (1.9 tonnes CO_2). Octavia removed the use of pool cars during the reporting period in summer 2021. Final usage data for these vehicles was unavailable and so previous year's figures have been reported and this equates to 1.8 tonnes CO_2. Public Transport expenses have also been recorded and carbon emissions associated with this travel equates to 1.1 tonnes CO_2. DEFRA conversion factors were used to calculate CO_2 emissions and an estimated to have emitted 4.8 tonnes CO_2 or 1.14 kgCO_2 / home managed through business travel.



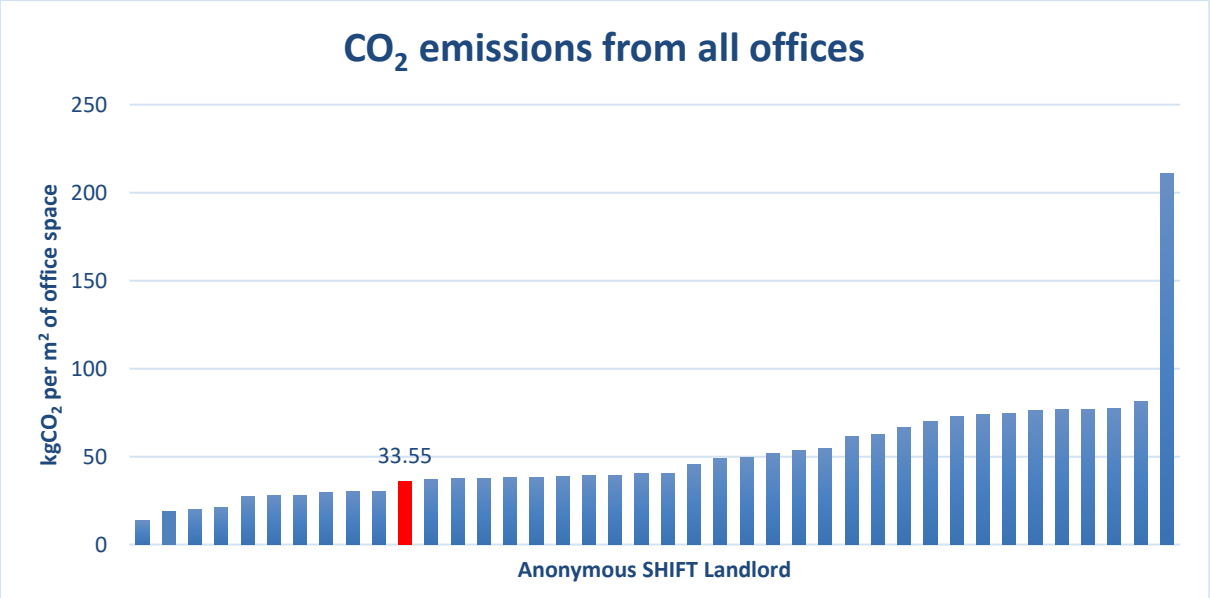
Recommended improvements:

- Octavia continuously have a low scoring of business mileage and should continue to monitor any changes as lockdown restrictions ease. Report whether any increase in business travel is essential and could be completed via video conferencing.
- Consider if electric pool cars are a possibility for Octavia. They could be stored and charged at the Head Office if charging infrastructure is installed. Not only will this reduce fuel costs, but it will allow for diversion of investment into properties. Additionally, it may discourage the use of personal vehicles for business travel.

Energy usage

SHIFT research indicates that emissions of 25 kg CO_2/m^2 of office space correlate with 80% reduction against 1990 levels, but the ultimate target is net zero emissions by 2050 through a decarbonised grid. The Government states a target of rented, non-domestic properties to be EPC B by 2030.

Octavia's Head Office, Emily House, was documented as using 346,621 kWh of electricity. Gas use was documented for Emily House in the raw data; however, this is used by a residential area named James Hill House and energy use has consequently been captured in the communal heating supply. The Head Office is powered using a 40kWp solar electricity system providing green energy, and uses the grid top up any remaining demand. In total, 87.8 tonnes of CO_2 were emitted in the assessment period which equates to 32.55 $kgCO_2/m^2$ of office space. This is a slight reduction compared to last year's figures and is likely to be a result of reduced office use.

