



45 YEARS SUSTAINABILITY REPORT JULY 2014



Notes:

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1. Introduction

It is important that strategic decision makers and producers understand how to make the best use of the current landscape of constraints in terms of the growing need for a more sustainable approach to film making. Producers and film funders should not see regulations and requirements as obstacles but should use them as competitive tool in their business strategy. Therefore, adding a financing and a corporate and social responsibility perspective to green filming is crucial. The need to educate the next generation is required now and is imperative if we are to support the rapidly changing landscapes of the creative industries in Europe.

'Sustainability In Vision' report May 2014

Charlotte Appelgren

General-Secretary, Cine-Regio (Consortium of 43 EU film funds)

The landscape is changing - in the UK and across Europe. The issue of sustainability in film is a topic rapidly gaining attention and gradually, implementation. A tipping point has been reached after several years of the subject being on the industry's radar, to where the shift is finally happening from discussion to engagement - and slowly to some practical measures being introduced.

With the BFI recognising the challenges of moving to a low carbon, sustainable economy and the legal duties being placed on businesses, their sustainability strategy has two dimensions;

Internal: to move the BFI to a low or zero carbon footprint by introducing the necessary sustainability management systems across the BFI buildings, staff travel and UK and International events. The UK government is committed to reducing its greenhouse gas emissions by at least 80% by 2050, relative to 1990 levels. <https://www.gov.uk/2050-pathways-analysis>

External: as the lead Government agency for film the BFI has a responsibility to lead the industry wide Sustainability in Film strategy. The twice-yearly industry wide meetings and the biennial Greening the Screen BAFTA event - most recently at the 2013 London Film Festival - go some way to covering this requirement. This strategy has the goal of moving the whole film sector to a low or zero carbon footprint to meet those UK legislated targets. As with the internal strategy the key factors are energy efficiency, efficiency in waste resource use, respect for flora and fauna and environmental amenity, waste reduction, a progressive move to low carbon energy sources and the social aspects of sustainability identified in BS 8909. This strategy is based on working with a full range of stakeholders in UK film, in the public and private sector.

So the current challenge is how to build on the work done so far and turn the theory into practice. The BS 8909 is the conduit through which a Sustainability Management System (SMS) can be put in place on film productions, arguably the toughest area of all to implement real change in the pursuit of a low carbon industry.

On the ground, film producer engagement is slowly increasing but for them to be convinced of the merits of a SMS they need to have a positive experience. To show the Standard can be applied to their production and that it will not be a labour intensive, expensive programme but one that will ultimately enhance the filming process.

A successful SMS is dependent on two key factors:

1. The programme has full buy in and support from the producers.
2. There is a green production runner on-set throughout filming.

2. Executive Summary

During early 2014, Greenshoot were engaged by the BFI to oversee the sustainability management process on The Bureau's '45 Years'. This was the first film selected by the BFI to benefit from the new Sustainability Pilot Programme and case studies.

The culmination of several months of planning between Greenshoot and the BFI, Ben Roberts office along with Carol Comely and Fiona Morham and her team in production. The idea was first pitched in April 2013 and agreed later that year to begin the programme in earnest in early 2014. It was decided that the BS 8909 and associated environmental standards should form a vital part of the methodology behind the sustainability measures. Educating producers and crew in the ways of sustainability was key and framing those within the structure of the BS 8909 was agreed to be the best and most logical strategy. (Particularly as compliance with the BS 8909 will potentially be used as a future mandatory for funding.)

The first production selected for the programme was '45 Years', starring Tom Courtney & Charlotte Rampling, which was to be shot in and around Norwich. It is important to highlight here that the earlier productions we engaged with felt it was too late into the pre production process. This highlights the need for 'early engagement' in the green light and financing period of productions. The case study for '45 Years' will look at an in depth analysis of production practices in relation to embedding sustainability using environmental standards ISO 14001 and the British Standard BS 8909, a Sustainable Management System for Film.

The prep production office for '45 Years' was based in Soho which is where we met for initial scoping meetings with Rachel Dargavel the line producer, Roslyn Hill and Francesca Pereira and the rest of the production team, prior to everyone moving up to Norfolk. We also delivered an initial small quantity of supplies, including recycling pop up bins and aluminium frames.

Once they had relocated to Norwich meetings were set up at the production office with the key HODs, to talk through how their departments could implement small changes in either procurement or business practices that would make a noticeable difference to their carbon footprint, and could even save the production money.

The challenge was to help the production trial the framework and embed the BS 8909 as efficiently as possible. As it is still early days in the take up of the BS 8909, film productions need all the help they can get to understand its methodologies and help decipher some of the more obscure technical language. Once a certain volume of productions have worked with the Standard, a virtuous circle should start to form whereby crew will go onto their next production knowing a little more about how it works. Eventually it will be considered the norm as so many will have experienced working with it they will expect all productions to be applying it. Embedding sustainability onto

productions will be as expected on a shoot as much as health and safety and every day business practices - this is the common goal.

3. Training & education - Green Production Runner

Greenshoot provide a 3 day Green Production Runner training course at Pinewood Studios, supported by Creative Skillset, in partnership with Screen South. We have had many excellent delegates and the ambition is always for those that pass the course exam and are ready for the next step that we look for productions they could put all that theory into practice.

This was achieved as a result of the course in November 2013, when Aaron Hopkins worked for Hammer Films on Woman In Black 2 as the Green Production Runner.

