

GOODWOOD SUSTAINABILITY

2019 ANNUAL REPORT



GOODWOOD



FOREWORD

Our family have been custodians of the land for over three hundred years and are responsible for preserving Goodwood. Today we are committed to realising innovative, sustainable solutions that will not only ensure future generations may enjoy the estate for many years to come but also that Goodwood may continue to positively impact the local community and economy.

It is imperative that we work towards becoming a sustainable, carbon positive estate; changing climatic conditions coupled with the worldwide impact of 2020's pandemic have made this need clearer than ever. During the global pause in activity, we've accelerated our sustainability strategy, redoubling resilient practices that allow us to protect the estate's natural capital. This has included a £6m investment in biomass energy, generated by the Estate's own sustainable resources and waste.

We've continued to develop existing initiatives – replanting natural woodland and rewilding areas to increase biodiversity; maintaining a traditional organic farming system to grow wholesome food and providing the perfect conditions for natural flora and fauna to flourish. We have also prioritised making our events as eco-friendly as possible with careful management of water use and waste.

As well as serving the environment, we consider the estate to be a key part of the local community, providing employment, charitable support, educational opportunities and recreational enjoyment. Goodwood's considerable positive contribution to the local economy has been confirmed by a recent economic impact study and our sustainability plans will help to safeguard this value – and our ability to increase it.

This is the first Goodwood Sustainability Report to set out the aims and ambitions for the next 100 years, sharing the successes and challenges in striving to become one of the most sustainable estates in the world.

The Duke and Duchess of Richmond

EXECUTIVE SUMMARY

This report looks back on 2019 and the achievements Goodwood made in moving its sustainability strategy forward, implementing change in earnest.

Goodwood aims to become one of the most sustainable Estates in the world. To deliver that goal, progress has been made across the six focus areas of the strategy. Whilst there is much still to be done, this first annual report highlights the depth of engagement and activities across these areas, namely carbon, water, social value, business operations, resources and waste and natural capital.

Setting up a sustainability steering group was crucial in engaging the wider business and for manager's to own, drive forward and deliver the plan in their business area. This enabled sustainability to become embedded into the fabric of the Estate and awareness across the teams grew. Sustainability progress was reported at both senior management meetings, board meetings and team meetings. The teams involved are highly engaged and passionate about a subject so important to the future of the Estate.

One of the biggest focus areas for 2019 was around carbon, where the measurement of the Estate's Scope 1 and 2 and a significant part of Scope 3 emissions have been recorded. These identified the impact from visitor travel to the Estate and the creation of the Visitor Offset Scheme, where visitors are invited to offset the impact from their travel contributing to the carbon positive projects such as tree planting, rewilding and hedgerow planting across the Estate. Most importantly, following a study the Estate will be making an investment in 2020/2021 of £6m in a new biomass facility to provide both hot water and electricity for the Hotel, dairy and Goodwood House using waste from the Estate.

Water use on the Estate has altered significantly over the last 5-10 years with clearly defined wet and dry seasons. As land managers, water is a critical resource. We have been proactively changing the grasses across our golf and grounds and the aerodrome to plant drought resistant strains that require less water in the summer dry season.

The Goodwood water supply network is gradually being upgraded to reduce the leaks across the system. We have retained the services of Arup, they have carried out an

initial study to assist us in creating a water management plan which we will progress with them throughout 2020/2021.

For many years, the Estate has supported local and national charities, raising money through staff initiatives as well as during the World Class Events. A total of £359,173 was donated to over 5 charities during 2019, staff also contribute to charities through volunteering days helping charities this year in their marketing and website design. The Goodwood Education Trust continues to provide a valuable resource to over 2827 young people and planning has granted and in place for the new Education Centre, planned to open in 2020. 2019 saw over 1 million visitors to the Estate to enjoy the surroundings, facilities and events that the Richmond family provide.

The Estate embeds sustainability into the heart of its operations. Renovation projects reach award winning design standards. Our events continue to be certified to the International ISO20121 standard for Sustainable Event Management. Staff development programmes ensure the staff are able to reach their potential, winning industry awards. The Goodwood Chef's Academy continues to grow in success, in 2019 providing the first female to win the Sussex Young Chef of the Year. Underpinning the importance of the staff, 2019 saw the launch of the One Goodwood programme, the internal staff health and wellbeing initiative with over 975 bookings being made by staff.

A significant focus in 2019 was on the consumption of natural resources and efforts to minimise the waste impact across the Estate have been put in place. Initially focusing on the major events where reduction schemes such as the reusable cup initially trialled at the Racecourse and then being adopted at all motorsport events. Water refill stations have been the norm and whilst the Goodwood water provision increases, the waste from single use plastic bottles significantly decreases. Recycling facilities were put in place at the events bringing the cleaning and waste contractors together to design and deliver a successful system. Work continues in these areas to reduce the waste from the events.

Underpinning the character of Goodwood is its natural capital. 2019 was no exception to the continued work the Estate does to maintain and increase its natural capital value. This year saw the start of the largest tree planting scheme in the south east of England with 55,000 trees planted in 2019 and a further 23,000 planned for the 2020 season. Other projects include hedgerow planting and areas are gradually being rewilded. All these projects have a significant carbon capture potential. The farm continues to achieve the Soil Association "organic" certification and the management of the golf courses achieved the Golf Foundation's GEO sustainability certification for club and course management.

2019 has set a strong foundation for the Estate to drive towards its goal of being one of the most sustainable Estates in the World and the development and delivery of the strategy has enabled new partnerships to be formed as the Foresight Group became the Estate's first corporate sustainability partner at the end of 2019.

1

INTRODUCTION

For over 300 years the Goodwood Estate has continually demonstrated its responsibility to the land and local community. Since the first Duke of Richmond came to Goodwood in 1697, the estate has adapted to changing socio-economic and natural environmental conditions. The estate will continue to adapt to ensure its enduring resilience.

Goodwood recognises its future is entwined with authenticity, sustainability and the protection of its natural capital. To this end, the single long-term threat to the estate is that of a changing climate. Driven by human-induced carbon emissions from ongoing worldwide industrialisation and the increasing demand from the rising global population on a finite sum of resources, the effects of climate change are numerous.

It is said that climate change will bring more extremes of weather, leading to drought, flooding and storms. In the UK, we are already seeing these effects in full force, with harsh winter storms and prolonged summer droughts affecting both the human and natural environments. Spikes of carbon in the atmosphere are linked to mass species extinction. We are witnessing significant declines to key pollinating species, a critical ingredient for agricultural production; atmospheric carbon levels will without doubt have a major impact on the productivity of the land. Air pollution is also affecting human health in the UK and beyond. The rising population requires more food and water, and the linear consumption is exhausting the world's supply of raw materials, including clean water. Goodwood is directly affected by these factors.

While the changing climate is a global issue, Goodwood recognises its responsibility as a world-famous brand to lead with positive actions, demonstrating to others what it means to be a truly sustainable estate, both in the work of the individual and the business as a whole.

The management and development of the estate embodies the definition of sustainability, meeting the immediate needs of the business without compromising the needs of future generations. Goodwood is committed to leading by example.

There is an increasing awareness, particularly amongst younger generations, the impact that the global drive for continued economic growth is having without sufficient regard to the climate or the environmental impact of this growth. As a result, they expect more from businesses when spending money with them. Therefore, long-term sustainability will depend on Goodwood's understanding of and reaction to these changing demands.

Goodwood's Sustainability Strategy sets out the aims and ambitions for the next 100 years, underpinned with action plans that align to the estate's business planning timescales.

This is the first Goodwood Annual Sustainability Report to share both the successes and challenges of adapting to these social and environmental changes and striving to become one of the most sustainable estates in the world.

The Goodwood Estate

Goodwood's 12,000 acres provide a range of diverse enterprises, from organic farmland, forestry and golf courses to the racecourse, motor circuit and aerodrome, as well as residential buildings, tenant farmland, farm buildings, offices, Goodwood House and the Goodwood Hotel. The activities can be seen in Figure 1.



FIGURE 1 ACTIVITIES ACROSS THE GOODWOOD ESTATE

Developing the Sustainability Strategy

During 2018 Goodwood set out to develop an estate-wide Sustainability Strategy. A series of workshops were carried out to identify the priority areas and the vision for the strategy, and to set clear targets. Sustainability is not a new concept to Goodwood – the estate has always striven to run the business within appropriate social and environmental thresholds.

A clear starting point was to bring all the existing initiatives together, then to build on them while sharing the achievements to inspire others to follow.

To guide the development and implementation of the strategy, a sustainability steering group was established, with representatives from different areas of the business. Specialist support in the development of the strategy has enabled our staff to understand and deliver their programmes, taking into account our key sustainability priorities.

Our 2030 Goal is to Become one of the Most Sustainable Estates in the World

The Sustainability Strategy is underpinned by Goodwood's core values, which define the ethos and heart of the business. These four very distinct values, which unite all areas of the business, are:

- The Real Thing: always be inspired by Goodwood's heritage
- Derring Do: daring to surprise and delight
- Obsession for Perfection: striving to do things even better
- Sheer Love of Life: sharing our infectious enthusiasm

Goodwood is clear that the Sustainability Strategy, the actions taken and the results communicated must be authentic, credible and drive real change.

In 2015, the United Nations Sustainable Development Goals (UN-SDGs or Global Goals), supported by 193 countries, provided a vision for a fairer, more sustainable world. Similar support has been shown for the 2015 Paris Agreement, where global leaders made history in recognising the real threat posed by climate change. Goodwood has the ability to address many of the Global Goals. Through the delivery of the Sustainability Strategy, Goodwood will take on its many challenges and showcase how a global brand can truly contribute to society.



2 OUR SUSTAINABILITY PRIORITIES

The Goodwood Estate's Sustainability Strategy provides the overarching ambitions across six key priority areas, and the framework for both existing and future initiatives.

Goodwood was already engaged in sustainable practices, but this strategy facilitated a stocktake of what is important to Goodwood and its stakeholders. This comprehensive approach will maximise the opportunities presented.

In taking a long term approach to the sustainability of the Estate, Goodwood is investing in studies including but not exclusive to, our economic impact, land management, water preservation, carbon and waste management and farming of the future.

The Sustainability Strategy has utilised the framework provided by the UN Sustainable Development Goals to ensure that current global sustainability issues inform the priority topics, objectives and targets. The strategy also takes into account changing societal expectations.

The strategy is supported by a series of detailed delivery plans, which will form an integral part of the estate's business planning cycle.

