



A Toolkit to Help Create Healthier & More Resilient Community Buildings

Foreword – Eastside Community Trust



Eastside Community Trust runs two buzzing hubs in East Bristol – Easton Community Centre and Felix Road Adventure Playground – alongside activities to make our community in Easton and Lawrence Hill a place of possibility for everyone.

Over the past three years, Eastside has explored the role of community buildings in improving local resilience to climate change and rising energy costs, while reducing carbon emissions from the energy we use in our homes and buildings. This work was part of Bristol’s Community Climate Action Project, funded by the National Lottery and coordinated by Bristol Climate & Nature Partnership.

We know that community buildings like ours play an essential role in climate action and resilience. They provide safe, comfortable places where people can go to get out of the cold or heat, offer trusted information and support, and can inspire others to take action by modelling best practice and raising awareness of steps we can take to reduce our carbon emissions.

However, community organisations have a lot on their plates with tight budgets, increasingly complex community needs, and often very little dedicated time or technical expertise within the team to design and manage complex energy systems in our buildings.

On our journey to make our two buildings healthier, more energy efficient and resilient, we have come across common challenges and questions shared by most community buildings in Bristol and further afield.

This toolkit was commissioned with funding from the Lottery to offer a roadmap for some of these shared challenges, with practical considerations, tips and additional resources to help us move forward together and bring about change that is both fast and fair. There is an enormous amount of work to be done, but I am heartened by the generosity and goodwill shown by everyone we have worked with on this project.

Special thanks to the project team who completed the toolkit, led by Innes Johnston of Max Fordham with support from Dave Tudgey of Bristol Energy Network, Brian Harper from Energy Tracers, and Jonathan Platt from **gcp** Chartered Architects. And thank you to the community organisations and other stakeholders across the city who helped feed into the development of this guide.

Foreword – Bristol Energy Network

Bristol Energy Network is a grassroots organisation that has been supporting communities to take control of their energy future since 2008, formalised as a Community Interest Company (C.I.C.) in 2014. Over the past three years, with National Lottery funding through Bristol's Community Climate Action Project, we have worked alongside Eastside Community Trust to understand the challenges community organisations face around building energy efficiency.

Through our partnership with Eastside Community Trust — supporting their work at Easton Community Centre and Felix Road Adventure Playground — we discovered both the problem and the pathway forward.

Energy Tracers made the invisible visible through thermal imaging, offering cost-effective, DIY-friendly next steps that empowered community building managers to take action. Their work showed that small, targeted fixes can make a big difference to comfort, costs, and carbon.

Max Fordham took those insights and turned them into this practical toolkit — translating technical complexity into realistic budgets, clear priorities, and actionable guidance. Their engineering rigour underpins every recommendation, ensuring the toolkit is both accurate and achievable. GCP Architects then shaped its structure and visual format, creating a resource that works in the real world of tight budgets, volunteer teams, and the messy reality of managing community projects.

But no toolkit works without a champion. Emily Fifield, her colleague Vic Wakefield-Jarrett, and the support and stewardship of Stacy Yelland (CEO) with their staff team from Eastside Community Trust, were ours — driving the work forward, engaging stakeholders, and keeping momentum through every stage of the whole project.

This toolkit is designed to support champions like Emily. It includes checklists, templates, decision trees, and quarterly planning tools, with an appendix of printable forms and worksheets that can be completed, shared, and updated as live records of your building's progress. Use it to plan improvements, track energy use, and build your case for action. Small, strategic improvements build resilience over time — and together we can make every community building part of Bristol's sustainable future.

This is a living document that will be revised regularly based on feedback from community building managers and users of this toolkit. We welcome your experiences, suggestions, and lessons learned as you work with this guidance. The next revision is proposed for spring 2026, allowing us to incorporate insights from those who have put these tools into practice.

David Tudgey, Project Development Manager, Bristol Energy Network, October 2025



Bristol Climate &
Nature Partnership

Community
Climate Action



MAX FORDHAM



gcp Chartered Architects
ARCHITECTURE | CONSULTING

Structure of the Toolkit

Part 1: Whole building approach

- What makes a healthier and more resilient building?
- Where to start?

Part 2: How to Make it Happen

- What is Decarbonisation and why is it important?
- How to make it happen

About the Toolkit

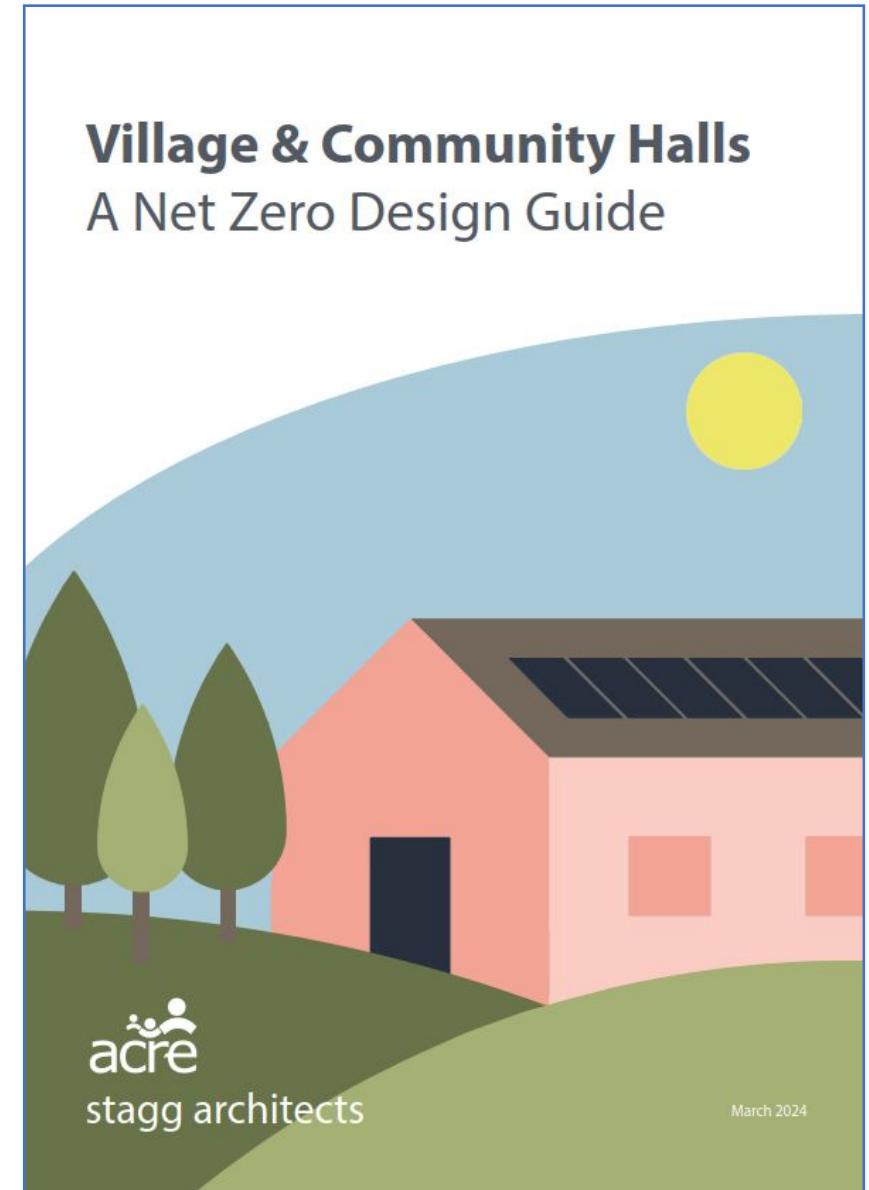
This toolkit builds on excellent work by others seeking to support the transition to healthier and more resilient community buildings. For example, Action with Communities in Rural England's, (ACRE) excellent *Village & Community Halls: A Net Zero Design Guide (March 2024)* provides comprehensive technical explanations and inspiring case studies of what's possible.

This toolkit focuses on providing a more holistic overview on creating healthier and more resilient buildings, and on the project management processes and practical steps needed to successfully deliver these improvements.

No building is the same, therefore no one solution is the same. A project to install a heat pump or solar panels is very different from a whole building retrofit, for example. This toolkit therefore seeks to provide a set of principles and a structure that should be adapted to suit each individual circumstance.

This toolkit is in two parts. Part 1 describes measures that could be adopted, Part 2 outlines how to achieve change supported by templates to help structure any work.

NB: Website links to useful sources and current legislation have been provided. We apologise if when you read this toolkit the links have expired.



About the Toolkit

Who is the toolkit for, how could it be used?

- This is for organisations who are hoping **make their building(s) healthier and more resilient** and at the same time, importantly **decarbonise** their asset(s). To make meaningful progress, **the process needs an owner** (member of staff, volunteer etc) who should be agreed and supported by the leadership team.
- The principle of working towards a healthier and more resilient building is a **significant undertaking and should be approved and recorded at the management committee** or equivalent.
- The leadership should **allocate necessary resources** (time and money) to support the owner to work through the process.
- The leadership should review progress with the owner and present regular reports to management committee or equivalent.
- The toolkit describes many measure to support the journey towards a healthier and more resilient building. Not all measures will apply in all circumstances.

Throughout this document, **Good Practice** suggestions are made in boxes like this one.

Good Practice 1: Identify owner of the process.

Good Practice 2: Owner to collate information highlighted in the toolkit in digital (cloud) **and** hard copy format. Share cloud logon details.

Good Practice 3: Use a dedicated workbook or digital notebook to record daily actions, notes etc.

Good Practice 4: Leadership to record decision to move towards a more healthy and resilient building.

Good Practice 5: Leadership to provide support to process owner.

Good Practice 6: Leadership to regularly review progress and provide support.

Throughout this document, **Top tip(s)** and sources of useful information are made in boxes like this one.

Part 1:

Whole Building Approach

A Toolkit for Projects and Building Operation

Adapting an existing building to make it healthier and more resilient is a complex and challenging project. The need, the approach and the process of getting there will all need careful planning and explanation. Not everyone will think it is a good idea!

Community Buildings - Health and Resilience

What is so important about community buildings?

Community buildings and the services they provide often play an underrepresented role in society. They are important in different ways to different communities. No two community buildings are the same, they are all unique and they are all under financial pressure.

- **Important assets:** Community buildings are important community assets and if lost due to lack of investment will never be replaced.
- **Community services:** In these times of pressurised public finances leading to constrained public services, community buildings and the services they provide are all the more important, as was clearly demonstrated during the Covid 19 pandemic. They frequently provide vital services for their communities.
- **Climate crisis:** as part of the climate crisis, where the UK exceeded 40°C for the first time in 2022, extreme weather events are likely to become even more frequent. Community buildings need to contribute to alleviating the crisis and provide a healthy place for the community.
- **Being responsible:** To ensure community buildings can continue provide their vital services, they need to be healthy places to work in, visit and enjoy, and they need to be resilient to ensure they can survive in our changing world.

Where to start? A Whole Building Approach

Why a whole building approach?

A whole building approach ensure that measures work together and redcues risks. Individual, uncoordinated fixes seldom provide the desired long-term benefit.

- **Integrated planning:** Assess the building's current state and define the vision. Create a long-term plan that sequences work logically, recognising it needs to be flexible to respond to funding opportunities etc.
- **Consider the fabric:** Upgrading the building's insulation and airtightness ensures the building needs less energy to be comfortable, making the heating and cooling systems more effective and affordable. However, the least disruptive and most affordable immediate action may be in the systems and not the fabric.
- **Monitor performance:** Measure how improvements are performing to check they are delivering expected benefits and not causing new problems like excess humidity or overheating.
- **Use sustainable materials:** Choose materials which minimise the emissions produced during their manufacturing and transport, thereby reducing environmental impact.

Good Practice 7: Discuss main techniques involved in making a building healthier and more resilient with the management team, other members of staff, stakeholders including the local community.

What makes a Healthier and More Resilient Building?

The main techniques in making healthier and more resilient buildings

1. **Enhancing the building envelope and energy efficiency**
2. **Adopting low-carbon heating, and better controls and measurement**
3. **Adapting to climate change and hazards**
4. **Improve indoor air quality and occupant wellbeing**

The building envelope is the shell or exterior of the building: roof, walls, windows and doors and floors.

