Broadland Housing Group

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

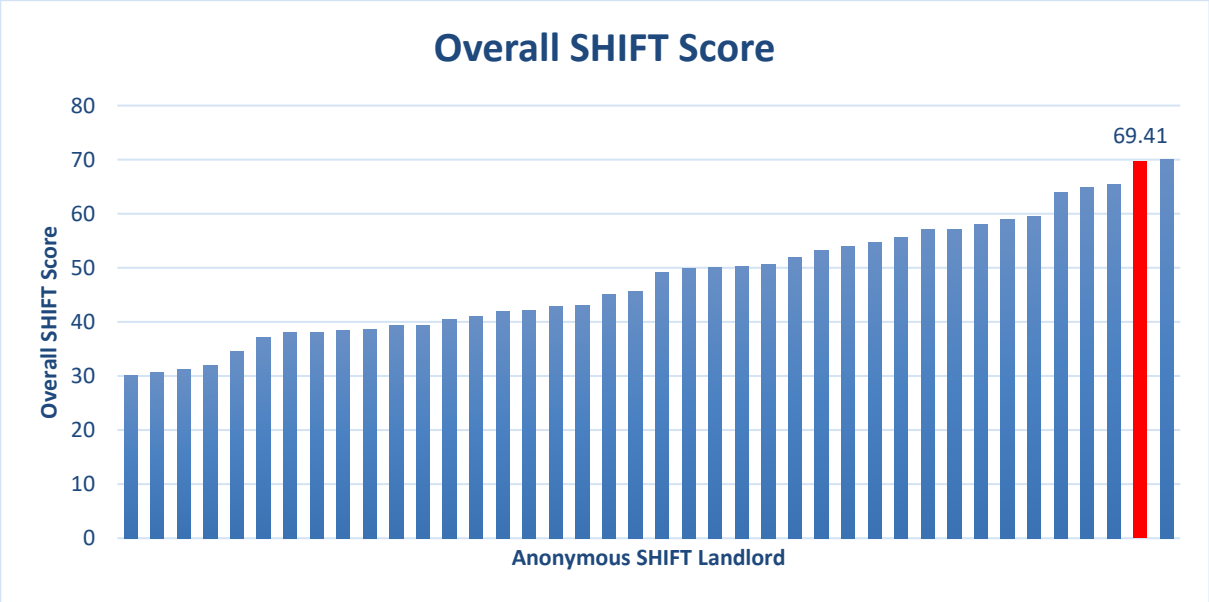
Contents

Executive summary

This report presents the sustainability performance of Broadland Housing Group 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.

Broadland's is a growing housing association based in Norfolk with 200+ employees providing more than 5,000 homes across Norfolk and North Suffolk. The results of this assessment will show, as best as the data allows, the gaps between Broadland's current environmental performance and environmentally safe levels of impact.

Broadland has achieved the SHIFT Gold standard with a score of 69.41. It ranks 2nd 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)	13,750 tonnes CO_2	SAP 73.5	SAP 73.33 ✓	SAP 85
CO_2 – communal heating systems – metered data (scope 1)	1,356 tonnes CO_2	12,469 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)	1,929 tonnes CO_2	663 kgCO_2 / home managed	565 kgCO_2 / home managed ×	0 kgCO_2 / home managed
CO_2 – offices (gas, scope 1, electricity, scope 2)	32.2 tonnes CO_2	18.81 kg/m^2	55.9 kg/m^2 ✓	0 kgCO_2 / home managed
CO_2 – business mileage (scope 3)	17.5 tonnes CO_2	3.36 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)	272 tonnes CO_2	52.4 kg CO_2 / per home managed	35.19 kg CO_2 / per home managed ×	0 kgCO_2 / home managed
Water – homes	0.6 million m^3	129.5 lpd	140.8 lpd ✓	130 lpd by 2030
Water – offices	240 m^3	1.11m^3/employee/ yr	8.43 m^3 / employee/yr ✓	3m^3/employee/yr by 2030
Waste generated – homes	1,612 tonnes	22.4% 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	0.5 tonnes	77% of waste diverted from landfill	71.03% waste diverted from landfill ✓	100% diverted from landfill
Responsible materials –	56.5%	56.5%	45.82% responsibly sourced ✓	100% responsibly sourced

maintenance & capital works				
Responsible materials - offices	73.36%	73.36%	57.90% responsibly sourced ✓	100% responsibly sourced
Adaptation to climate change – homes protected from flooding	4,990 homes	96% of homes protected from flooding	83.33% protected from flooding ✓	100% protected from flooding
Adaptation to climate change – homes protected from overheating	4,943 homes	95.1% of homes protected from overheating	78% protected from overheating ✓	100% protected from overheating
Biodiversity value	1770 tonnes biomass above ground	17.3 tonnes biomass per hectare	10.3 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 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	857 tonnes CO_2	164 kgCO_2 / home managed
Estimated CO_2 savings from sustainable transport interventions	741 tonnes CO_2	142.63 kgCO_2 / home managed
Estimated yearly carbon sequestration from green spaces[2]	33.8 tonnes CO_2	6.5 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.

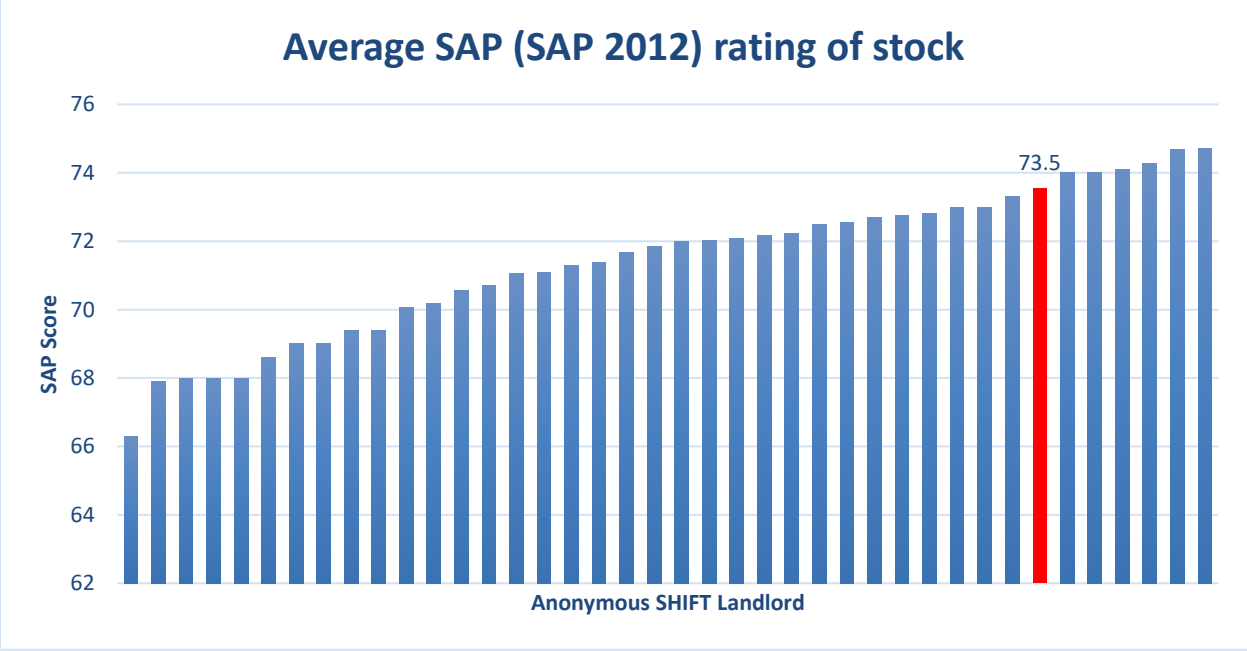
Existing Homes

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 Broadland's Head of Asset Management from their asset management database which indicated an average SAP of 73.5 has been achieved across their housing stock.



Recommended improvements (if not done already):

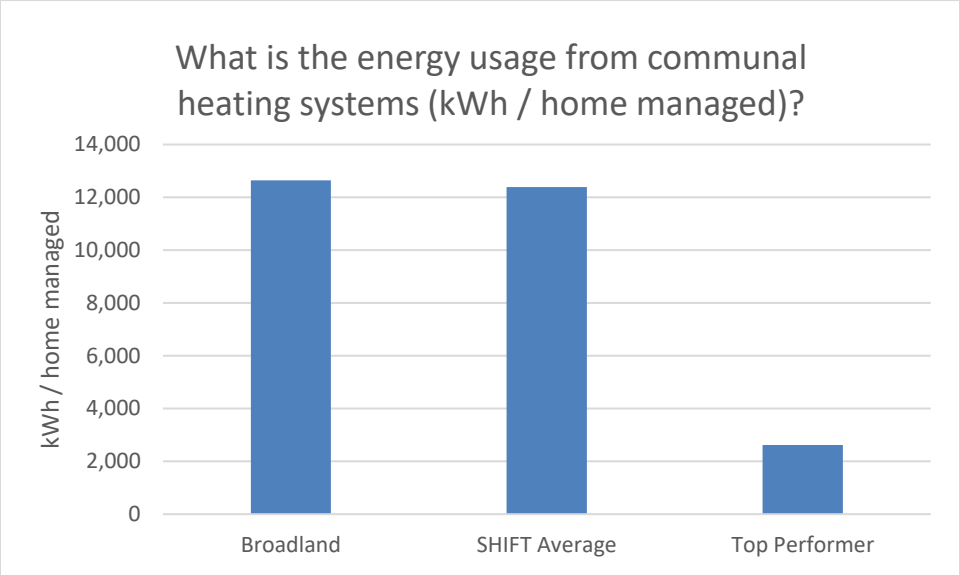
- Prepare address-level upgrade plans– the idea is to gain a vision of what your organisation would like each home to be like by 2050 in order to be as close as possible to net zero. Upgrade recommendations can normally be taken from the EPC data, but there is a limit. Further analysis will be needed 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
- 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 Broadland is already undertaking
- The analysis can be done on spreadsheets, but utilising CROHM will make the job much easier
- 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
- 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