Priority	Objective	Progress Highlights in 2019
<i>Carbon</i>	To be net carbon positive	<p>In 2019, we set out to develop a basic carbon footprint of the whole estate based on 2018 data. Targeting 63% of our total fuel consumption across the estate, we trialled recycled, low carbon fuels; solar hybrid, and hydrogen fuel cells as power sources for our major events. Thus, we formed a concrete plan to reduce emissions by 80% in 3 years.</p> <p>We have built a credible carbon reduction plan to 2030, completed our Energy Saving Opportunities Scheme (ESOS) report and conducted an estate-wide review of renewable energy options. In 2020/21 the Estate will be making a £6m investment in a new biomass facility to provide both hot water and electricity for the Hotel, dairy and Goodwood House.</p>
<i>Water</i>	To be water neutral	<p>90% of our water provision is from our own ground water sources, eliminating 2,100 tonnes of carbon were it to be supplied by mains. Mains water supplies only Goodwood Hotel and Goodwood Motor Circuit. We also have an annual infrastructure maintenance programme, targeting leak reduction.</p>
<i>Social</i>	To increase our social value	<p>Community engagement and charity programmes continued in 2019, raising £335,673 for over 12 charities via staff and fundraising activities.</p> <p>The Goodwood Education Trust's education programme continues, with commitment to constructing a new Education Centre in 2020, benefitting local young people.</p>
<i>Business</i>	To embed sustainability into business operations	<p>The Goodwood Senior Leadership Team drives the sustainability programme, which is supported by both The Duke and Duchess of Richmond.</p> <p>Investment in staff development continues: 13 apprentices have been supported by the estate, and the Goodwood wellbeing programme 'One Goodwood' benefits over 130 staff members. Two staff members received external achievement awards in 2019.</p> <p>Key developments – such as the redevelopment of the Laundry Green Rooms – have been built with sustainability in mind, enhancing the original heritage of the building.</p>
<i>Resources and waste</i>	To maximise the value of resources	<p>We tackled front of house waste at events by engaging the public in our waste management scheme and delivering a recycling programme. We commenced the removal of single use plastic at Goodwood Racecourse bars with reusable cups, to reduce litter. This will be rolled out across all Goodwood events in 2020. We had water refill stations across the events to further reduce the inevitable waste of plastic water bottles.</p>
<i>Natural capital</i>	To enhance our natural capital value	<p>We have developed an asset register across the estate to build an understanding of the natural capital value, starting with the carbon sequestration potential. Annual planting programmes continue, along with the largest tree planting scheme in the south of England, totalling 78,000 trees. The golf and grounds team continue their ecology plan and to build on their GEO Certification. The farm continues to be managed under the organic farming scheme, producing high value meats on permanent pastures that continue to sequester carbon.</p>

Sustainability Action Plans

For each of the priority areas, Goodwood has established sustainability actions plans for the individual business units. These action plans and the Sustainability Strategy objectives are aligned to one or more of the UN Sustainable Development Goals.



Sustainability Steering Group

Overall responsibility for sustainability lies with the Chief Commercial Officer, who keeps the Goodwood Leadership Team informed and reports to The Duke and Duchess of Richmond. She is supported by a team of sustainability experts. They will provide the relevant knowledge and support to drive programmes, research solutions, monitor progress, audit performance and provide recommendations, all with the sustainability outcomes set out in the initial strategy as the ultimate goal.

At the start of 2019, a sustainability steering group was established, with representatives from each division taking responsibility for the key priority areas. This has evolved over the year and continues to drive the implementation of the strategy. The group members are supported to understand and embed sustainability into their business streams. All staff were presented with the achievements to date at the State of the Nation event in December. 2020 will see the implementation of a wider staff engagement programme around sustainability.

This annual report pulls together the achievements made in 2019 across the estate's key sustainability priorities, and is the first for Goodwood, a major milestone. While we recognise there is a way to go, we have made significant strides in some areas. This is the start of the journey to take stock across all areas of sustainability and really look to the future.

3

CARBON (TO BE NET CARBON POSITIVE)

Carbon emissions are the main driver of climate change. Goodwood is already affected by the resulting changes in weather patterns. Goodwood recognises it is also driving carbon emissions through the consumption of fossil fuels both in estate operations and its world class events. The estate's long-term success is dependent on limiting global carbon emissions and mitigating the impact from changing climatic conditions. As a result, carbon is a critical sustainability priority and is the main measure of success for our strategy.

Our aim is to understand our carbon emissions, identifying a long-term programme across the estate that will work towards becoming a net carbon positive estate.

Objectives and Targets

Our carbon plan objectives are:

- To reduce carbon emissions year on year against a 2018 baseline

These objectives address the following UN Sustainable Development Goals:

- 7 - Affordable and clean energy
- 11 - Sustainable cities and communities
- 12 - Responsible consumption and production
- 13 - Climate Action

2019 Achievements

Understanding the baseline carbon footprint across the estate was the first step in forming the carbon reduction programme. Several existing studies and updated data provided an overall picture. Then, committing to the goal of becoming a net carbon positive estate by 2030 set the direction of travel and ambition. Defining the scope of our carbon plan was the next step. We have identified all Scope 1 and 2 emissions (electricity, fuels, gas) as well as those significant Scope 3 emissions, which include:

- Visitor travel
- Farming
- Water
- Waste
- Travel and transportation

It was agreed early on that this should be achieved through the avoidance of carbon emissions; the use of energy efficient design and technologies; the use of decarbonising and renewable solutions, and, potentially, the use of new, innovative technologies. These actions would form the basis of the carbon reduction programme before we used the carbon sequestration potential of the estate (and wider area) to balance these emissions.

Carbon Reduction Plan

Goodwood is committed to reducing energy consumption and increasing the use of renewable energy across the estate.

During 2019, we developed a deliverable carbon reduction plan aligned to specific actions and to measurable reductions. This is based on actions which can be taken on an annual basis. The largest carbon emission contributors within the immediate control of Goodwood are electricity and fossil fuel consumption, both in the year-

round businesses (notably the Hotel, dairy and main offices at Goodwood House) and at the events, through heating and the use of electrical equipment and mobile machinery. Outside of the immediate control of Goodwood, but still linked to the estate, are the emissions caused by visitor travel.

The total carbon emissions from fuels, gas and electricity consumption (Scope 1 and 2 greenhouse gas emissions) in 2019 amounted to 5,033 tonnes. We continue to build on the carbon roadmap for Goodwood and extend the reporting of the carbon impact across the estate's activities. Key areas included to date are:

- Visitor travel
- Farming (animal husbandry)
- Water
- Waste

The footprint of the areas above was an estimated 7,585 tonnes. We have committed to an investment in a large-scale biomass facility that will provide heat and power to the Hotel, dairy and Goodwood House, fuelled by wood and straw waste from the Estate. We will continue to monitor the wider supply chain impact and transportation of goods to the events. The current measured carbon footprint is 12,901 tonnes. The contributors to these emissions can be seen in the chart below.

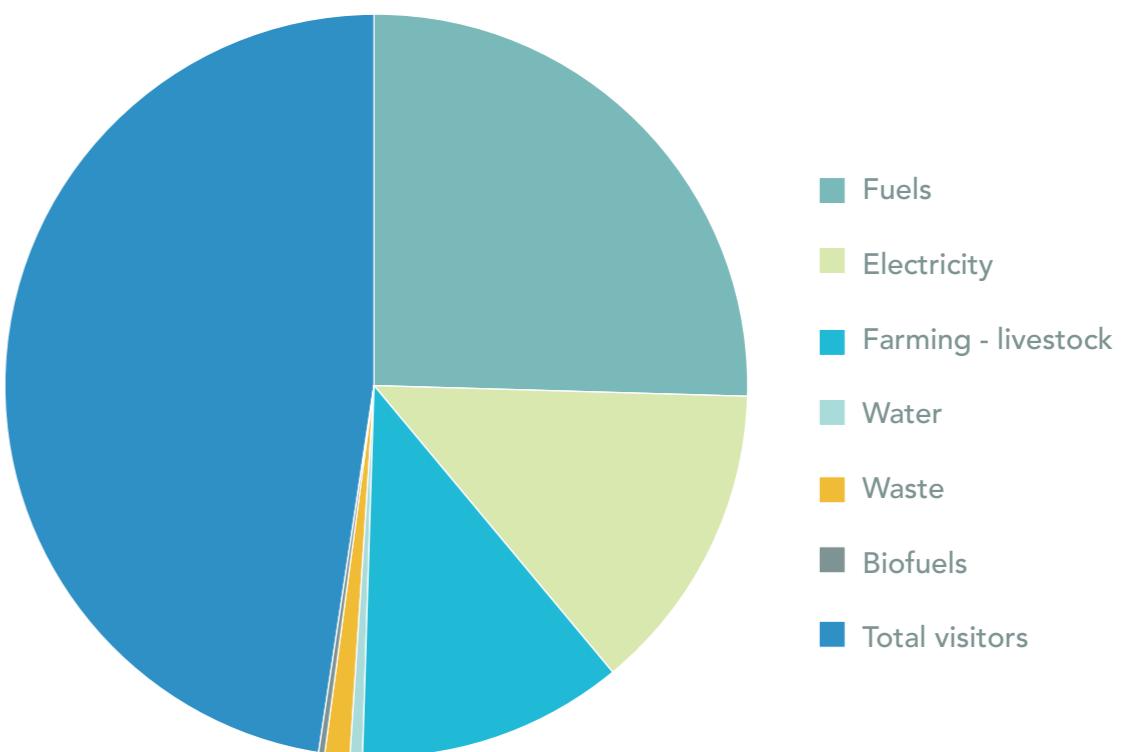


FIGURE 1 BREAKDOWN OF EMISSION SOURCES

Visitor Travel

Although largely beyond the control of Goodwood, visitor traffic is another direct impact of the events. Just as comprehensive traffic management strategies are in place to mitigate the impact on neighbours and locals, the carbon emissions from visitor travel should also be addressed. For the major events, shuttle buses are already arranged to encourage use of the train, but throughout the rest of the year daily visitors are reliant on cars.

Cars are also a significant part of the identity of Goodwood events, and part of the experience is around the visitor's car of choice. As a result, there will always be a significant carbon impact from visitor travel. In 2019, Goodwood launched a visitor carbon offset programme where visitors can contribute at the point of ticket sale to the planting of trees, hedgerows and rewilding areas across the estate.

Electricity

Electricity is the second largest contributor. Goodwood qualifies for the Energy Saving Opportunities Scheme and is therefore required to carry out ESOS assessments every four years. These assessments are intended to help businesses identify cost-effective savings which, if implemented, will improve energy efficiency and cut costs. An ESOS Phase 2 compliance report was completed in 2019. The ESOS report provides updated detail around usage within each of these business areas and will be used to tailor energy reduction plans in 2020 (see figure 2). It shows the highest consumption is at the hotel and racecourse.



FIGURE 2 ANNUAL ELECTRICITY (kWh) FOR DIFFERENT OPERATING UNITS

The breakdown of the actual usage is essential for managing the total consumption and can be seen in Figure 3.