Each technique describes actions, ranked in broad priority order (cheapest and easiest first) that could be adopted to make a building healthier and more resilient, but as each building is unique, each technique should be considered in the context of the whole building approach.

The ability to implement any improvements is frequently constrained by both human and financial resources. A vision for the building must be agreed and an integrated **plan** devised early in the process, so the organisation is

Good Practice 8: Agree the vision and develop a long-term integrated plan that sequences work logically. Save the plan in the digital filing system.

The Main Techniques

1: Enhancing the building envelope and energy efficiency

Improving a building's thermal envelope reduces energy use, lowers bills, and makes spaces more comfortable year-round, addressing both cold winters and hot summers.

- **Improve airtightness and draught-proofing:** Seal gaps and cracks in the building's structure to prevent uncontrolled air leaks
- **Adopt passive control measures:** Install external shutters, shades, or solar shading to block sunlight during hot weather, reducing overheating, and reduce heat loss in winter.
- **Add insulation to walls and roofs:** Upgrade roof, floor, and wall insulation to reduce heat loss in winter and keep heat out in summer.
- **Upgrade windows and doors:** Install high-performance double or triple-glazed windows and draught-proof doors to retain heat and minimise air leakage.

Note: Where possible choose low embodied carbon materials.

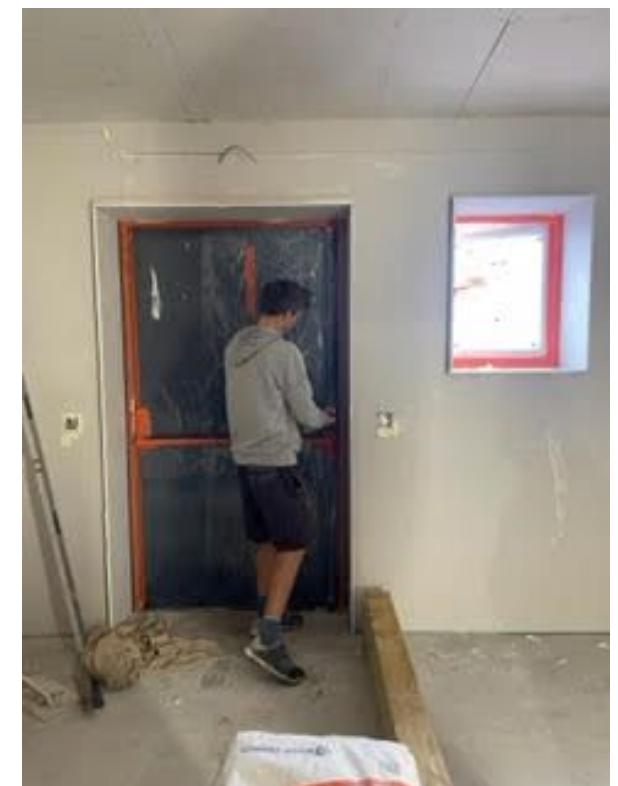
Building Envelope & Energy Efficiency: Fabric

- Heat is wasted through walls, windows, roof, floor, at corners and from draughts and ventilation. This can be seen on a thermographic.
- Water leaks from e.g. the roof can increase heat loss and humidity, encouraging mould growth.
- There are often **easy DIY fixes** (stopping-up gaps, adding loft insulation, adding seals to doors and windows, fixing leaks) before considering more involved projects.
- Insulating surfaces makes them warmer, **improving comfort** generally – you can really feel a cold wall or window in an otherwise warm room.
- Listed buildings require legal consent before you can alter the fabric – and some changes which alter the appearance or remove historic features may not be allowed.
- Improving airtightness may reduce ventilation and increase humidity, increasing the risk of mould, so controlled ventilation may be needed.

Good Practice 9: a. Locate any drawings of the building however basic; b. If drawings are hard copy (paper) get them scanned; c. Commission a digital building and topographic survey of the site and building; d. Record the type of glazing in all windows (single, double or triple) and note if any have failed: Commission a thermographic survey if not already available.

Save all records in the digital filing system.

Top tip: ACRE have developed [Village and Community Halls, A Guide to Surveys](#) that is relevant to all community buildings



Shirehampton Public Hall

The Main Techniques

2: Adopting low-carbon heating and better controls and measurement

After improving the building's insulation and airtightness, adopting low-carbon heating and better controls will further reduce energy consumption, enhance comfort and improve building management.

- **Low-carbon heating:** As the UK phases out fossil fuel systems (gas and oil boilers), heat pumps are often an effective replacement, providing up to 3 to 4 times more heat per unit of electricity than traditional boilers.
- **Renewable energy generation:** On-site renewable energy sources (solar photovoltaic PV panels) can cut a building's carbon footprint, reduce electricity bills and increase energy resilience if combined with battery technology.
- **Improved building controls:** using human or automatic assessment of performance can help monitor and optimise a building's performance in real time (lighting, heating, and ventilation based on occupancy and daylight levels), and report on the effectiveness of improvements. Install smart meters to track energy use and encourage behavioural changes to save energy.

Low-carbon Heating & Controls: Heating

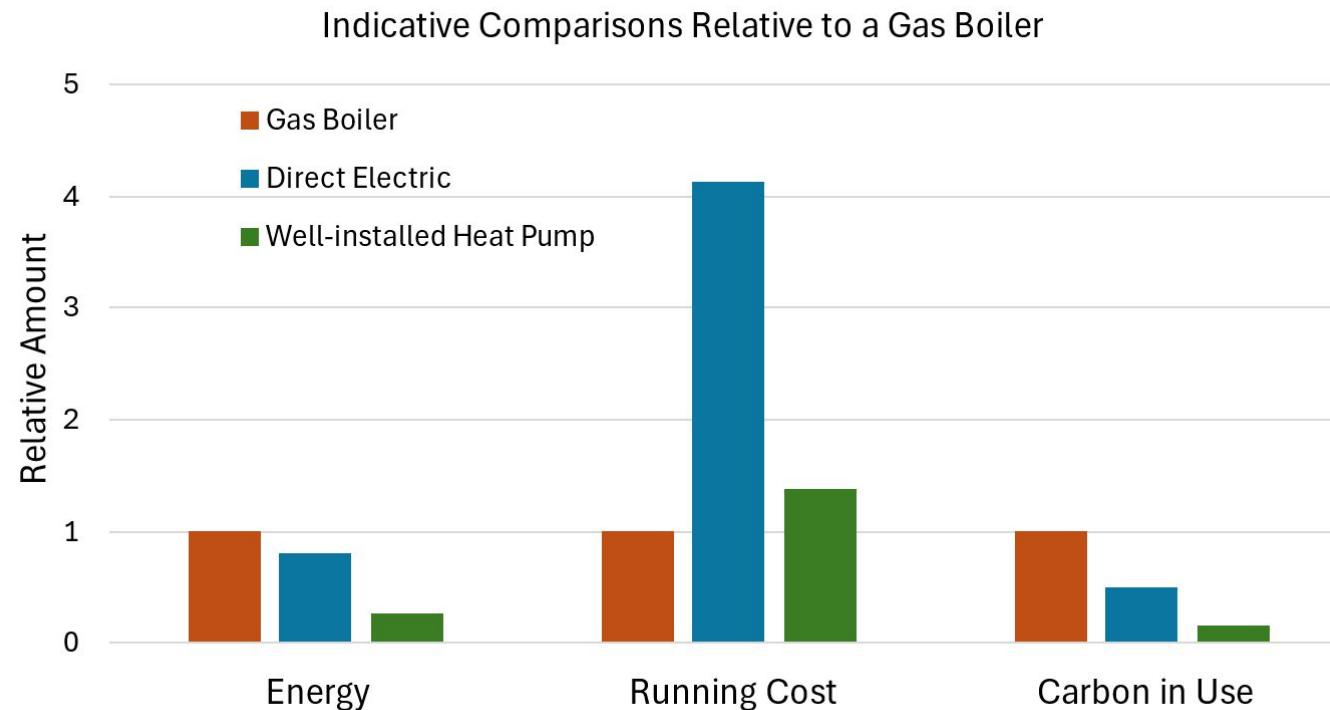
- Electric heating is lower carbon than gas because the national grid is gradually moving toward zero carbon. It works using heat pumps or direct electric heating. Heat pumps use the same technology as refrigerators to raise or lower temperatures. Direct Electric heating uses the same technology as kettles, immersion tanks or toasters.
- Heat can be moved around a building by pipes or cables into:
 - Radiators (usually fed by water pipes),
 - Convectors (may be helped with a fan),
 - Underfloor heating (in solid floors or under timber),
 - Radiant panels or lamps.
- Sometimes it can be necessary to **change the existing heaters and/or pipes**. This is because they may be too small or corroded. It might be preferable to remove old pipes if a new system doesn't require them.



Good Practice 10: Collate and record information and drawings of pipe locations, sizes etc.

Save all records in the digital filing system.

Low-carbon Heating & Controls: Heating



- Heat pumps take heat from the air, ground or body of water and put it into your building.
- They produce much more heat than the electricity they use. Therefore, the **energy consumed** (see chart above) is low.
- The difference between the cost of electricity and gas in the UK is currently large but should get smaller over time. Therefore, the **running cost** of a heat pump is comparable to a gas boiler even though the energy consumed is lower.

- Heat pumps run for longer at a lower temperature compared to gas boilers – like comparing a pan simmering gently or rapidly boiling.
- Heat pumps are more efficient running at lower temperatures than gas boilers normally do – but they can run hot if needed.

Top tip: The ACRE guide provides an in-depth explanation of how heat pumps work (pages 44-49).

Low-carbon Heating & Controls: Hot water

- Hot water for showers, sinks, etc, needs to be stored centrally at min 60°C then mixed with cold. A heat pump can provide water at a similar temperature but becomes a bit less efficient, so it's important not to overestimate the amount of hot water you need.
- Hot water can be generated at the point of use at max 40°C i.e. Zip tap, power shower etc. This reduces pipework and the resulting energy loss from circulating water. This is good if you have a few hot taps distributed widely around the building. This approach is much less efficient than a heat pump and requires a much bigger electrical supply.



Good Practice 11: Estimate a reasonable maximum litres of hot water needed over 2 hours, and over 1 day. E.g. are there showers, if so how many people use them and when? What about the Kitchen?

Save all records in the digital filing system.

Low-carbon Heating & Controls: Electricity

- Existing old **electricity supplies** are often too small to accommodate heat pumps, electric hot water, catering and electric vehicle charging.
- Upgrades can be expensive and time-consuming, but necessary to future-proof the building.
- Using **PVs** and a reliable **green tariff** are important.
- Battery storage can help with high peak demand (e.g. a kitchen) and can also help to manage costs. The battery can store energy generated by PVs for use during the evening and night, so the energy isn't wasted. They can also help you to take advantage of night-time tariffs, saving the energy for use the following day.



Good Practice 12:

- a. Find the name of your energy suppliers;
- b. Collate two years of energy bills;
- c. Compare current traffic with alternative green tariffs.

