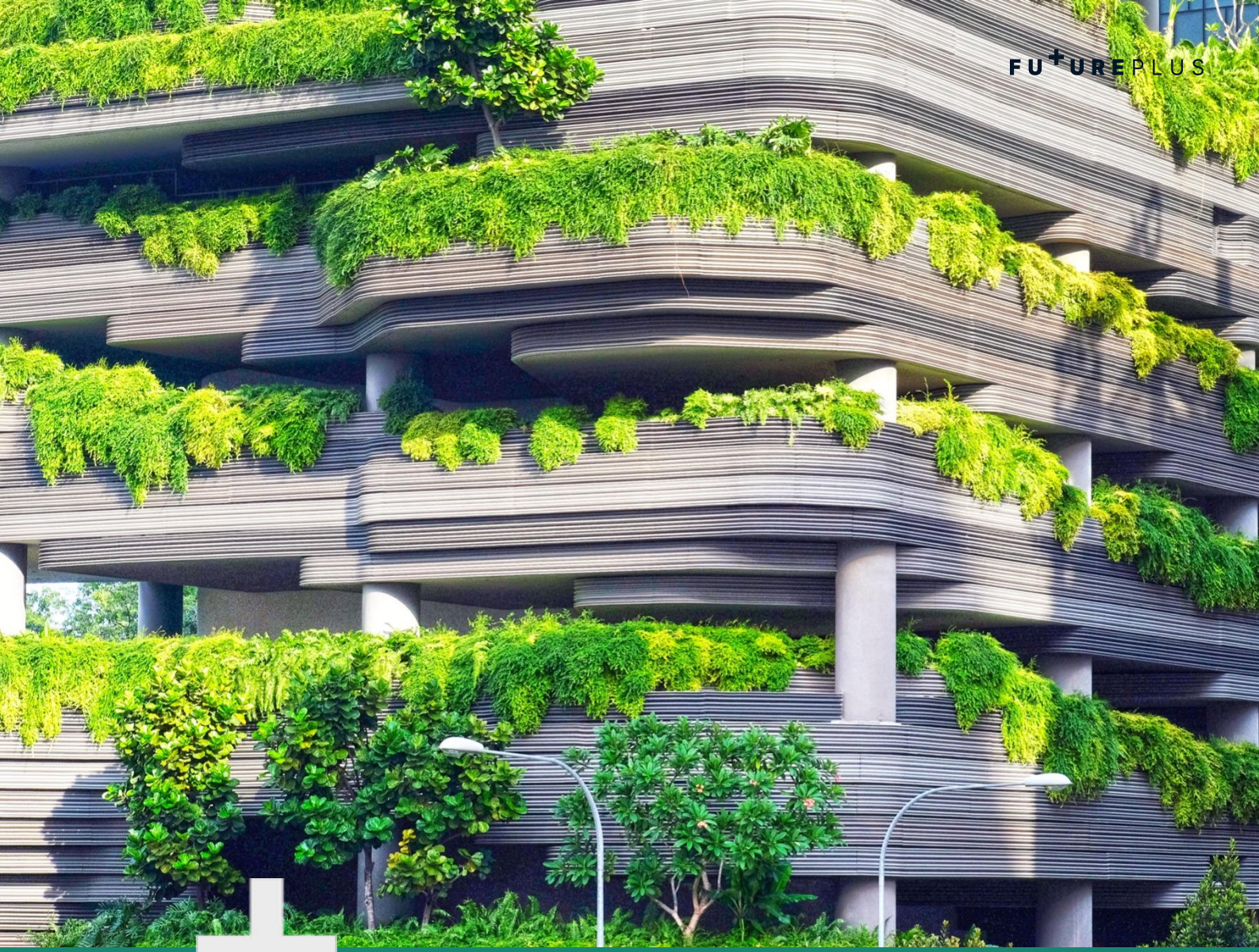

ENERGY EFFICIENT BUILDINGS

A FUTUREPLUS GUIDE

THE BENEFITS

Increasing the energy efficiency of company-owned or leased properties will not only reduce your organisation's **carbon footprint**, but often also makes good business sense. With energy being one of the largest controllable overheads in office buildings and workspaces, there are many opportunities to make cost savings and reduce exposure to the risk of energy price fluctuations. Techniques intended to improve energy efficiency can often also lead to improvements in working conditions too, increasing staff productivity and enhancing corporate reputation

WHERE TO START

There are many different actions your organisation can take to make your office buildings or workspaces more energy efficient, whether owned or leased. The first step is to **understand your energy use**:

- Identify the building's main sources of energy consumption (i.e. heating/cooling, machinery and electrical equipment, lighting, etc.)
- Monitor your energy consumption over a specified period of time (usually 12 months) to obtain a base figure. Be aware this may involve oil and gas use as well as electricity.