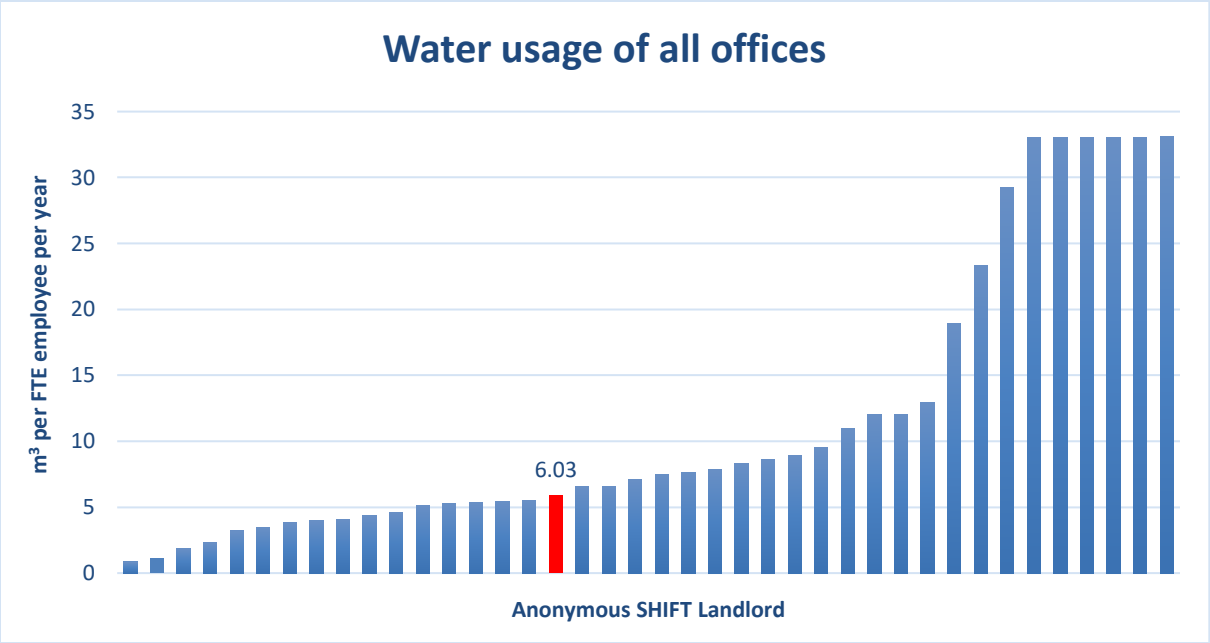


Recommended improvements:

- Depending on the uptake in home working, Octavia may consider restructuring their 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) could be made. The methodology for this is limited at present.
- Monitor energy savings at Emily House from the solar panel use.
- 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.

Water

Utility data for water usage was collected from Octavia's office bills, which has shared water metres and bills with James Hill House residential site. The water use at Emily House has therefore been apportioned to 25% of the usage. It was reported that 905 m^3 of water was used by Octavia's office-based employees in the assessment's reporting period. This equates to 6.03 m^3 per employee.