On the course in February 2014 was a 24 year old called Tam O'Malley. She not only shone in class and the exam, but was very keen to get production experience. Coming from Norwich, where '45 Years' was shooting, we therefore suggested to the production that Tam be the Green Production Runner for the first 10 days and that Greenshoot would pay her wages from the BFI award. They agreed - which meant an on set presence throughout the first week helping advise and support the crew in the first few days putting the SMS in place alongside our attendance.

4. Scope of the project

As with all film projects irrespective of size, it is best that the scope of the sustainability assessment is defined during early prep. It was important for Greenshoot and the production to both equally understand the parameters of the study. This would include the requirements defined by the BS 8909; who would track progress, key production champions, framework progress and monitoring and measurement were all agreed on at early stages. The point of contact would be the production Manager and coordinator, key runners and the location team would support a cross department system to allow the unit including cast to get onboard the SMS. Progress or challenges sent back up to top management for comment or action.

'The organisation shall establish, document, implement, maintain and continue to improve a sustainability management system in accordance with the requirements of the standard and how they will fulfill these requirements.'

This outlines the challenging expectation of the Standard. Greenshoot's role was to help with implementing as much of the framework as possible, guiding the '45 Years' production in their engagement with the Standard. We sent provisional notes and explanations to give an introduction to it and a breakdown of the areas of production it impacts on.

A crucial part of the development process is identifying areas where carbon savings - and potential financial savings - can be made. This is part of the prep process for elements of the Standard and gives the production a head start in helping it achieve its sustainability ambitions.

It was agreed the scope would cover the production filming period itself (therefore *not* including post production or distribution) using the three pillars of sustainability

- social, economic and environmental - at the heart. Specific areas to be covered were defined as;

1. Crew education
2. Energy reduction
3. Supply chain management
4. Carbon footprinting via START system, assessing financial & carbon savings
5. Travel planning,
6. Location and ecological assessments
7. Office and digital management
8. Recycling - food & DMR

5. Pre Production analysis of 45 years

The success of any sustainability initiative is always very dependent on buy-in from top management. The '45 Years' line producer, Rachel Dargavel, was supportive from the outset. One of the first steps was her agreement to support a crew and supply chain public sustainability policy. This serves as a public declaration of the production's beliefs and sends a distinct message concerning the ethical approach production would be taking. This initial buy relates to 3.4, Sustainability Policy in the BS 8909. 'The policy shall be approved by top management.' The sustainability supply chain memo to suppliers was not in the end sent out by production, due to time pressure. This is an integral process for the BS 8909. One way to support communication is to get a suppliers list early on at the first meeting with production, access key suppliers and confirm with top management that key communication documents can be sent as part of the SMS processes.

The first fundamental step to crew engagement is through the Green Crew Memo (below). It sets out what the practicalities are of the sustainability initiatives and what is expected of the crew. On over 100 projects the most successful green and sustainability programmes are those that have made public declarations to their cast, crew and key suppliers. (BSkyB are an early adopter of this policy and have made great strides in embedding best practice across the supply chain with key suppliers.)

5.1 The Green Production Memo - issued in Prep



45 YEARS

Green Crew Memo

Please be advised that the production is supporting a green initiative and we are making a concerted effort to reduce our impact on the environment. Please join us to reduce the amount of material we consume, recycle the waste we create, and conserve energy whenever possible. The following practices have been put into place and we appreciate your participation. Greenshoot are supporting the production. Don't hesitate to offer additional ideas and suggestions to Melanie Dicks - melanie@greenshoot.com.

REDUCE WHEN POSSIBLE

- Electronically distribute paperwork. If you are receiving hard copies that you do not use tell the AD's or Production Office. Share hard copies among departments and always print and copy double sided. The office provides plates, cups and mugs for your use in the office during prep.
- Reusable water bottles are provided for you to help us reduce the amount of individual plastic water bottles used. Using your reusable water bottles throughout production will prevent over 3,500 individual plastic water bottles from being used. You will be able to refill your bottle in the office, and when shooting on location. Contact the office to receive your water bottle.
- Use rechargeable batteries as much as possible. Technology has improved and they do work well. Please ask if unsure as to what brand.

RECYCLE

- We will be recycling on the production. Please pay attention to the different bins provided. A guide to the bins can be found on the next page.
- When in the office, please recycle your paper, cardboard, plastics and cans.
- Ink Cartridges should be sent to the office and will be recycled.
- All batteries must be recycled. Batteries collection boxes are located in the office.
- The producers have agreed on NO polystyrene, NO plastics on this production.

CONSERVE ENERGY

- Turn off lights and unplug electrical items or turn off power surges when leaving the office or your trailer.
- Do not idle any vehicle. Non drivers can assist Transportation with this effort by being mindful when a vehicle is waiting for you and communicating your current time frame.
- Please consider carpooling or mass transit when commuting to the office or set. We will be transporting crew to location via minibus this will reduce our impact on the local community and ease congestion.

We have identified department specific practices to help you reduce your impact on the environment. If you have not yet received your department requirements and recommendations contact the production office.

Our goal is to have a healthy and safe work environment. As we put more sustainable production practices into place please be mindful that none should increase risk of illness or injury.

5.2 The requirements of British Standard 8909 3.5.1 Issue identification

The Standard requires that a production should 'establish, implement and maintain a procedure to identify and evaluate the significance of sustainable development issues associated with its activities, products and services.'

The Standard works by asking productions to state what they want to achieve in terms of sustainability and to describe what they will do to achieve their aims. In conjunction with Greenshoot, the production will then implement their plans and review actual activity and outcomes against their initial objectives. These must take social, economic and environmental issues into account.

