

# **THE THEATRE GREEN BOOK**

**Sustainable Operations :  
Detailed Guidance**

*Version 2*

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## Foreword

The Theatre Green Book gives theatre-makers and companies common standards for the sector's journey to sustainable practice. Sustainable Productions sets common standards for producing shows sustainably. Sustainable Buildings provides guidance to make theatres fit for purpose in the context of the climate emergency.

This section, Sustainable Operations, covers everything else theatres do, from catering to rehearsals, offices to travel.

Theatre's impact on the planet is broad. Public buildings use energy. Audiences, staff and performers have to travel. The numerous operations that theatre needs, from rehearsals through to marketing, selling tickets, collecting waste, running dressing rooms and making coffee, all add to theatre's footprint.

It isn't a matter of deciding which is the worst offender and forgetting about the rest. If theatre is to become sustainable, and be seen by the public as sustainable, then it has to review every aspect of what theatre-making means, and rethink every way in which it currently harms the planet.

Building on theatre operators' own expertise, and the knowledge of theatres who have already begun this journey, Sustainable Operations provides solutions to those challenges, and offers a step-by-step approach to addressing them.

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**sustainable operations**  
**DETAILED GUIDANCE**

# 1 Introduction

## 1 Why the Green Book?

The climate crisis is an immediate threat to our safety, equity and prosperity. We urgently need to limit carbon emissions, reduce biodiversity damage, and, in doing so, achieve a just transition where people, places and communities are supported and vulnerable groups protected.

Theatre cannot solve the climate crisis alone, but it can play an urgent role in addressing it. Theatre can question and challenge, provoke, entertain and surprise. It can reflect the preoccupations of generations facing a time of dizzying, frightening change.

But to do that, theatre itself needs to work sustainably.

## 2 A Clear Path to Sustainability

The Theatre Green Book gives theatre a path towards sustainability. It builds on years of work by theatre-makers and sustainability pioneers like Julie's Bicycle, Creative Carbon Scotland, SiPA, and others. It maps the journey towards an industry that is low carbon and low waste, values people, and contributes to a more sustainable society.

## 3 Scope of the Theatre Green Book

The Green Book divides the challenge into three areas. Together, they give theatre clear, practical and detailed guidance towards sustainability:

- 1 Sustainable Productions
- 2 Sustainable Operations (this section)
- 3 Sustainable Buildings

## 4 Sustainable Operations

This guide was created with the input of theatre practitioners of all sorts: heads of catering and front of house, workshop managers, heads of box office, marketing and communications, sustainability leads and facilities managers.

Sustainable Operations is based not only on the sector's knowledge of theatre operations, but on the expertise in working sustainably already developed by numerous theatre practitioners.

There are some overlaps between Sustainable Operations and Sustainable Buildings. Sustainable Operations covers the challenge of managing buildings sustainably, whereas Sustainable Buildings shows how to upgrade them to be more sustainable. Whatever your role, it's worth looking at both volumes.

## 5 Scale

Inevitably, some of the advice in this volume applies to larger venues, who have dedicated facilities management teams, front of house specialists, and the resource to manage procurement centrally. Equally, some will apply to companies that have no building. Managing contracts, waste, paper, transport and deliveries may fall to one or many individuals but it is difficult to think of putting on a show or receiving a visiting company without using these resources.

Theatre operators of all scales have been involved in creating the Theatre Green Book, and the principles behind sustainability apply at all scales. You may not have a specialist marketing team, but the principle of getting your sustainability message across to audiences still applies. You may not have a 'Building Management System', but the principle of minimising energy use is the same. If your time and resource are limited, turn to the guidance and focus on those areas where you can see how to make the best headway.

Networks of smaller companies can help share worries, and expertise. They can pool resources. They may even be able to procure collectively to reduce costs, for example by purchasing green energy through an 'Energy Basket'.

## 6 The Standards

To work sustainably, theatres and theatre companies need to examine the whole range of their operations. That covers everything from marketing to travel, from running offices sustainably, to looking at waste management and heating controls. There's no point running a sustainable catering operation if your waste is never recycled and your radiators are heating empty rooms.

So the guidance in Sustainable Operations covers everything. To achieve 'Basic', the lowest of three standards, you'll need to make progress with different aspects of your operation. Climbing to 'Intermediate' and 'Advanced' will require progress across the board.

**The vital thing is to begin the journey now.**

### Cost

Sustainability doesn't have to cost more. On the contrary, reducing the amount of energy you use can be a massive cost saving for the organisation. That's worth remembering when some contracts - for 'green' materials or cleaning products - come back more expensive.

The main thing is to establish sustainability alongside cost as a key driver for the decisions you make. We will never work sustainably if sustainability is always sacrificed to price.

Quite apart from the health of the planet, there are major commercial benefits in the resilience, people-focus, and longer-term thinking that come with sustainability.

# 2 Starting Out - Preliminary Standard

Developing your green organisation, and communicating what you're doing, is an essential part of the transition to net zero. It forms the first step in the Theatre Green Book 'Preliminary' standard and is repeated as the first step in the Theatre Green Book's standard for Sustainable Operations.

## 1 Preliminary

To make progress on the transition to sustainable theatre, you must:

- Commit to the transition
- Organise yourself to support the transition
- Make an Action Plan and timeline
- Work out what data you need to collect
- Decide how you'll share progress

## 2 Building a Green Team

You'll only achieve change if you create the right conditions for a shift to sustainability.

You need a Green Team to drive the process, with someone to lead on:

- Productions
- Operations
- Buildings
- Data Gathering
- Communications

(If you're a smaller organisation, these categories will probably overlap.) You will need someone to Chair. Include a member of your Senior Leadership Team.

## 3 Creating a Sustainability Culture

Make sure you have buy-in at the top. Board and senior management need to support the drive to sustainability. Involve staff. Members of staff will be delivering change on the ground, and you need their expertise. Establish a green staff network to educate, understand challenges and share ideas. Plan for climate literacy training across the organisation. Clearly communicate targets, milestones and achievements.

Don't forget external stakeholders. Freelancers, performers and artists, funders, supporters and audiences all need to understand your sustainability aspirations and share in your achievements.

You'll need a communications plan to manage how you share the message about sustainability, celebrate successes, and make sure everyone feels empowered and involved. Section 4 of this Detailed Guidance is about communicating.

## 4 Choosing a Target

The Theatre Green Book sets three levels for your Operations:

- Basic
- Intermediate
- Advanced

To begin, get your Green Team together to assess where you currently stand against each standard, using Theatre Green Book 'Basic' standard as a checklist. Create an Action List of things you haven't done yet. Then decide which level to target and set yourself a timeline to achieve it.