Shirehampton Public Hall,
Springfield room.
Plug in electric radiator, above
uninsulated cellar, formally the
plant room when the building
was on gas. Experiencing huge
heat loss through the cellar

The Main Techniques

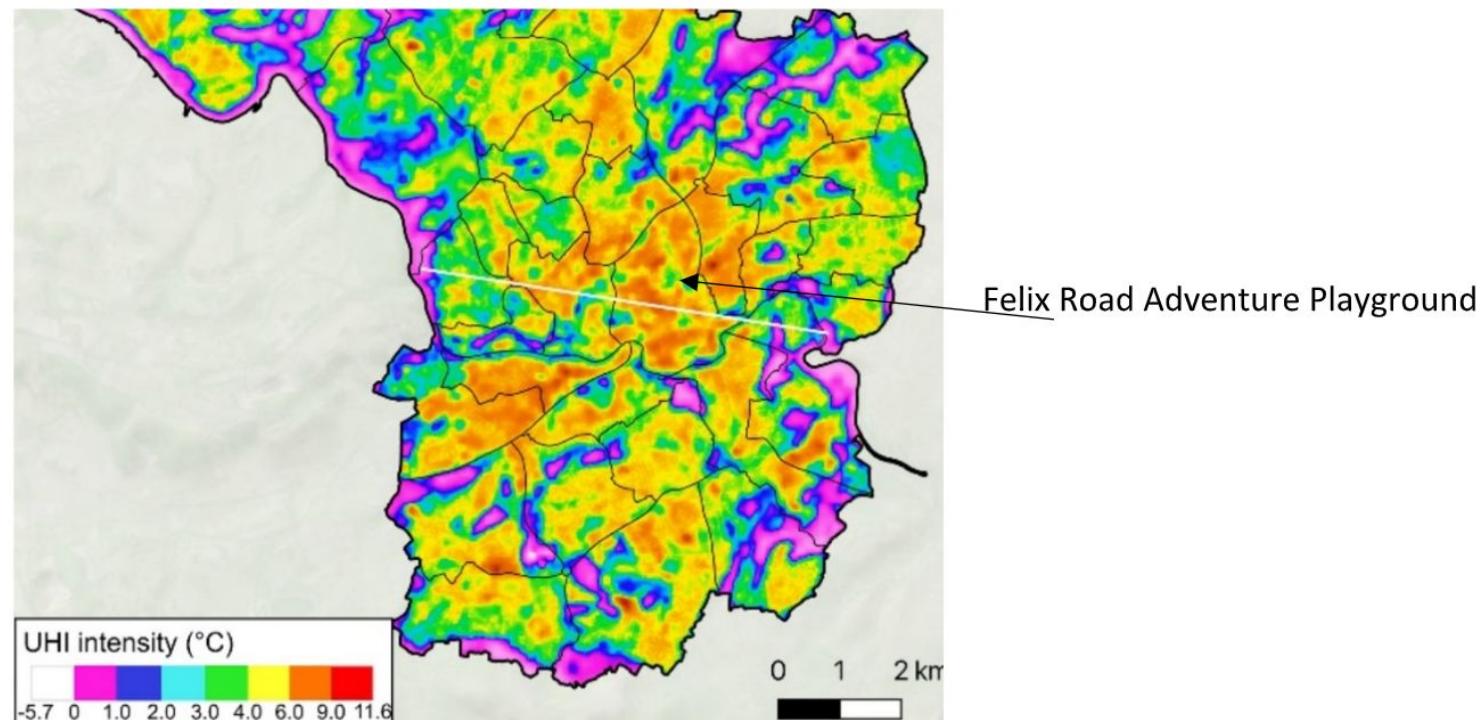
3: Adapting to climate change and hazards

Making buildings more resilient means preparing them to withstand future climate impacts like heatwaves, drought and flooding.

- **Overheating:** Reduce solar heat gain in warmer months by installing external shutters, awnings, or solar-control window films. Employ passive cooling strategies like secure night-time ventilation and good natural ventilation generally.
- **Flood resilience:** For buildings in flood-prone areas, measures can be resistant (aiming to keep water out) or resilient (designed to limit damage if water enters), or both. If practical, use flood-resistant materials and raise electrical and comms wiring/sockets above potential flood levels.
- **Sustainable water management:** Conserve water and manage stormwater runoff with rainwater harvesting systems for non-potable uses like gardening or toilet flushing. Using green roofs and permeable outdoor paving helps absorb rainwater. Installing low-flow fixtures and efficient appliances helps conserve fresh water in droughts.

Adapting to climate change: Overheating

- Upgrading wall, floor, and roof insulation helps **buildings stay cooler** in the summer, as well as warmer in the winter. This reduces the need for energy-intensive air conditioning.
- Try to achieve **secure night-time ventilation** e.g. opening vents or secure windows overnight – nighttime air in the UK is usually cooler even in summer and can pre-cool buildings ready for the next day.
- Install external shutters, awnings, or solar-control window films to **block** direct sunlight and **reduce** solar heat gain.
- Use reflective, light-coloured paint on roofs and walls to **absorb less** heat from the sun



Heat map of Bristol. Source and image:

<https://environment.blogs.bristol.ac.uk/2020/11/19/is-extreme-heat-an-underestimated-risk-in-bristol/>

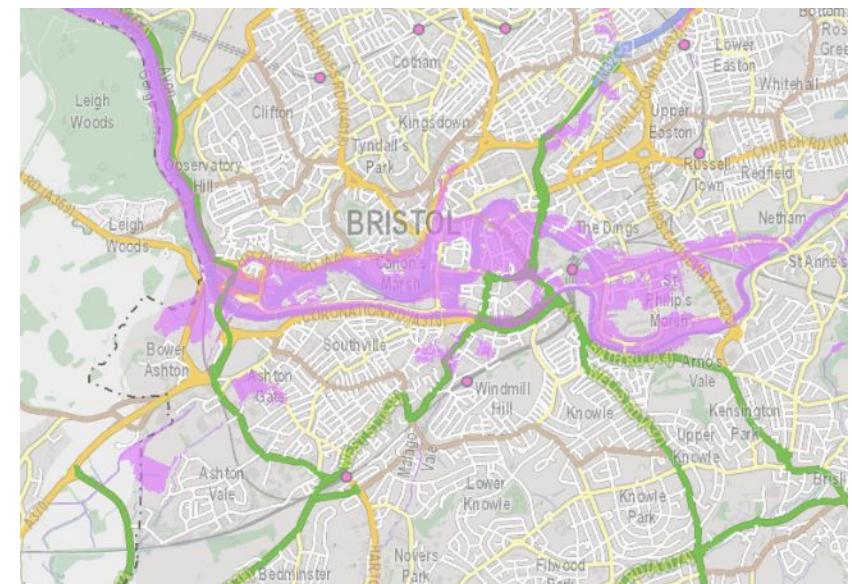
Adapting to climate change: Flooding

- If your building is in an area of flood risk, consider adopting measures that either prevent water from entering a building (**resistant**) or minimise damage if it does (**resilient**).
- Replace carpets with tiles or treated floorboards and use lime-based or waterproof plasterboard.
- Use temporary door and window barriers to **prevent floodwater entry** into your building. Anti-flood air bricks can also prevent water ingress.
- Resilient measures include **relocating** electrical sockets, wiring, and key mechanical systems like boilers to higher floors or above anticipated flood levels.



Top tip: Check out if your building is in a flood risk zone by putting your postcode into the GOV.UK flood mapping tool found [here](#).

Also, knowing if your building is in a flood risk zone is important for insurance purposes.



Bristol flood risk areas in 2050's (from Bristol Flood Risk Management)

Adapting to Climate Change: Water

- Collecting, storing, and **reusing rainwater** is a sustainable, low-cost solution that helps with both water scarcity and flood mitigation.
- Rainwater storage or greywater (sinks/showers) recycling systems involve installing tanks or underground cisterns to collect runoff from rooftops. The stored water can be used for non-potable purposes such as flushing toilets, laundry, and garden irrigation. This reduces the building's demand for mains water – but can be costly.
- Rain gardens and bioretention area are sunken landscaped areas planted with vegetation that capture and absorb stormwater runoff. They can filter out pollutants before the water re-enters the ground.
- Installing vegetation on rooftops, referred to as **green roofs**, decreases the amount of water runoff and provides a slight local cooling effect, helping to manage both heat and stormwater.
- Permeable surfaces allow water **to soak into the ground** rather than running off, which recharges groundwater and reduces strain on drainage systems. Replacing impermeable surfaces like pavement and car parks with permeable alternatives is part of **Sustainable Drainage Systems (SuDS)**.



Avonmouth Community Centre (ACC) rear garden with rainwater run off, now rectified with a French drainage system and water catcher system. Completed in november 2025

The Main Techniques

4: Improve indoor air quality and occupant wellbeing

Healthy indoor environments are a vital aspect of an attractive and usable community building.

- **Ensure proper ventilation:** Improving air tightness reduces heating costs, but you must balance this with adequate ventilation to prevent a build-up of moisture and pollutants. Use natural ventilation (opening windows – keeping security and noise in mind) or mechanical systems with heat recovery (MVHR) for more airtight buildings.
- **Prevent damp and mould:** Damp in buildings is a contributor to poor health, especially for vulnerable people. It's really important to address water leaks and to ensure rooms are well-ventilated.
- **Reduce indoor pollutants:** Use extractor fans in kitchens and WCs. Select low-VOC (volatile organic compound) materials & paints; and when cleaning minimise harmful chemicals in the air.
- **Enhance natural light:** Where possible, maximise natural daylight and views of the outdoors, especially on to gardens which can positively impact mood, productivity, and health.

Air Quality and Wellbeing: Ventilation

- Ventilation is required to maintain fresh air generally, and in particular to remove moisture, heat, smells and pollutants.
- Most spaces will need some ventilation, even corridors. Wet areas e.g. toilets & kitchens must have some by law.
- In **summer**, ventilation is essential for reducing overheating. This is normally achieved by opening windows, but some modern buildings do not have enough openable windows.
- In **winter**, too much ventilation causes heat loss and can result in very dry air.
- Kitchens (commercial) are often responsible for over-ventilation, because the canopy extract runs at full speed all day, even when no food is being prepared.
- For most rooms other than kitchens, **heat-recovery ventilation** can be installed to provide controlled fresh air without losing too much heat. The cost is equipment and electricity to run a fan.



Good Practice 13: a. Find out what type of ventilation the building has (natural, extract, heat recovered, air conditioning etc); b. If you have a kitchen, does it have an extractor and does it work?; c. Collate any drawings for the ventilation installation

Save all records in the digital filing system.

Air Quality and Wellbeing: Summer Cooling

- As summers become hotter, homes are at **increasing risk of overheating**. This can be a serious health risk as well as a comfort issues. Unfortunately, modern buildings are often been designed without this in mind.
- A community centre represents an opportunity to provide a **cooler space for local people** to get away from the heat. There may be a formal expectation of this: Refer to Bristol Council's Register of Winter Warm Spaces.
- Community Centre **staff** should also not have to endure overheating.
- Keeping a space cool with **big openings** for fresh air and **shading** of direct sunshine helps avoid powered cooling equipment. It's a good idea to **pre-cool** the building at night with secure open vents, ready for the following day. See also <https://www.heatwavetoolkit.com/>
- Whilst it's still better to cool naturally, cooling using electric heat pump systems is nowadays quite efficient - and relatively low-carbon as the electricity grid becomes progressively decarbonised.
- Where heat pumps are installed for heating, it is often possible to reverse the equipment to provide cooling. However, cooling is not necessarily as effective if connected to radiators or underfloor pipework. It is best when fan-assistance and located at high-level.

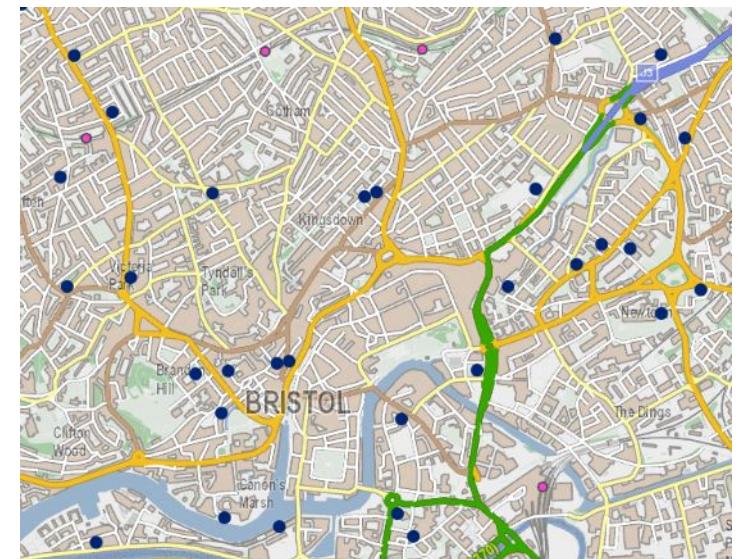


Image from the BCC Local Information Maps for Community Places of Safety

<https://maps.bristol.gov.uk/pinpoint/?service=localinfo&maptype=js&mapopts=legend&layer=Community+Places+of+Safety>

What is decarbonisation, why is it important?

Decarbonisation is at the heart of healthy and more resilient buildings

Having community buildings that are fit for use over the next 25 to 50 years means the owners and managers of buildings will need to address decarbonisation.

