

Guide yourself through

This 'Guide Yourself' package is designed for those in the Learning and Skills Sector who wish to take some time to gain an in-depth understanding of the sustainable management of Buildings and Estates. It is divided into four sections which can be read as a whole or separately. Within the sections it addresses 8 relevant sub-topics:

- New buildings and Refurbishments
- Using Energy Efficiently
- Conserving Water
- Reducing Unnecessary Waste
- Encouraging Biodiversity
- Purchasing
- Transport and Fleet Management
- Environmental Management Systems

Context

Making the case for Sustainable Development

Good management of buildings and estates, when put in a broader sustainability context, can contribute positively towards sustainable development in key areas such as:

- Reducing an estate's environmental impact through better management of wastes and energy
- Raising the environmental awareness and responsibility of all staff and students. For example through implementing an environmental policy or formal Environmental Management System (which requires all individuals in the organisation to be given environmental training)
- Improved presence and reputation within the community. For example through greening the supply chain and encouraging local procurement, as well as ensuring sound physical appearance of buildings

LSC Policy

The LSC Strategy for Sustainable Development - From Here to Sustainability (2005) makes a strong case for sustainable development being at the heart of all learning. It stresses 'the importance of all learners acquiring sustainable development skills – skills that will equip them to lead their lives and work in a sustainable way and to influence others to do the same'. The LSC identifies three ways in which the Learning and Skills sector can

contribute to sustainable development:

- Through its management of resources
- Through the learning opportunities it delivers
- Through its engagement with communities

The LSC Strategy for Sustainable Development has identified a number of priority action areas for implementing change in teaching, learning and the curriculum in relation to sustainable development:

Education for sustainable development

Promote and encourage acceptance and delivery within learning programmes of the Sustainable Development Education Panel's key concepts for education for sustainable development.

Learning materials

Consider adopting and using currently available sustainable development learning materials and develop appropriate sustainable development programmes and modules.

Whole-institution approach

Implement a whole-institution approach to sustainable development, taking account of both institution-based provision and virtual learning environments, and both informal and formal learning approaches.

Links and partnerships

Develop links between providers and industry and between pre- and post-16 education and learning providers (including higher education), also considering European and international partnerships.

Healthy college programme

Encourage development and implementation of healthy college programmes.

Preparing the Ground

The guidance is presented in individual sections:

New buildings and refurbishments

How to plan and implement new build developments and refurbishments that achieve highest levels of sustainable development principles

Using energy efficiently

Helping to reduce unnecessary use of energy around the FE estate while at the same time saving money

Conserving water

Ways that the Learning and Skills sector can reduce water wastage and save money at the same time

Reducing waste

How the the Learning and Skills sector can reduce the waste of resources, whilst also saving money and helping the environment

Encouraging biodiversity

Making the provider grounds more attractive, helping local wildlife and improving the well-being of the local population

Purchasing

Ways in which the FE system can take proactive steps towards helping its local community by developing and encouraging more sustainable purchasing strategies

Transport and fleet management

Identifying ways in which learners and staff can be encouraged to take more sustainable and healthy approaches to travel

Environmental management systems

Describing a structured approach towards developing ways to implement a system of procedures and documentation to manage the environmental impacts of the organisation.

New Buildings and Refurbishments

Introduction

This section covers how to plan and implement new buildings developments and refurbishments that achieve highest levels of

sustainable development principles. It explains why sustainable development needs to form an integral part of any building project, and identifies what steps need to be taken, and at what stage, to achieve high quality sustainable development through the buildings development process.

The key driver for delivering sustainable design and construction is to ensure that the buildings achieve value for money on a whole life basis. This means not only through minimising costs to your organisation through the building's lifetime, but also to contributing to the wider economy whilst minimising damage to the environment.

Good sustainable design and construction is concerned with an approach which links in favourably with wider agendas such as sustainable communities and climate change. An integrated design approach is preferable to a fragmented one. In short, the main principles of sustainable design in buildings include:

Holistic approach

An integrated design approach is preferable to a fragmented one; everything is connected to everything else.

Site

The nature of a site strongly influences sustainable design (e.g. the use of micro-renewables such as solar Photo-voltaics and wind turbines will be location-dependent).

Energy efficiency

Reducing energy use is more cost effective and environmentally sound than producing or reclaiming it (even from use of renewables). Much of this is a behavioural change issue, although sustainable design principles can contribute favourably towards this, for example, through maximising solar gain.

Resource use

Recycling products and materials is lower on the waste hierarchy than reuse or up-cycling. Furthermore, aiming for durability is a much more efficient use of resources. There are a variety of ways a building's design, construction and habitation can make positive gains here (e.g. design that optimises use of natural light; natural ventilation and cooling etc; consideration of insulation, use of microrenewables; procurement of locally sourced and green building materials; use of recycled aggregates in construction; grey water recycling). The reuse of buildings and / or land is another key feature that should be considered.

Access

Good, sustainable design will look at access issues particularly in locating new developments in close proximity to services and sustainable transport modes.

Health and crime

Good design will have positive health implications. Holistic design should also facilitate access to key services (health services; sports facilities etc). It should also enable residents to travel by more sustainable (and healthier) modes of transport than the car such as by foot or bicycle (through the provision of footpaths and bridleways for example). Good sustainable design will also have designing out crime as a factor.

Sense of Place

Good sustainable design will also be sympathetic to its surroundings and use local materials to the benefit of local communities.

Biodiversity

Good sustainable design is also characterised by protecting local wildlife and species to retain local distinctiveness and biodiversity. Retaining certain vegetation such as trees and shrubs may have additional benefits, such as providing natural cooling in summer months (through shading).

Adaptation measures to climate change

Good design will incorporate features such as use of Sustainable Urban Drainage Systems (SUDS) in areas prone to flood risk.

Foundations

The [LSC Strategy for Sustainable Development](#) highlights the need to promote and deliver good sustainable practice in all design, new build and refurbishment activities and to reduce the overall carbon footprint of the sector.

Reducing the footprint is not just about design, new build and refurbishment. Many LSC providers, such as independent learning providers, are not involved in LSC funded rebuilds. Therefore, it is important that emphasis is placed on reducing the footprint through ongoing management, such as having targets to use less energy.

There are opportunities here, not only with any planned refurbishment, new build and sustainable design. Good practice measures that can be applied to existing buildings. This will be particularly important in light of the fact that the Government could set challenging targets through the Climate Change Bill. Having a

new build will not be enough – all FE providers will need to keep improving the energy performance and consumption of their buildings.

Why is Sustainable Design important?

The FE system invests significant amounts in construction of new education establishments and in the refit and refurbishment of existing buildings. Delivering sustainable procurement will help to deliver real value for money over the longer term avoiding false economies or unnecessary hidden costs.

The sector's footprint covers three key environmental areas carbon, water and waste. In addressing these issues, FE providers have can have a number of positive influences such as:

- Help UK business competitiveness and innovation, by encouraging and supporting innovative solutions to new sustainable designs and products
- Build genuinely sustainable communities, particularly through engaging with local suppliers and delivering corporate objectives

There is a high degree of autonomy within the further education system which to some extent reflects the fact that a number of providers are leading the way in introducing sustainable procurement and operational processes within their own buildings and functions.

