

# **THE THEATRE GREEN BOOK**

*Version 2*

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*We would like to thank everyone who has supported the Green Book with their time, their commitment and ideas. Their names are in the acknowledgements. And special thanks to the funders of the Green Book, whose names you'll find in the inside back cover.*

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## Green Book Foreword

Theatre has begun a journey.

It's a journey we must all make - a transition to a world where we live, work, travel, eat and make art without harming the planet we live on. To use Gro Harlem Brundtland's definition of sustainability: to meet the needs of the present without compromising the ability of future generations to meet their own needs.

We need to make this transition urgently. The climate emergency is a crisis, and a crisis is a problem that demands attention now - not next year or the year after. Many theatres have laid credible plans to achieve net zero by 2030.

The good news is that we're already well on the way. Since the Theatre Green Book came out in 2021, networks all over the world, encompassing all varieties of theatre, opera and dance, have joined this collective initiative. We're learning, together, to make theatre sustainable. We're learning how to share that progress with our partners and audiences.

Theatre's core strengths are innovation, courage and creative thinking. They've all fed into this second edition of the Theatre Green Book. With their help, we can make the journey to net zero. We can make theatre today, without compromising the dreams of future theatre-makers.

**Lisa Burger and Paddy Dillon, Renew Culture**



The climate emergency is the most serious challenge humanity has ever faced.

Theatre can play an essential part in our response.

So theatre must become environmentally sustainable.

## *A complete method for environmentally sustainable theatre*

- *A framework for planning sustainability*
- *Best practice guidance for every area*
- *Three standards on the path to net zero*
- *A measurement system to measure progress*

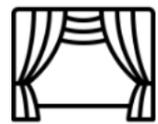
### ***based on***

- *Practical expertise from theatre-makers*
- *Reliable methodology from environmental sustainability experts*

### ***to support***

- *Work of any kind (theatre, dance, opera...)*
- *By anyone (freelancers, companies, theatres, schools...)*
  - *At any scale*

# To be sustainable, we need to...



## Sustainable Productions

... make theatre **Productions** as sustainably as possible



## Sustainable Operations

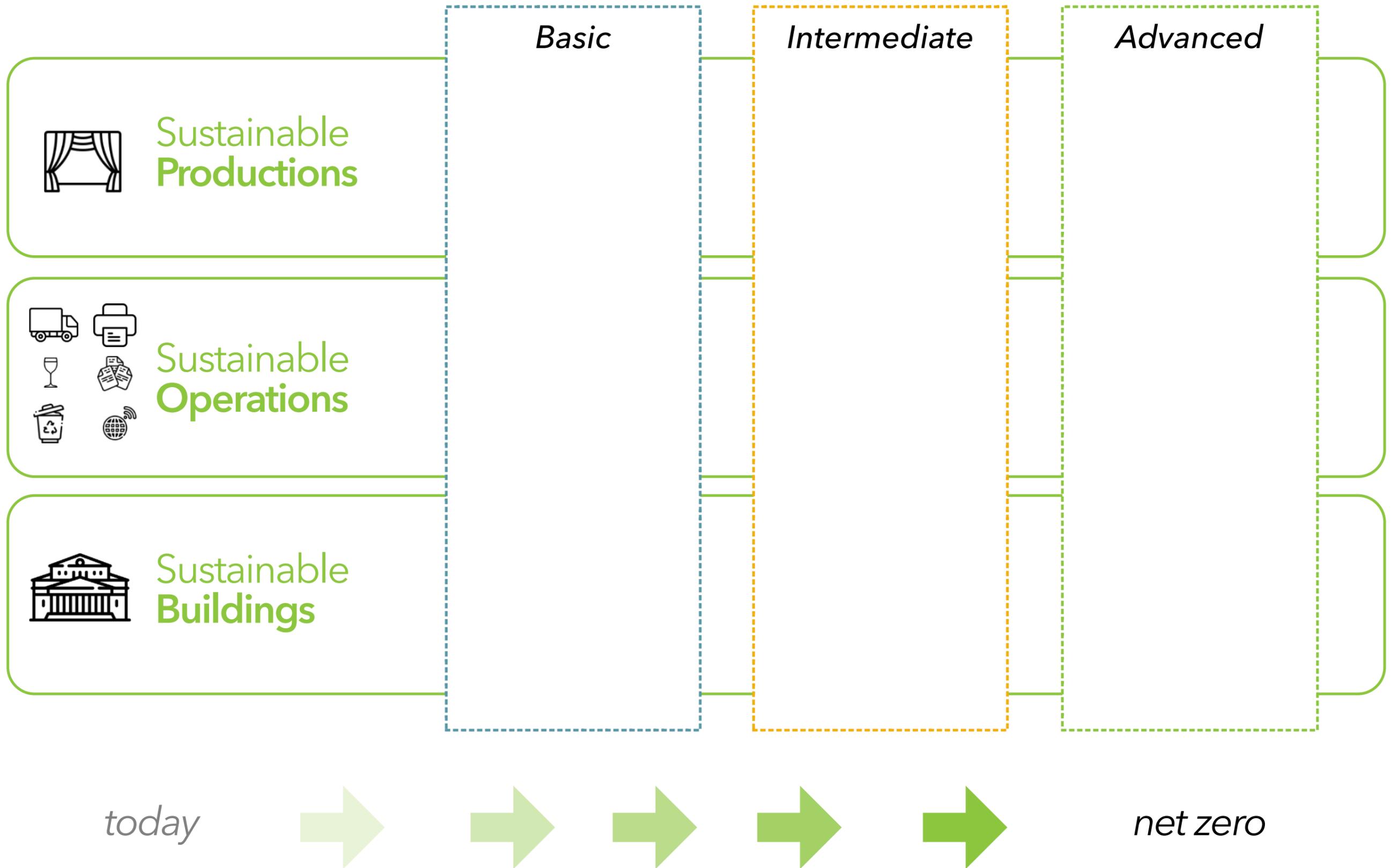
... run theatre **Operations** as sustainably as possible



## Sustainable Buildings

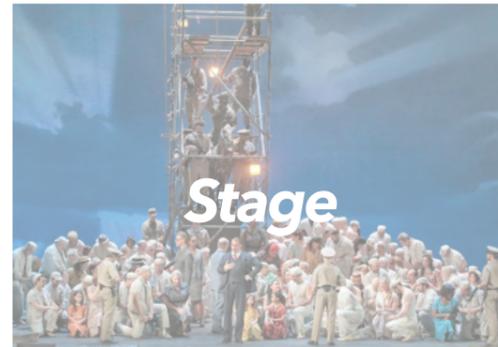
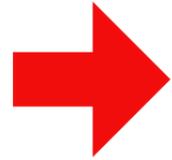
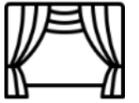
... make theatre **Buildings** as sustainable as possible

# Follow three steps for the transition to net zero

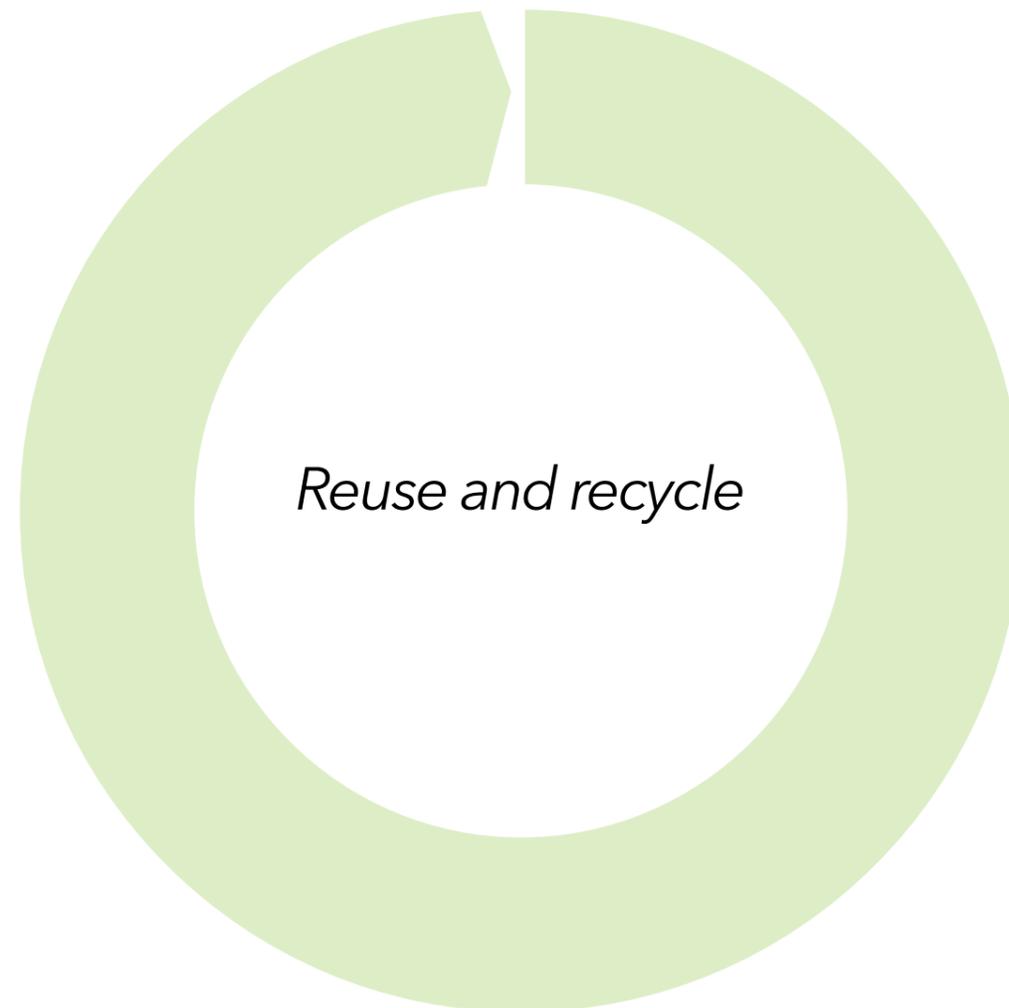


What must we do to make  
theatre sustainable?

# In our PRODUCTIONS, we need to ...



move from a **linear** ...  
... to a **circular** economy for theatre



# In our OPERATIONS, we need to ...



- **Reduce** how much we use
- **Source** what we use sustainably
- **Reuse or Recycle** everything we can



# In our BUILDINGS, we need to ...



*Insulate* so we need less energy



Make our systems *efficient* so we use less energy



Generate *renewable* energy



Support *biodiversity* and use less *water*

How do we start?

## Start with a **PRELIMINARY** commitment

- **Commit** to becoming a sustainable theatre-maker
- Form a **Green Team** in your organisation
- Set a timeline to reach the first step, **Basic**

# Start with a PRELIMINARY commitment

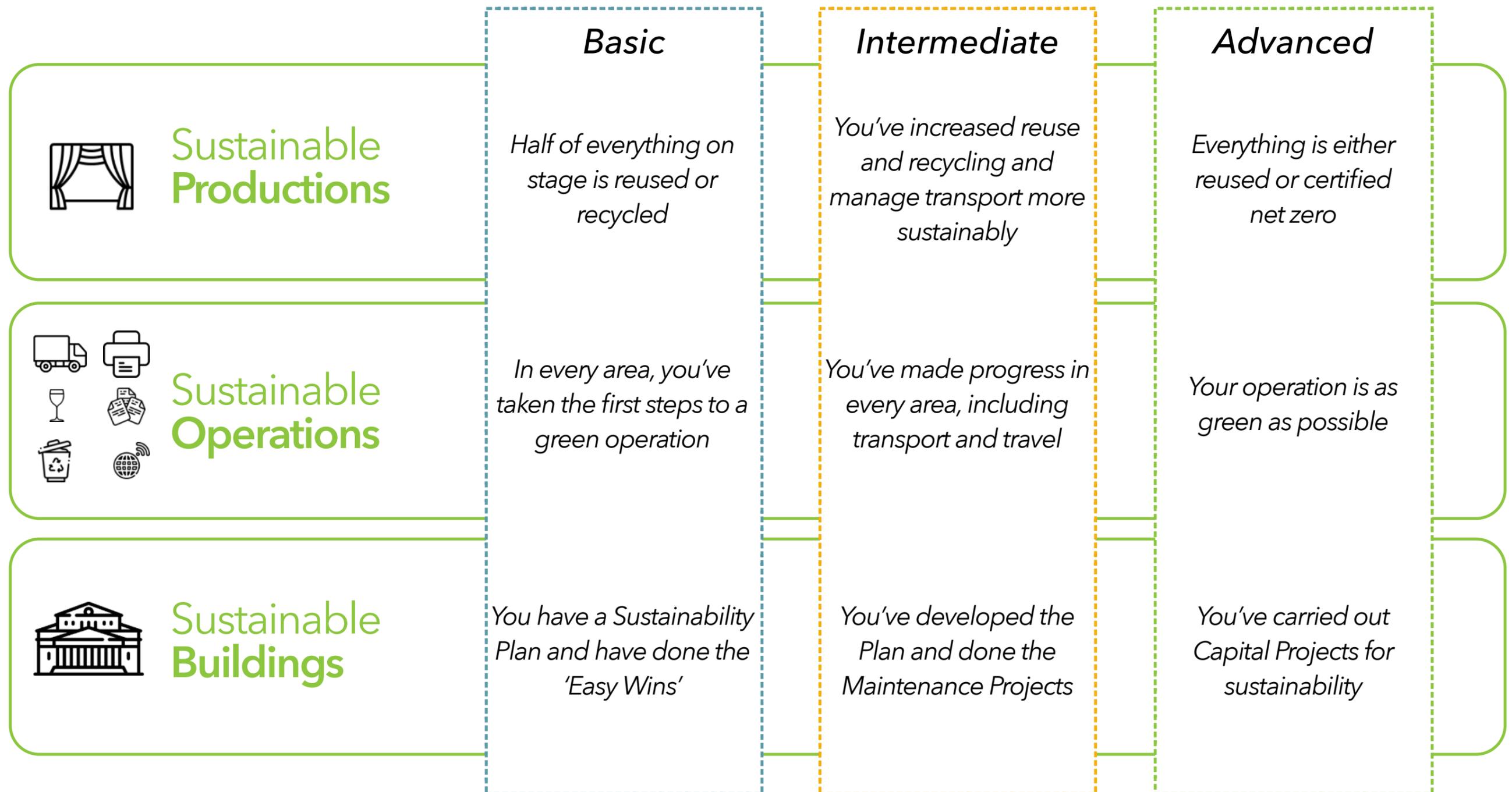
These are the steps you'll need to reach

Theatre Green Book **Preliminary**

## Preliminary

<ul style="list-style-type: none"> <li>• <b>COMMIT</b> to reducing your environmental impact, and starting the transition to net zero.</li> </ul>	<p><i>It's essential to make sure your environmental commitment is clear to everyone.</i></p>	
<ul style="list-style-type: none"> <li>• Establish a <b>GREEN COMMITTEE</b> including a sustainability lead, a member of the senior leadership team, and a lead for each area - Productions, Operations and Buildings – and key staff members.</li> </ul>	<p><i>Leadership is key but a senior team is needed to decide which Theatre Green Book level to target, make change, involve staff and report progress.</i></p>	
<ul style="list-style-type: none"> <li>• Agree an <b>ACTION PLAN</b> setting out the steps you need to reach the next Green Book stage, and a timescale to achieve it.</li> </ul>	<p><i>You must be clear on the key actions needed to deliver measurable progress towards the environmental goal.</i></p>	
<ul style="list-style-type: none"> <li>• Make a <b>DATA PLAN</b> to set out what you are going to measure and who is responsible.</li> </ul>	<p><i>You need to be in a position to report and analyse your progress, to achieve each Green Book standard.</i></p>	
<ul style="list-style-type: none"> <li>• Set a <b>COMMUNICATIONS PLAN</b> to explain how you will share your targets and achievements, involving staff, partners and audiences.</li> </ul>	<p><i>Sustainability needs a cultural change. Good communication helps everyone share the challenge.</i></p>	

