Building efficiency checklist

Savings for businesses and the public sector

Creating a low carbon future



Version	Draft 0.6
Team	Climate Change Task Force





Zero Carbon Shropshire 2030

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1 Introduction

Since 2019 we have had an aim achieve carbon neutrality countywide by 2030 – for more information on this please see our <u>Climate Strategy and Action Plan</u>; and <u>Climate Action</u>.

This guide is intended to be helpful for both commercial and public sectors to support short term easy win measures (2022-2025) and provide next steps and further considerations for retrofitting that would require investment. The intended teams to support are commercial managers, property maintenance and business account holders.

The government's electricity price forecast for the National Grid estimates a 40% rise in real prices by 2030 and in some instances, they have already gone up by 100% in the last 2 years. This is a massive shock to many, though long anticipated by industry experts. Whilst the UK relies on gas imports the energy prices will go up and be volatile

In summary, reducing operating costs, staffing fees and associated maintenance costs is the smart decision for any site manager. This guide presents an easy win simple set of measures that can be ticked off by facilities managers. Supported by further innovative retrofit opportunities to power down with energy efficiency and power up with renewable energy to secure ongoing low running costs. Utility costs are typically the most controllable overhead for a building; when compared to staffing costs, management fees and maintenance costs.

Powering down with efficiency measures and powering up with renewables has the following benefits:

- Reduce utility costs and associated carbon emissions.
- Reduced operating costs for service areas better use of public finances.
- Better managed buildings are more comfortable and productive to work in.
- Improved health and wellbeing benefits; healthy staff.
- Helping to meet our corporate directive of net zero carbon corporately by 2030.
- This is in line with the Governments Climate Act (2008) and various directives since.
- Comply with MEES (Minimum Energy Efficiency Standards).

Short term measures include in summary:

- 1. Short term operational "soft measures": facilities management, site managers and correct staff training.
- **2. Longer term operational "hard measures"** include designed measures (whether retrofitting or new builds). The running cost of any equipment that consumes energy soon <u>outweighs</u> the capital expenditure.

Savings and payback

Annual savings can be estimated based on 1. Low-cost measures and 2. Higher capital investments.

Given some knowns (% savings, unit price of utility), the payback period and return on investment for each measure can be calculated. As can the total energy saving (kWh) and carbon saving (CO₂e).

Table 1 Savings summary split (short term and long term)

Measures	Est. savings	Assumptions	Payback Period
Short term low/zero capital expenditure	£XXX,XXX p.a.	20% improved heating controls, lighting and behaviour change	1-5yrs.
Longer term higher capital (retrofit)	£XXX,XXX p.a.	40% savings via fabric improvements and heat pumps	5-10 yrs.

Listed in the checklists over the next pages are savings that very clearly add up.

2 Short term measures

Please refer to individual <u>energy reports (DEC's, EPC's)</u> for further information on appropriate measures which are wholly dependent on the individual site circumstances. Short term measures are classed as standard. A zero spend approach should be incorporated into existing operational management and procedures by site managers, building users. A lot of these "easy wins" are associated with behaviour. The **Climate and Energy Crisis** is high on the public agenda and is an enabler for this type of behaviour change.

Low hanging fruit (good housekeeping)

Site managers, building-users, green champions, service staff.

Appropriate staff training will be delivered on "good housekeeping" and cover off a range of low or zero cost measures addressing the correct operation and use of existing systems and equipment:

- Heating and cooling systems, controls, and thermostats.
- Heating schedule based on occupancy and set to operational hours.
- Thermostats set at 18°C (the law states this is adequate for the workplace).
- Switch off lights and ICT equipment after use.
- Ensure there is no equipment running on days the building is shut (such as weekends).
- As above check baseloads outside of operating hours on closed days to ensure it is zero.

These types of measures are very simple and low-cost. Managers and staff alike should take control of their energy consumption by using smart meters to spot anomalies and be pro-active in keeping their utility costs down.

Even without significant investment in building fabric or heating systems, operational changes can encourage energy saving behaviour. A correctly managed approach to ensure equipment and lighting are switched off after use and heating controls, timers and thermostats are set correctly. This method relies on behaviour change, site managers and correct guidance. Measures are listed below and may involve "Green Champions" to assist.