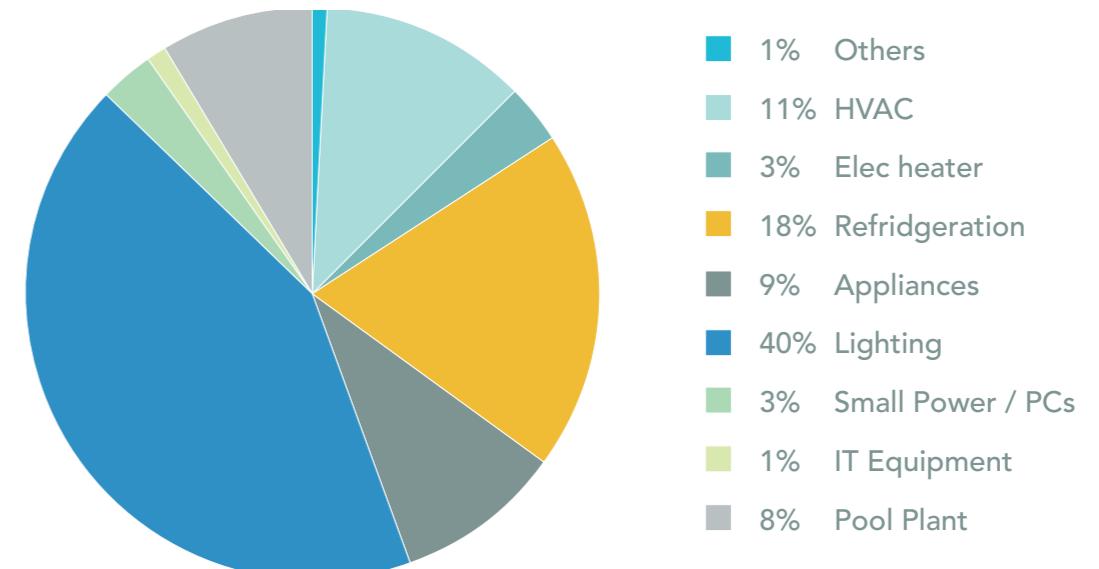


FIGURE 3 BREAKDOWN OF ELECTRICITY USAGE

The carbon baseline data, the data from the ESOS assessment of the estate and the resulting recommendations facilitate an understanding of the current energy usage. This will form the foundation of a robust energy management plan, a key focus for 2020.

Prospects for efficiency improvement and CO₂ emissions reduction have been categorised as follows:

- Capital replacement actions
- Retrofit/refurbishment actions
- Behavioural actions
- Improved operational management/control

The 2019 ESOS assessment has identified a total saving across electricity of 14%. Along with energy-saving infrastructure planned as part of Goodwood Hotel's renovation project, this will form part of the carbon reduction plan. Goodwood is also committed to switching to a 100% renewable tariff for mains power at the next contract renewal, which is due in 2022.

In 2019, an estate-wide renewable energy assessment was instigated to identify the potential to generate and use a significant proportion of renewable energy on site, which has resulted in a decision to invest in a new biomass waste-to-energy facility (see below). The estate is also evaluating the transition of Goodwood's fleet of vehicles to electric and hybrid, as well as the expectations of visitors wanting to charge their own electric vehicles on the estate, with the provision of renewable energy for that facility.

Biomass Waste-to-Energy system

Following the successful introduction of a biomass heating system in 2016 as part of the Hound Lodge redevelopment, in 2019 the Estate began the implementation of a similar scheme as part of the Goodwood Hotel redevelopment. At the same time, we began exploring more efficient handling of our event waste streams, including around 3500 tonnes of straw and chestnut stakes that form the Festival of Speed spectator protection system, which is required by Motorsport UK regulations to be single-use. When it became apparent during 2019 that even a simple hot water solution would be challenging to accommodate successfully into the redeveloped Hotel site, this led us to consider a more substantial and ultimately more efficient ‘combined heat and power’ biomass solution in an off-hotel location, which would have the capacity to use all of the Estate’s waste straw and woodchip to produce both hot water and electrical energy. The total output significantly exceeds the hotel’s needs, so a strategic site at the Redvins barn complex was identified that would both accommodate a larger boiler (and the required handling machinery movements) and also provide heat and power connectivity to further significant consumers users on the Estate, namely the Goodwood dairy and Goodwood House. By installing the system prior to March 2021, the Estate is also able to take advantage of a government-funded Renewable Heat Incentive for the next 20 years, which justifies the sizeable £6m investment and generates further income for the Group. Where heat and power production exceeds the needs of the Estate, there is also the opportunity to export electricity to the National Grid, taking an income rather than a cost saving. A final advantage to the scheme is that most of our straw and wood waste (from both forestry and events) is already being transported off-site to fuel biomass generators, so an onsite solution provides an obvious further benefit in reducing transportation.

Fuels

Operationally, the use of fuels in temporary power, as well as estate vehicles and mobile machinery, is a significant contributor (25%) to the estate’s carbon footprint. In 2019 initiatives were introduced on event to trial the decarbonising of the fuel supply within temporary power, using solar hybrid generators and changing diesel fuel to recycled cooking oil (HVO). The estate has committed to delivering these changes across all event generators in 3 years, reducing the total estate footprint by 9%.

The management of the golf courses and grounds identified opportunities to reduce both the energy and carbon impact, as well as pollution, from machinery and equipment used. They began a move to HVO fuel for their heavy machinery in January 2020. They are also introducing more electric equipment, including strimmers and chainsaws, and will have introduced electric alternatives to the fleet of larger ride-on machines by spring 2021.

New technology is also being trialled, including automatic ball collectors on the practice ground and automatic fairway mowers.

Summary of 2019 Actions and Achievements

2019 has been a year of baseline data collation, prioritisation and establishing a credible carbon reduction plan. In summary we have:

1. Electricity:

- i. Identified a timescale to transition to 100% renewable energy
- ii. Started a review of renewable energy potential across the estate
- iii. Reviewed opportunities for energy generation using on-site waste

2. Fuels:

- i. Trialled the use of HVO at events and solar hybrid power, reducing the need for diesel generators
- ii. Agreed a plan to transition to 100% HVO across major events over 3 years
- iii. Moved to HVO for mobile machinery for golf course and garden maintenance

3. Visitor travel:

- i. Set up a carbon offset scheme for visitor travel for the 2020 season

4. Carbon roadmap to 2030:

- i. Mapped the carbon footprint, initially for events and subsequently extended to the whole estate; preliminary targeted reduction can be seen in Figure 4

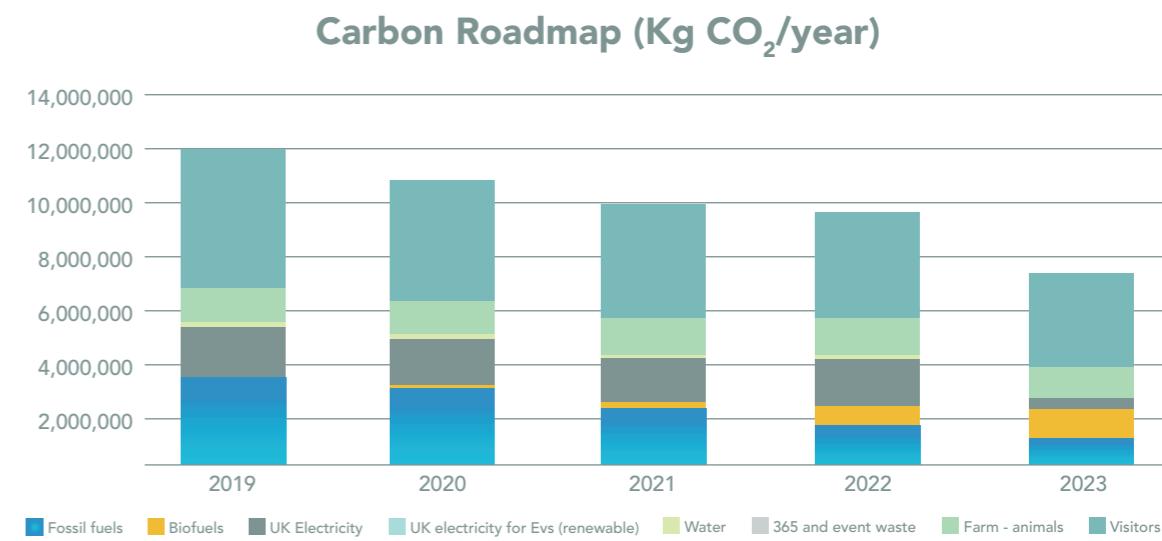


FIGURE 4: PRELIMINARY CARBON ROADMAP TO 2030

4

WATER (BE WATER NEUTRAL)

water is a critical resource and as land managers we use significant quantities across the Estate. Changing climatic conditions are affecting the availability of water, as well as our demand for water to manage our facilities and land. In addition, provision of bottled drinking water – once seen as a luxury – is now the norm, leading to significant plastic waste issues. Our aspiration is to achieve water neutrality, so that water demand is maintained. This means for every new development, total water use across the estate after the development must be equal to or less than total water use before the development. This measure will take an estate-wide view, from reducing leaks and driving better efficiency to maximising water reuse.

Goodwood has retained the services of Arup to support Goodwood in shaping their long term water management strategy. This study will help inform the Estate plans and investments for the coming years.

Objectives and Targets

Our water plan objectives are:

- To reduce water leaks year on year against a 2018 baseline
- To be water neutral from a 2019 baseline

These objectives address the following UN Sustainable Development Goals:

- 6 - Clean water and sanitation
- 12 - Responsible consumption and production
- 14 - Life below water



Our aim is to conserve and protect our water sources through efficient use and management, maintaining water neutrality.

2019 Achievements

A water infrastructure working group was established in 2019 to monitor, review and drive progress towards water efficiencies and usage reduction. Comprehensive water data has been collated through 2019 to show the overall water consumption from both Goodwood's borehole and mains water supply. 90% of the total water at Goodwood is supplied by its own borehole, however the infrastructure is challenging and over the years a significant number of leaks have appeared. We need to improve access to the water data for effective use in day-to-day metering, however we estimate our water consumption as:

- Total water extracted from the borehole in 2019 was 507,000 m³
- Total mains water consumption in 2019 was 48,500 m³

The baseline data has been used to develop an informed, comprehensive water infrastructure plan to address the leaks which account for around 25% of the total water extracted from the Goodwood boreholes. The water infrastructure plan is targeting a 10% reduction in leaks annually through the following strategic priorities:

- Reducing leaks
- Improved operational control
- Increased storage
- Mains connections
- Reduced consumption per capita
- Safeguarding supply

The use of water is clearly seasonal, with the irrigation of both the golf courses and the racecourse consuming considerable quantities of water. As the summer season is increasingly dry, the pressure on the borehole water is significant and the need for storage in the wetter winter months may become a necessity.

Golf and Water Management

The greenkeeping team has taken a two-pronged approach to reducing water consumption in the management of the two golf courses:

- Watering regime
- Drought-resistant grass types

These measures have been implemented due to their proven ability to reduce overall water consumption, however the effects are not accurately measured. The water infrastructure team has a plan to improve both the metering and visibility of water across the estate to support the individual teams in reducing consumption. During 2018's dry summer, the water restrictions meant that the borehole supply was turned off to the Downs Course as priority was needed for the racecourse leading up to the Qatar Goodwood Festival. This was a necessity to maintain the integrity of the supply to the racecourse, ensuring the welfare of the horses racing, but it meant the grass on the golf course was adversely affected.

With increasingly dry summers forecast, the water strategy team will look at what means of water storage during the wetter seasons might help to manage these changing conditions, alongside the detection and repair of leaks. Automatic watering has always been in operation on both golf courses but is now being installed at the Racecourse, where night watering is widely recognised as beneficial for greater absorption and reduced evaporation. Under the water infrastructure plan, the team is seeking a better pipe network leading to holding tanks – larger underground tanks with a possible reservoir holding.