In January 2007, the LSC set out their "strategy for building greener colleges of the future", which for the first time states that providers must include green proposals in their designs if they are to win capital funding. Providers will be strongly encouraged to embed principles of sustainability in the design of their buildings and building systems. Buildings will in the future need to achieve a BREEAM excellent rating, and to meet and preferably exceed the requirements of Part L of the buildings regulations. Other criteria include approaches to maximise the use of natural lighting and ventilation, the use of solar and wind power, and reuse of rainwater. The approach aims to deliver "innovative, energy efficient and inspirational buildings"

The LSC is overcoming barriers to sustainable procurement by increasing the capital cost criteria available for sustainable elements of building design and construction. FE providers applying for capital grant support can now apply for an additional cost allowance of 5% of building costs to be ring fenced and used for elements in the building that address sustainability. FE providers that can demonstrate how their design exceeds the new requirements of Part

L of the Building Regulations and addresses further sustainable issues are eligible for the allowance. Any increase in costs resulting from Part L will be covered by a regular twice-yearly increase of the LSC's capital costs criteria; this is in addition to the 10% allowance to reflect increases in sustainability. The LSC has [commissioned a design guide](#) for FE providers that will provide examples of best practice in the design of FE provider buildings. The LSC is also commissioning a BREEAM model assessment for the FE system (see www.breeam.org for more information).

Drivers

The government has recognised that implementing high quality sustainable development within buildings can make a significant contribution to environmental, social and economic sustainability. It is developing mandatory and voluntary standards to be implemented for new builds and refurbishments, and is also providing support to enable other public sector bodies such as local authorities to support high quality sustainable development in buildings within their own statutory remit.

Delivering sustainable development in buildings starts with the building's design and construction. The lifetime of a building can be 2030 years or more, so implementing best practice in sustainable development from the start is essential. Building construction has a range of environmental impacts, including the use of raw materials such as aggregates, water or timber. Buildings use creates a similarly wide range of impacts on the environment, including energy and water use and waste generation. Legal, social and community impacts can include regulatory standards, health and safety obligations and community relations. Performance against all of these areas can be significantly improved through the integration of higher sustainability performance standards within the building's design and subsequent management.

Costs are a priority consideration for any new build or refurbishment. A well designed and constructed building should achieve best value for money for the building's owners and management. Integrating high standards of sustainable development from the building's design phase onwards can contribute to the long term sustainability of the building, through reducing its environmental impacts and minimising its lifetime operating costs. A recent LSC-commissioned study found that some providers in the learning and skills sector are starting to incorporate more sustainable features into new build and refurbishment projects. Combining economic and environmental assessment tools to obtain best value solutions in both financial and environmental terms has the potential to make a significant contribution to

achieving sustainable development. Financial assessments of any project should therefore consider the building's whole life costs, including its design, construction, running and eventual deconstruction, rather than focussing purely on initial design and construction costs.

Achieving high levels of user satisfaction is a very important consideration in building design, especially for educational establishments. So it is important to ensure that the building provides a high quality learning environment. High standards of building design provide learners with maximum levels of natural lighting and high standards of air quality, good quality artificial lighting, controllable heating and ventilation. There is an increasing level of awareness in society, especially in young people, of the importance of sustainable development to our long-term well being, so the building design will need also to take account of wider sustainable development impacts such as minimising waste and water use, minimising the use of natural resources in construction, and maximising linkages and benefits to the local community. There are also opportunities to incorporate new energy or water saving technologies, such as using combined heat and power, the installation of solar or wind technologies, or rainwater harvesting into the new site. A high quality building will also contribute to wider awareness-raising and demonstrate the role of the FE system to lead by example in integrating sustainable development into its buildings and estates management.

Regulations

To harness the opportunities presented by environmental improvements to buildings, the government has introduced tougher standards such as the revisions to Part L of the Building Regulations in April 2006, which raised overall energy efficiency standards for both new build and refurbishment.

Implementation of the Energy Performance of Buildings Directive: Energy certification based on accredited processes will be required on all non-domestic buildings with a floor area in excess of 1,000 m². Public buildings will also have to display their energy certificate and have it updated at least once every ten years.

Voluntary standards

A selection of tools and standards applicable to you and your organisation in assessing the sustainability and / or environmental impacts of your buildings are [available in the Tools section](#).

Baseline and Targets

The Energy Efficiency Accreditation Scheme (external website) is

the UK's only independent award recognising achievements in reducing energy use by leading organisations in industry, commerce and the public sector. Over 200 organisations, ranging from banks, retail, universities, hospitals and local authorities have achieved accreditation. To date 13 universities are accredited, including the Universities of Glasgow, Manchester and Thames Valley, and Harper Adams University College, but no colleges or post-16 providers have participated yet.

Participation

The first step towards achieving new or refurbished buildings that meet highest standards in sustainable development is to ensure that there is comprehensive and committed support and buy-in at all levels of your organisation (also see [Leadership and management](#)). This includes enthusiastic endorsement for the project from higher management and from the delivery team including the finance department, the architect and the design and construction team. Developers of many successful buildings emphasise the importance of having at least one “champion” from senior management who is fully committed to the concept and the practicalities of implementing sustainable development into the project. The education team must also contribute strongly towards ensuring that all aspects of sustainable development are fully recognised, not only within the organisation’s management but also within the wider economy including the future users of the building (learners, staff), the local community, builders and suppliers.

Interventions

There are practical measures that you can implement to improve a building’s sustainable development performance from the early stages of design. The following list of design topics can be relevant to all new build or refurbishments:

- Integrated passive design orientation, glazing etc.
- CO2 targetting in buildings
- Insulation / thermal bridging
- Air permeability
- Climate change
- Materials
- Drainage
- Ecology / biodiversity
- Transport
- Recycling and waste management
- Construction waste
- Post completion (post occupancy evaluation)

A range of voluntary standards and tools can be found in the [Putting it into practice section](#).

Targets for Public Sector Buildings

The [Sustainable Development Commission](#) recently carried out a wide-ranging audit of central government operations, including central government departments and executive agencies. The audit aimed to identify, monitor and mitigate the overall environmental impacts from the central government estate, which comprises over 17 million m² of office floor space, employing over 650,000 employees. The government has now set targets to be achieved within its own estate in relation to new build or refurbishment. You can apply the results from the Sustainable Development Commission's work your own estate. Some of the headline targets identified and agreed for government estate buildings include:

- Water consumption should be reduced to an average of 3 m³ per person/year for all new office builds or major office refurbishments. This will be a one off assessment for the first year of occupation
- All new builds and major refurbishments should meet the Building Research Establishment's (BRE) Environmental Assessment Method (BREEAM) 'excellent' standard or equivalent ¹
- All departments should conduct sustainability appraisals of office relocations.

¹Departments should define what a new build and major refurbishment is for their own estate. An appropriate environmental assessment process such as BREEAM or an equivalent (e.g. CEEQUAL, DREAM etc.) appropriate to the size, nature and impact of the project must be carried out on all projects. Where BREEAM is used, all new projects are to achieve an "excellent" rating and all refurbishment projects are to achieve at least "very good" rating, unless site constraints or project objectives mean that this requirement conflicts with the obligation to achieve value for money. Where an alternative environmental assessment methodology is used, projects should seek to achieve equivalent ratings

Procurement and Sustainable Buildings

The [Government's Sustainable Procurement Action Plan](#) clearly identified the key issues and priorities relating to construction and sustainability, for both new build and refurbishment. The most important of these cover the need to meet minimum buildings standards (particularly BREEAM), to adopt a robust EMS, to ensure onsite recycling of construction waste, to require recycled content in procured products, to achieve water savings, and to make use of the [Quick Wins Product List](#).