Green Champions

These are staff within the organisation who wish to champion the future take make practical actions to mitigate and adapt to climate change. Green Champions raise awareness and engage staff to encourage good practice amongst colleagues by setting an example. They should receive "Carbon-Literacy" training so they can answer questions on climate change. Green Champions help monitor energy usage and identify opportunities for reduction. Their scope covers energy, water, recycling, reuse, and travel. It helps if they meet regularly to collaborate, share resources, and create a roadmap towards achieving the commitment of zero carbon by 2030.

Climate Challenge

- Please refer to our <u>staff energy and water page</u> and guide for more information on site monitoring.
- Go to the our new <u>Climate Dashboard</u> buildings section; where you will find links to the portals and efficiency information mapped (DECs and EPCs) for the whole county.
- Check your buildings EPC and DEC, by searching your property postcode. Here.
- Register with Systems Link, WME and Wave Utilities to obtain a login to their portals.
- The site manager or designated officer should monitor electric, gas and water consumption.
- If no data is available, then an AMR (automated meter reader) or smart meter may need to be fitted.

3 Site details checklist - score X/20

This is to capture details about the site; building name, address, site contact, function, age, sector, existing energy performance details (consumption, EPC/DEC) and floor area.

Site category	Please fill in details:-	Check (Y=confirmed/N=missing)
1. Site name		, , , , , , , , , , , , , , , , , , , ,
2. Site address		
3. Site contact		
4. Management/Maintenance		
5. Building functions –		
6. Commission year		
7. Current EPC	Rating A-G	
8. Current DEC	Rating A-G (if applicable)	
9. Efficiency rating (kWh/m2) (0-500)		
10. Target (kWh/m2)	< 150 (office). < 250 commercials.	
11. Total energy (kWh/yr.)		
12. Total spend (£)		
13. Footprint (tCO2/yr.)		
14. Dwelling emission rating (tCO2/m ^{2/} yr.)	DER	
15. GIA floor area (m²)		
16. Floor area office (m ²)		
17. Area residential (m²)		
18. Area commercial (m²)		
19. Is the building retained		
for more than 5years?		
20. Public access?		
SCORE		X/20

4 Plant room - score X/9

Item		Details	Done (Y/N)?
dis	e meters and stribution boards easy locate and labelled?	A clearly labelled and arranged plant room is easier to maintain and operate.	
2. Is	the plant room mperature low or cool?	A warm plant room is not good – means heat is being wasted and pipework isn't insulated.	
3. Are	e heating and cooling ntrol systems clearly pelled and integrated?	If linked it ensures heating not on at the same time as cooling. Also heat recovery can be employed.	
	BMS/BEMS installed?	Building (Energy) Management System	
5. We	eather compensation?	Helps a lot in sporadic weather/seasons	
6. Sea	easonal controls set?	Set spring / autumn changeover for old systems	
7. Is	efficiency > 90%	Condensing boilers ratings	
8. Ma	aintenance to date?	Annual inspection/maintenance	
9. Is	plant room clean/tidy?	Not used to store items and vents clear etc.	
SCORE			X/9

General comments – site walk around

Category	Comments
Building age and fabric	
2. Roof /condition	
3. Building condition	
4. Heating controls	
5. Radiators / emitters	
6. Office space	
7. Public space and access	
8. Windows	
9. External doors	
10. Lighting	
11. Lighting controls	
12. Kitchen / conveniences	
13. Recycling / reuse	
14. Renewable power on site	
15. Renewable heat on site	

