Raising standards:
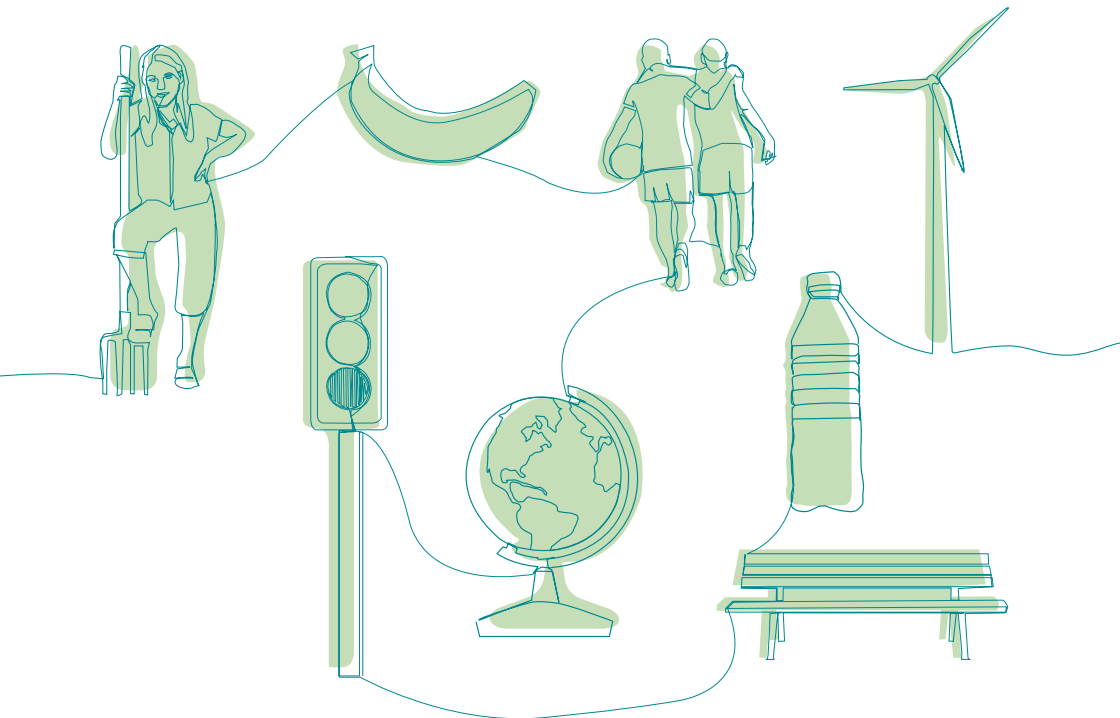# Making sense of
the sustainable
schools agenda

Raising standards:
Making sense of the sustainable schools agenda

Editors
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Audience
It is hoped that this publication will be of value to headteachers, senior leadership teams and governors of specialist schools and all those responsible for driving forward the development of sustainable schools.

Mission of the Specialist Schools and Academies Trust
The Specialist Schools and Academies Trust works to give practical support to the transformation of secondary education in England by building and enabling a world-class network of innovative, high performing secondary schools in partnership with business and the wider community.

Acknowledgements

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Preface

The Specialist Schools and Academies Trust (SSAT) believes that schools and practitioners can be enabled 'to take the appropriate steps 'Becoming a Sustainable School' through a dedicated school-led network of professional learning, mutual support, challenge, innovation and dissemination. The SSAT is developing a programme that will allow schools to become system leaders – to reorient the education system, as they develop, implement and share outcomes to encourage, empower and support others to meet the expectations of the National Framework for Sustainable Schools.

The underlying vision for this programme is to create a powerful strategic partnership encompassing schools, non-government organisations and industry that will:
- enable and encourage schools to become models of sustainable best practice;
- enhance teaching and learning through active and inclusive approaches to education for sustainability; and
- equip young people and local communities with the drive and capability to safeguard the future

I am delighted that Professor William Scott agreed to respond to the SSAT challenge to help find a way to share this belief, and to help the SSAT engage with more headteachers to secure their desire to empower their schools to embrace this agenda.

The powerful argument in this paper provides a rigorous intellectual framework that we hope will be of value to schools in helping them understand this agenda and provide the driver for a commitment to sustainable development as a core component of whole school improvement.

Mike Goodfellow
Head of Community Development, Specialist Schools and Academies Trust

1 Introducing the idea of sustainable schools

A brief background

Although the DCSF's sustainable schools initiative is relatively new, it builds on many years of school interest and activity in relation to environmental, development and (global) citizenship education. This has been supported by national policy initiatives from government (DfES, Defra, DfID), from QCA and Ofsted, and now from the DCSF, the National College for School Leadership (NCSL) and the Specialist Schools and Academies Trust (SSAT), and there has also been much commitment from a wide range of non-governmental organisations (NGOs) and charities, and support from business, universities and the professions. Although the analysis of exactly what the issue is that all this addresses, and what might be done about it, varies considerably, the underlying emphasis usually depends on one, or both, of two propositions, though these may be entwined in a variety of ways:

1. there is a growing problem in the relationship between humanity and the environment in that the way we are living is over-taxing the biosphere's ability to support us in terms of the goods and services it provides; eg, mineral, biological and food resources, fresh water, clean air, etc.

2. there is a growing and now critical problem in the inequalities between peoples, both within nation-states and across the world, in terms of the quality of life we are able enjoy. One influential way of thinking about this is in terms of the capability we have, as Amartya Sen (1999) puts it, 'to choose a life one has reason to value'.

The first emphasis is grounded in physical reality, in biological systems, and in thermodynamics: there are real biological and chemical processes that take place which need to be protected, and there will be real limits, ultimately, on what humans are able to do in terms of exploiting natural resources. The second is grounded in a morally-based, social justice argument which sees

a duty of care towards all humanity. Both are future-focused in the sense that what we do or don't do now will inevitably influence the abilities of future generations to live fulfilling lives.

Although these emphases can be conceptualised in a distinct fashion, as has been done here: the first as environment, the second as development/ citizenship, on the ground they are intertwined as has been noted. Examples include the effects of climate change on animal, plant and human migration, conflicts over access to water, oil and other natural resources – and the debates that we are all increasingly aware of concerning the large environmental impact of already-developed countries. At present these tend to emphasise climate change, and the need for Western Europe and North America not only to make a tangible difference, but also to be seen to take a moral lead in doing so.

Sustainable development

Over the last 20 years it is the idea of sustainable development that has come to be seen in policy circles across the globe (e.g., the UN and its agencies, national governments, international NGOs) as the most appropriate way to conceptualise this range of socio-economic-environmental issues that threaten both the integrity of the biosphere and human well being. Sustainable development has been defined in many ways but the most familiar definition remains that given by the World (Brundtland) Commission on Environment and Development (WCED, 1987) which saw it as a process of change with the future in mind. The UK Government, in its 2005 strategy for sustainable development, *Securing the Future*, set out its long-term aims for development in the UK.

Here, the government's immediate priorities for action were:
• sustainable consumption and production – achieving more with less
• natural resource protection and environmental enhancement – protecting the resources on which we depend
• sustainable communities – creating places where people want to live and work, now and in the future, and
• climate change and energy – confronting the greatest threat

In this strategy, the goal of sustainable development was defined in this way:

> to enable all people throughout the world to satisfy their basic needs and enjoy a better quality of life, without compromising the quality of life of future generations.

Although there are continuing problems with definitions and meaning, the term sustainable development has been found useful because of an underlying view that it is the very processes of human socio-economic development that are actually environmentally unsustainable (PSI, 2007). The sustainable, in sustainable development, focuses attention on the environment and the impact of development.

However, a perhaps more accessible, and therefore more useful view – it is an explanation rather than a definition – of sustainable development is that contained in the government's response (DfES, 2006a) to its consultation about a framework for dealing with sustainability issues in schools:

> Sustainable development is a way of thinking about how we organise our lives and work – including our education system – so that we don't destroy our most precious resource, the planet. From over-fishing to global warming, our way of life is placing an increasing burden on the planet, which cannot be sustained. Things which were once taken for granted such as a secure supply of energy or a stable climate do not look so permanent now. If our prosperity is tied to the health of the planet, then no one's well-being is secure unless the environment is protected. If we cannot prosper in a world that suffers from poverty, inequality, war and poor health, then our future is intimately bound up in the future of other people and places. Sustainable development means inspiring people in all parts of the world to find solutions that improve their quality of life without storing up problems for the future, or impacting unfairly on other people's lives. It must be much more than recycling bottles or giving money to charity. It is about thinking and working in a profoundly different way.

It is this idea of 'thinking and working in a profoundly different way' that is key here, which is why education in general, and school education in particular have long been seen by many as key to bringing about a sustainable future, whether one starts from an environmental or development perspective.