Historically this Plan-Do-Check-Act cycle has proved an effective way of 'holding' organisations to their stated course. It has produced significant results for hundreds of thousands of organisations using other Management Systems Standards, such as the ISO 14001 for environmental management.

British Standards usually apply either to companies or to products, however BS 8909 aims to be more flexible and applicable. It can apply to a feature film just as well as it can to a cinema, or any kind of company working in the film industry. Complying with this new Standard highlights that processes are in place - so the film company's environmental impact is minimised.

Much of the time these are common sense implementations, small changes in working practice that can have a big effect on the sustainable nature of the production.

5.3 Compliance of BS 8909 on '45 Years' (The 3 Pillars of Sustainability)

How the production worked with the Standard and associated sustainable measures, what were the results, challenges and suggestions.

5.3.1 Environmental

BS 8909: 3.5 Planning 3.5.1 Issue identification & evaluation

Greenhouse gas emissions:

We initiated a reduction in energy consumption through the implementation of a 'Switch Off' campaign at the production offices and on location. The production office landlord supported this initiative as did the lighting team for on location support. The generator used a low mix of bio-diesel and ran a switch off campaign during lunches over the course of the 30 day shoot. (See ROI.)

All emissions were tracked through the START tools an interactive education system that Greenshoot have developed for the creative industries. This monitors progress and tracks all the carbon emissions to calculate a full and robust carbon footprint allowing for the producer, financier, broadcaster, distributor or commissioning body to monitor progress. This follows the plan-do-act-check criteria for a sustainable management system.

Pollution waste management:

No hazardous waste was generated - as set construction was minimal - which was a win. A local carpenter was employed for the first few weeks on location and was surprised at how 'green' and 'environmentally friendly' the production was. Delighted that VOC paints, FSC wood and supplies were being used. He was really helpful in taking away his off cuts of wood to reuse, minimising the waste onset.

Protection of habitat:

An environmental assessment in prep was carried out regarding the chosen locations and any potential environmental issues or impacts that may occur. One of these was a location on the Norfolk Broads, in unspoilt countryside and the unit were very careful to leave the habitat exactly the same as they found it. No incidents were reported there or anywhere throughout the filming period. The main location was situated next to a working farm. Communication started early on the production process with the landowner and he supported production throughout and maintained a good working relationship with the locations team. All crew were engaged and made sure a 'take nothing and leave nothing' strategy was adopted.

Recyclability and recycled content:

A full Environmental Management System (EMS) was implemented throughout the production period. Recycling & composting programmes were successfully completed with the assistance of a recycling company based in Norwich. They efficiently managed the delivery and regular exchange of the 1100L wheelie bins, which were used at all locations. These were separated into Dry Mixed Recycling (DMR) and food composting. The waste was divided into separate waste streams, then put into a closed loop system, where possible i.e. paper is turned back into paper, plastic to plastic, etc. The food was sent for anaerobic digestion, eventually being turned into electricity and supplied to the national grid. There was a healthy saving on carbon and finance, with the correct waste strategies implemented. Every traditional film or TV unit has a unit base for crew cars, catering base and support vehicles, a technical base and a location base. Traditionally waste is all black bagged which includes low-level construction waste. If crew cannot see the waste then no ownership is taken. Traditionally a municipal skip is placed at two places; on location and at unit base. The cost per skip is traditionally £350 per site and emptied once per week or more frequently with large crowd days. On '45 Years' we worked with the locations team and art department to reduce the waste. Location managers traditionally schedule in anywhere between £350 - £700 per week for waste costs on this size of production. Placing a full recycling and composting system into the production reduced this by over 50% in volume of waste and over 80% in costs (see ROI.) Adopting a full waste management system takes research, time and commitment and we should now be seeing this as part of everyday filming practices. Take up across the industry is very slow and only works if producers, broadcasters and commissioners insist that best practice is adopted.

With the on-set EMS it was vital that the crew engaged fully with the programme. Greenshoot have developed a simple system - frames with blue lids for DMR, green pop-ups with green liners for food composting - meant there was quick uptake and a reduced amount of cross contamination. The system is only as good as the people that use it so all credit to the crew for (eventually) getting to grips with it so successfully. Tam O'Malley

was the green co-ordinator on set for the first 10 days and supported the crew with queries and the management of supplies on set. Training the workforce to be compliant is crucial with any new system and making it a part of everyday working practices is key.

Transport impacts:

This was a win on the carbon reduction strategy as the crew travel was organised around car sharing so a significant number of vehicles were unused - meaning fuel and CO₂e were reduced. The production team and producer insisted on a car reduction and car sharing policy to set. There was a minibus travelling between the production office in Norwich to the main location at Neatishead, about 15 miles outside the city. The producers very early on in the prep stages banned crew cars from Neatishead. There would have been approximately 30 crew cars a day travelling into the single track village. Reducing this environmental impact by 70% and supporting travel by mini bus meant a great reduction in carbon being emitted and a cost saving on fuel from production offices to location. It was only through the producer signing up to this strategy during prep and making it mandatory that it was a successful campaign. This initiative was written into the SMS (Sustainability Management System).

Sourcing of materials:

Sourcing of materials included using FSC wood in any set build or construction. There were no large scale set builds - but additions added to doorways - all wood was sourced locally. All off cuts were taken for reuse by a local carpenter. Another good win.