A 'Basic' operation means you've achieved meaningful change, and you're on a path to zero carbon. An Advanced organisation is effectively zero carbon.

## 5 Priorities

It's easy to get bogged down in the many conflicting challenges around sustainability.

Sustainability specialists often talk about 'Scope 3 emissions', the indirect carbon impacts of most of what you do. They cover a huge range of different challenges: buying new equipment, marketing shows, audience travel, printing and publishing, communication and marketing, legal and business services, computer services, and catering. Some are easy to change. Others are mostly beyond your control.

It's essential to put your energy where it has most impact. To help you to do that, the Theatre Green Book Sustainable Operations has been divided into six areas: Paper and Digital; Food, Drink and Retail; Managing the Building; Reuse and Recycling; Travel; and Contracts / Procurement.

Some may not apply to your organisation, but a sustainable operation requires progress across the board. There's no point running a 'green' back of house if you're wasting energy in the foyers.

### 1 Focus on what you can control and don't worry about what you can't.

For example, audience travel is likely to be a major part of a theatre's impact. You can inform audiences about green travel options and incentivise them (see chapter 9). You can't force people to travel differently. So do what you can, then move on to the next task.

### 2 Identify what has most impact.

### 3 Plan your actions by balancing high impact with what's easiest to achieve.

### 4 Set a timetable for each action.

The tracker will help you.

# 3 Key Principles



## Introduction

Sustainable Operations covers a wide range of different activities. But the underlying principles are very simple:

**REDUCE** how much you use.

**SOURCE** what you use as sustainably as possible.

**Reuse or RECYCLE** everything you can.

Whatever you do, it will be much easier if you collaborate, network and share.

## 1 Reduce

The first task is always to reduce how much energy or resource you use. Whether it's the amount of electricity you draw, the quantity of waste you generate, the weight of paper you buy, or the size of your data-hungry website, powering and sourcing things sustainably becomes far easier if you minimise your footprint in the first place.

## 2 Source

Once you've cut down how much of everything you need, you can set about sourcing it as sustainably as possible. That might mean buying your electricity from renewable sources, finding the most sustainable type of recyclable coffee cup for your café, or buying locally so as to reduce travel.

Specifying sustainable materials; shortening supply chains by purchasing direct; or questioning suppliers about the transport they use - they're all examples of getting the goods and services you need from the most sustainable source you can find.

## 3 Reuse or Recycle

Finally, there's the challenge of disposing of your waste as sustainably as possible. There's guidance in chapter 7, but the principle is to reuse or recycle everything you can, whether it's sending spent cooking fat for biofuel, giving workshop offcuts to local schools, or selling unwanted furniture on eBay.

## Sharing

Use your networks to spread expertise and share solutions. Involve partners, suppliers, freelancers and supporters in your sustainability journey. Make sure you get your sustainability message across to everyone you work with - including audiences.

## Buildings

Theatre buildings are among theatre's most significant carbon impacts. Chapter 7 (Managing Buildings) is key to a sustainable transition.

The Theatre Green Book's Operations section (this section) helps you manage your building more sustainably. The Theatre Green Book Operations Tracker suggests the practical measures that will reduce carbon impact.

The Buildings section provides guidance on how to upgrade your building to make it more sustainable. The Theatre Green Book Building Survey Tool helps you plan the changes needed to upgrade your building.

The Net Zero Carbon Building Standards provide benchmarks for cultural buildings' energy use, and a framework for measuring and setting carbon budgets for buildings.

# 4 Communicating

## 1 Key principles

Theatre-makers are well aware of theatre's and the arts' potential to influence society in response to the climate emergency. But we can only do that if we're open about our own response and share what we're doing with our partners, stakeholders and audiences.

And we will only achieve the challenge of changing how we work, if we communicate closely with each other.

Good communication is essential in the challenge of making theatre sustainable. Theatres need to:

- Share with the public what they're doing to make the transition and work in ways that sustain the planet.
- Share with their own staff and partners how they're doing it, so everyone can work effectively together.

## 2 The Message

Communication about sustainability depends on clear messages to share:

- Theatres' values and mission, the priority they put on a strong response to the climate crisis, and their desire to bring audiences with them.
- How they plan to make their own work sustainable - which is vital to give credibility to the whole message - with clear, achievable targets rather than vague aspirations, e.g. 'We are on track to achieve Theatre Green Book Basic by December'.
- Stories of achievements and successes - for example, how a recent production achieved Theatre Green Book 'Intermediate' standard, or how a member of the technical team found a way to cut down on wasting batteries.

## 3 Getting the Message Across to Audiences

Audiences play a key role in theatre's journey to sustainability. So it's vital to share with them what you've achieved, what you're doing -

and why. Getting your sustainability message across spreads the word, enhances your brand, and involves your audience in a shared initiative. Here's what to focus on:

- Create clear, consistent communications.
- Share your green charter or sustainability plan with your audiences. If you're targeting Theatre Green Book standards for productions, publicise it on ticketing and marketing material. Once you have reached a standard, use the self certification tool to get a logo and use it. If you have a Sustainability Plan for your building, advertising it might help fund-raising. Tell audiences about your Sustainable Operations standard, and explain how catering or marketing operations help achieve it.
- Good news stories work. Share goals, data, and accomplishments. Make a regular sustainability slot in your newsletters or social media, and include suppliers and partners in the narrative. Involve your audience directly by inviting audience representatives to environmental visioning days. Without overdoing messaging, look for the right opportunities to get stories across, for example on menus or programmes.
- Theatres have great outreach opportunities, and the power to communicate sustainability. You may want to align education work with school curriculums and sustainability awareness dates here: [https://www.eauc.org.uk/environmental\\_dates\\_calendar](https://www.eauc.org.uk/environmental_dates_calendar).
- Involve audiences, for example by helping them with sustainable travel options (see chapter 9). You'll need to involve them if, for example, you want them to make more plant-based choices in the restaurant, or stop asking for bottled water.
- Social media, websites, programmes, tickets, newsletters and emails all offer opportunities to share your sustainability message.

## 4 Getting the Message Across Within the Organisation

A sustainable organisation involves everyone including the board, all staff and freelancers (see chapter 2 above) communicating effectively across the whole team.

Theatre-makers are busy. To make the transition as painless and swift as possible, you need to:

- Set clear goals and targets.
- Make sure information is available to everyone.
- Share where you are and what you have learned, honestly and openly.