In parallel, trials have been done in partnership with the Sport Turf Research institute – the world's leading authority on the design, construction and maintenance of golf greens and courses – to implement improvements to course management techniques, processes and design. Dwarf rye grass is being trialled, which is more resistant to disease and drought as a result of a deeper root system, and suits greens, tees and fairways. Associated benefits are expected to include lowering the overall nutrient input and water consumption. Goodwood plans to use 100% dwarf rye grass on the new short game practice area currently under construction. If this is successful it will be gradually introduced to the main courses.

Impact of Refillable Water Bottles at Events

During 2019, as part of the waste plan, single-use plastics were targeted. The carbon impact from a bottle of water can be 700-1000 times that of water provided by a mains source, which is higher than our own Goodwood water. We are therefore focused on providing our visitors with an alternative to bottled water, which may mean an increase in overall water consumption from our own sources, but also poses a significant carbon benefit.

As a result, whilst bottled water consumption and waste plastic decreased on event, we saw an increase in our provision of Goodwood water from our refill stations, which had to be carefully balanced by the estate's water management team.

Summary of 2019 Actions and Achievements

As with other areas of the strategy, 2019 has been focused on baseline data collation and establishing a water infrastructure plan. In summary we have:

- i. Established a water infrastructure group
- ii. Formed a water infrastructure plan, targeting 10% reduction in leaks, including upgrades of the racecourse irrigation system
- iii. Planned the water efficiency infrastructure for the hotel redevelopment
- iv. Decreased the carbon impact from bottled water through provision of refill stations on event

5

SOCIAL (INCREASE OUR SOCIAL VALUE)

Goodwood plays a vital role in the local community and is a significant employer in West Sussex. In addition, it is estimated that 1 million people visit the estate annually, for the major festivals, as well as weekly events and recreational pursuits. The Goodwood Education Trust brings around 3000 children to the estate each year, to promote an understanding of the countryside and facilitate 'Learning Outside the Classroom', using the rich variety of sites and businesses found at Goodwood. The estate also supports a number of charities, benefitting a range of individuals.

Goodwood wants to ensure it is accessible to a diverse range of people. Goodwood also recognises its position locally, both as an employer and as a client supporting a number of local businesses. This too represents a significant local contribution to the local community. While Goodwood acknowledges that the events themselves do create local disturbance, their impact is carefully managed; neighbours and tenants are continually engaged in the delivery plans where events may adversely impact individuals.

Our aim is to increase the estate's social value by providing local employment, as well as recreational and educational opportunities, and economic benefits to the local community.

Objectives and Targets

Our social value objectives are:

- Increase our social value year on year against a 2018 baseline
- Ensure the estate and its events are accessible to everyone

These objectives address the following UN Sustainable Development Goals:

- 3 - Good health and well being
- 4 - Quality education
- 5 - Gender equality
- 10 - Reduced inequalities
- 11 - Sustainable Cities and communities

2019 Achievements

The estate has always carried out a variety of activities that bring substantial social and economic value to the local and wider community. We knew this was significant, but it had not previously been quantified. During 2019 we started to monitor the extent of this social value contribution across charity; education and schools; employment; skills and training, and staff wellbeing, to build a picture of the total contribution for 2018 and 2019.

In 2019, the estate commissioned a socio-economic valuation study undertaken by the London School of Economics to place monetary values on these aspects. This will provide the benchmark and enable us to prioritise activities that will deliver high socio-economic value to the local community and UK in the future. This report will be published in early 2020. It will help develop a 2020 strategy around social value and the estate's charitable giving.

Charities

Event charities are chosen annually by The Duke and Duchess of Richmond and each charity is invited to have a presence at the flagship events where they hold collections. In 2019, £335,673 was donated to the event charities. In addition, every two years Goodwood staff select an estate charity to benefit from staff events. The 2019-2020 charity partner is Canine Partners, who provide assistance dogs for people living with disabilities. The 2019 target was £20,000 which would provide funding for the purchase and training of one assistance dog. So far, staff have raised over £23,500 for the charity through a range of activities, including individual sponsorship for the Great South Run, car washing, golf days, pancake sales, raffles and plant sales.

Volunteering

In 2019, staff were encouraged to volunteer contracted hours to charitable causes, as well as activities across the estate. A total of 14 days was recorded. This included the Goodwood Digital team reviewing the Canine Partners website, databases and social media content, to improve their marketing and develop the charity further. 2020 will see a focus on this variety of in-kind expertise support for the estate's charitable partners.

Within the estate, 2019 saw one of the largest tree planting programmes in the south of England (see Natural Capital). Staff contributed to this venture: over the winter, 190 volunteers planted 1,500 trees.

Education

The Goodwood Education Trust, in partnership with the Woodland Trust through the Forestry School programme, supported 3000 children in 2019. A new Learning Centre was designed and approved for development, which will provide a state-of-the-art facility, from autumn 2020. The Festival of Speed Super Shell programme invited a further 274 young people to learn about technology around the Festival of Speed, and encouraged them to consider careers in the STEM industries.

To date, links with universities and the support of student projects has been opportunistic; a more structured approach is planned for 2020. During 2019, the estate staff supported two students' MSc projects. The first looked at waste management across the events and the attitudes of visitors to recycling efforts at events (see Resources and Waste section), and a second project looked at the different biodiversity of grasses across the estate.

Members and Visitors

An estimated 1 million visitors attend the flagship events, gardens, golf courses, hotel, racecourse, motor circuit aerodrome and health club, as well as Goodwood House and the estate footpaths. The GRRC Family Open Day saw over 2,000 GRRC members and their families attend a free open day at Goodwood House, with funfair rides, refreshments and a car display.

Several other complimentary events are held throughout the year for Goodwood staff members and their families, including The Duke of Richmond's Garden Party, Father Christmas at Goodwood House, staff lunches after each flagship event and the Christmas 'Blow Out' party.

There are also plenty of events at the motor circuit which are open to all, including Breakfast Club events, pre-motorsport event testing days and track days, which the public can spectate.

Open Farm Sunday every other year also gives the public free access to Home Farm, where they can take part in a number of activities, have a tour of the farm and meet the animals.

Neighbours and Tenants

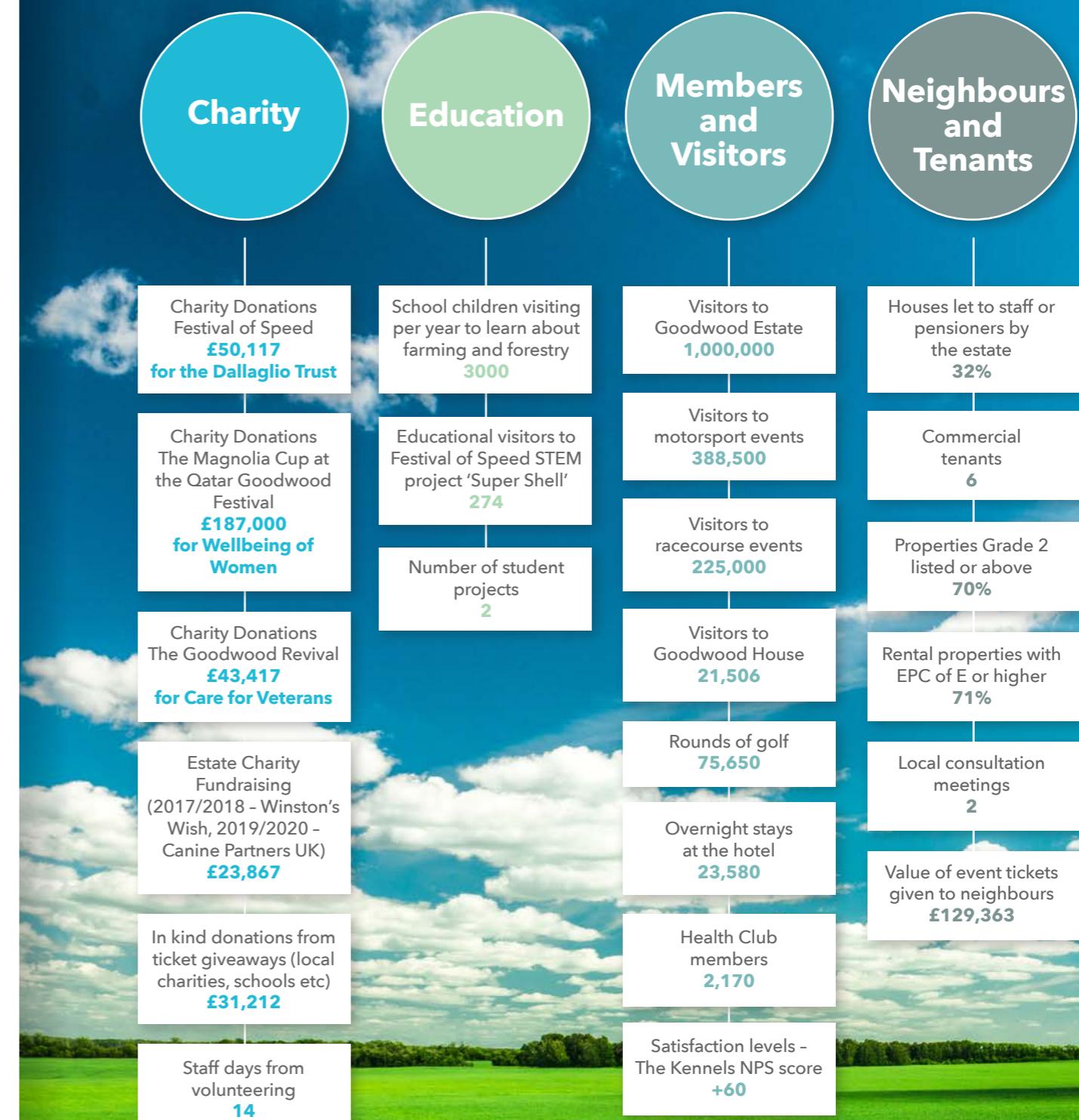
Goodwood takes its role as both landlord and tenant seriously and runs a series of local consultation meetings with neighbours to the motor circuit. These meetings allow the community to feedback to the events team and to stay informed. Local residents also receive a series of correspondence throughout the year, informing them of firework displays and other planned events. Event tickets are provided to all neighbours affected by road closures or severe traffic during the flagship events. The total value of the tickets given to local residents under this scheme in 2019 was £129,363.

In general, feedback is received through social media and acted on where relevant. Feedback during events is continually tracked and acted on during the event or immediately after. Managing stakeholders is an integral part of Goodwood's sustainable event management system which is certified to the international standard ISO20121.

Summary of 2019 Actions and Achievements

The graphic opposite shows our contribution to social value in 2019.

KPIs for 2019



6

BUSINESS (EMBEDDING SUSTAINABILITY)

Economic and political change has wide reaching implications for farming and land management. The diversity of agricultural, business and recreational provision has enabled the estate to be maintained in its entirety. Goodwood's goal is to be a self-sustaining estate, with all business units being economically viable and contributing to the on-going preservation of the estate's heritage. The changing business landscape exacerbates the need to fully embed holistic sustainable practices into the estate's business decisions going forward.