Water sources and usage:

The production were keen to avoid using the traditional plastic disposable bottled water system that inevitably means a large amount of bottles remain unfinished - and a mountain of plastic is created. Sometimes this is the only practical option - for example on remote locations - but the production made the decision to use water coolers - and portable bottles, provided by the production, which is best practice. The producers went a step further and agreed to the use of dispensable coolers and pumps on top of water coolers. This showed a great saving not only in the bottom line by not using plastic bottles but there is a saving on waste generated by plastic and a great saving in carbon and energy usage. Some crew did complain about the system, water not being cold, access to water was difficult at times and these are comments echoed across the industry. There is new technology for portable waster systems being introduced and we will keep crews, productions and producers informed of progress. The comments from a few members of the crew regarding water were picked up on by Melanie Dicks who made a set visit to chat to crew and discuss and show the tangible results in savings in relation to carbon and waste on other productions. The entire industry that Greenshoot has engaged really feels the amount of industry waste created has to stop. The Director of Photography on '45 Years' was a great champion of the water canister and his lead across the technical departments was a great support. (See filmed interviews with head of departments on '45 Years'.)

Energy source and usage:

Power sources onset were pulled either locally from each domestic location or hired in generators from the lighting company. A 'Switch Off' campaign was implemented and the

generator was powered down at lunch and before shooting - this led to a 12% saving in carbon and cost. Traditionally generators are kept running for local domestic use but it is not needed at locations. The gaffer, DP, and lighting team questioned the EMS and sustainability plan at the beginning of prep: 'Being green doesn't work on film sets', 'too difficult', 'we are too busy'. Melanie Dicks spoke with the team, taking time to explain why in the past green initiatives hadn't worked as they are always an adhoc basis but by having a uniform strategy that is managed by the entire crew means they take full ownership. The lighting team by wrap were surprised how well it had gone. A good win. The best boy and gaffer also supported a full donation of used gels and supplies to a local educational charity in Norwich called The Garage. Communicating wins and challenges shows the reader of this report that buy in and time is needed to framework the management system and ideally a green steward is present on every film to support workloads and monitor progress, compliance and the SMS. Training the workforce is key and showing tangible results on past productions proves that commitment and perseverance will lead to success with any environmental system adopted.

5.3.2 Social

Community relations:

Clear guidelines were established for minimising the impact of the filming schedule on the local communities. This involved limiting hours of work, engaging early with communities about parking arrangements and potential noise from usual film crew activities. On '45 Years', local houses around the location were used for make up, costume and a holding area for cast and crew. Community relations were handled by a very experienced location team. They were able to make sure that all local residents and business were not affected unduly by operational and filming activities.

The production were sensitive to the environment they were in - whether it was the busy centre of Norwich or the remote countryside. The invasion of a film crew can be a (literally) disturbing event for residents and locals. All efforts were taken to inform people of the film units arrival/departure dates and there were no reported incidents. The location manager communicated with the locale through letter drops and door-to-door contact.

Complaints and prosecutions:

Absolutely no complaints or prosecutions were received. This is an important consideration in the BS 8909 under section 3.7.7. communication.

Equality in respect of disability, ethnicity, gender, religion & sexual orientation:

When the production were hiring crew they did so using a non discriminatory policy with respect to all factors. This also applied when the cast was selected and the extras for crowd scenes.

Nuisance (light, sound, smell):

This part of the Standard is closely linked to the questions under the environmental pillar regarding protection of habitat. It's about behaviour that may be likely to cause offence to

the community with respect to noisy generators, filming in anti social hours, etc. Again '45 Years' performed very well in this department, receiving no notices or complaints.

Safe and healthy working conditions:

Health and safety standards were strictly adhered to throughout the filming period. Risk assessments were kept at the production office to minimise paper usage onset. Health & safety is now part of everyday business practice across the creative industry. It is important to mention here Creative Skillset training & BECTU courses that have played a significant part in training the industry to become world leaders in film making and safety practices onset. The UK film industry has a world leading reputation for health and safety across the supply chain of the creative industries and our collective intention is that environmental best practices also becomes every day business protocol with the investment that is required.

Slave labour and other oppressive labour practices:

All employees of the production were treated properly and paid fairly, with clear communication from top management and the producers, by way of crew contracts and deal memos. Working hours were agreed and minimal overtime incurred and where overtime was necessary, rates were agreed and adhered to and turnaround times enforced.

Skills and training:

The trainee green steward, Tam O'Malley, had attended the Greenshoot/Creative Skillset course. Greenshoot provided support to all the crew in terms of the sustainability management system - we engaged with all departments on set and obtained feedback. A short film was made with key Head of departments. Our collective ambition is to see new entrants trained in best practice and adopted throughout the industry.

5.3.3 Economic

Contribution to diversity and stability of the local economy:

By helping communities benefit from film activities: for example, by hiring local people and compensating them properly or sourcing local props, extras and catering. Sourcing of food locally so helping the local economy and reducing the food miles. The crew and cast all stayed for the duration of the shoot in the community. They were either renting or staying in hotels. Local buildings used as locations brought income into the community. Along with local transport companies, local power suppliers all helped in the inward investment back into the region. A low carbon strategy also adopted met with procedures to monitor progress.

Ethical business and financial practice:

The financial planning followed a standard framework of public & broadcast funding.