- **Carbon emissions:** Emissions generated from buildings are a problem because buildings are responsible for a significant portion of global greenhouse gas (GHG) emissions, contributing to climate change by trapping heat and warming the planet. In the UK, the built environment is responsible for 25% of total carbon emissions, and that includes all community buildings.
- **Net zero:** UK has the goal of achieving Net Zero by 2050; therefore, it needs to address both the operational carbon from energy use and the embodied carbon from the entire lifecycle of a building, including all existing and new community buildings.

- **Energy performance certificates (EPCs):** EPCs aren't needed for existing community buildings. These generally apply to the letting or leasing of parts of a building. From April 1st, 2027, a minimum EPC rating C will be required for new and existing leases, with the standard increasing to B by 2030. Exceptions may apply for listed buildings, some places of worship, temporary structures, or certain small buildings under 50 square metres. Decarbonising can help achieve improved EPC ratings. To get an EPC will require a specialist to create a simple standard model of the building's energy use.

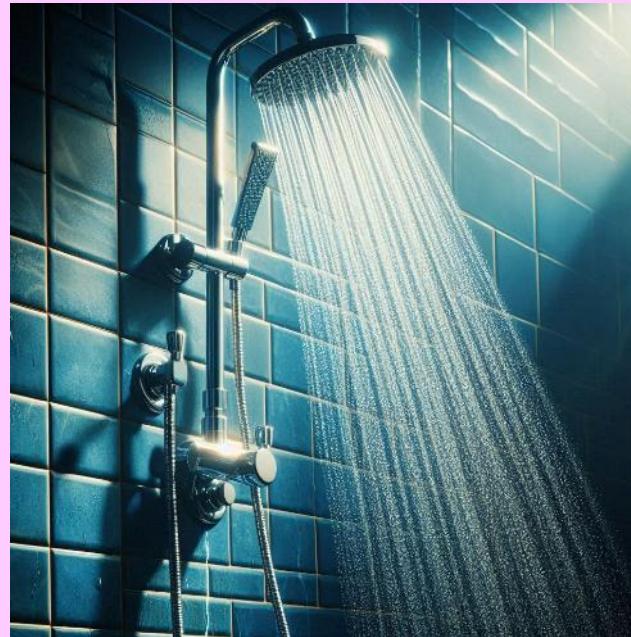
Top tip: Whilst the legislation on EPCs is still being defined, in the past the implementation date for such legislation has been pushed out, so it is possible that the April 1st 2027 requirement for EPC C may be deferred. If you let space in your building, it's a good idea to keep up to date with legislative changes.

Decarbonising a Building – The Basics

The problem: carbon



Carbon emissions come from burning gas, coal and oil (fossil fuels), and from using materials in building and refurbishment work.



Currently gas is the primary source of fuel for heating and hot water in all buildings.

The solution: zero carbon



Carbon emissions can be reduced by switching from fossil fuels to electricity from renewable sources, insulating buildings and other techniques. Generating on site electricity via solar panels and installing heat pumps can help to reduce carbon emissions.

Other Carbon Emissions

- Adding the emissions from **travel, food, items bought and sold**, and so on, completes the carbon footprint of the Community Centre. The graphic below illustrates – for a company – the whole picture of emissions, of which energy use is only a part.
- Water use also has associated carbon emissions and should be considered as a scarce resource itself.

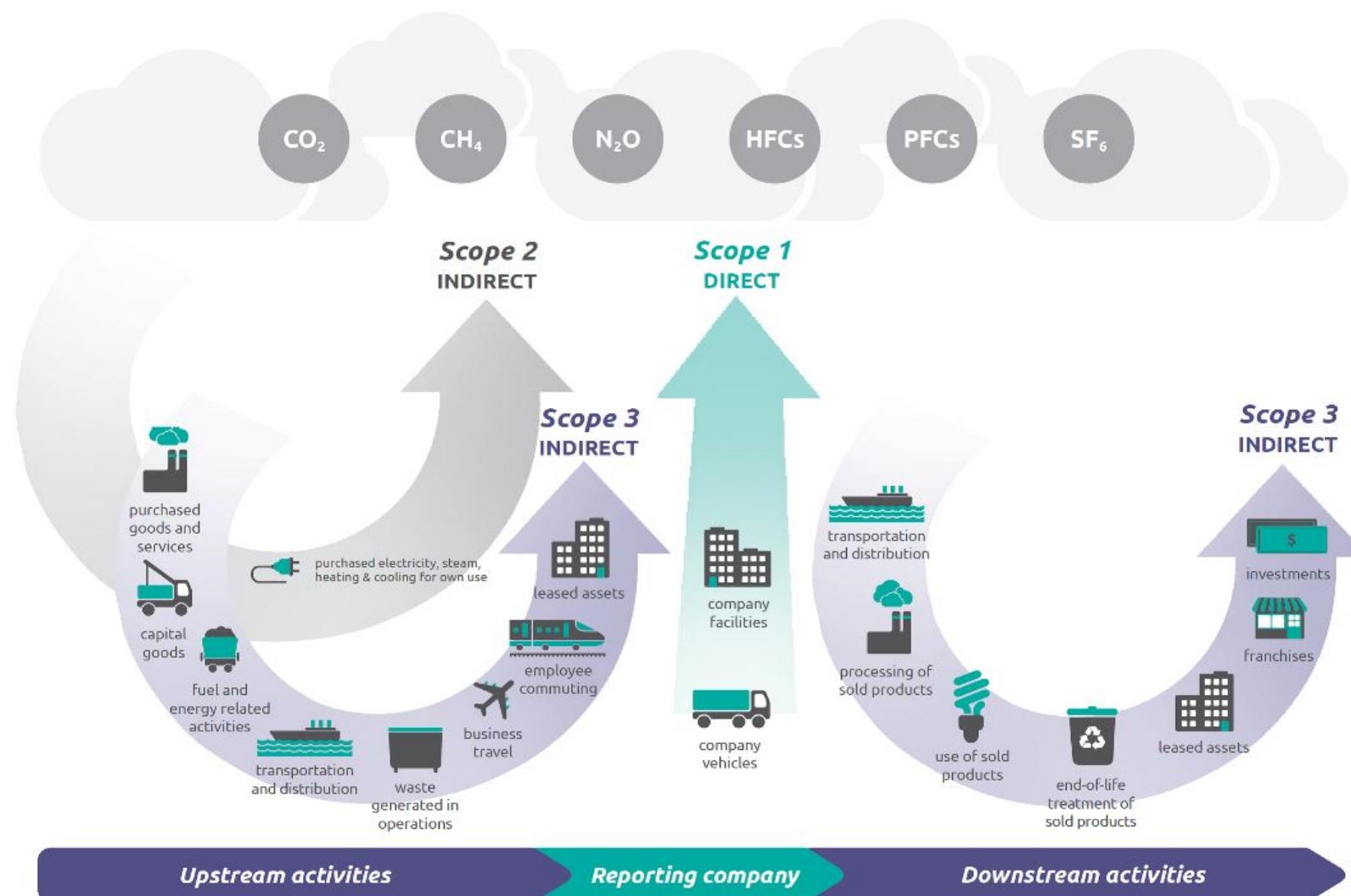


Image from the GHG Protocol documentation

<https://ghgprotocol.org/corporate-value-chain-scope-3-standard>

Other Health & Resilience Considerations

This Toolkit has been designed to help building owners make their building(s) healthier and more resilient, through improvements to the systems, fabric and decarbonisation.

This document does not cover:

- Biodiversity and green spaces – essential for people’s wellbeing and the health of the planet’s ecosystems.
- The financial resilience of your organisation.
- The technical aspects of catering kitchen installations.
- Outreach and education of the community with a message promoting healthy and resilient environments.
- General refurbishment and repair.

These topics still need consideration to make your building as healthy and resilient as it can be.



Community development worker Ash Bearman, helping with the renovation energy tours of Shirehampton Public Hall with the trustees. This was with support from the Bristol Energy Network for the Get Ready for Winter series running from September to December 2025

Part 2:

How to Make it Happen

A toolkit for Projects and Building Operation

The owner of the process should try to populate this section with any missing information, understand the roles and work through the stages. This should be reviewed by the leadership on a regular basis.

Making it Happen

A project will be most straightforward and cost-effective when a **managed process** is followed. Any changes should be done in a way which suits the **future operation and maintenance** of the building. There should be a focus on **record information** and availability of **in-use data** (e.g. energy bills).

This section is structured into 5 main stages as below:

BRIEF □ PLAN □ DESIGN □ BUILD □ OPERATE

- 1. BRIEF: Defining the vision**
 - 2. PLAN: Create a strategic plan**
 - 3. DESIGN: Managing a design process**
 - 4. BUILD: Managing an installation process**
 - 5. OPERATE: Living with a new installation**
- 

1. Defining the Vision: Realism and Opportunity

Realistic vision

- Any plan to promote a healthier & more resilient community building is likely to affect several aspects of the building and seldom involves just changing the boiler for a heat pump!
- The interventions usually needed involve reconsidering several aspects of the building and might require changing how the building operates.

Opportunity for renewal and change

- The decision to make your building healthier & more resilient is perhaps a once in a lifetime opportunity to think about not only the building itself but also holistically about the future of the organisation.
- It could be a strategic reset for an organisation, and an opportunity to consider:
 - What the building might be used for
 - Who the users might be in future
 - What services might be provided
 - How the layout could change to facilitate the above
 - Bring more people into the decision-making structure and volunteer base
 - Undertake a skills audit of staff, users, friends etc to determine who might be able to support the project



Avonmouth Community Centre (ACC) “the day of the trace” . January 2025. Finding building drawings in boxes to give background for the trace.

Good Practice 14: Identify the owner of the process.

1. Defining the Vision: Buy-in

Working together

- It is important to ensure the aspiration for a healthier & more resilient community building is broadly supported, and that there is the necessary support and commitment which may require you to ask searching questions.

First principles

- Successful projects rely on a committed team with strong leadership, and clear objectives that respond to defined needs. Many projects flounder or halt because some basic issues haven't been addressed. Such issues might include:

- Why is a healthier and more resilient building needed?
- Who is going to benefit?
- What will it achieve and how?
- What is the timeframe and when will the benefits be realised?
- Who needs to be involved?
- Who could lead the project?

Good Practice 15: Management team to validate the project

Good Practice 16: Talk with the local community

Working with your community

- Developing a healthier & more resilient community building should be based around the needs and aspirations of the local community. To achieve collective buy in, community engagement must start at the beginning of the project and carry on

- Early engagement is helpful to collect information from all those who interact with the building. It helps to build a common

1. Defining the Vision: Community Engagement

Effective Community Engagement

- When engaging with the community, it is important not to present pre-conceived plans or ideas. People must be free to express their thoughts and be heard. Everyone has a right to contribute, and the community engagement process should be planned with this idea at its heart. Early engagement should be interactive, stimulating and designed to capture ideas. Later stages of engagement will focus on more specific proposals.
- A community engagement plan outlining the process and a programme of events should include:

- Organisations, groups and individuals to be included (define your audience)
- Consultation events (meetings, workshops etc) with plan of what is to be achieved
- Quantitative and qualitative information gathering (written surveys and questionnaires) with plan of what is to be achieved
- Communication channels (website, Facebook, X etc)
- Programme of events including plan for feedback

Good Practice 17: Develop community engagement plan

Good Practice 18: Use model questionnaires questions and meeting agenda

- Strategic: Part of a wider plan in terms of supporting collective decision making
- Inclusive: Open to everyone, welcoming and seek to reach the widest cross-section of the community
- Supportive: Accessible including venue, location, timing, language, digital etc
- Well planned: Organised in advance with clear plan on the aims
- Honest: Have no hidden agenda and no pre-conceived ideas
- Engaging: Capture interests and promotes engagement
- Responsive: Provides feedback at all stages

basic principles of good communication. and better informed decision making.

Good Practice 19: The Scottish Community Development Centre have produced useful guidance on [community engagement](#).

1. Defining the Vision: Shared Priorities

Use community engagement to define your priorities

- **Cost:** This will usually be a driver but is it the only, or main one? Are you concerned with operating costs or capital costs?
- **Carbon:** Is this important, or secondary as you have more urgent critical issues to solve?
- **Maintenance:** Is the cost of maintenance a major concern with clear scope for improvement?
- **Innovation & public message:** Is outreach part of your mission, what is your attitude toward the risk of less-proven technology?
- **Comfort:** Does the building have problems that need to be solved as a priority?
- **Timings & disruption:** Are you linked to the academic year, critical funding deadlines etc.
- Think about the question are you trying to answer / what **outcome** are you looking for? Only ask questions in any consultation about things you really want to know about!