The Action Plan contains a number of case studies where public

sector organisations have implemented these priority actions to the highest standard. It also refers to future plans in the schools sector in which more than 500 secondary schools, under current plans, will undergo 'minor refurbishment', leading to savings of 5,000 tonnes of carbon per year and savings of £5,000 per year on average. The Action Plan also identifies using micro-generation or renewable technologies in schools due for major refurbishment, a revised approach to addressing capital and running costs in schools, and exploring options such as Energy Services Companies who can provide capital funding in return for long term energy supply contracts.

The next step

Tips, tools and ideas about how to make buildings more sustainable can be found [here](#)

Using Energy Efficiently

Introduction

Energy is one of the largest controllable costs for most of the buildings. There is usually considerable scope for reducing expenditure on energy by reducing unnecessary energy use. There may also be opportunities to invest in new energy technologies by supporting the development of renewable energy and low carbon technology markets.

Drivers

Lower energy bills and better value for money

The most pressing rationale for addressing energy management relates to reducing costs and saving resources. The Retail Price fuel index rose in real terms by 26% in the 12 months to December 2006¹, which presents energy managers with a strong incentive to identify and act in a way that minimises energy wastage. A survey in Yorkshire and Humberside's HE sector found that many organisations had renewals of their electricity contracts costing 40/50% more in 2005 than 2004, and this upwards trend continues. Most establishments could reduce energy costs by 10/20% through implementing simple actions that produce quick returns². All cost savings on unnecessary energy use go straight onto the 'bottom line'.
¹DTI Energy Trends and Quarterly Energy Prices, 2006. ² Carbon Trust Assessing the energy use in your building. Fact sheet CTL003.

Reducing carbon dioxide emissions

Although education buildings are not currently subject to sector wide targets for reduction of energy use or carbon emissions, there is an increasing emphasis on identifying ways in which the

education estate can reduce its overall carbon footprint. The national carbon dioxide reductions required to meet the UK's 2050 target of reducing our emissions by 60% will place obligations on all areas of the economy. If all sectors were to contribute equally to achieving the goal of 60% reduction by 2050, a 2% reduction in carbon emissions each year from now onwards would be required. There is no currently comprehensive data available about the total amount of energy use or carbon emissions by educational buildings. A study by the Environmental Change Institute, University of Oxford, in 2005 estimated total HE building stock emissions to be about 0.54 Mt carbon (derived from approximately 7.4 TWh/year), equivalent to about one percent of total UK emissions from all sources (2% of total service sector emissions). This estimate suggests that the likely contribution of carbon emissions from the FE sector would be at least the same amount.

More efficient use of natural resources

Educational establishments can be ideal for implementing combined heat and power (CHP). This combines power generation with heat production, and is a recognised cost effective solution where year-round heating as well as electricity demands are needed.

There is an increasing level of interest in the use of renewable energy resources. Using renewable energy can cut energy bills significantly and also contribute to ways of reducing carbon emissions. Renewable energy can be generated from a range of energy sources including wind, wave, tidal, solar, hydro, geothermal and biomass. These forms of generation offer an enormous potential energy resource. The UK has one of the best onshore and offshore wind resources in the world. The potential energy resource available from biomass (including wood, crops, or organic wastes) is being realised at many installations around the UK for providing heat and/or power in installations ranging from individual wood-fuelled boilers in households to large scale biomass-fired heat and electricity generation schemes. Many technologies have been operating in other European countries for a number of years and are now starting to be deployed in the UK in increasing numbers, for example ground/air source heat pumps, solar electricity from photovoltaics and solar thermal heating.

New energy technologies

There is also a range of new energy technologies that are being developed to provide heat or power. These new technologies may include microgeneration, fuel cells or hydrogen technologies, all of which are currently at early stages of deployment into economically viable energy solutions, but which are being actively adopted in early demonstration sites. A number of educational establishments

are investigating how these new technologies can provide cost effective energy as well as providing an educational resource for learners and the local community about sustainable energy.

Regulations and taxes

There are an increasing number of energy- related regulations and energy taxes that are directly relevant to educational establishments, which aim to achieve reductions in the environmental impacts from buildings.

The Climate Change Levy is a tax applied to energy used in the non-domestic sector (industry, commerce, and the public sector). The aim of the Levy is to encourage these sectors to improve energy efficiency and reduce emissions of greenhouse gases. Businesses and public sector pay the Levy through their energy bills.

The EU Emissions Trading Scheme controls carbon emissions from larger energy using plant such as boiler houses. The threshold for participation is 20 MW so it is unlikely that FE sites will be eligible for consideration at present, but the Scheme may change in the future.

The EU Energy Performance of Buildings Directive aims to deliver substantial reductions in carbon dioxide emissions from all buildings, both domestic and non-domestic, by 2010. The Government is implementing the Directive through the requirement for all buildings to have an Energy Performance Certificate by 2008. All buildings occupied by a public authority or visited by a large number of people with a total floor area over 1000m² will be required to display a current energy certificate showing its energy performance. Regular inspections of boilers and air conditioning units, and re-evaluations of building performance, will also form part of the requirement.

Baseline and Targets

There are no national baselines for educational establishments relating to energy use, although some studies have been carried out to establish guideline values. BRECSU for the DfES studied the energy records of over 2000 schools in the UK, to identify the range of energy costs. These varied considerably between 65119kg of carbon per pupil in secondary schools, with associated cost per pupil at the worst performing schools more than twice the best schools (£51 compared with £21 per pupil).

The Sustainable Development Commission's [review of government buildings](#) has set targets for sustainable operations in government buildings including energy efficiency. The target is to increase

energy efficiency per m² by 15% by 2010 and by 30% by 2020, relative to 1999/2000 levels. These could be appropriate targets to consider for FE organisations as well although for this to be achieved, the first requirement will be to have a baseline audit carried out on the entire FE system. To date however, no guidance or relevant targets have yet been established.

The next step

Tips, tools and ideas about how to use energy efficiently can be found [here](#)

Conserving Water

Introduction

Water is a valuable natural resource that is vital for public health and for the environment. There are limits to its availability in many areas, so it is everyone's responsibility not to waste it. There is also an energy cost for the transportation and cleaning of water. Recent drought orders, especially in the southeast, have highlighted how vulnerable we can be to restrictions to water supplies. Even in wetter areas, costs incurred by the water companies are rising and these costs are passed on to customers. Implementing water saving actions can be a high profile but low cost demonstration of an organisation's commitment to sustainable development.

Drivers

Educational establishments use water within the office environment in kitchens, toilets and bathrooms. Water is also used outside for grounds maintenance and the cleaning of premises. Some FE organisations may also have laboratories or engineering facilities which need water supplies.

With the introduction of the Water Act 2003, all public bodies now have a duty to 'conserve water'. By monitoring your water use and comparing it to benchmarks you can save up to 50% of your water bill. The Water Act 2003 places a duty on all public bodies to 'take into account, where relevant, the desirability of conserving water supplied or to be supplied to premises'. This means that all public bodies should reduce the water used on their premises to an efficient level.

Baseline and Targets

The biggest single determinant of total water use for an FE organisation is likely to be the number of people using the buildings. Educating people about efficient water use will therefore be an important issue to address, as well as the types of fittings

and water-using equipment installed and their maintenance.