6 Heating/cooling and hot water checklist - score X/15

Low-cost energy saving tip!		Type of measure	Typical saving	Further detail	Done (Y/N)?
1.	Is there a vacant building policy that ensures equipment are shut down?	Isolate utilities and ensure space heating and electricals are off	100%!!	Vacated ensure heating and electrical systems are deactivated (may need a 5C frost protection).	
2.	Is the baseload zero overnight or on days the building is closed?	Energy monitoring: Systems Link / WME	As above	Any loads outside of operational hours – indicates wasting energy.	
3.	Is there a flexible working policy that adapts to building occupancy?	Space heating and electricals	Up to 50%	If building occupied <50%, then shut down heating.	
4.	Is the cooling (A/C) system deactivated in the autumn and winter?	Ensure A/C doesn't conflict with heating	40%	In wintertime deactivate A/C . Set changeover— e.g. April / Oct	
5.	Is the heating system deactivated in the summer?	Ensure heating doesn't conflict with cooling.	40%	In summertime deactivate heating system. Set changeover according to season – April / Oct	
6.	Have basic insulation and air tightness steps been taken?	Roof level, cavity wall, Secondary glazing. Floor insulation	30%	Insulation needn't cost the earth and significantly reduce your costs at the same time!	
7.	Are unoccupied areas zoned off and left unheated?	Space heating: TRV's (thermostatic radiator valves).	20%	Set TRVs according to occupancy schedule. Ensure only rooms occupied are heated. TRVs off in unoccupied areas.	
8.	Are windows kept shut whilst the heating is on?	Space heating	20%	Ensure windows or external doors aren't open when heating is on	
9.	Are wall thermostats set correctly to 18°C?	Space heating	20%	Set thermostats correctly as law states working environment.	
10.	Are TRVs set correctly	Space heating	20%	TRVs should be set to medium by default or off if areas are not being used.	
11.	Are heating and controls and timers set correctly?	Space heating – set schedule (daily, weekly, and monthly)	20%	Ensure timers set to occupancy. Easy to use controls are effective and save expensive callouts.	
12.	Are all immersion heaters set correctly?	Hot water	20%	Ensure immersion heaters set correctly and on at required time and duration.	
13.	Are draught exclusion and air tightness in place?	Building fabric, external window and door seals	20%	Ensure windows shut and seals fitted to any external doors and windows.	
14.	Are heating plants inspected and serviced annually?	Space heating and hot water	5%	Keep heating system checked and serviced correctly.	
15.	Are all hot water and heating pipework correctly lagged with thermal jackets and insulation?	Space heating and hot water	5%	A warm plant room is warm, then there is a problem. (and that doesn't mean venting the excess heat outside!)	
SCORE				•	X/15

7 Electrical checklist - score X/12

nergy s	aving measure	Type of measure	Typical saving	Further detail	Done (Y/N)?
1.	Do the meters supply what is expected? And are they labelled correctly?	Utilities: electric, water, gas. Metering	10-50%	You might be paying someone else's!	
2.	Is utility (energy and water) monitoring in place (AMR where possible)?	Ensure an AMR is installed, and any separate activity is sub metered.	Up to 30%	If you can't measure, you can't accurately keep track of spend or carbon footprint	
3.	Are your staff familiar with the climate dashboard?	As above – monitoring	As above	Site managers have access to dashboard and utility portals to monitor use/spend.	
4.	Is the baseload zero overnight or on days the building is closed?	Energy monitoring: Systems Link / WME	As above	Loads out of operational hours is wasted energy.	
5.	Is there a flexible working policy that adapts to building occupancy?	Electrical equipment and lighting	Up to 50%	If occupied <50%, then shut down equipment.	
6.	Have conventional electric wall heaters been replaced with night-storage equivalents?	Electrical space heating	20%	Advanced storage heaters with flexible controls are available and cheap to run.	
7.	Have all portable heaters been removed and staff instructed not to use them?	Electrical – remove heaters and ensure off after use.	10%	Fixing your central heating system is more cost effective than portable heaters.	
8.	Are lights low energy?	Lighting – low energy.	60% (on lighting only)	Should now be LEDs	
9.	Are lights switched off outside occupancy hours and controls working?	Lighting - controls	20% (on lighting only)	Correct signage and ensure daylight/motion sensors working.	
10.	Are external lights on timers and day sensors?	Lighting - controls	20% (on lighting only)	Ensure daylight sensor and timers working	
11.	Are all ICT equipment switched off after use?	Electrical	5-10%	Signage to switch off equipment overnight	
12.	Has a fixed wiring test been done and any issues highlighted been rectified?	Electrical	5%	Check wiring for load and voltage (220) optimisation, safety and saves energy.	
ORE			l	l	X/12