Everyone has a role to play in making theatre sustainable. If you want to harness their energy and expertise, you need to keep them involved and enthused, with a clear sense of progress.

- Make sure you update on sustainability in company meetings and communications.
- Share the sustainability standards of the productions everyone is working on.
- Share targets and successes on your operations, and in upgrading your building.
- Make sure you credit the work, commitment and skill that goes into the transition to sustainability.
- Celebrate success.

## 5 Getting the Message Across to Everyone Else

No one can make theatre without the freelance artists, practitioners and actors on which the sector depends. Each theatre and company's transition depends on bringing their partners with them, keeping them fully informed, and providing them with the support they need, if you ask them to work differently.

Induction is the key to collaborative working. As partners join the team for a production or other project, make sure they know how important sustainability is to you. Make sure you've told them what you expect - not only in generalities but in detail. Make sure you've fully understood what that means for them - and provided the support or information that will enable them to participate in the journey.

# 5 Paper and Digital

## 1 Introduction

Sustainable management of paper and printing means minimising how much paper you use across the whole organisation. In any theatre operation this will include everything from marketing, ticketing and programmes, to planning schedules, rehearsal scripts, reports and records. It means sustainable practice for printing, whether using in-house machines, or commercially printing large-scale posters and multiple copies of programmes.

'Going digital' is often the solution to reducing paper use – for example, with digital ticketing. But digital activity itself has a large carbon footprint. Sophisticated websites, multiple drafts of video clips, thousands of emails – all of them require energy-intensive storage. The 'cloud' isn't really a cloud – it means vast server farms with extensive cooling needs.

The Operations Tracker contains checklists of ideas to help you plan strategies for paper and printing, and for digital management.

## 2 Paper and Printing Front of House

### Paper

Traditionally, marketing and box office produced quantities of posters, flyers, mailshots, cast lists, programmes and tickets. The switch to digital tickets and resources has cut paper use a lot. Review your remaining paper requirements to make sure there are no viable paperless alternatives and where you are using paper, think circular. Obtain paper from a recycled source. Recycle it after use.

You don't need to cut out all paper use overnight. Sustainability is a transition that can take time. Digital and paper operations can run in parallel – for example, programmes can be made available online to help reduce printing, even if you know some of your audience still want paper copies.

The key thing is to make sure you're printing only necessary quantities. Small, repeat orders of programmes can save you over-ordering. If you find yourself recycling quantities of cast lists or programmes, then you're printing too much.

### Printing

Marketing posters are a part of most campaigns. But they have an environmental impact.

Choose a local printer who uses recycled papers. Try to find one who offers sustainable printing methods, using non-toxic inks. Make sure your environmental requirements are part of any procurement process for printing (see chapter 10).

## 3 Paper and Printing Back of House

Review how much you print and think where it can be reduced. Even where printing can't be eliminated, you can still achieve gains by reducing it. For example, rehearsals may still need paper scripts – but you can challenge whether every edit requires a print-out for every member of the cast and team. Schedules are often printed multiple times, when they could often be shared digitally. Meetings don't need copies of agendas and minutes for everyone.

Cut down on paper use through printing policies that require double-sided printing, and ensures staff minimise how much they print. Central printers (requiring staff to go elsewhere to collect prints) have been shown to reduce printing. So have systems that identify who's responsible for each print.

Make sure printing and paper supplies are sustainably sourced.

## 4 Digital

Unfortunately, digital is not a zero-carbon alternative. The internet, email and cloud-based services cause substantial carbon emissions in manufacturing, powering and cooling computers and data centres.

Active digital management is needed to minimise your digital footprint.

### Websites

Without your knowing it, your website may have a large carbon footprint. Online carbon calculators can help you understand it (see sidebar).

You can manage it in two ways:

- Choose an internet provider who offers sustainable operation.
- Minimise internet page numbers and data size.

The Operations Tracker contains suggestions for how to reduce data size. Movies consume storage capacity, so consider how you make use of them. Images are often stored at higher res than the internet

needs, so reduce them in size. Don't keep obsolete pages and information longer than you need. Your website isn't an attic with infinite capacity. You must manage it.

### Digital Communications

Digital communication carries its own carbon footprint. Too many emails don't only damage us – they damage the planet as well. Most emails don't need to be stored, so establish guidelines for deletion.

The Operations Tracker contains suggestions for managing digital communication. Once you've made a policy, make sure it's fully communicated with staff, and that everyone understands it.

### Storage

For most organisations, digital storage grows every year. We've got used to the idea that 'digital' means keeping everything forever. That isn't only a logistical nightmare – it's a nightmare for sustainability as well.

Keeping multiple copies of large documents increases digital storage exponentially. While editing a promotional film, for example, it's not uncommon to save copies as the edit progresses. Saved copies – each as big as the eventual movie – can stay on the server, or in the cloud, for years. The same applies to high-res photographic images, audio files, and, at a smaller scale, to schedules, reports, minutes and programmes.

Initiate a project to review current storage and discard unneeded files. Establish clear guidance for everyone in reducing digital storage to a minimum.

### Digital

According to the International Energy Agency, data centres consume nearly 1% of global electricity demand.

- Investigate your website emissions with carbon calculators like this one: <https://www.websitecarbon.com/>. An average web page produces 1.76 grams CO2 per page view. For a website with 10,000 monthly page views, that's 211 kg CO2 per year (the equivalent to the CO2 absorbed by about 10 trees each year).
- Fewer webpages have a smaller impact. Minimise data size (in MB), particularly through video and image content.

# 6 Food and Drink, Retail

## 1 Key principles

Around a quarter of global greenhouse gas emissions come from food, and more than half of this comes from animal products. Theatres have a part in tackling this challenge through:

- Their public catering offer
- Staff canteens

Addressing your catering offer is one of the single biggest impacts you can have on your theatre's overall carbon footprint. A more sustainable catering approach means:

- Sourcing food and drink locally and sustainably; and reducing or eliminating food products with a high carbon impact.
- Reducing food waste.
- Choosing and managing kitchen and bar equipment sustainably.
- Sustainable catering service and packaging (e.g. avoiding disposables).

The Operations Tracker includes suggestions to help your transition to more sustainable catering.

Retail operations may have less impact, but still require thoughtful management as part of the transition to net zero.

## 2 Sourcing Ingredients

The ingredients you serve, and suppliers you work with, are the cornerstone of sustainable catering. Make your menu seasonal, and champion local producers. Ingredients sourced from further afield should be sourced directly from producers or through certified sourcing programmes to ensure transparency.

