2021 / 2022

Annual Environmental Report

www.re3.org.uk

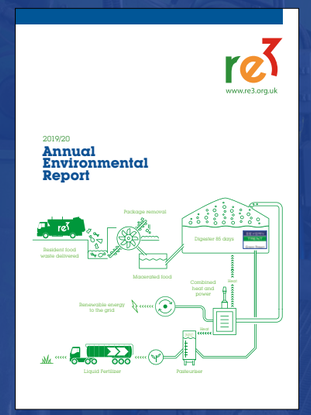
Contents

About re3 3
General Manager 4
re3 Innovation 5
Performance Monitoring 7
Health & Safety 9
Waste: Where does it come from? 10
Projects 12
Waste: How we deal with it 15
Waste: Storage and Transport 17
Waste: What happens with it? 19
Public Engagement and Media Appearances 22
Energy and Environment 24
Glossary 25











Annual Environmental Report

2022 is the sixteenth Annual Environmental Report (AER) published by re3, highlighting the activities of the partnership and how the waste received has been managed throughout the previous contract year.

About re3

The re3 partnership was established in 1999 with Bracknell Forest, Reading and Wokingham Borough Councils agreeing to work together to develop sustainable waste management facilities for the three local authority areas.

After securing a 25-year PFI (Private Financial Initiative contract), FCC Environment joined the partnership to deliver the contract on behalf of the councils. FCC Environment is one of the UK's leading resource and waste management businesses collecting waste and recycling from 1.3 million people in the UK; recycling 1.8 million tonnes per year and generating 117 mw of green energy from waste that cannot be recycled.

The individual councils, as unitary authorities, continue to be responsible for both the collection and disposal of waste. However, the contract stipulates how waste is to be treated in accordance with national legislation and regulations which govern recycling and diversion targets.

Local authorities have a duty to arrange for the collection and disposal of household waste (and if requested industrial and commercial waste). In addition, they must also provide waste collection facilities such as Household Waste Recycling Centres. The re3 Councils also provide glass bring back recycling facilities.

The re3 partnership offers multiple services across its two locations. At Smallmead, Reading, there is a MRF (Materials Recycling Facility (where any kerbside collected recycling is deposited). The recyclable goes through a mechanical sorting process which separates the waste into different categories, these are then baled (some types of material remain loose) and they are collected by off-takers for reprocessing. There is a transfer station, where any recyclables and refuse are collected and sorted in preparation for processing or landfill. Finally, there is the recycling centre where local residents within the Bracknell Forest, Reading and Wokingham council boroughs can take items to be recycled. At Longshot Lane, Bracknell, there is a transfer station as well as a recycling centre for residents to use.

The Annual Environmental Report is great way for re3 to showcase the highlights of the last year, how waste has been managed and treated and any changes that have occurred within the contract over the last contract year.

95.60%
Average recovery rate across the partnership

90%
Average rating of sites from user satisfaction survey

55,984
Tonnes sent to Lakeside EfW for energy recovery

9,458
Tonnes of glass collected for recycling from bring banks

176,830
Tonnes of contract waste

16,153
Lifts of re3 Glass banks

20,111
Green waste recycled as compost

20,015
Tonnes of food waste recycled

3,742
Tonnes of street sweeping collected

A message from the General Manager

Year sixteen of the partnership, and another record-breaking year! A diversion rate of 95.60%; the highest rate since the partnership began in 2006, demonstrating a 5% increase from last years previous record-breaking performance.

This record-breaking diversion rate demonstrates the success of the partnership in delivering continual improvement in terms of performance and environmental commitment. As we negotiated our way along the roadmap out of lockdown, focus was not lost, and through the difficult times we all faced, the staff across the partnership successfully continued the rollout of kerbside food waste collections. Rigid plastic recycling was introduced at the re3 recycling centre and increased items diverted for reuse, a pop-up reuse event happened which enabled us to further support our charity partner Sue Ryder, and a robotic picker was installed at the Smallmead MRF, the first of its kind in England. These new services and innovation all contributing to the success of the partnership and its performance and are testament to the commitment of the staff involved.

With restrictions being eased and many people returning to pre-pandemic ways of life, waste and recycling volumes and compositions have again changed, however, the partnership has been able to adapt the services provided to ensure a fantastic service has been delivered to all residents in the re3 area. And as we look to expand the trade waste service at the Recycling centres, local SMEs can also benefit from the services provided by re3.

The Annual Environment Report provides key information and data regarding the last contract year performance, providing insight into the services provided and projects undertaken, all of which underpin our core values of environmental commitment, forward thinking, people focus, and doing the right thing.



95.60%

landfill diversion in 2021 – the best performance since the partnership began in 2006

re3 Innovation

At the beginning of the contract year, Covid was very much still at the forefront of everyone's minds.

Some Government restrictions were still in place including the wearing of masks, social distancing and working from home was still recommended. However, there was hope as on the 12th of April, certain restrictions did begin to lift and we entered the final stages of the roadmap out of lockdown.

While Government restrictions were tightly in place, it limited our staff's ability to engage with customers using the recycling centres. Social distancing rules were applied and the physical assistance we were able to offer the public was reduced compared to pre-pandemic times.



The Click and Tip booking system continued to operate which ensured the recycling centres were never overcrowded, there were no queues blocking the roads to other local businesses and social distancing rules were always followed. This enabled our customers to deposit their waste, knowing all appropriate measures were being taken to make the experience as COVID safe as possible.

However, with the restrictions lifting this year, it allowed us to reintroduce assisting the public with their materials, and remove social distancing measures. The booking system continues to be a success and has been extremely beneficial in ensuring there is no overcrowding at the recycling centres, minimal queues, and that all members of public can receive the help they need when on site. In line with Government restrictions easing, more booking slots were made available to members of public to use the recycling centres.



Robot

At re3 we believe it is vital to be forward thinking and to adapt to new technologies and processes as we strive to minimise our environmental impact. Therefore, when Recycleye, an intelligent waste management start-up, invited us to join their Early Adopters' Scheme, we were thrilled to participate in bringing state of the art AI-powered equipment to our Material Recycling Facility (MRF) at Smallmead, Reading and in September 2021 we successfully installed England's first retrofittable AI-powered robotic waste picking system of its kind.

Recycleye, is a growing technology company which uses advanced machine learning, computer vision and robotics to commodify waste. We partnered with them to help improve the efficiency of our recycling process. The project originally began as a research and development project, but the robot is now fully installed and continually evolving in our MRF cabin.

The AI-powered robot is picking, segregating, and removing contamination from plastic streams, and forms an integral part of the overall MRF processing capabilities. The main objectives of the robot is to deliver consistent performance and ensure material purity of the streams it picks. Achieving an average of 55 successful picks per minute, the intelligent robotics picking system is powered by Recycleye Vision, an AI computer vision system which detects individual items of waste streams by material and is trained to pick various products on a priority basis. Sitting on top of the existing picking belt, the vision system gives full visibility of the waste streams which pass by underneath.

Through the Recycleye KPI dashboard and metrics we can easily identify exactly the amount and type of material the robot picks in a given period. This enables us to better understand the amount, type, and value of the materials on the picking belt in our MRF.

We have recognised that to ensure sustainability in future markets, material purity and plant efficiency will be key. So far, we have seen an increase of 12% in the identification of natural HDPE material and our end product has less than 1% contamination. This ensures that the material streams produced in our MRF, will be to the highest quality and when these materials are reprocessed, will create new pure products.

The installation of the robot in our MRF meant we had to integrate its operation and safety systems into our existing systems, which required intelligent design and engineering. Our engineering team combined forces with Recycleye and their partner FANUC to deliver bespoke guarding, safety and operating equipment and systems to ensure the robot has constant free movement without impacting operations in the MRF and while keeping all MRF operatives safe.