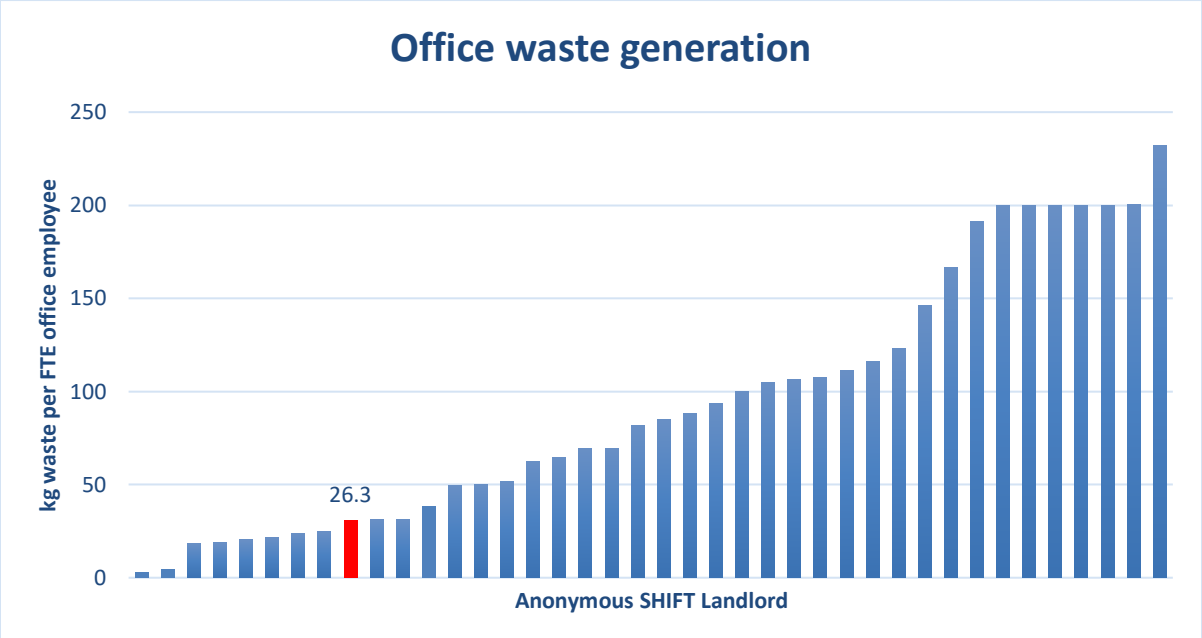
Recommended improvements:

- Consider setting up a quarterly utility reporting system for your offices to keep a consistent track of data.
- Carry out a water audit as this could identify further environmental and cost savings.

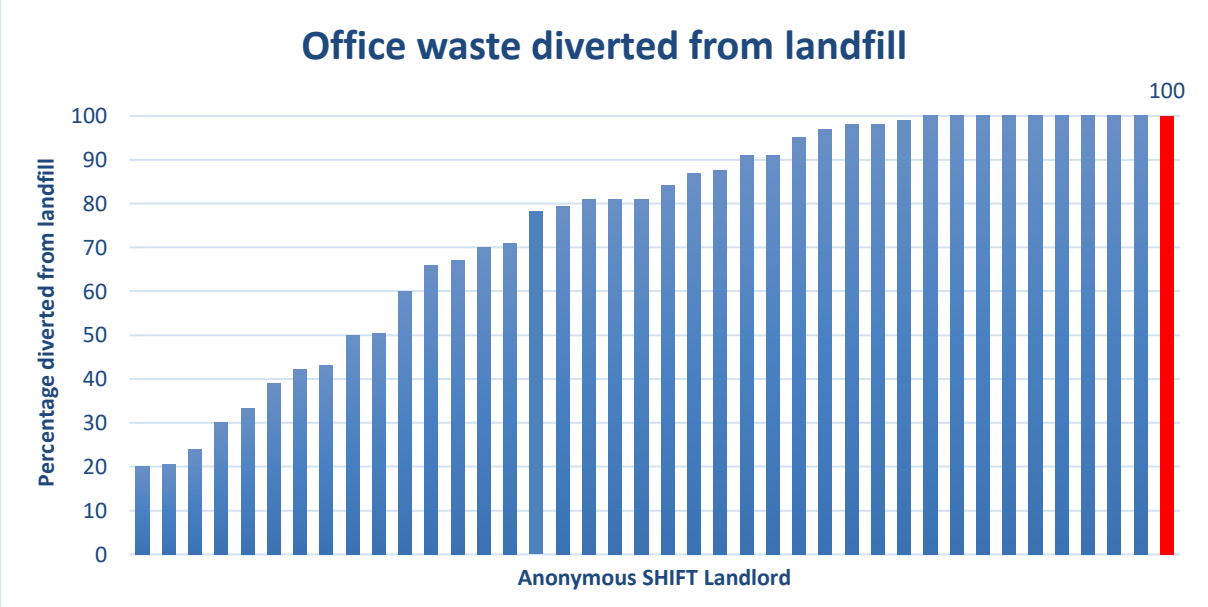
Waste

As interest rises in the circular economy, alongside awareness of the damaging impacts of plastic pollution in particular, 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 in Octavia's office was estimated using previously reported data. Offices have had limited use over the reporting period and have operated at a reduced and largely unoccupied capacity therefore previously reported figures have been scaled down accordingly. It has been estimated that total waste generated was around 3.9 tonnes (26.3 kgs per employee). This does show a reduced intensity compared to previously reported figures.