# BASIC is the next step on the journey to net zero



The next sections show how to reach **Basic** in each area

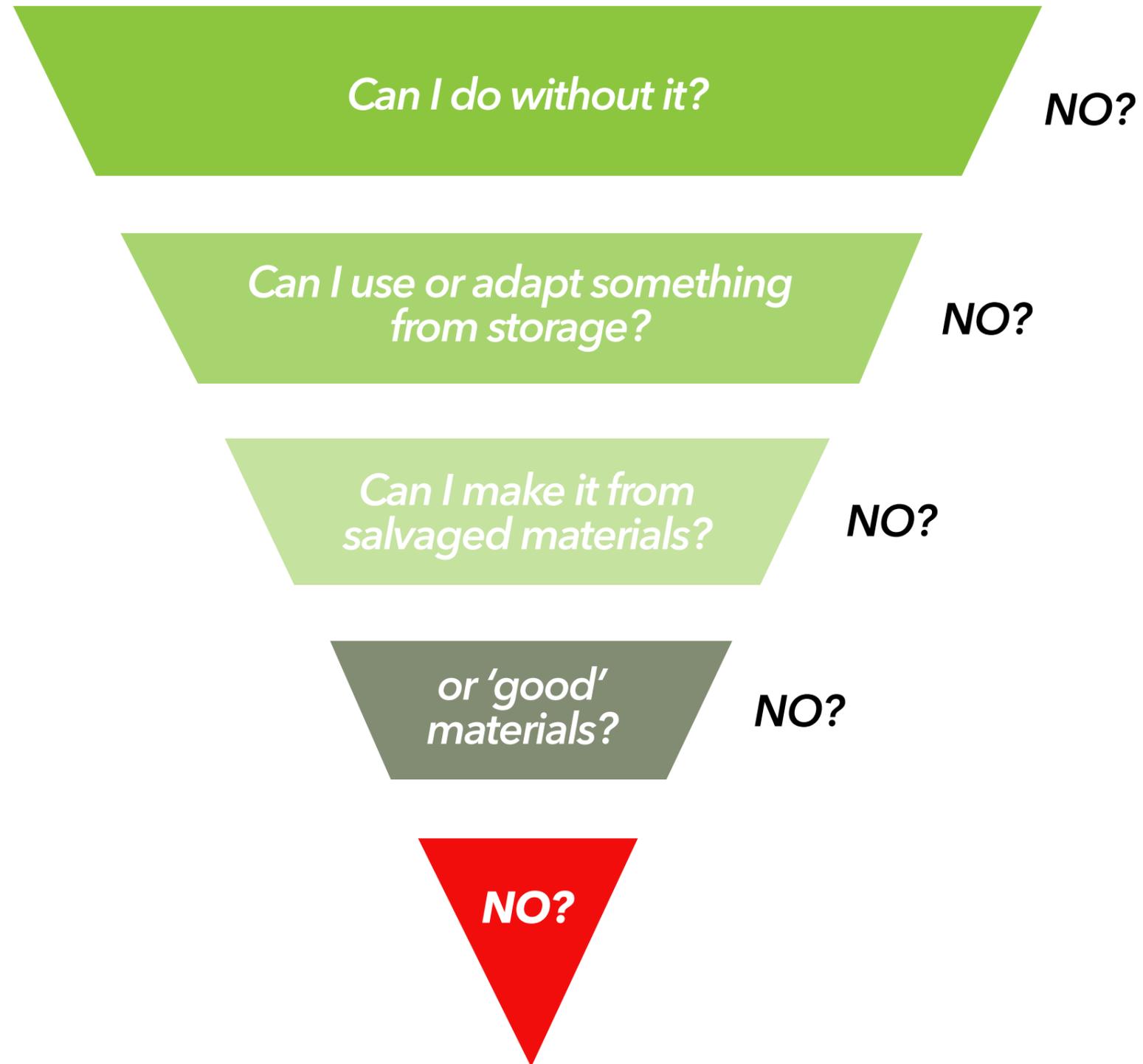
# **SUSTAINABLE PRODUCTIONS**

Click [here](#) to go straight to **Productions Resources** for:

- Detailed guidance
- The Production Calculator and standards
  - Case studies
  - Toolkit pages

*If you don't produce shows, ignore this section*

# Think differently



*Is it worth harming the planet for?*

# Where do materials come from?

## Reused

*Masking, floors, building components, scaffold, steeldeck, furniture, props, costumes ...*

## Remodelled

*Remodelled stairs, flats with new textures, reupholstered chairs, altered costumes...*

## Recycled

*Salvaged metal sections, timber, plywood sheets, perspex sheets, salvaged fabric...*

## 'Good' new materials

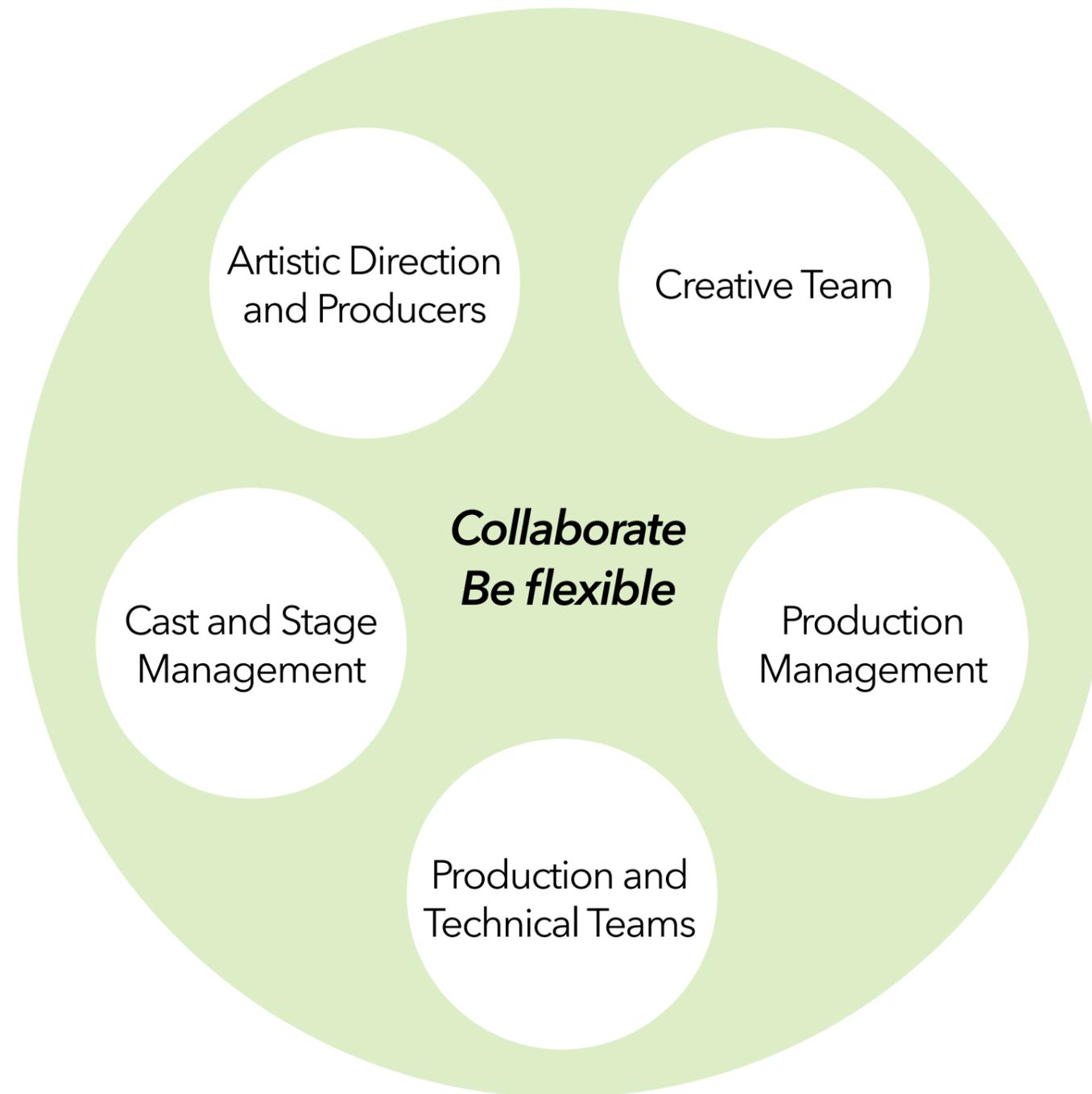
*Certified timber and plywood, 'recycled' metal, reconstituted plastics, organic fabrics...*

## 'Bad' new materials

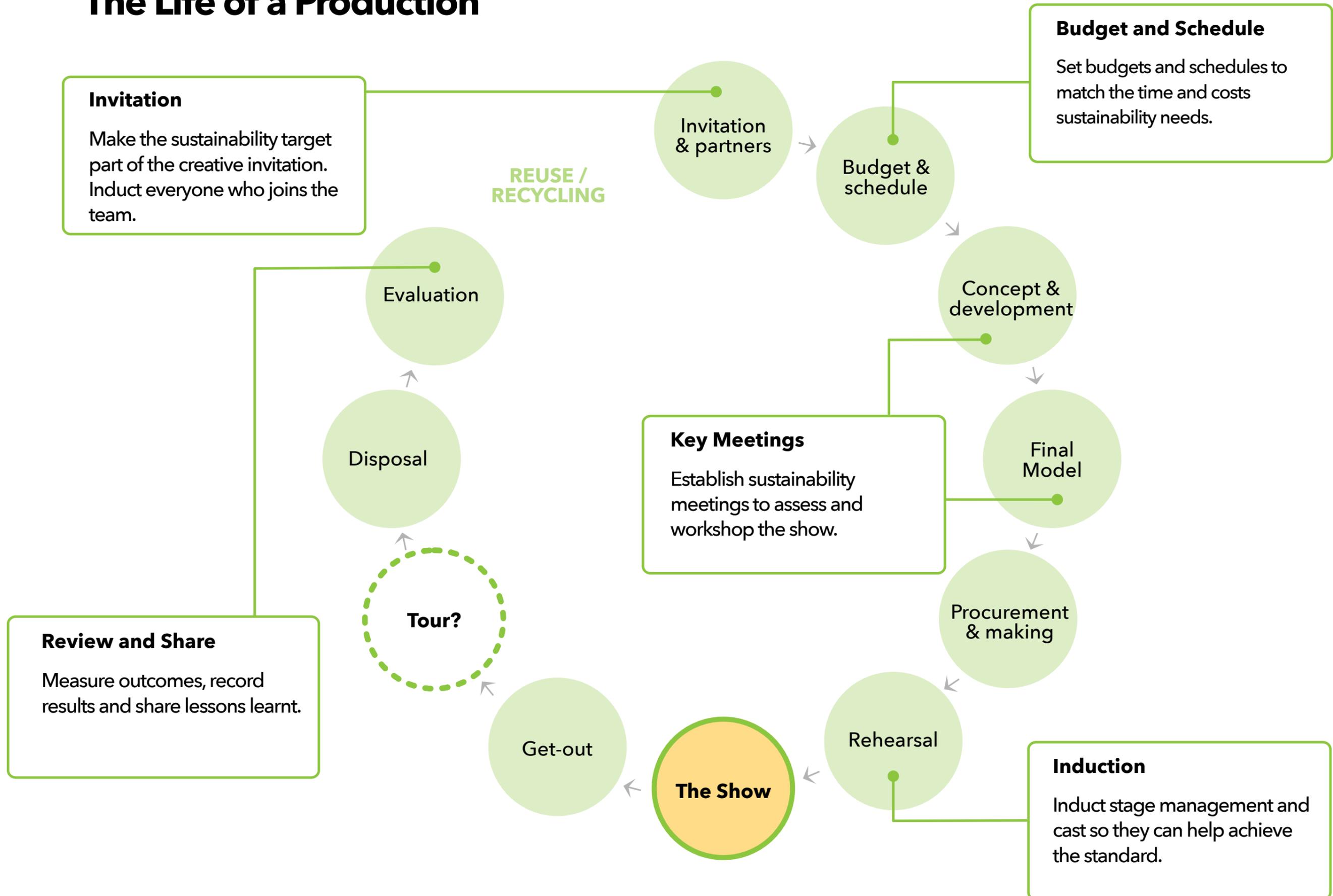
*Uncertified timber products, new steel and aluminium, PVC, vinyl, man-made fabrics...*