As waste streams and the processes around them are shaped by new legislations and goals, we believe the installation of the robot in our MRF has offered us a new world of possibilities and ways to adapt our waste streams and the processes involved.





RECYCLEYE

Social Value

Towards the end of this contract year, we have begun using a new platform which allows us to capture and showcase our community investment and social value activities and their impact. The platform puts a monetary value on your social, environmental and economic impact and helps identify keys areas where our organisation can create social value.

The platform uses 'Impact Evaluation Standard (IES)', which is a common list of activities that organisations undertake which have a significant social, economic or environmental impact on their communities. The IES then sets out a list of metrics, proxy values and guidance documents to help us estimate the amount of social value we are generating on our contract.

In total there are 122 metrics which are all fully aligned to UK Government's Social Value Model (PPN06/20). PPN06/20 is a 'Procurement Policy Note' which takes into account social value in the award of central government contracts. Out of these 122 metrics we have chosen around 25 'key' metrics to focus on. These metrics all fall under 5 main categories. These categories are: COVID-19 Recovery, Equal Opportunities, Economic Inequality, Climate Change & Wellbeing. All these metrics are fully auditable and traceable back to the Government metrics and they also follow guidance from HM Treasury.

For social value to be calculated, contracts must continuously record data which is attributed to their metrics. This data can be recorded on a monthly, quarterly, biannual, and annual basis. The data is input into an online platform, where it automatically calculates the amount of social value created for each metric using the predetermined proxy values. The platform can then generate a report, detailing the total amount of social value created for each contract since the first set of input data, as well as showing you how social value has increased over the duration of the contract.

Towards the end of the contract year, re3 began backdating and collecting data to input into the online platform in order to see how much social value we had generated since the beginning of 2021. Overall, we estimate that for the contract year of April 2021-March 2022, there was at least £15 million worth of social value generated by the re3 contract.



Performance Monitoring

Contract requirements

The contract is continuously monitored through 70 Key Performance Indicators (KPIs) by both contractor and client. Should the contractor's performance not meet the required standards, they can incur penalty points and financial penalties. If there are any KPIs which are consistently receiving penalties and failing to reach the required standards, they may be subject to formal review and if necessary, operational procedures may be altered to rectify the situation.

Some of the metrics measured using KPIs include waste management, disposal and transfer of waste, bring banks, health and safety practices and the efficiency of turnaround times for council vehicles visiting the facility to deposit material.







Daily and weekly Checks

Daily and weekly checks are used to ensure the contractor is performing to a high standard in key contractual areas and that all recycling centres are being maintained to the appropriate standard. These checks cover visitor numbers, bring bank capacity and environmental aspects such as windblown litter. These checks also enable the contractor to demonstrate compliance with the environmental permits for the facilities.

Monthly Reports

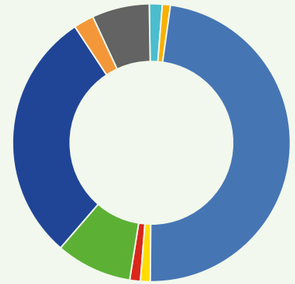
Through the creation and reviewing of a monthly report and 18 annual ones, by re3, areas for improvement can be identified easily and quickly rectified to improve service and operational performance.

Complaints

The re3 partnership uses a standardised format to record complaints. Within 3 working days all written complaints from members of public are acknowledged and a full written response is provided within 10 working days. This format enables us to improve our service through offering us a period of time to evaluate each complaint in depth, discuss ways to avoid the situation in the future and enforce changes to improve our service and to ensure a complaint of a similar nature does not happen again.

Between April 2021-March 2022 re3 received a total of over 100 complaints (up over 75%). In this contract year we have endeavoured to receive feedback from the re3 residents through the User Satisfaction Survey. This feedback has been logged as a compliment or complaint in line with contract requirements. A lot of the complaints were in relation to site regulations such as the booking system and restrictions on site as well as a some relating to site staff.

Complaints
April 2021 - March 2022



Turned away for trade waste	2
Site staff	54
Site layout	1
Site regulations	33
Bring banks	8
Turned away hazardous waste	1
Site safety	1
Access Queues	11
Site other	3
Other	114

Performance Monitoring
continued

Compliments

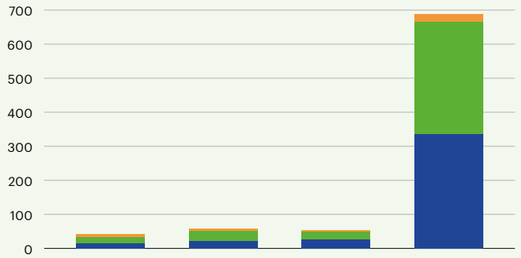
By analysing the compliments, we receive from members of the public it allows us to tailor our service to the needs and wants of the public, while also providing encouragement and a sense of accomplishment to staff members.

In the previous year we received a total of 57 compliments, this year however it has significantly risen to around 700 compliments, which is over a 990% increase! This year we have been overwhelmed with the positive feedback we have received. These compliments were almost evenly split between the two recycling centres, Longshot Lane and Smallmead. This record high number of compliments is a testament to the hard work of the re3 team and the dedication they have to, ensuring both sites are operated and managed to a high standard of customer service to meet the needs of the public.

Overall while the number of complaints has risen by over 75%, the number of compliments received has risen far more in the past year, over ten times the complaints increase. This can be attributed as a result of the re3 partnership, listening to residents and maintaining and running our recycling centres to a high quality.

This increase in compliments shows that by using the complaints framework we can identify areas that require improvement and implement change which ensures every visit to the re3 recycling centres are successful ones.

Number of compliments received 2018-2022

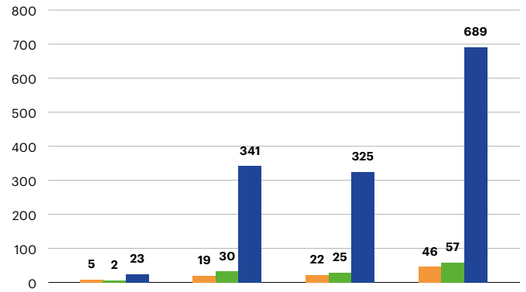




Compliment Category April 2021 - March 2022



Compliments Received Trends 2019 - 2022





Health & Safety

For re3, Health and Safety is of the utmost importance. In the last contract year, a total of 60 health and safety accidents and incidents occurred, involving staff, site users, and members of public and there were also 376 near misses recorded. The number of accidents has significantly decreased since last year by 56% (136 accidents were reported last contract year). Well established procedures, processes, and staff training are key to ensuring a safe environment for everybody on site. The continued use of the booking system, beyond the lifting of Covid restrictions has assisted with site safety in terms of controlling the number of members of public on site, therefore decreasing the risk of a near miss or accident occurring. There has been regular specific health and safety staff training, with health and safety on site being continuously monitored. While the behavioural safety training programme 'Because' is not new, it continues to be extremely successful in minimising the risk of near misses and accidents occurring, by continuing to build on the positive health and safety culture on site. During monthly 'Because' meetings staff have the opportunity to discuss and review all near misses and accidents that occurred during that month, which can identify measures to implement to prevent reoccurrence. The meetings and regular engagement provide all staff with the platform to bring forward their own ideas and initiatives that could help improve health and safety on site.

Environmental Safety

At re3 we take great pride in ensuring everything we do has minimal impact on the environment. In the past year there have been 19 environmental incidents, (7 of these being fire related incidents) across both the Smallmead and Longshot Lane sites. The environmental incidents include things such as oil leaks from vehicles, or waste materials being placed in the wrong containers. Fires have been an issue in the waste industry for many years and represent an obvious danger to human life, can pose a major environmental hazard and impose significant cost on a business through property damage, thankfully the fires experienced at re3 have been very small, and our well-trained staff have been able to easily extinguish them. At re3 we strive to minimise the risk of fires through our detailed Fire Prevention Plan, maintaining an extremely high level of health and safety on site, as well an ensuring our site rules detail clear instructions on what waste can be disposed of and how. There has been significant investment in fire detection, and extinguishing systems, which are installed at both facilities.