Prioritise plant-based ingredients by offering a good range of plant-based starters, mains and desserts. You can shift gradually away from meat and fish through plant-only starters and by highlighting plant-based 'house' dishes. For meat or fish, use only high-welfare meat and dairy, and responsibly sourced fish.

Bar snacks also need rethinking. Offer plant-based options, seek out dairy that's high welfare, and favour British-sourced products to reduce food miles.

## 3 Reducing Food Waste

Waste from Front of House and catering departments can be hard to organise. Audit waste to identify where food is being wasted and implement a reduction strategy (for example by reducing some portion sizes).

Ensure any unavoidable food waste is sent for Anaerobic Digestion or Composting. Bins need clear labelling. Use pedal bins with visual signs on the lids, and instructions in languages that suit your staff and audiences. (There's more on this in chapter 7, Reuse and Recycling.)

## 4 Kitchen and Bar Equipment

The energy and water used in kitchen and bar equipment can have a significant impact. Some beer delivery systems use significantly less power, and less water for cleaning. Consult suppliers for advice on low energy options, and include sustainability as a criterion when selecting kit.

Good maintenance ensures efficient operation of equipment, while training helps staff get the best out of it. Review all equipment and operations to identify sustainability wins. For example, you may be able to reduce water waste by limiters on taps. Cooking fat can be recycled for biofuel.

## 5 Catering Service and Packaging

Switch to and promote recycling wherever possible. Avoid single-use cups and glasses. Glass in auditoriums needs risk assessment, and may require a Licence variation. If you don't allow glassware, source reusable cups and glasses made from aluminium or recycled plastic.

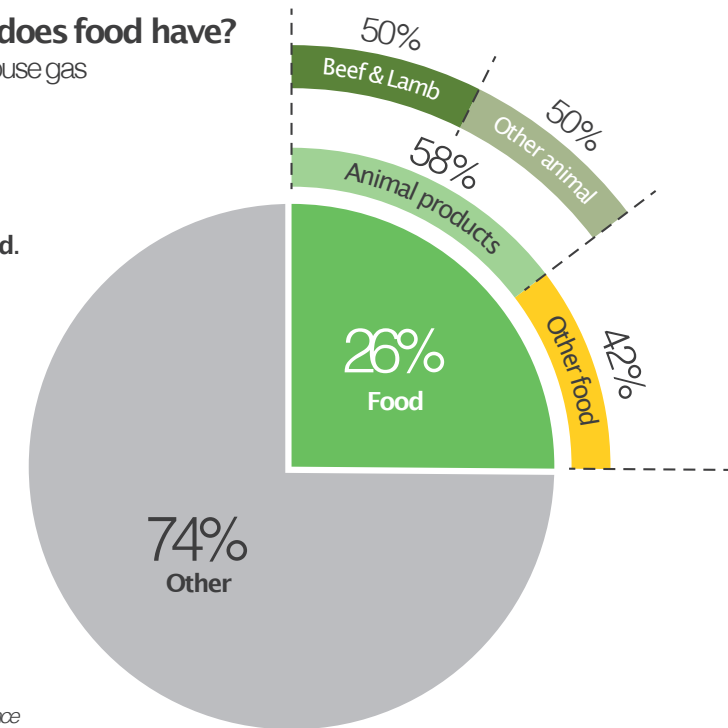
### How much impact does food have?

Proportion of total greenhouse gas emissions from food

A quarter of global emissions come from **food**.

More than half of food emissions come from **animal products**.

Half of all farmed animal emissions come from **beef and lamb**.



Source: Poore & Nemecek (2018), Science

Communicate clearly how they should be returned, and train your FOH team to help. Be ready to serve coffee and water in customers' own reusable cups. See the Toolkit for more on options for recyclable cups.

Source bar snacks in compostable packaging (if your waste contractor can support this). Ice creams can be scooped in cones, or served in reusable cups with edible spoons. Buy savoury snacks from large catering packs, store them in glass vessels and serve into reusable containers or paper bags.

If your staff wear uniforms such as T-shirts, make sure they're locally sourced from natural fibres, and laundered sustainably with low-impact products.

## 6 Retail

Retail may vary from large shops to temporary merchandise stalls. Here are some general principles:

- Sell non-perishable products that are designed to last.
- Work with your suppliers to avoid single use plastics and excessive non-recyclable packaging.
- Minimise deliveries.
- Avoid plastic carrier bags. Use recycled, reusable and biodegradable packaging.
- Promote and partner with sustainable products and brands.
- Encourage suppliers to share their sustainable policy.
- Sell re-usable coffee cups and water bottles.

# 7 Managing Buildings

## 1 Introduction

### Managing Buildings

Theatre buildings are among theatre's greatest carbon impacts. The transition to net zero depends on reducing how much energy they use. This section is about how to manage your facilities as efficiently as possible. 'Sustainable Buildings', the final section of the Theatre Green Book, is about how to upgrade them, to make them fit-for-purpose in the climate emergency.

### Sustainable Buildings

The final area of the Theatre Green Book, Sustainable Buildings, provides guidance on upgrading buildings to make them more sustainable by:

- Better insulation, double-glazing and draught lobbies, so they need less energy.
- More efficient building services such as heating, cooling and hot water, so they use less energy.
- Renewables such as Photovoltaic ('PV') cells that generate on-site energy.
- Support for biodiversity and reduction of water use.

Sustainable Buildings is supported by a 'Building Survey Tool' that allows building owners or managers to enter details about their premises and generate an initial Sustainability Plan for:

- Easy Wins that you can implement straightaway.
- Maintenance Projects you can plan into maintenance programmes.
- Capital Projects that need fund-raising and planning consents.

In each case, it ranks sustainability interventions in order of impact, to make sure you tackle the most important things first.

## 2 Understanding Targets

Set up by a consortium of construction industry groups, the Net Zero Carbon Building Standard provides emissions benchmarks for all types of buildings. Science-based, it takes a whole-building approach (covering all scope 1 and scope 2 emissions), and suggests targets for thirteen sectors, including cultural and entertainment buildings. Targets are calculated as a share of the national carbon budget, to achieve decarbonisation within UK government timelines (note that theatres may aim to achieve net zero quicker than this).

The NZCBS suggests benchmarks and targets for both operational carbon (how much your building emits in operation), and embodied carbon (the carbon emitted by manufacturing the building in the first place). Reducing operational carbon is the subject of this section, which helps you operate your building more sustainably, and of Sustainable Buildings, which helps you upgrade your building to operate better. Carrying out building works has a carbon impact, and this is covered in more detail in Sustainable Buildings.