***Using less is the most sustainable choice***

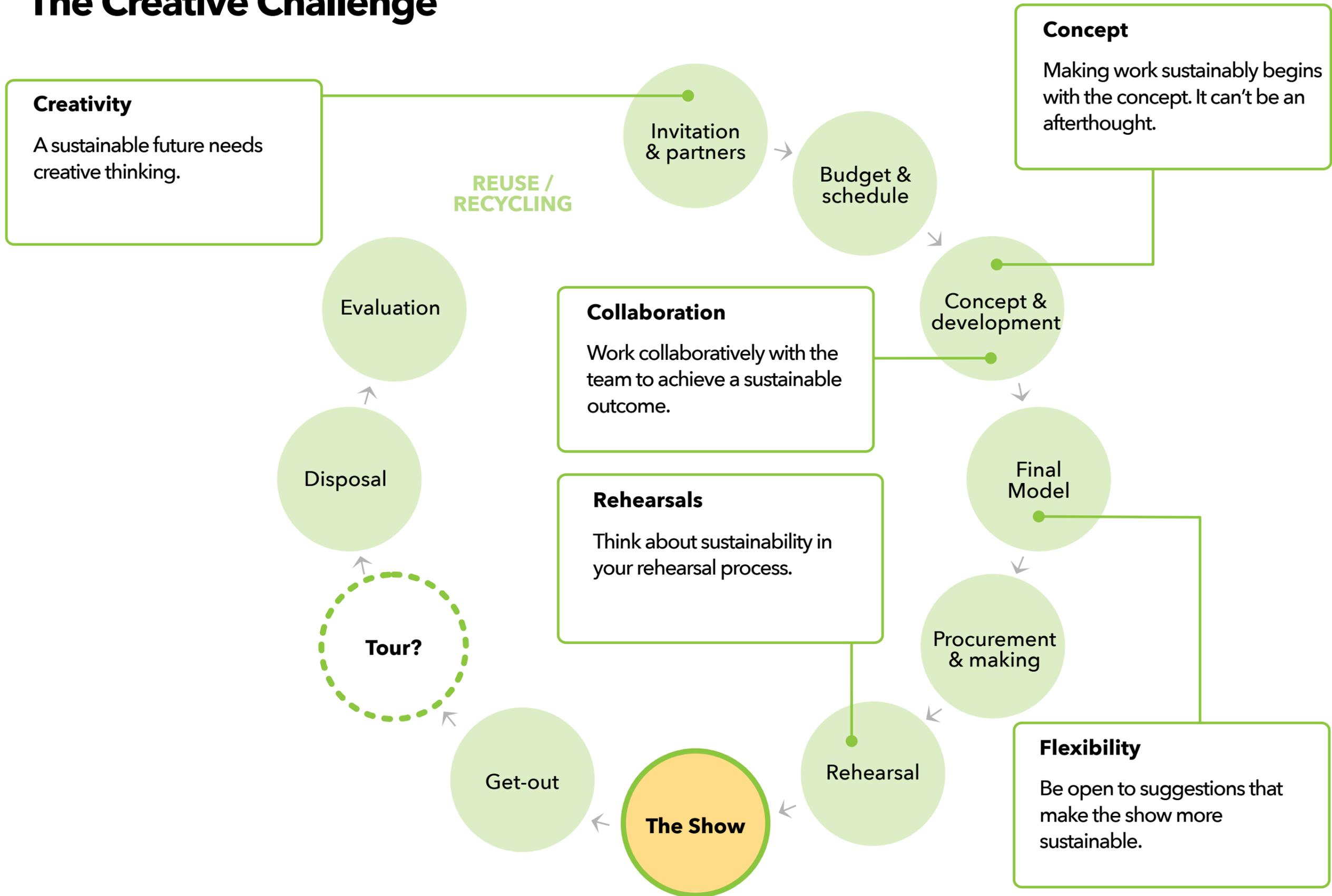
# Everyone has a part to play



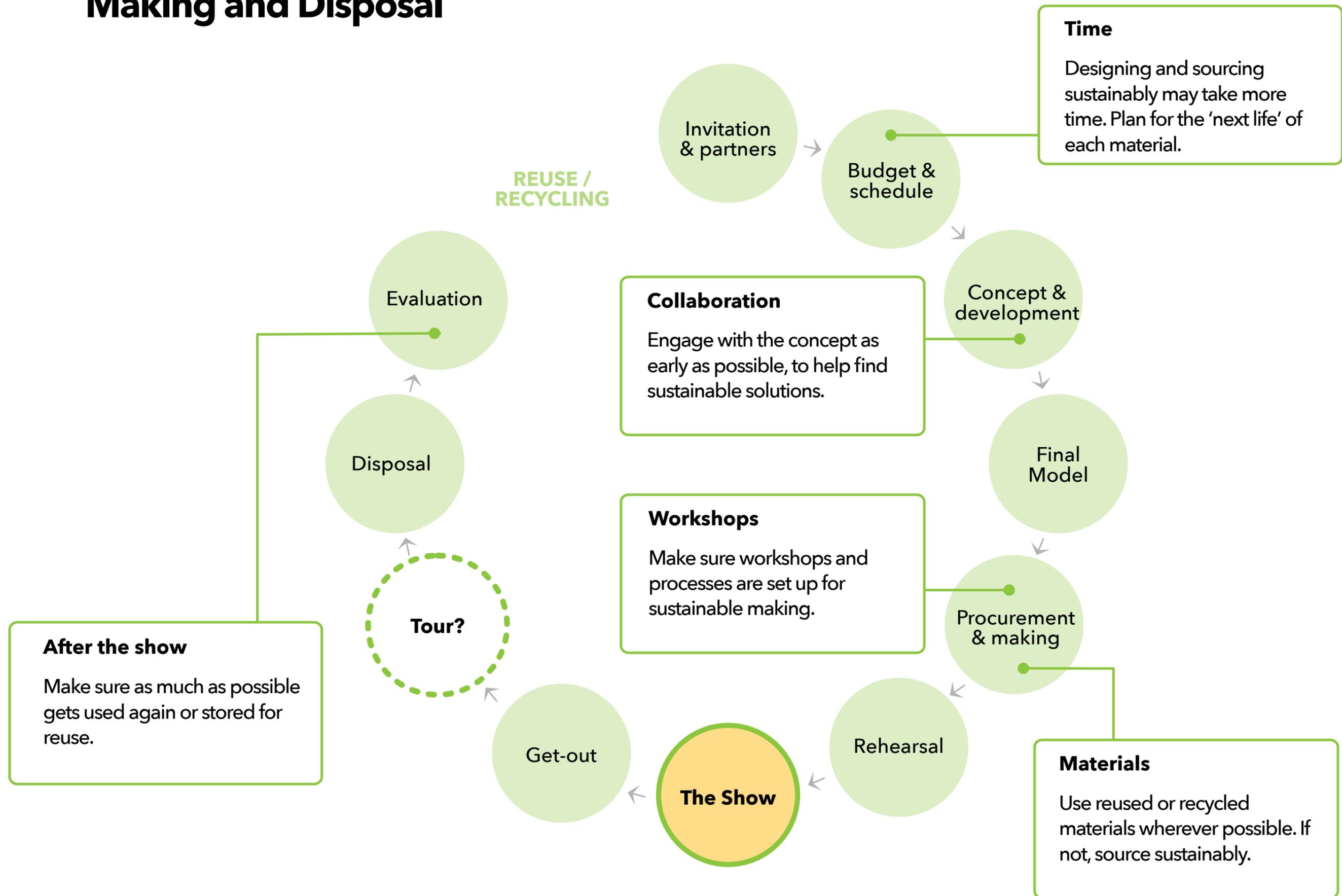
# The Life of a Production



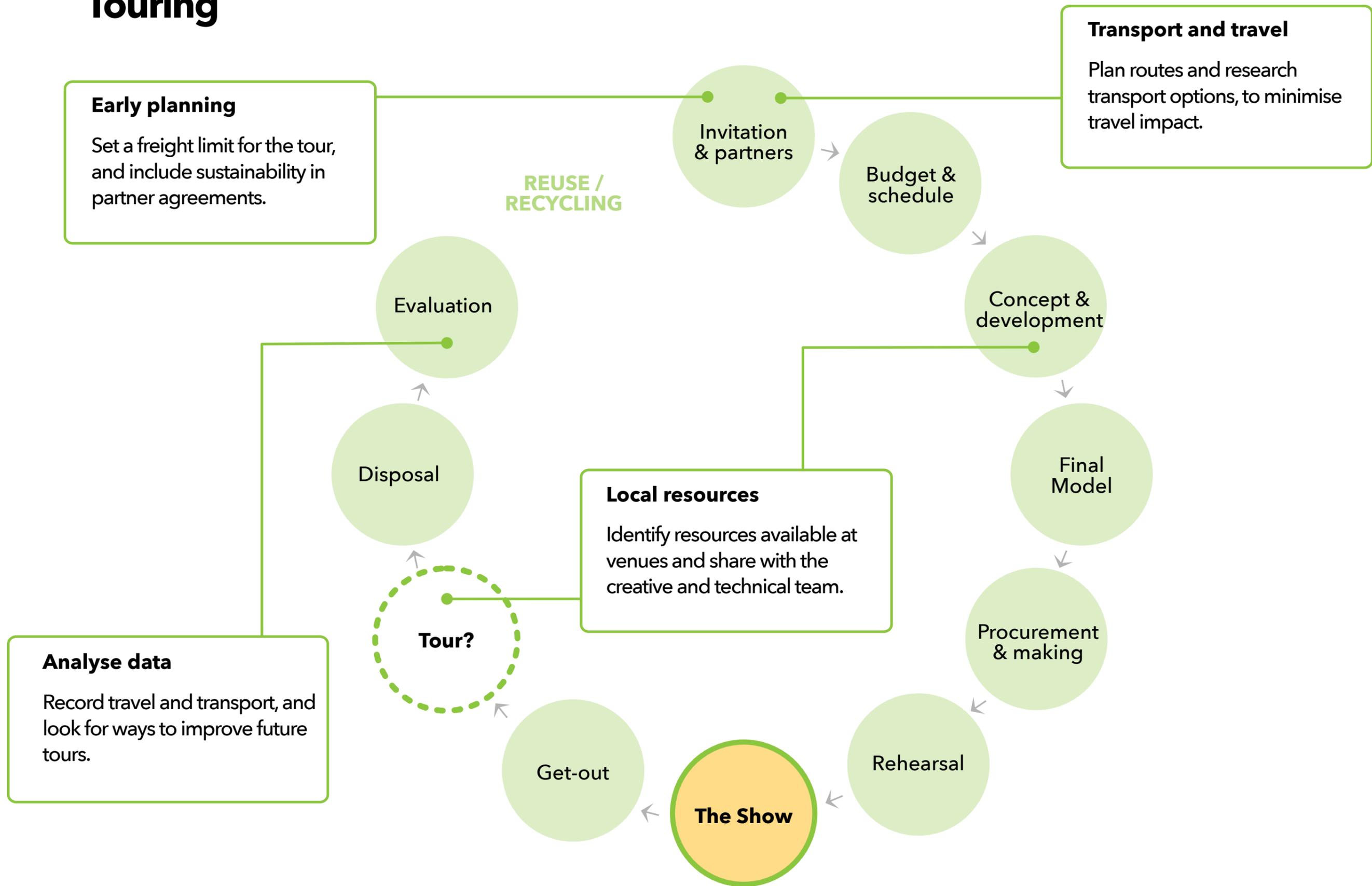
# The Creative Challenge



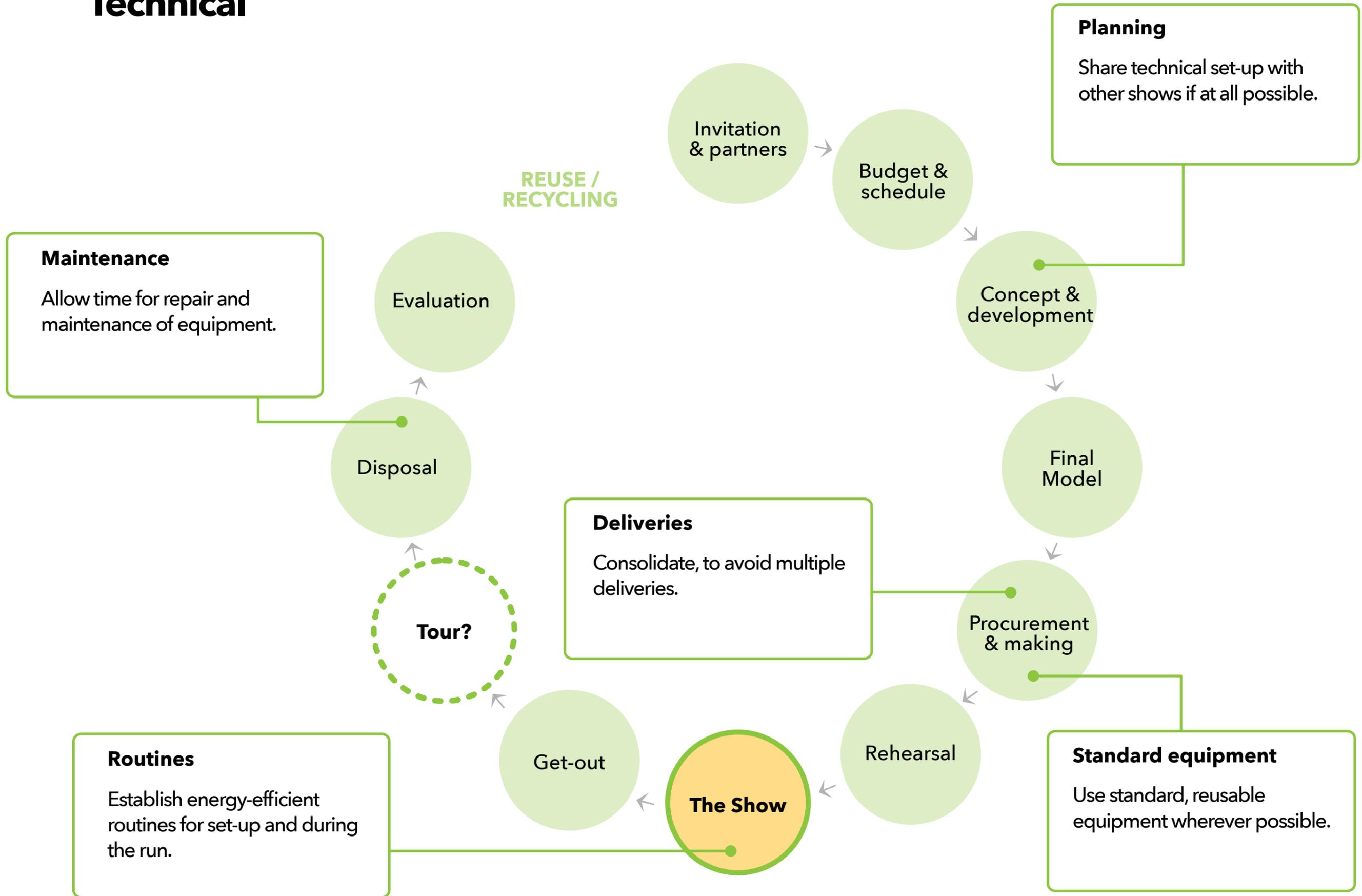
# Making and Disposal



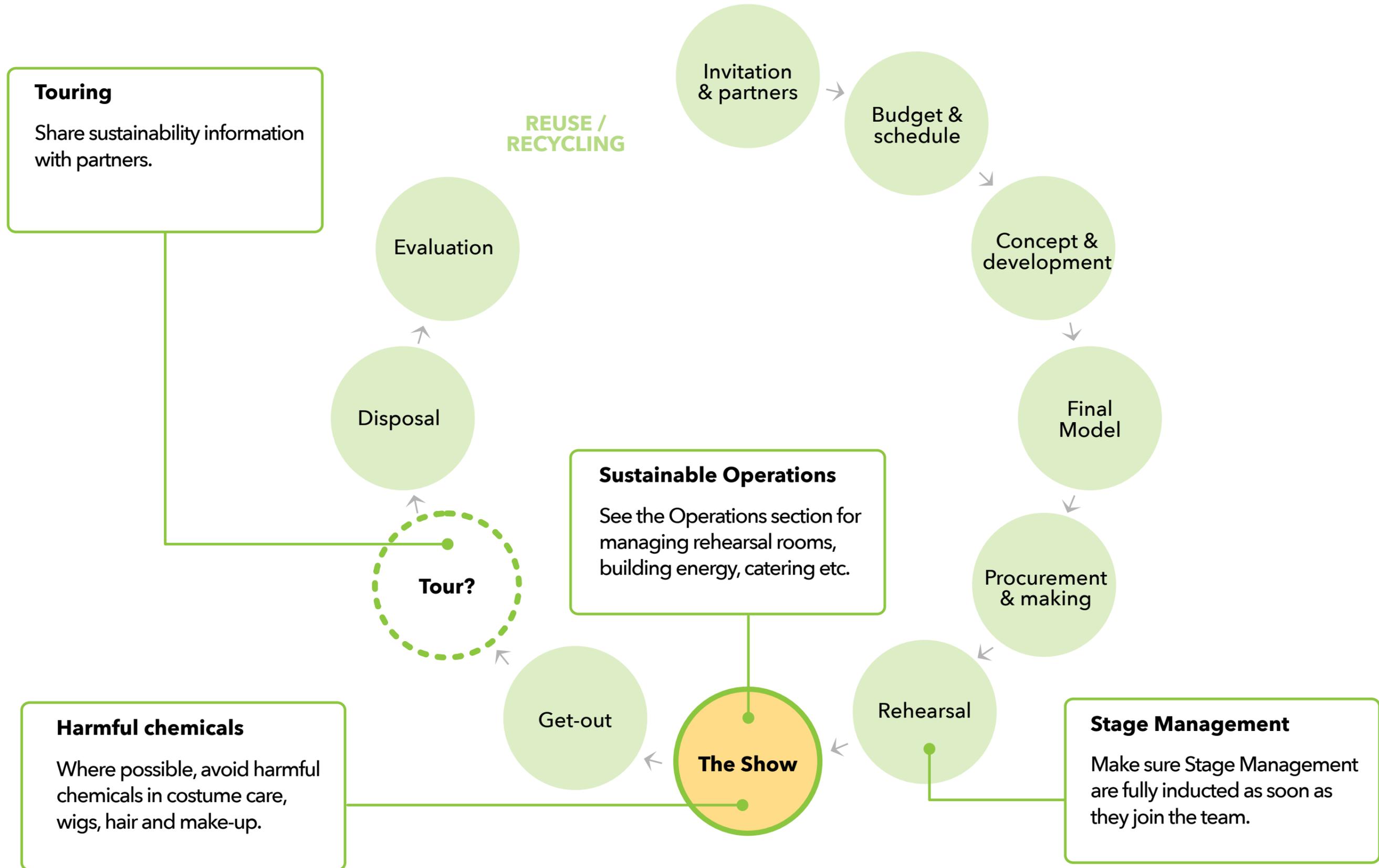
# Touring



# Technical



# Running a Production



# Basic Production

This is **Basic** standard. It follows the five steps of a production.

In a **Basic** production:

- 50% of everything on stage must be reused or recycled
- 65% must be stored or used again afterwards

The Green Book **Production Calculator** helps you assess percentage of re-use and recycling in each production.

## Step 1 Prepare for a Sustainable Production

- **PRODUCING** : Appoint the team early. Make sure Basic standard is understood. Set a longer programme if possible. Set the budget to spend more on people's time and less on materials.
- **CO-PRODUCTION / TOURING** : Agree how expertise and resources will be shared. Identify responsibilities for measuring, recording, and sustainable disposal. Establish a haulage limit (e.g. 'one trailer' or 'one transit van'). Reference Basic standard in Co-production agreements.

## Step 2 Concept and Development

- **CONCEPT** : Hold an early concept meeting to collaboratively sense-check ideas. At **DEVELOPMENT** stage, collaborate with the whole team to achieve a sustainable outcome.
- **CO-PRODUCTION / TOURING** : Consider haulage limitations when designing (or when redesigning for a tour). Ensure technical specifications are agreed with all receiving venues.

## Step 3 Making a Sustainable Production

- **REUSE AND RECYCLING** : Keep an inventory of materials: sets and scenery, props and furniture, costumes. **50%** of each category should have been used previously. **65%** should be used again after the show.
- **NEW MATERIALS** : Source new materials sustainably if possible. Avoid PVC, tropical hardwoods and polystyrene where possible.
- **DELIVERIES** : Consolidate deliveries where possible. Avoid last-minute deliveries where possible.

## Step 4 Rehearsing and Running a Sustainable Production

- **STAGE MANAGEMENT and CAST** : Make sure cast and stage management understand Baseline standard, and can contribute to achieving it.
- **TECHNICAL** : Use re-used or hired equipment where possible. Make a plan to reduce the impact of your practice across all technical departments (see Technical worksheet).
- **WARDROBE, WIGS, HAIR, MAKEUP** : Avoid harmful chemicals where possible.
- **CO-PRODUCTION / TOURING** : Use sustainable transport methods where possible. Choose accommodation within walking distance of venues.

## Step 5 After the Production

- **REUSE AND RECYCLING** : Check you've achieved the target of **65%** reused / recycled for sustainable disposal.
- **REVIEW** : Assess results. Share lessons learned with future teams.

Done? v, NO or N/A





Source

Disposal









You can download this page with the Production Calculator from **RESOURCES**

# Intermediate Production

This is **Intermediate** standard.

In an **Intermediate** production:

- 60% of everything on stage must be reused or recycled
- 70% must be stored or used again afterwards

## Step 1

### Prepare for a Sustainable Production

- **PRODUCING** : Provide an information pack of in-house and local resources to support sustainability. Offer climate literacy training to key team members, including freelancers.
- **CO-PRODUCTION / TOURING** : Agree a Green Contract Rider with receiving venues (see Toolkit), including resources available. Review sustainable haulage options.

Done? v, NO or N/A


## Step 2

### Concept and Development

- **CONCEPT and DEVELOPMENT** : Connect with productions in the same season to **SHARE and REUSE** materials.
- **CO-PRODUCTION / TOURING** : Minimise business travel. Record all journeys. Technical design to use local resources where possible.