8 Staff engagement checklist - score X/10

Measure	Type of measure	Typical saving	Further detail	Done (Y/N)?
 Are staff aware of the <u>Climate</u> <u>Dashboard</u> and service area targets? 	Behaviour and engagement.	10-50%	Staff will be issued training to use the dashboard.	
 Have staff been invited to commit to the Climate Challenge? 	Behaviour and engagement.	5-10% annual reduction targets)	A reduction of 10% per year; competition for bronze, silver, gold "badge".	
3. Are staff engaged with their utilities?	utility monitoring		Is the site manager familiar with the utility portal?	
4. Have the utility meters been located and W3W saved?	utility monitoring		Save location W3W "hunt the meter"	
5. Do staff know how to read the meters?	Electric, gas and water monitoring		Send meter reads quarterly to energy and water officer.	
6. Is the site manager familiar with our energy and water monitoring portals?	Behaviour and engagement – energy and water utilities	As above	Depends on your utility provider.	
7. Have staff been invited to be a green champion?	Behaviour and engagement.		We need at least one green champion in every building.	
8. Have staff been appropriately trained on energy efficiency?	Behaviour and engagement.	As above	Staff can be keen to engage on the climate agenda whilst helping your profit margins!	
9. Are staff instructed to keep external windows and doors shut when the heating is on ?	Behaviour and engagement	10%	Ensure windows and doors closed if the heating is on. If it is too hot, then it's a thermostat problem.	
10. Are your staff familiar with heating and cooling controls?	Behaviour and engagement	10-50%	Correct use of thermostats and A/C not on with heating!	
SCORE	ı	1	1	X/10

Please refer staff to Shropshire <u>climate action</u> and specifically our new <u>Climate Dashboard</u>.

9 Renewable heat on site - score X/6

Renewable heat sources	Type of measure	Typical saving	Further detail	Done (Y/N)?
 Is renewable heat being sourced and used on site? 	Heat pump (ASHP, GSHP), biomass or solar thermal	2-3X more efficient than oil or gas or panel heaters.	Electric, oil, gas prices all going up.	
Is a district heating low carbon heat being used on site?	Refer CP1 Standard for heat networks	Typically, 50%	Can provide low- carbon affordable and secure heat	
 Does heat pump/plant meet MCS criteria and maintained yearly? 	Quality assurance and certification	10%	Check MCS standard – footings, fan clear of debris etc.	
4. Has solar thermal met MCS criteria and maintained yearly?	Quality assurance and certification	10%	Check MCS standard – glycol top up, pump maintenance.	
5. Are renewable heat controls optimised?	Heating controls	20%	Ensure SPF and COP are optimal.	
6. Is the site manager familiar with renewable heat controls and login?	Behaviour and engagement –	20%	Remote login for heating controls.	
SCORE				X/6

10 Renewable power on site - score X/6

Renewab	ole electric power	Type of measure	Typical saving	Further detail	Done (Y/N)?
1.	Is renewable electric generated on site?	Solar PV (electric) panels or Wind turbine	Typically, up to 50% of onsite electric demand	Electric prices gone up 200%.	
2.	Has the renewable met MCS criteria?	Quality assurance and certification	30%	Check MCS standard – PV / wind	
3.	Is monitoring in place?	Engagement / monitoring	30%	ORSIS/Solar Edge for new systems.	
4.	Is site manager familiar with renewables?	Behaviour and engagement –	20%	Onsite checks helps spot issues early	
5.	Is solar PV checked and maintained annually? (checks over page)	DC side electrics AC side electrics	10%	Ingress, DC cables, inverters, AC MCBs	
6.	Is solar PV generation optimised? (checks over page)	Panels, local shading; use of optimisers on new systems.	10%	Check panels annually for soiling, shading and electrical issues above.	
SCORE					X/6