Commissioning a voluntary Display Energy Certificate (DEC) tells you how your building performs currently on sustainability. (See Sustainable Buildings for more information).

## 3 Controls

Good building controls are the key to running buildings on as little energy as possible. Zoned heating makes sure empty rooms aren't being warmed. Timers shut off fans and cooling systems. Movement detectors switch off the lights when everyone's left. If your controls don't allow careful energy management, make it a priority to upgrade them. Until then, set in place operational procedures to ensure lights and heating are switched off.

A Building Management System provides automatic control over your use of energy. But 'BMSs' need to be set up correctly, with good training for the staff who run them.

*See the Toolkit for more guidance on services controls and BMSs.*

## 4 Behaviours

Even the best controls won't help if your staff and visitors don't understand them, and behave in ways that make the building use energy unnecessarily.

If staff leave doors open, so heat escapes from heated to unheated areas; if they leave lights on in empty rooms, or switch heating systems to full because they feel cold; if they open windows while aircon is running, and then leave them open when they leave the room - then your building is wasting energy, and costing you more than it should.

So it's essential to induct staff (and visitors) in sustainable behaviour, and establish a culture where everyone is using the building responsibly.

## 5 Maintenance

Well-planned maintenance (Planned Preventative Maintenance) is essential to sustainable building management. Maintenance:

- Prolongs the life of building components, plant and joinery.
- Ensures services and plant operate as efficiently as possible.
- Prevents expensive building failures that disrupt operations and divert expenditure from sustainability upgrades.

### Payback

Using less energy can generate massive savings. The 'payback' on upgrading controls - the time it takes to pay back their cost through lower energy bills - is often very quick. (Improving behaviours costs nothing and also cuts bills.)

The same applies to many other sustainability measures. If you're hesitating about investing in upgrades, it's worth calculating the savings each will achieve.

A Planned Preventative Maintenance Programme allows you to track the expected lifespan and maintenance needs of each element of your building, from roofs to boilers. This helps you plan upgrades effectively. For example, if you know your roof will need replacing in five years' time, you can plan around that for upgrading insulation. See Sustainable Buildings, Detailed Guidance chapter 11, 'Maintenance', for more advice.

A Planned Preventative Maintenance Programme gives advance warning of capital expenditure needed to replace roofs or theatre seating, allowing Boards and management to plan capital projects in advance.

## 6 The Right Skills

Larger theatres have in-house teams to maintain and manage facilities. In smaller companies, facilities management is likely to be combined with other responsibilities. In that case it's worth developing relationships with maintenance companies, and drawing on their expertise. It's also important to work out your responsibilities (maintenance may be up to your landlord).

In many teams, knowledge is held by long-serving members of staff – but not always shared. Make a checklist of the information needed to manage the building sustainably, so that good practice is passed on through staff changes, and you have clarity around handover, induction, awareness & responsibility. See *the Toolkit for more guidance*.

Regular training and continual professional development is important to keep staff knowledgeable and informed of current health, safety and environmental guidance, aspects of statutory and regulatory requirements, and industry good practice.

## 7 The Right Information

Some theatres have only patchy information about the state of services, whether the roof is insulated and who last fixed the gutters.

Others have more complete Operators' Manuals and Health and Safety Files, dating from previous capital projects. It's important to collate all the information you have, fill in gaps when you can, and update information as works are carried out.

Ideally, theatres and companies who manage buildings should maintain a detailed asset register, which provides an inventory of all maintainable assets and their relative condition. This document should include schedules of key maintenance tasks, how often they need to be carried out, and what they are likely to cost.

## 8 Housekeeping

Day-to day upkeep of the theatre can be made more energy efficient and environmentally friendly. Here's where to focus:

- Laundry: wash on cold cycles, use eco-friendly detergents, hang dry when possible or seek dry cleaners that use wet cleaning.
- Use eco-friendly chemicals like Method.
- Soaps: Organic soap is a fail-safe way to avoid artificial chemicals. Prioritise vegan soaps to promote animal welfare. Reduce products containing palm oil.
- Foam soaps are good, as you get more out of a smaller container. Utilise re-fills wherever possible. Buy in bulk to reduce volumes of single-use plastic and delivery frequencies.
- Hand towels or hand driers: There is not much difference between the two from a carbon consumption perspective so stick to what you have. Hand towels are generally considered more hygienic in combating pandemic infection.

## 9 Tracking Progress

Utilities bills give you a direct measurement of how much energy you use, whether through electricity, or through the fossil fuel you buy (gas, in most cases).

The Operations Tracker includes a Calculator that converts the kilowatt hours (kwh) of energy you buy into a measure of the carbon impact of your building energy use.

However, improvements in your carbon record will also come from improvements in the electricity supply. So tracking the energy itself, in kwh, gives you a better idea of whether you're successfully saving energy.

Understanding the energy use of your building as a whole is useful – but it won't tell you in detail where the energy is going. For that you need to:

- Install sub-meters to capture the energy use of each part of your operation (for example, stage lighting).
- Record energy use regularly so as to identify movements over time and highlight irregularities (if your energy use doesn't drop in summer or periods of low occupation, something's wrong).

### Technology

Larger organisations manage facilities with 'Helpdesk' platforms, Computer Aided Facilities Management (CAFM) or a Building Management System (BMS).

A Helpdesk receives, logs, and responds to service requests raised by staff.

A Computer Aided Facilities Management (CAFM) system automates functions such as scheduling works. It needs good staff training, and a dedicated staff member responsible for reviewing and updating the asset database.

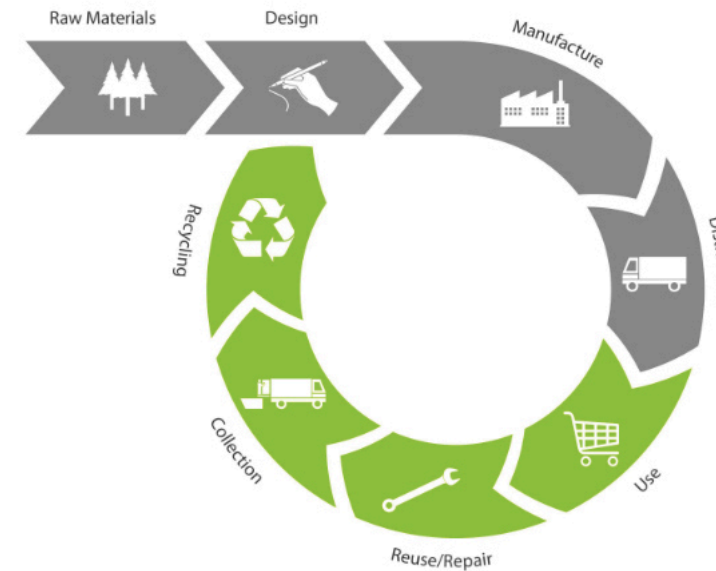
Building Management Systems (BMS) can significantly improve management and efficiency, as well as improving environment and reducing costs. Ensure the BMS is functioning appropriately and users are fully trained.