Sustainable development, education and learning: the UNESCO decade

Through the 1990s, and continuing into this present decade, education and training interventions (and hence the learning accruing from these) have been seen as important strategies within sustainable development policies, especially by UN agencies. In 2002, a Decade (2005-2014) of Education for Sustainable Development (ESD) was agreed by the UN, with UNESCO designated as lead agency. The UN Decade aims to promote education as a basis for a more sustainable society and to integrate a consideration of sustainable development into education at all levels, and into all areas of life including communities, the workplace, and society in general. The UN Decade website says that ESD is about learning to:

• respect, value and preserve the achievements of the past
• appreciate the wonders and the peoples of the Earth
• live in a world where all people have sufficient food for a healthy and productive life
• assess, care for and restore the state of our planet
• create and enjoy a better, safer, more just world, and
• be caring citizens who exercise their rights and responsibilities locally, nationally and globally

UNESCO's overall goal for ESD is to build capacity to work for sustainable futures; to make people better informed; ethical; responsible; critical; and willing to take social action, based on an integrated approach to economic, social and environmental issues. In 2006, UNESCO identified four thrusts of ESD:

1. improving access to quality basic education
2. reorienting existing education to address sustainability
3. developing public understanding and awareness, and
4. providing training programmes for all sectors of private, governmental, and civil society

The DCSF's sustainable schools initiative is mainly focused on the second of these, but it also has an emphasis on the third as it sees the interaction of schools and their communities as key aspects of the initiative, and suggests that schools can lead by example and help steer communities into living more sustainably.

The DCSF's sustainable schools initiative

In May 2006, the government issued a consultation paper: *Sustainable Schools for pupils, communities and the environment; delivering UK sustainable development strategy* (DfES, 2006b). The paper began:

> DfES has reaffirmed its commitment to sustainable development by publishing a two-year action plan to achieve outcomes to underpin a sustainable society. Schools are a key strand of this action plan and are invited to become models of sustainable development for their communities. This consultation paper seeks views from schools and their stakeholders on how we can work together to turn issues like climate change, global justice and local quality of life into engaging learning opportunities for pupils – and a focus for action among the whole school community.

The key ideas here are [1] the connection between action and learning: between what the school does, as a community, and what the people in it: students, staff, governors, can learn; and [2] the way that schools can model sustainable ways of working for the wider community. The links to *Every Child's Future Matters* (ECM), through the principle that every child should have the opportunity to positively shape society, and their own future, are clear, and central. See also *Every Child's Future Matters* (SDC, 2007) for a comment on the ECM area with sustainability in mind.

The sustainable schools initiative comes at a time of unprecedented national policy commitment to the idea of sustainable development, and when media interest is not just at its strongest ever, but seems unlikely to diminish in intensity. There is also evidence that families are taking a greater interest in sustainability matters, for example: waste reduction, recycling, fair trade, reducing food miles, conservation, local sourcing of goods, carbon off-setting, etc, and so this is a time when the potential for significant cross-fertilisation between communities, families and schools, and hence the sort of mutual enabling of activities and progress that the sustainable schools framework envisages, would seem to be high.

In a speech on climate change, in May 2004, Prime Minister Tony Blair said:

> Sustainable development will not just be a subject in the classroom: it will be

in its bricks and mortar and the way the school uses and even generates its own power. Our students won't just be told about sustainable development, they will see and work within it: a living, learning place in which to explore what a sustainable lifestyle means.

Section 4 of the DfES consultation put it more bluntly:
There are good reasons for schools to embrace sustainability, from improving pupil motivation to saving money.

There were 870 responses – a figure considerably in excess of the norm for DfES consultations. 347 responses were from students, 160 of whom were under 11. The report on the consultation (DfES, 2006a) contains quotes from both adults and young people and summarises the latter's views in this way:

- frustration with the state of the environment in their communities, typically road danger, noise and pollution; vandalism, litter and graffiti; and destruction of nature for building/industry.
- concern over anti-social behaviour, from racism to vandalism and litter, and a lack of respect demonstrated by young and old people alike.
- concern at the continuing presence of poverty and injustice in the world, and the backdrop of war.
- anger at the careless use of natural resources at the expense of future (their) generations; unthinking pollution militating against their quality of life; and a sense that adults are uninterested in the issues.

Much of this report is taken up with a further consideration of the sustainable schools strategy in the light of the consultation; some ideas are repeated; others built on. There's a quote from Alan Johnson which re-emphasises the action – learning – modelling point that's at the heart of the sustainable schools idea:
Schools are there to give children the knowledge and skills they need to become active members of society. Many children are rightly worried about climate change, global poverty and the impact of our lifestyles. Schools can demonstrate ways of living that are models of good practice for children and their communities. They can build sustainable development into the learning experience of every child to encourage innovation and improvement.

The report re-emphasises a point made in the consultation, that a sustainable school is one that is guided by the principle of care for oneself, each other (across cultures, distances and time), and the environment (both far and near). The report stresses that there are different ways of approaching the task of building a sustainable school, noting that most schools are already working on aspects of this, even if they don't recognise what they are doing as sustainable development.

The challenge

All the above paints a positive picture of initiatives and activities. There are a number of caveats to all this, however:

Policy commitment

The national policy commitment to this area of work has, over time, involved a number of ministries, and this remains the case today with both DCSF and DfID encouraging and supporting work in schools. The sustainable schools initiative is obviously not the only or main priority for DCSF because of continuing concerns about low levels of achievement in some schools, and the impact of these on national economic competitiveness. Therefore, neither can the initiative be seen as an over-riding priority for headteachers and schools, except where they can see how focusing on sustainability can raise standards. The core argument of this paper is that this is not just desirable but also possible.

Embedded experience

Although there is much embedded experience in schools of environmental /development/citizenship issues, it is not well distributed across schools, and it tends to be fragmented between subject disciplines and in relation to preferred foci: environment, development, etc. Understandably, there is a history of fairly minimalist approaches to these matters, with sometimes a single, and usually lightly-resourced, co-ordinator carrying responsibility, and little across-the-school development takes place in such circumstances, or without the direct involvement of school leaders. Despite the growth of targeted external award schemes (eg, EcoSchools, Sustainable Schools, International Schools, etc), more evidence is still needed to show how the

schools receiving these have actually reoriented their work and outlook to any significant degree. We are now seeing the emergence of case studies of school practice which should shed light on these questions.

Risk in partnership

The potentially very valuable support provided by business, NGOs and other organisations can come at a price as they have agendas of their own, and schools need to be careful in terms of the provisions of sections 406 and 407 of the 1996 Education Act which, respectively, prohibit the promotion of partisan political views, and require that when political issues are brought to the attention of students, they are offered a balanced presentation of opposing positions. The last point obviously applies to any teaching as this area is replete with values conflicts and contradictory information and opinion to which the media add on a daily basis. Sophisticated approaches and skilled teaching are needed here, but little professional development has taken place in relation to these issues. The recent High Court action against the DCSF in relation to the distribution of the film: *An Inconvenient Truth* to all secondary schools has reinforced the need for schools to tread carefully in such politicised areas – see Teachernet (2007c). As not all families recognize the importance of sustainability, schools need to ensure that the education they provide does not become proselytisation. This is especially the case where a school fully endorses the sustainable schools initiative.

Barriers to change

Some commentators see the very idea of a sustainable school, for the foreseeable future, a contradiction as, they see progress towards this ideal being blocked by existing structural and political frameworks that schools are powerless to change by themselves.

The opportunities

There are, of course, embedded in the above many reasons why schools should seize the opportunity presented by the sustainable schools initiative. Here are some of the obvious ones:

No contradiction

There are no necessary contradictions between the idea of sustainable schools and the priority of raising standards. The idea of socio-environmental sustainability embodies issues and challenges that are not only accessible to all, but which are also appropriately intellectually demanding and which enable the development of understanding, skills and dispositions. The real-world issues they deal with are motivating for students.

Controversial issues

This whole (socio-environmental sustainability) area is deeply controversial, and raises many ethical issues not only in relation both to how we live (and might live), but also in relation to how we teach. For some, it calls into question the purpose of schools and the meaning of curriculum.

Champions needed

The sustainable schools initiative needs championing and significant leadership on the ground. Individual schools, working in partnership with community groups, are well placed to make significant contributions to understanding.

A learning process

The sustainable schools initiative needs to be an exploratory one with clear views about learning at its heart, and some argue persuasively that sustainable development makes no sense unless it is conceived of as inherently a learning process. Currently, we do not know anything like enough about what is possible, practicable, and desirable. We need evaluated practice in order to learn about what we can sensibly do.

Across the curriculum

Issues relating to sustainability are found right across the curriculum, in the whole school context, and in relations with the wider world, both locally and globally. Good practice and exemplary models of development will involve all these.

A year of action

The DfES designated 2006/7 as a sustainable schools Year of Action (DfES 2006c; Teachernet, 2007d), by the end of which it was hoped that:

- all schools would have received information about the sustainable schools strategy
- at least 60% of schools would have addressed the goals of the strategy in their school development plans
- 90% of schools taking action on sustainable development will consider that the action has had, or will have had, a measurable impact on students' knowledge and understanding of sustainability issues and/or improved the schools' environmental performance

The next chapter examines what government is proposing in relation to the eight sustainable schools doorways, the vision statements that these embody, DCSF thinking about each doorway in terms of curriculum, campus and community, and the learning and other outcomes that are desired. The chapter ends with a critique of the idea of doorways from six perspectives.

2 Sustainable school doorways and DCSF vision

Introduction

The DfES consultation paper set out a national framework for developing sustainable schools through which every school was invited to consider its achievements so far and plan what more it could do over the longer term to help the government meet its 2020 sustainability targets. The paper also set out eight aspects of the work of a school which it termed 'sustainability themes' or 'doorways' in which action could be taken, and learning occur. These doorways are shown in Table 2.1.