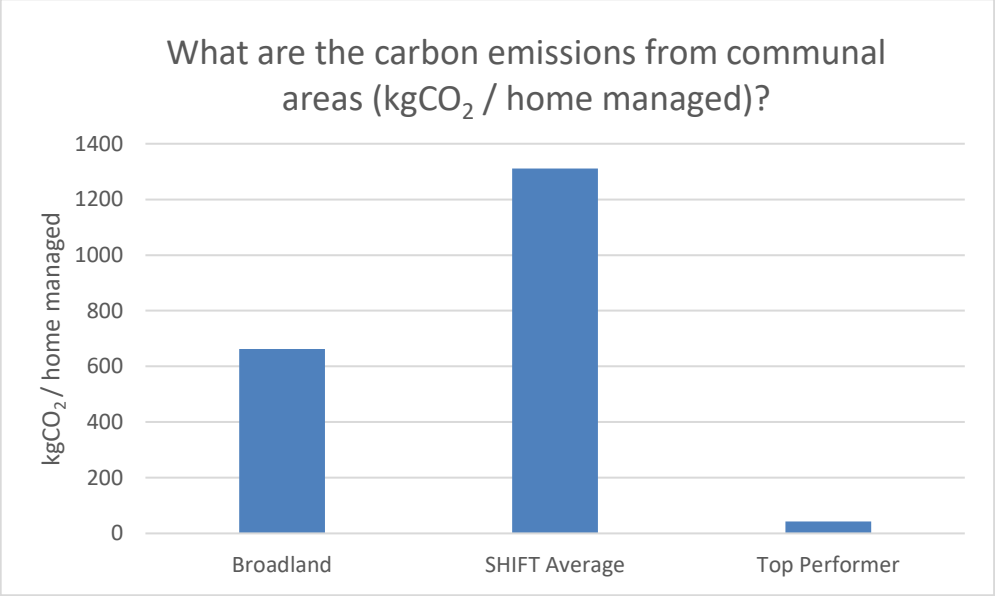
Energy for communal and district systems is a huge cost to landlords and highly visible. The heating systems are known to be very inefficient and are not adequately reflected in the SAP rating. They are also regulated under the Heat Metering regulations which may require retrofitting heat meters at some point in the near future.

Broadland provided data for 669 communal heated properties. Using the data available it has been calculated that an average of 12,469 kWh per home managed has been achieved. The table below shows the average kWh values per communally heated home from other SHIFT landlords.

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. Broadland were not able to identify the energy used directly in these properties which has made it difficult to compare Broadland's performance against this long-term target.



Broadland also assessed schemes that used communal energy and identified 2,909 homes are served with some form of landlord supply. A total of 1,929 tonnes of CO_2 has been emitted from communal gas and electricity supplies which equates to 663 $kgCO_2$ / home managed.



Recommended improvements (if not done already):

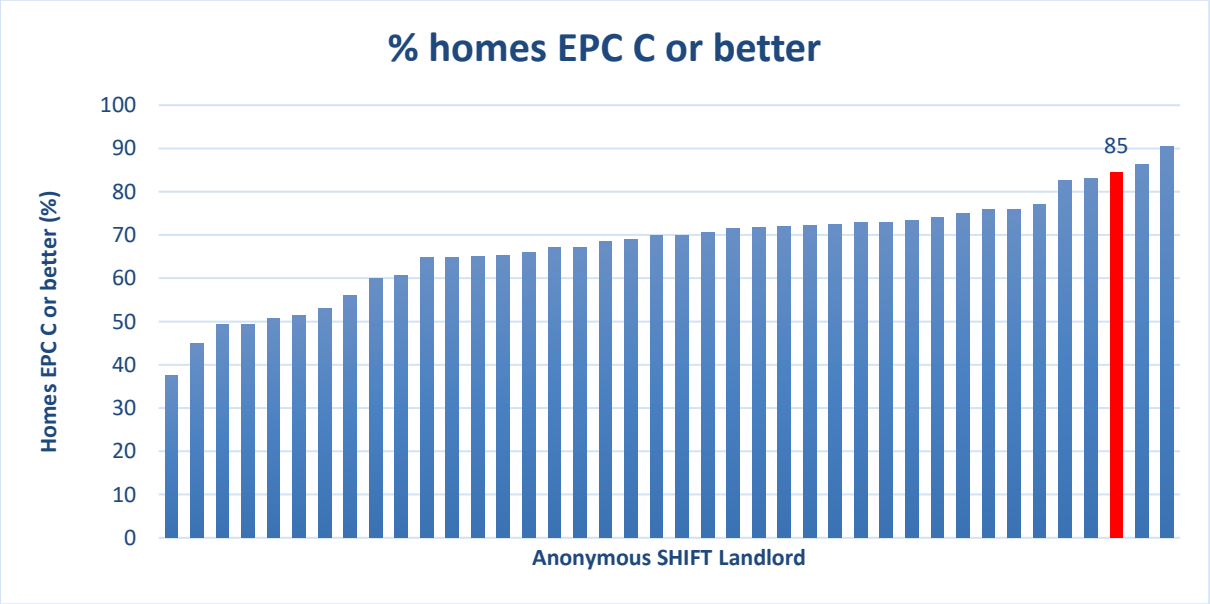
- Broadland do not currently use a sub-metering systems for communal heating as it is not a legislative requirement, but by November 2021, all heat networks will have to be assessed under the Metering & Billing Regs to see if individual meters or HCAs should be installed. As a landlord, tracking energy use in your communal heating systems will highlight inefficiencies and offer cost and carbon savings for your organisation

- Consider whether communal electricity supply could be switched to a 100% renewable supplier – this could cut CO_2 emissions by ~516 tonnes annually
- Conduct a review of all communal systems in your stock – the review should include control settings, boilers, pumps and bypass valves. Lisbon Court may be the best system to begin with as it has the highest kWh usage per supplied property
- The Heat Network Efficiency Scheme (HNES) Demonstrator supports performance improvements to existing district heating or communal heating projects. Consider how your organisation could access funding within the 2022-2023 financial year
- 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

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 Broadland's asset management database, 4,258 properties are believed to be EPC C or above, this equates to 85% of Broadland's stock. Including leaseholders and shared ownership properties may bring this figure up but as Broadland are not responsible for major works for these properties, they have been excluded from the SHIFT assessment.



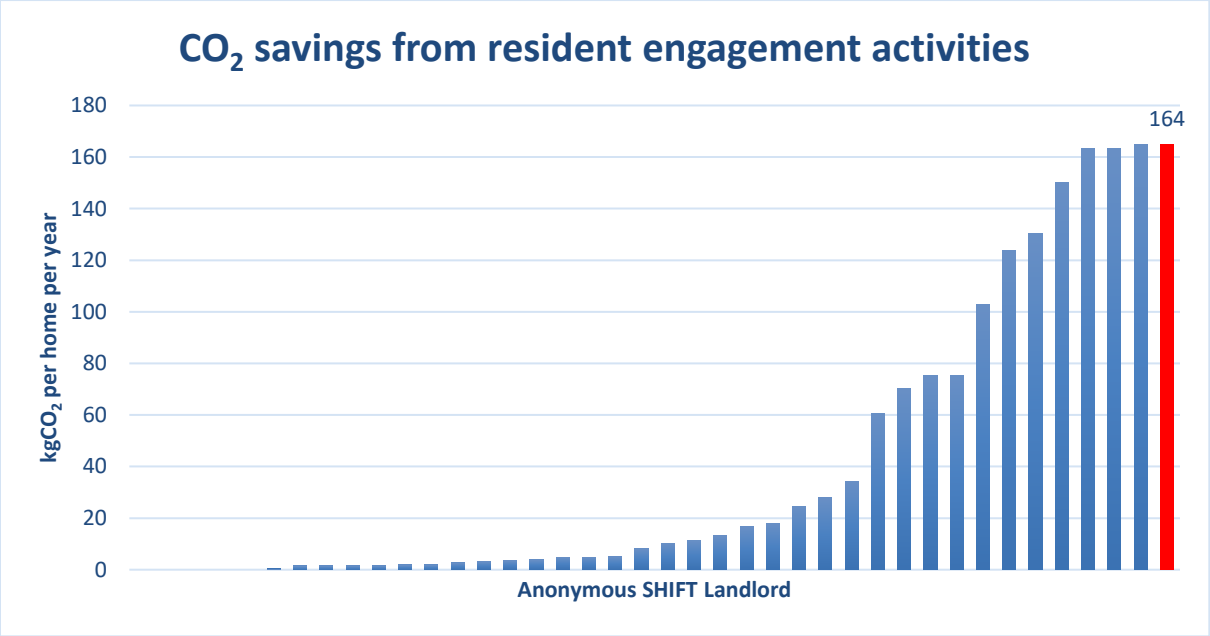
Recommended improvements (if not done already):

- 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.
- It is good to see Broadland have a very small proportion of EPC E – G rated properties but will need identify a plan of improvements works for the ~14% of their stock currently rated EPC D to ensure fuel poverty targets are met.
- 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.

Broadland have consistently engaged their residents on energy efficiency and despite COVID limiting certain activities 100% of residents were still engaged both actively and passively by Broadland. Broadland's heating system engineers continue to provide advice to residents when home visits occur, 230 new heating systems have been installed in properties with residents provided best practice information for ensuring high efficiency in their new systems. 348 tenants have also engaged with Broadland's tenancy support process where tips on energy efficiency was provided. Switchee devices have also been installed in eleven properties and these numbers are expected to increase as COVID put a limit on home visits. Broadland also use their media channels to promote energy efficiency through their green webpages, social media campaigns such as Energy Saving Week and features in their tenant newsletter.