95.60%

The average recovery rate across the partnership reached 95.60%. This is the highest rate since the partnership began

Waste:
Where does it come from?

Waste collection

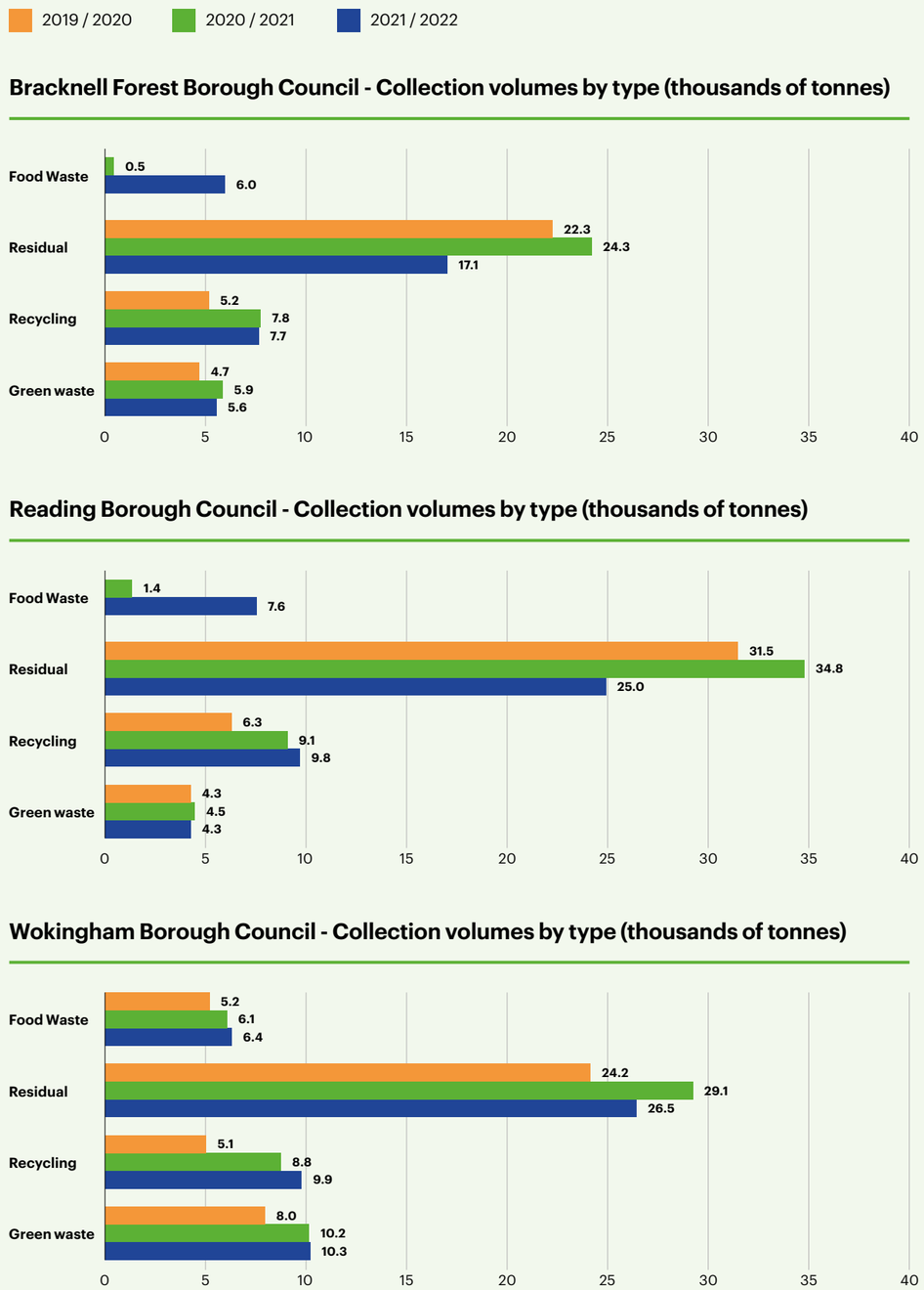
Each council operates a waste and recycling collection service. The councils have individual systems with slightly different collection methods, but the materials they collect for recycling are largely the same.

Recycling waste collection performance

From April 2021-March 2022 the total amount of contract waste was 176,830 tonnes. This figure is slightly down from last year's 180,629 tonnes (2.1% decrease). The previous contract year would have covered the majority of lockdown restrictions, meaning a lot of people who would have normally worked from an office, instead worked from home. This therefore increased the amount of kerbside waste collected. However, this contract year saw the lifting of all lockdown restrictions and many people returning to work, likely contributing to the decreased total amount of contract waste received.

Recovery Rate

This year we have an excellent recovery rate of 95.60%. This is the highest it has been since the contract began and is over a 5% increase on last years rate of 90.56%. This will largely be a result of the food waste collection being introduced into Bracknell Forest and Reading councils. The recovery rate is a measure of the total amount of waste sent for recycling, Energy from Waste, beneficial use, reuse and composting. Our figure this year showcases how year on year we are increasing the partnerships performance and minimising the amount of waste sent to landfill. It is worth noting that the implementation of a trial to recycle rigid plastics will have also contributed to this increased recovery rate as this material would have otherwise been sent to landfill.



Food waste

Just before the beginning of this contract year, all councils had successfully begun the regular weekly collection of food waste, which is why this year's food collection tonnage is significantly higher than previous years. The contract year of 2020-2021 saw 8,038 tonnes of food waste collected, however this year 20,015 tonnes were collected, a 149% increase. Along with the extremely effective roll out of the food waste collection service, some of the tonnage collected is likely attributed to the fact that during the start of this contract year many people were still working from home, so the household waste generated was higher than usual.

re3 food waste is stored in our transfer stations before it is transported to anaerobic digestion facilities in Oxfordshire. It gets broken down via anaerobic digestion. This process harnesses anaerobic microorganisms to break down biodegradable component of waste and as a result a biogas (methane) and compost-like-output (digestate) are formed. This biogas can then be captured and used to produce electricity. The plant produces 2.4mw of electricity which is enough to power 4,800 homes. The digestate can be used as a soil conditioner. It can help retains soils moisture and can improve conditions of low-quality soils such as soils found at closed landfill sites.

Street sweepings

Street sweeping operations occur in all 3 council boroughs with the street sweepings deposited at the transfer stations. It is then transported to either Grundons in Oxfordshire or Invixon in Cambridgeshire. This year only 3,742 tonnes of street sweepings was collected which is a 20% decrease on last years figure of 4,384 tonnes. By processing our street sweepings at these facilities, we can reduce our environmental impact through limiting and diverting away from landfill.

20,015

Tonnes of food waste collected between April 2020 and March 2021

149%

Increase in waste collected via the food waste service



20m

In the last contract year, 9,458 tonnes of glass was collected. That equates to almost 20 million wine bottles

Glass collections

The collection of glass bottles is an integral part of the re3 contract and with three council areas to serve, the service is regularly monitored and reviewed to ensure it is as efficient and effective as possible. The re3 contract has a total of 548 bottle banks (609 including the bottle banks at the recycling centre sites) at 135 locations throughout Bracknell Forest, Reading and Wokingham council areas. These banks were emptied 16,513 times during the contract year.

In order to manage and optimise our weekly glass collections service, we use a smart waste management cloud software called MOBA. It allows for the creation of collection routes, tracking and completion of these routes as well as the weight and location of each bottle bank. This system enables us review all data relating to the bottle bank collection service, identify any trends or issues, optimise the collection route and record any incidents on site that would disrupt the collection service occurring, such as access to glass banks be blocked or restricted, this enables us to maintain a reliable and efficient service.