The 'lock-down year' of 2020/2021 can set a baseline for the energy the building was consuming when closed.

# 8 Reuse and Recycling



The Waste Hierarchy



The Circular Economy

## 1 The Waste Hierarchy

The Waste Hierarchy (see above) sets a framework for managing waste sustainably. Wherever possible, prevent and reduce waste. Next, re-use where you can (for example, a glass or crockery plate), then recycle (for example, recycling the material in a paper cup to make new paper products), then recover energy value from discarded material (for example, by burning timber products as biomass).

Only after these options have been considered should anything be finally treated and safely disposed of.

## 2 The Circular Economy

Incorporating these principles will encourage staff and audiences to make sustainable choices. It will help us move from a linear economy, where raw materials are turned into objects and then thrown away, to a circular economy, where resources and materials are kept in use for as long as possible.

## 3 Reduce/Reuse

The best way to reduce waste is to avoid producing it in the first place. To achieve this:

- Audit supply chains to identify where you can avoid waste at source.
- Review activities such as catering, ticketing, and education to see where waste is generated and how you can produce less.

- Encourage behaviour in visitors and staff that results in less waste generation.

In addition:

- Choose suppliers who allow packaging, including crates and pallets, to be returned once no longer required.
- Choose products that allow containers such as bottles to be returned for reuse.
- Where packaging can't be returned, reduce it as much possible. Wherever you can, replace packaging with edible or reusable alternatives.
- Eliminate single-use plastics.
- Reduce food waste through tracking food sales and consumption to avoid over-ordering.
- Cut paper waste by encouraging paperless offices and administration.

See the Productions section for guidance on reducing and reusing materials in productions.

## 4 Recycle

Once waste is generated and the products can no longer be reused, reduce how much waste is thrown away by increasing recycling rates. It's important to limit contamination so as to make sure recyclable material is of good quality:

- Identify the most common waste materials and capture them as separate streams.
- Train staff to understand the waste management and recycling system, and how waste products are streamed.
- Educate visitors to dispose of waste properly and reduce contamination.
- Provide sufficient bins to allow for on-site separation of multiple waste streams (e.g. residual, dry recyclables, organic waste).
- Provide clear, concise recycling signage to guide staff and visitors.
- Ensure waste contractors follow the same waste separation strategy. Check they're committed to monitoring and inspecting where sorted waste ends up.

## 5 Recovery / Disposal

Waste which contains energy (such as timber products, or spent cooking fat) can be disposed of through contractors who recover energy as biomass.

Landfill disposal should be handled by contractors able to ensure safe best practice treatment of all waste products.

# 9 Travel and Transportation



## 1 Introduction

Travel is a 'Scope 3 emission'. In other words, it isn't the direct responsibility of the theatre, like the gas burnt in a boiler (Scope 1), or the energy produced in a power station (Scope 2). The energy consumed in travel is an indirect consequence of the theatre's operations.

As with many scope 3 emissions, theatres don't have full control over travel - they can't tell audiences how to arrive for a production, or re-write bus timetables to suit show times. And audiences may, of course, use their journey to shop, go to a restaurant or visit friends, as well as taking in a show.

Nonetheless, there are concrete steps theatres can take to support sustainable travel choices for:

- Audiences
- Staff
- Visitors, including artists and freelancers

As for 'transportation' - deliveries and touring - theatres can choose sustainable options to minimise their carbon footprint. Green travel policies can also cut the carbon footprint of staff travel for work.

In all cases, the key to cutting travel emissions is to:

- Reduce the number and length of journeys where possible.
- Identify sustainable travel options and make them easy to use.

- Promote sustainable choices, for example by educating audiences, staff and visitors about the energy consequence of car travel, informing them of alternatives, and incentivising sustainable alternatives.

A Green Travel Plan can bring all these initiatives together.

## 2 Sustainable Travel Options

The most sustainable ways to reach a theatre involve walking, cycling, electric vehicles or public transport.

- Make sure signage for pedestrians is effective to point pedestrians to the theatre. Work with Local Authorities to make sure routes are well-lit, well-maintained and safe.
- Provide adequate numbers of bike racks, as well as cloakroom facilities for folding bikes. Secure bike pods enable staff to cycle. Secure bike storage might be found internally by converting a store or unused office. Some audiences or visitors may be helped by charging points for electric bikes. Marketing and website information can inform audiences and visitors of the facilities you offer.
- Lobby the Council for well-signed and marked cycle routes to your premises. In some places it may be possible to partner with a local city-based bike scheme.
- If you have a car park, install electric car charging points. Your website and staff information can promote taxi companies with electric vehicles.

- It may be hard to improve public transport to your premises. But clear information about public transport and timetables can be shared on your website, with links to sales, service information and walking apps such as mapmywalk. In some cases, it may be worth adjusting show times to suit local train or bus timetables.

## 3 Audiences

No one wants reduced travel to mean reduced audiences. However, you can encourage audiences to reduce their journeys, for example by combining theatre visits with other tasks. A single visit for shopping and theatre might halve someone's distance travelled.

Travel-share schemes can also reduce journeys, with audience members sharing car transport, or (electric) taxis home.

### Measuring Travel

As with many aspects of sustainability, you'll only know if you're making progress if you track data effectively.

Aim to gather all the information you can about how audiences reach your venues, so you can measure change over time - and update audiences as emissions drop.

Do what you can to measure staff and visitor travel. Set targets for progressive improvement year-on-year, and use the data to focus on areas of improvement. The Operations Tracker includes a simple travel calculator.

A survey of audiences can gather data about current practice, and give you a baseline to work from.

The key to progress is clear information about sustainable travel options. These can be promoted through marketing information at the point of ticket sales, and on your website. It's easiest to get the message across if you've already engaged the audience in your sustainability journey.

Sustainable travel can be incentivised by:

- A slight reduction of ticket costs for use of public transport, which can be promoted through ticket sales.
- Reducing car parking provision over time.
- Suggesting audience members offset carbon emissions for travel at the point of purchase. It may be possible to link to offsetting schemes, in-putting travel distance through postcode information.