## Step 3

### Making a Sustainable Production

- **REUSE AND RECYCLING** : Keep an inventory of materials: sets and scenery, props and furniture, costumes. **60%** of each category should have been used previously. **70%** should be used again after the show.
- **NEW MATERIALS** : Source all new materials sustainably. Avoid PVC, tropical hardwoods and polystyrene where possible.
- **DELIVERIES** : Record deliveries related to the production.

Source

Disposal


## Step 4

### Rehearsing and Running a Sustainable Production

- **STAGE MANAGEMENT and CAST** : Use the Toolkit to make a Sustainability Plan for the rehearsal / production period and run.
- **TECHNICAL** : Begin to implement your plan to reduce the impact of your practice across all technical departments (see Technical worksheet).
- **WARDROBE, WIGS, HAIR, MAKEUP** : Source sustainable products where possible. Minimise laundry cleaning temperatures. Avoid dry cleaning where possible.
- **CO-PRODUCTION / TOURING** : Record travel distance and transport methods. Choose accommodation with green accreditation.


## Step 5

### After the Production

- **REUSE AND RECYCLING** : Check you've achieved the target of **70%** reused / recycled for sustainable disposal.
- **REVIEW** : Assess results. Share lessons learned with future teams.


You can download this page with the Production Calculator from **RESOURCES**

# Advanced Production

This is **Advanced** standard.

In an **Advanced** production:

- Everything on stage must be reused or recycled, or ...
- Accredited net zero

## Step 1

### Prepare for a Sustainable Production

- **PRODUCING** : Use **CARBON CALCULATORS** (included in Production Calculator) to aid decision-making on new scenery materials and travel. Encourage the creative team and cast to promote the production's sustainability.
- **CO-PRODUCTION / TOURING** : Plan the tour route to reduce travel and use sustainable travel methods. Only co-produce with companies that have reached overall Baseline standard, and tour to theatres that have a commitment to sustainability.

Done? v, NO or N/A


## Step 2

### Concept and Development

- **CONCEPT and DEVELOPMENT** : Use **MODULAR COMPONENTS** where possible to support recycling.
- **CO-PRODUCTION / TOURING** : Calculate the carbon footprint of **TRAVEL and TRANSPORT**, to help plan reductions. Use local resources where they support reductions.


## Step 3

### Making a Sustainable Production

- **REUSE AND RECYCLING** : **75%** of materials should have been used previously. **80%** should be used again after the show. Make sets for easy disassembly to support recycling.
- **NEW MATERIALS** : Source all new materials from accredited zero carbon sources. Completely avoid PVC, tropical hardwoods, polystyrene and harmful chemicals.
- **DELIVERIES** : Calculate the carbon footprint of deliveries, to help plan reductions.

Source

Disposal


## Step 4

### Rehearsing and Running a Sustainable Production

- **STAGE MANAGEMENT and CAST** : Fully implement a Sustainability Plan for the rehearsal / production period and run.
- **TECHNICAL** : Fully implement your plan to reduce the impact of your practice across all technical departments (see Technical worksheet).
- **WARDROBE, WIGS, HAIR, MAKEUP** : Completely avoid harmful chemicals and materials.
- **CO-PRODUCTION / TOURING** : Calculate the carbon footprint of tours, to help minimise and offset impacts. Publish results and highlight blockers to sustainability.

-

## Step 5

### After the Production

- **REUSE AND RECYCLING** : Check you've achieved the target of **80%** reused / recycled for sustainable disposal. Ensure any residual waste is sustainably disposed of.
- **REVIEW** : Assess results. Share lessons learned with future teams.


You can download this page with the Production Calculator from **RESOURCES**

## Go to PRODUCTIONS RESOURCES

- for ...
- *Detailed Guidance*
  - *The Production Calculator and downloadable standards*
  - *Case studies*
  - *Toolkits*



Go to  
**Productions**  
resources

# **SUSTAINABLE OPERATIONS**

Click [here](#) to go straight to **Operations Resources** for:

- *Detailed guidance*
- *The Operations Tracker and standards*
  - *Case studies*
  - *Toolkit pages*

# Establish a green structure for your organisation

## Leadership

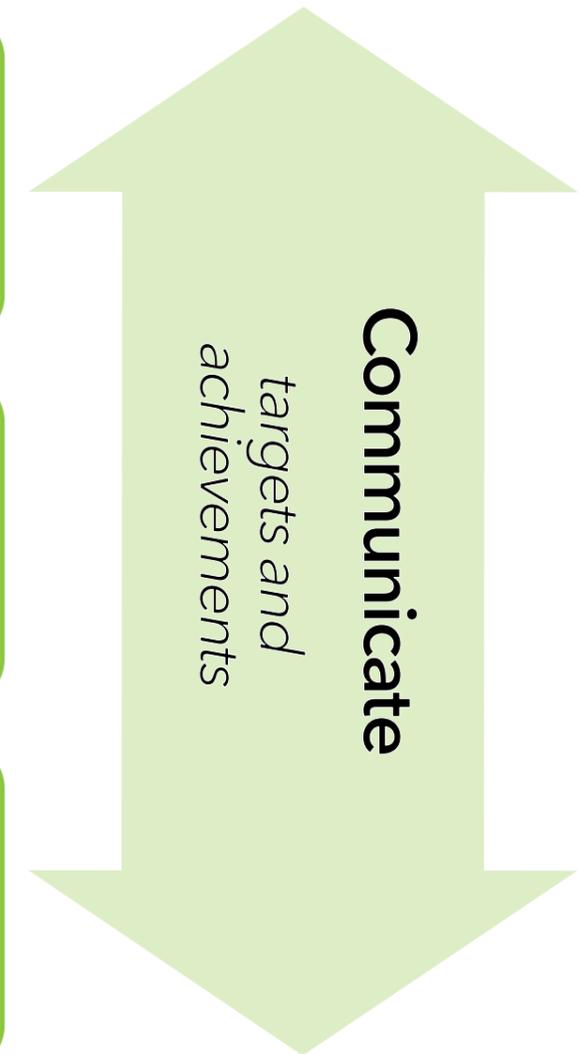
Sets **clear goals** and empowers everyone to change what they do

## Green Team

**Co-ordinates** actions, agrees **targets**, and **records** progress

## Everyone

Shares **expertise**, provides **feedback** and implements **actions**

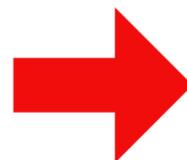


# Be methodical

*Don't waste time on things you can't control.*



**Preliminary**  
*Commit*



**Basic**  
*First steps*

**Intermediate**  
*Development*

**Advanced**  
*Sustainable operations*

# Paper and digital

## Marketing

Where paper is unavoidable, make sure it's sustainably sourced and recyclable.

## Communication

Remember to inform staff, visitors and audiences of your targets and achievements.

## Rehearsals

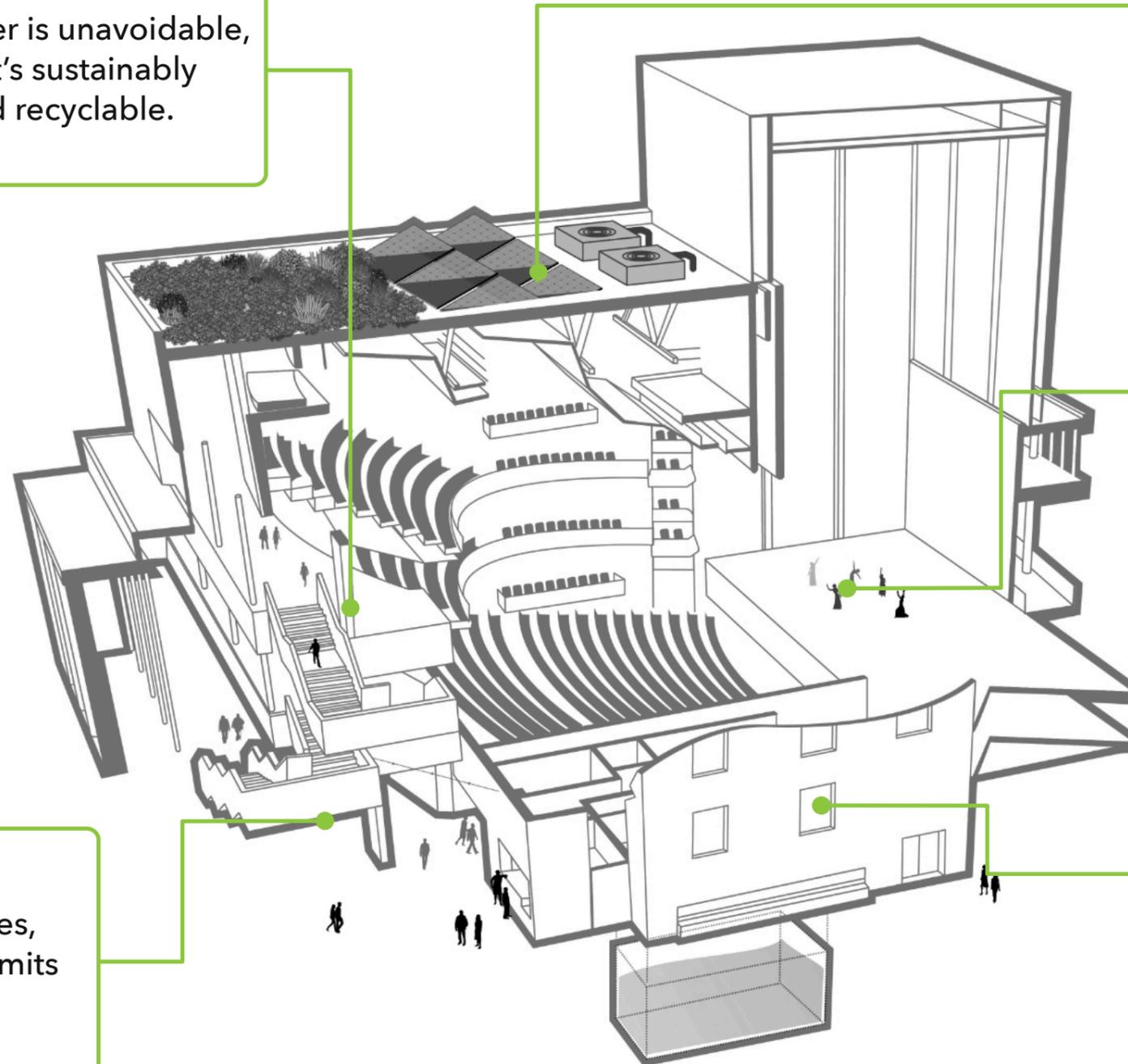
Limit printed scripts. Avoid reprinting multiple copies with every re-write.

## Back of house

Avoid printing. Use shared digital schedules. Establish best practice for digital and storage.

## Digital

Cloud storage of websites, photos, clips and films emits carbon. Avoid storing multiple copies.



# Food, drink, retail

## Catering and bars

Food, drink, service, packaging and waste all have a big impact.

## Communication

Encourage staff, visitors and audiences to share your targets and achievements.

## Food

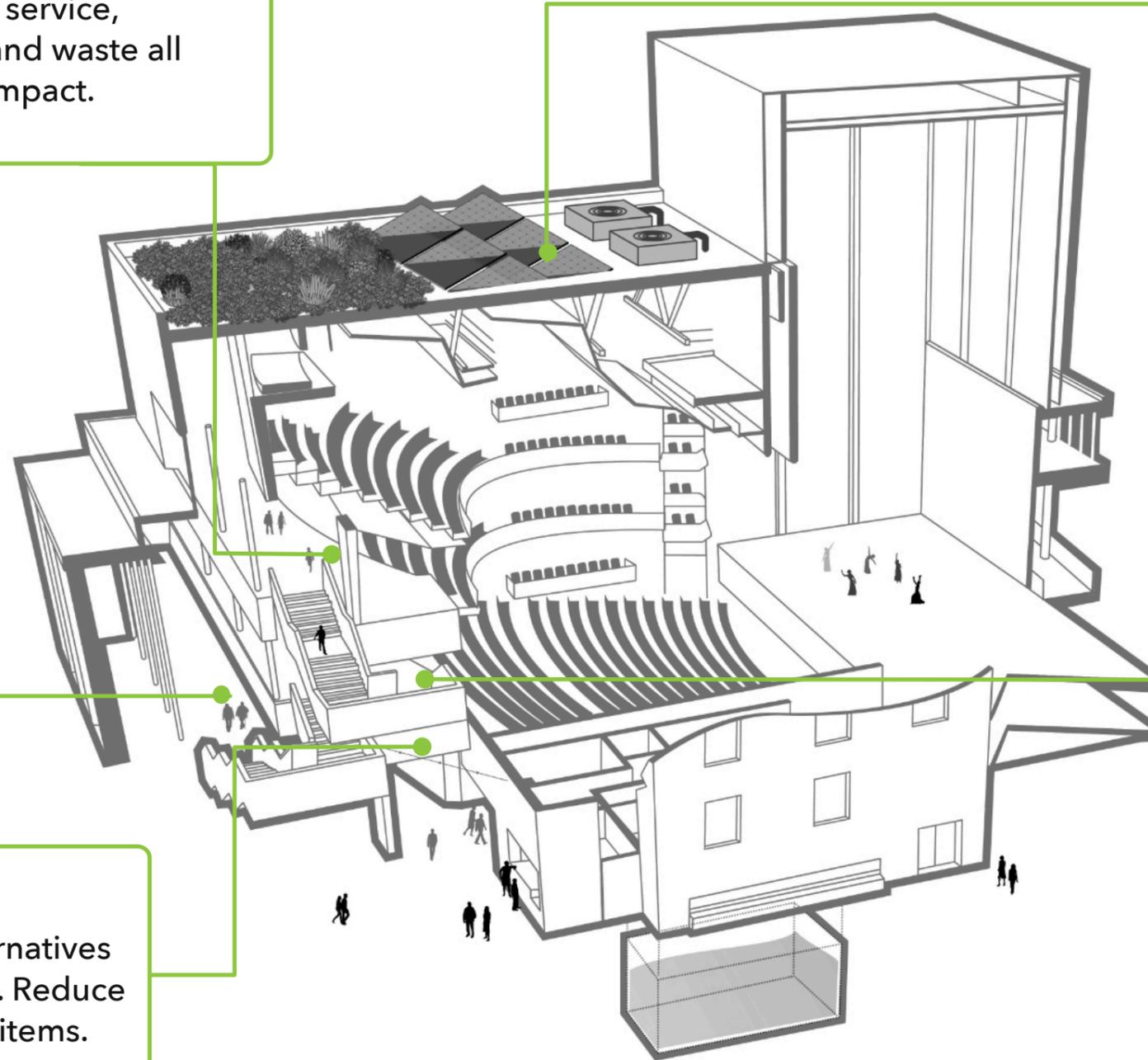
Start to move menus towards more plant-based items. Source locally and sustainably.

## Retail

Procure responsibly. Partner sustainable brands. Reduce packaging and deliveries.

## Single-use plastics

There are good alternatives for drinks and water. Reduce packaging for retail items.



# Managing the building

## Changing behaviour

Train staff and visitors to reduce energy by turning off lights, heating and cooling, and closing windows and doors.

## Data

Track utility bills to see where you're using energy. Sub-meter each area to show more detail.

## Building Systems

Manage systems so they're switched on as little as possible, and as low as possible.