Octavia continue to send any waste that can not be recycled to the Belvedere Energy and Waste Facility, as part of the Western Riverside Waste Authority which is responsible for managing the waste and recyclables for in the Royal Borough of Kensington and Chelsea. 100% of office waste is diverted from landfill and used to create energy from waste.



Recommended improvements:

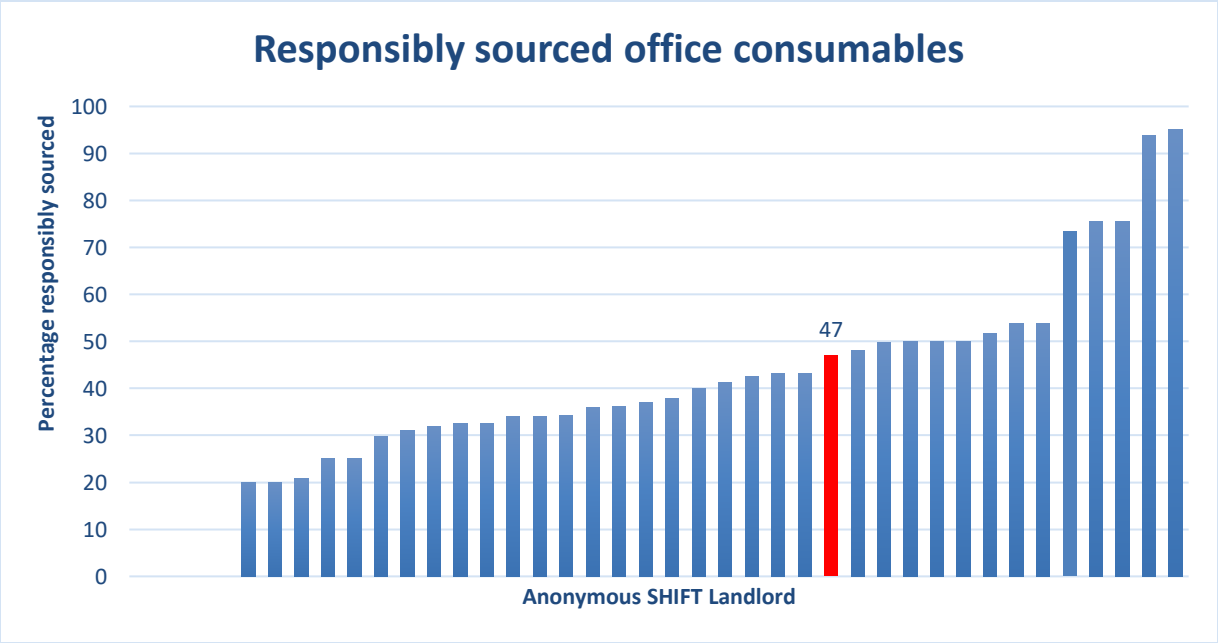
- Octavia has an ambition for their workplaces to become paperless and are beginning to develop a strategy to monitor the waste in the office and create targets to reduce waste

generation. It is great that there is an energy-from-waste system in place but encouraging recycling and reuse options is important.

- 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.
- If printing is necessary, consider double sided printing.
- Investing in good quality and clearly labelled/information on bins to encourage the correct recycling, making it easy for staff members and visitors.

Office consumables

Octavia have reused previously audited information on office consumables for this year's SHIFT assessment. This auditing was carried out by a SHIFT Assessor for Octavia's 2019 assessment. It likely that this audit could return for the next assessment. It was recorded that 47% of Octavia's office supplies are responsibly sourced.



Recommended improvements:

- Until a further SHIFT audit is available, consider monitoring the procurement of office consumables through a green office supplier. 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 Octavia's strategy.

- It may also be beneficial to assess a supplier's delivery, ensuring it is low emission.

Offices at risk of flooding and overheating

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.

Octavia analysed flood data for their office Emily House in a recent Flood Report with SHIFT. It was found that the offices are considered at low risk of surface water flooding and fluvial flooding. However, this does contrast to the Environment Agency online flood risk tool which categorises Emily House as high risk to surface water flooding. It is recommended Octavia consider the highest risk factor as a precautionary measure.