Comment from author: There was a discussion regarding a future incentive for producers. A Green Tax Credit System with a recoupment that sits within the Producers financial recoupment corridor. If Producers taking up sustainability programme as part of

everyday business practices on their film productions and were to benefit from a Green Tax Credit capped at up to £25K (as per international studio policies) per production which would include, ethical supplies, recycling and food composting, monitoring and measuring and a green steward then every production moving forward would eagerly adopt. This is the system they have in the US. Can this be discussed at policy and commission level? Penalties could be levied to meet a low carbon reduction programmes as set up by UK government. Click below to review;

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/47613/3702-the-carbon-plan-delivering-our-low-carbon-future.pdf

BS 8909 uses the most widely adopted definition of sustainability, that of the World Commission on Environment and Development. It says that “sustainable development is meeting the needs of the present without compromising the ability of future generations to meet their own needs”.

6. Departmental Analysis

Department	Executive Summary - Departmental notes - 45 years
Assistant Directors	Gareth (1st AD) and his team were great in supporting the sustainability programme, actively engaging from the start of prep. They also helped in the final week of production putting the green notices on the call sheet that revealed the sustainability facts from the shoot regarding volume recycled, CO2 levels saved, etc.
Art Department	The art department although reticent at the start of prep were fully supportive of the recycling programmes and supported donations.
Catering	Anglian Caterers are run by Peter Kingston and he and his team were very receptive to the composting initiative. They willingly put their raw food into the pop up and helped oversee meal times. Local food was purchased reducing food miles. The chef and owner took some composting back to local farms to reduce waste.
Camera	Film short ends were all kept and were brought back to London to be donated to the Met film school. The use of rechargeable batteries was encouraged but all batteries were stored and collected by Greenshoot at the end of production and disposed of with other industry collections. Donated to Recycle for Charity - who in turn donated to Trees for Cities.
Construction	There was very little set building so no hazardous waste was produced and the issue of sustainable wood
Costume	Suzie Harman was a big supporter of the green initiatives and made a point of washing costumes in cold washes and reusing bags, hangars.
Grip/Electric	The 180kw phase 3 generators were used except when filming at the main location at Neatishead the energy was supplied from the house. The best boy and lighting team were interviewed on location. They agreed to keep all the lighting gels; not only an expensive resource but very hard to recycle. We were able to donate a large box in Norwich to the arts school.

Location	Tom Hamilton, the location manager, was very helpful throughout the production and his team fully engaged with the recycling programme. Lots of interesting discussions on set about practicalities of being a greener industry. The final comments from Tom - " This has been an interesting experience for me - efforts on past shows have not worked. Being green on '45 Years' was a success and the operation was smooth and the transition to recycle and conserve was widely appreciated - and long may that continue'.
Sound	The sound dept. were very much pro the sustainability efforts but they felt using the suggested rechargeable batteries would be too much of a risk for them. They didn't believe any green measures would be taken up in the industry but agreed that if producers sign up to it then all crew would comply.
Transport	The unit mini bus that transported crew from the main location to the production office in Norwich. There was strict 'no idling' policy enforced throughout the filming period.
Water	Water bottles were rejected in favour of 5L water coolers so meant on water being wasted and plastic being collected.
Recycling	The EMS was set up with full approval and support from the crew and top management. We used innovative recycling frames used to make them visually distinctive from the composting pop up bins. This helped reduce the bin contamination rate. A large box of batteries & toner cartridges were collected and then donated on wrap to Recycle for Charity.

6.1 Crew communication

It is essential to keep producers, management and crew updated with some tangible evidence that the sustainability management system on each project they are part of is actually achieving something. It is a great motivational strategy that gives a reason for those small changes in working practice they are doing. In the BS 8909 standard communication is found under clause 3.7.7.

Energy savings - Congratulations!
Through the switch off campaign & food
composting programme you have saved and
generated enough energy to power 45,000 strings of
fairy lights that can now be used at the wrap party!

Congratulations!

You have helped recycle 4.45 tons of food and DMR waste on 45 YEARS with a diversion from landfill rate of 96%.



This is the equivalent YEARLY waste for 5 households!

7. Audit & compliance

The notes and clauses in the BS8909 relating to the audit process is to be found at 2.2.1 Terms & definitions & 3.8.4: Management system audit

A 1st party audit of the production was undertaken at key stages throughout the production process by both Tam O'Malley and again by Melanie Dicks and the team at Greenshoot. Key data analysis can be found at the end of this report on page 20. The process is systematic and objectively determined to evaluate the extent to which the sustainability management system was successful. Audit process stage 1, undertaken at end of prep date: 20th March 2014, 2nd stage completed end of week one of filming and again during the last week of filming.

Tracking and recoding the achievement (no matter how modest) can show a gradual picture being built up of how an individual production team and the UK independent film sector is performing with regard to sustainability.

Continual improvement is the mantra for this and all sustainability management systems. It provides a constant goal to take any complacency out of the process.

8. Challenges and suggestions

By using industry quotes from renowned filmmakers and statistics to back up findings were a useful tool in communicating a sustainability strategy on the production.

"I think the environment should be put in the category of our national security. Defence of our resources is just as important as defence abroad. Otherwise what is there to defend?"

Robert Redford

CHALLENGE

Putting the correct waste in the correct bin is still the greatest challenge for crews working on a sustainable production. Contamination of either dry or food recycling potentially means the whole bin has to be sent to landfill.

SUGGESTION

We introduced a simple recycling frame for DMR meaning there is finally a visual distinction between bins (previously both bins have been pop ups). This initiative has helped reduce the contamination rate significantly. Also the lid on the DMR prevents rain.

CHALLENGE

Crew education - getting onboard as early as possible is key.