11 Solar PV further checks

Solar PV checks	Detail	Done (Y/N)?
Remote monitoring	Has the site manager / business account holder have a login to remote monitoring service for PV (and app).	
DC side faults	 No low resistance to ground faults (or shorts) Check ingress protection (cables, connectors) Cabling should be installed correctly under MCS accreditation – and ducting. DC isolation switches ingress protected. DC isolations switches ON. 	
AC side faults	Check AC generation feed from inverter to distribution-board MCB hasn't tripped. AC isolation switches ON.	
AC generation meter	Check generation meter and take a quarterly meter reading (this also should have an ORSIS datalogger).	
Shading	No/minimal localised shading (trees/hedgerows)	
Soiling	Panels kept clean. Bird poo etc	
Damage	Sometimes panels get damaged – e.g. schools	
Inverters (SMA, Fronius, Solar Edge etc)	Check remote monitoring Check vents clear, mountings. Make sure not overheating. Check display for any fault codes; Most inverters configured by Bluetooth or wireless.— consult the installer.	
Equipment warranty (panels, cabling, inverters)	Check warranty period if installed within last 5-10 years if any faults occur. Manufacturer warranty for inverters normally 10 years.	
Workmanship warranty	Check with installer the terms of workmanship warranty and period of cover. Normally 2-5 years. All systems should be certified and MCS accredited. Any unresolved issues raised with Trading Standards.	
SCORE		X/6

12 Active travel and electric vehicles - score X/7

Electric v	ehicles	Type of measure	Typical saving	Further detail	Done (Y/N)?
1.	Are electric vehicles being used by staff?	Zero carbon transport	60% (1/3 the cost to run vs petrol/diesel)	Fuel prices rising sharply.	
2.	Are there charge points available on site?	Zero carbon transport	60%	Fuel prices rising sharply.	
3.	Are there shared EVs available for staff?	Zero carbon transport	60%	Fuel prices rising sharply.	
4.	Are there cycle racks?	Active travel		Health and fitness	
5.	Are there shared cycles/ebikes available?	Active travel		Health, fitness and wellbeing	
6.	Are there showers and changing facilities?	Active travel		Health, fitness and wellbeing	
7.	Is there easy access to public transport?	Low carbon transport		Reduce traffic on roads	
SCORE				X/7	

13 Recycling checklist - score X/5

Please see our <u>new resources section</u>. Commercial recycling is delivered by: <u>Veolia Shropshire</u>
Find out how you can achieve <u>economic benefits</u> and <u>resource efficiency</u>.

Me	asure	Type of measure	Typical saving	Further detail	Done (Y/N)?
1.	Are recycling stations centrally located and clearly labelled?	Recycling	(there is a commercial case for recycling)	resources	
2.	Are your staff familiar with our workplace recycling guidance?	Recycling	(there is a commercial case for recycling)	resources	
3.	Are the actions being carried out as listed in our recycling strategy?	Recycling	(there is a commercial case for recycling)	resources	
4.	Have individual general waste bins been removed?	Recycling	This improves recycling rates	You only need one central general waste bin; this encourages staff to get up and walk around and think before they bin!	
5.	Is an officer responsible for collecting compostable waste?	Resources – green waste	n/a – useful for the garden though!	Typically, coffee, tea dregs and green waste can be composted.	
SCORE	SCORE				X/5

14 Reuse checklist - score X/4

<u>Warp-it:</u> (Waste Action Re-use Portal) We have initiated a re-use distribution network for repurposing stationary, furniture, and other office equipment. This service helps to repurpose and relocate office furniture and equipment to where it is needed. This service is available for use by Shropshire Council service areas, Town and Parish Councils, schools and academy trusts, charities, and not-for-profits. It is not available for personal use (for which there are services like Freecycle and Freegle).

Me	asure	Type of measure	Typical saving	Further detail	Done (Y/N)?
1.	Are your staff signed up to Warp It?	Reuse	Reusing stuff saves money and helps cross council collaboration!	resources	
2.	Do staff check Warp It prior to purchase of equipment?	Reuse	Reusing stuff saves money and helps cross council collaboration!	resources	
3.	Are staff listing unwanted items on Warp It?	Reuse	Reusing stuff saves money and helps cross council collaboration!	resources	
4.	Are staff engaging with Warp It when moving office, cleardown or spring-clean?	Reuse	Reusing stuff saves money and helps cross council collaboration!	resources	
SCORE	SCORE				

Please follow the links above depending on the type of organization:

- o Town and Parish Councils sign up here
- o Schools sign up here
- o Charities sign up here
- o Further information for schools and not-for-profits here
- o <u>Business Partners sign up here</u>
- o Short instructional videos on how to list and claim items

Make sure you bookmark the correct link. Hit the big green button which says 'register' now. Once you register, you'll get further instructions. You can browse items on Warp-it by hitting the search button.