A study (Key Performance Indicators for Water Use in Offices) carried out on behalf of a number of UK water companies identified an average water consumption level in office buildings of about 4m³ per occupant per year. The report suggested that consumption above this average indicates that significant water savings could be achieved, although even if water use is below this average value, further savings may still be achievable. Based on this study, a target for government offices has now been established at an average of 3 m³ per person per year for all new office builds or major office refurbishments, with a target to reduce water consumption by 25% by 2020 (In line with the recommendations of the Sustainable Buildings Task Group report).

There are currently no statutory targets for reducing water use in educational establishments. A DfES study of 2000 secondary schools found water consumption between 3.65 and 5.44 m³ per pupil, with a median of 4.6 m³ per pupil. This level of usage is likely to be similar within FE buildings, suggesting that there are significant opportunities for reducing water use.

The next step

[Tips, tools and ideas about conserving water can be found here](#)

Reducing Waste

Introduction

The UK produces more than 225 million tonnes of waste each year, from municipal, commercial and industrial, construction and demolition sources.

The types of waste we produce, the way we manage waste, and the way we transport it, all impact on the environment. While waste cannot be completely eliminated, we can reduce its environmental impact by preventing waste from being created wherever possible, and by sustainably disposing of the waste that is produced. Waste generated should be reused and recycled, transforming it from a problem into a resource.

Waste arisings result in continued environmental degradation. For example, pollution associated with waste may include methane emissions from decomposition processes, and landfill and incinerator emissions. On the other hand, waste minimisation and greater re-use and recycling could reduce landfill and the associated negative impacts on the environment. Sustainable waste management may also have wider benefits. For example, where

activities such as recycling are part of community-based projects, this may benefit social cohesion and reinforce positive messages on sustainable development.

Municipal Waste

Municipal waste, which is waste from households and other waste collected by local authorities, makes up about a sixth of the total waste arisings in the UK, and industry and commerce accounted for just over a third (source DEFRA).

The UK Government has set targets for household recycling of 25 / 30 / 33 % of household waste to be recycled or composted by 2005 / 2010 / 2015. The 2005 target was achieved, and latest statistics show that household recycling and composting reached 26.7% by 2005/6. There was a decrease in the amount of municipal waste sent to landfill by 1.9 million tonnes to 17.9 million tonnes and a 3% decrease in total municipal waste collected in 2005/6, reducing from 29.6m tonnes to 28.7m tonnes.

Waste from Educational Establishments

The headline statistics about domestic and municipal waste, which are being reported consistently in the national media, do not include waste produced from educational establishments. This is because waste from educational establishments does not fall within local authority collection remits, so it is collected by private contractors, and is classified as commercial waste.

Similarly, although there is a large amount of data compiled about the amount of waste produced by households, there is no separate data available about how much waste is produced from educational establishments. There are also currently no statutory national targets for waste reduction or recycling for any waste of commercial (or industrial) origin.

Waste disposal is usually the responsibility of the FE provider's facilities manager, who arranges with licensed waste carriers or disposal contractors for its appropriate disposal.

The FE provider will encounter a wide range of waste types for disposal, including:

- paper
- glass
- cans
- refrigerators, freezers
- furniture
- clinical wastes
- radioactive Wastes

- batteries
- waste electronic equipment
- mobile phones
- wood
- toner cartridges

There are three main reasons for taking action to minimise waste generation and to improve waste management within the FE system:

Environment

The environmental costs of waste are increasingly apparent. The waste hierarchy is a strong guide to best practice in terms of resource efficiency and moving towards a more sustainable pattern of consumption.

Economic

Costs for waste disposal are increasing considerably, and are a strong economic incentive to organisations to reduce the amount of waste generated and to select more appropriate and economic disposal alternatives for waste that remains.

Compliance

Waste legislation is increasing both in terms of the scope of waste types covered and in the severity of fines imposed on non-compliance. Legislation now places responsibilities on all parties involved in the waste management chain from the producer of the waste to the person responsible for its final disposal, so all FE providers must be fully aware of their obligations relating to waste.

Baseline and Targets

There are currently no statutory obligations relating to waste from educational establishments: they are not required to report on the amount of waste they produce, or on what the different fractions of waste comprise, or where the waste is disposed. They are also not subject to any waste reduction or recycling targets. This is now starting to change: despite the lack of any statutory obligations, some FE providers or universities are now taking action to implement waste planning strategies across their estate and to encourage greater awareness among their learners and staff about individual responsibilities for waste.

The Government is also taking the lead in encouraging better levels of waste reduction and recycling by departments within its own estate. As part of its actions to develop a sustainably managed estate, the Government has set targets within its estate for levels of waste arisings and recycling as follows:

- Waste arisings departments to reduce their waste arisings by 5% by 2010 and 25% by 2020, relative to 2004/5 levels
- Recycling departments to increase their recycling figures to 40% of their waste arisings by 2010 and 75% by 2020

The Learning and Skills sector also has a key role to play in delivering a more responsible approach to waste. It can achieve this by setting a leading example in implementing sustainable waste management practices within its own estate. Other measures that can be adopted are through raising awareness amongst learning providers and the wider community of the importance of best practice in waste minimisation and resource efficiency

The next step

[Tips, tools and ideas about reducing waste can be found here](#)

Encouraging Biodiversity

Biodiversity, which is short for biological diversity, encompasses the whole variety of life on earth. It includes all species of plants and animals, and the complex ecosystems of which they are part. It is not restricted to rare or threatened species.

The health of our biodiversity is one measure of the extent to which we are living sustainably. Within urban areas in particular, biodiversity makes a strong contribution to the development of sustainable communities and to establishing and maintaining urban green space and the built environment.

Drivers

The UK Biodiversity Action Plan (external website) commits the Government and its agencies to 59 programmes or tasks: to conserve species and habitats; to develop public awareness and understanding; and to contribute to biodiversity work in the European and global context.

Local biodiversity action plans are in place across the country to identify local priorities and to determine the contribution they can make to the delivery of the national Species and Habitat Action Plan targets.

Demonstrating real commitment to delivery of biodiversity programmes can have benefits in a number of areas:

- effective risk management
- legal compliance
- improved reputation of the organisation

- attracting and retaining staff
- demonstrating commitment to corporate sustainable responsibility

The creation of Natural England (external website) in 2006 created a single organisation with responsibilities that include enhancement of biodiversity and landscapes in both rural and urban areas. Promoting nature conservation and protecting biodiversity within the context of sustainable development must now become embedded in all main sectors of public policy. All public bodies now have a duty to have regard to protect and enhance biodiversity.

The next step

Tips, tools and ideas about encouraging biodiversity can be found [here](#)

Purchasing

This guidance focuses upon sustainable procurement and how it can be used to support wider social, economic and environmental objectives in ways that offer real long-term benefits.

Key Drivers

Procurement by the public sector offers opportunities on behalf of both citizens and taxpayers to make a clear contribution towards a more sustainable procurement approach. The purchasing power of large organisations offers a powerful route to implementing sustainable development principles at all stages of the supply chain.

The [Sustainable Procurement National Action Plan](#) was published in 2006 to use the considerable purchasing power of the government estate to move towards a more sustainable economy through stimulating the market for more sustainable goods and services. It provides a flexible framework that allows organisations to assess the quality of their procurement activity and gives a clear route map to better performance. It identifies areas for priority spend where attention should be focused, and it provides specialist toolkits and expert advice and support for public sector procurers.