Table 2.1 The 8 doorways

Food and drink	Energy and water
Travel and traffic	Purchasing and waste
Buildings and grounds	Inclusion and participation
Local well-being	The global dimension

Teachernet (2007a) says:

The National Framework introduces eight 'doorways' through which schools may choose to initiate or extend their sustainable school activity. It focuses on ways in which sustainable development can be embedded into whole-school management practices and provides practical guidance to help schools operate in a more sustainable way.

Each doorway may be approached individually or as part of a whole school action plan, though undoubtedly schools will find that many of the doorways are actually interconnected. For example, an interest in food and drink may see schools start growing their own fruit and vegetables in the grounds,

which ties in to composting and conservation, both of which are features of the buildings and grounds component. This, in turn, may spark an interest in other activities such as waste and recycling (relevant to consumption and waste) or collecting rain water and renewable energy watering systems (the energy and water component). While a collective, whole-school approach is recommended, either track offers opportunities for improvement across the school's curriculum and campus, and in its relationship with the local community.

Vision statements

Each doorway also has a vision statement which set out the Department's thinking (DfES, 2006b) on what might be achieved by 2020. Table 2.2 shows these:

Table 2.2 DCSF vision statements for sustainable schools

Food and drink	Energy and water
By 2020, the Government would like all schools to be model suppliers of healthy, local and sustainable food and drink. Food should, where possible, be produced or prepared on site. Schools should show strong commitments to the environment, social responsibility and animal welfare. They should also seek to increase their involvement with local suppliers	By 2020, the Government would like all schools to be models of energy efficiency, renewable energy use and water management. They should take the lead in their communities by showcasing wind, solar and bio-fuel energy, low-energy equipment, freshwater conservation, use of rainwater and other measures
Travel and traffic	**Purchasing and waste**
By 2020 the Government would like all schools to be models of sustainable travel, where vehicles are used only when absolutely necessary and where there are exemplary facilities for healthier, less polluting or less dangerous modes of transport.	By 2020, the Government would like all schools to be models of sustainable procurement, using goods and services of high environmental and ethical standards from local sources where practicable, and increasing value for money by reusing, repairing and recycling as many goods as possible.

Buildings and grounds	Inclusion and participation
By 2020 the Government would like all school buildings – old and new to make visible use of sustainable design features and, as opportunities arise, to choose building technologies, interior furnishings and equipment with a low impact on the environment. We would like all schools to develop their grounds in ways that help pupils learn about the natural world and sustainable living, for example, through food growing and biodiversity conservation.	By 2020 the Government would like all schools to be models of social inclusion, enabling all pupils to participate fully in school life while instilling a long-lasting respect for human rights, freedoms, cultures and creative expression.
Local well-being	The global dimension
By 2020 the Government would like all schools to be models of good corporate citizenship within their local areas, enriching their educational mission with activities that improve the environment and quality of life of local people.	By 2020 the Government would like all schools to be models of good global citizenship, enriching their educational mission with activities that improve the lives of people living in other parts of the world.

Curriculum, campus and community

As a means of helping schools to envisage the totality of what sustainable schools might set out to do, the DCSF encourages schools to think in terms of their curriculum, campus and community. Although obviously not totally separate, these three headings do represent a convenient way of representing significant aspects of school life. Table 2.3 shows DCSF thinking (DfES, 2006b) about these three dimensions for each doorway.

Table 2.3
DCSF sustainable schools: curriculum, campus and community

Food and drink

Curriculum

Schools can use the curriculum to cultivate the knowledge, values and skills needed to address the health and sustainability issues of food and drink, and reinforce this through positive activities in the school and in the local area.

Campus

Schools can review the impact of their food and drink choices on human health, the environment, the local economy and animal welfare, and work with suppliers to identify produce that meet the highest standards.

Community

Schools can use their school grounds, communications, services, contracts and partnerships to promote awareness of the wider impacts of food and drink choices among their stakeholders.

Energy and water

Curriculum

Schools can use the curriculum to cultivate the knowledge, values and skills needed to address energy and water stewardship – both at a local and a global level.

Campus

Schools can review their use of energy and water and establish policies for monitoring and reducing their use through good management and the deployment of appropriate technologies.

Community

Schools can use their communications, services, contracts and partnerships to promote awareness of sustainable energy and water use among their stakeholders.

Travel and traffic

Curriculum

Schools can use the curriculum to cultivate the knowledge, values and skills needed to address travel and traffic issues, and reinforce this through positive activities in the school and in the local area.

Campus

Schools can review the impact of their travel behaviour and establish policies and facilities for promoting safe walking and cycling, car sharing and public transport to lessen their environmental impact and promote healthier lifestyles.

Community

Schools can use their communications, services, contracts and partnerships to promote awareness of travel decisions among their stakeholders.

Purchasing and waste

Curriculum

Schools can use the curriculum to cultivate the knowledge, values and skills needed to address sustainable consumption and waste issues, and reinforce this through positive activities in the school and in the local area.

Campus

Schools can review their purchasing and waste choices in order to reduce whole-life costs, support the local economy, and establish policies for reducing, recycling, repairing and reusing as much as possible.

Community

Schools can use their communications, services, contracts and partnerships to promote awareness of sustainable consumption and waste minimisation among their stakeholders.

Buildings and grounds

Curriculum

Schools can use the curriculum to cultivate the knowledge, values and skills needed to appreciate the link between the built environment, human well-

being and nature, and reinforce this through positive activities in the school and local area.

Campus

Schools can review the way their estate influences the behaviour, well-being and learning of pupils and staff, and take steps to enhance interior and exterior spaces for health, achievement and play, and to provide safe habitats for local wildlife.

Community

Schools can use their communications, services, contracts and partnerships to promote the importance of sustainable design and practices in buildings and grounds among their stakeholders

Inclusion and participation

Curriculum

Schools use the curriculum to cultivate the knowledge, values and skills needed to promote inclusion and participation, and reinforce this through positive activities in the school and local area.

Campus

Schools can review their approach to promoting inclusion and participation, and establish policies that promote a culture of mutual respect and care such that all pupils enjoy their day-to-day experience of school.

Community

Schools can use their communications, services, contracts and partnerships to promote the values of inclusion and participation among their stakeholders.

Local well-being

Curriculum

Schools can use the curriculum to cultivate the knowledge, values and skills needed to understand and address local issues and challenges, and reinforce this through positive activities in the school and local area.

Campus

Schools can consider the challenges facing their local surroundings and

community, and identify areas where the school's decisions, practices and services can contribute to local well-being.

Community

Schools can use their communications, services, contracts and partnerships to promote awareness of local environmental and social challenges among their stakeholders.

The global dimension

Curriculum

Schools can use the curriculum to cultivate the knowledge, values and skills needed to act as globally aware citizens, and reinforce this through positive activities such as school partnerships and exchanges.

Campus

Schools can review the extent to which their management and purchasing choices affect people and the environment globally, and establish policies that reflect their commitment to global citizenship.

Community

Schools can use their communications, services, contracts and partnerships to promote respect for the well-being of other cultures, countries and the global environment among their stakeholders.

The doorway rationale

The rationale for each doorway is that it is a familiar means of highlighting a range of issues that are not only key to what schools do anyway, but which are also significant in relation to sustainability.

Here is what the DCSF says about this significance in relation to four of the doorways:

Energy and water

DCSF: The rising demand for energy and water across the planet is storing up problems for future generations. Increased energy use creates greenhouse gas emissions and climate change. Increased use of water is

threatening the world's underground aquifers, contributing to water scarcity in many parts of the world. For this reason, energy and water conservation are two essential areas for schools to tackle.

Eco-efficiency measures can help schools to reduce their need for energy and water, as well as reducing their environmental impact. Reducing the amount of energy and water a school uses can result in real cost savings. A carefully-managed school may consume only half the amount of water a poorly-managed school consumes.

Energy and water are already features of the curriculum across the key stages, especially in science and geography. Energy and water are also necessary and increasingly costly resources which schools have to buy, with potential for cost-savings in relation to their purchase, and their future availability as resources on a global scale is now under threat. The argument for sustainable schools is that there is considerable scope for addressing the nature of these two resources, and their sourcing, processing, use and re-use, both in the curriculum, and as real and necessary issues to be dealt with both locally in the school and at home, and globally both now and in the future. Not all schools will have the possibility of introducing new energy sources: eg, solar panels, aero-generators, heat-pumps, ground-heat extraction systems, or efficient modern ways of reducing energy use, but many will, particularly through new-builds and refurbishments. In these circumstances, the scope for involving the school and local communities in deliberations and decisions is considerable.

Purchasing and waste

DCSF: Our society generates an enormous amount of waste, the majority of which is just thrown away. Waste, and the culture that encourages it, can be tackled through sustainable consumption and a philosophy of 'reduce, reuse and recycle'. As well as reducing costs, this approach can support markets for ethical goods and services and provide an interesting focus for learning.