SUGGESTION

The early delivery of the Green Crew Memo is essential. This document gives a message that the production is taking sustainability seriously and the producers expect all crew to do likewise.

CHALLENGE

Maintaining the impetus throughout the duration of the filming period.

SUGGESTION

The writing of a mid show report and the regular reporting of the waste stats (eg. 3.2 tonnes recycled so far) is a great way for crew engagement, suggestions and feedback.

9. Conclusion - Management review

There were many things to admire regarding the sustainability programme on '45 Years'. Principally, it was the willingness of top management to engage and embrace the process which was the fundamental reason why it meant many of the ambitions of the BS 8909 framework were met.

The employing of a green steward - Tam O'Malley, meant that the crew education process could be instilled right from the outset. Tam is a graduate of the Creative Skillset/Greenshoot Green Production Runner Training Course. Her knowledge proved very useful in those formative first few days of shooting when everyone is finding their feet - especially in the area of sustainability. There's nothing to beat hands on tuition on the job and Tam was great in providing this.

She advised on the environmental management system which was using the 2 bin strategy - 1 for dry mixed recycling and 1 for food waste. It proved useful to have her on hand during the first week - especially at lunch - to advise crew on what waste goes in what bin, etc. Tam also carried out a crew questionnaire and location appraisal. She met all departments and this gave her an great insight into industry practices. Traditionally 1st level entrants will usually stay within one department or at the photocopier or driving rushes. By embedding a green production runner into productions they interact with every department for tracking and monitoring the production. This is a great educational process for the first couple of years before moving up a grade. See where the environmental impacts are and learn how to mitigate them throughout their career.

9.1 Repurposing of assets

We arranged for a number of wooden window black outs and lighting gels and sandbags to be donated from the production to The Garage, a creative industries training and performance venue in Norwich. We will be supporting final asset distribution once picture lock is finalised.

9.2 Learnings for future productions

There are a number of learning's to take from the sustainability programme implemented on '45 Years'. They follow a similar pattern to the numerous other productions we have been involved with since 2009.

What the producers need is a practical offer to help implement a sustainable management system. As productions across the UK grow in size so does the need for proper systematic procedures to minimize our industries environmental impact. The BS 8909 and associated standards help fulfill the BFI sustainability ambitions. There needs to be a Green Production Runner as a mandatory who looks after all the sustainability matters, the industry needs to be trained to be compliant and the producers need fiscal incentives to adopt.

10. Return on investment

How can we compare savings in financial terms and then again in carbon terms? By analysing a pre production carbon impact with the usual business practices of the film industry and then again at the end of prep and again at the end of filming taking industry

standard practice with new sustainable practices and comparing the two is how Greenshoot have created the START programme. The results here are clear to understand. Regarding carbon, we have seen approximately a 33% saving in emissions being pumped into the atmosphere and a financial savings across the production by embedding a sustainable management system of over £5,000. A good win.

Requirements and descriptions	Greenshoot to monitor	Please action/ notes	Financial and carbon savings
Reduce paper usage	Producer agreed to a 30% reduction in paper usage. A 75% reduction was achieved	By tracking similar size productions who use up to 6-8 boxes of stationery per week during production - local stationers - industry standard charge £18.99 per box x 4 = £75.96 per week	Savings over 6 week prep using a minimum of 4 boxes per week @ £18.99 per box £ 75.96 per week Finance saving £455.76 Carbon savings 1.76 t CO2e
Catering	Anglian Caterers	Full engagement	Plastic cutlery not purchased: Detailed assessment in final report: Interim: 40 cast and crew - 2 meals: 2500 items of cutlery over 6 weeks. Savings in not purchasing plastic: knives/Forks / 6 Wks: £319.0 Dessertspoons /6wks £399.90 Teaspoons 6Wks £179.90 Total saving catering £898.80 Carbon savings e2.36 t CO2e
Additional	not using sachets of condiments at catering		£150.00
Water	water management in place	Substantial savings on not using plastic disposable water bottles b 3 pallets of water est. in savings - 3,600 bottles saved.	financial savings £1,341.00 Carbon savings e2.75 tCO2e
Waste	Traditional skips in Norwich £350.00 - Jays Skips or Council skips per week x 6 weeks: 80% landfilled. Total waste costs - £2,800 Greenshoot engaging local company to compost and recycle: £78.00 per week x 6 weeks - e£468.00	£78.00 per week est x 6 weeks £468.00 e savings of	Financial savings e £2,332.00 Carbon savings e7.74 t CO2e
Carbon Foot print & Final Savings	Final analysis	Greenshoot will track the productions footprint and produce a full carbon footprint report	CO2e reduction 33.74 TC02e Financial savings £5,177.56

Other carbon savings include: Switch off campaign, energy reduction, waste reduction, food composting, car sharing, public transport and procurement.