Example of a method of ranking priorities.

	Priority (1-7)	Notes
Capital Cost		
Running Cost		
Carbon Emissions		
Maintenance & Simplicity		
Innovation		
Occupant Comfort		
Disruption to Install		

1. Defining the Vision: Evidence

Evidence-based decision making

- Projects have a better outcome if they are based on the best information available at the time. It's impossible to have every historic plan or energy bill, every opinion, questionnaire result, data set, previous report, but you need to try to find the best information given the time & resources you have and use it to inform decision making. The better the evidence base, the better the decisions.

Rationale for data collection

- Larger, more complex projects with greater funding or investment needed are likely to attract greater scrutiny of the decision-making process, and the evidence to back up decisions.
- Using robust data to support decision making helps to ensure that decisions are evidence-based, rather than individual preferences coming into play.
- Funders often look for documented evidence of the decision-making process.

Range of data

- The range of data needed to support a project needs to be tailored to the needs of the project. Data collection should, where possible, be over a five-year period so trends can be established.

Organisation

- Days and hours of operation
- Number and profile of main users, individuals / groups
- Frequency of group occupancy / bookings
- Booking system and charging regime
- Number of staff (f/t and or p/t) and volunteers
- Main sources of income derived from accounts
- Funding history: grants and their outcome expectations
- Providers of similar facilities in the area and their charging regime
- Constitution and Charity Commission status

Building

- Utility bills (gas, water, electricity, heat network etc)
- System safety tests and records of works
- Building fabric report if available e.g. Energy Trace
- Maintenance bills: planned and responsive
- Historic plans of the building
- Legal ownership plans eg lease, land registry
- Historic approvals eg planning permission
- Contractual obligations eg solar panels installed by 3rd party

1. Defining the Vision: Data Collection

Understand your building and how it's used

- Energy: How much is used & when, what was happening at the time?
- Occupancy: When is the building busy, and which parts of the building are in use at different times?
- Usability: What do people find frustrating or hard to understand?
- Fabric: Where are there leaks or gaps? How much insulation is there in the floors, walls and roofs?
- Get bills, measure room temperatures, ask people about comfort, look for equipment details / drawings
- You may need to supplement existing information with new surveys: thermal imaging, floorplans, building systems.

Example of a checklist of things to investigate and record.

1) Record Drawings and Information	Obtained? (Y, N, N/A)	Notes
5-yearly electrical test certificates (also called 'EICR' or 'NICEIC')		
Gas/mechanical system test certificates – original installation or more recent.		
Architectural plans, sections and elevations.		
Building system plans, schematics, equipment schedules.		
Last 2-5 years monthly electrical, gas/oil, water, district heating bills and/or submeter readings with kWh & £.		
Agreed maximum demand and/or measured peak demand from electrical utility.		
Access to BMS (Building Management System) logs.		
Maintenance logs and service plans.		
Lease agreements or records of site ownership boundaries.		

1. Defining the vision: Data Collection

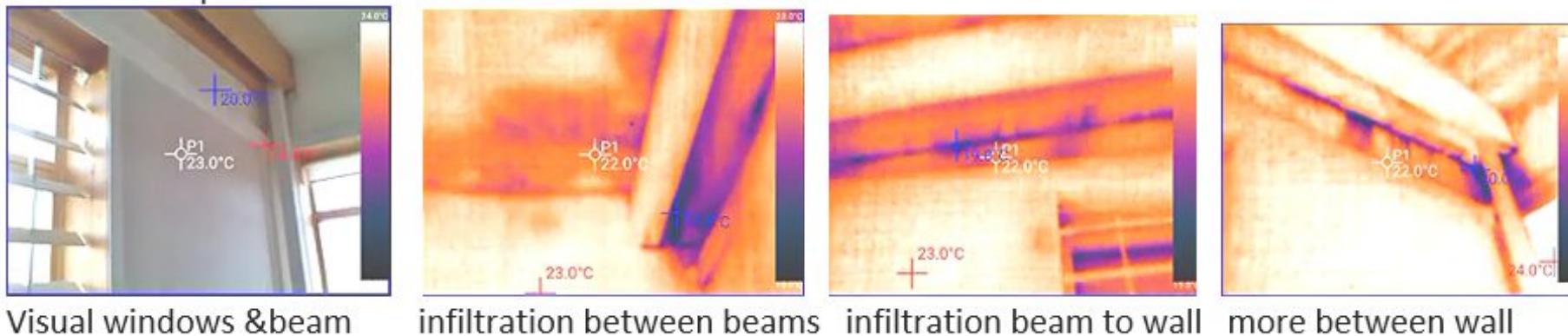
2) General Information	Obtained? (Y, N, N/A)	Notes
Anecdotal information from users on issues with the building and its comfort		
Diary of typical numbers of occupants through a typical day / week / season, with list of planned activities		
Comments on surrounding sensitivities: noise, neighbours, planning/conservation area		
Details of local ground conditions (only if relevant)		
3) Photos from Around the Building	Obtained? (Y, N, N/A)	Notes
Duty/spec of main heating and hot water equipment e.g. plates on boilers, pumps and water tanks.		
Duty/spec of other equipment: cooling, ventilation, PV's, Kitchen catering equipment.		
Photos of radiators, exposed pipework, and inside of electrical distribution boards (without touching any live parts).		
Condition of windows - open and closed - including seals, glass, size of reveal / wall thickness.		
Photos of insulation where visible accessible e.g. in attic or suspended floor.		
Record or photos of current settings of controllers e.g. thermostat menu settings.		
4) Specialist Surveys	Obtained? (Y, N, N/A)	Notes
Sample of room air temperatures and humidity, ideally summer and winter, with a logger.		
Building airtightness measurement (if not done in Energy Trace) to CIBSE TM23 and BSENISO9972:2015		
Thermographic survey (if not done in Energy Trace) to BSEN13187:1999 and BRE176		
Heating flow and return temperatures measured at pipes by heat source.		
Typical radiator surface temperatures with system on maximum		
Hot water storage temperature and temperature measured at taps.		
Measured flowrates achieved at e.g. Kitchen extract canopies and toilet ventilation fans.		

1. Defining the vision: Data Collection

Specialist surveys

- Fabric airtightness and thermographic surveys can help to identify quick wins that you can get on with right away.
- An **Energy Tracers CIC report** is a possible survey to cover these items in one go and report on possible solutions.
- For example, at Knowle West Media Centre, an Energy Trace revealed significant heat loss at the upper edges of many spaces, identifying an issue with the building which would otherwise be invisible. The report then went on to suggest relatively affordable approaches to reduce that heat loss by adding insulating panels and sealing gaps.

A corner room with two windows. The walls are well insulated. The windows were good. the ceiling was partly insulated but very uneven. The exposed wood beams suffered much infiltration. The wall above the straw bale is poor on insulation.



The whole of the upper floor space has high levels of infiltration from gaps around the wood beams . the location is on a hill with little shelter. When the wind blows the natural ventilation is very high and probably the dominant heat loss. With no wind there will be a significant stack effect ventilation heat loss . The fix is to seal all cracks and holes a large but simple task .

The whole roof insulation is very poor . The remedy is internal insulation that also covers the outside wall above the straw bales.

Excerpt from an Energy Tracers report on Knowle West Media Centre.

1. Defining the Vision: Aims, Vision, Objectives

Vision and Leadership

- When you've concluded your initial **community engagement** work and **gathered the evidence** and reviewed these; then the Aims, Objectives and Vision, for your Healthier & More Resilient Community Building should be established. These should be specific to the project and be based on the principles established by the management team.
- Agreeing the Aims, Objectives and Vision will help inform the Strategic Plan.
 1. **Aims:** Evolved to reflect community engagement and collected evidence. These could be articulated as themes
 2. **Objectives:** Defined stages needed to realise the aims
 3. **Vision:** Long-term aspiration for the building. This should be an inspirational statement
- The process of agreeing the Vision should be a collective exercise and could be led by the Process Owner or another person specifically nominated for that task.
- Leadership means providing:
 1. Support and accountability for all stages and participants
 2. Right environment for the project to succeed
 3. Ensures the Vision is within the remit of the organisation

1. Defining the Vision: Aims, Vision, Objectives

Engagement and data analysis

- If there are gaps in the information collected, take action to fill those gaps. For example, if building plans are missing, commission new digital plans
- Analysis of the collected information will help create the Aims, Objective and Vision for the project.

Agreeing the Aims

- Look for themes in how the community talk about the building and what it could be, and ensure these are central to the project plan.

Develop Objectives

- Having established the Aims / themes, translate them into Objectives e.g. Sustainability = Objective 1: Construct a building that is an environmental asset and a model of sustainability in the community.

Craft the Vision Statement

- Using the Aims and Objectives construct a clear, compelling Vision Statement. The statement should articulate the purpose of the project: create a Healthier and more Resilient Building and its desired future impact.
- It should be forward-looking and aspirational and avoid any current challenges. Ground it in the community's expressed ideas and the collected evidence.
- It should be brief, eye catching, and easily understood by everyone, from users to funders.

Communicate the vision and gather feedback

- Once the vision is drafted, share it transparently with the community and iterate based on their feedback. Explain how the final Vision was developed directly from their input. This helps build trust and creates a sense of ownership.

2. Creating a Strategic Plan: Overview

Getting started

- Establishing the Aims, Objectives and Vision of a Healthier and more Resilient Community Building should inform the strategic planning and the structure needed to deliver the project. The Strategic Plan should capture all previous stages of work and provide a framework for delivering the project.
- It is important the Strategic Plan reflects the scale of the project. Relatively straightforward projects may not need an in-depth plan, but more complex projects might warrant a more detailed plan with more analysis of how the building is used, etc.

Top tips: Marsh and Micklefield's Retrofit your community building: A community action plan.
[Retrofit Your Community Building](#)

A Strategic Plan could include:

- SWOT analysis of the organisation and its ability to deliver the Vision
- A conversation about what services and activities to Stop: Start: Continue
- Strategic priorities for the plan with quick wins identified
- Broad phasing strategy
- It should be time limited with project milestones
- High level budget needed to deliver the Vision
- High-level business plan modelling the implications of undertaking the works
- Capital funding plan needed to deliver the Vision with a statement on likely sources of funding including reserves and grants

Top tips: Having undertaken a similar strategic planning exercise, Easton Community Centre in Bristol produced an Asset management Plan for several projects including ones designed to create a Healthier and more Resilient Community Building

2. Create a Strategic Plan: Start With a Wish

Initial wish list

- Based on the issues discussed above, do you want focus mainly on making the building more efficient, or to improve people's comfort? Ideally both, but if necessary, which would you prioritise?
- Similarly, do you expect to focus mainly on the systems in the building, or on the fabric of the building, or both?
- And are you concerned mainly with immediate improvements, or might you do more now or pay extra to facilitate further improvements in the future?
-
- Considering a whole building approach, categorise and prioritise improvements into:
- - a) Things you can do yourself now – **Quick Wins**
 - b) Items that need the support of a designer or installer – **Short to Medium Term**
 - c) Longer-term items should be thought about at the planning stage
 - d)
- Prioritise scope and describe desired outcomes to turn it into a **brief**.

2. Create a Strategic Plan: Start With a Wish

Quick Wins - Maintenance		
Ref	Action	<input checked="" type="checkbox"/>
F01*	Maintain drainage regularly including clearing roofs, gutters and gulleys	<input type="checkbox"/>
F02	Resolve any damp - wet fabric loses more heat and causes degradation	<input type="checkbox"/>
F03	Put lockable covers over thermostats of other control points that people may be tempted to adjust	<input type="checkbox"/>
F04	Clear leaves & debris from existing mechanical equipment regularly, such as air conditioners and heat pumps	<input type="checkbox"/>
F05	Consider how redecoration might lead to retrofit trigger points (e.g. ceilings)	<input type="checkbox"/>
Short-Medium Term - Decarbonisation & Replacements (Removal of fossil fuels)		
Ref	Action	<input checked="" type="checkbox"/>
K01	Consider installing electric vehicle chargers in the car park. Note that as cars tend to be parked at schools for the whole day, slow chargers (3kW or 7kW) tend to be satisfactory to meet the needs	<input type="checkbox"/>
K02	If the school has a swimming pool ensure that it has a swimming pool cover and move the pool water heating over to a dedicated pool water air source heat pump	<input type="checkbox"/>
K03*	If your boiler is over 15 years old or unreliable, actively start to prioritise planning for a heat pump to replace it (do not wait for it to fail)	<input type="checkbox"/>
K04	If you have to have a large, centralised store of hot water (for very major kitchen or large showering needs such as swimming pools) consider the use of a dedicated packaged air-source heat pump heated hot water tanks to replace existing tanks	<input type="checkbox"/>

Church of England has many useful resources for planning a project – focused on Churches but with wider relevance especially to community buildings.