From November 2021 residents were able to mix their glass bottles within the banks instead of being required to separate into specific green, clear and brown bottle banks. Our Glass bottles offtaker has a clever Glass specific Materials Recycling Facility (MRF) that sorts and separates the glass collected in our bottle banks, this ensures that the glass is sorted, graded and recycled at the Berryman recycling centre. This ensures the mixed glass collections are recycled whilst the mixed collections are running. The basis of this change was to make it easier for the public to dispose of their glass, and due to the fact some sites were consistently overflowing with a specific colour, while other banks at the same site would be nearly empty. When our team arrived onto site to empty the banks, they would notice only one of several banks would actually be full. By mixing the glass it stops the overflow of certain colours, meaning less collections are necessary at sites, and the potential for overflows in minimised. By reducing the number of collections, we can limit the time our trucks time spend on the road and reduce our environmental impact.

During this contract year we have collected 9,458 tonnes of glass from our bottle banks, which is a 7% decrease on the previous year's figure of 10,374 tonnes. This decrease is likely a result of lifting lockdown restrictions and the reopening of indoor and outdoor venues and events. However, this year figure is still significantly higher than pre-Covid figures which were around 6000-7500 tonnes of glass collected.



Projects

Reuse pop-up shop

Reuse is becoming an ever increasingly important part of people's daily lives, and topic of conversation, at re3 we try to limit our impact on the environment and move upwards on the waste hierarchy when processing waste. In October 2021, re3 held its very first pop-up reuse event, at Smallmead recycling centre. The event spanned over two days and gave hundreds of visitors the opportunity to purchase pre-loved items at bargain prices. While members of the public viewed the items on offer, they had the chance to purchase some hot drinks and cakes from our sustainable coffee bike. Items available for reuse were collected via the recycling centres.

At the event there was a wide range of items on offer which included electrical items such as TV's and lamps which had been PAT and function tested to ensure they were safe and working, household furniture, musical instruments, bikes, children's toys, records and Bric-A-Brac. The event was very successful, and many members of public visited the reuse shop and purchased items. The £453 profit made form the event was donated to the Sue Ryder charity, with whom we have worked with for several years now. Future events are being planned, as we expand our commitment to reuse through the re3 partnership.

Reuse Sue Ryder

The re3 partnership has been working with the Sue Ryder charity since 2011. Sue Ryder provides palliative and neurological care, bereavement support and training for health care officials and has been doing so since 1953. At re3 we are extremely proud to have partnered with such an important and compassionate charity.

On our sites there is a designated signed area where visitors can place items they wish to be donated to Sue Ryder. Staff will then inspect the items to ensure they are in good condition and meet the charities requirements. If the items do meet the requirements, they will be placed in our Sue Ryder storage unit where they will be stored until the charity comes to collect them. Items will then be taken and distributed between the charities shops and subsequently sold.

Another challenge of a year for Sue Ryder, coming out of a pandemic and striving to get all our retail shops back open and trading, but we made it thanks to our fabulous teams but also the incredible support of our customers and donors and our fantastic relationship with everyone at re3.

We have made over £8000 on the items you have kept for us and we have sold through our shops at Shinfield and Sandhurst. This has been much needed revenue and will make a difference to our service users who are going through one of the most difficult times of their lives. We provide 2.2 million hours of care every year, so this income that you have helped us raise will make a huge difference.

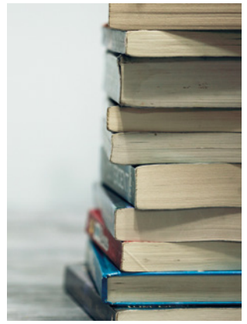
Our thanks to all of your team for all your support and much needed stock, your teams are a credit and it is so brilliant to know that we have your support every year – thank you!!"

Jane Bullen
Sue Ryder Manager









Precycle

The Precycle Group is a multi-material recycler that focuses on the re-use of materials entering the waste stream. Their goal is to collect items that otherwise would have been thrown away and find them a new home with owners who can benefit from them. At re3 the main items we collect for Precycle are books and Bric-A-Brac, bikes, DVD's and CD's.

At both sites we have a designated reuse area, where visitors can drop off items they would like to be reused. When it comes to books, Precycle and re3 use a system called Sell It Back. We use an app to scan the barcode of every book that is dropped off in the reuse area; if the app detects that there is demand for that particular book, it is then packaged securely with all other books to be collected by Precycle. These books are then taken to Precycle's facility where they will be sold online or provided to schools and other organisations.

Bric-A-Brac, cookery equipment, and similar items collected by Precycle are taken to their facility, sorted, graded, and then distributed to various countries around the world that require these essential items, such as Iraq and Pakistan.

Not only does this promote a more circular economy, something which is going to be necessary if we wish to limit our environmental impact, it also means that at re3 we are moving material up the waste hierarchy, a factor which will be key when trying to reach our environmental goals.

Rigid Plastics

Plastics generally are near 100% recyclable, but in the process of recycling they are sorted, cleaned, shredded, melted, and then remoulded.

Each time a plastic is recycled through this process its quality is degraded. The structural quality of the plastic decreases in tensile strength and viscosity, making it harder to process.

This last year, re3 began collecting Rigid Plastics, by working with a company called Haulaway Ltd who divert rigid plastics away from landfill to a UK based recycling centre that regrade, wash, grind or pellet the polymer to meet end of waste specification. Any forms of contamination will be sent to an Energy from waste (EFW) plant to produce energy from the waste.

260.64

In the Last Contract Year 260.64 Tonnes of Rigid plastics have been diverted from landfill

PRECYCLE GROUP

re3paint

Each year there is approximately 100,000 litres of paint (180 football pitches worth!) disposed of by re3 residents and an estimated 65% of it is still in useable condition. To tackle this problem and to limit the amount of paint being disposed of, we have the re3paint scheme. It is a community paint reuse initiative which allows residents to take home full or partially full tins of paints that were deposited by other visitors at our recycling centres for free. This scheme not only means residents can save money on home improvement projects, the paint which otherwise would have been thrown away can also be used in local community projects by appropriate community groups. By not having to dispose of the paint, the environmental impacts of paint disposal are reduced.

65%

It is estimated that 65% of discarded paint is still in usable condition. To prevent this waste, re3 has launched re3paint – a Community Paint Reuse initiative



6.157 Tonnes of paint

4,736 litres

1,266 containers



Trade Waste Scheme

Our trade waste scheme has been in place since 4th November 2019 and has been a great success. It offers local SMEs the opportunity to dispose of their non-recyclable waste at our recycling centres (for a disposal charge), as well as some recyclable material for free. The scheme allows for up to 100 local business to join. To be accepted onto the scheme, the businesses must carry a carrier waste-license, and have a business address within one of the Bracknell Forest, Reading and Wokingham Council areas, ensure they comply with all site rules when visiting and when they visit, they will be given a waste transfer note to hold onto.

Local businesses involved in the scheme include: Plumbing, window cleaners, landscapers, carpentry, building services, property management and painters and decorators.