No official overheating survey of Octavia's office has been conducted, but it is documented that Emily House has the ability to use passive measures to help alleviate the overheating risk i.e., cross ventilation is possible. In addition, the office has air conditioning facilities.

Recommended improvements:

- Additional passive measures for overheating such as brise soleil and reflective glass coatings are possible.
- As air conditioning is installed, ensure it is the most efficient available, low-emission and it is maintained. Octavia may consider getting quarterly checks to ensure air conditioning is functioning correctly.
- Check Environment Agency flood maps and install adequate protection, 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. Points for this section are therefore awarded 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.

Octavia have scored 15 out of 15 for an effective strategy. Octavia's updated Sustainability Strategy ensures that sustainability runs throughout their organisation including their homes and office. Sustainability targets and objectives cover all environmental areas assessed in SHIFT including energy efficiency, flood risk, overheating risk, waste, water, materials etc. Residents have had the opportunity to assist in the strategy development. SMART targets allow for interim and long-term ambition to be monitored and analysed. It is also clear that Octavia's Executive Director is responsible for the delivery of the environmental strategy along with a governance board.

Recommended improvements:

- Establish clear monitoring and review process to ensure tracking of SMART target attainment. Establishing more 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 from Octavia 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.

Supply Chain

Engaging with your supply chain is a way to encourage improved environmental performance. As well as brining an enhanced local environment for staff and residents, there are also financial benefits for your organisations. For example, if a maintenance contractor reduces uses more efficient transport, they save costs which could be passed on to you.

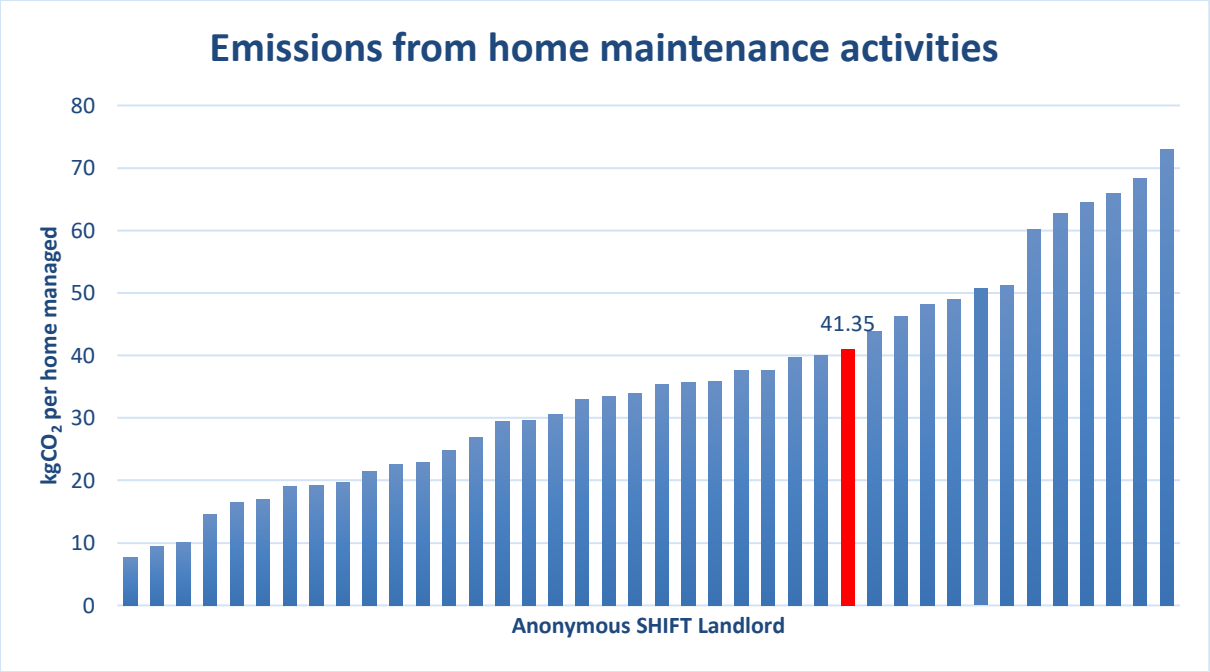
For SHIFT purposes, we include in-house maintenance team data in with the supply chain questions. This allows better comparability between organisations. For example, we can compare maintenance CO_2 emissions per home between organisations that do their own maintenance, with organisations who subcontract out all maintenance.