11. '45 Years' - Carbon Footprint and measurements



SUSTAINABILITY | TRACKING | ASSET REDISTRIBUTION | TOOLS

PRODUCTION SUMMARY

British Film Institute (BFI)	The Bureau - Production Company
Production Title	45 YEARS
Project commencement START	March 12th 2014
Genre	Drama
Budget	£1,500,000
Broadcast TX or release date	To be confirmed
No of days on location	30
No of days in studio	0

Emissions by Stage

Stage	Tonnes CO2e	Percentage
Development	0	0%
Pre-Production	1.57	2.07%
Production	74.73	97.93%
Post - Production	0	0%
Premiere & Distribution	0	0%
Total tonnes of CO2e for production period	76.30	



KEY METRICS

	Tonnes CO2e
Total emissions - in Scope, Filming.	76.30
Emissions per £1000	0.05
Emissions per no.of crew - see notes	1.91
Emissions per episode - NOT APPLICABLE	0

Emissions by Activity

Emissions by Activity		Tonnes CO2e	%
ACTIVITY			
ENERGY: Grid		4.64	6.08
ENERGY: Generators		10.11	13.25
FLIGHTS: By Origin		4.06	5.32
FLIGHTS: Helicopters		0	0.00
BUSINESS TRAVEL and FREIGHT		4.70	6.16
STAFF COMMUTE		4.69	6.15
FREIGHT		3.94	5.16
HOTELS AND ACCOMMODATION		25.75	33.75
OFFICE PROCUREMENT		2.45	3.21
MATERIALS - includes textiles and procurement		15.78	20.68
WASTE AND RECYCLING PROGRAMMES		0.18	0.24
COMPOSTING PROGRAMMES		0	0.00
	Total	76	100.00

12. Photo gallery

From this

to this



13. Visualising carbon on '45 Years'

Carbon dioxide (CO₂) is the primary greenhouse gas **emitted** through human activities.

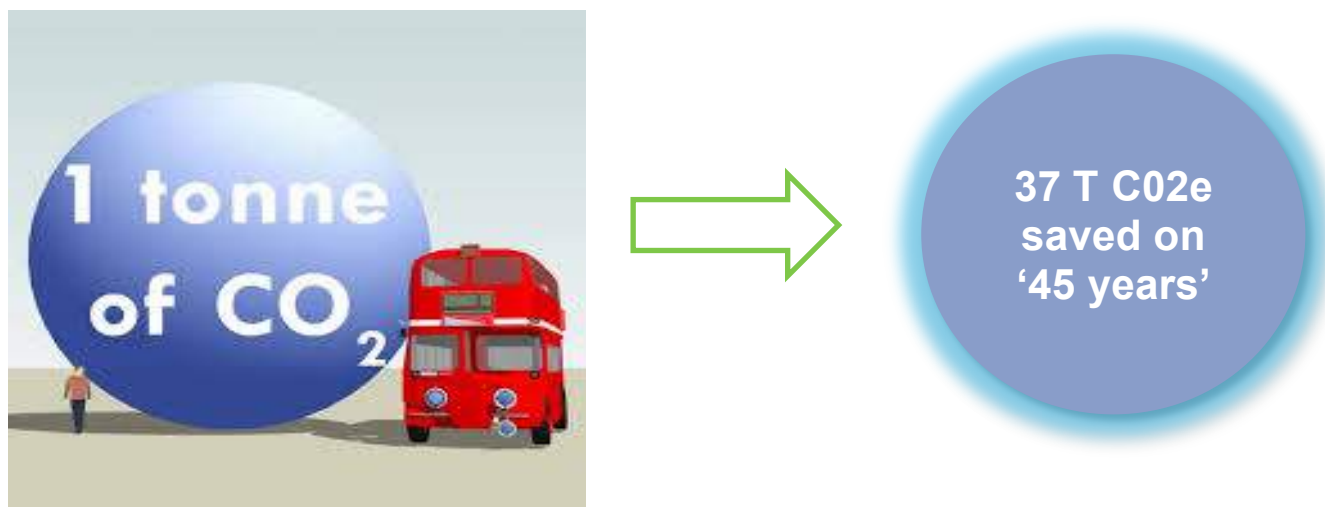
Carbon dioxide, or CO₂, is a natural, colourless and odourless greenhouse gas that is emitted when fossil fuels (i.e. natural gas, oil, coal etc.) are burnt.

It is the most prevalent greenhouse gas after water vapour and has therefore become the proxy by which we measure greenhouse gas emissions.

However, carbon dioxide is only one of many greenhouse gases that are emitted when humans undertake certain activities. Other greenhouse gases are methane, nitrous oxide and ozone – all of which occur naturally in our atmosphere.

To take into account the emission of other greenhouse gases when calculating the level of greenhouse gas emissions, scientists have devised an equivalent measure – CO₂e (which literally means carbon dioxide equivalent).

CO₂e allows other greenhouse gas emissions to be expressed in terms of CO₂ based on their relative global warming potential (GWP).



Sustainable practices on 45 years saved over 37 tonnes of CO₂e from being pumped into the atmosphere, that is very cool for our planet!

Click on the link to look at the UK legal commitment to reducing climate change in the UK.

<https://www.gov.uk/government/policies/reducing-the-uk-s-greenhouse-gas-emissions-by-80-by-2050>

Appendices

Appendix 1 - Terminology used within this case study

Climate change

The changes to the Earth's climate resulting from increasing concentrations in the atmosphere of greenhouse gases (GHGs), such as carbon dioxide. The Intergovernmental

Triple bottom line

the bottom line in film production traditionally refers to profit and loss in terms of finance. The triple bottom line brings in finance, social and environmental or in short. Profit, people, planet.

Panel on Climate Change

has determined that the marked increase in GHG concentrations since pre-industrial times is the result of human activity, including the burning of fossil fuels (such as oil) land clearing and agriculture. Since GHGs trap heat in the atmosphere, the dominant change has been a rise in average temperatures globally, although there is significant variation, with larger increases at the poles.

Ecosystem

An ecosystem consists of a dynamic set of living organisms (plants, animals and micro-organisms) all interacting among themselves and with the environment in which they live (soil, climate, water, air and sunlight).