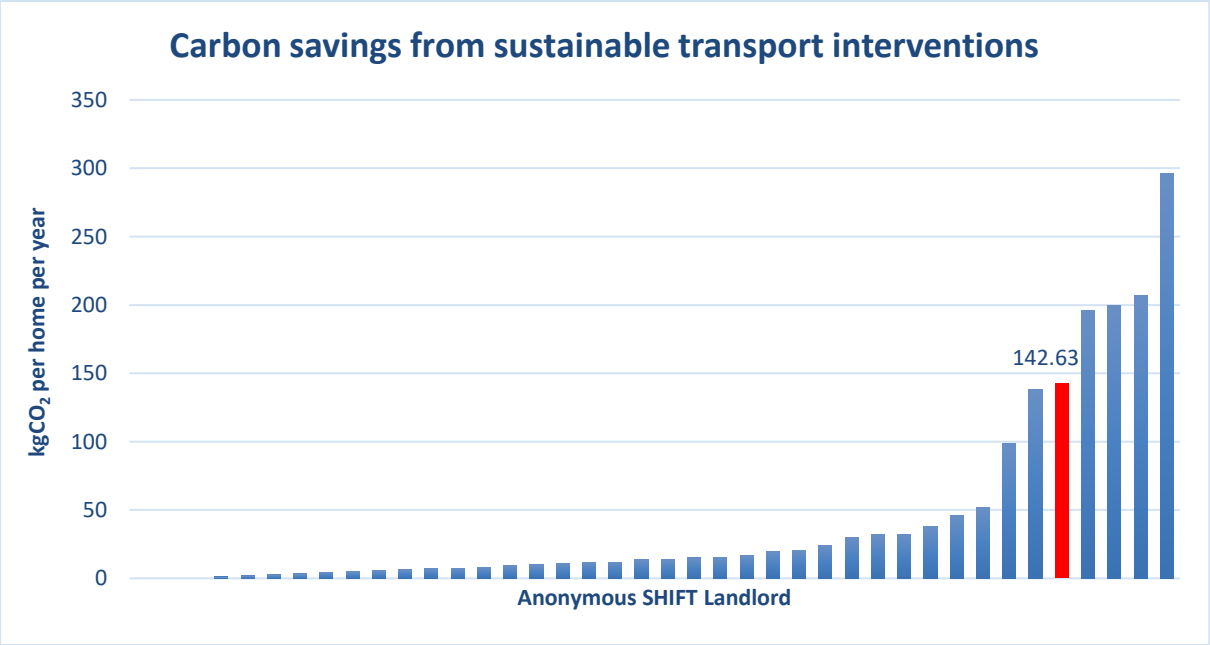
Recommended improvements (if not done already):

- Include energy advice in all contact with residents – gas safe checks, refurbishments, heating upgrades, rent arrears activities, new sign-ups
- Encourage residents to consider having smart meter installed – many energy companies are installing these at no cost to customer
- 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. Broadland could set annual targets for number of homes receiving these measures
- When a new heating system is installed, Broadland 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 Broadland could introduce an option where tenants with new heating systems can report energy use for 3(?) months to Broadland and if bills seem significantly higher than what Broadland 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 32% of Broadland's have cycle storage facilities provided. Broadland have recently started installing electric vehicle charging infrastructure at new schemes with 3% of their homes with access to a charger. Broadland also provide sustainable transport information such as cycle maps and public transport options on their website and social media platforms but also on physical notice boards in sheltered and care schemes. All 124 new Broadland tenants also receive a home user guide which includes this information. Engagement levels have reduced compared to previously reported performance, but this again can be attributed to impact of COVID lockdowns on tenant behaviour. Broadland also offer an excellent deal for residents through partnering with Norwich Car Club where residents and staff receiving free membership and no minimum monthly spend which removes many of the barriers of entry. These measures are estimated to save around 142.63kgCO_2 per home. Below you can see how your performance compares to other SHIFT landlords.



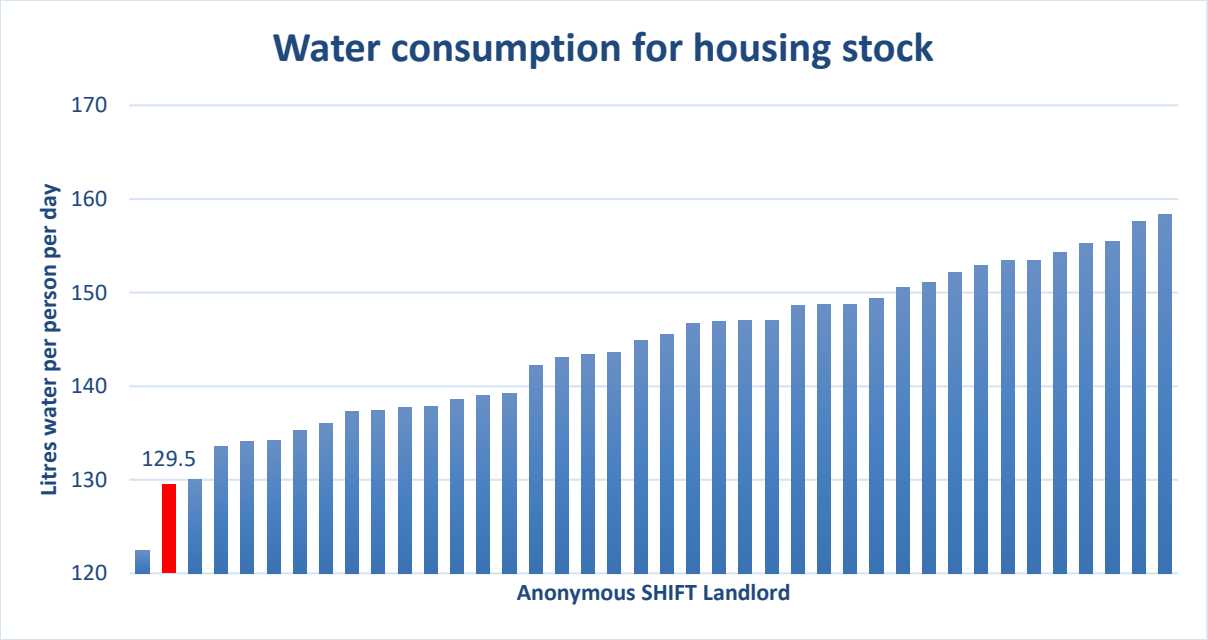
Recommended improvements (if not done already):

- Work with new build colleagues to ensure that cycle storage is included at all new builds
- Electric charging infrastructure is now being installed at new sites which is encouraging but Broadland may wish to specify a minimum number of chargers per property. Currently Broadland are averaging 1 charger per 28 properties, but more will be installed in future build phases. Current availability will not sustain the expected increases in EV ownership in the future which is an important factor when 'future proofing' new and existing schemes

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 Broadland'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 Broadland's stock but also incorporates data from Broadland's refurbishment and new build programmes. When updating bathrooms, Broadland uses water saving fixtures, these include low-capacity bath, low flow taps and dual flush toilets. Broadland have refurbished 35 bathrooms in their existing stock and have built 124 social let homes during the reporting period. Building upon previously reported data, it is estimated that 49% of Broadland homes now have baths smaller than 180l, low flow taps and low flow showers. 71% of homes also have dual flush toilets installed. 61% of Broadland'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. Broadland also identified the number of homes built since 1989 to estimate that 96% of homes have water meters installed. Broadland have evidenced that all residents have access to water efficiency advice provided by Broadland either directly through tenancy support referrals for example or indirectly through articles in Broadland's tenant magazines. This gave a result of 129.5 litres per person per day (lpd) using the SHIFT water efficiency calculator tool.



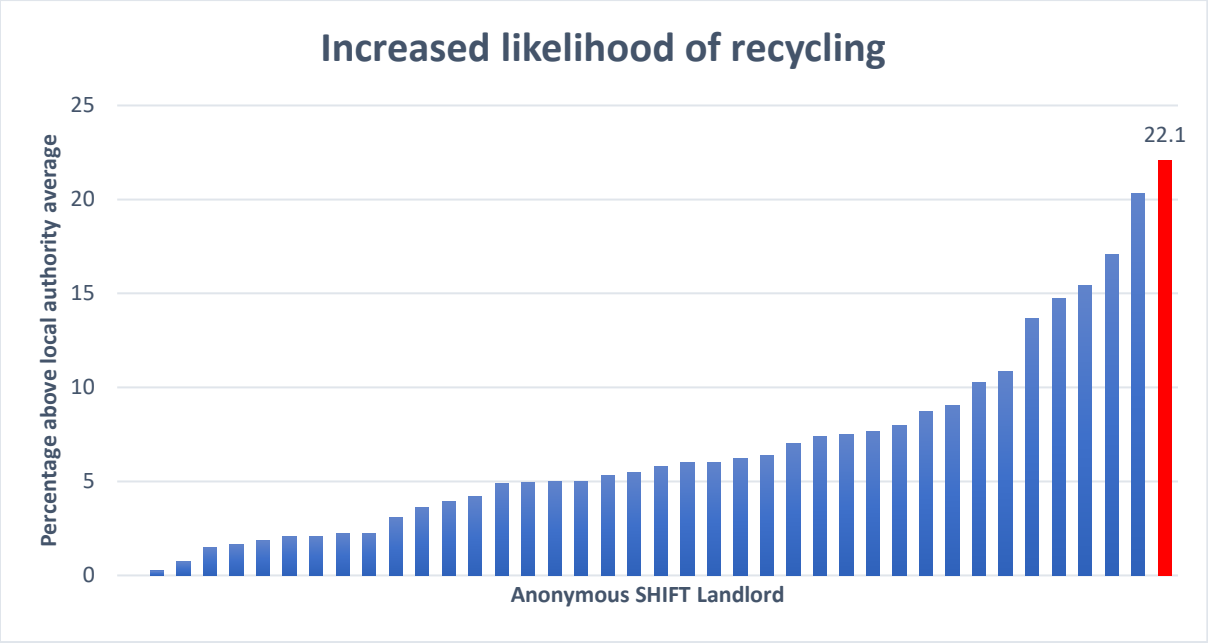
Recommended improvements (if not done already):

- Broadland have provided great bathroom specification information and detailed refurbishment numbers which has been used to identify that the majority of Broadland's stock now have dual flush toilets installed for example. Broadland 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 Anglian 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

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.