Purchasing and waste also feature in the curriculum, most likely, perhaps, through PSHE and citizenship, and also through the work of eco-clubs and school councils, and they are obviously relevant to every commercial

transaction that the school undertakes: stationary, consumables, furniture, equipment, clothing, food, drinks, etc., and to all aspects of waste disposal whether through composting, recycling, reuse, or dumping in landfill. Whilst there are currently few opportunities for financial savings, this is unlikely to remain the case for long. Many also argue that there is also an ethical aspect to this through fair trade purchasing, local sourcing, and certification schemes in relation to timber etc. The argument for sustainable schools is that reducing waste at source, for example through attention to packaging, together with ethical purchasing, and then action to reduce waste going to landfill or incineration through re-use and recycling, is an issue that ought to concern governors, staff and students if the school is to becomes a model for similar action and learning elsewhere.

Travel and traffic

DCSF: The rising number of vehicles on the roads leads to congestion, increased road accidents and pollution. During term time cars on the school run account for 16% of early morning traffic and a measurable increase in pollutants such as carbon monoxide near schools. It also decreases pupils' independent mobility, reduces their amount of daily exercise and detracts from their awareness of road safety.
Walking and cycling offers a sustainable alternative, providing a valuable boost to student fitness levels, increasing student concentration and instilling positive habits for life.

Travel and traffic management can represent daily problems for schools, and act as sources of irritation for local communities, especially in relation to school runs. Helping students manage the dangers associated with them has long been a feature of school life through, for example, road safety and cycling proficiency, and there are obvious links to the curriculum, perhaps through PSHE, geography and science, and to important issues around the healthy schools agenda. The argument for sustainable schools is that there is good potential for a strong inter-linking between a school's policies in relation to transport to and from school (for both students and staff), and what it teaches through the curriculum, with the opportunity to link to issues about resources more generally, and also considerable scope for the involvement of students, through school councils, perhaps, in decisions-making.

The global dimension

DCSF: Sustainable development cannot be achieved in isolation. The air we breathe, the food we eat and the clothes we wear link us to people, environments and economies all over the world. There is a global dimension to every aspect of our lives and communities.

Challenges like global poverty and climate change jeopardise our future prosperity, and it is increasingly important to develop young people's understanding of such significant issues to develop a generation of globally aware citizens.

Schools can respond by developing a responsible, international outlook among young people, based upon an appreciation of their interdependence with other societies and the environment. Young people should leave school understanding the impacts of their personal values, choices and behaviour.

That what we do in this country is connected to other people across the globe, and that this connectedness and interdependence is significant in terms of both how we live today, and might live in the future, are growing aspects of how schools think about their work – whether through the curriculum, perhaps in geography or citizenship, or through whole-school activities such as twinnings, exchanges, and cultural activities.

The argument for sustainable schools is that there are social, environmental and economic dimensions to this interdependence which, when brought together, are powerful means of helping young people better to appreciate and understand the opportunities and responsibilities that their own lives will bring. Schools will likely need to respond to these challenges in different ways: ones that reflect their own social contexts and the opportunities and responsibilities these bring. For example, a small rural school may well be quite differently placed than a larger school serving parts of a large conurbation, and where in the country the school is, may be significant as well.

Desired outcomes

It will be obvious from the above that none of these doorways can (or should) be viewed in isolation: all are connected, one way or another, to at least one other. This should be no surprise given that they are merely access (or vantage) points on the life of the school as a whole: curriculum, campus and community – and what has been set out here so far can obviously not do full justice to the potential for a school to address the important issues that the idea of sustainable schools presents.

In terms of the curriculum/campus/community model, there are what might be termed win-win-win outcomes that the sustainable schools initiative is looking for. One way of seeing this is as follows:

- **Curriculum:** Student learning that integrates academic, practical and ethical concerns, that acknowledges the significance of the issues raised by the sustainable schools initiative to the whole of humanity both now and in the future, that recognises the existence of different perspectives on problems and what might now be done, that understands the complexities and uncertainties in data, and that appreciates the argument for involvement at a personal / social level in addressing concerns.

- **Campus:** Greater awareness by governors, leaders, teachers and students of how the issues raised by the sustainable schools initiative impact on all aspects of school life, and how what the school does, as a community, might change and develop in particular ways, leading, for example, to a more integrated consideration of issues, cost savings, the creation of school buildings and grounds that can provide models of sustainability in practice, and hence act as positive teaching resources, and an enhanced involvement of students in decision-making.

- **Community:** Increased local community involvement in all aspects of school life, the opening up of the school for community use, and its inspiration for the community of ways of more sustainable living; but also the recognition that the idea of community is now more appropriately seen at the global level, given our economic interdependence, our social linkages, and our shared environmental problems.

The next section of the paper looks at some criticisms that have been levelled at the sustainable schools initiative, in particular, the idea of doorways.

Critiquing the idea of the doorways

Although obviously useful, the idea of the eight doorways is not without its critics. Objections come in six main forms:

1. Isn't this all far too reductionist?
   This objection is fundamental; it deprecates the loss of an holistic vision through fragmentation into doorways and division between subjects. It says that much of significance is lost if sustainability issues are treated in this way as parts of a whole which, because of these splits, is never quite realised. This is not a new criticism of secondary education, of course, with its emphasis on the culture of subject disciplines, but it applies with particular force in relation to sustainability.

2. Shouldn't the global dimension have primacy?
   This objection is also fundamental, but in a different way. It argues that the global dimension is of such significance that it should not be a (mere) doorway. Rather, the argument goes, it should be an over-arching idea that every doorways take very seriously: a framework through which everything else is viewed. The global dimension is seen by its supporters to need over-riding priority in terms of public policy, and hence in relation to educational policy as well.

3. Whatever happened to biodiversity [1]?
   This objection is also rather fundamental, again in a different way. It regrets the lack of a doorway specifically focused on biology and ecological systems, and is based on the position that, actually, it is ecological quality that underpins all human existence through the provision of goods and services from the environment. Not to have an explicit focus on this, the argument goes, is to miss the point about what is at the heart of the sustainability problem.

4. Whatever happened to biodiversity [2]?
   This objection is related to the previous one. It regrets the lack of a clear focus on biodiversity because the lack of such a doorway marginalises a significant section of the curriculum (biology), and argues that the existing doorways, for example, food and drink, cannot adequately represent the important set of ideas around ecology. At the core of this argument is the idea that the sustainable schools initiative marginalises work coming from the environmental education tradition.

5. Why 8 doorways? Why these 8?
   These objections are part pragmatic and part political. They argue that the identification of the 8 doorways can be seen as either arbitrary or contrived, and that there could, quite reasonably, have been other ways of looking at all this.

The absence of a direct focus on biodiversity is one aspect of this critique, and the selection of doorway labels to represent current emphases (its strongest critics would say: fads and fashions) in schools is another.

6. What happened to the 7 key concepts?

This objection is more principled. It recalls that QCA, proposed that there were in fact seven key concepts of education for sustainable development, and wonders why, in effect, eight new ones have been invented. The seven key concepts are:

1. Interdependence – of society, economy and the natural environment, from local to global
2. Citizenship and stewardship – rights and responsibilities, participation, and cooperation
3. Needs and rights of future generations
4. Diversity – cultural, social, economic and biological
5. Quality of life, equity and justice
6. Sustainable change – development and carrying capacity
7. Uncertainty, and precaution in action

There is, of course, a point to each of these stances;

1.   The reductionist argument is hard, in principle, to refute, and suggests that schools need to address sustainability issues not only in subject areas, in whole-school approaches, and in out-of-school collaborations, but also to be careful to link across all these in an attempt to present the bigger, integrated, picture to students.

2/3. The argument for the importance of the global dimension tends from those with a background in development education and global citizenship, and represents a crucial set of arguments about the world today in terms of global inequalities and inter-generational social justice. The main point, perhaps, is that these are not the only key arguments. Equally fundamental are those about biodiversity. Here, the argument is that there will be no possibility of social justice if the fundamentals of the integrity of the biosphere are not maintained. The point for schools is to ensure that both these perspectives are adequately represented in what they do with students.

4/5. The second biodiversity argument tends to come from those with a background in environmental education. Given that there's not going to be a biodiversity doorway – or any other doorway for that matter – and that food & drink or buildings and grounds don't adequately represent biodiversity

matters, there's a need for schools to acknowledge this in the way that the sciences are enabled fully to contribute to the sustainable schools initiative.

6. The QCA 7 key concepts of education for sustainable development do seem to have been abandoned. In some ways this is a pity as they come with a well-defined set of learning outcomes across the key stages in terms of [i] values and dispositions, [ii] skills and aptitudes, and [iii] knowledge and understanding. These represent the most careful thinking, to date, about learning outcomes (Defra, 1998), and it is likely that schools will find these helpful aids to their own thinking about student learning in relation to the sustainable schools initiative.

The DCSF acknowledges a number of the issues raised here in its Action Plan which responds to comments on the early stages of the sustainable schools initiative. For example, the points relating to biodiversity are extensively covered following comments received, and biodiversity is now presented as one of ten, newly-conceived, 'cross-cutting issues'. Although this sounds rather like one of the 'cross-curricular themes' that were introduced with the original national curriculum around 1990, the point here is a broader one. Now, this isn't just focused on teaching about biodiversity, it is about supporting and enhancing it both in the school grounds and in the local community, and hence making a small, but definite, contribution.