## Maintenance

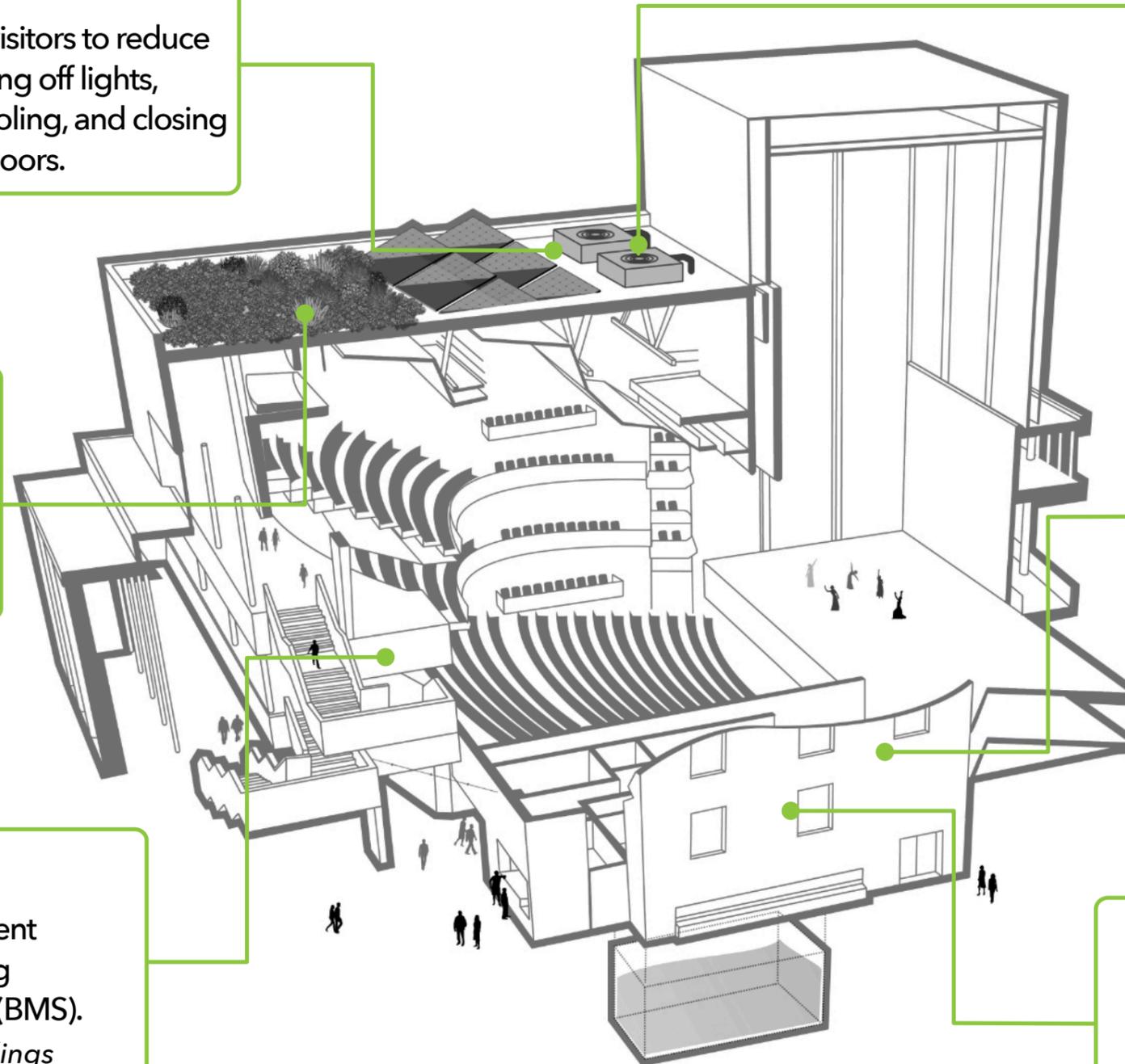
Maintain plant carefully to improve sustainability, performance and cost.

## Better controls\*

Fit timers and movement detectors, or a Building Management System (BMS).  
\* See *Sustainable Buildings*

## Housekeeping

Avoid environmentally harmful cleaning products and procedures.



- This section shows how to **manage** buildings as sustainably as possible.
- The next, 'Sustainable Buildings', shows how to **upgrade** them to make them more sustainable.

# Reuse and recycling

## Reduce

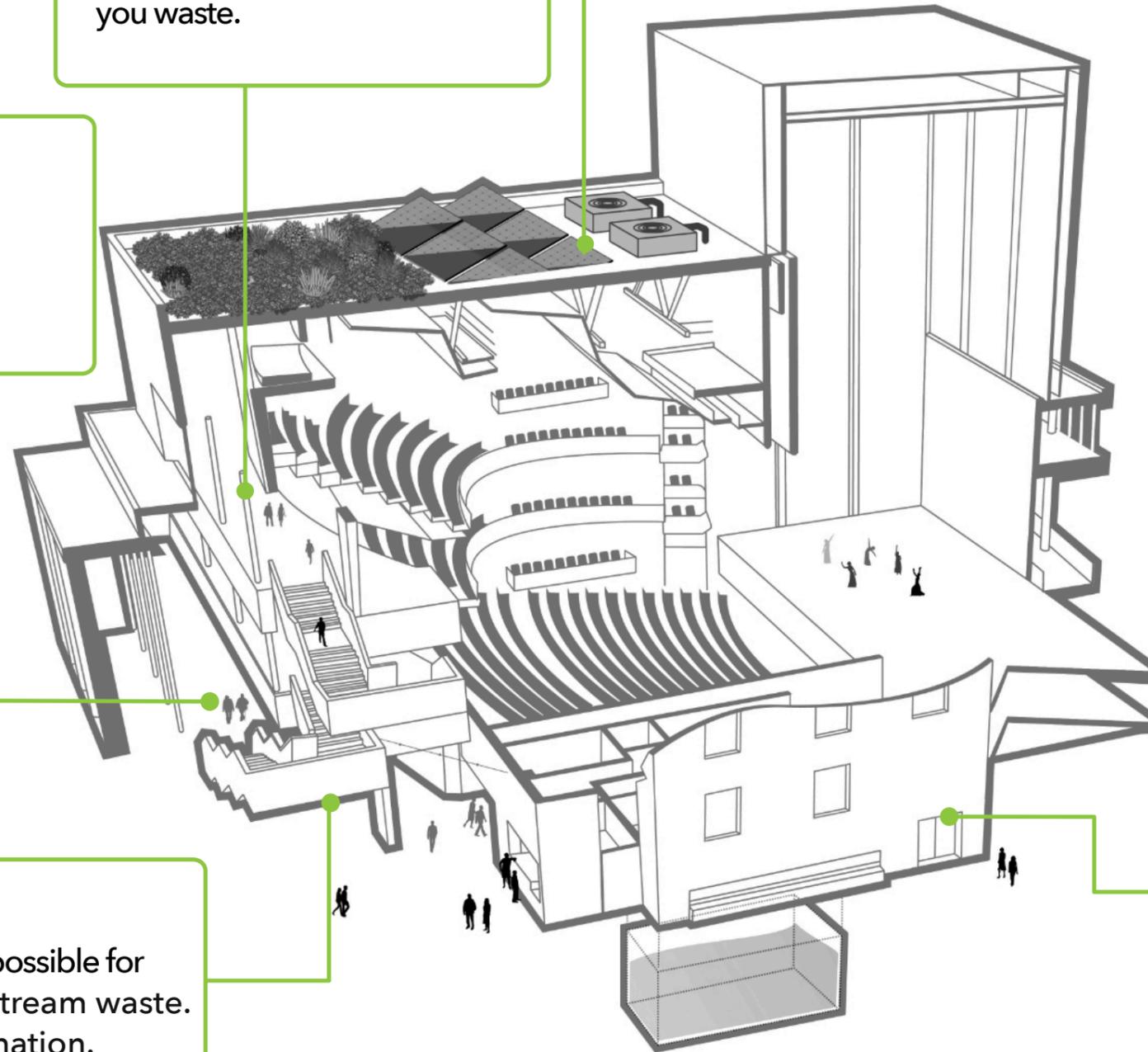
Think through the lifecycle of every product to cut how much you waste.

## Reuse

Choose reusables over disposables. Try to make everything last.

## Communication

Set targets and let everyone know how you're doing.



## Recycle

Make it as easy as possible for visitors to recycle. Stream waste. Reduce contamination.

## Data is Key

Monitor waste generation and recycling. Use data to set targets.

# Travel and transport

## Communication

Use sales, website and inductions to communicate sustainable travel options.

## Staff and Visitors

Explore flexible working, and support sustainable options.

## Deliveries

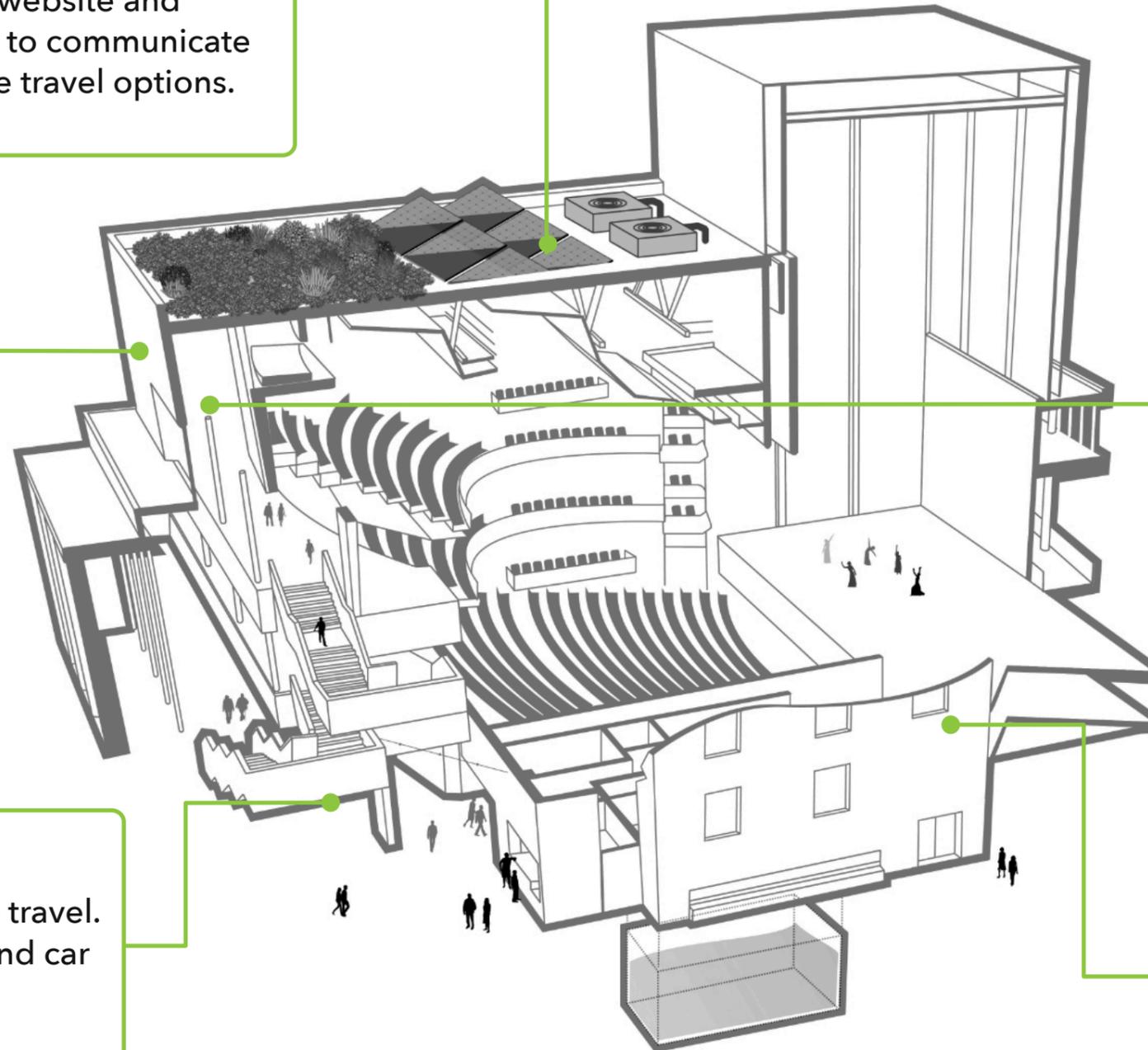
Reduce numbers of deliveries and how far they come.

## Audiences

Encourage sustainable travel. Help with timetables and car sharing.

## Data

Start to record travel and delivery data to help make reductions.



# Contracts and procurement

## 'Third parties'

Sustainable operations need outside contractors and suppliers to share your goals.

## Procurement

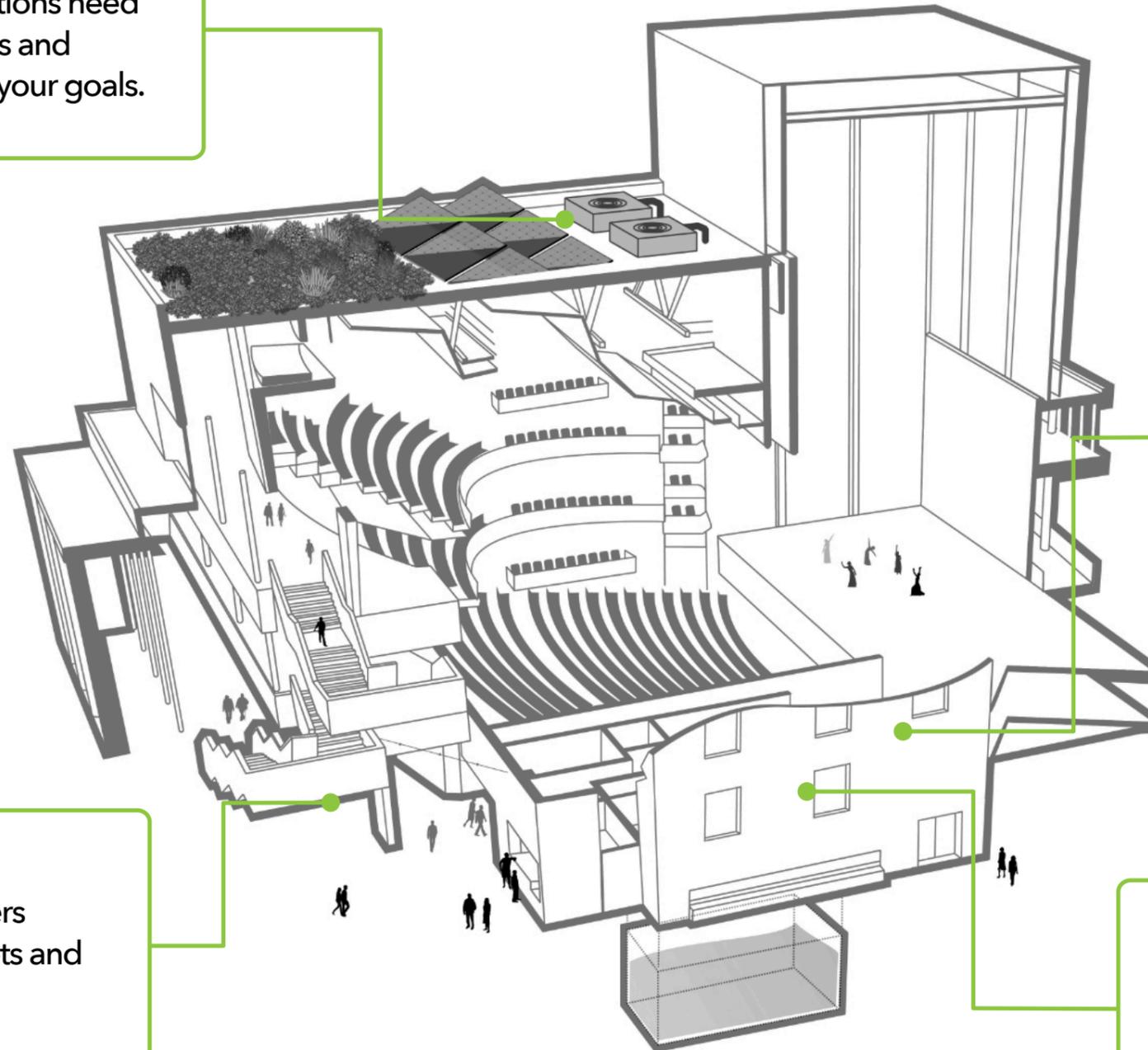
Set sustainability standards for the goods and services you buy.

## Communicate

Make sure your partners understand your targets and achievements.

## Contracts

All your contracts can contain sustainability clauses.



# Basic Operation

To reach **Basic** in your operations:

- **Plan** for a Sustainable Organisation
- Reach **Basic** in at least four of the six areas (steps 2 to 7)

The Green Book **Operations Tracker** helps you assess your progress in each area.

## Step 1 Plan for a Sustainable Organisation

- Establish a **GREEN COMMITTEE** and staff sustainability network. Set a timescale to achieve Basic standard.
- **COMMUNICATE** your Sustainability goals and systems, to staff, visitors and the public. **ENGAGE** your audiences on the journey.

## Step 2 Managing Paper and Digital

- Make a plan and timetable to **REDUCE PAPER** and switch to digital alternatives for tickets, documents etc.
- Make a plan and timetable to make **DIGITAL SYSTEMS** (e.g. websites and emails) sustainable.

## Step 3 Managing Food, Drink and Retail

- Make a plan and timetable to manage **FOOD AND DRINK** outlets sustainably. If you have a restaurant or staff canteen, make **20%** of starters & mains vegetarian or vegan.
- Make a plan and timeable to reduce **SINGLE-USE PLASTICS** in your Front and Back of House operations.

## Step 4 Managing Buildings

- **RECORD** energy readings every month.
- **TRAIN** staff and visitors in energy-saving behaviour. Set **CONTROLS** (timers and thermostats) to minimise energy use.

## Step 5 Managing Waste

- Separate **WASTE** between recycling and general waste and measure both.

## Step 6 Managing Travel and Transport

- Provide **STAFF, ARTISTS, VISITORS** and **AUDIENCES** with information on sustainable transport options.
- Record **BUSINESS TRAVEL**, using the Travel Calculator.
- Prepare a **DELIVERIES PLAN** to consolidate and reduce deliveries, and share it with every department.