63% of Broadland's homes are believed to have internal recycle bins fitted using previously reported performance and data collected for 73 kitchen replacements and 79 social let new homes. COVID has limited the opportunities to engage effectively with tenants but Broadland have still used their media channels to promote waste initiatives like Recycle Week and educate their residents on best practice. COVID has hampered the usual direct engagement with residents with waste amnesty days not possible, but Broadland have tracked how many visits to their waste advice pages their tenants have made. Overall, 2.8% of Broadland's tenants have been actively engaged and 100% have been passively engaged during the reporting period and these measures encouraged an estimated 22.1% increase in recycling over and above local authority average.

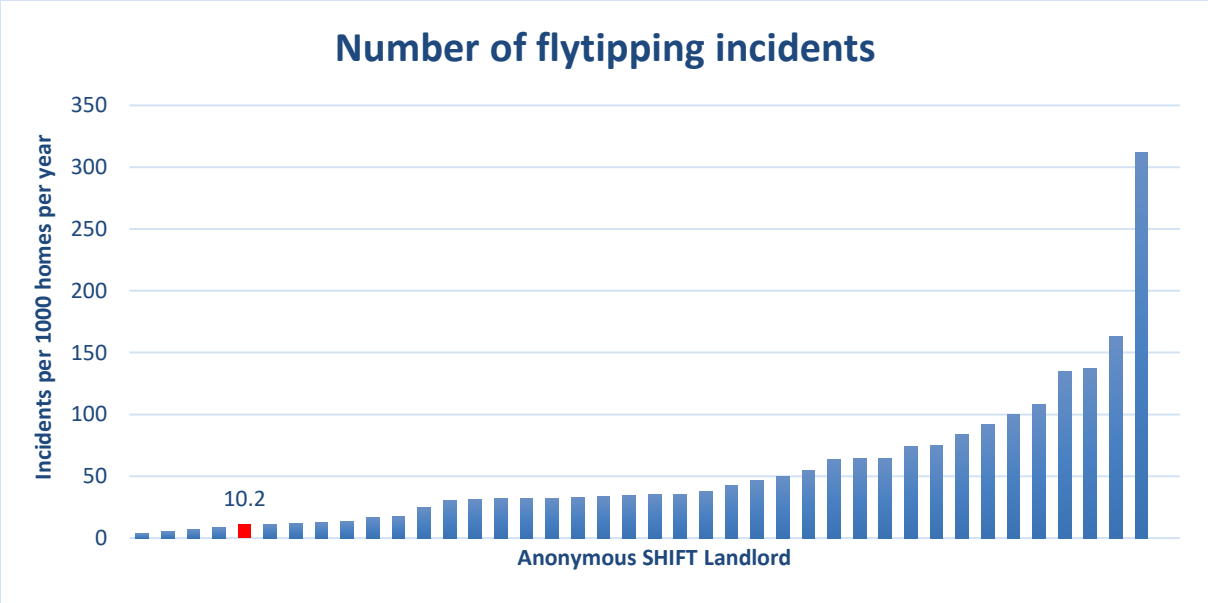


Recommended improvements (if not done already):

- Liaise with new build colleagues to ensure internal recycle bins become a standard component in 100% of new builds as currently only 64% of homes completed in reporting period received these bins
- Broadland 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. This will allow Broadland to proactively take action necessary to rectify issues. This may include increasing communal bin capacity, install CCTV in fly tipping hotspots, changing caretaker visit days, purchasing recycle bins for residents etc.
- Consider arranging a quarterly estate clean ups involving residents and Broadland 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 – Broadland have undertaken this in the past and should ensure that these become a staple event in schemes where fly tipping and other waste issues are prominent

Fly tipping

Fly tipping is unsightly, presents a potential fire hazard and is costly for landlords to deal with. Broadland has recorded 53 fly tipping incidents in their works system during the 12-month reporting period equating to 10.2 per 1000 homes.



Recommended improvements (if not done already):

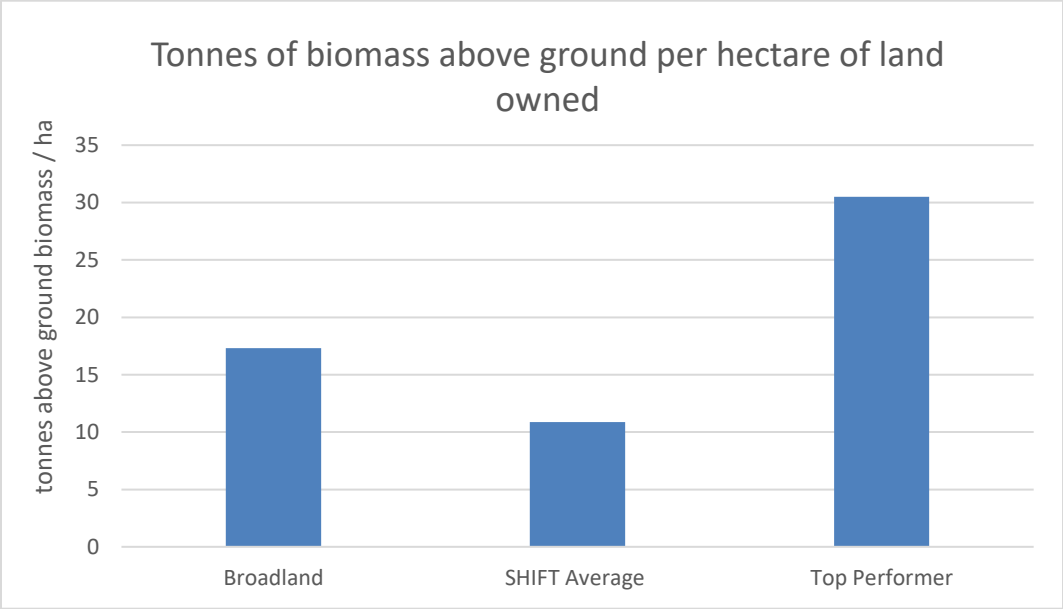
- Nationally, fly tipping has increased due to COVID lockdowns but is impressive that there has been a ~75% reduction in fly tipping compared to Broadland's last SHIFT assessment
- Consider whether introducing a more comprehensive system for logging fly tipping including location and type of waste could help devise a strategy for reducing the number of incidents in hotspot areas – for example mattresses appear to be a commonly fly tipped item and NCC will offer a bulky waste collection service for mattresses. Could Broadland look at arranging a discounted cost to residents for the collection of these items?
- 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

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.

Government is targeting a 19% increase in woodland coverage by 2043 across the United Kingdom and SHIFT has converted this into a biomass target for landlords to aim for in their green spaces.

Broadland has completed remote surveys for the areas of gardens and communal grounds across numerous flats and homes in their housing stock. Using these surveys and knowledge of schemes estimates for shrubland, grassland and woodland were created and used for Broadland's wider stock. It has therefore been calculated that Broadland has 17.32 tonnes of above ground biomass per hectare of land owned which equates to 1,770 tonnes of biomass across Broadland's stock.



Recommended improvements (if not done already):

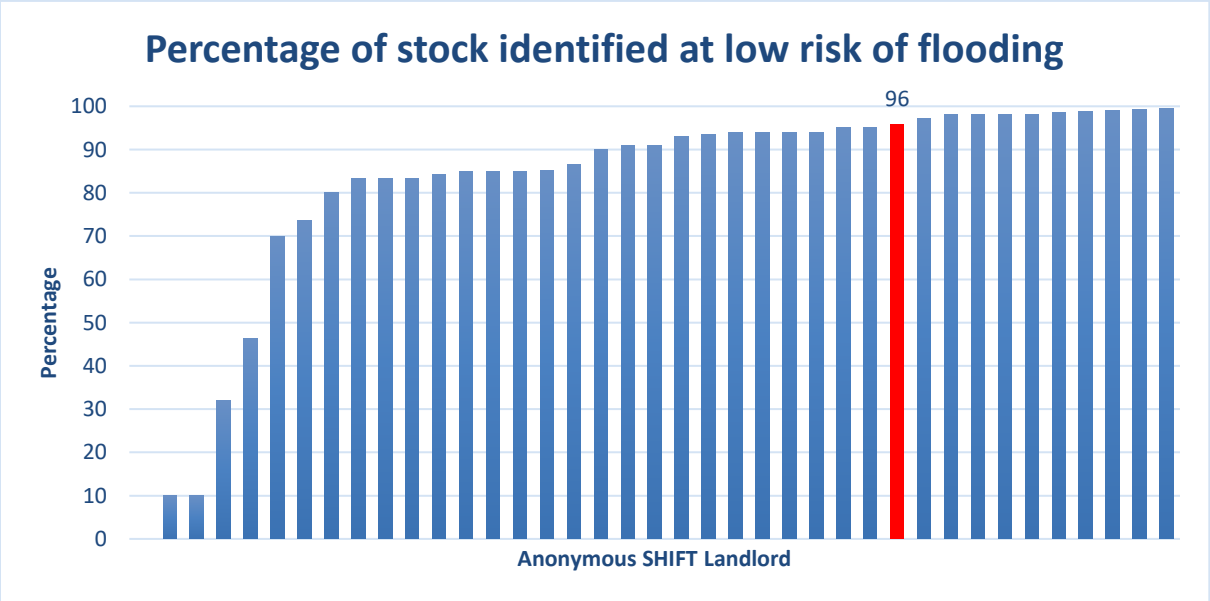
- Consider planting higher density biomass areas in existing green spaces as most of Broadland's green spaces are currently just grassland. These are probably mown areas which require time, money and carbon emissions to maintain
- Liaise with new build colleagues to ensure that they are maximising biodiversity within their schemes. This will likely go beyond what currently takes place on Broadland's schemes 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
- Consider introducing a Landscape Management Plan for both new schemes and your existing land owned. Some key biodiversity considerations for green spaces include prioritising native species but ensuring a diverse range of species are planted and ensuring permeability as it is crucial for wildlife to be able to pass through the site otherwise these areas will act as a 'green walls'

- Derive efficient measurement of green spaces quality as this issue is increasingly being assessed by lending institutes as part of their ESG requirements
- Broadland should consider expanding their garden area and communal ground surveys to continue to build up a better picture of green spaces managed
- Consider whether a biodiversity fund for residents to do wildlife planting could be achieved by partnering with contractors. This will provide them good examples for their Corporate Social Responsibility and help Broadland convert more of their underutilised green/grey spaces into high biodiversity areas

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.