Environmental assessment

A process to predict the environmental effects of a proposed project throughout its lifecycle (including construction, start-up, operation and shut-down) and to recommend ways to eliminate, minimize or mitigate those impacts.

Environmental/Social/Economic Performance Indicators

Performance indicators relating primarily to environmental, social and economic areas. Footprint In a spatial context, the area occupied by permanent and temporary facilities and their associated activities. In an ecological context, it measures humanity's demand on nature by considering the resources consumed and resources affected to support our activities.

Global Reporting Initiative (GRI)

A global, multi-stakeholder initiative to develop a common framework for sustainability reporting. The Sustainability Reporting Framework includes the Sustainability Reporting Guidelines, now in their third version, Sector Supplements and Protocols. The GRI is a collaborating centre of the United Nations.

Nations Environment Program (UNEP).

ISO 14001 An international standard that sets requirements for Environmental Management Systems.

Environmental Management Systems should address policy, planning, implementation/operation, checking/corrective action, and management review.

Leadership in Energy and Environmental Design (LEED)

A certification system that “recognizes leading edge buildings that incorporate design, construction and operational practices that combine healthy, high-quality and high-performance advantages with reduced environmental impacts”.

Construction practices and regulations by the Canada Green Building Council, based on the LEED rating system developed by the US Green Building Council. Points towards certification are awarded for meeting performance criteria in five categories: sustainable sites, water efficiency, energy and atmosphere, materials and resources and indoor environmental quality.

Performance Indicators (PI)

PIs are used to help an organization define and measure progress toward the organisational goals or objectives. GRI also uses Performance Indicators to elicit comparable information on the economic, environmental and social performance of the organisation.

Stakeholder

A person or organization that has a legitimate interest in a project or entity. Also refers to people who could affect or are affected by an organisation’s social, environmental and economic performance.

Sustainability (also often referred to as Environmental Sustainability)

Meets the needs of the present without compromising the ability of future generations to meet their own needs.” (Bruntland Commission). The concept of sustainability usually includes the areas of environmental, social, and economic development.

Sustainability Management System (SMS)

A Sustainability Management System (SMS) is a set of management processes and procedures that enable an organization to continuously improve its environmental, economic and social sustainability performance. An SMS follows the established Plan-Do-Check-Act management system cycle for continual improvement.

Sustainability Management and Reporting System (SMRS)

A performance-based system that defines our sustainability objectives, fosters an integrated approach to achieving them, and provides transparent reporting on results relative to sustainability related bid commitments and corporate goals, to both internal and external audiences.

Sustainability Reporting

The practice of measuring, disclosing and being accountable for organizational performance while working towards the goal of sustainable development. A sustainability report provides a balanced and reasonable representation of the sustainability performance of the reporting organization, including both positive and negative contributions.

Triple Bottom Line

Another term for ‘sustainability’ that refers to the idea that environment and social factors should be considered in addition to the financial bottom line.

Zero Waste

The concept that all activities are designed to eliminate waste and that any residual waste is recovered to be used as inputs to other processes.

Further reading;

British Standard. 8909: Specification for a sustainability management system for film
British Standard. 8900: Guidance for Managing Sustainable Development

British Standard. 8901: Specification for Sustainable Event Management System
with Guidance of Use. BSI, 2007.

ISO 26000 Guidance on social responsibility

UK Government reports on climate reduction:
<https://www.gov.uk/2050-pathways-analysis>

Appendix 2. Local and International Standards

Local and International standards

In essence, a standard is an agreed way of doing something. It could be about making a product, managing a process, delivering a service or supplying materials – standards can cover a huge range of activities undertaken by organizations and used by their customers. Standards are the distilled wisdom of people with expertise in their subject matter and who know the needs of the organizations they represent – people such as manufacturers, sellers, buyers, customers, trade associations, users or regulators.

1. EMAS

The EU Eco-Management and Audit Scheme (EMAS) is a voluntary scheme that allows all types of organizations to improve their environmental performance and achieve recognition for doing so. Its origins lie in European Council Regulation 1836/93, which allowed participation by industrial sector organisations within the EU in the Scheme. This Regulation is now in its third version and extends to all types of organisations. The aim of EMAS is to recognise and reward those organisations that go beyond minimum legal compliance and continuously improve their environmental performance.

2. The BS8909

The inception of BS 8909 was led initially by the UK Film Council and then the BFI with cross-industry partners including The Film Agency for Wales, John Newbiggin - Chair of Creative England, Film London, distribution companies, the Writers Guild and the actors union, Equity. It also included film industry specific consultants (Greenshoot) to develop the local standard to be then taken up internationally into an ISO - International Standard. The BS 8909 provides framework that practical steps and training are now being built around.

3. The BSI Group

(British Standards Institute www.bsigroup.com) also known in its home market as the British Standards Institution is a multinational business services provider whose principal activity is the production of standards and the supply of standards-related services. The BSI portfolio extends to more than 30,000 current standards. They are designed for voluntary use so it's up to you. You're not forced to follow a set of rules that make life harder - you're offered ways to do your work better. Standards are knowledge. They are

powerful tools that can help drive innovation and increase productivity. They can make organisations more successful and people's everyday lives easier, safer and healthier.

- http://ec.europa.eu/environment/emas/documents/legislative_en.htm
- <http://www.be-smarter.eu/en/library/eu-regulations/emas-regulations.html>
- www.bsigroup.co.uk
- <https://www.gov.uk/government/organisations/environment-agency>
- <https://www.gov.uk/government/policies/reducing-and-managing-waste>

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