<https://www.churchofengland.org/resources/churchcare/net-zero-carbon-church>

2. Creating a Strategic Plan: Project Brief

Developing a Project Brief

- By this stage, there should hopefully be an outline project brief defining the organisations overall aspirations for the project. As the project progresses, this will need to be developed in more detail to define the project and engage any professional support and to guide the design process for the project.
- If necessary, and based on your organisation's skills audit, ensure you have appropriate professional support to prepare a project brief and develop the project.
- To achieve this, the brief should include:
 - The purpose, aims and ethos of the community organisation leading the project
 - The purpose and aims of the project
 - Required outcomes
 - Details of all measures to be accommodated
 - The budget and tendering rules
 - Other relevant information
 - Role of any professional team
- Depending on the scope of the work and the complexity of the project, the role provided by any professional support will vary greatly and will depend on the available skills within the organisation, the available budget and the nature of the project.
- Tasks where professional support might be needed:
 - Running or participating in community or stakeholder engagement events
 - Undertaking site investigations / surveys
 - Designing the project
 - Obtaining consents
 - Producing cashflow forecasts and supporting applications for funding draw-downs
 - Health and safety issues
 - Contract management (contractors)
 - On-site project management of physical works

Top tips: Locality Brokers, part of Locality provide access to a range of professional support used to working on community buildings.

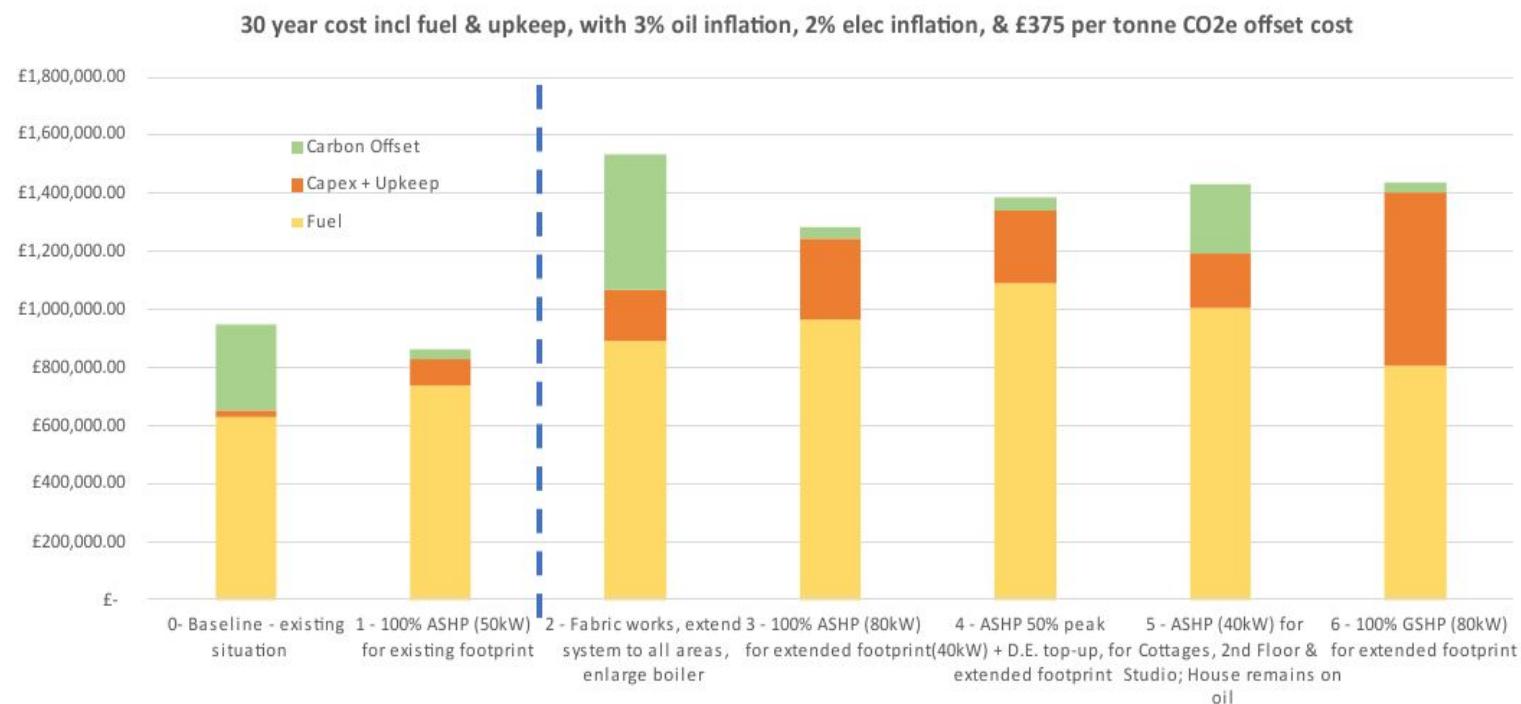
2. Creating a Strategic Plan: Define Performance

Specialist Estimates of Performance

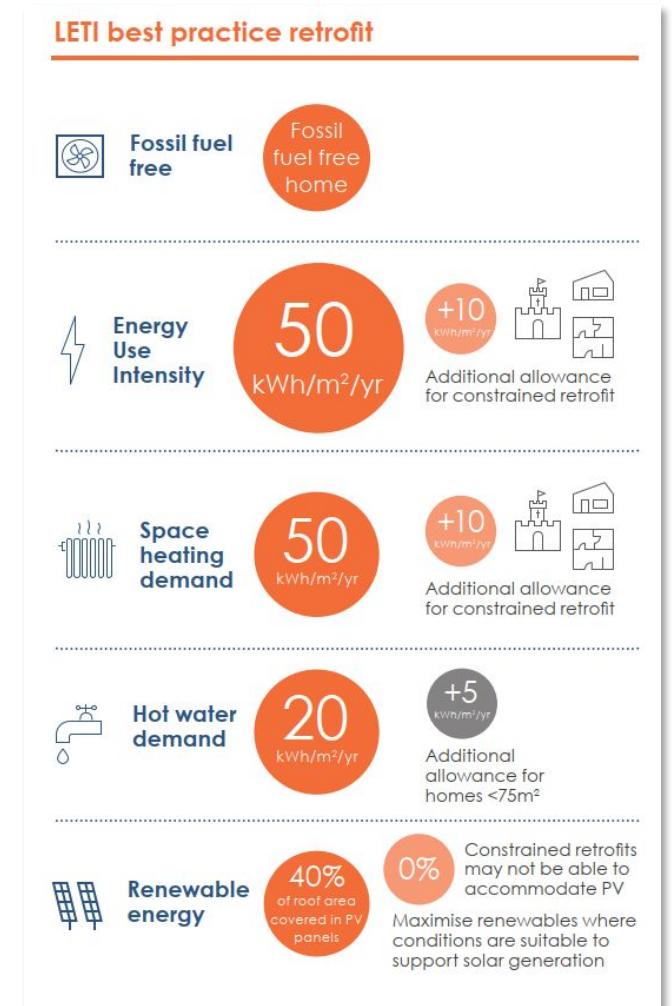
You may wish to compare the performance of options; one way to illustrate estimated project cost is with a bar chart that shows:

- Running Cost (fuel) – consider if inflation is estimated and included.
- Capital Cost + Maintenance + Replacement.
- A notional cost of carbon offsetting, which punishes more polluting options.

A consultant could provide a chart like this to help you decide on a preferred option: this is not something you have to do, you should consider if this actually *is* helpful for you.



Options for improvements can be compared on the basis of cost. Here the running cost is yellow, orange is the upfront capital and maintenance costs, and green is the equivalent cost of carbon offsetting (from Bristol City Council 2023).



LETI provides targets for energy and water use.

<https://www.leti.uk/retrofit>

- It can be helpful to **set targets** to help define ambition in priority areas.
- Some energy targets are shown above – you may also have budget targets etc.

3. Managing the Design Stage: Professional Help

Thinking about your capacity

- The client's Process Owner /project manager is the **most important role**. You may need support to help you define the project clearly, match it to your budget, assess health and safety, and help you decide on the best options.
- If your strategic plan **involves more than one self-contained system, alteration or measure**, then it is worth considering involving professional support.
- It is inherently difficult comparing suppliers' quotations. Some comparisons may only be made with specialist input. Unscrupulous installers may cut corners, giving an incomplete view of costs
- You need to decide **what specialist support you need help with:** drawings, calculations, management? This becomes a brief for each element of professional support needed. Professional institutes provide a database of consultants:
 - [Chartered Institution of Building Services Engineers](#)
 - [Royal Institute of British Architects](#)
 - [Royal Institute of Chartered Surveyors](#)

Professional help and the design process

- Engaging professional help / design team can describe and rank options and help diagnose historic problems. They can help to match your priorities with your budget. And they can create defined information for use by a builder or installer.
- The process should follow a sequence of design and construction stages illustrated by **BRIEF □ PLAN □ DESIGN □ INSTALL □ OPERATE**.
- To get the best value from a consultant, make sure you have defined your vision and at least have an outline brief. Ask them to respond specifically to this as a brief.
- If doing design work, make sure all specialists / consultants have Professional Indemnity (PI) Insurance.

Top tip: Localities provide a range of support for community organisations considering building projects. See their guide on [Engaging professional advisors when acquiring or adapting your building](#).

3. Managing the Design Stage: Develop the Design

Designing the project and thinking about how to deliver the works

- Designing and describing the works in detail during the design stage is important to help ensure the effective delivery of the construction stage. This will help completed works provide quality and value for money.
- Breaking the project down into stages will help you think about how the project could be delivered and the impact on the organisation.
- Different approaches to delivering the works might have different impacts on the organisation e.g. loss of income from space being unavailable.
- Thinking through the design carefully can help identify any health and safety risks e.g. for the installer or if people are using the building during the works.

Continued Stakeholder and Community Engagement

- Ongoing community engagement is important to ensure people understand the challenges and the agreed outcomes. Stakeholders can contribute to finding solutions to challenges and help develop the project as it evolves.
- It is useful to share the emerging design regularly with stakeholders. Ongoing engagement reduces the chance of surprises at the end of the project.

3. Managing the Design Stage: Approvals

Statutory approvals

- An application for **planning permission** may be required, if the scope of the project includes elements that impact the surrounding environment or neighbours. The application process normally requires design information to be submitted to show what is happening.
- If the scope is small-scale, it may be '**permitted development**' i.e. no planning application required, if certain conditions are met.
- If the building is on the register of listed buildings with Historic England, then a **Listed Building Consent** may be required.
- Planning permission may come with **specific conditions** which must be fulfilled before, during the works or upon completion.
- Before undertaking any building or installation etc, Building Regulations Approval may also be required. Again, it is more straightforward if there is a set of designs available for them to look at.