Composting

re3 compost is available for residents to purchase at our recycling centres and is made from recycled garden waste of residents from Bracknell Forest, Reading and Wokingham boroughs (20,111 tonnes this contract year!) Garden waste deposited at our recycling centres gets transferred to Sutton Courtenay Composting site in Oxfordshire where it is processed and turned into compost. In order for the compost to be free from any weed, seeds and pathogens it must be sanitised which occurs when high temperatures of 65-80˚C are maintained for at least 7 consecutive days. The compost undergoes a 12- week long composting processes using open windrows. There are three stages: Screening, shredding and maturing. The compost is of high quality, peat-free and conforms to the requirements of BSI PAS 100 and the Compost Quality Protocol. Not only is our compost high quality at an affordable price (£4.00 per 40L bag or 3 bags for £11), but it is another initiative which promotes the circular economy and reduces our environmental impact.







re3cyclopedia

re3 launched re3cylopedia in 2018 and it is a free app available on the App Store and Google Play Store. The aim of the app is to increase recycling rates through educating residents on what can and can't be recycled and to make the processes as easy and simple as possible. Residents can search any household items to find out whether they can or cannot be recycled, either kerbside or at recycling centres. It also details what items can be composted and where the nearest bottle and textile bank is.

Residents can quickly find when the next kerbside collection will be, or renew a garden waste scheme.

In the last contract year, we have seen increases across our re3cyclopedia usage with a 10% increase from 10,000 to 11,000 users each month. The app also has increased in total users from 114,719 to 122,980 a 7% increase from the previous year. There has been a significant increase of 27% rise in downloads of the re3cyclopedia app from 20,002 to 25,552.

re3cyclopedia

Bracknell Forest Council | Reading Borough Council Working better with you | WOKINGHAM BOROUGH COUNCIL





Waste:
How we deal with it

Pre-Sorting	Large items which are not suitable for recycling are removed.
Trommel	Larger items are separated from smaller items through the use of a large rotating drum.
Disc Screen	Very small items which the MRF cannot process are removed as well as any glass.
Air Knives	4 types of plastics, 2 types of fibre and paper is removed the with combined use of air knives and sensor based optical sorting equipment.
Eddy Current Separators	Aluminium cans are removed using an electric current.
Over Band Magnet	Steel cans are sorted by this
MRF Picking Team	A dedicated team remove any items post mechanical stage that are not suitable for recycling (known as negative pick).

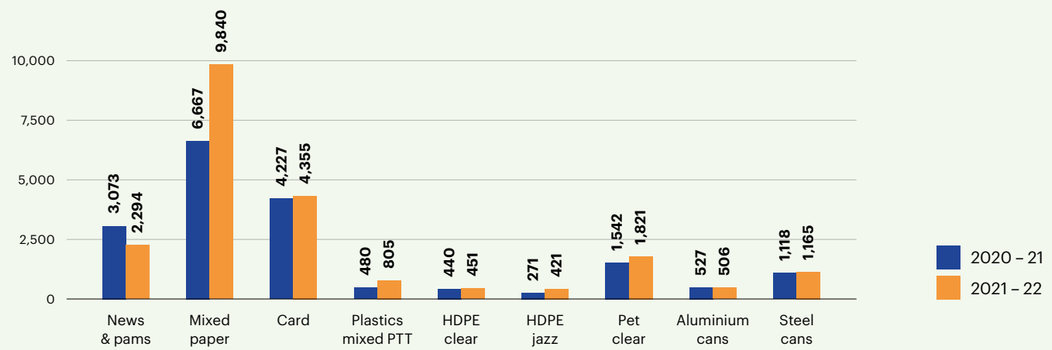
The MRF (Materials Recycling Facility)

All recyclable material from Bracknell Forest, Reading and Wokingham Borough council kerbside collections are transferred and processed in the Materials Recycling Facility (MRF) in Reading. Up to 60,000 tonnes of Mixed Dry Recycling (MDR) can be processed in our MRF each year. Through a mechanical process, detailed above, the MDR is separated into various recyclates: Newspapers and pams (paper), cardboard, cans, plastic bottles, plastic tubs and trays, paper, card, aluminium, steel cans and aerosols. Most of the materials are then bailed, inspected and sent to reprocessing companies to be turned into new material. Any materials which are not suitable for recycling are diverted to Energy from Waste plants to be use for Refuse Derived Fuel (RDF).

Regular sampling occurs in the MRF to ensure both the waste streams coming in and out are to a high enough quality.

This year we saw 27,450 tonnes of waste enter our MRF from Bracknell Forest, Reading and Wokingham Borough Councils kerbside collections. Overall, most recyclable materials saw an increase in collected tonnage, except for aluminium which slightly decreased from last year's figure of 527 to 506 tonnes and news and pams which also decreased from 3073 to 2294 tonnes. However, the other types of MDR remained similar to the data from the last contract year.

MRF recycling volumes by type (tonnes)



Cardboard, Mixed Paper, News & Pams (fibre)

This contract year has seen an increase in both the amount of mixed paper processed, but also the amount of card too. Mixed paper has seen a significant increase from 6,667 tonnes up to 9,840 tonnes, a 48% increase.

The demand for fibre products, particularly mixed paper, and cardboard, increased following various lockdowns around the world (a result of increased online shopping) and the demand this past contract year has still remained very high. This has all benefited us, as the increased volume of these materials being found within the MDR allows us to process larger volumes for onwards recycling.



Plastics

When MDR is processed by the MRF it is segregated into 4 types of plastic: Mixed pots, tubs, trays (PTT), HDPE Clear (milk bottles), HDPE Jazz (bleach bottles) and PET Clear (tubs and trays). The different plastics are subsequently bailed once they have been processed and then collected by off-takers to be taken to processing plants whereby they are made into new products such as food packaging, bags for life, and various other plastic products

Last year Jayplas were our only off-taker of plastics and remained our main one this year too. Jayplas has almost 40 years' experience in the plastic recycling industry and is the UK market-leader in post-consumer recycling. Not only do they collect, sort and process industrial quantities of a wide variety of plastics into feed stocks for packaging companies, but they also manufacture a diverse range of plastic bags, including refuse sags, bags for life, printed heavy duty retail bags and draw bags.

Aluminium and Steel Cans

Any steel or aluminium cans which enter our MRF are separated and processed into bales. The aluminium cans are taken by Novellis to be reprocessed and steel cans are taken by Morris Metals/AMG/Sims for reprocessing. Novelis is the largest world's largest recycler of used beverage cans, recycling more than 74 billion cans annually. They recycle the cans and use recycled material to make sheets which can be used in the automotive and aerospace industry. AMG has grown into one of the world's largest processors and marketers of ferrous and non-ferrous scrap metal. They sell a wide variety of excess, secondary and other useable grades of non-prime steel, including master coils, pup coils, sheets and slit coil as well as bundled shredded and sheared scrap metal. They also produce a number of special products like detinned steel bundles, coolant scrap and tin ingots.







Waste:
Storage and Transport

Monitoring Loads – MDR

To ensure any material we produce is of the highest quality we have implemented multiple measures, particularly fibre products. Any incoming material is subject to a visual inspection to ensure it is of a high enough quality to be mechanically processed.

When MDR is delivered to our MRF, we inspect each load for three components: Quality, contamination, and moisture. If the load is of poor quality and contains a large amount of contamination and moisture, it will be rejected. If the MDR contains too much moisture then it is unable to be recycled properly at the repressors, and it can cause processing issues within the re3 MRF, this can result in poor quality loads being produced and sent to off-takers, where it will be rejected. This has negative financial implications and will lower our recycling rate too.

We make sure quality control is conducted often and so for every 125 tonnes that comes through the MRF, we take a 60kg sample from it to ensure it adheres to a defined set of quality criteria and meets the requirements of the client and customer.

Transfer Stations

There is a transfer station located at both the Smallmead and Longshot Lane sites. Here waste is deposited and stored by local council collection vehicles and traders before it is taken away to be reprocessed or disposed of.

Longshot Lane, Bracknell

The Bracknell transfer station can manage up to 100,000 tonnes of waste and recycling per year. Bracknell and Wokingham collection teams deposit a range of waste here including garden, MDR and food. MDR is stored prior to onwards delivery to Smallmead MRF to be processed. Longshot Lane can also be used as an additional storage area, should Smallmead transfer station reach full capacity.