As noted above, there's unlikely to be a revision to these doorways. They are, after all, just a way 'in', a means of not only acknowledging that most schools already do address these matters to a degree, but also that they should do so, in a concerted way. The main point for schools to note, perhaps, is that they are only a way in, and that it is what you do when you've gone through the doorway that really matters.

The next chapter sets out a series of brief case studies of secondary school practice which illustrate what selected schools and local authorities across England are doing in relation to the eight doorways, and to sustainable schools leadership.

3 Case studies of secondary school practice

This chapter sets out 13 brief case studies of secondary school practice that illustrate aspects of sustainability in relation to work focused across curriculum, campus and community. These are organised in sections that focus on sustainable school doorways, leadership in the school, and the local authority context.

The case studies are:

Sustainable school doorways	Focus
1. Gunnersbury Catholic School, Borough of Hounslow London	Food and drink
2. Ampleforth College, Yorkshire	Energy and water
3. Kesgrave High School, Ipswich, Suffolk	Travel and traffic
4. The City of London Academy, London Borough of Southwark	Purchasing and waste
5. Royston High School, Yorkshire	Buildings and grounds
6. The Glebe School, Bromley	Inclusion and participation
7. The Petchey Academy, London Borough of Hackney	Local well-being
8. Penair School, Cornwall	Global citizenship

Leadership in the school
9. The Academy of St Francis of Assisi, Liverpool
10. Crispin School, Somerset
11. Federation of Durham Community Business College & Fyndoune Community College, Durham

The local authority context
12. Devon County Council
13. Leeds City Council

These cases are all adapted from the following sources:

Teachernet
The Government Office for London (GOL)
The National College for School Leadership (NCL)
Devon County Council
Environmental Education, the journal of the National Association of
Environmental Education (NAEE)

and the URL of the original document is given in each case. As most of the
cases set out here are shorter than the originals, readers are recommended
to go to the source documents in order to access the greater detail of
developments that will be found. Each of these sources also contains
additional case studies of both secondary and primary school practice.

Further sources of useful cases studies and other information about
sustainable school issues include:

Schools for the Future: design of sustainable schools (HMSO, 2006a)
This guide is aimed at expert professionals such as designers and local
authority clients. It addresses refurbishment of existing schools as many
sustainability techniques used in the design of new schools can be applied
to existing schools and vice versa. Five secondary schools are featured in
this guide, including one of the schools (The Academy of St Francis of Assisi)
discussed here.

Schools for the Future: designing school grounds (HMSO, 2006b)
This guide is aimed at everyone involved in developing school grounds –
teachers, headteachers and governing bodies, local authorities, architects,
dioceses and sponsors. It is particularly relevant to people who make
decisions about capital and revenue spending, want to increase the
educational opportunities offered by schools, or are involved in designing
school sites.

Sustainable schools for pupils, communities and the environment (DfES, 2006b)

This was the original consultation paper on sustainable schools from the DfES. It contains case studies of four secondary schools, including one of the schools (The Glebe School) discussed here.

What the DCSF sees as core material to support the sustainable schools initiative is available on the web (Teachernet, 2007b).

Case 1 Gunnersbury Catholic School, London Borough of Hounslow

Focus: Food and drink

Significant features:

In November 2005, the London Borough of Hounslow introduced the school to Global Action Plan's Action on Waste project. The school then began constructing an on-site eco-garden where the students and staff have planted vegetables and fruit trees in the first phase and have expanded to include fruiting bushes and herbs in the second phase this year. The third phase will include an area for relaxation where there will be a sensory garden with scented plants, herbs and plants chosen specially to encourage touch, a seating area and sun-dial.

To encourage understanding of the importance of protecting the environment and the source of food, the eco-garden is grown organically. The school has had help from the Science department with regard to companion planting, the promotion of composting the waste and why worms help the soil. They are collecting the waste food from the staff room and kitchens and trying to encourage staff to recycle their waste to make compost. Pupils have been encouraged to bring waste-free lunches through an ongoing poster campaign, managed by the Art teacher and a dedicated group of pupils. They have introduced a number of compost bins and hope to have their own compost for next year.

One of the underlying principles has been to promote greater cross-curricular links within the school and to this end, the school's Science and

Technology status has been enhanced as well as links made to Art, Geography and CDT. The eco-garden has been able to go ahead because of funding provided under the school's science status. Sustainability projects have been run throughout the school with particular emphasis in Art and Geography. The school created a 'Promise Tree' as part of World Environment Day in 2006 and a visiting artist made giant toothbrushes using recycled plastic bottles to emphasise the importance of not wasting water. Construction of the toothbrushes was linked to the work of the America pop artist Klaus Oldenburg, which were later displayed at an exhibition. The school has also redesigned the recycling collection area following inspiration from Gaudi.

Source: Government Office, London
http://www.gos.gov.uk/gol/Environment_rural/Sustainable_schools/

Case 2 Ampleforth College, Yorkshire
Focus: Energy and water

Significant features:

This year 9 geography project addressed the concepts of sustainable change, uncertainty and precaution in action. It considered interdependence and the needs and rights of future generations while focusing on rights, responsibilities and the links between local and global citizenship, and emphasised the contribution of local action to a topical global issue. Its objectives were to:

- Challenge preconceptions about the link between the greenhouse effect and global warming
- Appreciate the possible positive and negative impacts of global warming at local, national, regional and global scales
- Appreciate the difficulties in achieving sustainable solutions to global issues.
- Learn how the local community and the international community are addressing the issue of global warming
- Understand how local agenda 21 meets some of the commitments of the UN Rio and Kyoto summits

At the end of a geography unit of work on weather and climate, the year 9 class used a selection of newspaper articles to find out different views about global warming, climate change and the greenhouse effect. The pupils shared their findings and discussed possible effects on a local, regional and global scale. The teacher asked pupils either to produce a poster or devise a quiz on the topic as homework.

The teacher introduced the UN Rio and Kyoto summits and Local Agenda 21, highlighting the connections between local, national and global action on climate change. 'Information cards' were also provided, which contained background information on the population, economy and politics of six contrasting countries involved in the UN summit, including the UK. Working in groups. Pupils then devise short role plays to simulate negotiations between the countries and the difficulties of balancing conflicting viewpoints and demands about climate change, for example between the USA and a small Pacific island state.

Following the role play, the class then brainstormed ways of reducing greenhouse gases at a local level, and the teacher emphasised local contributions for example walking instead of driving, showering instead of taking a bath. Pupils carried out a DIY Home Energy Check available from the local Energy Efficiency Advice Centre at home, with pupils presenting their findings back in the classroom.

This task was undertaken in class time. External support came from North Yorkshire County Council Local Agenda 21 and the Energy Efficiency Advice Centre.

Source: TeacherNET
http://www.teachernet.gov.uk/CaseStudies/casestudy.cfm?id=507

Case 3 Kesgrave High School, Ipswich, Suffolk

Focus: Travel and traffic

Significant features:

Kesgrave is a specialist technology college in the suburbs of Ipswich which also attracts pupils from surrounding rural villages.

In 2005 a survey found that more than 25 per cent of Kesgrave's pupils chose to walk, and more than half to cycle, to school. This has been accomplished through a mixture of encouragement and investment in safe routes to school. A separate entrance for those arriving by car or bus provides peer support for walking and cycling, while a ban on pupil cars and motorcycles ensures older pupils are not driving. Cycling also enables pupils to participate in activities that would be inaccessible without some pupils having their own means of transport. As the school does not have enough minibuses to transport all pupils, having the majority of pupils cycling means they can use the vehicles for those without bikes or who are disabled.

For example, it means that year 11 pupils can go to nearby sporting facilities for tennis, swimming and badminton or PE. With over 70 per cent of pupils either walking or cycling, transport safety and security are important issues. Pupils are not permitted to cycle on school grounds and designated cycle parking (sufficient for 800 cyclists) is located apart from the school building. Five staff members, one of whom is specifically tasked with ensuring that cars and buses do not enter the car-free zone, oversee the arrival and departure of pupils.

Of Kesgrave's 1550 pupils, 360 now walk to school and around 800 cycle each day. There has also been a significant increase in cycling at Kesgrave's feeder schools. All the primary schools now have travel plans in place and Kesgrave benefits from pupils entering the school with sustainable travel methods already firmly in mind.

Kesgrave's Deputy Headteacher Brian Hawkins explains, 'Kesgrave High school aims to be at the heart of a life-long learning community. Through our commitment to sustainable travel we are making a significant

contribution towards reducing carbon emissions, while improving the health of our pupils.'

Source: TeacherNET
http://www.teachernet.gov.uk/CaseStudies/casestudy.cfm?id=571&subcatid=124&catid=105

Case 4 The City of London Academy

Focus: Purchasing and waste

Significant features:

Administrative Assistant, Judi Allbury started to organise paper recycling in the school on her own initiative, and a Global Action Plan training day in February 2006 kick-started the school's waste reduction programme. The School Council was considering projects to get involved with when Judi Allbury suggested the Southwark Secondary School Environment Award. They were very keen and she worked with them to get it started; this has led to an Eco Council that focuses solely on sustainability initiatives.