Identify the opportunities

- Make a checklist of where energy savings can be made. For example;
    - Is a large proportion of your energy use coming from air-conditioning or heating?
    - Are you using outdated equipment and machinery that is energy-inefficient?
- Use your baseline energy calculations to set realistic and achievable energy reduction targets. We can help with this! Get in touch at: team@future-plus.co.uk

Prioritise your actions

- Create an action plan that outlines the improvements that need to be made, by when, and how, along with who will be responsible for making these changes happen.

IDEAS FOR LEASED BUILDINGS

Many organisations operate in leased buildings and feel a little powerless when it comes to making meaningful energy savings, but there are lots of actions and opportunities to engage with, even in a rented building.

Persuading employees that making significant cuts to energy use is achievable may seem difficult, but it's important to understand and communicate that day-to-day actions **do make a difference**. Incremental and achievable changes can quickly add up to make big energy reduction impacts across a business.

SMALL ACTIONS ADD UP

Encourage employees to think about small actions they can build into their daily routine that will make a difference. Some examples include:

- Switching off lights and equipment when not in use, particularly over-night and at weekends
- Turning down or zoning heating and air-conditioning where appropriate
- Making sure that radiators and air-conditioning vents are kept clean and are not obstructed
- Only run kitchen dishwashers when full and set on eco cycles
- Use less water wherever possible (only boiling the water you need, for example)
- Ensure that freezers are regularly defrosted and fridges are not overfilled
- Shut windows and doors in cold weather, and encourage employees to dress appropriately for the season
- Only print when necessary, or better still, go paperless
- If you have control over your lighting, switch energy-inefficient light bulbs for LEDs
- Replace end-of-life equipment and machinery for more energy-efficient models

LOBBY YOUR LANDLORD!

If you are feeling frustrated that your building is less energy-efficient than it could be, speak to your landlord or building manager and press for changes to be made. Speak to other tenants in the building and see if they feel the same. You could also consider voting with your feet and looking for more energy-efficient premises when your lease expires.

IDEAS FOR OWNED BUILDINGS

If you own your building/s it's much easier to invest in more comprehensive energy-saving infrastructure and techniques.

For really comprehensive examples, we recommend taking a look at both the **BREEAM** and **WELL** websites, which showcase best-practice examples of what can be achieved in terms of sustainable building design for both planetary and human health.

ENERGY EFFICIENT LIGHTING & CONTROLS

Lighting accounts for **20% of energy consumption** in the UK but is also one of the easiest and more affordable elements of building design to replace.

LED bulbs: On average consume **70-90%** less energy than a standard bulb.

Dimmer switches: Can save energy by dimming lighting where appropriate.

Motion sensors for outdoor lighting: Useful for entrance/exit lighting and parking spaces.

Occupancy sensors for indoor lighting: Typically used for toilets facilities, kitchen areas, stairwells and meeting rooms.

Timer controlled lighting: Programmed to turn on/off at certain times.

Networked lighting control systems: This lighting system allows a user to manage the lighting through the a computer or handheld device.

ELECTRICITY GENERATION & RENEWABLE ENERGY

Implementing renewable energy technologies, such as solar panels, can be a great way to make your buildings more energy efficient and integrate them into overall power management. Solar panels are widely available, relatively easy to install, and generally require little maintenance.

Before installing solar panels on the roof, get the advice of a structural engineer to survey whether the building can support the added weight of the panels. Ground mounts can also be used if you don't have any usable roof space.

VENTILATION VS. AIR-CONDITIONING

The upfront cost of installing a ventilation or air conditioning system is quite high.The choice between the two systems depends on the building's specific needs.

How to improve efficiency

- When buying new ventilation systems, select higher efficiency motors and fans.
- For existing ventilation units, use time settings to ensure that fans are not running when not required.
- For air conditioning systems, ensure that the heating and cooling systems are not competing with each other – employ a deadband or temperature gap.
- Turn off heating or cooling in unnecessary areas – this can be done automatically through machines or computer servers, but if you do not have these, set a timer for the AC to be turned off.

OTHER THINGS TO CONSIDER

Green roofing
Installing a green roof can reduce energy costs, cut down on pollution, sequester carbon, and retain stormwater so cities don't get overwhelmed during weather events.

Insulation
Inefficient insulation means that properties can overheat in the summer and lose heat in winter, consuming more energy as the demand from heating or cooling systems are much higher. In order to identify whether your office has an efficient insulation system, a commercial building survey is highly recommended.

Building Management System (BMS) Upgrade
A centralised system linking all electrical, plumbing and mechanical systems in a building that can be controlled from a computer device or dashboard. A building with a BMS is considered a 'smart building'.

NEED MORE HELP?

Please let us know if you would like more information on energy efficient buildings – we would be happy to help: team@future-plus.co.uk