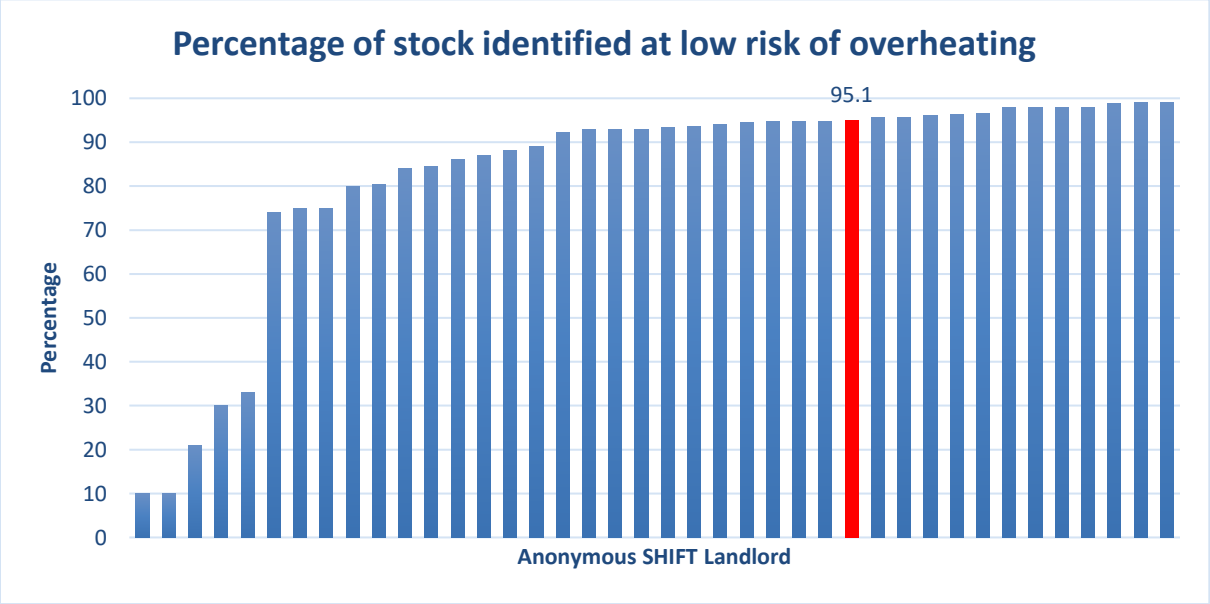
Broadland has assessed fluvial, tidal and surface water flooding using Environment Agency flood maps and identified that 96% of homes are at low risk of flooding. This is a reduction compared to the 98% reported last year as Broadland have discovered that several sites are now deemed at medium or high risk of surface water flooding. 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 and is already increasing in risk within Broadland's stock. Using information from insurers may only project flooding for the next year and not the next 30 years which is more useful for planning and gives a more robust picture of the long-term flood risk to your housing stock.



Recommended improvements (if not done already):

- Ensure 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).
- The Social Housing Sustainability Reporting Standard requests flood risk data information for your housing stock – this could further incentivise an updated flood risk assessment to be commissioned
- For the homes at medium or high risk, ensure they are signed up to early flood alerts and ensure responsive actions are in place from Broadland in the event of flooding
- With Broadland identifying that flood risk has increased for several of their sites they recently assessed, this should indicate that an updated risk assessment should be completed
- 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 Broadland's asset management database was used in the SHIFT overheating risk assessment tool to estimate that 95.1% 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 Broadland's housing stock.



Recommended improvements (if not done already):

- 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.
- 69 properties were not fully assessed as build date data were missing for properties – it is recommended that Broadland investigate these gaps in the data and look to address them ahead of any further overheating assessments
- 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 Broadland's Development Support Officer indicated that 79% achieved low EPC B (SAP 81 – 85) and the remaining homes (21%) only achieved EPC C (SAP 69 – 81). It is highly recommended that Broadland start trialling building to an EPC Grade (e.g. "A") or SAP rating (e.g. SAP 92+ minimum). This will help Broadland 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 Broadland'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, but Broadland did not identify whether the overheating risk assessment accounted for projected increases in summer temperatures due to climate change. 81% of new developments have received ecological enhancements such as wildflower

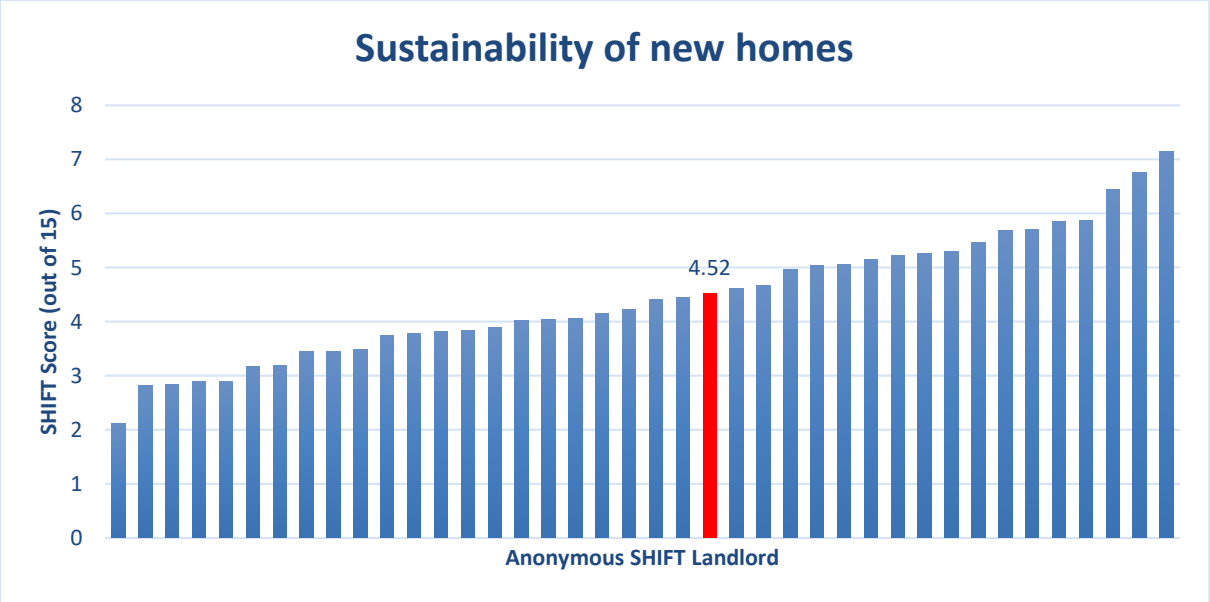
[1] Committee on Climate Change, 2019, pg 42 https://www.theccc.org.uk/wp-content/uploads/2019/02/UK-housing-Fit-for-the-future-CCC-2019.pdf

[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/

meadows and flood attenuation ponds, 59% homes received cycle storage and 64% homes had internal recycle bins fitted in their kitchens. It was reported that 100% of sites had used responsibly sourced building materials but no further information was provided to verify this claim so no score has been attributed to this data.

Verifying that the expected energy performance and sustainability measures of new homes is essential otherwise Broadland runs the risk of creating a "performance gap" between what they are expecting from their new homes and what is actually being achieved. Broadland has achieved part verification as they were able to evidence that cycle storage and ecological enhancements are checked by Clerk of Works during the snagging process. Broadland may wish to consider a scheme such as the Home Quality Mark (HQM) or enhance their verification processes by having a representative sample of post-occupancy energy performance monitoring within new schemes.

Using the SHIFT calculator for new build and the data above, the sustainability score for Broadland's new build homes was 4.52 out of 15.