The school has excelled at the three Rs of reduce, reuse, recycle, reducing their paper consumption by photocopying and double-sided printing, recycle ink cartridges, plastic, mobile phones, Christmas cards, spectacles and CDs, and offering a recycling service for local businesses including the BBC and primary schools. 'Not wasting things has become embedded in our ethos and we take better care of things now,' said Allbury. They bought a recycle bin for their kitchen and they now compost kitchen scraps to reduce their food waste. 'There are so many small things we can do and they are all achievable in a day,' said student Sam Bradley. Philanthropic recycling is employed by the school and old computers are donated to Computer Aid International and clothes are sent to developing world organisations. Students get reward points for donating their clothes, which they can use to buy recycled products.

As The City of London Academy is a brand new school the focus was on changing behaviour. Judi Allbury said the key to this is making adaptations

easy for everyone, to give solutions, and a chance to make a difference so that it becomes second nature. The students have fantastic support from the top. The Head is updated regularly on the school's sustainability progress, and the Student Council gives presentations to the governors regularly. 'The Head hardly ever says we cannot do something. He sees our eco-friendliness as a badge of honour,' said student Jack Cassidy. Southwark council has also been very supportive. Jo Green, Southwark council's Sustainable Education Officer said: 'Pupil involvement is key to getting a green Eco Schools flag and is something that most schools find very hard to enable. The school should be congratulated for facilitating such genuine participation by the students.'

The school now recycles 65% of its waste and has gone from using around thirty boxes of paper per week to ten, which saves them money as well as trees. At the start of the waste programme an audit revealed they were producing 40.62 kg of waste per day. Within a year that was reduced to 17.2 kg, a reduction of 58%. There have been hurdles for the school to leap along the way. Initially the premises staff were resistant to eco-initiatives and many teachers were reluctant to get involved as it seemed to be more work on top of an already packed schedule. However, the opposite proved true – there is now less rubbish to discard and departments have saved money, halving their paper budgets.

Source: Government Office, London
http://www.gos.gov.uk/gol/Environment_rural/Sustainable_schools/

Case 5 Royston High School, Yorkshire

Focus: Buildings and grounds

Significant features:

The schools wanted to promote sustainability and develop their grounds, so decided to create a micro-river system in a neglected central courtyard area. This … took two and a half years and involved all pupils, staff, parents and the local community, and the courtyard is now the 'environmental hub' of the school, but just one feature of the school's commitment to Sustainable

Development. A group of pupils volunteered to join the environment group and participate in the planning, implementation and installation of the micro-river facilities. The project objectives were to:

- Encourage Geographical enquiry and skills using practical investigation, fieldwork outside the classroom and decision-making
- Develop knowledge and understanding of the effects of geomorphological processes on landforms and the environment
- Increase the use of the school grounds in the curriculum

The micro-river system was designed as a resource that could be used in teaching different subjects. Water is circulated using pumps powered by wind and solar energy, and the model river channel simulates the course of a river, including meanders. The area surrounding the channel is planted with suitable plants from 'alpine' to 'estuarine' environments.

Creating the micro-river system also stimulated many other developments throughout the school, such as an environment for pond-dipping outside the science rooms. The school now has a large recycling initiative, collecting aluminium and steel cans, printer cartridges, plastic bottles, waste paper and cardboard. This operates throughout the school and on the community campus, and the school sends any recycling profits to help a school in Lesotho. Pupils at both schools have written to each other and they hope to arrange a visit to the school in Lesotho and help build a wind turbine and solar-powered classroom there.

This activity is a good example of Sustainable Development because it makes links between local developments in the UK and elsewhere, it addresses the concepts of interdependence and quality of life and pupils participate in every aspect of the project in collaboration with the local community. External support was provided by Learning Through Landscapes, The Environment Agency and local businesses. Technical support was received from a local university and the British Trust for Conservation Volunteers.

Source: TeacherNET
http://www.teachernet.gov.uk/CaseStudies/casestudy.cfm?id=545

Case 6 The Glebe School

Focus: Inclusion and participation

Significant features:

The school provides a curriculum for students with multiple moderate learning difficulties, including Autistic Spectrum Disorder. Students have social and communication difficulties.

The education for sustainability co-ordinator (ESC), a geography specialist teacher, is well established in the school and well qualified. The head values the approach and emphases that are applied to this area of the curriculum which are consistent with the general ethos of the school. Currently there are as many as ten staff directly involved with different aspects of education for sustainability. The head is willing to provide additional staff time and financial assistance to facilitate developments in education for sustainability. It is a feature of this school that the learning support staff are also particularly involved; two especially have undertaken professional development to improve their expertise in this area (one has undertaken an organic gardening course to complement the horticultural emphasis elsewhere in the curriculum). Sustainability is also part of the Duke of Edinburgh Award training that many students undertake.

An important feature of the planning that takes place in the school, mainly led by the ESC, is that there are periodic reviews of progress and the setting of targets for future development. This is carried out by staff across the disciplines involved, including support staff and students are involved where possible. The school has developed its policies for including sustainability in the curriculum and management of the school by working in collaboration with different 'stakeholders' who have a direct interest in the school, including staff, students, parents, governors, as well as those more removed from the day to day running of the school, such as the Bromley Garden Project , WWF and Eco-Schools.

The school buildings and estate are treated as an important resource for student learning in sustainability. The school participates in the 'Globe Project', which invites people to monitor environmental aspects locally and

to report their findings on a national website. The students recently have also begun to carry out energy audits around the school. The school council is active with good representation across the school. It is well managed by the staff who achieve a reasonable balance between direction and allowing the students to manage their own affairs. Meetings occur every two weeks with agendas arrived at collaboratively and minutes written by a student.

An important principle of the school is to give students the opportunity to try things if they feel motivated to do so and to learn to participate in an unthreatening environment. There is a strong emphasis on 'learning by doing' but this is also associated with collaborative learning and through a participatory approach the school has developed a 'collaborative learning cycle'. This is explicitly used by students in the various tasks and problem-solving activities they undertake around the school. Reflection is an essential part of this process and comments they make such as 'working together helps' and 'we can put our ideas together and help each other' reflect what they genuinely seem to think of the effectiveness of this approach.

Source: NCSL
http://www.ncsl.org.uk/sustainableschools/sustainableschools-glebe.cfm
Teachernet
http://www.teachernet.gov.uk/CaseStudies/casestudy.cfm?id=574&subcatid=127&catid=105

Case 7 The Petchey Academy, London Borough of Hackney

Focus: Local well-being
Significant features:

September 2006 saw the launch of the school, and ecoACTIVE (a local NGO) worked with the school to address sustainability from the outset. The school is new, so everything is at a very early stage with the school and charity working together to develop initiatives.

The school has initiated activities that aim to help improve the environment and quality of life for local people. The Think Green Team and Active Community are two groups which are part of this enhanced curriculum and

have combined on several occasions. In Numeracy, there has been a unit on lifestyle changes and habits, and the Green Team is in the process of building on this to start a project for the whole school to be run as a competition between school houses. The project involves everyone trying to achieve green household and community behaviours wider than just within the school.

The Think Green Team, comprising of twenty 'student warriors' who meet once a week for two hours, and involve as many students as they can; gardening is a good way to do this. The team has worked with a group of older people at a residence run by Hanover, a provider of housing and support services for older people in Hackney, where they are working on green issues as part of a community project with Global Action Plan. Both of these teams are in the early stages of learning about sustainability and making changes to their surrounding area, so it was a good opportunity for an exchange of ideas in the early planning. The school had their new garden patch to plant and the older people recently had raised bed boxes built, so a decision was made to link up. The students prepared a presentation and talked about their project and the residents contributed their ideas. There was a sharing of items made from recycled materials and ideas about reducing and reusing. Students then finished off the visit by helping to fill the raised beds. The residents said afterwards: 'It was great to see that the younger generation is so knowledgeable about this important subject. Some of us do not get to spend a lot of time with different groups of people, especially the young, so the day was important to us in this respect also'.

Source: Government Office, London
http://www.gos.gov.uk/gol/Environment_rural/Sustainable_schools/

Case 8 Penair School, Cornwall

Focus: Global citizenship

Significant features:

As Cornwall is geographically remote, relatively impoverished and socially homogenous, we needed to reach out to the wider world to help our

students develop a national and international perspective and decided to develop a curriculum for global citizenship, using sustainable development as the underpinning philosophy and ICT as the integrating skill. The original concept was to 'green' the school and in so doing teach people the fundamental principles of sustainability, increasing their ability and potential to affect and bring about change.

The aim of a curriculum with a global dimension is to enable young people of today to grow up to be citizens of the future. We think a truly global citizen is one who:

- is aware of the wider world and has a sense of their own role as a world citizen
- respects and values diversity
- will challenge the status quo and act to make the world a more equitable place
- is equipped to contribute to a sustainable common future
- is committed to promoting the knowledge, skills, values and attitudes to which young people are entitled

Implicit in all our work is the belief that we can work for a more secure and sustainable future – both for people and the planet Earth.

A curriculum with a global dimension needs a holistic approach to provide a meaningful experience. Working with schools in Nepal meant that we were confronted by a whole series of issues that as geographers, we could not address without the help of colleagues. RE provided an essential perspective for fully exploring the moral and ethical issues, but we have found that many subjects can contribute to a curriculum with a global dimension. Although Nepal is one of the world's poorest countries where 88% of the population is dependent on agriculture, and 40% lives in absolute poverty, both Cornwall and Nepal derive much of their income from tourism and both are striving to develop sustainable ways of maintaining this valuable input to the economy.