Where theatres attract international audiences, websites can help with information about sustainable ways to travel from abroad.

## 4 Staff

There are several strategies for reducing staff travel:

- Flexible working, to reduce commuting.
- Video conference calls to reduce travel to meetings. Long-distance journeys should only be undertaken if there's a clear reason why a zoom call won't work.
- Time management to reduce the numbers of long-distance journeys. For example, a single journey can be planned to serve multiple meetings.
- Reducing single journeys in taxis.

Sustainable travel options can be promoted and incentivised by:

- Signing up to the cycle-to-work scheme to subsidise cycle purchase.
- Providing more secure bike storage (along tools for bike repair and shared maintenance days).
- Providing shower facilities for cycle commuters.
- Subsidising local transport bus passes.
- Timing meetings to help staff avoid rush hours.

Your Green Travel Plan can gather information in one place, helping staff use less polluting forms of transport in all aspects of their work.

## 5 Visitors

To reduce visitor travel:

- Use local contractors if possible.
- For visiting artists, provide temporary accommodation close to rehearsal spaces and venues. Try to create longer residencies for out-of-town artists. For journeys to theatre or rehearsals, promote sustainable travel options.
- Adopt video-conferencing where possible.
- Consider where visiting artists and freelancers are based. It may be possible to employ freelancers based nearby. Some theatres may even choose to cast locally.

## 6 Deliveries

You can reduce journeys by:

- Planning ahead and consolidating to avoid multiple deliveries from the same suppliers.
- Ensuring Production and Storage facilities are in close proximity.
- Sourcing materials locally.

To ensure deliveries are as sustainable as possible:

- Consider replacing your own transport with an electric van.
- Seek out suppliers who offer sustainable deliveries.

## 7 Touring

Sustainable touring is essential if theatre is to move towards sustainability, but still reach audiences. The key is to:

- Reduce the amount you tour with.
- Reduce the number and length of journeys.
- Choose sustainable transport wherever possible.

*For more advice on sustainable touring, see the Productions section.*

# 10 Contracts and Procurement

## 1 Introduction

Theatres and companies don't control everything. They depend on suppliers of food, plywood, paper, and cleaning products. They work with contractors for cleaning, building maintenance, and the upkeep of technical equipment.

To make your operation sustainable, you need all those third parties to share your values and work to the standards you set.

That needs:

- Well-defined standards that you communicate clearly.
- Procurement rules and practices that prioritise sustainability, identify companies with shared values, and separate meaningful action from 'greenwash'.
- Contracts that enshrine sustainability requirements.
- Follow-through in monitoring performance.

## 2 Standards

Over time, specialist theatre suppliers and contractors will become familiar with the Theatre Green Book, so you can refer to it in setting standards. Green Book guidance is written in plain language, and should make sense with little extra explanation.

External standards and guides can also act as references for sustainability, such as the Sustainable Restaurant Association's Food Made Good framework (see Toolkit). Independent certification is essential for any product claiming to be sustainably sourced or zero carbon.

If you need to define standards for yourself, make sure they cover:

- Origin of products (i.e. where originally manufactured, and where raw materials come from).
- Delivery / transport methods and packaging.
- Certification.

## 3 Procurement

Sustainable procurement identifies third parties who will deliver what you need in a sustainable way. It helps to identify partners who share your standards, and develop long-term relationships with them, encouraging them to be part of your sustainability journey.

### Procurement criteria

Make sure sustainability is ranked alongside cost and quality when you select contractors. When tendering goods or services, make sustainability a high priority, and set scoring systems to reflect this. Include sustainability in questionnaires.

### Information

In reviewing companies' information, it can be hard to separate 'green' claims from reality, and easy to get lost in the detail of where components come from and which standards you can trust.

Request transparency across the whole life cycle of third party products. Challenge 'green' claims, and request further information on certification schemes. Ask to see environmental policies or sustainability credentials. Wherever possible, require independent environmental certification.

Ask for information on transportation methods and distances. Include questions about packaging, treatment of waste, and whether waste disposal can be included in contracts.

Above all, be clear about your own standards and ask for verification that contractors' proposals will meet them.

### Central Procurement

For larger organisations, central procurement manages standards across everything you do, and prevents different departments having

to reinvent the wheel with every tender. Checklists of approved suppliers saves time on hunting for appropriate partners.

The Government offers useful guidance on sustainable procurement: <https://www.gov.uk/guidance/sustainable-procurement-tools>

*See the Toolkit for a guide to sustainable procurement.*

## 4 Contracts

New contracts with external suppliers or contractors should be revised to incorporate sustainable principles, commitments and specific roles. These may involve the right to reuse and recycle products where necessary.

Key Performance Indicators (KPIs) can be introduced to measure performance. They will need active management (see below).

It's sometimes possible, by agreement, to amend existing contracts to incorporate sustainable incentives, roles and features. Contract riders can bring pre-existing contracts into line with sustainability targets.

Incorporate sustainability principles and commitments in contracts with staff, freelancers and visiting companies

*See the Toolkit for an indicative contract rider for supply contracts.*

## 5 Monitoring Performance

Key Performance Indicators in contracts help monitor performance and ensure final outcomes. They will need active management, however. Staff time must be set aside to monitor performance and raise issues.

Meaningful progress on the climate emergency comes from better actions, not just better intentions. If you have limited time and resource, identify the actions which have most impact. Follow through on them, for example by asking to see certificates, or verifying distance travelled in delivery.

# 11 Zero Carbon and Beyond

## 1 Introduction

The ultimate goal for every organisation is to achieve zero carbon emissions each year: to operate without harming the planet.

For most, that will take several years to achieve. It's a transition, not an overnight change. For some, it may be impossible. For example, we don't have a decarbonised transport network to support sustainable touring. Historic theatres can't be fully insulated, and will probably always need more energy to run at acceptable temperatures.

When theatres can't achieve zero carbon operation, they can reach 'net zero' by 'off-setting' the amount of carbon they can't get rid of. Off-setting means calculating your carbon, then investing in a scheme (for example, tree-planting) to absorb the same amount of carbon as the theatre is emitting. In theory, the building's impact is cancelled out: it's 'net zero'.