Recommended improvements (if not done already):

- 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
- 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 excluded gas boilers from new homes now, well in advance of Future Homes Standard

Offices

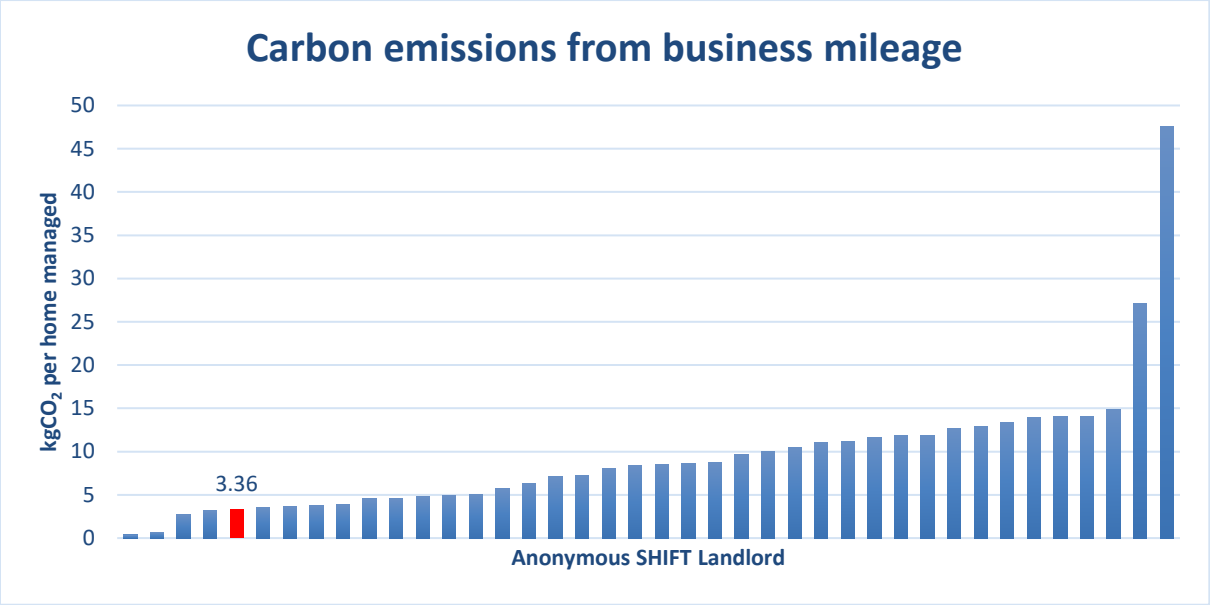
Although offices have a minor impact on the organisations overall environmental performance there are several advantages from focussing on improving their environmental qualities. Utility bills reduce, staff can see a tangible commitment to sustainability and facilities teams gain first-hand experience 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 Broadland's Finance Transactions Assistant 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, petrol and electric. Using DEFRA conversion factors to calculate CO_2 emissions, Broadland are estimated to have emitted 17.4 tonnes CO_2 or 3.36 kgCO_2 / home managed through business travel.



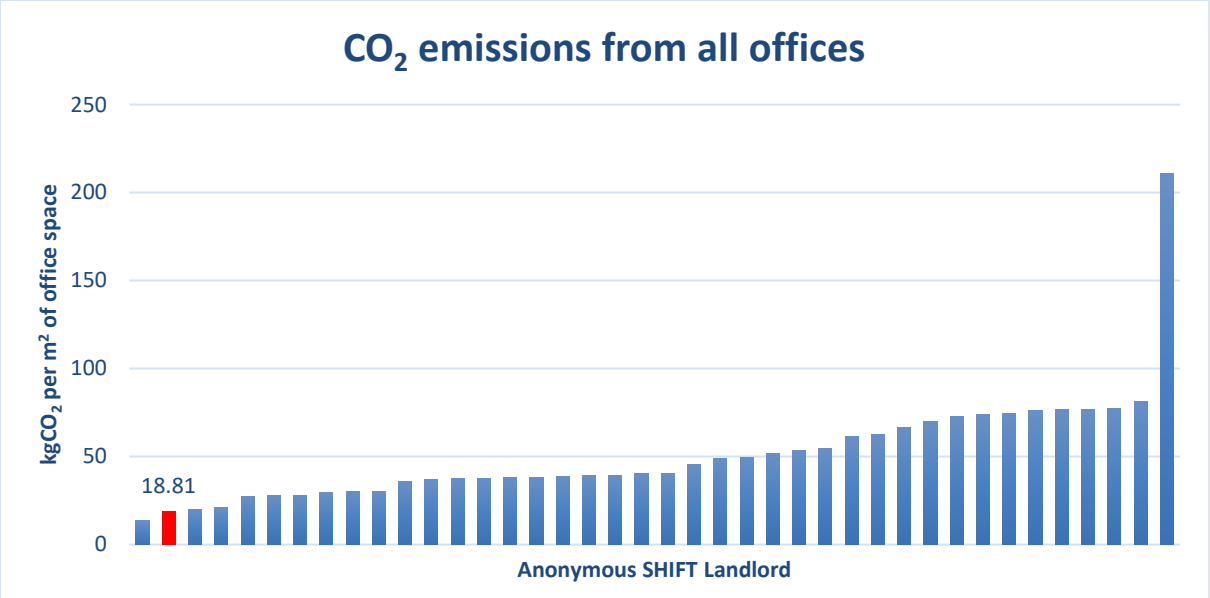
Recommended improvements (if not done already):

- Consider if electric pool cars stored and charged at Broadland offices could offer a suitable alternative to using 'grey fleet' for business use
- Encourage increased use of video conferencing even when the UK fully unlocks as Broadland has reduced business mileage carbon emissions compared to previous SHIFT assessment

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.

Data was collected through meter readings which enabled a calculation of Broadland's office emissions. In total, 32.16 tonnes of CO_2 were emitted in the assessment period which equates to 18.81 $kgCO_2/m^2$ of office space.

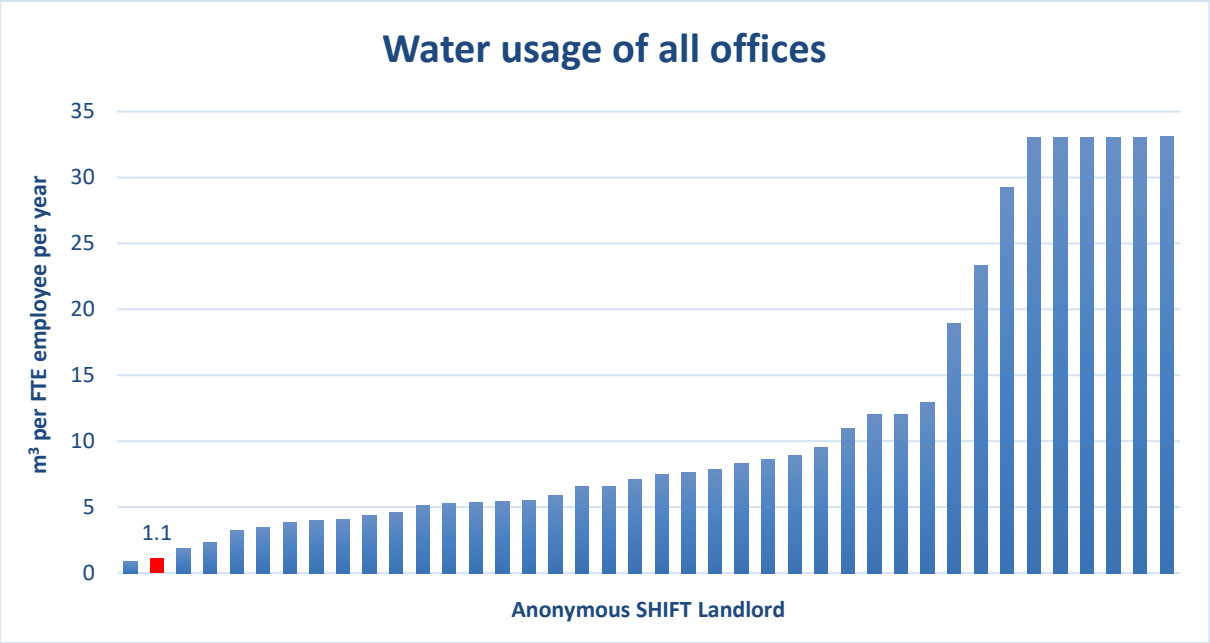


Recommended improvements (if not done already):

- As offices have been closed it is good to see that emissions have dropped by ~18 tonnes CO_2 compared to previous assessment – this has not always been the case with other offices assessed. Depending on the uptake in home working, Broadland may consider restructuring their office spaces in the future to favour multiple 'touchdown point' office spaces rather than having several main offices. This would reduce office space required and associated emissions

Water

Utility data for water usage was collected from Broadland's office bills. It was reported that 219 m^3 of water were used by Broadland's office-based employees in the assessment's reporting period. This equates to 1.01 m^3 per employee.



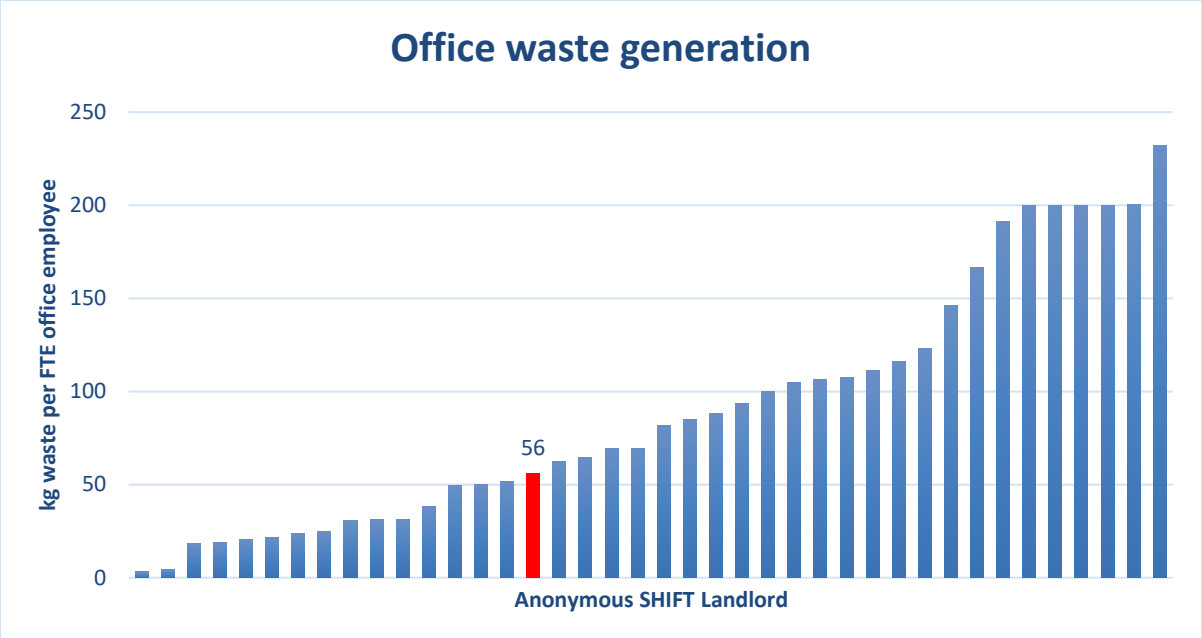
Recommended improvements (if not already done):