Smallmead, Reading

The Smallmead transfer station is significantly larger than the Bracknell one and can manage up to double the waste per year (200,000 tonnes). All 3 councils deposit their collected waste here as well including street sweepings, food, glass and mixed municipal solid waste (MSW).





Transport

Green Waste

The green waste is collected separately by each council from kerbside and taken to Smallmead or Bracknell transfer station for storage along with green waste from recycling centres

Green waste is transferred to Sutton Courtenay Composting Facility

Green waste undergoes composting processes and is eventually bagged up and brought back to Smallmead and Bracknell for sale to the public

General Waste

General waste is collected separately by each council from kerbside and taken to Smallmead or Bracknell transfer station

The general waste might be taken to Lakeside Energy from Waste (EfW) to produce renewable energy.

Or the general waste will be taken to a FCC transfer station before being transferred to FCC EfW to produce renewable energy or waste not suitable is transferred to FCC Sutton Courtenay landfill

Food Waste

The food waste is collected separately by each council from the kerbside and taken to Smallmead or Bracknell transfer station

It is transferred to Severn Trent Green Power Anaerobic Digestion Facility in Oxfordshire for processing

Biogas (methane) and a compost-like-output (digestate) are produced. Biogas can be used to create electricity and digestate can be used to improve poor soil conditions

MDR

MDR is collected separately by each council from the kerbside and taken to Smallmead or Bracknell transfer station for storage

It is then processed in Smallmead MRF

The processed material is collected by off-takers for reprocessing into new material

Waste:
What happens with it?

Spot Market Audits

At re3 we recognise that once waste has left our site, it's not the end of that waste's story. Monitoring and auditing the end destinations of waste is an essential role of managing the re3 partnership. Regular desktop and site visit audits are conducted at all of the facilities that receive our waste and recycling.

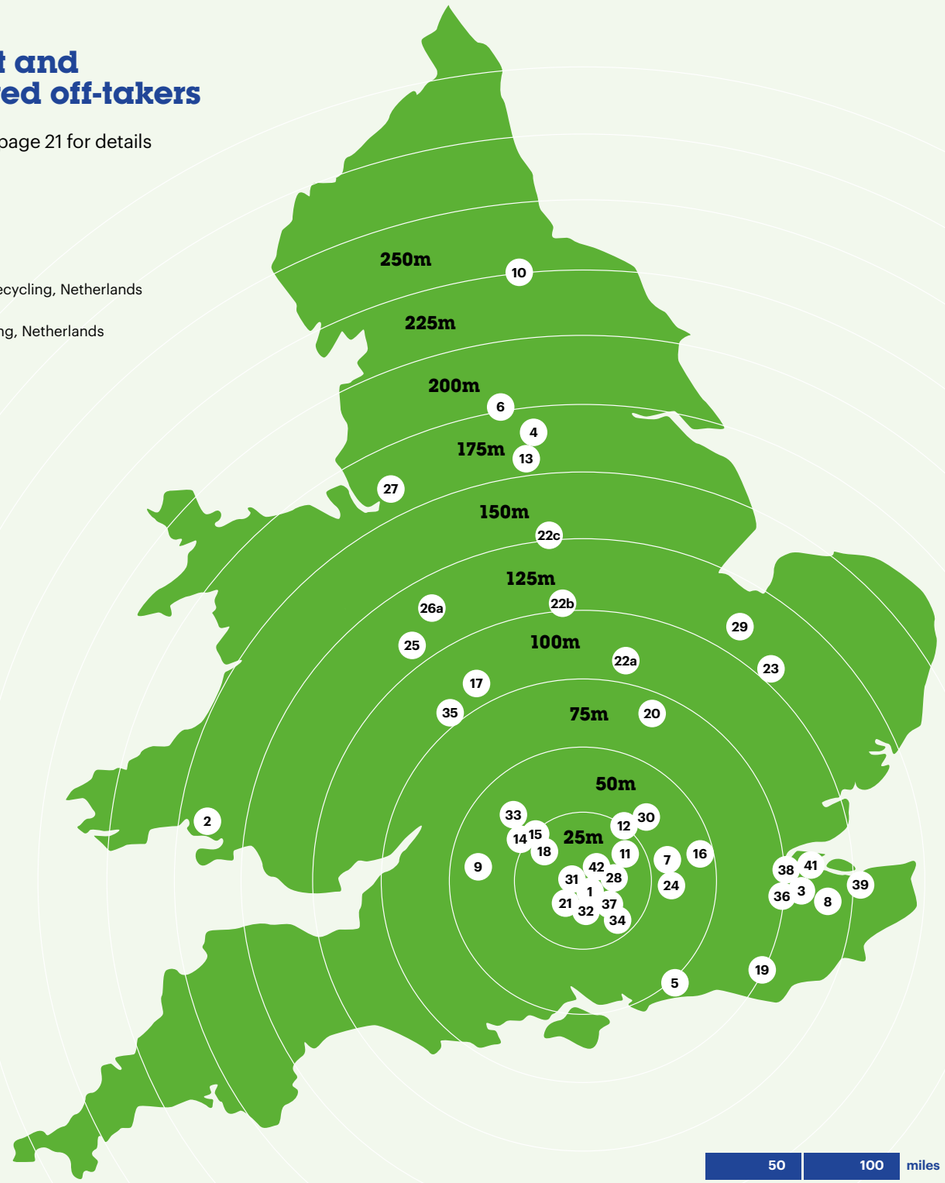


Current and approved off-takers

See table on page 21 for details

26b Newport Recycling, Netherlands

40 VG Recycling, Netherlands



Lakeside Energy from Waste (EFW)

An energy from waste plant (EfW) is a waste management facility that combusts wastes to produce electricity. It is an alternative waste management strategy which not only diverts waste from landfill but also creates renewable energy to power local homes and business. Waste is burnt, which in turn heats water, this water turns to steam which drives a turbine to generate electricity.





In the contract year, Lakeside has processed 396,158.48 tonnes of waste, of which re3 contributed 55,984 tonnes. The waste we sent to Lakeside EfW included:

- **Municipal solid waste (MSW) – Kerbside collected household waste that has arrived at site in refuse collection vehicles.**
- **Non-hazardous commercial and industrial dry wastes and industrial dry wastes**
- **Anything that cannot be processed in our MRF**
- **Any other non-hazardous waste that is combustible**

To ensure the processes in EfW's have a minimal impact on the environment their emissions are monitored and checked regularly by the Environment Agency and all gases created during the combustion process are treated before they are released through the stack.

The recovery rate across the re3 partnership area for the 2021/2022 period was 95.60%. The recovery rate is a contractual measure of the total amount of waste sent for recycling, Energy from Waste, beneficial use, reuse and composting. This demonstrates a further year on year trend of increasing the partnership performance.