Other possible approvals

- Health and Safety regulations - Construction Design and Management (CDM) Regulations
- Advertisement consent
- Environmental impact assessment
- Felling or works to trees, particularly if they have a tree preservation order or are in a conservation area
- Hazardous substances consent
- Mining or working of minerals
- Notification where the Crown is developing on Crown-owned land
- Landlord approvals

Sharing all approvals

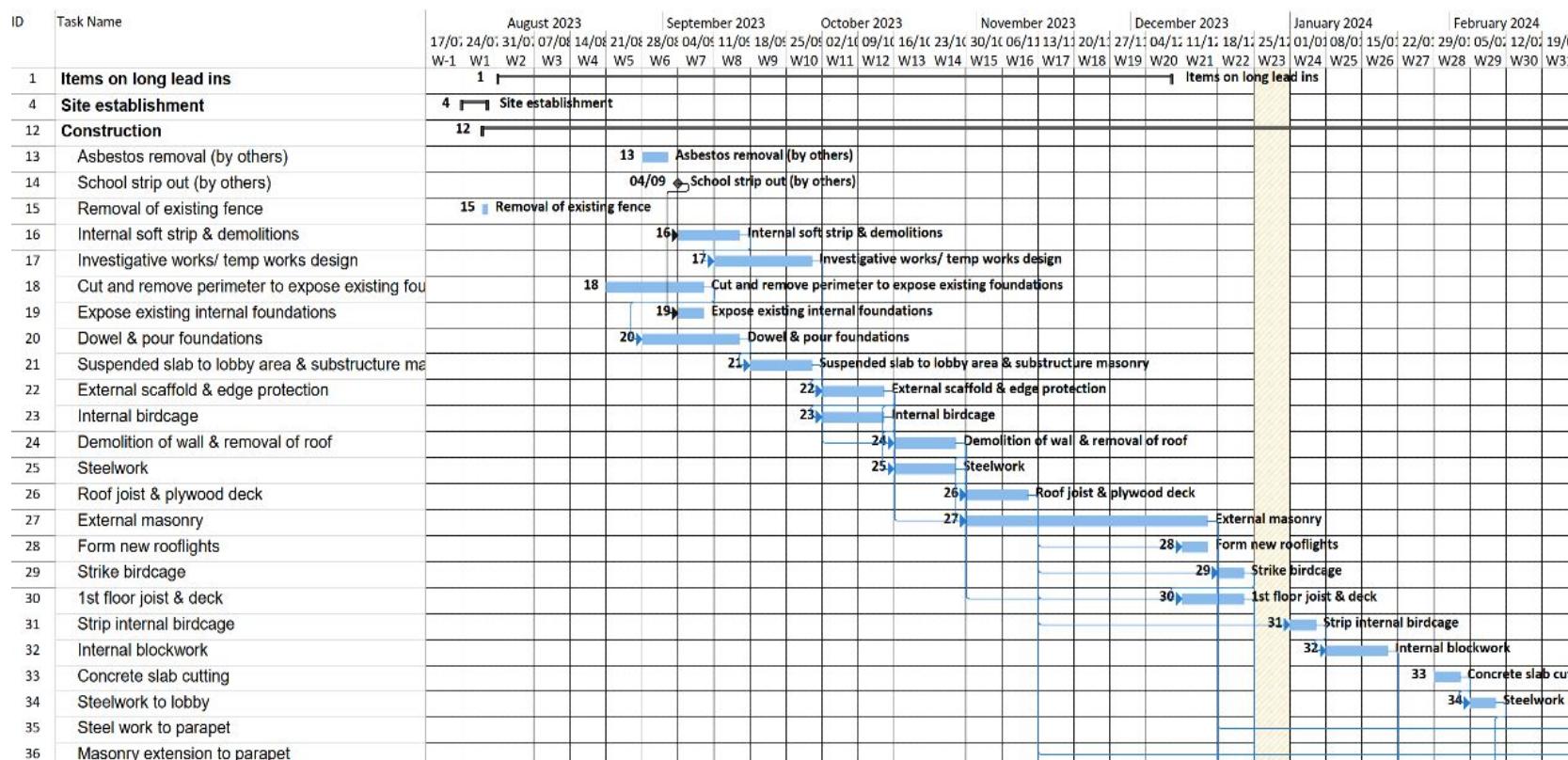
- Include approvals in any tender documentation issued to installers / builders. This will help ensure the works are delivered in line with any approvals.

Top tips: The [National Heritage List for England](#) (NHLE) is the only official, up to date register of all nationally protected historic buildings and sites in England but also see the Official List Entry for full details of the listing of any property.

4. Managing the Build Stage: the Programme

Organising the works into sequential tasks

- At the beginning of a project, agree a **plan of the timeline** with the installer, builder etc – they should tell you:
 - The expected **overall duration**, which they may be required to stick to in the contract.
 - Dates of **key deliveries** they expect to receive, and what happens if they are late.
- Any periods where the building is **without power or water**.
- Depending on the scale, the installer / builder could take control of the areas they are working in and close them off to others. These areas are their site and covered by their insurance if anything goes wrong.
- The order in which zones or areas of the building might need to be **closed off**, and how staff and visitors are to access other parts throughout need to be considered.



An example timeline displayed as a "Gantt Chart"

4. Managing the Build Stage: the Money

Cash is king

- Getting reliable and realistic **cost information** is important for decision making. The more detail you have about what you need (a design, a specification) the more representative that cost information will be.
- A **cost consultant or quantity surveyor** can help by preparing estimated cost plan of the works and then prepare tender documentation to obtain competitive quotations. The cost plan can distinguish items you buy directly from items included in a building contract.
- The cost plan is a document you can use to estimate the **likely cost of any works, plan your cashflow** and use to **inform and target fundraising**. For larger projects where you need to raise large amounts of money, potential funders might want to see a cost plan to demonstrate you have a **robust plan for managing the costs** associated with the project.
- It is very important to **understand how VAT** (typically 20%) is treated by HMRC in relation to your organisation. VAT can be complicated, and you should fully understand how VAT will be calculated before you embark on a project.

Top tip: Advice on VAT can be found at [Charities Aid Foundation](#) .

An example of part of a project cost plan

ELEMENTAL SUMMARY		Cost	Cost / m ²
0	Facilitating Works		
0.1	Toxic / Hazardous/ Contaminated Material Removal	25,000	6.53
0.2	Major Demolition Works	-	-
0.3	Specialist Groundworks	-	-
0.4	Temporary Diversion Works	-	-
0.5	Extraordinary Site Investigation Works	-	-
	Facilitating Works Total	25,000	6.53
1	Substructure		
1.1	Substructure	42,550	11.12
	Substructure Total	42,550	11.12
2	Superstructure		
2.1	Frame	-	-
2.2	Upper Floors	40,000	10.45
2.3	Roof	327,850	85.67
2.4	Stairs and Ramps	153,400	40.08
2.5	External Walls	75,000	19.60
2.6	Windows and External Doors	178,900	46.75
2.7	Internal Walls and Partitions	153,060	39.99
2.8	Internal Doors	158,250	41.35
	Superstructure Total	1,086,460	283.89
3	Internal Finishes		
3.1	Wall Finishes	331,440	86.61
3.2	Floor Finishes	467,415	122.14
3.3	Ceiling Finishes	247,215	64.60
	Internal Finishes Total	1,046,070	273.34
4	Fittings		
4.1	Fittings, Furnishings and Equipment	172,280	45.02
	Fittings Total	172,280	45.02
5	Services		
5.1	Sanitary Installations	155,750	40.70
5.2	Services Equipment	27,000	7.06
5.3	Disposal Installations	30,000	7.84
5.4	Water Installations	232,375	60.72
5.5	Heat Source	-	-
5.6	Space Heating and Air Conditioning	460,000	120.20
5.7	Ventilation	156,833	40.98
5.8	Electrical Installations	539,847	141.06
5.9	Fuel Installations	3,000	0.78
5.10	Lift and Conveyor Installations	115,000	30.05
5.11	Fire and Lightning Protection	23,000	6.01
5.12	Communication, Security and Control Systems	142,405	37.21
5.13	Specialist Installations	50,000	13.07
5.14	Builder's Work in Connection with Services	128,583	33.60
	Services Total	2,063,793	539.27

4. Managing the Build Stage: Commissioning Work

Tendering of the construction / installation

- **Competitive tender or trusted firm?** You may know a firm already who you want to use. It may be necessary to ask a few firms to tender. Most organisations have internal rules around the spending of money: it is important you check early in the project. Some funders, **particularly where public money is concerned** will insist on 'competitive tendering' to ensure **best value** is achieved. It is good practice to approach 3 or more firms with your specific requirements, to compare quotes, before including one in your plans.
- A **supplier** can provide a quote for supplying equipment, and an **installation / building firm** can quote for installing it. Quotations will be needed for each aspect of the works. An alternative approach would be obtaining quotations from builders who would manage the whole process.
- All tenderers should be given the same brief to quote from.

Top tip: Check your organisations constitution / procurement rules early on in any project to ensure when commissioning work you are following the rules.

Things that could be specified in a tender

- Weekly written updates outlining timings, costs and what's coming up
- Anticipated cost of annual maintenance contract
- Removing of all debris and cleaning
- Handover information including in-person demonstration, test certificates and commissioning records, manuals, descriptions of the installation and required spare parts and maintenance.

Safe and reliable installers / builders

- Companies should ideally have CHAS and Trustmark accreditation. These are government backed standards for health & safety and quality.
- Individuals working on construction sites should hold CSCS cards that says they have received safety training.
- They should explain how they will work safely.



TRUSTMARK
Government Endorsed Quality



4. Managing the Build Stage: Commissioning Work

How to invite a tender

- Agree parameters for the tender with colleagues and your professional team
 - **Outline Budget and Timeline:** Provide an approximate budget and define key dates, including the deadline for tender returns and the expected timeline for selection.
 - **Evaluation Criteria:** Clearly state how tender applications will be evaluated, including any best practice standards, scoring criteria and compliance.
- Prepare the tender pack of information
 - **Create a Formal Letter:** Draft a letter of invitation to tender that serves as a cover for the entire package.
 - **Include Instructions:** Provide detailed instructions on the tendering procedures, emphasising that failure to comply may invalidate the submission.
 - **Develop Specifications:** Include a specification document detailing the project requirements, plans, and any relevant information about the building.
 - **Define Contract Terms:** Include the form of the contract, contract conditions, and any amendments.
 - **Provide Forms for Submission:** Include a standard form for tender submissions and a tender pricing document to ensure consistency and comparability.
- Identify and contact tenderers
 - **Compile a List:** Research and compile a list of suitable contractors who are qualified to undertake the project. Ask community organisations for recommendations
 - Consider using members of the Federation of Master Builders
 - Also, Constructionline has a database of suppliers
 - **Send the Invitation to Tender ITT:** Distribute the complete tender package simultaneously and in writing to the selected list of prospective bidders.
- Manage the tender submission process
 - **Set a Clear Deadline:** State a deadline for the submission of tenders, noting late submissions will not be considered.
 - **Specify Submission Method:** Clearly state the required method for submitting the tender eg sealed envelop, email, standard forms etc.
 - **Handle Enquiries:** Be prepared to answer questions and provide clarification to those tendering when asked. Share any clarifications with all parties.
 - **Contract award:** Inform the successful tenderer and let the unsuccessful know. Be prepared to answer questions your decision. Sign the agreement or contract.

Top tip: Check your organisation's constitution / procurement rules early on in any project and follow them in tendering

4. Managing the Build Stage: The Unexpected

Prepare to manage the unexpected

- When working on existing buildings there will often be on-site **discoveries**.
- The installer / builder may think of a **more efficient way** to install part of the system, based on their specialist experience.
- Availability of **labour and supplies** can also unexpectedly affect timings.
- **Bad weather** can slow things down.
- **New funding** becomes available, and you may wish to enlarge your scope after the initial works have started.
- Any change should be **tracked and managed**. This means you need to:
 - Define roughly what the change involves
 - Get either / both the installer /builder or cost consultant to put a cost to it
 - Decide if it's worth it
 - Finally, be clear if you are making the change or not.



Avonmouth Community Centre (ACC). Energy Tracers CIC Brian Harper and Robbert Smart (Bristol Energy Network) working together at the centre. Many community centres and churches have oversized doors contributing to heat loss.

4. Managing the Build Stage: the Unexpected

How to manage required changes

- The format below could be adopted to record and report and agree the outcome of any notified change. Ideally each change request should have a number, making tracking easier.
- If the change has an impact on costs, this needs to be reflected in a revised cost estimate. Also, if the change has an impact on programme, again this needs to be reflected in an updated programme.
- It doesn't matter how small or large, all change needs to be communicated to all stakeholders including management, users and funders.

Good Practice 20: Agree the format for recording, agreeing and reporting change at the outset of the project and include a description in the tender.

An example of a change order record allowing for an overview of full implications of the proposed change.