New developments and the operation and maintenance of existing properties will be future-proofed by developing the estate's infrastructure. The businesses must be able to withstand the social, economic and environmental changes predicted for the coming years, selecting materials that will last and reduce negative environmental impact without compromising on quality.

In addition, the estate recognises the need to invest in the teams that deliver the Goodwood experience, whether than be land managers or event managers. Career development and promotional opportunities as well as a major wellbeing programme are seen as a fundamental part of the business.

Our overarching aim is to sure the estate is maintained in its entirety as it has been for the last 200 years, and to embed sustainable practices across all of its operations.



Procurement decisions are fundamental to any sustainability strategy. As a customer, Goodwood not only generates revenue for the local economy, but also has the ability to drive sustainability through its own supply chain. Having developed a sustainable procurement code in 2019, this will be integrated into all business decisions in 2020, maximising local economic value and ensuring ethical and environmentally-sound provenance of goods and services.

Objectives and Targets

Our sustainable business plan objectives are:

- To be a profitable business that creates local economic value
- To ensure the estate's supply chain and procurement processes are sustainable and ethical
- To invest in staff as a valued, well-respected employer

These objectives address the following UN Sustainable Development Goals:

- 8 - Decent work and economic growth
- 12 - Responsible consumption and production

2019 Achievements

Renovation Projects

2019 saw the renovation of Laundry Green, a sympathetic redevelopment in keeping with the estate's heritage. The renovation focused on retaining and enhancing many building's original features whilst creating a functional, modern work place.

Throughout 2019, planning continued for the redevelopment of the Goodwood Hotel, with sustainability as a key focus on the programme. The creation of 10 extra bedrooms built to a high sustainability standard begins in 2020.

In 2017, the Sussex Heritage Trust awarded Goodwood's Hound Lodge with the Commercial Award, in recognition of the redevelopment of the late 19th century building. The judges were particularly impressed by:

- The use of South Downs flint in the walls, sourced from land owned by the estate
- The use of oak grown on the South Downs (processed by a sawmill on the northern edge of the estate) for the weatherboard cladding, sleepers used in the landscaping, the garden pergola, the oak-covered walkway in the courtyard garden and the entry gates
- The use of 30% recycled clay peg tiles from the estate
- The landscaping – specifically the wild flower meadow and indigenous broad leaf trees – which sympathetically flows into the natural woodland of The Valdoe
- The use of chalk and soil from the Hound Lodge site, used to reinforce tracks, fill in a redundant pond at the Goodwood Hotel and in landscaping the Downs Golf Course
- The installation of a woodchip boiler to provide heating and hot water to both Hound Lodge and The Kennels, fuelled by Goodwood-grown woodchip



Employment

A total of 777 individuals are employed at Goodwood on either a full or part time basis. These individuals are key to delivering the Goodwood experience, whether that's on a guided walk, a visit to the house, dinner at Farmer Butcher Chef or coming to Festival of Speed. The Goodwood ethos runs through it all. The majority of the staff live locally and are often recruited through our work experience programmes and internships.

Staff development continues with our internal management training programme, providing a number of internal promotion opportunities across the estate. Currently the estate employs 13 apprentices across the business. The Chef's Academy has proved hugely successful and the estate's Chef de Partie at Farmer, Butcher, Chef, Isabella Raccagna, was the first female chef to win the Sussex Young Chef of the Year, following a MasterChef style cook-off against five highly talented competitors. 2020 will see the first dinner hosted at The Kennels attended by the apprentices' families, The Duke and Duchess of Richmond and The Kennel's members.

Elsewhere on the estate, Goodwood House Operations Manager Shelley Freeland received an Acorn Award and was named one of the most influential young people in the hospitality industry. Since their inception in 1986, the Acorn Awards – affectionately known as the 30 Under 30 – have sought to recognise the flair and passion of 30 rising stars in hospitality.

The fact that two women won these prestigious awards reflects the importance placed on gender equality at Goodwood, and the fact that all staff are supported to achieve their potential. In 2019, the gender balance across the business was 48:52 male to female.

Recognising Staff Contribution to the Business

The Goodwood values are embedded into the various teams across Goodwood. The golf and grounds team have a monthly award for team members, nominated by each other, for those ‘living the Goodwood values’. In 2019 the team did a day of community outreach. They are now looking to utilise their volunteering days in 2020 with an ‘SOS Garden’ initiative, using their skills in garden maintenance and renovation projects to benefit the wider community.

One Goodwood

Goodwood is committed to improving the health and wellbeing of our people. This commitment supports one of the key pillars of the business: creating a happy, healthy and harmonious place to work.

Recognising the staff are central to the success of Goodwood, the wellbeing programme, One Goodwood was launched in February 2019.

The One Goodwood team conducted a wellbeing survey which has led to the development of the Goodwood Wellbeing Programme – a fully-funded scheme of 49 classes a month for just a £10 donation, which goes to Goodwood’s estate charity.

In 2019, 19% of staff took part in the programme, with 975 bookings, including over 300 massages. A total of £2,198 has been raised for Canine Partner.

GEO Certification for the Golf Club and Course Management

With 35,000 rounds of golf played annually on each course, course maintenance requires responsible management. Golf at Goodwood realised its ambition of achieving the GEO certification in November 2018, for its commitment to sustainability across both the Park and Downs Courses, with work focused on nature, water, energy, supply chain, pollution control and community. The GEO concluded that Golf at Goodwood should receive certification due to its:

‘outstanding work to minimise impact on the environment through the introduction of biomass heating, solar panels and enhanced monitoring on water consumption’ and ‘numerous natural environment projects, providing enhancements to habitat in line with the surveys and advice commissioned by the facility’.



Summary of 2019 Actions and Achievements

- i. Goodwood launched the One Goodwood wellbeing programme
- ii. The economic valuation report formed the benchmark for future procurement impact
- iii. Goodwood redeveloped Laundry Green rooms and Hound Lodge in a style sympathetic to the estate’s heritage
- iv. The development of the hotel began in earnest
- v. Goodwood took on 13 apprentices across the business
- vi. Two members of Goodwood’s staff won industry awards

Employment	2019
Direct employed staff	777
Male to female ratio of staff	48.52
Apprentices	13
Casual staff during events	960
% new staff hired from local area (Hampshire and West Sussex)	93%
Staff turnover	21%
Total staff participating in the One Goodwood Wellbeing programme (launched February 2019)	130

7

RESOURCES (MAXIMISE LIFE CYCLE VALUE)

Goodwood is both a producer and consumer of products and services. The diversity of the business provides many opportunities to be creative and retain the value of materials produced, procured and used across the estate's activities. In addition, the local community stands to benefit from large quantities of materials that are no longer of use to the estate. Achieving this requires comprehensive resource management, identifying a life cycle plan for all materials purchased. Increased visibility of this life cycle will drive our procurement and disposal decisions, and indeed, help us increase the life cycle value of materials.

Our overarching aim is to maximise the life cycle value of the materials we produce and procure through reuse and recycling, reducing overall waste quantities.

Objectives and Targets

Our resources and waste plan objectives are:

- To reduce the overall quantity of waste produced annually
- To reuse the majority of materials procured and produced
- To maximise recycling levels for remaining waste (>60% target)
- To minimise disposal via EfW (Energy from Waste)
- To avoid disposal to landfill

These objectives address the following UN Sustainable Development Goals:

- 9 - Industry, innovation and infrastructure
12 - Responsible consumption and production

2019 Achievements

A comprehensive waste plan was developed in 2019 that set out to:

- Implement recycling at flagship events, with visible front of house solutions tackling single use plastics
- Provide refillable cups at the racecourse, eliminating single use plastic cups
- Develop a recycling plan across all office activities throughout the year
- Develop a resource management plan that engages suppliers of events to identify waste reduction and reuse opportunities
- Understand attitudes to recycling at events

In managing waste across the estate we gathered the actual quantities by business area, the different waste streams and disposal arrangements and received regular data reports to evaluate the impact of management strategies. The shift over 2019 has been to move waste from a bill to pay to a resource to be actively managed.

The table below highlights the different disposal methods used by external contractors for waste across the estate in 2019:

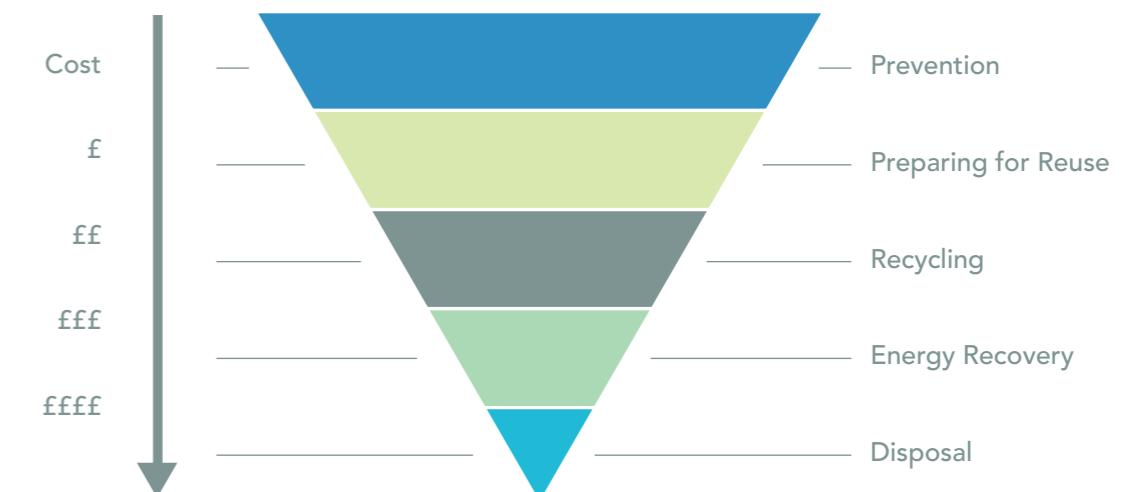


Benchmark of waste produced across the estate in 2019		
	Tonnes	%
General	1512	74
Recycling	85	4
Glass	86	4
Green Waste	0	0
Food	30	1.5
Plasterboard	11	0.5
Wood	297	15
Metal	20	1
Totals	2041	100

Developing a comprehensive resources and waste plan was a major focus for 2019 at Goodwood. This is divided into general waste, operational waste and waste generated from the major events. With regards to smaller events, the waste is subsumed into the 365 management practices.

The waste management plan was based on the Waste Hierarchy (see Figure 3).

FIGURE 3 WASTE HIERARCHY



Prevention

As all waste must have been initially purchased by someone, the logical place to start with reducing waste impact is procurement. In some areas Goodwood has direct control over procurement, such as in catering, where good progress is being made in reducing food waste and excess packaging. In other areas – such as events – there is less direct control, as contractors and sponsors design and build their own stands and often leave their waste behind. Goodwood have been proactively working with their partners to communicate their sustainability objectives which their partners have embraced. All parties are committed to supporting the events becoming more sustainable as this is a shared objective for all involved.