The National Action Plan's rationale and its framework for action are of direct relevance to FE procurement activities. The action plan therefore provides a valuable resource.

Baseline and Targets

Based on the work of the Government's Sustainable Procurement Action Plan, a number of targets can be set out that are of direct relevance to your organisation.

The focus of the Plan is to achieve behavioural change, acting through a range of initiatives to enable, encourage, engage and, where appropriate, enforce changes to achieve a more sustainable approach to procurement by public sector bodies:

Enable

To achieve leadership commitment to sustainable procurement, set clear priorities, develop capabilities, ensure supportive budgetary mechanisms and put in place a competent and active delivery team.

Encourage

To have incentive systems and internal rewards and to showcase and recognise best practice.

Engage

Particularly through building long-term supplier relations, early involvement with contractors and helping to stimulate innovative approaches to best practice solutions.

Enforce

Ensuring full adherence to relevant legislative or audit requirements, with appropriate sanctions if necessary.

The next step

[Tips, tools and ideas about purchasing can be found here](#)

Transport and Fleet Management

Introduction

A better and more sustainable transport management can have a range of benefits including on the environment and to human health. Transport is an essential part of life, providing mobility and transporting goods. But poor or inappropriate transport systems also contribute to poor air quality (noise and pollution) due to congestion and lack of alternatives to the car. The worst impacts are felt in built up areas. Poor air quality and a build up of traffic can have adverse impacts on health (increase in road traffic accidents; and respiratory impacts affecting the very young, elderly and vulnerable groups); social inclusion (lack of public transport issues will reduce people's access), and on overall quality of life.

Transport also has a significant impact on climate change. It is the biggest single energy user in the UK, and is one of the major sources of emissions of carbon dioxide. Emissions from transport have more than doubled since 1970, and now account for 28% of total UK emissions. Emissions from private cars have increased by

8.5% since 1990, while over the same period road traffic volume increased by 18.5%¹.

For all of these reasons, there is now a strong emphasis on improving the efficiency of use of our transport modes and of minimising inappropriate use of polluting vehicles. Many local authorities actively promote alternative modes of travel instead of the car, such as buses, trains, cycling, car sharing etc. Many companies also support company-wide travel schemes which aim to reduce their impact on the environment as a result of their transport activities.

Many FE providers are also actively initiating transport plans. The rationale for implementing travel plans covers a wide range of areas, but particularly the need to provide access for all as well as reducing the environmental impacts of travel. There are a number of factors encouraging the development of these types of plans:

- Reducing congestion including implications of current or future congestion charging
- Health - encouraging walking and cycling
- Cost savings
- Legislation
- Improved public image education, awareness

The next step

Tips, tools and ideas about transport and fleet management can be found [here](#)

Environmental Management Systems

Introduction

Dealing with the environment is an increasingly complex activity, covering areas as diverse as energy, waste, transport, biodiversity, all to be integrated within the principle activity of the Learning and Skills Sector to provide education and training. **Good environmental management** can help to ensure a more efficient and effective approach for staff and learners alike:

- identifying all relevant environmental issues and assigning responsibility for dealing with them
- developing and implementing standard procedures for managing them
- achieving continuous improvement through target setting and other means
- The business case for implementing an environmental management system (EMS) can provide a number of benefits,

- including
- driving continuous improvement
- managing and reducing risks, both within and external to the FE organization
- commitment from all levels of participants
- greater accountability for delivery actions
- help towards prioritising actions
- achieving cost savings such as in energy and water

Setting the scene

An EMS is a framework that assists an organisation to manage their environmental impacts, both in terms of reducing and ameliorating significant negative impacts and improving positive impacts. It often has positive implications for improving an organisation's image as well as its bottom line.

It is a system of procedures and documentation to manage the environmental impacts of an organisation. It should be appropriate to the organisation, and need not be long or complex.

Developing an EMS starts with an understanding of an organisation's impact on the environment. An environmental policy statement is a clear statement of objectives outlining an organisation's intentions to minimise its impact on the environment. It demonstrates commitment and provides a starting point for action. An audit of existing consumption and management of energy, waste and water sets out an organisation's understanding of its impact on the environment, and identifies objectives and targets for improvement, with a view to implementing an effective EMS or adopting a sound sustainability policy.

An EMS is a voluntary undertaking that can be both informal and formal. The formal route involves external verification and accreditation. In the UK, BS EN ISO 14001 is the most widely used standard and the most popular within the UK, followed by the Eco Management and Audit Scheme (EMAS) as well as BS8555 (Guide to the phased implementation of an environmental management system including the use of environmental performance evaluation).

All of the EMS standards are based upon continuous improvement and follow the Denning Cycle of: plan what you're going to do, do what you planned to do, check that you did what you planned to do, and act to make improvements (IEMA, August 2007, Ebriefing: Environmental Management Systems). This is also discussed in the [Leadership and Management](#) section.

The Government Position

EMS is heavily advocated at the National level by UK Government, with all National Government Departments having stringent environmental management targets imposed upon them under the Sustainable Development in Government Estates (SDiGE) initiative.

Furthermore, in 2005, the Department for the Environment and Rural Affairs (DEFRA) issued a position statement on EMS¹, which advocates the use of EMS for helping both private businesses and public sector organisations reduce their environmental impacts.

The statement incorporates five key messages:

- Organisations should use a robust and credible EMS that is appropriate for improving their environmental and financial performance
- Organisations implementing an EMS should use a national or international standard or scheme
- An EMS should be audited by an independent certifier accredited by the United Kingdom Accreditation Service (UKAS)
- An EMS should help improve environmental and financial performance through the supply chain
- An EMS that demonstrates good management of legislative compliance should be used to help achieve regulatory benefits such as reduced fees and charges

Hence, the overall benefits of implementing an EMS (particularly one that is formally recognised) include, but are not limited to:

- Improving an organisation's bottom line performance. For example, cost savings can be made through cutting energy and fuel consumption as a direct result of managing emissions to air
- To respond to supply chain pressure. Today many companies are facing pressure within their supply chains to become more environmentally responsible. The need for formal EMS is only expected to grow as they are an effective, transparent and accountable means by which companies can demonstrate their environmental commitment and performance, as well as managing compliance
- To boost competitiveness. For example, becoming more environmentally aware may open up new market opportunities Environmental Technologies and Services for example
- To improve public image particularly of those more potentially polluting organisations
- To manage risk and ensure compliance with environmental

legislation and regulations, which will reduce prosecutions and fines as a result of pollution

- To improve health and safety on site due to improved housekeeping and employee awareness of environmental issues and how the impact of their own working practices

¹Defra: Environment Strategy Directorate; Environment, Business and Consumers Division (September 2005) 'Government Position on Environmental Management Systems'

Putting it into Action

Sustainable Design

Table: Voluntary tools and guidance that can be used to address sustainability issues in the built estate