- Learn how to add an item here.
- Learn how to claim an item here.

If you want to know more about the system in general, go to <u>www.getwarpit.com</u> where there are examples of how the system is working well in other organizations just like ours.

You can also check out the Frequently Asked Questions <u>here</u>.

15 Water efficiency checklist - score X/6

Understanding, reducing and adopting best practice with your water usage can save your business money, help you avoid costly repairs and reduce your carbon footprint. A win-win-win situation. Severn Trent has devised a three-step process to help you measure your water use, minimise your waste and maintain the results.

https://shropshire.gov.uk/shropshire-climate-action/resources/water/

Measure		Type of measure	Typical saving	Further detail	Done (Y/N)?
to im effici	e staff been guided nplement water iency measures save water?	Water efficiency.		Water also has a cost and carbon footprint. and efficiency measures in place	
	kitchen and toilets ked regularly?	Taps, washrooms etc.		Ensure leaks reported promptly	
3. Is wa	eter monitoring in e?	Water monitoring		Is the site manager familiar with the utility portal?	
been	the water meter a correctly located W3W saved?	Water monitoring		Save location using W3W to avoid repeated "hunt the meter"	
	taff know how to the meter?	Water monitoring		Send meter reads to energy and water officer.	
unde	concealed and erground pipework gral (no leaks)?	Water monitoring		Service pipes on client side of supply (from Severn Trent	
SCORE	SCORE				

16 Summary observations

GIA (Gross Internal Area)	Clarify floor areas.
measure of the floor area in m ² .	
Building primary function (sector or service area)	e.g. social care
Building functions if mixed use	
(residential/office/commercial/arts/hospitality)	

Item	Building condition (current state – examples only)
General condition/age	Heritage (Victorian or pre), 1900-1950s, 1950-1980s, 1980s-2000, 2000 or newer.
Heating and cooling	Heating and cooling systems not easy to use or conflict. Timer's schedule set incorrectly and no weather compensation.
Hot water	Immersion tank poorly lagged and timers not functioning well or easy to use. Is it set to use cheap electric at night?
Electrical	Several portable heaters seen. 2kW wall heaters in kitchens. No signage to switch ICT/lights/equipment off after use. No timer fitted on communal hot drinks boiler.
Lighting	Lighting all fluorescents, seemed to be on all the time on arrival in the daytime (when good natural daylight). No controls or signage present. Timers/controls not seen for external lighting.
Building fabric	Current roof insulation is only 30mm roc-wool. No cavity wall, solid wall-insulation or ground floor insulation.
External windows and doors	For example – poor seals on windows and doors; single glazed.
Metering arrangements (electric/gas/water)	 The XX meter though supplies XX and office areas. The commercial units have separate electric and water meters individually (but no gas). Confusing layout or poorly labelled (example)
Active Travel and EVs	No active travel measures or EV charge points in place.
Renewable heat and power	No renewable energy generated or sourced on site
Recycling and reuse	No recycling or re-use measures seen or in place.
Water efficiency	Water meter not easy to locate, taps on or dripping. Leaks.
Staff awareness	Staff currently don't feel empowered to make any changes although they are keen to make a difference with climate agenda

(examples only shown)

Total Score	XX out of 100 = XX%	
Add up the points out of 100		

17 Actions to achieve targets

(examples only shown)