Maintenance CO_2 emissions

In-house and subcontracted maintenance teams emit CO_2 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 figure for organisational emissions. Where a landlord has its own maintenance fleet these figures are included too. This metric indicates the total CO_2 emitted due to maintenance activities.

Octavia provided mileage data collected from surveying their main contractors (VHL, Mears, Ginko). Using DEFRA conversion CO_2 conversion factors, a figure of 174.7 tonnes of CO_2 or 41.35 kgCO_2 / home managed was calculated. This is a slight increase on Octavia's performance last year.



Recommended improvements:

- Require larger contractors to respond to your environmental surveys – after a while they will see that their customers take this seriously and will start to reduce emissions.
- Additionally, some SHIFT landlords have found that benchmarking contractors carbon emissions per £1000 contract value can be a good way of identifying anomalies – where a contractors CO2 per £1000 spend is much lower or higher than the average, Octavia 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
- 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

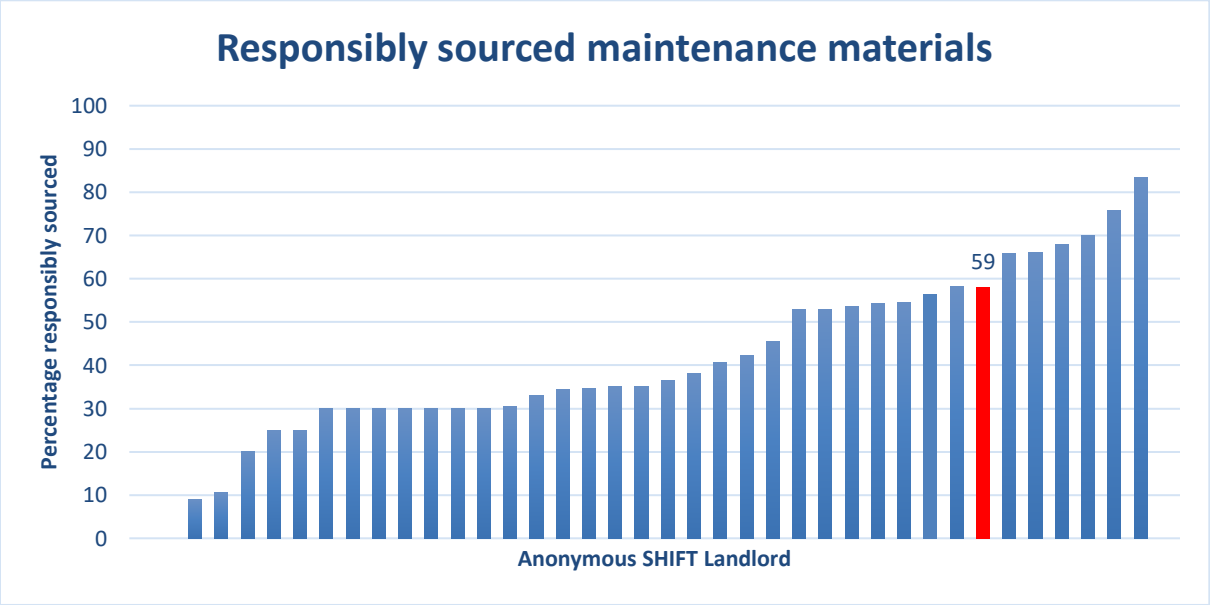
Responsibly sourced maintenance materials

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.

Octavia engaged all major suppliers about the responsible sourcing of materials. Although a breakdown of each material used and it's responsible sourcing was not available, Mears

provided a detailed procurement strategy documenting the use of ethical and delivery of materials with more environmental credentials. VHL were able to document that their stockists for spares and parts are highly rated in the area of supplying sustainable and environmentally friendly products; as well as being ISO 14001 accredited. No information was available for Ginko.

Despite engagement with key suppliers with bespoke questions aimed at extracting better information, supplier data was no better so Octavia's overall performance has been adjusted to reflect the evidencing of 3rd party verification, responsible sourcing policy, any accreditations and tracking systems for responsible materials. It is estimated that 59% of materials are responsibly sourced.