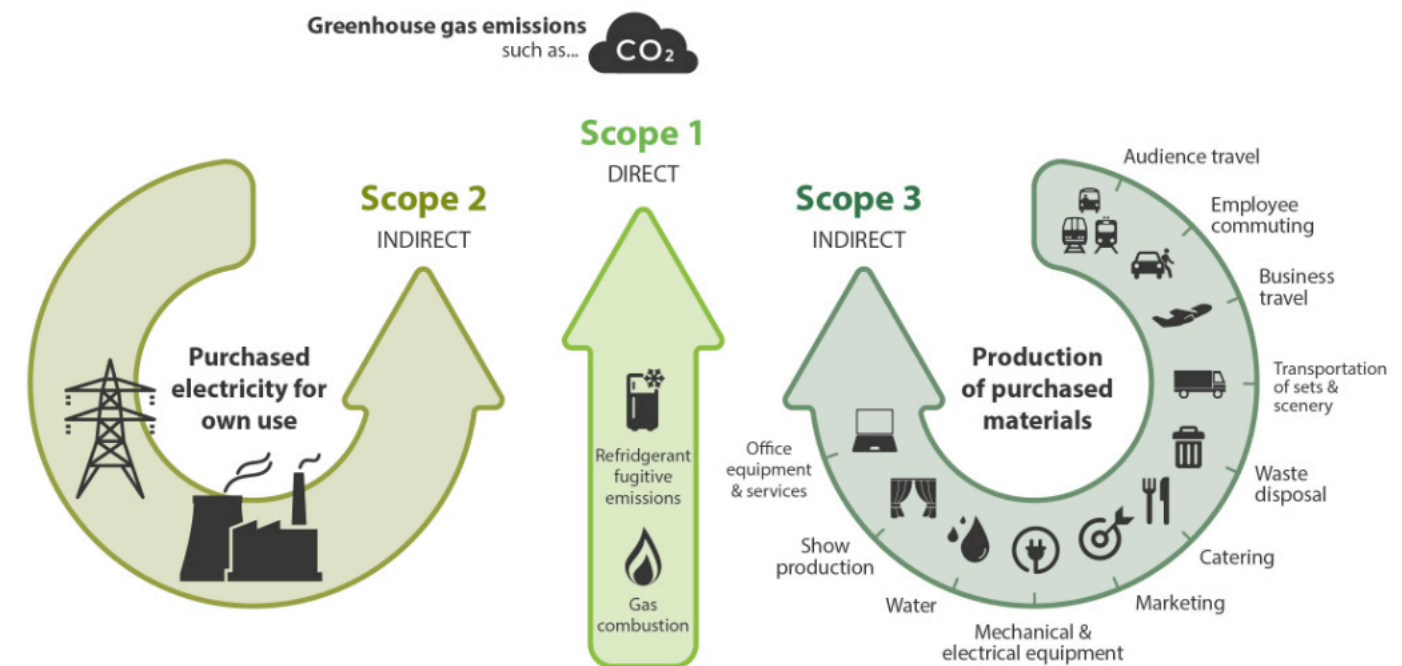
But accurate carbon calculation is difficult, off-setting is full of complexity, and it can be hard to find schemes you can rely on. Offsetting should always be seen as a last resort. The first step is to reduce carbon emissions as far as practically possible.

## 2 Offsetting

If you decide to off-set residual carbon, it's best to follow UK Green Building Council guidance:

Carbon offsets should either be procured directly or via recognised existing offsetting frameworks. Both of these routes should seek to demonstrate 'additionality' (i.e. they wouldn't be happening anyway), avoid double-counting and provide a clear process for verifying actual carbon savings. Offsetting frameworks worth considering include the Clean Development Mechanism and Gold Standard.

However, it can be hard to find a really reliable off-setting scheme. Unless you're focused on declaring 'net zero', it may be as effective to make equivalent donations to projects such as the Woodland Trust, or a local wildlife scheme.



If theatres are on a journey to net zero, then the amount they need to offset will keep reducing. Make sure you regularly balance your need against your offsets - and don't fall behind on the payments.

See <https://ukgbc.org/our-work/topics/advancing-net-zero/carbon-offsetting-and-pricing/>

## 3 Regenerative Action

It will be a challenge for many theatres to reach zero carbon. All the same, it's important to focus on the longer necessity of restoring some of the damage we have already done to the planet. As cherished institutions within local communities, theatres have the

### Defining Net Zero

For an existing theatre, net zero carbon is defined as follows:

*"When the amount of carbon emissions associated with the building's operational energy on an annual basis is zero or negative. A net zero carbon building is highly energy efficient and powered from on-site and/or off-site renewable energy sources, with any remaining carbon balance offset."*

ability to influence and inspire action beyond their own business operations. Sharing knowledge, collective purchasing of similar services, or shared community engagement projects are ways to increase the impact of your own strategies.

Ultimately, public buildings should aim to take restorative action by generating electricity, supporting biodiversity, and taking whatever measures they can to address the climate emergency.

The journey need not end at carbon zero.

### Defining Emissions

**Scope 1** emissions are caused directly by the theatre, when it burns fossil fuels like oil and gas in a boiler.

**Scope 2** emissions come from indirect energy generation - i.e. when a theatre buys electricity which the electricity company makes by burning fossil fuels in power stations.

Scope 1 and 2 are mostly within a theatre's control.

**Scope 3** emissions are indirect. They're far harder for theatres to control. They're caused by the journeys audience make to reach the theatre, the carbon emissions of supply companies, and the transport needed to deliver supplies and take away waste. It's easy to get confused trying to calculate, let alone change them.

# You'll find tools and more in the **RESOURCES** area



## Sustainable Productions

for...

- Downloadable Production Calculator
- Detailed guidance
- Case studies
- Toolkit

Go to **Productions** resources



## Sustainable Operations

for...

- Downloadable Operations Tracker
- Detailed guidance
- Case studies
- Toolkit

Go to **Operations** resources



## Sustainable Buildings

for...

- Downloadable Building Survey Tool
- Detailed guidance
- Case studies
- Toolkit

Go to **Buildings** resources

## Certification

for...

- Downloadable Self-certification forms
- Sustainability Glossary

Go to **General** resources

*Renew Culture are co-founders and co-authors of the Theatre Green Book. We have pioneered the growth of Green Book networks across the world, and are leaders in theatre's journey to sustainability.*

<https://www.renewculture.co.uk>

**Renew Culture**  
The Theatre Green Book

*Buro Happold is an international, integrated consultancy of engineers, consultants and advisers. After leading the construction industry in declaring a climate emergency, we've committed to reduce our own impact by achieving challenging science-based targets. We are collectively working towards an equitable and green future by adapting our business to mitigate climate change and the biodiversity crisis and helping others achieve their sustainability goals.*

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