In 2019, Festival of Speed created 774 tonnes of waste, of which 288 tonnes was wood. This is a huge quantity of waste, but fortunately many stands – or parts of them – are taken away and reused. We estimate a conservative 50% of the stands were reusable. From now on, we will work with suppliers and stand designers to avoid unnecessary waste creation. In 2020, Goodwood has committed to establishing reuse methods for some of the 774 tonnes of wood waste generated at Festival of Speed, which will benefit the local community as well as the environment.

Plastic bottle waste was reduced this year with the provision of water refill stations at the events, which proved popular with visitors. Festival of Speed event waste was reduced by 10%.

At the racecourse a branded reusable plastic cup scheme was implemented at the bars. This began with an initial pilot scheme of 70,000 cups. The resulting reduction in plastic waste and litter on the ground means we will roll this programme out across the whole estate in 2020.

Changes in golf course management and the shift to more organic forms of course management have dramatically decreased the types of hazardous waste containers being produced.

Preparing for Reuse and Recycling

Most waste streams can be reused or recycled however this requires ‘clean’ waste, or waste segregation. Over 2019, there have been significant improvements in waste segregation at Goodwood.

A new 2-bin system has been planned and will be rolled out across all offices to enhance waste segregation. The bins will be identical in design and messaging across the whole estate and will match the collection facilities provided by our main waste contractor. There will be a mixed recycling bin with a lid to allow bottle shaped drinks cans and bottles, and a letter box slot for paper and card. The second bin will collect general waste.

On event, front of house waste management is always a huge challenge, with a variety of visitors and waste streams. At Festival of Speed and Revival this year, a 2-bin system was introduced, and resulted in ‘clean’ mixed recyclables.

Energy Recovery

Any waste streams that can’t be reused or recycled are sent to a waste contractor to be converted into energy. While this is better than sending waste to landfill, it still means that the resources are ‘lost’. Therefore, our aim is to improve segregation of clean waste streams, to avoid contamination and to maximise recyclability. From 2021, all straw bales and non-recyclable waste wood from the Festival of Speed will be converted in to heat and power in a new onsite biomass facility.

Food waste continues to be segregated for all activities and is sent to an anaerobic digestion plant. This produces methane used to generate electricity, with the remaining nutrient-rich digestate used as fertiliser. The collection service has been increased to twice weekly in 2019, thereby avoiding the odour issues encountered in the hot summer of 2018.

In 2019, we started looking at the opportunity to process food waste on site into compostable material; this evaluation continues. Collecting the back of house food waste from event catering facilities is an ongoing challenge. At present this is being sent as general waste for incineration, which is largely inefficient and expensive.

Composting

There are compostable waste streams across several business areas, including forestry; golf and grounds; stable waste and the racecourse. Our aim is to create a closed loop process for the green and brown waste generated on the estate to be treated or processed on site and converted back into usable compost. The estate’s goal is to:

- Manage all the non-food, organic waste stream in-house
- Avoid cost and emissions from contracted transport
- Retain and utilise the resulting resource on the estate to benefit trees, plants and soil
- Avoid buying in compost and mulch

Inputs to Composting at Goodwood

Source	Material	Current use / disposal
Forestry	Lops and tops where this cannot be left in situ, e.g. road-sides, park, gardens	Chipped and composted, and then used on the estate
Golf courses and grounds	Grass cuttings, leaves, hedge trimmings	Mulched by contractor
The racecourse	Grass cuttings	EfW via contractor
The stables during race days and on event	Lops and tops where this cannot be left in situ, e.g. road-sides, park, gardens	Chipped and composted, and then used on the estate
Festival of Speed front of house	Paper towels	On farm composting
Potential inputs		
Shredded paper	Confidential waste shredded on site	EfW via contractor
Toilet roll cores	Recycled cardboard	Recycled or EfW via contractor

Green waste from forestry is already composted and used around the estate. In 2019, the paper hand towels from the washrooms at Festival of Speed were collected, totalling 2.8 tonnes. They were added to the green waste for composting, improving the mix and retaining the nutrient value. Options for composting all of Goodwood's food waste are being explored, however there are significant legislative requirements as well as logistical challenges to be considered. Prevention and segregation of waste is the first step.

Attitudes to Recycling at Events

Festival of Speed was the focus of a post-graduate research project into the attitudes of visitors to major events. Interviews with over 200 visitors highlighted the importance of the recycling initiative and the fact that it significantly improved their event experience. The proof was in the resulting bags of clearly segregated plastic bottles and cans.

Highlights from the survey are as follows:

- 85% said they used the bins
- 75% were aware of the recycling scheme
- 84% recycle at home
- 43% segregate food waste at home
- 73% said environmental initiatives improved their event experience
- 94% said there should be recycling opportunities at events

Golf and grounds

As part of the Golf Foundation's internationally recognised GEO certification for sustainable club and course management, the golf team monitor the consumption of resources and the waste produced. Aligned to the estate-wide ambition of composting 100% of its organic waste, the green waste produced was previously composted along with the Forestry organic waste. It is now collected separately and with the grass clippings, the hedge trimmings and leaves collected, are periodically mulched by a contractor and the product is spread on site.

Staff are engaged in office recycling with the course management offices and staff breakout area already implementing separate recycling facilities.

Summary of 2019 Actions and Achievements

- i. This year comprehensive event waste planning effectively segregated plastic bottles and cans (over 6 tonnes) from general waste at Festival of Speed
- ii. Goodwood also provided water refill stations to reduce single use plastic bottles – event day waste was reduced by 10% compared to the previous year
- iii. At the racecourse we have introduced reusable plastic cups at the bars, starting with 70,000 cups as our initial pilot and now rolling this out to other events in 2020
- iv. Goodwood segregated and composted 2.8 tonnes of paper towels from Festival of Speed and will do the same at Revival in 2020
- v. Goodwood has established a clear understanding of attitudes and the need for recycling among front of house staff

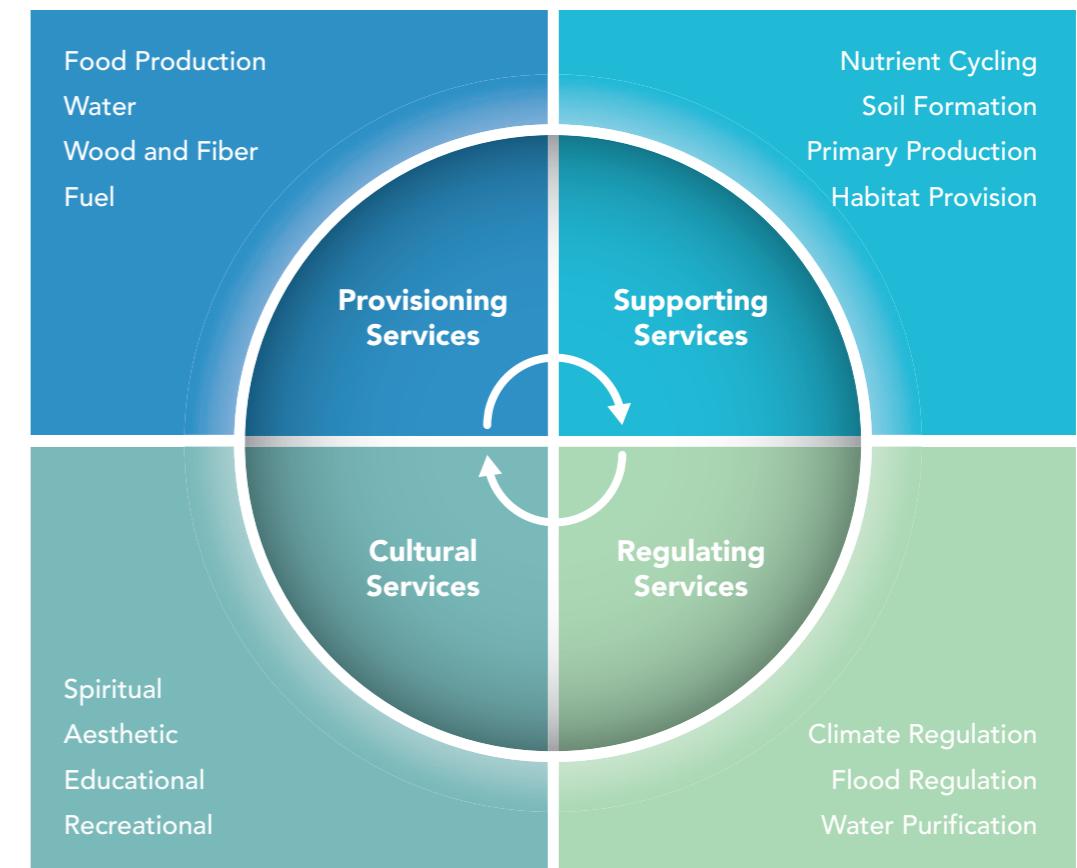
8

NATURAL CAPITAL (ENHANCE VALUE)

Goodwood's natural capital forms the fabric of the estate and the backdrop to all of its activities. Goodwood's 4,700 hectares (11,000 acres) are a mix of managed gardens, recreational areas, farmland, woodland and hedgerows, as well as various buildings. These assets play an important carbon sequestration, environmental, economic and recreational function locally, and nationally.

The World Economic Forum defines natural capital as the world's stock of natural assets, which include geology, soil, air, water and all living things. It is from this natural capital that humans derive a wide range of services – often called ecosystem services – which make human life possible. True sustainability will ensure that these goods and services are maintained for future generations. They are essential to life and underpin both a thriving society and a prosperous economy.

The most obvious ecosystem services are known as Provisioning Services. They include food, water and the plant materials we use for fuel and shelter. The less visible ecosystem services include climate regulation, natural flood defences and water purification, all known as Regulating Services. Supporting Services include the ecosystem services that rely on biodiversity, for example the pollination of plants by insects. Finally, the Cultural Services include the spiritual and aesthetic inspiration we take from the natural environment.



Our aim is to ensure that Goodwood's natural capital is protected and enhanced for future generations, through sound land management practices and engagement.

Objectives and Targets

Our natural capital objectives are:

- To maintain the estate's natural capital value against the 2019 baseline
- To increase long-term carbon capture capability and biodiversity throughout the estate

2019 Achievements

At the start of 2019, we set out to understand the estate's natural capital value with a high-level asset register and a framework for effective measurement and monitoring. Building on the key goal of becoming a net carbon positive estate, there was a clear need to understand our carbon sequestration potential. This has been the focus for 2019.

There are two key factors at play:

- Carbon storage in the soils and existing woodlands
- Carbon sequestration resulting from growth in permanent pastures, new woodland and the existing woodlands and hedgerows

It is critical that Goodwood's land management practices are not contributing to carbon release. Clearly livestock farming, dairy and meat production is receiving significant negative attention regarding carbon emissions. However, the permanent pasture that hosts the organic livestock sequesters twice the quantity of carbon emitted by the animal herds on the estate. Organic farming methods are key to both retaining the pastures and not releasing the carbon stored in the soils into the atmosphere.