## Step 7 Contracts and Procurement

- Include sustainability criteria in **PROCURING** major suppliers and contractors. Include Sustainability standards in major **CONTRACTS**.

fills in spreadsheet














You can download this page with the Operations Tracker from **RESOURCES**

# Intermediate Operation

To reach **Intermediate** in your operations:

- **Develop** your Sustainable Organisation
- Reach **Intermediate** in at least four of the six areas (steps 2 to 7)

## Step 1 Plan for a Sustainable Organisation

- Arrange **CLIMATE LITERACY TRAINING** for at least 25% of staff. Set a timescale to achieve Intermediate standard.
- **COMMUNICATE** your Theatre Green Book experience to other theatres.

## Step 2 Managing Paper and Digital

- Implement your plan to **REDUCE PAPER** and switch to sustainable printing.
- Implement your plan to make **DIGITAL SYSTEMS** sustainable.

## Step 3 Managing Food, Drink and Retail

- Implement your plan to manage **FOOD AND DRINK** outlets sustainably. If you have a restaurant or staff canteen, make **20%** of starters and mains plant-based.
- Implement your plan to reduce **SINGLE-USE PLASTICS** from your Front and Back of House operations.

## Step 4 Managing Buildings

- Make a **FULL ANALYSIS** of energy use in each part of the building.
- Make a **PLAN** for further reductions in energy use, using the findings of the analysis.

## Step 5 Managing Waste

- Eliminate waste to landfill. Make a plan to reduce **WASTE** and increase **RECYCLING**, to make sure you stream waste as much as your waste collector allows.

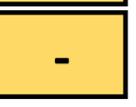
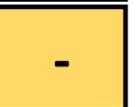
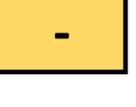
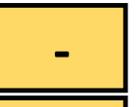
## Step 6 Managing Travel and Transport

- Survey **AUDIENCES** to find out how they travel.
- Make a **SUSTAINABLE TRAVEL PLAN**, including a limit on **AIR TRAVEL**.
- Implement your **DELIVERIES PLAN** to reduce the annual carbon footprint of deliveries.

## Step 7 Contracts and Procurement

- Make a **SUSTAINABLE PROCUREMENT POLICY** to define standards and requirements for all major suppliers and contractors, and share with all relevant departments.

fills in spreadsheet



You can download this page with the Operations Tracker from **RESOURCES**

# Advanced Operation

To reach **Advanced** in your operations:

- **Develop** your Sustainable Organisation
- Reach **Advanced** in all areas

## NOTE

As a minimum, publish your carbon footprint using the Theatre Green Book tools, to include:

- Significant new materials in productions (steel, aluminium, timber)
- Travel (touring, deliveries, business travel)
- Building energy use

You may also use general calculators (e.g. Julie's Bicycle), but make sure you use the same method every year

## Step 1 Plan for a Sustainable Organisation

- Arrange **CLIMATE LITERACY TRAINING** for at least 75% of staff. Offer training to freelance partners. Set a timescale to achieve Advanced standard.
- **PUBLISH** your carbon footprint (see note below) every year.

## Step 2 Managing Paper and Digital

- Complete your plan to **REDUCE PAPER** and switch to sustainable printing.
- Complete your plan to make **DIGITAL SYSTEMS** sustainable.

## Step 3 Managing Food, Drink and Retail

- Complete your plan to manage **FOOD AND DRINK** outlets sustainably. If you have a restaurant or staff canteen, make **75%** of all menu items plant-based.
- Complete your plan to reduce **SINGLE-USE PLASTICS** from your Front and Back of House operations.

## Step 4 Managing Buildings

- Switch to a **GREEN ENERGY SUPPLIER** if possible.
- Implement your **PLAN** for energy reductions.

## Step 5 Managing Waste

- Complete the plan to minimise **WASTE** and maximise **RECYCLING**.

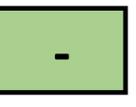
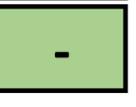
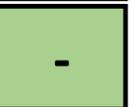
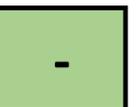
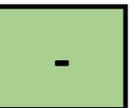
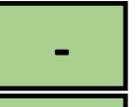
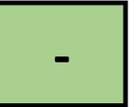
## Step 6 Managing Travel and Transport

- Incentivise **AUDIENCES** to travel sustainably.
- Implement your **SUSTAINABLE TRAVEL PLAN** to minimise the carbon footprint of your business travel.
- Minimise the carbon footprint of your **DELIVERIES**.

## Step 7 Contracts and Procurement

- Require all major suppliers and contractors to comply with **KEY PERFORMANCE INDICATORS** for sustainability.

fills in spreadsheet



You can download this page with the Operations Tracker from **RESOURCES**

## Go to OPERATIONS RESOURCES

- for ...
- *Detailed Guidance*
  - *The Operations Tracker and downloadable standards*
  - *Case studies*
  - *Toolkits*



Go to  
**Operations**  
resources

# **SUSTAINABLE BUILDINGS**

Click [here](#) to go straight to **Buildings Resources** for:

- Detailed guidance
- The Building Survey Tool and downloadable standards
  - Case studies
  - Toolkit pages

*If you don't have a building, ignore this section*

## Theatre buildings emit a lot of carbon

- *The previous section, Sustainable Operations, shows how to **manage** buildings as sustainably as possible.*
- *This section shows how to **upgrade** buildings to make them more sustainable.*
- *Sustainable buildings **cost less** to run.*

## These are the priorities, in order:

### Insulation

*Roofs, walls and windows ... so your building **needs** less energy*

### Efficiency

*Efficient plant and good controls ... so your building **uses** less energy*

### Renewables

*So you generate **renewable** energy*

### Biodiversity (and use less water)

# Insulation (so you need less energy)

## Roofs

Roofs are a major source of heat loss, particularly above auditoriums

## Walls

Walls can be insulated to keep energy in.

## Floors

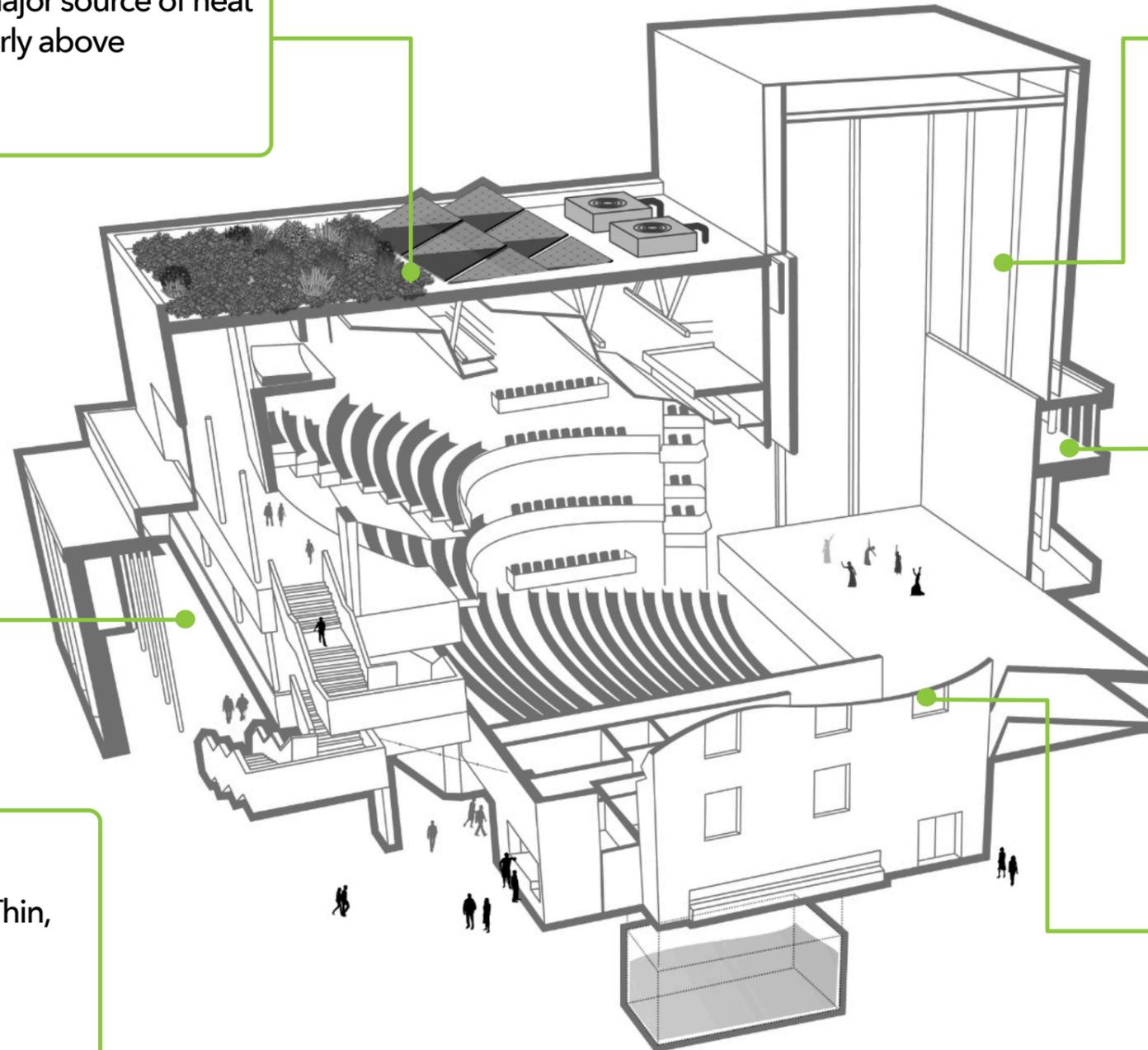
Uninsulated overhangs and balconies let energy escape.

## Entrances

Entrances need lobbies. Thin, leaky doors waste heat.

## Doors and windows

Double or secondary glazing stops heat going out of the windows.



# Efficiency (so you use less energy)

## Heating and cooling

Replace fossil fuels with low-carbon energy sources. Thermostats and timers minimise use.

## Ventilation

Efficient fans and pumps prevent energy waste. Timers and controls switch them off.

## Lighting

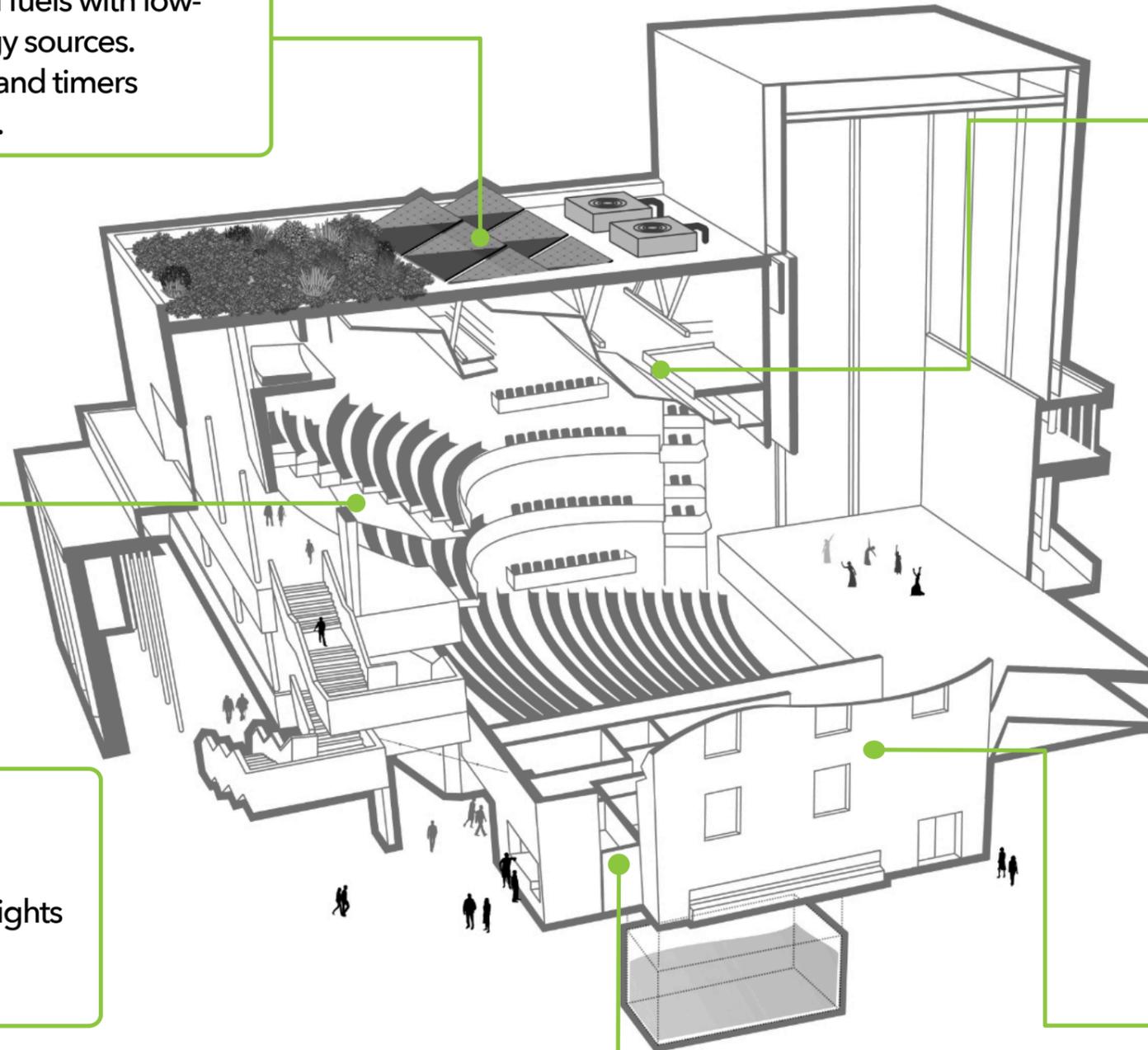
Switch to LED. Timers and movement sensors keep lights off unless they're needed.

## Hot water

Hot water supply for taps and showers must be heated sustainably.

## Other Systems

Lifts, servers, security systems and catering are all big energy users.



# Renewables (make your own energy)

## Solar panels

'PVs' and thermal panels work well on auditorium or back of house roofs

## Turbines

Wind power rarely works in towns and cities, but may help rural theatres.

## Air source heat pumps

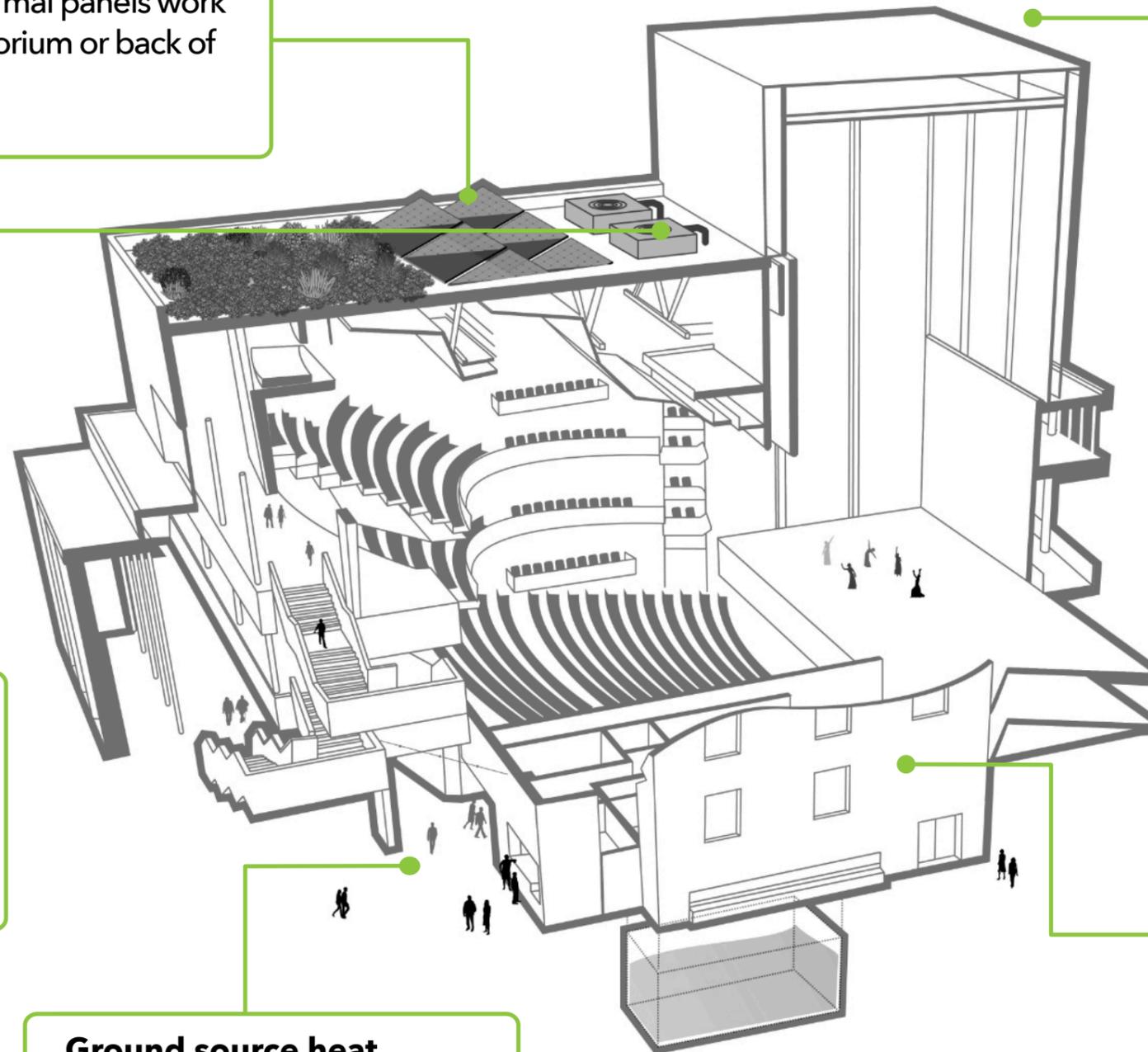
Easier to install than GSHPs, these can work well for some theatres.