- Like office carbon emissions, it is good to see that water usage has dropped significantly as the offices has been shut. It suggests there are no major leaks in your system keeping water use high
- Some offices did not have the full reporting period available, so assumption had to be made on usage. Consider setting up a quarterly utility reporting system for your offices and your landlord supply to keep a consistent track of data and save time when collating data for the annual report

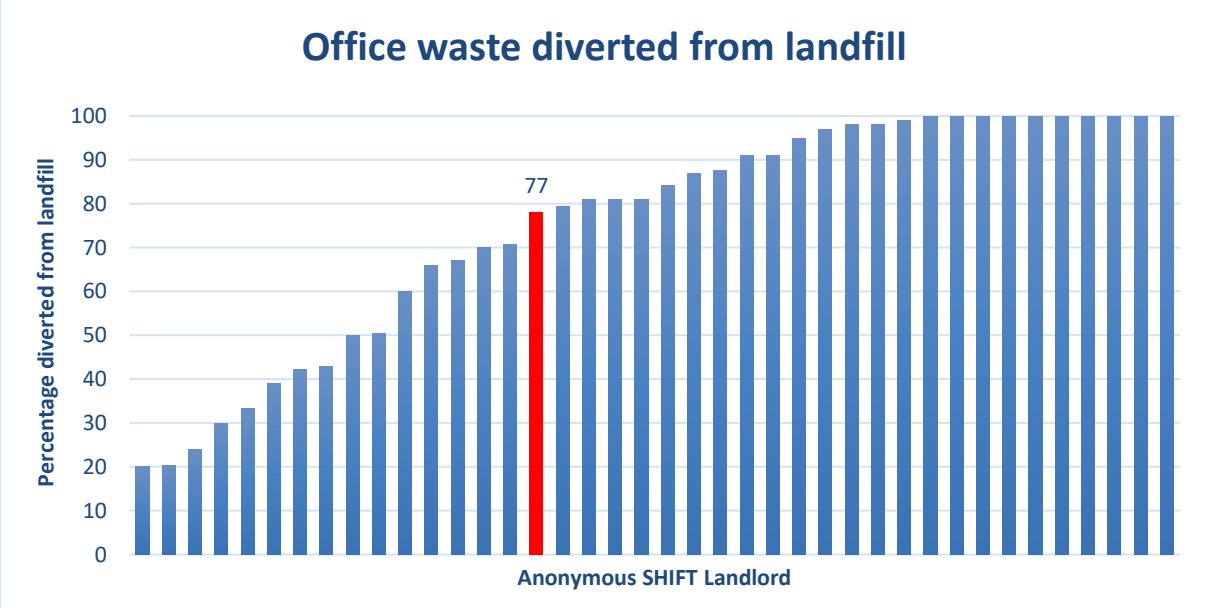
Waste

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 Broadland's offices was estimated using previously reported data. Offices were only open for use for 5 months of the reporting period and operating at a 10% capacity therefore previously reported figures have been scaled down accordingly. It has been estimated that total waste generated was around 506 kilograms (56 kgs per full time employee).



Waste diversions were estimated based on the types of bins present in each of Broadland's offices. Using this information, it is estimated that 77% of office waste is diverted from landfill.



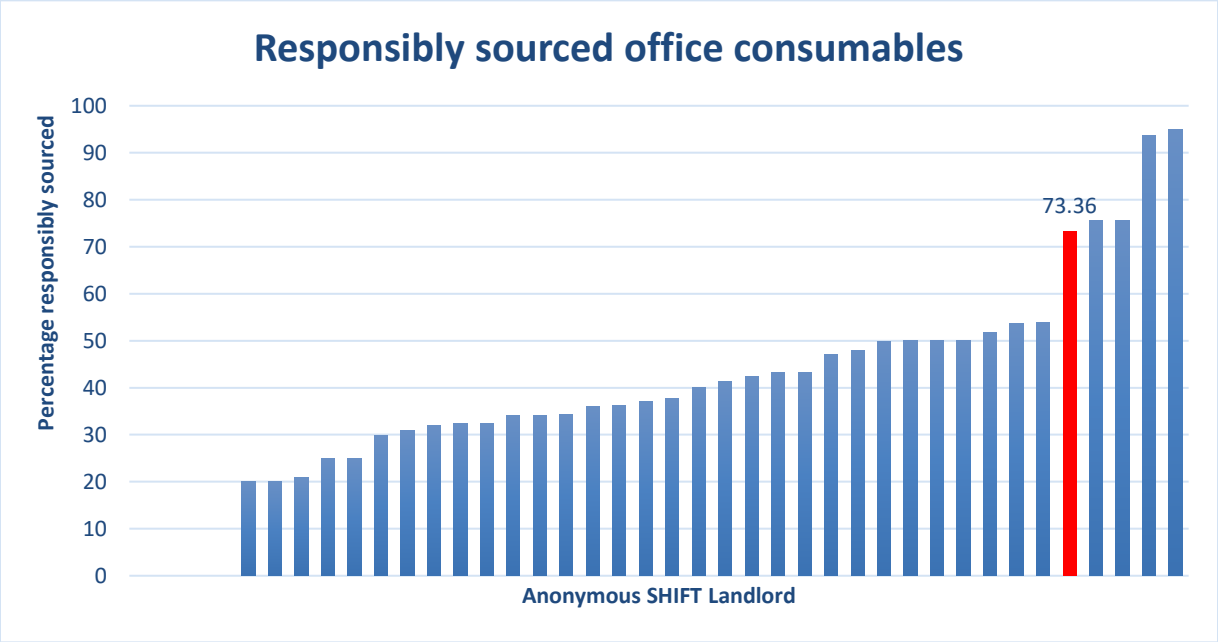
Recommended improvements (if not done already):

- The ideal first step is to reduce the amount of waste generated. Review systems to see what functions can be made paperless – working from home will almost certainly have forced legacy paper base systems to go digital
- Work with office waste contractor to increase waste recycling rather than relying on energy-from-waste option

- Install “follow me” printers
- Reduce disposable cups and other utensils

Office consumables

Broadland provided an environmental spend report from Lyreco - their office consumables supplier which indicated that 73.36% of products were responsibly sourced. This figure has been used for this assessment even though there may have been some ad-hoc purchases made with separate suppliers



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.

Broadland analysed Environment Agency flood data for their offices and found that their offices are considered at medium risk of surface water flooding. Broadland may want to consider drafting a flood action plan for its offices in the event that access/egress is prevented by flood waters.

No official overheating survey of Broadland’s offices has been conducted, but it is well known that Broadland’s Dereham suffers from overheating during summer months. Broadland have utilised some of the passive measures listed below to help alleviate the overheating risk but the move to hybrid working means that during extreme weather employees will not be expected to operate in the overheating office.

Recommended improvements (if not done already):

- For hot offices install passive measures such as brise soleil and reflective glass coatings. If air conditioning is installed ensure it is the most efficient available.
- 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.

Broadland have scored 15 out of 15 for an effective strategy. Broadland continues to ensure that sustainability remains an important strategic ambition with relevant objectives found in their Sustainability Policy, Corporate Strategy and Long-term Action Plan. Excellent SMART targets covered all environmental areas assessed in SHIFT including energy efficiency, flood risk, overheating risk, waste, water, materials but will need to be updated to reflect latest metrics and long-term targets in SHIFT 2021. It is also clear that Broadland's Executive Property Director is responsible for the delivery of the environmental strategy with important projects such as analysing carbon footprint being 'championed' by her demonstrating the senior level commitment to the sustainability agenda.

Recommended improvements (if not done already):

- Ensure forthcoming sustainability strategy has all the items listed in the SHIFT scoring matrix. You can use the detail in the overall performance data to help establish KPIs for your organisation

- Improvements to SHIFT metrics in areas such as biodiversity, average SAP and various carbon metrics mean that Broadland's Environmental Champions may want update your action plan to reflect this

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.

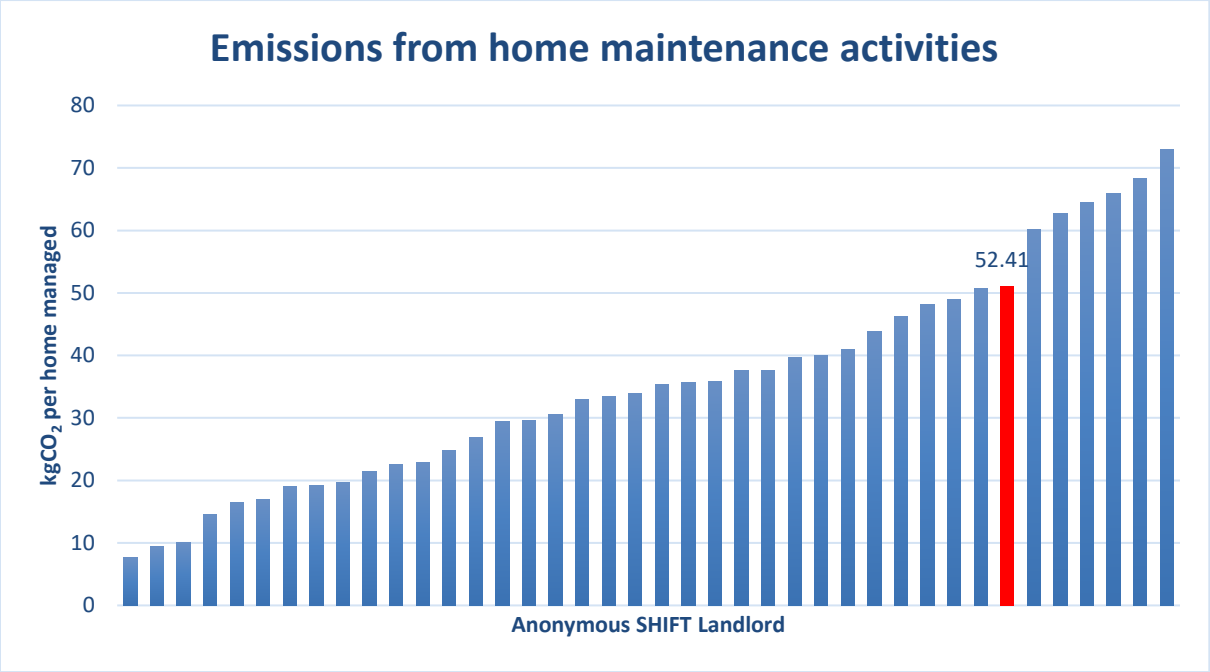
For SHIFT purposes, we include in-house maintenance team data in with the supply chain questions. This allows better comparability between organisations. For example, we can compare maintenance CO_2 emissions per home between organisations that do their own maintenance, with organisations who subcontract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