The carbon sequestration and emissions from land management across the estate are estimated at an annual 166,700 tonnes of CO₂ annually. These can be seen in the following table:

Broad Habitats	Habitats	Qty hectares	Ecosystem services	Carbon sequestration Tonnes CO ₂ e / yr
Woodland	Forestry Commission Woodland	1234	Regulating Supporting Cultural	79,000
	Goodwood Forest Inventory - Mixed, Mainly Broad-leaved	528	Regulating Supporting Cultural Provisioning	33,800
	Goodwood Forest Inventory - Mixed, Mainly Conifer	198	Regulating Supporting Provisioning	12,700
	Goodwood Forest Inventory - Young Trees	40	Regulating Supporting Cultural	400

Broad Habitats	Habitats	Qty hectares	Ecosystem services	Carbon sequestration Tonnes CO ₂ e / yr
Enclosed farmland	Permanent pasture (5+ yrs)	1000	Regulating Provisioning Supporting	24,000
	Ley grassland (-5 yrs)	550	Provisioning Supporting	13,200
	Arable crops (barley, oats, winter wheat, oat/vetch)	176	Provisioning	-2500
	Wild bird cover	5	Provisioning Regulating Supporting Cultural	-70
	Agroforestry	8	Provisioning Regulating Supporting	71
Urban green spaces	Let farmland (arable, grass)	500	Provisioning Regulating	-7,000
	Golf courses - grassland	113	Cultural Regulating	2,700
	Racecourse - Permanent pasture (5+ yrs)	160	Cultural Regulating	3,800
	Car parks - Lowland grassland	160	Cultural Regulating	3,800
	Gardens - Grassland	27	Cultural Supporting	650
	Other grasslands	87	Regulating	2,088
	Total (Hectares)	4786		166,661

The Organic Farm

There has been much media commentary about emissions and the damage to the environment caused by agriculture, particularly cattle. The global push for intensive farming and higher outputs per hectare has led to increased use of artificial fertiliser, pesticides and antibiotics for intensively housed livestock. Monoculture – rather than rotational cropping – has led to a loss of biodiversity, affecting birds and insects. Intensive livestock farming has led to higher concentrations of slurry and associated methane production, which is 25 times more harmful as a greenhouse gas than carbon dioxide.

At Goodwood the organic farm uses crop rotation to maintain soil fertility and to control pests and weeds, with a positive impact on biodiversity. Cattle are farmed as part of the rotation and methane emissions are controlled by injecting the slurry into the soil, rather than surface-spreading, thereby maximising available nitrogen and lowering ammonia emissions. This system of natural grazing enhances the environment in terms of soil restoration, biodiversity, water quality and flood mitigation, with the added benefit of healthy lives for the animals. This in turn produces meat that is healthier to eat. The permanent pasture supporting the organic livestock delivers a significant contribution to sequestering carbon – a total of 22% of the annual carbon sequestered by the estate.

Tree and Hedgerow Planting

The forestry department is undertaking the largest tree planting in the South of England, with 55,000 trees planted in 2019 and a further 23,000 to follow. While these will be carbon neutral for the first few years, by year 20 they will be sequestering over 250 t CO₂ per ha / yr. This rate slows down around year 30, at which point they can be felled for woodchip to be used for heat and power, thus avoiding the need for fossil fuels.

There are plans to use woodchip for a substantial new biomass facility on the Estate, so this ongoing tree planting will ensure the estate can continue to be self-sufficient in this area.

A first for the estate, in 2019 all the tree spirals used to protect young trees from rabbits and squirrels were made from biodegradable starch, and as such did not introduce any plastic to the environment.

Small branches that cannot be used as wood chip are composted on site, and then used as mulch around the estate. This year 2.8 tonnes of the paper towels from Festival of Speed were collected and added to this, avoiding the associated transport and waste treatments costs, and adding nutrients back into the estate.

Where possible, the lops and tops from forestry are chipped and left in the woods, as this requires no further input and the material will naturally decompose and return nutrients to the soil, as well as providing valuable insect habitats. Where these need to be cleared – such as near roads or in the park and gardens – they are chipped and piled on hard standing.

In a 50:50 3-year partnership with the Woodland Trust, 600 metres of hedgerow have been planted this year. Additionally, a further 200m of established hedgerow has been laid in a traditional method as part of an ongoing Estate initiative, thereby promote new growth in the hedge from ground level to preserve this important habitat and prevent long-term damage from machine cutting.

Rewilding and Biodiversity

Goodwood is continuing its rewilding program to enhance biodiversity, by changing the management on ‘no-mow’ areas to allow grass and wildflowers to flourish. The 9-hectare former quarry site is being left to re-wild, along with a further hectare at the racecourse.

The shoot has a 10m cover crop, providing a buffer zone of wildflowers, all of which will lead to better ecosystems for insects, birds and wildflowers. It is hoped that the populations of insects and bats can be monitored through partnerships with local societies and universities.

The golf courses are 4 years into a 5-year ecology plan, creating and protecting valuable habitats around the courses. 2020 will see a new ecology plan for golf management, with a wider focus on understanding the biodiversity across the estate.

Golf at Goodwood

Golf at Goodwood is looking to transition to a more organic approach to course management and has reduced its use of chemicals in disease control by 80% from 2015. This transition is largely due to the use of organic fertiliser and over-seeding with bent grasses to reduce the more disease-susceptible meadow grass. The Park Course currently uses 95% organic fertiliser, which encourages beneficial micro-organisms within the rootzone, and over the next couple of years the Downs Course will also transition to 95% organic fertiliser. The golf team have been on knowledge-sharing visits to Denmark, where all courses have transitioned to 100% organic fertiliser, and slight blemishes and disease scars in greens and on fairways are an accepted part of golf.

Golf Habitat Management Plan

The golf team developed a 5-year habitat management plan, due to be updated in 2020. This plan identifies actions across the courses to optimise the surrounding ecosystems, including wildflower areas and rewilding for insects. It also incorporates beehives, woodland planting and hedgerow management.

2020 will see the development of a new 5-year ecological plan to increase biodiversity across the estate. The first step will be to obtain current data on biodiversity and habitat mapping, and to develop an action plan for initiatives such as further tree planting, hedgerow management and rewilding.

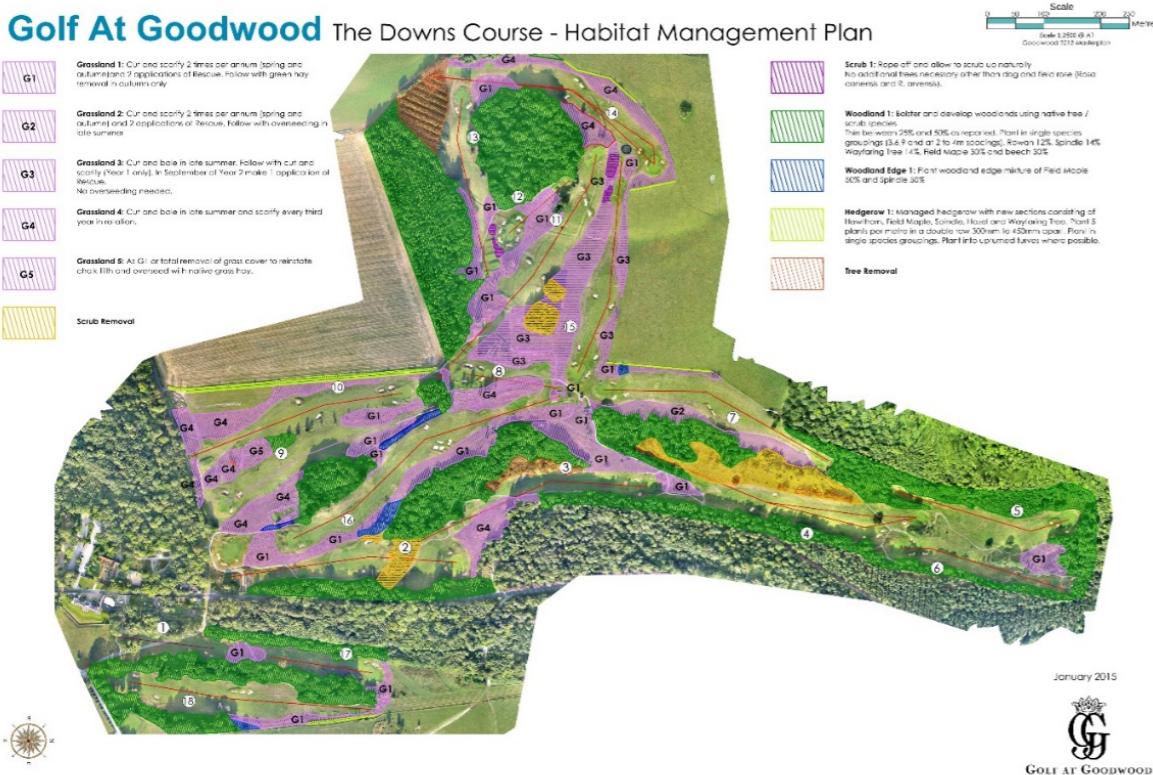


FIGURE 2 GOLF HABITAT MANAGEMENT PLAN

Engaging the Public

During 2019, a plan was designed to encourage the public's understanding of the estate's natural capital value and garner their support. Goodwood set up a visitor carbon offset scheme to share the responsibility for the impact produced by events and recreational pursuits. This was launched with the tickets sales to the 2020 events.

Summary of 2019 Actions and Achievements

- i. Goodwood established a baseline for the natural capital value of the estate and a framework to facilitate clear monitoring and measuring of that value
 - ii. Goodwood developed a carbon mass balance for the estate
 - iii. The largest tree planting in the South of England began with 55,000 new trees; a further 23,000 will follow in 2020
 - iv. Goodwood planted 600m of new hedgerow and traditionally laid 200m of established hedgerow
 - v. Goodwood launched a visitor carbon offset programme
 - vi. The verges and various other areas of the racecourse were rewilded

9 FLAGSHIP EVENTS

Goodwood has had a Sustainable Event Management System (SEMS) since 2012, certified to the international ISO20121 standard. At the start of 2019, a full review and overhaul of the system was undertaken to align it to the estate's sustainability strategy, and to create a tool with which the event General Managers could deliver real progress on the ground. Responsibility was taken by the Festival of Speed Event General Manager, who started the process of fully engaging and coordinating efforts across all events.

All the event General Managers came together to develop an action plan spanning the 6 sustainability focus areas of carbon, water, waste, social value, natural capital and sustainable business. The scope of the SEMS currently includes the delivery of Festival of Speed, Goodwood Revival and Members' Meeting and the 19 horseracing days at Goodwood Racecourse. As delivery of the estate strategy matures, the best practice developed for these flagship events will be rolled out to all Goodwood events.

The SEMS, like all robust management systems, follows the principles of the Plan-Do-Check-Act cycle.