Address environmental/energy/fuel poverty issues	Address all sustainability issues (including wider issues such as land-use and transport)
<p>SAP is the Government's recommended system for energy rating of dwellings. The Standard Assessment Procedure is used for calculating the SAP rating, on a scale from 1 to 120, based on the annual energy costs for space and water heating calculating the Carbon Index, on a scale of 0.0 to 10.0, based on the annual CO2 emissions associated with space and water heating.</p>	<p>BREEAM is the Building Research Establishments evaluation tool that can be used (ideally) at the design stage and following development. Ecohomes is the equivalent for houses. Trained BRE assessors undertake building surveys to rate performance on measures such as materials used and the amount or embedded energy within them; efficiency of lighting and heating (including utilisation of natural lighting and ventilation); power generation and use of renewables and micro-renewables (e.g. solar PV, Solar thermal, geothermal); it also looks at issues such as land use. E.g. physical access issues and flooding and grey water recycling.</p>
	<p>Whole life costing for a building aims to avoid focusing on short term cost savings at the expense of longer term benefits. Good environmental practice usually goes hand in hand with good economic practice. Measures to reduce the consumption of energy and water not only benefit the environment by reducing emissions and conserving resources, but will also result in substantial financial cost savings over the lifetime of the building. The cost of energy and water are likely to rise significantly faster than Retail</p>

	<p>Price Index over the coming decades as resources become scarcer and environmental controls on utility companies increase. Cost savings that might seem marginal at today's prices could well increase considerably as these price rises come into effect throughout the life of the building</p>
<p>The Green Guide to Specification (BRE) is a publication providing guidance for specifiers, designers and their clients on the relative environmental impacts of over 250 elemental specifications for roofs, walls, floors etc.</p>	<p>OMSH House builders Toolkit has been created by WWF, sponsored by asset manager Insight Investment, to provide clear guidance for house builders seeking to address a wide range of sustainability issues. The toolkit, compiled by Upstream tackles a variety of concerns including climate change, community involvement, the sustainable use of materials, and waste. It is available free of charge.</p>
	<p>The Regional Sustainable Development Framework is used to highlight the economic, environmental and social impacts of policies, development proposals and other new initiatives within the region (s) and provide information which can help to improve them from a sustainability perspective. It can be used as the basis of an appraisal framework for a Strategic Environmental Assessment/Sustainability Appraisal which are increasingly being used for large and small developments</p>
	<p>Sustainability Appraisal/Strategic Environmental Assessments are increasingly used to appraise the wide sustainability issues of developments at the design stage (e.g. master plans; and housing development) and provide useful recommendations and mitigation ideas to incorporate into the final design, for example access</p>

	<p>issues (such as ensuring there is good access by sustainable modes of transport) ;land use flooding issues (such as use of SUDS); energy issues (for example exploring integration of micro renewables into design; ensuring all houses are built to at least Ecohomes 'very good'; ensuring building materials have low embedded energy) etc</p>
	<p>Environmental Impact Assessment processes could be used more informally in improving the sustainability performance of developments (see comments made above for Sustainability Appraisals and Strategic Environmental Assessment.</p>
<p>Part L (1 and 2) of Building Regs The revisions to Part L set maximum carbon dioxide emissions for whole buildings. The regulations will apply both to the construction of new buildings and renovation of existing buildings (with a total surface area over 1,000m²). For new buildings, it is anticipated that Part L will reduce carbon emissions by 25% from 2002 standards which already reduced emissions by 15%. The net reduction of 40% from pre2002 is often used as an indicator of improvement</p>	<p>Considerate Constructor's Scheme this is a scheme developer's on which developers can register to demonstrate their consideration for local neighbourhoods and the environment and therefore contributes to a wide range of sustainability issues, for example, it encourages developers to use and procure resources wisely; reduce pollution associated with construction activities; limit noise and visual impact associated with construction; it also contributes towards the social dimension of sustainable development for example, it urges developers to respect neighbours; and to observe safety.</p>
	<p>Sustainable design and construction: Guidance for planners on preparing development plan policies at the local and regional</p>

	levels. (Sustainable Homes forum).
envest2 is the new improved version of BRE's tool for environmental impact and whole life costs analysis for buildings.	Sustainability Works is an online software package. It is specifically designed to help housing professionals and their partners deliver sustainable development efficiently, from policy level to project delivery.
RETScreen Project analysis software is effective and free Canadian software. It can be used worldwide to evaluate the energy production and savings, lifecycle costs, emission reductions, financial viability and risk for various types of energy efficient and renewable energy technologies (RETs).	Life cycle analysis looks at the environmental impacts of a product throughout all stages of its production; use and disposal.

The most widely adopted voluntary standard within buildings design and management is the Building Research Establishment's family of **BREEAM (BRE Energy Assessment Model) tools**. These set stringent standards to which the energy and environmental performance of new or existing buildings is rated by trained BRE assessors. Excellent is the highest score, although all new builds (mainly over 1000 m²) should at the very least aim for a very good rating where there are explicit reasons for this. For new buildings, BREEAM should be considered from the building's outset design stage.

Renewable Energy Options

The table below gives an example of costing renewable energy technologies and is an approach that can be used for a number of projects across all of the topics in this and other sections

	ACTIVE SOLAR	WIND	HYDRO	BIOMASS
TYPE OF INSTALLATION	Photovoltaic (PV) panels for electricity or water/evacuated air panels for	Wind turbines providing electricity from small diameter 50w to large	Ranges from small microhydro turbine running off constant	Straw, wood or various fast growing crops can be harvested for

	heating/ hot water	commercial turbines providing 0.5mw or more	stream with a drop to large commercial dams and river installations	burning to create energy
EASE OF INSTALLATION	Can be installed as part of roof (new build) or retrofitted Replumbing required for existing water tank only appropriate for south facing roofs with minimum pitch of 30°	Depends on size Larger installations require large foundations and should be sited at a distance from any dwellings	Easiest with small stream and high head of water requires pipework and concrete work to house turbine	Requires large amount of land sited near to fuel burning facility. 300500m ² of coppice for space heating one dwelling
HEATING REGIME REQUIREMENTS	Solar panels most effective in summer (up to 80% of hot water supply). Best with low constant heating. PVs not effective for heating.	Provides renewable energy for electrical heating most effective in winter heating demand should be relatively constant as there is an energy storage limitation.	Provides renewable energy for electrical heating most effective in winter. Energy storage limitations. More reliable than either wind or sun.	Best for hot water only rather than space heating PVs not effective for heating. Effective all year round, but requires storage space (5m ³ per dwelling per year for wood)
EMBODIED ENERGY PAYBACK	712 years	0.5 years	N/a (?)	Minimal
AESTHETICS	Problems of integrating panels on existing stock in	Needs careful siting in rural areas. Does not affect	Pipe work should be underground ideally turbine house and	Monoculture cropping can look unsightly and out of place as well

	urban/conservation areas	dwelling	dams need integration with landscape	restricting views . Fuel storage issues
FINANCIAL PAYBACK	10-15 years for water panels Photovoltaics do not payback over their lifetime yet	Depends on size larger installations pay back more quickly 7.5-12.5 years	Small scale systems can pay back within 7-8 years	8-10 years depending on size of scheme and species planted
LIFE CYCLE IMPACT AND HEALTH	Minimal health Impacts; Clean technology; Some environmental impact from products	Beating noise can be intrusive if sited to close to housing, otherwise clean technology; some environmental impacts from turbines	Minimal health impacts clean technology microhydro has minimal environmental impact larger schemes have more impact	Fuel must be burnt cleanly avoid toxic emissions possible impact on biodiversity
MAINTENANCE	Life expectancy of panels 15-20 years; servicing required	Life expectancy of turbines can be 20 years or more; servicing required	Very long life expectancy turbines can run for 30-60 years; minimal maintenance	Requires intensive input for harvesting and maintenance crops

Using Energy Efficiently

Reducing energy use

There is a wealth of information available on ways to reduce energy use. The starting point for assistance is the [Carbon Trust](#), which provides free, practical help and advice on saving money by reducing energy use. The Carbon Trust's website contains a comprehensive suite of fact sheets, technical guides, posters and other material. Some guidance is developed specifically for the HE and FE sector.