55,984

During the previous contract year, the Lakeside Energy from Waste facility processed over 396,158.48 tonnes of residual waste. 55,984 tonnes of this was sent directly from re3



Off-takers

No.	Company	Market	Postcode	Miles from Smallmead	Miles from Longshot Lane	End Market
1	**A1**	Car batteries, non-ferrous metal wire/copper & scrap ferrous metal	RG41 4SP	7	10	UK
2	**AMG**	Steel cans	SA15 2HD	161.1	169	UK
3	**AP Concept**	Card (baled)	ME19 4YT	73.8	62.8	UK
4	**Berrymans**	Glass	WF9 3NR	202	200	UK
5	**BMCY**	Ink cartridges	BN17 7QU	71.4	55.8	UK
6	**Brooksight**	Gas cannisters	LS25 INB	223	221	UK
7	**Calor Gas**	Gas cannisters	SW18 1EG	41.3	31.4	UK
8	**Countrystyle**	Plasterboard and wood	TN27 0RU	111	92.6	UK
9	**Crapper and Sons**	Wood	SN4 8DW	50.7	58.8	UK
10	**Credential Environment**	Tyres	DL5 6DX	277	271	UK
11	**Ecobat**	Household batteries	WS10 8JR	82.8	71.8	UK
12	**DS Smith**	Card (baled) & mixed paper	ME10 2TD	97	79	UK
13	**Ekman Recycling**	Card (baled)	NW9 6LH	47	42.5	Germany
14	**FCC Blackburn Meadows**	Chemicals & paint	S9 1HF	188	186	UK
15	**FCC Sutton Courtenay Composting Facility**	Green waste	OX14 4PW	22.6	42.9	UK
16	**FCC Sutton Courtenay Transfer Station**	Wood	OX14 4PW	22.6	42.9	UK
17	**Flogas**	Gas cannisters	RM13 8UH	82.8	71.8	UK
18	**Grundons**	Street sweepings	OX10 6LX	16.5	25.6	UK
19	**Haulaway LTD**	Rigid plastics	BN27 3WA	99.2	88.2	UK
20	**Invixon**	Street sweepings	PE19 5UH	97.1	92.5	UK
21	**J Mould**	Hardcore & soil	RG30 3XN	13.9	4.6	UK
22a	**Jayplas**	MRF plastics	NN18 9EX	105	107	UK
22b	**Jayplas**	MRF plastics	LE11 5ST	127	134	UK
22c	**Jayplas**	MRF plastics	DE55 2DT	162	152	UK

No.	Company	Market	Postcode	Miles from Smallmead	Miles from Longshot Lane	End Market
23	**Living Fuels Ltd**	Cooking oil	IP26 4JQ	134	132	UK
24	**Mercury Recycling**	Fluorescent tubes	CR0 0XZ	56	45	UK
25	**Morris Metals**	Steel cans	TF10 7NB	147	155	UK
26a	**Newport**	MRF plastics	TF10 7NB	200	204	UK
26b	**Newport**	Card (baled), card (loose), mixed paper	TF10 7NB	1,090	1,088	Netherlands, Germany and UK
27	**Novellis**	Aluminium cans	WA4 1AP	193	191	UK
28	**Oakleaf**	MRF rejects	TW19 6AF	28.3	20	UK
29	**Palm Paper**	News and pams	PE34 3AL	139	132	UK
30	**Pearce Recycling**	Card (loose) & mixed paper	AL4 0JY	52.1	47.6	UK
31	**Precycle**	Books/media, bicycles, Bric-A-Brac, textiles/ shoes & WEEE (Small)	RG30 1LB	3	13	UK
32	**Select Environmental**	Asbestos	RG2 0QX	1.1	11.8	UK
33	**Severn Trent**	Food waste	OX7 4EB	56.6	64	UK
34	**Sims**	Fridge/freezers & WEEE (large)	GU46 6ED	16	10	Europe
35	**Slicker Recycling**	Oil	DY13 9BZ	109	117	UK
36	**Smurfit Kappa**	Card (baled & loose)	ME6 5AX	79	69	UK
37	**Sue Ryder**	Bric-A-Brac	RG2 8HA	134	147	UK
38	**SWEEP Kuusakoski**	TV's/PC's & WEE (small)	ME10 2QB	88.9	78	UK
39	**Synergy**	Gas cannisters	CT4 7BA	104	95.7	UK
40	**VG Recycling**	Card (baled & loose) & mixed paper	Netherlands	405	394	Netherlands and Vietnam
41	**Viridor**	MRF plastics	ME2 4NF	86	75	UK
42	**WN Thomas**	Car batteries & non-ferrous metal wire/copper	SL1 3QR	22	19.4	Exported to Spain & USA

Public Engagement and Media Appearances

The last contract year, we have had multiple media appearances and public engagement campaigns. One of the biggest public engagement campaigns was for our pop-up reuse shop at Smallmead, Reading. Information was supplied to the residents via re3 social media accounts, the re3 website and local newsletters. The aim of the campaign was to encourage residents to come along to the Smallmead site and donate reusable items, prior to the event and then on the day of the event, residents could come to site, browse our items, and buy any that they wanted.

There was also a mixed glass recycling campaign, the aim of this was to inform residents that all glass recycling can now be recycled together at bottle banks and does not need to be separated.

To achieve this, there was a press release as well as social media posts and adverts in local resident's magazines.

At the end of the contract year, we had a food waste campaign which was aimed towards all 3 councils with a focus on reducing food waste and avoiding contamination in food bins. This campaign coincided with Food Awareness Week in March.



User Satisfaction Survey

The re3 user satisfaction survey aims to provide valuable information on the recycling centre sites visitor's and how they view the service and what we can do to improve to ensure they have a successful visit to site.

The focus of the survey this year was to gain an understanding of how the booking system affects the waste service for residents, factors which are important to assist residents when recycling, current levels of satisfaction on different aspects of the site and how safe visitors feel when visiting site.

In order to get the survey out to local residents the council utilised the booking system to ask people to take part in a survey. Overall, there were 2862 surveys completed with 1383 of those being Smallmead users and 1479 being Longshot Lane users. This year's survey was slightly shorter than before, with the hope that shorter questions would result in higher engagement levels.

Overall, the results from the survey were very positive and most residents were very satisfied with both sites, the staff and services provided. Smallmead received an overall higher rating than the year previous. It saw its rating increase from 89% in 2020-2021 to 91% in 2021-2022. Residents using Longshot Lane were equally as happy as last year with the score remaining the same at 88%.

Another statistic captured was how safe visitors felt on site and the results were very positive. At Smallmead, 96% of visitors felt safe while visiting site which was an increase on the last year's previous score of 94% and Longshot Lane also received a higher safety score of 97% compared to last year's score of 94%, showcasing how site safety has improved since last year.

Overall residents rated Smallmead, Reading as good/very good

91%

Overall residents rated Longshot Lane, Bracknell as good/very good

88%

Media Coverage

Website

In the contract year April 2021-March 2022 the re3 website was visited 926,315 times, by 303,626 users, of which 292,173 were new users. It is likely many of these users were visiting the site to book a slot to deposit their waste. You can access this booking system through the re3cyclopedia app and the re3 website. 292,173 new users signed up to use the website. 598,591 sessions were logged on the website and the average session duration lasted 44 seconds.

Bounce rate is determined by a percentage that represents the number of visitors who enter the site and then leave rather than continuing to view other pages. That means about 62% leave the site after visiting the first page while about 38% will continue to view other pages within the re3 site.



Users
303,626

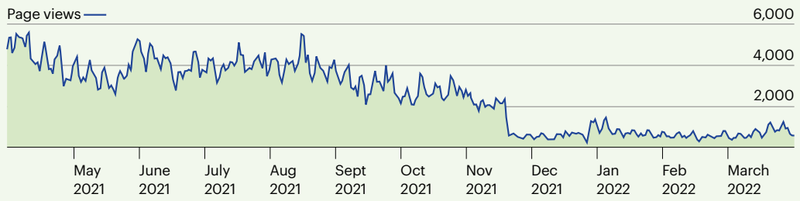
New users
292,173

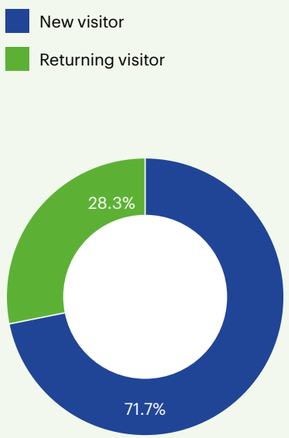
Sessions
598,591

Avg. session duration
00:00:44

Bounce rate
61.80%

Page views
926,315





Energy and Environment

707k KWh

The Smallmead site used 707,108.16KWh of energy with a monthly average of 135,405.4KWh

151k KWh

Longshot Lane used a total of 151,181.1KWh, with a monthly average of 23,258.64KWh

Energy Consumption

At re3 we are committed to reducing our carbon footprint wherever possible and so ensuring our energy consumption is efficient and minimal is of the utmost importance. Therefore, we continuously monitor it to see if there is room for improvement at both sites. We already have no Scope 2 emissions (indirect GHG emissions associated with the purchase of electricity, steam, heat, or cooling) due to us using 100% renewable electricity.