Recommended improvements (if not done already):

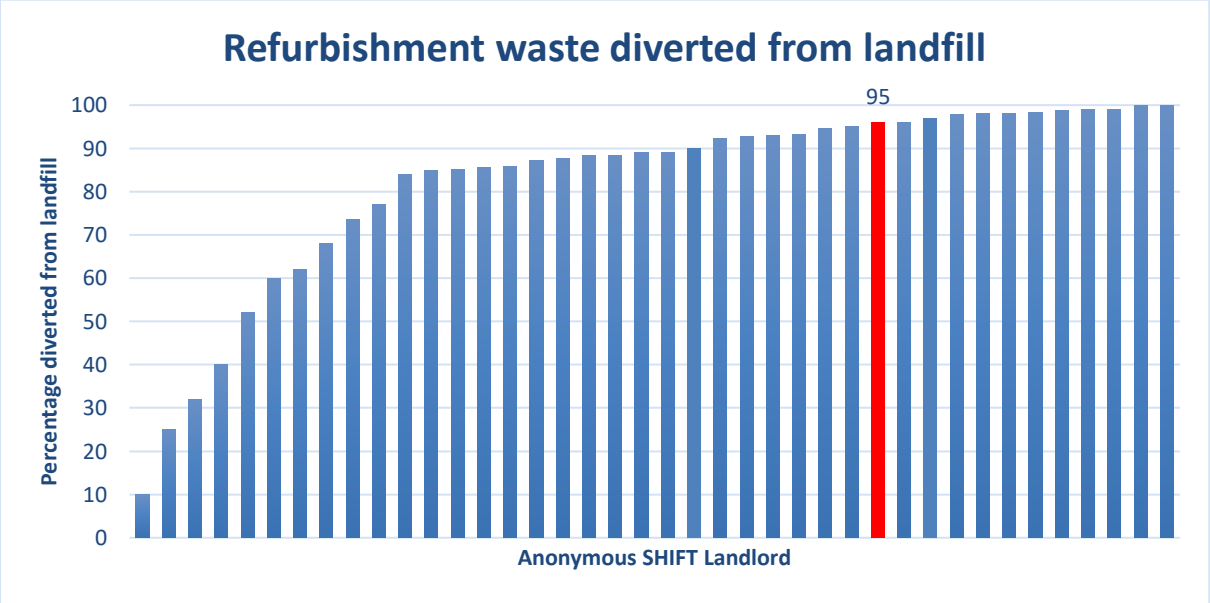
- Octavia are gaining similar detailed information from suppliers across annual assessments. To further the detail, they may find it useful to host supply chain 'engagement' days focussing on sustainability – they provide a great opportunity to clearly explain the environmental data required and establish a point of contact within each supplier/contractor for sourcing this data which will save Octavia time and frustration during the data collection process.
- Consider making it a requirement within contracts for suppliers (for your DLO) and subcontracted maintenance and development firms to devise their own responsible materials scoring methodologies and report them to you. A suggested method for contractors is:
    - Identify the responsible sourcing accreditations that relate to the materials and products they use (e.g FSC/PEFC for timber, BES6001 for plastics / windows / tiles /

flooring, Copper Mark for boilers etc) – probably achieved through a survey of their own suppliers
    - Start tracking responsibly sourced products in their stock databases/purchase logs
    - Make it possible for Octavia (and others) to either request % of materials responsibly sourced or include responsible sourcing information within the invoices for materials so that Octavia can easily track this information within its own systems.
- Examples of eco-labels include BRE Green Guide to Specification, ISO14001, BES6001, ISO 20400, FSC and PEFC

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.

Octavia sourced data from their supply chain and reported that 95% of waste is recycled/diverted from landfill. Octavia received excellent waste reports from VHL and Mears. Ginko, a grounds maintenance contractor, documented that 100% of its waste is recycled. Overall, this meant that 95% of waste is believed to be diverted from landfill from their homes refurbishment activities.



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 whether quarterly reporting requirements for contractors could reduce workload for Octavia when completing your sustainability assessment.
- Octavia may consider implementing subcontractor KPIs for this impact.

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 e.g. ESG and SECR reporting

Please be in touch for a free consultation on any of the above. Contact Richard on 07718 647118 or richard@SHIFTenvironment.co.uk

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