The Carbon Trust also provides support for individual organisations, including:

- Free onsite energy surveys or detailed assessments of specific

- energy efficiency issues.
- Design advice professional, independent and objective advice covering energy efficient and environmentally conscious building design. The service provides one day of general project consultancy, paid for by a cash-back scheme.

Reducing energy costs

The main barriers that reduce the uptake of energy efficiency measures are generally considered to be lack of capital, lack of staff time and the fact that departments are generally unaccountable for energy costs. But the increasing profile being given nationally to rising energy costs and the impact of energy use on climate change means that these barriers need to be tackled across the organisation in order to achieve real energy efficiency savings.

Despite the strong drivers from fiscal and regulatory measures, and the financial impact of rising energy prices, the direction of energy use from FE system buildings is likely to be upwards for the foreseeable future. This is because educational establishments are becoming more and more energy intensive, particularly because their use of energy-intensive IT equipment is greater, and they use more energy intensive equipment for research. Consequently older buildings incorporate air conditioning or cooling equipment to ensure acceptable ambient temperatures, while newer buildings may incorporate these services as standard. In addition, working hours are often longer, and buildings are used more intensively and, in some cases, for community use outside normal operating hours.

The importance of continuing to improve energy efficiency is therefore critical to minimise unnecessary rises in energy usage. Larger energy users may be able to reduce their energy costs, or obtain grants or loans through which they can make investments for longer-term energy savings opportunities.

There are a number of ways to obtain exemption from the Climate Change Levy: for FE organisations, the most relevant exemptions are applied if energy is provided through a good quality combined heat and power scheme, or if the energy is provided from renewable sources. There are a range of grant schemes that may provide some financial support towards installing these types of installation, such as through the [DTI's Low Carbon Building Programme](#) or from local or regional funds. Community-related projects may also benefit from the [Energy Savings Trust](#) which has a wealth of information and experience in related areas.

Conserving Water

Good practice in water management takes the following steps:

- Establish levels of water use using water meters, with regular monitoring.
- Eliminating leaks checking for underground water losses, taps left running, taps dripping, urinals flushing continually, etc.
- Reducing unnecessary water usage such as wasteful or inappropriate grounds watering or overzealous wash-down of hard standings.
- Monitoring progress relating to water consumption over time.
- Recycling grey water and rainwater

There is a wealth of information about ways to reduce water use available from the government-funded organisation Envirowise.

Envirowise

Produce guidance fact sheets and technical support documents about how to approach and implement water savings initiatives, from easy, no-cost actions through to ways to invest in cost-effective savings.

Early actions to minimise water use can include the following types of actions:

- Encourage good housekeeping and efficient use of water in all areas;
- Fit flush controls to urinals in gents' toilets
- Fit percussion taps to turn off water automatically in washrooms; and
- Fit pistol grip controls to hosepipes.

More specific information is also available through Envirowise including events, workshops and site visits.

The Environment Agency

Publishes a range of free literature relating to water conservation and demand management. The information includes details of implementing a water management plan in buildings, cost benefits of investing in water efficient technologies, opportunities from investing in greywater recycling systems, and case studies.

Reducing Waste

The Environmental Association for Universities and Colleges has produced [an online Waste Management Guide](#) that is targeted directly at FE and HE (FHE) providers. The guide does not attempt to provide comprehensive advice on managing every possible waste

arising from FHE organisations, but aims to provide a framework for building a waste management system and then provides useful signposting to other sources of more detailed information where appropriate. It gives guidance on developing a structured approach to waste management within an educational environment, advice on arranging and contracting for disposal of waste, and information about different types of waste likely to be encountered for disposal.

There are a number of main steps to developing and implementing an effective and sustainable approach to waste within the management of your buildings and estates:

- Assess your current waste how much waste is produced, what types of waste are produced, which departments produce which types of waste, where is the waste disposed to
- Identify opportunities for savings use the waste hierarchy to identify where waste can be eliminated, reduced, reused, recycled
- Establish priorities for action to establish some “quick wins”, which activities would achieve the greatest results (e.g. volume/weight of waste, value of disposal costs saved); the fastest results and which would have greatest impact on staff and learners?
- Set targets, agree data collection requirements
- Implement waste minimisation and waste management actions
- Monitor progress
- Review the results, identify successes
- Promote achievements, implement continuous improvements to the waste management plan

Encouraging Biodiversity

This guidance provides an overview of the key drivers and issues relating to biodiversity that can be a reference for FE providers and for those with curriculum responsibilities in your organisation. It describes how biodiversity can be fully integrated into the management of your estate and how it can also be incorporated into the overall learning provision relating to sustainable development.

The EAUC's practical guide on Biodiversity on Campus

The EAUC's practical guide on Biodiversity on Campus set out a three-stage approach to taking action on biodiversity which you should apply in your organisation:

Creating:

- new habitats and wildlife opportunities
- greater awareness of biodiversity across the FE organisation
- benefits for staff and learners
- new partnerships within the FE organisation and with the wider community

Enhancing:

- wildlife
- local biodiversity
- the work and study environment for staff and learners

Maintaining:

- wildlife habitats
- healthier campuses
- interest in environmental issues

Guidance on developing biodiversity action plans can also be found on [the Business and Biodiversity Resource Centre's website](#), on which there are a number of publications relating to biodiversity and sustainable development.

Purchasing

By working through the sources of guidance below, you will gain a better understanding of how your procurement actions can make an important contribution towards advancing sustainable development within your organisation. The sources below provide guidance on identifying opportunities for increasing the sustainability of your procurement choices.

Action Sustainability

[Action Sustainability](#) is a Social Enterprise set up to lead and inspire sustainable procurement. It supports and facilitates the Strategic Supply Chain group, a leading authority on sustainable procurement whose members are Directors and Senior Managers from the UK's leading private companies, government departments, professional institutes and academic organisations. It provides the latest thinking on sustainable procurement and is a good place to start.

Forum for the Future's 'Sustainable Procurement Process'

Forum for the Future has developed a flowchart "The Sustainable Procurement Process" It shows the key steps involved in improving sustainability of procurement, as follows:

- Reduce demand

- Specify sustainability
- Favour sustainability
- Improve suppliers

[Forum for the Future](#) is working with a number of public sector organisations, including councils and NHS trusts, to develop and implement a greater quality of sustainable procurement.

[OGCbuying.solutions](#)

[OGCbuying.solutions](#), the trading arm of the Office of Government Commerce (OGC), is one of the latest public sector organisations to join Forum for the Future. Over the next three years Forum for the Future will be working with OGC buying.solutions to increase its sustainability credentials and improve the sustainability aspects of the goods and services made available to the public sector under its contracts. Working in partnership, Forum for the Future will be developing OGC buying.solutions' Sustainable Development strategy, reviewing its policies and creating a sustainable procurement toolkit for category and contract managers, to ensure sustainability is built into procurement processes.

Transport and Fleet Management

Supporting initiatives

[The Energy Savings Trust](#) is the main source of information, advice and support on ways to improve your transport management.