At Smallmead, we have an office block, recycling centre, transfer station and MRF, which used a total of 707,108.16KWh last year and had a monthly average of 135,405.4KWh.

Longshot Lane has an office block, outdoor recycling centre and a transfer station, which used a total of 151,181.1KWh and had a monthly average of 23,258.64KWh.

The MRF at Smallmead uses the highest amount of electricity due to it running for a minimum of 4 days per week, as well as nights. Often there will be additional shifts to make up for lost time due to mechanical failures, bank holidays or to deal with an increased demand.

Landfill

The guiding principle when managing waste is the waste hierarchy. At the bottom of the waste hierarchy, disposing of waste can be found as it has the largest environmental impact associated to it. When managing waste our aim should be to first reuse, if not then recycle or recover. However, some waste cannot be reused, recycled, or recovered and therefore must be disposed of to landfill. This type of waste is known as mixed municipal solid waste (MSW). When MSW is deposited in the landfill it is compacted, spread about and finally covered. Should any waste from re3 need to be disposed of in such a way, it will go to FCCE (FCC Environment) Sutton Courtenay Landfill in Oxfordshire. Since the beginning of the partnership, we have seen the amount going to landfill significantly reduce as we strive to minimise our carbon footprint wherever we can.

Company Initiatives and Values

The re3 partnership continues to be committed to reducing energy consumption at both Longshot Lane and Smallmead. FCCE Berkshire, who operate and manage the sites on behalf of the re3 partnership are fully accredited with ISO 50001, 45001, 14001 and 9001 certifications. In addition to this FCCE were awarded 5 stars by the British Safety Council and a Sword of Honour for its commitment to health and safety, as part of this process the re3 sites were audited, and their great work helped FCCE achieve this prestigious award. We also adhere to the FCC values and behaviours which include the following four areas. These areas are key in order for us to reach our goals:

FCCE were awarded 5 stars by the British Safety Council and a Sword of Honour for its commitment to health and safety

Environmental Commitment
Ensure what we do is environmentally and socially responsible

People Focus
Value, reward and motivate our team

Forward Thinking
Embrace change and prepare for the future

Doing the Right Thing
Secure our future by being better at what we do

In addition to this we also adhere to the FCC values and behaviours which include following four areas that are key for forward thinking regarding our future.

Glossary

Air Knives
Air Knives direct pressurized air onto the surface of objects, usually as they move along a conveyor belt. They will separate the waste depending on size and weight

Anaerobic Digestion (AD)
Anaerobic digestion is a sequence of processes by which microorganisms break down biodegradable material in the absence of oxygen. The process is used for industrial or domestic purposes to manage waste or to produce fuels.

Average Recovery Rate
This is a contractual measure of the proportion of contract waste diverted to Energy from Waste, Recycling, Beneficial Use and Composting.

Bring Bank Sites
An alternative name for the community recycling sites provided by the local authority/contractor and charities, for convenient public access to recycling services. These sites often consist of different recycling banks for different materials.

BSI PAS 100
The British Standards Institution's 'Publicly Available Specification for Composted Materials' (PAS 100) sets a minimum compost quality baseline, upon which composters should build as appropriate to the product types and markets targeted.

Certifications
ISO 50001 – Energy Management
45001 – Occupational Health & Safety
14001 – Environmental Management
9001- Quality Management

Composting
A natural process to recycle organic material into a fertilizer used to improve soil.

Contamination
Contamination occurs when non-recyclable items are placed in a recycling bag or bin, making it more difficult to process at the Materials Recycling Facility.

Contract Waste
Contract Waste is defined within the contract but broadly covers household waste collected by the councils or their agents, waste brought to and deposited of at the Recycling Centres by householders and industrial and commercial waste disposed of via the transfer station.

Disc Screen
The disc screen consists of rotating discs for separating wastes through the clearance between the discs depending upon the size and the weight of the waste while the wastes move on the rotation discs.

Environment Agency
The Environment Agency is a non-departmental public body, established in 1995 and sponsored by the United Kingdom government's Department for Environment, Food and Rural Affairs, with responsibilities relating to the protection and enhancement of the environment in England

Eddy Current
A tool used in a Materials Recycling Facility (MRF) to separate aluminium cans.

Energy from Waste (EfW)
Energy from Waste is the application of sound proven combustion engineering principles to a variety of technologies which reduce and sanitise the residual municipal waste fraction, after recycling and composting has taken place, in order to recover energy.

FCC Environment
(Formerly Waste Recycling Group (WRG)) Parent company of re3 Ltd. FCC Environment is one of the leading waste management services companies in the UK and the fourth partner of the re3 partnership.

Kerbside Collection
Kerbside collection is a service provided to households, typically in urban and suburban areas, of collecting and disposing of household waste and recyclables.

Landfill Site
Designed, controlled, and managed disposal sites for municipal solid waste spread in layers, compacted to the smallest practical volume, and covered by inert material applied at the end of each operating day.

Materials Recycling Facility (MRF)
A recovery operation that separates mixed materials into their individual streams before transferring them to repressors.

Mixed Dry Recycling
Dry Mixed Recycling is a broad term used to describe a range of different types of clean recycling waste that can easily be reused or reformed into other goods, products, or broken down into their core materials.

MRF Picking Team
Members of staff whose role is to remove items of contamination from the mixed dry recyclables on the conveyors in the Materials Recycling Facility.

Municipal waste/ Municipal Solid Waste (MSW)
Municipal waste comes under the control of the Local Waste Disposal Authority and includes household waste and other wastes collected by a Waste Collection Authority or its agents.

Off-taker
The party who buys the product being produced by the project or who uses the services being sold by the project

Overband Magnet
Overband magnets are suspended over conveyors in the MRF to separate steel cans

Recyclables/Recyclate
Materials that still have useful physical or chemical properties after serving their original purpose and that can, therefore, be reused or remanufactured into new products.

Recycling Centre
Recycling centres are provided as a place where residents can safely dispose their household waste and recycling.

Reprocessing
Series of operations that transform industrial materials from a raw-material state into finished parts or products

Social Value
Social Value measures the positive value businesses create for the economy, communities, and society.

Trade Waste
Trade waste refers to any form of industrial waste or materials that are leftover when something is built, manufactured or service is provided

Transfer Station
Transfer Stations are where local waste collection vehicles and trades people disposing of commercial trade waste deposit their waste. The waste is held here prior to being bulk loaded into a transport vehicle and sent for reprocessing.

Trommel
The trommel screen is used to separate materials by size. The rotating drum rolls larger pieces over to allow all fine material to flow down and through the trommel screen plates.

Waste Hierarchy
The "waste hierarchy" ranks waste management options according to what is best for the environment. It gives top priority to preventing waste in the first place. When waste is created, it gives priority to preparing it for re-use, then recycling, then recovery, and last of all disposal (e.g. landfill)

WEEE
Waste Electrical and Electronic Equipment

www.re3.org.uk

re3 Ltd
Smallmead Waste Management Park
Island Road
Reading RG2 0RP

T: 0800 988 9023
E: re3admin@fccenvironment.co.uk

www.re3.org.uk

Bracknell Forest Council | Reading Borough Council Working better with you | Wokingham Borough Council | FCC Environment

The information is provided by re3 Ltd, every care has been taken to ensure the accuracy and reliability of the contents.

Designed by www.cubicstudio.co.uk