Broadland provide mileage data collected for their Repairs, Estates and Cleaning Teams and also engaged with two of their capital works contractors. Using DEFRA conversion CO_2 conversion factors, a figure of 272 tonnes of CO_2 or 52.41 kgCO_2 / home managed was calculated. This is an increase on Broadland's performance last year but during COVID, many of the DLO vehicles were used for community work such as delivering food parcels. This has contributed to an increase in emissions compared to previous assessments, but Broadland now also have the most comprehensive dataset for their fleet mileage which suggests previously reported data may have been an underestimate.



Recommended improvements (if not done already):

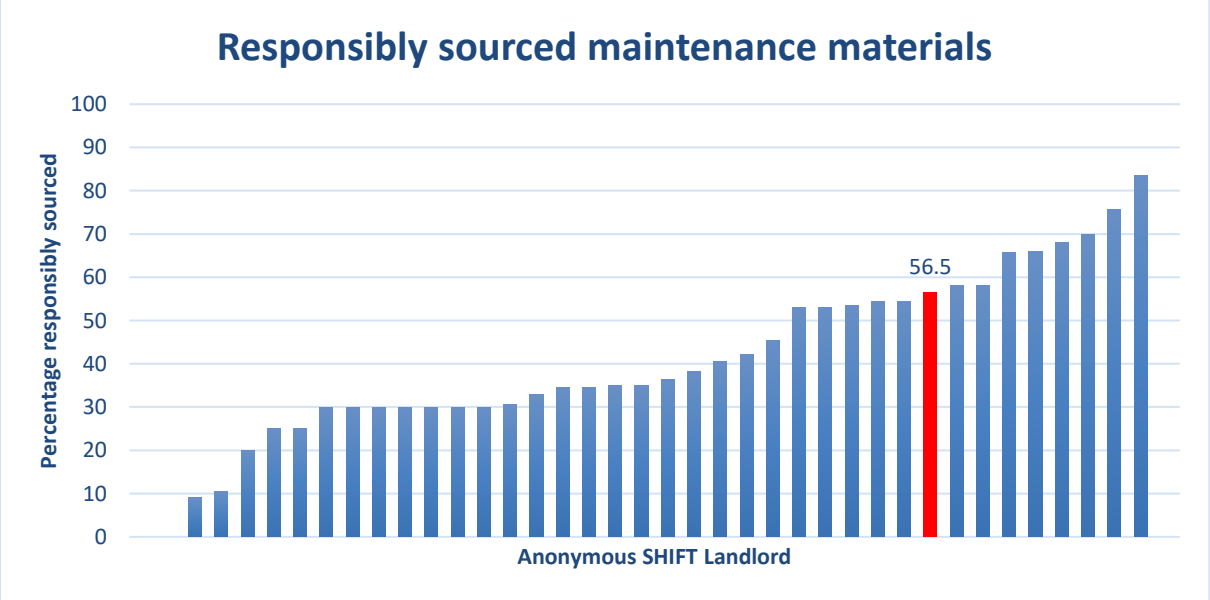
- Broadland have reported a high $kgCO_2$ / home managed especially for a region-specific housing provider. Some of this may be due to increased vehicle use for community response projects due to COVID but this is also Broadland's first SHIFT assessment with a fully comprehensive log of DLO mileage meaning that previously reported data may have been underestimated. Consider the following recommendations and their likely impact on fleet emissions
- 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. At the moment these seem suitable for densely populated areas where range isn't an issue
- 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
- Investigate whether job assignment software for DLO team is providing the most efficient order of works. Are Broadland approaching a job list using distance as an influencing factor?

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.

Whilst Broadland engaged all major suppliers about the responsible sourcing of materials, very few provided suitable information. Jewsons data was directly analysed by Broadland to identify all the FSC timber, OSMA, Polypipe and Briston products purchased as these have been confirmed as responsibly sourced. Travis Perkins were able to provide data on the of FSC/PEFC products sold to Broadland but were not able to expand this analysis to other product lines. Much better information was sourced from Broadland's Estates Services Team who believe that 80% of their materials used are responsibly sourced as many materials are reused such as pallets to make leaf pens and weed killer use is limited through the use of weed suppressing fabrics. Broadland's Cleaning Team also provided excellent information on their materials supplier who provide eco-friendly cleaning products which are EU ecolabel certified. Even during COVID, Broadland identified innovative ways to be as sustainable as possible such as partnering with a local gin distillery to maintain a steady supply of hand sanitiser.

Despite significant engagement with key suppliers with bespoke questions aimed at extracting better information, supplier data was no better so Broadland's overall performance is estimated to be the same as their previous assessment at 56.5% of materials responsibly sourced.



Recommended improvements (if not done already):

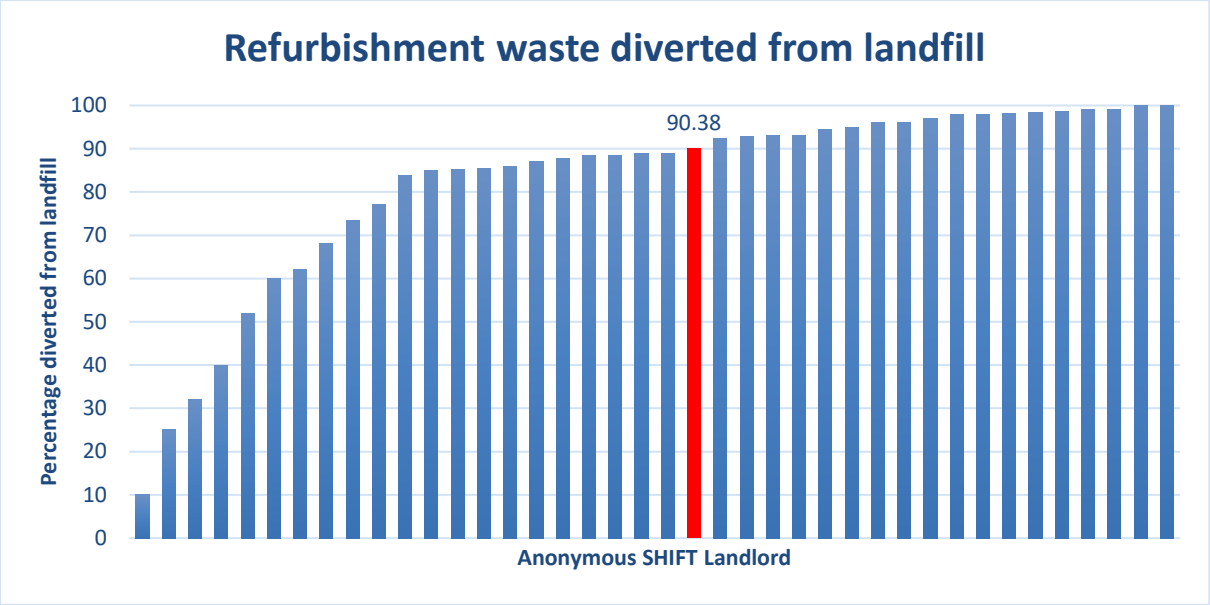
- Broadland have reached an impasse with their suppliers so they may find it useful to host supply chain 'engagement' days focussing on sustainability – they provide a great opportunity to clearly explain the environmental data required and establish a point of contact within each supplier/contractor for sourcing this data which will save Broadland time and frustration during the data collection process

- Before Broadland's next SHIFT report, it is also recommended that they consider re-engaging with Jewson's and Travis Perkins on the specific questions asked during this assessment to try and get a clear answer on why information isn't available. For Jewsons, it is asking about the materials that come from their BES6001 accredited factories and for Travis Perkins it is asking about their eco range and what products that covers
- Post-assessment, SHIFT located a product mapping document produced by St-Gobain for their major materials suppliers with information on ISO14001 and BES6001 accreditations. SHIFT highly recommends using this document as evidence to leverage better information from Jewsons (owned by St-Gobain)
- Some landlords have been using herbicide-free weed controls such as biodegradable, organic foams which Broadland may want to explore to eliminate their use of weed killer
- 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 Broadland (and others) to either request % of materials responsibly sourced or include responsible sourcing information within the invoices for materials so that Broadland 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.

Broadland sourced data from their in-house team as well as their supply chain and reported that 90.38% waste is recycled/diverted from landfill. Broadland provided an excellent waste report for their DLO's waste which indicated that 91% of waste is diverted from landfill. For the remaining contractors, no data was available so the SHIFT sector average was assumed. Overall, this meant that 90.38% of waste is believed to be diverted from landfill from their homes refurbishment activities.



Recommended improvements (if not done already):

- 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 Broadland when completing your sustainability assessment
- Identify if more detailed data is available from TR2 report on how much waste is recycled versus used in energy-from-waste. Broadland may then consider introducing targets for recycle rates
- Consider implementing subcontractor KPIs for this impact once consistent reporting structure is implemented. This could involve reducing the proportion of waste used for energy-from-waste

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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