The Energy Saving Trust works to cut greenhouse gases and air pollution from the road transport sector. It promotes cleaner, lower-carbon vehicles and fuels, eco-friendly driving techniques and low-carbon transport alternatives. It offers a free fleet consultancy to any organisation running at least 50 vehicles, to provide practical advice on how to reduce fleet costs, cut vehicle emissions, improve social and environmental relations, and minimise traffic and parking problems.

[Sustrans](#), a leading sustainable transport charity, works with schools to establish cycle routes and improve public transport.

Engaging with staff and learners

Much of the emphasis will involve your organisation focusing on engaging with staff and learners to encourage them to take a more sustainable approach to their mobility. This could include:

- best practice urban design on and off campus to minimise the need for cars
- reducing the need to travel e. g. using videoconferences

- car sharing this may need better planning for meetings, events etc
- improving access to alternatives to the car
- walking or cycling particularly where trips are only one or two miles in length
- integration with public transport working with local transport providers to ensure clean, safe, reliable and accessible public transport that is closely integrated with the FE estate
- providing subsidised public transport / cycle purchase support
- fleet management audit
- encouraging advanced car driving techniques which can reduce fuel consumption by up to 25%

Additional options could include considering adopting highly fuel efficient cars for the organisation's fleet such as alternative fuels, electric hybrid. You should also take care to address the issue of your "grey fleet" this refers to staff who use their own cars on official business.

Environmental Management Systems

The government-funded organisation Envirowise provides a range of documents guiding the preparation and implementation of writing environmental policies. Although mainly targeted at industrial companies, the guidance is of relevance to the Learning and Skills sector as well.

As a general rule, it suggests that the policy should contain statements on the following criteria:

- a commitment to continuous improvement
- recognition of compliance with relevant environmental legislation as a minimum level of performance
- the education and training of staff in environmental issues and the environmental effects of their activities
- the monitoring of progress and review of environmental performance on a regular basis (usually annually)

The policy statement can include any areas of relevance. For the FE system, areas will include energy, waste, water and transport.

You should also read the [Section on Leadership and Management](#). This will help you understand where an EMS can sit within the wider sustainable development priorities for your organisation.

Resources Websites and Case Studies -

Building & Estates

Resources

LSC Embedding Sustainable Development in the Curriculum

The LSC publication Embedding Sustainable Development in the Curriculum provides guidance and support for staff within learning institutions seeking to embed sustainability into the curriculum.

Sustainable Operations in Government

This is run by the Sustainable Development Unit in Defra, and is the government's own view on looking after its estate sustainably.

Building Colleges for the Future

The LSC's National Capital Strategy 2008/9 - 2010/11

Carbon Footprinting: An Introduction for Organisations

An introduction to what, why and how from the Carbon Trust.

Carbon Trust support

Information about the support offered by the Carbon Trust

Carbon Trust: Assessing the energy use in your building

A guide to assessing your energy use

Carbon Trust: Energy Management Priorities

A self-assessment tool

Commissioning Sustainable Construction in Further Education Colleges

A guide commissioned by AOSEC (Association of South East Colleges)

Conserving Water: An AOSEC guide

A guide to conserving water in FE colleges, written by the Association of South East Colleges

EAUC EMS Paper

This paper explores the uptake of Environmental Management Systems in universities

EAUC Sustainable Procurement Project (EAF)

These are the tools and resources from this 3 year Defra-funded project

Essential Guide to Travel Planning

This guide was published by the National Business Travel Network

Fairtrade

An EAUC Presentation

Hazardous Waste Insight Guide

The EAUC's Insight guide to the Hazardous Waste Directive that came into effect in 2005

[How to Save Energy in Further Education Colleges](#)

How to Save Energy in Further Education Colleges

[How to Save Water in FE colleges](#)

A guide written by the Oxford Institute for Sustainable Development

[Quick Wins List](#)

Market Transformation's Quick Wins List

[Sustainable Procurement Action Plan](#)

The Government's Sustainable Procurement Action Plan

[The EAUC's practical guide on Biodiversity on Campus](#)

The EAUC has produced a guide to provide advice and support to universities and FE providers about incorporating biodiversity into their environmental management considerations

[Value for Money Unit: Department for Children, Schools and Families](#)

A good practice guide for schools, offering advice and guidance on energy and water management, that may have some relevance to FE providers

[Waste Strategy for England](#)

The Government's 2007 Waste Strategy

[Watermark](#)

A benchmarking study, carried out in 2000-03

[WEEE Insight Guide](#)

The EAUC's Insight guide to the Waster Electronic and Electrical Equipment Regulations that came into effect in 2007

[Whole Life-Costing](#)

Transforming Government Procurement, published by HM Treasury in January 2007

[Display Energy Certificates Insight Guide](#)

This EAUC Insight Guide is essential in helping anyone responsible for buildings or energy in the education sector to understand what is required of them under the new regulations, including the requirements for Display Energy Certificates in education.

[From Here to Sustainability](#)

The Learning and Skills Council's Strategy for Sustainable Development

[Securing the Future](#)

The 2005 UK Government Sustainable Development Strategy

[Sustainable Development Guidance for Estate](#)

Management

A guide published by the Scottish Funding Council
[Sustainable Development in Government](#)

2006 report on sustainable operations within the Government estate, written by the government's independent watchdog; the Sustainable Development Commission.

[Useful Websites - Buildings and Estates](#)

Case Studies

[City of Sunderland - Usworth Sixth Form College](#)

From the LSC Design Guidance website, a new building which looked at how energy could be minimised in its lifetime

[Elmwood College](#)

This CaSPr case study looks at using the Curriculum to Implement ISO14001.

[Elmwood College Case Study](#)

This case study from the Scottish Government details Elmwood College's approach to land management

[Enfield](#)

From the LSC Design Guidance website, a new building with a variety of sustainability features incorporated.

[Lauder College](#)

The ECO Space Project

[Orkney College](#)

This case study looks at how they implemented a recycling scheme at this rural college

[Aberdeen College Recycling Waste Aware Campus Case Study](#)

Aberdeen College have a policy of ensuring that all college based paper productions are printed on post consumer waste de-inked recycled paper.

[Blackpool and The Fylde College: Sustainable Procurement – Building Capacity](#)

This case study provides an excellent example of how a college can influence it's members of staff to think about sustainability through training and the implementation of a strong procurement policy

[City of London Academy: Post Occupancy Evaluation](#)

This case study is a product of 'Building for the Future', an inter-regional collaboration programme, which aims to achieve balanced

and sustainable economic growth.

[Cleaning up your impact at Castle College](#)

A very useful example of how an institution can identify and procure affordable and sustainable cleaning service providers.

[Glasgow Metropolitan College's Recycling Projects - Waste Aware Campus Case Study](#)

The college introduced recycling facilities in partnership with Glasgow City Council Environmental Protection Services.

[Merton College, London: Post-Occupancy Review](#)

A review of a recently-completed FE building. The aim of the study is to evaluate the building by undertaking a post-occupancy evaluation and share the evidence-based lessons within the further education sector.

[New Education Centre is Sustainability Exemplar - Derbyshire Adult Community Education Service](#)

An example of how a group of partners can come together to find funding and create a sustainable building and deliver a sustainable curriculum.

[New system saves time and money at City College Plymouth](#)

Employing modern technology and having the right service providers can help an organisation significantly reduce energy and water consumption, as well as saving money.

[Sustainable Procurement at Durham](#)

This case study demonstrates how important a sustainable procurement policy can be to an institution, both environmentally and financially.