Describe Change							
	Client	Architect	Mechanical	Builder	Other		
Describe Impact						Total	Agreed? (Y/N)
Cost of Impact	£	£	£	£	£	£	

4. Managing the Build Stage: Communication

Agree on active management

- Communication and flow of information are very important. You may be encouraged to set up a WhatsApp group or other messaging service group, to help you and the installer / builder ask and answer questions and send photos of work easily, but there are some risks with this approach, including:
 - Poor security and potential disclosure of sensitive information
 - Creation of unorganised and unsearchable records
- A traceable formal system such as email might be more reliable and anything agreed informally should be followed up with email or letter.
- It is helpful for the installer / builder to provide a **weekly look-ahead**, say each Friday with bullet points outlining what they expect to do in the following week. At that point they can also warn you about anything slowing them down, or risks that a price might increase.
- The look-ahead could cover things such as:
 - Are they on track with timings, what is happening when?
 - Photographs of progress since last update
 - Any problems encountered or information they need
 - Anything that needs to change from what has been agreed
 - Confirmation of health and safety on site
 - Confirmation of any firms they are sub-contracting works to.
- Agree to regular review meetings (site meetings) and record any outcomes and actions with organisation responsible identified in meeting notes circulated to all parties.

Good Practice 21: Agree communication protocols. Include a description and expectation in the tender.

4. Managing the Build Stage: Testing

As a project nears completion

- At the end of every project the installer / builder should provide the client with testing and certification in relation to the works they have undertaken. There are different types of testing and certification:
 - **Building Regulations Compliance:** Local authority or approved inspector inspections are required at key stages to ensure the project complies with Building Regulations. Obtaining completion sign off confirms your project has met all the legal requirements outlined in building regulations, ensuring the building is safe and fit for purpose
 - **Commissioning and Testing of Services:** Key building systems, including heating, cooling, ventilation, air flow rates, lighting, security systems, drainage, electrical circuits, data cabling, and water distribution / quality, water flow rates must be tested and commissioned to ensure they operate correctly and efficiently, as required by Part L of the Building Regulations.
 - **Fire Safety Tests:** Tests are needed for all fire safety systems, including fire alarms, emergency lighting, and the correct placement and functionality of extinguishers and fire signage.
- **Airtightness Testing:** Performed to assess the building's air leakage, is important for energy efficiency and controlling air quality, and is often tested and recorded by a qualified professional.



Good Practice 22: Testing and Commissioning requirements should be documented in the tender.

4. Managing the Build Stage: Project Handover

Plan for a proper handover

- Before handover
 - **Practical Completion:** Agree on the "practical completion" criteria, meaning the building is ready for use and final snags that are to be addressed.
 - **Snags and Defects:** Complete a snagging list, which is a detailed list of minor incomplete items, and ensure they are rectified before the final handover.
 - **Testing and certification:** Secure all necessary statutory approvals and other sign-offs.
 - During the handover meeting
 - **Transfer Access:** Hand over keys, fobs, and other access controls to the Process Owner.
 - **Handover Pack:** Present consolidated documentation, including the as-built drawings, warranties, Operations & Maintenance Manuals, and the Health and Safety File.
 - **Building User's Guide:** Provide a guide for operating and maintaining the building and its systems.
 - **Client Training:** Provide training to the community group on the building's systems and how to use them.
 - **Financial Closeout:** Finalise the financial aspects, including the release of any retention money and the final account.
 - **Defect Rectification:** Agree access arrangements for rectification of defects.
 - **End of defects period and completion:** If your agreement with the installer / builder includes a defects period diarise the event and present outstanding defects.
- After the Handover Meeting
 - **Monitor the Transition:** The project team may provide an occupation or transition plan to monitor the use of the building and address any initial issues.
 - **Obtain sign-off:** Get final sign-off from the management team.
 - **Archive documentation:** Archive all project transition documentation for future reference.

4. Managing the Build Stage: Project Handover

Client training at handover

- **Demonstrating** how the building and its systems works, to a few people who will need to use it, with time for questions & answers is valuable.
- Ask the installer / builder for an **explanation of what was installed**, what spare parts it requires, and how to maintain it.
- **Contact details** for maintenance and spares.

Good Practice 23: Ensure key people are available for the demonstration, both from the installers side and client side.

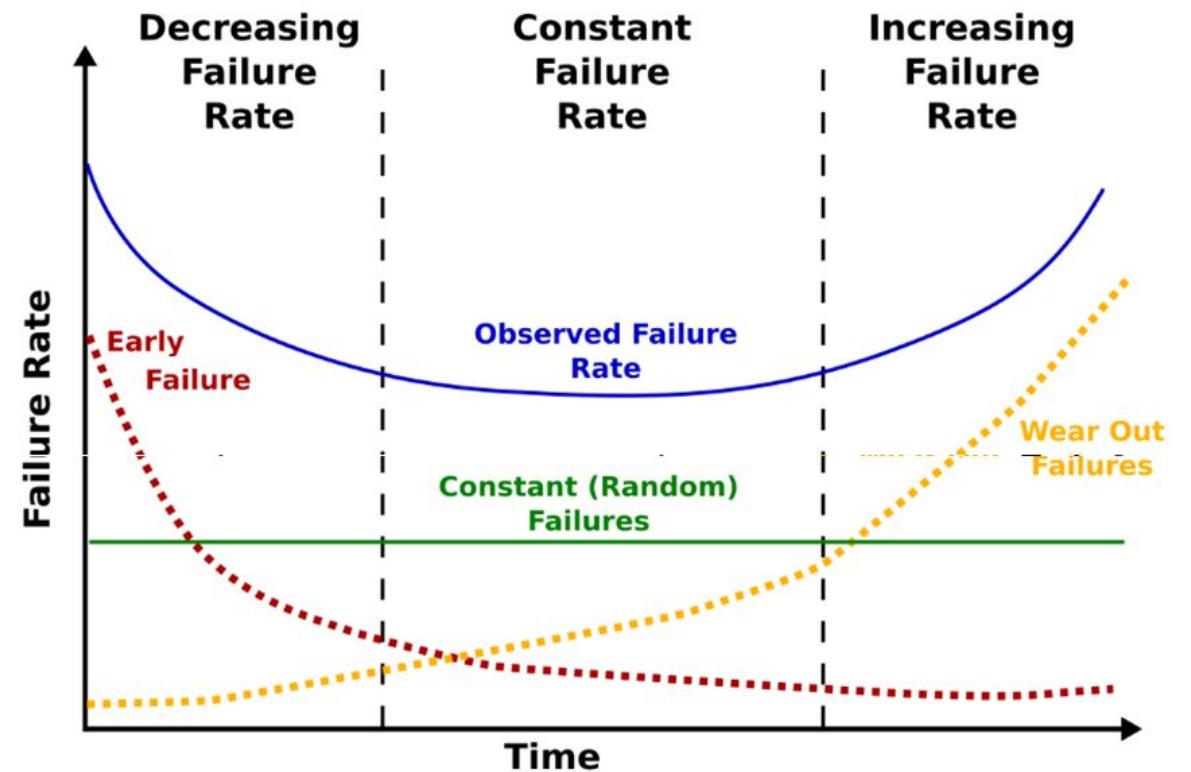
Meeting/Event	Purpose	Installer attendees	Client attendees	Duration	Date planned	Has it happened?	Notes
<i>e.g. new heat pumps</i>	<i>e.g. to demonstrate the operation of the new heat pump system</i>	<i>e.g. heat pump supplier</i>	<i>e.g. project owner, maintenance staff</i>	<i>e.g. 2 hours</i>	<i>##/##/##</i>	<i>e.g. No</i>	

An example of a client handover training record.

5. Living with the Project: What to Expect

Allow for the unexpected

- Be prepared for 'the bath shaped curve' – something will go wrong, especially with more complex installations. This is common with building systems.
- Installer may be **responsible for maintenance** for the first year after they finish (defects period).
- **Experiment** where you can – test changing then resetting the heating, hot water or ventilation settings. Test how low you can set the heating targets over the winter.
- Start to **review energy use** after a few months and after one year. Compare with historic readings.
- Nominate someone (external or internal) to be responsible for operation, maintenance and training of other users on an ongoing basis.

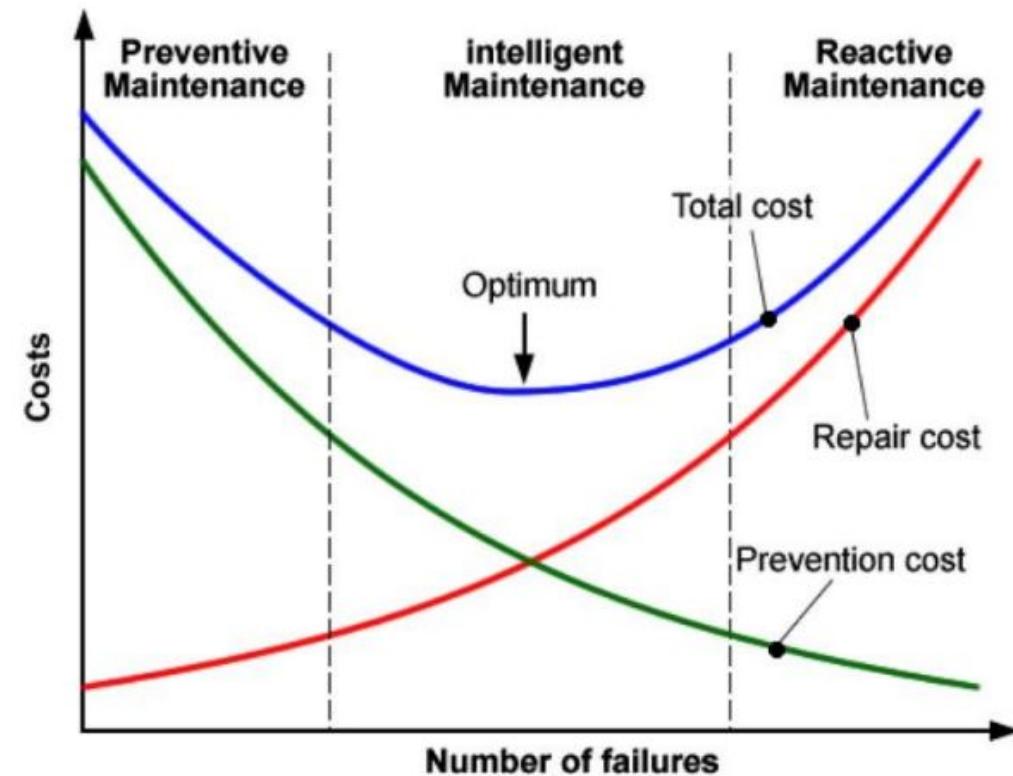


Graph illustrating system failure rates in relation to time.

5. Living with the Project: Plan to Maintain

Be prepared

- Planned Preventative Maintenance (PPM) is the idea of inspecting and maintaining equipment regularly, in a planned way, to prevent bigger problems later. Is essential for any new installation, as it also good practice for any existing building. This is something which should be prioritised as it will save money in the long term.
- This could be via a 3rd party contract, or by staff or volunteers (unless a specialist required).
- Some checks may be legal requirements e.g. legionella.



Graph illustrating relative cost of failures in a building in relation to adopted maintenance regimes.

5. Living with the Project: Maintain

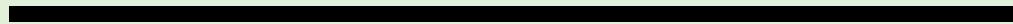
Schedule Planned Preventative Maintenance (PPM)

- Always disconnect any equipment from electrical supplies before maintaining it.
- Keep a log of all maintenance: regular checks and repair work.

Check	Normal frequency	Method	Date last done
Cleaning items with exposed moving parts, checking for wear	6-monthly	Dependent on item	
Changing or cleaning filters on fan or pipe systems (including aircon units with fans), checking for dirt	6-monthly	As manufacturer instructions	
Checking for visible rust, limescale or copper corrosion	3-monthly	Dependent on item	
Opening and closing valves to make sure they don't stick (recording the initial and final position so the settings don't change).	3-monthly	Manually or by changing control settings	
Checking hot water parts for limescale.	3-monthly	Where removeable	
Cleaning kitchen ductwork of grease	Say monthly	Detergent spray	
Checking drainage runs clear (including condensate drains from heat pumps and fridges).	6-monthly	Can use tracer dye	
Checking local hot water heaters for correct operation of pressure relief valve	3-monthly	As manufacturer instructions	

An example of planned maintenance schedule.

Appendix



Templates for use to collect data and track information on projects are provided below.