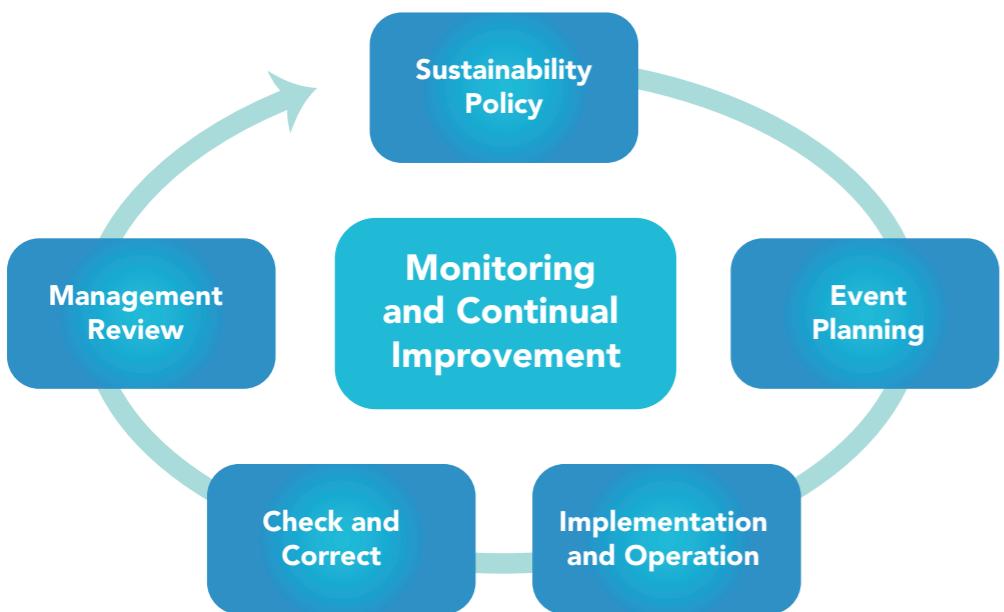


FIGURE 1 PLAN-DO-ACT CYCLE

Festival of Speed

Festival of Speed, arguably Goodwood's flagship event is the world's greatest celebration of motorsport and automotive culture. It is a four-day festival held in the grounds of Goodwood, the focus of which is the hill climb, a dynamic platform for the automotive industry to celebrate the past, present and future. Over 200,000 visitors come to the event from over 75 countries each year. 2019 saw history made as a new hill climb record was set by an all-electric supercar, taking seconds off the previous record.

Throughout the planning and delivery of the 2019 event there was a concerted effort by the event team to address waste, energy consumption and water usage. An audit schedule spanning the build, event days and breakdown phase identified its successes and further opportunities for subsequent events.

Carbon

Being a key sustainability priority for the estate, reducing carbon was a focus for the 2019 event season. Across the estate the events are a significant contributor to the carbon footprint with their need for temporary power.

The 2019 season was used to test different low carbon alternative power supplies. The trial of a hybrid generator to provide 100% renewable power for an isolated location was successful, saving around 340 litres of diesel and just under a tonne of carbon.

The event partner Siemens demonstrated hydrogen fuel cell technology, and as part of their activation they powered the First Glance paddock cars, including charge for 3 of the electric cars. At Goodwood Revival, HVO was used in the generators, reducing the carbon content of the fuel by 80-90%.

At Festival of Speed, the transition towards electric and hybrid cars continued. DHL's electric delivery vehicles were utilised on the racetrack for marshalling, and the majority of the automotive exhibitors showcased their existing or new concept electric vehicles.

In 2020, the alignment of renewable energy provision and the electrification of the car will continue to be a key focus of Goodwood's sustainability message at Festival of Speed.

While arguably out of Goodwood's control, as with all events, visitor travel has a significant impact. Initial estimates suggest this impact is equal to the overall operational carbon footprint of the event. Goodwood is working to provide alternatives for visitors, which is a challenge, as all the events are a short distance from Chichester Train Station. Shuttles buses provided by Stagecoach will continue to cater to the major motorsport and racecourse events; the use of these buses increased by 17% 2018-2019, a significant increase on the two previous years rise of 9% and 7%. In 2020, visitors will be invited to financially offset the carbon impact of their journey at the point of ticket sale, funding planting and rewilding schemes across the estate.

Resources and Waste

A major focus of the sustainability initiatives in 2019 were around waste. While there was an overall reduction target, another key focus was to clearly report and understand where the waste was coming from. Festival of Speed – with a significant temporary infrastructure built for the 4 days – creates over 65% of the total event waste (see Figure 5). Wood forms a significant quantity of this waste (37%) and has been identified as an area for improvement; reuse outlets will be identified in 2020 rather than focusing only on recycling. It is hoped that engagement with the stand exhibitors and designers will also help to reduce the overall quantities of waste.

Overall, the initiatives taken to address waste management – targeting a reduction in overall waste and an increase in dry mixed recycling – were successful, and the positive message resonated with visitors, 96% of whom reported recycling at home.

75% of visitors were aware of the 2-bin recycling system, with 58% disposing of bottles and cans into event recycling bins always or frequently, and 66% using general waste bins correctly, either frequently or always. 73% of attendees surveyed agreed or strongly agreed that environmentally responsible initiatives improved their event experience, with 50% agreeing or strongly agreeing that an event's positive environmental impact would affect their future attendance.

To motivate further improvements to the front of house waste management systems, 97% of surveyed attendees wanted to separate their waste at the event. Further questions - drilling into the ease of finding appropriate bins, ensuring enough opportunities to recycle, clarity around the waste to go in each bin and info to further assist with waste segregation - will be taken by the event General Managers.

The event audit revealed that staff are already well engaged with back of house waste segregation and would benefit from having space in the event build for waste segregation. There are also greater opportunities for waste avoidance through the creation of a standard set of sourcing guidelines for suppliers, stand designers and builders. These guidelines will include a list of materials to avoid, materials to be recycled and other forms of best practice, for example:

- No plasterboard or gypsum
- No metal-backed insulation materials
- Avoid materials that are difficult to recycle, e.g. PVC
- Materials should be segregated on site in order to maximise reuse

2019 Total Waste Disposed from Events (Tonnes) and Disposal Method

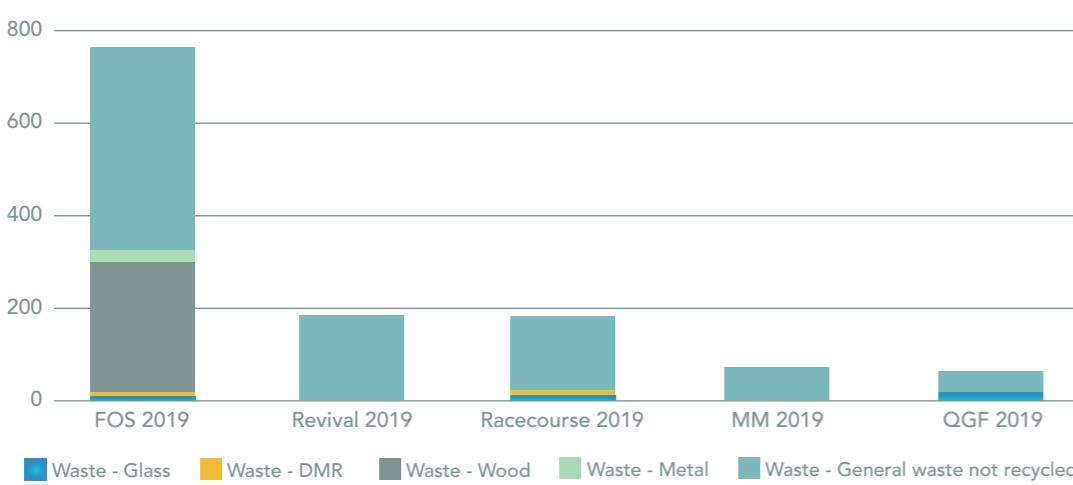


FIGURE 2: TOTAL WASTE DISPOSED FROM EVENTS IN 2019

Water

Water refill stations were widely available across Festival of Speed and were in regular use. These touch points with visitors also communicate the sustainability message on both water consumption and waste management. Refilling a bottle of water from a mains supply can save over 8 times the actual quantity in that bottle, due to the manufacturing and production processes of bottled water.

A water reuse system was trialled at the campsite, in an attempt to reduce the grey water from the washrooms being tanked away, and instead, using it on the estate. The system has encountered some challenges, which will be considered in planning for 2020 events.

Natural Capital

Festival of Speed is now well established and past years have seen damage from generators to some tree species on the estate. As a result, generators are sensitively sited away from canopy lines and fencing is in place around trees to protect them from root damage.

The event team embraced the estate's tree planting programme; in the winter planting season over 1,500 trees were planted by staff members.

Social

The events provide entertainment to a large number of people; 2019 saw 204,000 attend Festival of Speed, a record number.

Each event has a dedicated charity, as selected by the Charity Committee chaired by The Duke of Richmond. In 2019, Festival of Speed raised close to £55,000 for the Rugby Works charity. The other flagship events supported Care for Veterans, and 9 separate charities were supported across the horseracing season.

A total of £33,000 worth of Festival of Speed tickets were provided to local residents to compensate for the disruption caused on the local roads during the event. This figure is similar for the other motorsport events, while just under £25,000 worth of tickets were given away for racecourse events.

The event team recognises the importance of liaising with the local community and through the Parish Council framework have a Motor Circuit Consultative Local Committee that meets twice a year. This is supported by letters to the neighbouring residents informing them of upcoming events. Goodwood staff also respond to local planning development. For example, there is a 400m development barrier in the local plan around Goodwood Motor Circuit and a guide for new developments is available to inform residents of the Consultative Committee.

Business

Festival of Speed is a significant contributor to the success of the estate; the revenue generated by the event undoubtably enables investment into the estate's maintenance. The event team is small compared to the scale of the event and suppliers and event partners are relied on to deliver the high-quality spectacle. Early in the year, the event team provides suppliers with information, running partner forums and supplier days where they are able to communicate directly. Sustainability has been an increasingly important part of this communication and will continue to be as the estate looks to develop wider partnerships.

The events not only provide additional temporary employment, there are also opportunities to volunteer in exchange for tickets – a total of 460 individuals benefitted from a volunteer opportunity at the 2019 motorsport events.

10 2020 AND BEYOND

Goodwood is committed to achieving our goal of being a carbon positive estate and creating a holistic approach to sustainability, delivering value across the social, economic and environmental agenda.

We will continue to work across our 6 key priority areas of carbon, water, business, resources, social and natural capital, remaining alert and responsive to changing conditions and expectations. The Goodwood Sustainability Roadmap details the initial steps already in progress.

Goodwood will continue to implement learnings from the key studies highlighted within this report and will invest in projects such as the Biomass project in 2020/2021 enabling the estate to move towards its vision of carbon positivity. In addition to this, Goodwood have secured their first sustainability partner, the Foresight Group, one of the UK's leading renewable investors, having invested in more than 240 renewable projects around the world.

Foresight will support Goodwood with their expertise in clean energy, energy efficiency and waste management. Goodwood will host the annual Foresight Sustainability Summit which brings together business leaders and institutional investors to explore the geopolitics of a resource constrained world and the impacts on FEW (Food, Energy and Water). This will see Goodwood play a key role in the global conversation of sustainability.

Goodwood, with our commercial partners and suppliers will collaborate to drive the carbon agenda and will join us on the journey to becoming one of the most sustainable Estates in the world.

Goodwood sustainability journey Roadmap 2019 – 2030