We have been corresponding with three schools, one in the capital Kathmandu, and two others in remote villages. Using a mixture of e-mail and hand deliveries we have managed to swap information and survey results.

One of our staff was able to visit the schools, which was an invaluable way of assessing the success of the scheme and find ways of overcoming misunderstandings and problems. In the rural area, we worked with volunteers through an organisation called SPW (Student Partnerships Worldwide) who promote environmental awareness through lessons and Green Clubs in schools in remote areas. They also undertake mini-improvement schemes by installing water taps, pit latrines and chulos (smokeless stoves) with the help of students.

Source: Teachernet
http://www.teachernet.gov.uk/casestudies/casestudy.cfm?id=533

Case 9 The Academy of St Francis of Assisi, Liverpool

Focus: Leadership

Significant features:

The school is an academy jointly sponsored by the Roman Catholic Church and Church of England. The Academy took students into the new buildings from September 2005. The building is an educational resource where possible. Thus the environmental strategies are clearly evident to students and staff, allowing for interaction and monitoring as part of the curriculum. Particular impetus for the emphases of the Academy has come from the Anglican Bishop of Liverpool and the present head of the school. The Specialism Development Plan for 2006-09 begins by stating that the aim is to become a school where working sustainably is the norm and where sustainability is transferred into the local community and beyond. The plan stems from four main roots: the original vision or mission for the Academy, the WWF Pathways Project, the Eco-Schools initiative, and the Government's 'Every Child Matters' policy.

The implementation of sustainability dimensions is largely the responsibility of the deputy head. There is a curriculum committee and a specialism committee and both are stated to be highly supportive of education for sustainability. A new post of education for sustainability co-ordinator (ESC) , has been agreed and will be sought as a priority. A mapping exercise is

underway with restructuring of the Key Stage 3 (Years 7 and 8) curriculum to integrate environmental sustainability themes and to include a 'competence curriculum' is scheduled for launch in 2008-09.

Student pride in the Academy is an aspect that the senior management consider important. The recent favourable publicity, including the focus on the quality of the buildings, including the environmental design aspects, has been in the local press, contributing to the increased prestige of the Academy. The head considers this has led to improved student self-esteem and attainment over recent months. St Francis has topped the value-added tables locally.

There is also the goal of moving towards carbon neutrality. Much of the plan is detailed and covers many aspects of the life and management of the school, setting a proposed time frame on the possible achievement of each element of the plan. CPD with some staff is already underway using the WWF 'Pathways to Sustainability' as a focus. The school is also committed to preparing for an Eco-Schools Silver Award and then on to a Green Flag Award in the early stages of the development plan. The Healthy Schools initiative is programmed for the present session. There has been significant cooperation and financial assistance from the Groundwork Trust, particularly in relation to the development of the Year 7 allotments.

Source: NCSL
http://www.ncsl.org.uk/sustainableschools/sustainableschools-stfrancis.cfm

Case 10 Crispin School, Street, Somerset

Focus: Leadership

Significant features:

Education for sustainability and good citizenship underpin the ethos and aims of the school. These are well articulated and have a prominent place in the school prospectus and website. Sustainability is well embedded in the formal curriculum, with geography, science (and its extension, the science club, where there is emphasis on alternative energy) and art (where the

principles of 'green' management and use of resources is explicitly practised) being the lead subjects.

'Participation' is an important principle of the school leadership and this extends throughout the school in many different ways. Various initiatives are in place to encourage participation, with oversight from the senior management team. This includes an active student council which provides the 'student voice' with its own website and is linked into Citizenship lessons. One of the central purposes of this is to give students the opportunity to reflect on the school environment and make proposals for its improvement. For example, the senior management are aware that the large number of students attending the school creates considerable traffic problems. These constitute not only health and safety issues but also relates to environmental sustainability. As a result a school traffic plan has been formulated with close participation from students.

A significant number of students in the school are well motivated to aspects of sustainability, including those among the older ones who in many schools are uninvolved. They are developing a broad understanding of the issues and see the wider consequences of their actions. Concepts of human rights and justice are also part of this understanding. Furthermore there is a strong desire to do practical things both locally and globally to help to bring about change. Here again the link with the school and community in Kenya provides a focus for improved cultural understanding which is extended to include a variety of cultures. Many students are willing to discuss these matters and the issues that these raise with increased globalisation.

Source: NCSL
http://www.ncsl.org.uk/sustainableschools/sustainableschools-crispin.cfm

Case 11 Federation of Durham Community Business College & Fyndoune Community College

Focus: Leadership

Significant features:

This federation of the two schools was set up about 18 months ago under one headteacher. Under the new leadership there is a strong emphasis on raising standards, with an increasingly well informed and supportive governing body. Personal development, as well as academic progress, is considered important. Education for sustainability is stated as an important part of the ethos of the school. The nature of sustainability is broad and is based on the 'eight doorways' identified in the Sustainable Schools National Framework and also includes consideration of both schools in relation to their local communities. Within this health, safety and security, active citizenship and inclusion as well as social enterprise are considered important and there are good links with local businesses and the local authority departments.

The senior management are clear that they intend to develop a shared understanding of sustainability across both institutions and in all subject areas. There were three afternoon CPD sessions on sustainability in the last autumn term with some sessions being led by staff and others by local experts. The senior team also undertook the Chronos on-line training, which included aspects related to education for sustainability. In their ambitious development plan education for sustainability is a target for all curriculum areas at KS3, with the preparation of schemes of work and performance targets. It is also included in the CPD programme for staff.

As part of their development plan the schools are jointly preparing for the Eco-schools bronze award and have joined the Global Gateway. The senior management recognise that the federation is somewhat remote geographically and they consider it important to develop links with national initiatives, which will provide them with wider information and involvement in aspects of sustainability. The student voice is an area where there has been special emphasis, with a student council that meets regularly and a sustainability group that take initiatives forward. Training has been instituted

for councillors to enhance their contribution to the process. Video conferencing is being used to enable both councils of the federation to communicate regularly and there is also a face to face meeting each term.

The rural dimension is very important to Fyndoune Community College, since it provides an outdoor classroom students care for animals and plants, with emphasis on growing food locally and healthily. Through these activities students reflect on local sourcing of food as well as care for the environment through plant and animal husbandry.

Source: NCSL
http://www.ncsl.org.uk/sustainableschools/sustainableschools-durham.cfm

Case 12 Devon County Council

Focus: The Local Authority

Significant features:

Devon County Council will work in collaboration with schools, partners and other organisations to help secure the delivery of the Devon Promise so that:

By the age of seven all young people will have had opportunities to
- interact with members of the local and global community, including people from a different cultural background from their own, both within school and through supervised visits outside school
- take part in a supervised exploration of their school grounds and locality
- visit a site of natural history or environmental interest in order to understand through direct experience what makes these places special
- engage in activities designed to improve or sustain the environment

By the age of eleven all young people will have had opportunities to
- explore how their own choices can affect global and local environmental and developmental issues
- have been involved in practical action locally to address global development and environmental issues
- have engaged in a collaborative curriculum-based project with young

people at a partner school overseas
- visit and actively explore the special qualities of the environment, habitats and cultural heritage of other areas to compare with their own locality

By the age of fourteen all young people will have had opportunities to
- explore views of economic and social development and social justice with members of the local and global community from different cultural backgrounds
- participate in an investigation of an environmental or development issue with young people in a partner school overseas
- have examined through an investigation outside school the impact of human processes on places and environments
- take part in a short stay residential experience

By the age of nineteen all young people will have had opportunities to:
- demonstrate a commitment to environmental sustainability, social justice and equity through undertaking voluntary practical conservation or development activities in the local or global community
- participate, directly or indirectly, in a school exchange programme with a partner in another country
- participate in a challenging journey or expedition which includes an overnight stay
- gain experience of the world of work, voluntary organisations, further education or training relating to sustainability or the environment

Source: Devon County Council
http://www.devon.gov.uk/index/learning/plans-and-strategies/
changingourfutures.htm

Case 13 Leeds City Council

Focus: The Local Authority

Significant features:

All Leeds schools can take part in a 'pay-by-weight' contract whereby all waste destined for landfill is weighed on collection and the bill is based on

the weight of what is being thrown away. An integral part of this scheme is a paper and card recycling element that allows schools to reduce their waste costs by separating out all mixed paper and card. 60 Leeds schools currently use this contract and have introduced recycling facilities into their schools including collection procedures within school buildings. It is anticipated that this figure will increase as landfill charges continue to escalate and as the range of items for collection expands. A smaller number of schools also have local arrangements in place for the separation and collection of other recyclables such as printer cartridges, mobile phones, aluminium cans, etc.

Since 2003, all schools in Leeds have benefited from a council contract that purchases 100% of its electricity from an accredited renewable energy source with a zero carbon output. In 2005, 154,000,000 kilowatt hours of electricity were purchased representing a saving in CO_2 emissions of 66,000 tonnes. In the recent health related activities survey, 40 schools indicated that they were actively involved in energy management initiatives including energy conservation schemes where school energy monitors ensure that lights are turned off and energy is not wasted unnecessarily.