## Ground source heat pumps

Warmth in the ground is an energy source, but 'GSHPs' often require major works.

## Electricity

In some countries, electricity already comes from renewable sources.



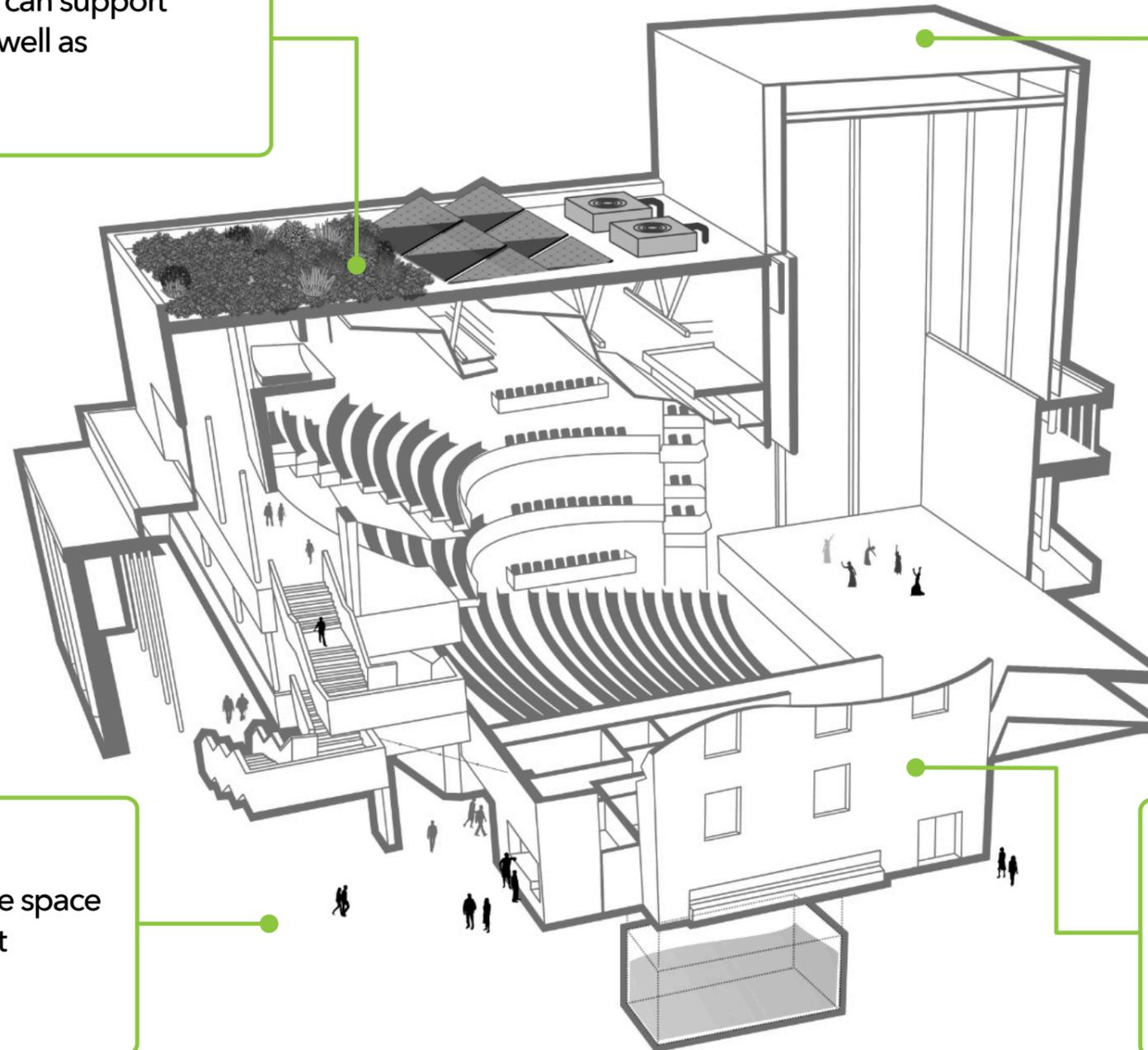
# Support biodiversity and use less water

## Green roofs

Planted roofs can support wellbeing as well as biodiversity.

## Rainwater

Rainwater can be captured to irrigate plants, but needs storage space.



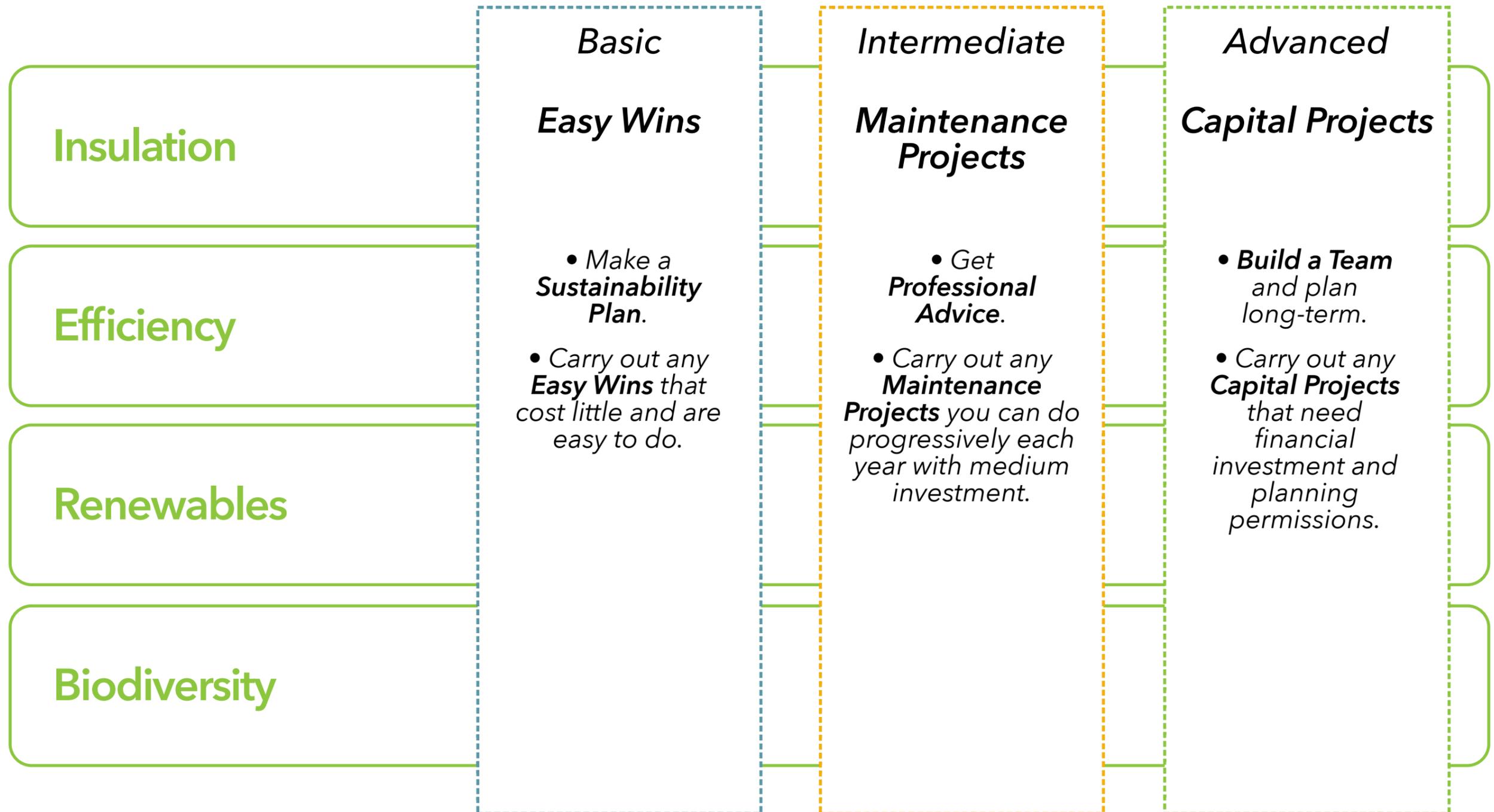
## Landscape planting

Any theatre with outside space has a chance to support biodiversity.

## Low-flow taps and WCs

You can restrict the amount of water you use in taps, urinals and cisterns.

# Make a Sustainability Plan



# Sustainability cuts energy costs

*If you don't own your building:*

- Create a **Sustainability Plan**
- Share it with the **Building Owner**

*Basic*

**Low cost**

*Saves money through energy savings*

*Intermediate*

**Medium cost**

*Saves money through energy savings*

*Advanced*

**High cost**

*Saves money long-term, but needs major investment through:*

- *Subsidy*
- *Fundraising*
- *Energy contracting*

# Basic Building

To reach **Basic** for your building:

- Make a **Sustainability Plan**
- Put in hand the **Easy Wins**

The **Building Survey Tool** helps you start a Sustainability Plan. Answer questions about your building. It will help you divide actions into

- **Easy Wins**
- **Maintenance Projects**
- **Capital Projects**

It will put them in order of priority, and suggest where you need professional advice.

You can download this page with the Building Survey Tool from **RESOURCES**

## Step 1 Plan for a Sustainable Building

Done? *v, NO or N/A*

- Prepare a Sustainability **PLAN**, identifying Easy Wins, Maintenance projects and Capital Projects
- Gather **INFORMATION**. Record energy use monthly.

## Step 2 Insulation: so your building needs less energy

- Identify Easy Wins (if any) to insulate **ROOFS**, balconies and **WALLS**. Put them in hand and list next steps.
- Identify Easy Wins (if any) to upgrade **DOORS** and **WINDOWS**. Put them in hand and list next steps.

## Step 3 Efficiency: so your building uses less energy

- Learn all you can about your **HEATING AND COOLING** system(s). Identify Easy Wins (e.g. better timers, thermostats and controls). Put them in hand and list next steps.
- List all your **LIGHTING** systems and how they're controlled. Identify Easy Wins (e.g. movement detectors or timers). Put them in hand and list next steps.
- Learn all you can about your **HOT WATER** system(s). Identify Easy Wins (e.g. better timers, thermostats and controls). Put them in hand and list next steps.
- Learn all you can about your **VENTILATION** system(s). Identify Easy Wins (e.g. better timers and CO2 detectors). Put them in hand and list next steps.
- Learn all you can about **OTHER SYSTEMS** (lifts, servers, security, catering equipment, electrical appliances etc). Identify Easy Wins . Put them in hand and identify next steps.

## Step 4 Renewables: so you make your own energy

- Research **RENEWABLE** energy generation systems (Solar panels, Photovoltaic ('PV') cells or (more rarely) wind turbines). Identify next steps.
- Research **HEAT PUMPS** as a replacement for boilers and chillers. Identify next steps.
- Switch to a green **ELECTRICITY** supplier if possible.

## Step 5 Support Biodiversity and use less water

- Install **PLANTERS** around your building, where possible. Identify opportunities for new planting, or **GREEN ROOFS**.
- Install butts to collect **RAINWATER**, where possible.

# Intermediate Building

To reach **Intermediate** for your building:

- Develop your **Sustainability Plan**
- Put in hand the **Maintenance Projects**

## Step 1 Plan for a Sustainable Building

Done? *v, NO or N/A*

- Develop the Sustainability **PLAN** with professional advice. Complete the Easy Wins and put in hand the Maintenance Projects.
- Where possible, install **SUB-METERS** to show clearly where energy is being used.

## Step 2 Insulation: so your building needs less energy

- Identify Maintenance Projects (if any) to insulate **ROOFS**, balconies and **WALLS**. Put them in hand and list next steps.
- Identify Maintenance Projects (if any) to upgrade **DOORS** and **WINDOWS**. Put them in hand and list next steps.

## Step 3 Efficiency: so your building uses less energy

- Identify Maintenance Projects for your **HEATING AND COOLING** system(s), and put them in hand.
- Identify Maintenance Projects for your **LIGHTING** system(s), and put them in hand.
- Identify Maintenance Projects for your **HOT WATER** system(s), and put them in hand.
- Identify Maintenance Projects for your **VENTILATION** system(s), and put them in hand.
- Identify Maintenance Projects for your **OTHER SYSTEMS**, and put them in hand.

## Step 4 Renewables: so you make your own energy

- Get professional advice to confirm feasibility of **RENEWABLE** energy systems. Identify next steps.
- Get professional advice to confirm feasibility of **HEAT PUMPS** as a replacement for boilers and chillers. Identify next steps.
- Identify systems you could switch from fossil fuels to **ELECTRICITY**.

## Step 5 Support Biodiversity and use less water

- Install new **PLANTING** areas. Get professional advice to confirm feasibility of **GREEN ROOFS**. Identify next steps.
- Identify Maintenance Projects to reduce **WATER USE**, and put them in hand.

You can download this page with the Building Survey Tool from **RESOURCES**

# Advanced Building

To reach **Advanced** for your building:

- Carry out a **Capital Project**

## Step 1 Plan for a Sustainable Building

- Carry out a Capital Project(s) to achieve your Sustainability **PLAN**, raising funds and obtaining permissions as necessary.
- Monitor energy **RECORDS** to compare planned energy savings with actual outcomes.

Done? *v, NO or N/A*

## Step 2 Insulation: so your building needs less energy

- Carry out all possible works to improve insulation to **ROOFS**, balconies and **WALLS**.
- Carry out all possible works to upgrade **DOORS** and **WINDOWS**.

## Step 3 Efficiency: so your building uses less energy

- Carry out all works to make your **HEATING AND COOLING** system(s) as energy-efficient as possible.
- Carry out all works to make your **LIGHTING** systems(s) as energy-efficient as possible.
- Carry out all works to make your **HOT WATER** system(s) as energy-efficient as possible.
- Carry out all works to make your **VENTILATION** system(s) as energy-efficient as possible.
- Carry out all works to make your **OTHER SYSTEMS** as energy-efficient as possible.

## Step 4 Renewables: so you make your own energy

- Install **RENEWABLE** energy generation systems, if they are part of your Sustainability Plan.
- Install **HEAT PUMPS** where feasible, if they are part of your Sustainability Plan.
- Switch systems wherever possible from fossil fuels to **ELECTRICITY**.

## Step 5 Support Biodiversity and use less water

- Installing **PLANTERS**, planted areas and **GREEN ROOFS** wherever feasible.
- Install systems for recycling **RAINWATER** or **GREYWATER** wherever feasible.