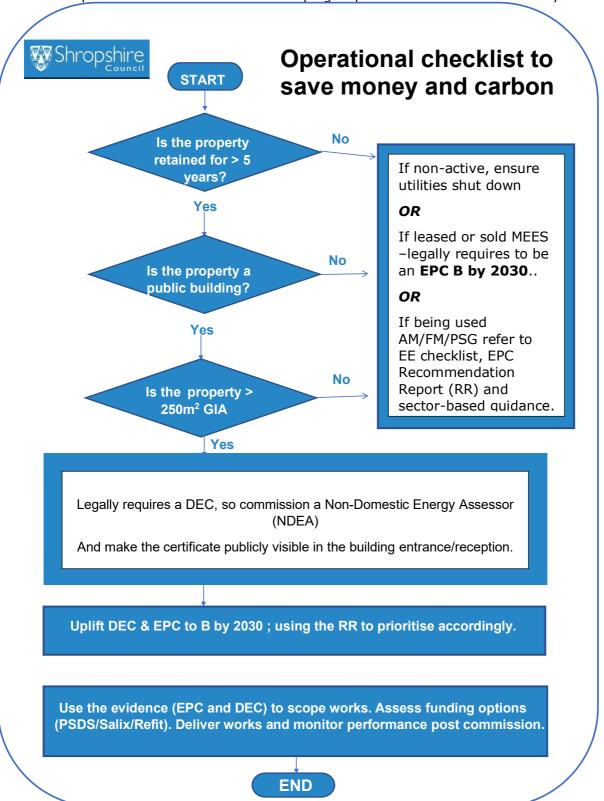
Item	Recommended actions / retrofits or refurbishments		
General	 Action based on the items marked N in the checklist. Make EPC/DEC visible in entrance foyer. 		
Heating and cooling	 Optimise heating and cooling system integrated. Controls operated centrally – BEMS with weather comp. Heating schedule is set to reflect occupancy and off outside of operating hours (make baseload zero). 		
Hot water	Improve lagging or replace more efficient thermal store. Fit functional easy to operate timer control (such as Eddie).		
Electrical	 Remove wall mounted (2kW) heaters from kitchen areas Signage to switch off lighting, heating and ICT equipment outside of working hours. Or automatic controls. 		
Lighting	 Fix the motion sensors for lighting in communal areas. Change out the fluorescent lighting for LEDs. 		
Building fabric	Uplift insulation (roof space, ground floor and interna/external walls where possible). Air tightness for new buildings.		
External windows and doors	Fit secondary glazing , or new double/triple glazing. Draught proofing and seals where possible.		
Metering arrangements (electric/gas/water)	Label metering correctly and clearly. Fit sperate commercial and residential AMR meters. Fit heat meters for commercial or residential tenants.		
Active Travel and EVs	Fit EV charge points using OLEV grants and cycling facilities.		
Renewable heat and power	Look at roof capacity for solar thermal and PV		
	Look at switching heating system to a heat pump.		
Recycling and reuse	Put centrally located recycling facilities in office (kitchen).		
Water efficiency	If large user fit AMR otherwise Limpet system.		
Staff awareness	Clarify site management and maintenance responsibility.		
	Enlist a Green Champion and monitoring of the utilities.		

18 Target performance

Performance rating	Units / parameter	Current	Target
Efficiency score	%	40%	80%
EPC	A-G		В
DEC	A-G		В
Current efficiency rating	kWh/m²/yr.		
Dwelling emission rating	kgCO2/m²/yr.		
Running cost/m2	£/m²/yr.		
Total utility spend	£		
Total carbon footprint	tCO2		
Saving	£		
Saving	tCO2		

19 Building decision flow chart (reference)

This is a simple flow chart with the aim of helping to prioritise and deliver efficiency works:-



20 Further information (reference)

- Carbon Trust
- CIBSE Benchmarking tool
- Climate Dashboard.
- Commercial guidance
- Commercial hints and tips
- Climate action for businesses
- Energy and heating guidance
- Energy saving guide for offices
- Energy efficiency checklist (measures for the short term)
- Historic buildings
- Shropshire Climate Action
- Sector-based guidance

Energy certificates

- Find EPC (Energy Performance Certificates) and DEC (Display Energy Certificates)
- Further info on DECs https://www.gov.uk/check-energy-performance-public-building
- Explanation of EPCs and DECs
- Open community's data (MHCLG)

MEES (Government Minimum Energy Efficiency Standards)

- Non-domestic MEES guidance and legislation
- Domestic MEES guidance and legislation