You can download this page with the Building Survey Tool from **RESOURCES**

## Go to BUILDINGS RESOURCES

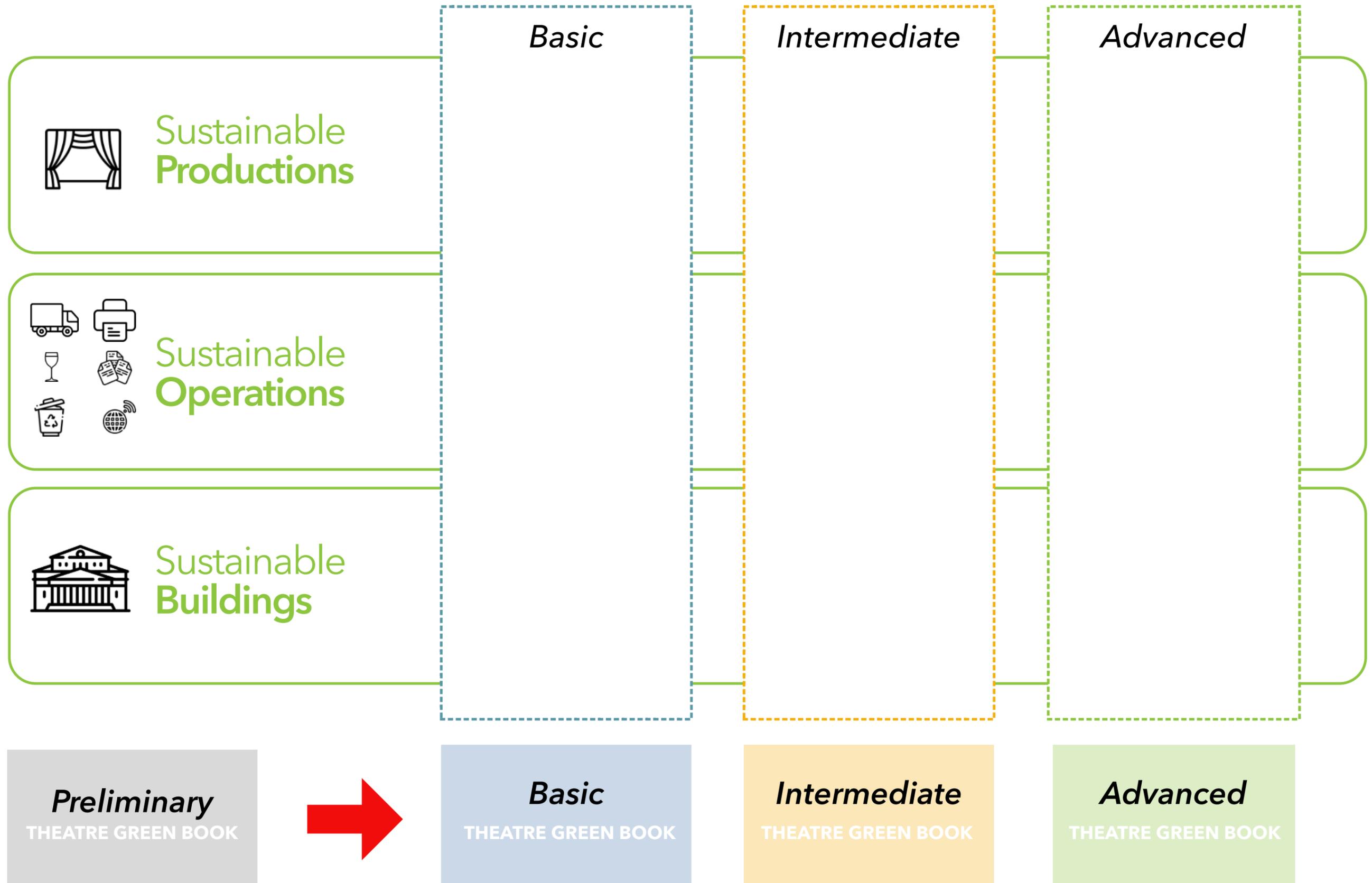
- for ...
- *Detailed Guidance*
  - *The Building Survey Tool and downloadable standards*
  - *Case studies*
  - *Toolkits*



Go to  
**Buildings**  
resources

How do I measure progress?

# Self-certify using the Theatre Green Book standards



# How to Start :

Make a **Commitment** to sustainability, with

- A **Timescale** to reach Baseline.
- An immediate **Action Plan**.

Form a **Green Team** and develop a sustainability culture within your organisation.

Appoint someone to lead on **Data** gathering and someone to lead on **Communications**.

# Preliminary

<ul style="list-style-type: none"> <li>• <b>COMMIT</b> to reducing your environmental impact, and starting the transition to net zero.</li> </ul>	<p><i>It's essential to make sure your environmental commitment is clear to everyone.</i></p>	
<ul style="list-style-type: none"> <li>• Establish a <b>GREEN COMMITTEE</b> including a sustainability lead, a member of the senior leadership team, and a lead for each area - Productions, Operations and Buildings – and key staff members.</li> </ul>	<p><i>Leadership is key but a senior team is needed to decide which Theatre Green Book level to target, make change, involve staff and report progress.</i></p>	
<ul style="list-style-type: none"> <li>• Agree an <b>ACTION PLAN</b> setting out the steps you need to reach the next Green Book stage, and a timescale to achieve it.</li> </ul>	<p><i>You must be clear on the key actions needed to deliver measurable progress towards the environmental goal.</i></p>	
<ul style="list-style-type: none"> <li>• Make a <b>DATA PLAN</b> to set out what you are going to measure and who is responsible.</li> </ul>	<p><i>You need to be in a position to report and analyse your progress, to achieve each Green Book standard.</i></p>	
<ul style="list-style-type: none"> <li>• Set a <b>COMMUNICATIONS PLAN</b> to explain how you will share your targets and achievements, involving staff, partners and audiences.</li> </ul>	<p><i>Sustainability needs a cultural change. Good communication helps everyone share the challenge.</i></p>	

**Basic**  
THEATRE GREEN BOOK

**To reach Basic :**

- All **Productions** target Basic and two thirds achieve it (only include productions for which you have lead responsibility).
- You have a Sustainable **Operation** and have achieved Basic in 4 out of 6 areas.
- You have a Sustainability Plan for your **Building** (if applicable), and have put in hand the Easy Wins in each area. ( Include Easy Wins you have carried out in the past 5 years).

You can download this page from **RESOURCES**

Sustainable Productions	Target?	Achieved?
Production		

Sustainable Operations	Organisation	
Paper and digital		
Food,drink, retail		
Managing the buildings		
Reuse and recycling		
Travel		
Contracts and procurement		

Sustainable Buildings	Plan	
Easy win no. 1		
Easy win no. 2		
Easy win no. 3		
Easy win no. 4		
Easy win no. 5		
Easy win no. 6		

# Intermediate

THEATRE GREEN BOOK

## To reach Intermediate :

- All **Productions** target Intermediate and two thirds achieve it (include productions where you are a co-producer).
- You have a Sustainable **Operation** and have achieved Intermediate in 4 out of 6 areas.
- You have developed the Sustainability Plan for your **Building** (if applicable), and have put in hand the Maintenance Projects in each area. (Include Projects you have carried out in the past 5 years).

You can download this page from **RESOURCES**

Sustainable Productions	Target?	Achieved?
Production		

Sustainable Operations	Organisation	
Paper and digital		
Food,drink, retail		
Managing the buildings		
Reuse and recycling		
Travel		
Contracts and procurement		

Sustainable Buildings	Plan	
Maintenance Project no. 1		
Maintenance Project no. 2		
Maintenance Project no. 3		
Maintenance Project no. 4		
Maintenance Project no. 5		
Maintenance Project no. 6		

**Advanced**  
THEATRE GREEN BOOK

**To reach Advanced :**

- All **Productions** target Advanced and three quarters achieve it (include touring productions where you are a receiving venue).
- You have a Sustainable **Operation** and have achieved Advanced in all areas.
- You have achieved Advanced for your **Building** (if applicable).

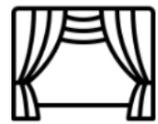
Sustainable Productions	Target?	Achieved?
Production		

Sustainable Operations	Organisation	
Paper and digital		
Food,drink, retail		
Managing the buildings		
Reuse and recycling		
Travel		
Contracts and procurement		

Sustainable Buildings	Plan	
Capital Project no. 1		
Capital Project no. 2		
Capital Project no. 3		
Capital Project no. 4		
Capital Project no. 5		
Capital Project no. 6		

How do I measure outcomes?

# Assess your practice using the standards



Sustainable  
**Productions**

*Basic*  
THEATRE GREEN BOOK



Sustainable  
**Operations**

*Basic*  
THEATRE GREEN BOOK



Sustainable  
**Buildings**

*Basic*  
THEATRE GREEN BOOK

# Measure circularity and carbon using the tools



Sustainable  
**Productions**

**Basic**  
THEATRE GREEN BOOK

**%**  
reused /  
recycled

**kgCO2e**  
new  
materials



Sustainable  
**Operations**

**Basic**  
THEATRE GREEN BOOK

**%**  
waste  
recycled

**kgCO2e**  
travel



Sustainable  
**Buildings**

**Basic**  
THEATRE GREEN BOOK

**kgCO2e**  
building

Note: 'kgCO2e' is 'kilograms of CO2 equivalent', a standard measure of carbon emissions.

**kgCO2e**  
total

What tools do I need?

# You'll find all you need in the **RESOURCES** area



## Sustainable Productions

for...

- Downloadable Production Calculator
- More detailed guidance
- Case studies
- Toolkit

Go to **Productions** resources



## Sustainable Operations

for...

- Downloadable Operations Tracker
- More detailed guidance
- Case studies
- Toolkit

Go to **Operations** resources



## Sustainable Buildings

for...

- Downloadable Building Survey Tool
- More detailed guidance
- Case studies
- Toolkit

Go to **Buildings** resources

## Certification

for...

- Downloadable Self-certification forms
- Sustainability Glossary

Go to **General** resources

The Theatre Green Book is a pathway to climate and ecological sustainability.

It aligns theatre with UN Sustainable Development Goals:

- *Goal 9 : Industry, Innovation and Infrastructure*
- *Goal 11 : Sustainable Cities and Communities*
- *Goal 12 : Responsible Consumption and Production*
- *Goal 13 : Climate Action*

You need action on health, equality and justice to align theatre with all 17 UN Sustainable Development Goals.

- *<https://www.undp.org/sustainable-development-goals>*

# Acknowledgements and Thanks

## Thanks

With very special thanks to the many individuals and organisations who have provided input and support in developing the second UK edition of the Theatre Green Book.

Alex Horder, Alex Mathias, Alisha Khadri, Alistair Cope, Alistair McArthur, Amber Massie-Blomfield, Andrew Ashton, Andrew Wylie, Anette Ollerearnshaw, Angela Buckley, Angela Wachner, Anna Walsh, Ben Gearing, Ben Richardson, Ben Steinitz, Ben Twist, Bob Brandsen, Camille Wilhelm, Carlos Martinez Andreu, Caro Overy, Catriona Fallon, Célia Grau, Charlotte Jones, Chris Durant, Chris Lang, Chris Mercer, Chris Pepler, Christian Gade Bjerrum, Christian Wallace, Christy Romer, Claire Appleby, Claire Murray, Claire Walker, Claudia di Giacomo, Craig Tye, Dan Turden, Danniella Beattie, Danny Lennon, Danni Vickerstaff, Dave Guy, David Bonney, David Evans, David Sunnuk, David Tanqueray, Dieter Reeps, Edilia Gänz, Emily Blackwell, Emma Wilson, Emmanuelle Lejeune, Esther Garrido, Evie Redfern, Ewa Semerakova, Feimatta Conteh, Fiona Sturgeon Shea, Flo Carr, Frances Dawes, Francesca Moseley, Frankie Bradshaw, Gemma Swallow, Geoff Hense, George Thomson, Grace Chan, Grace Christie, Grace Nye-Butler, Graham Sutherland, Hannah Essex, Hans Antonsen, Hans Joachim Rau, Heidi Wiley, Helen Atkinson, Helen Johns, Helena Wilson, Henrik Gustafsson, Holly Rice Roughan, Igor, Irma McLoughlin, Jacob Teglgard, Jamie Saye, Jason Cox, Jason Culverwell, Jeffrey Tse, Jenn Taillefer, Jennifer Huygens, Jenny Carter, Jess Curtis, Jim Davis, Jim Harrison, Joachim Klement, Joanna Crowley, Joel Williams, Johan Otten, John Spreadbridge, Jon Davies, Jon Freeman, Jon Morgan, Jonathon Thonon, Josie Dale-Jones, Julie Fuchs, Juliet Hayes, Justin Audibert, Justine Harvey, Karine Décorne, Kate Bierman, Kate John, Kate Varah, Kathy Bourne, Katy Downton, Kieron Docherty, Kieron Lillis, Kim Fridbjørg, Kirsten Cockburn, Laura Morgan, Laura Oliver, Laura Pick, Laura Sedgwick, Laura Tendall, Laura Wootten, Lauren Soley, Lia Bundle, Linda Dixon, Lisa Burger, Lisa Maguire, Liz Minshall, Liz Sillett, Louise Gregory, Louise Miles-Payne, Lucy Bird, Lucy Davies, Maaïke Westinga, Martin Högg, Matthew Belsey, Melly Still, Merita Huang, Michael Bell, Mikkel Rubaek, Natasha Pavey, Neil Darlinson, Niamh Flanagan, Nicola Saunders, Nina Jacques, Paddy Dillon, Pam Vision, Paul Burgess, Paul Colwell, Paul Handley, Paul Jozefowski, Peter Alesbury, Peter Rice,

Peter Robson, Peter Wright, Phillip Brown, Philip Lisseman, Polly Bentham, Rachael Duthie, Rachael O'Sullivan, Raquel Castells, Richard Ashton, Richard Willoughby, Rima Dodd, Roberta Mock, Robin Townley, Rolf Hauser, Ros Maddison, Rose Connelly, Rufus Norris, Ruth Butterworth, Ryan Watson, Ryanne de Boer, Sam Garner-Gibbons, Sanne Brodersen, Sarah Cope, Sarah Moeremans, Sarah Newton, Sebastian Warrack, Serge Rangoni, Simon Curtis, Simon Erridge, Stephanie Thomas, Stephanie Sirr, Steven Morris, Tapio Sakkinen, Teresa Pfaud, Terry Lee Dickson, Tobias Wolff, Tomas Wright, Tony Smith, Tracy Dunk, Urs Dierker, Valentina de Simone, Vera Liao, Vicki Mortimer, Wayne Dibsall, Wesko Rohde, Will Hargreaves, Will Ramsey, Will Reynolds, Zad Novak, Zoe Robinson, Zoë Svendsen.

Many of the above are freelancers. Others work for:

ABTT, An Tobar and Mull Theatre, Arcola Theatre, Arts Council England, Arts Council of Wales, Arts University Bournemouth, Association for Lighting Production and Design, Association for Sound Design and Production, Association of Stage Managers, ATG, Baeredygtig Kulturliv NU, Bennetts Associates, Buro Happold, Bush Theatre, Central, Centro De Tecnologia Del Espectaculo, Charcoalblue, Chichester Festival Theatre, Citizens Theatre, Complicité, Creative Carbon Scotland, Creative Scotland, Creu Cymru, Curve Theatre, DTHG, Dutch National Opera and Ballet, Ecostage, English National Ballet, English Touring Opera, European Theatre Convention, Federation of Scottish Theatres, Fedora, Footprint Scenery, Forced Entertainment, GMAST, Green Adventures, Guildford School of Acting, Headlong, Independent Theatre Council, Indigo, Instituto Nacional de Artes Escénicas y de la Música, Irish Theatre Forum, LW Theatres, Lyric Theatre Belfast, Mind the Gap, National Theatre, National Theatre of Scotland, National Theatre Wales, Nederlandse Associatie voor Podiumkunsten, New Vic Theatre, Nimax, Nottingham Playhouse, Northern Stage, Oper Leipzig, Opera Europa, Opera North, Oxford Playhouse, PAV, Performing Arts Alliance Taiwan, Rambert, Renew Culture, Roundhouse, Royal Ballet and Opera, Royal Danish Theatres, Royal Exchange, Royal Holloway College, Royal Lyceum Theatre Edinburgh, Royal Shakespeare Company, SAIL, Salisbury Playhouse, Scottish Ballet, Scottish Conservatoire, Shift, Society of British Theatre Designers, Stage

Management Association, The Lowry, Theatre Alibi, Theatre and Dance Northern Ireland, Theatr Clwyd, Theatres Trust, UK Dance, UK Theatre / SOLT, Vereniging van Schouwburg- en Concertgebouwdirecties, Vereniging voor Podiumtechnologie, Wales Millennium Centre, Welsh Ballet, Young Vic, 1927.

We apologise if any names have been missed. Very many others have helped through the many theatre organisations, companies and freelance collectives who are working for sustainability, and whose thinking has contributed to this guide.

## Triallers

Many theatres use the Theatre Green Book, and have offered feedback. We are grateful to all of them. A group of UK theatres has offered continual structured feedback to test the second edition and its support tools:

Chichester Festival Theatre, English National Ballet, Headlong, The Lowry, National Theatre, National Theatre of Scotland, Northern Stages, Opera North, Royal Ballet and Opera, Royal Shakespeare Company, SAIL, Shift, Wales Millennium Centre, Young Vic.

## European Theatre Convention

The European Theatre Convention ([www.europeantheatre.eu](http://www.europeantheatre.eu)) has been instrumental in helping develop the new format of the Theatre Green Book, supported by a group of member theatres across Europe:

Teatro Arriaga, Bilbao; Deutsches Theater, Berlin; Théâtre de Liège; Národní Divadlo, Prague; Det Norske Teatret, Oslo; Staatsschauspiel, Dresden; Toneelmakerij, Amsterdam; Young Vic, London; Het Zuidelijk Toneel, Tilburg.

Icons are from Flaticon: <https://www.flaticon.com/>

*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.*

<https://www.burohappold.com/about/>

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**BURO HAPPOLD**

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ALLFORD  
HALL  
MONAGHAN  
MORRIS

HaworthTompkins

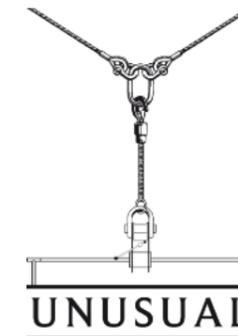
The  
**Steel**  
Charitable Trust

Bristow



**T H E A T R E**  
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