All schools in Leeds have access to a corporate contract for office supplies that supports a sustainability theme and includes:
- 100% post consumer waste recycled copier paper contract.
- Other stationery products with a recyclable content.
- Remanufactured printer toner cartridges
- Computer monitors, that conform to TCO 99 standard using less energy than traditional CRT monitors

From February 2007 over 85% of Leeds schools have benefited from a fruit and vegetable contract as part of their catering service that provides seasonal produce with minimum journey miles to ensure minimum levels of freshness. The contractor also offsets carbon emissions produced through the planting of trees.

Sustainable design features have recently been incorporated in a number of new school buildings and refurbishment schemes in Leeds; these include:

- natural ventilation and daylighting
- high specification thermal insulation
- passive infra-red (PIR) smart lighting
- sustainable construction techniques: high efficiency condensing heating plant and advanced/flexible building management systems

Although greywater recycling has not yet been incorporated into a whole school scheme, it has been delivered as part of a fire re-instatement at Crawshaw School. A bio-mass boiler was recently installed at Wetherby St James School, which is being monitored to inform future schemes.

Source: *Environmental Education* 85, 7–16 (National Association for Environmental Education) Steve Ruse can be contacted at: s_teve.ruse@ educationleeds.co.uk

The final chapter examines the selected case studies from a number of perspectives, explores the sort of learning that sustainable schools might encourage, proposes a number of key characteristics of effective sustainable school leadership, examines another way of thinking about campus, community and curriculum, looks at the crucial issue of how sustainable schools can raise standards, and concludes with an examination of ways of thinking about progress towards becoming a sustainable school.

4 Discussion and ways forward

Introduction

This chapter begins with a commentary on the key points that arise from the case studies. It then extends this to examine the sort of learning that sustainable schools might encourage, and then draws on the cases and other literature to suggest a number of key characteristics of effective sustainable school leadership. It explores another way of thinking about campus, community and curriculum, and goes on to focus on the crucial issue of how sustainable schools can raise standards of achievement in the widest possible sense. The chapter concludes with an examination of ways of thinking about progress towards becoming a sustainable school.

Key points from the cases

In Table 4.1, each case study is considered. In the central column, a number of key points are made in relation to campus, community and curriculum, showing particular emphases. In the right-hand column, key points are made about how school leadership effects and supports this development. This is, of course, just one reading of the cases, and readers are encouraged to do this analysis for themselves in the light of the particular context within they work.

Table 4.1 Key points from the case studies

Key Points	Showing a focus on …	In leadership terms …
1. Gunnersbury School	**community – campus –** curriculum • The use of an organic garden, the growing of food, and the composting of some school waste • Links with local people through gardeners coming into the school, and produce being sold	This has enabled a focus on cross-curricular links and collaboration between different school departments. There is now a leadership-supported plan to extend this work to other aspects of school life.
2. Ampleforth School	community – campus – **curriculum** • Challenging preconceptions • Possible positive and negative impacts of global warming • The difficulties in achieving sustainable solutions to global issues • Learning how local and international communities are addressing the issue of global warming.	This approach sets out to enable students to engage in open-ended ways with some of the very significant debates that are happening in the wider-world, the outcomes of which will affect their lives.
3. Kesgrave School	**community – campus** – curriculum • Increasing the physical activity of students with its associated health benefits • Reducing motor transport around the school area • Extending these benefits to feeder primary schools	The school realised that encouraging and enabling cycling would not only reduce car use, congestion and traffic dangers, but would also mean that students had more freedom to attend curriculum enrichment activities.
4. The City of London Academy	community – **campus** – curriculum • Reducing the waste the school produces and saving money that can be spent on improving teaching / learning • The link with an NGO to stimulate change • The creation of an EcoCouncil which can provide strong student support for developments	The initiative of one person has been supported and built on and is now embedded into how the school sees itself. Teaching and support staff have seen tangible advantages from this emphasis.

5. Royston School	community – **campus** – curriculum	The school reports an increase in 'feel good factor' amongst staff and students along with an improvement in exam results.
	• Increased use of the school grounds for teaching • The transformation of areas of the school into 'learning landscapes'	
6. The Glebe School	**community – campus** – curriculum	Education for sustainability is given a wide interpretation, and its principles fit well with the ideals and ethos of the school. The head is seen as open-minded and receptive to new ideas, and students are involved in decision making and bringing about change.
	• The school's use of horticulture, here given a wide interpretation to include business management, is an important element in sustainability initiatives; it provides a focus, which the students find motivating. • This also provides a valuable link with the local community.	
7. The Petchey Academy	**community** – campus – **curriculum**	The school has identified its extended curriculum as an opportunity for the institution and its students to interact positively with people from the community, and address all five outcomes of *Every Child Matters* through this.
	• The enhanced curriculum is used to enable students to work with local people in the community to enhance their well-being • There is effective collaboration with NGOs such as Global Action Plan	
8. Penair School	**community** – campus – **curriculum**	Appreciating the need to go beyond a 'greening' of the curriculum, to a much broad interpretation of sustainability, and finding the human and capital resources to put this in place.
	• The value and mutual benefit of strong links between schools at a distance • The use of both ICT and 'traditional' means of long-range communication to enable dialogue • Setting out to increasing students' potential to bring about change	

9. The Academy of St Francis of Assisi	**community – campus** – curriculum • The new building's environmental design has been significant in staff and student motivation about sustainability. • Links with the community are recognised as important, and the Academy has a stake in the development and management of the park adjacent to the school.	The student voice is considered to be important and a careful induction into democratic processes is gradually taking place. In staff professional development there is an emphasis on education for sustainability.
10. Crispin School	**community – campus – curriculum** • Teachers are encouraged in developing activities outside their curriculum area and out of normal school time. • Time and money are found for teachers to include education for sustainability in their professional development and to help develop their expertise and planning skills. • The use of the campus is strong as are two-way community links	The school's vision of sustainability is well articulated to teachers and promoted to parents. Overall responsibility lies with a well motivated deputy head who works with a team of teachers including an assistant head and the education for sustainability co-ordinator. Senior management undertakes reviews of progress, acknowledging deficiencies as well as successes, and involve students in the process where possible.
11. Durham CBC and Fyndoune Community College	**community** – campus – **curriculum** • The development plan is supported by a CPD programme to encourage all staff to include aspects of sustainability in the curriculum. • The federation has developed a project that combines aspects of sustainability with enterprise; using this to raise money to send to global partners for a water aid initiative. • Regular video conferencing has helped to draw the two school councils closer together.	A deputy head in each school drives the sustainability agenda. Each has a broad view of the nature of sustainability which they promote, and each has a specialist interest. The development plan includes education for sustainability as a key component of school development. Time and finance have been put into making the student voice more effective.

12.	community – campus – curriculum	Taking an appropriately
		broad and wide-ranging
Devon local authority	• Students' first-hand investigations and direct engagement are encouraged	view of sustainability, the local authority has set out a progressive set of 'entitlements' for the students in its schools, right across the age-range.
	• The global as well as the local context is emphasised	
	• Student involvement in projects that address real-world issues is stressed	
13.	community – **campus** – curriculum	Taking a view of sustainability, mainly in relation to raw materials, energy and the building stock, the local authority has set out to address key sustainability issues that are of importance to all its schools. This will likely save schools money as well as making a contribution to sustainability.
City of Leeds local authority	• The local authority sets out to help schools reduce their use of natural resources, and production of waste.	
	• Schools are given access to seasonal produce with low 'food-miles'	
	• The local authority helps new school builds to have advanced, low-impact features.	

Sustainable schools and learning

One very positive feature of sustainable schools is that it has been written in a way to help governors, heads and teachers relate readily to its structure and language; the use of familiar doorway labels such as food, energy, water, travel, waste etc., means that the language of the initiative is not only already familiar, it also maps squarely onto many recent policy foci: school meals/ climate change/citizenship/inclusion/ etc. The DCSF hopes that schools will see in this framework much of what they do already, and be encouraged to continue with this, and do more, with, perhaps, every school leader then being able to echo the headteacher profiled in the consultation paper (DfES, 2006b) who is quoted as saying:

We didn't realise we were doing sustainable development until somebody told us. We were just trying to meet the needs of our children.

As this illustrates, there is considerable scope for misunderstanding the point here. Being able to use the sustainable schools initiative, with its familiar language, to be able to say that schools are now addressing sustainable development has obvious attractions for government as it wants to stimulate activity, and it has to report on progress in these matters to UN agencies.

However, there must be more to it than this, otherwise schools can just carry on doing what they do now. For example, there has to be a difference between, on the one hand, addressing each doorway through the curriculum (the easy bit, a lot of which happens now), linking this with purposeful activities in the school and community with tangible pay-back through, for example, lower water bills (more difficult to do, but which is being attempted with some success as the case studies show), and on the other to have all this lead to student capability to respond to the challenges everyone will face in sustainable development (the really hard part, and a longer-term goal – that not all school leaders yet understand).

Of course, one problem is that the issues addressed by the policy idea of sustainable development, are sometimes hard to express succinctly. In its consultation response, the DfES (2006a) noted this:

> Sustainable development means inspiring people in all parts of the world to find solutions that improve their quality of life without storing up problems for the future, or impacting unfairly on other people's lives. It must be much more than recycling bottles or giving money to charity. It is about thinking and working in a profoundly different way.

This idea of 'thinking and working in a profoundly different way' raises questions about what schools should do, if they are to take this idea seriously, and what follows addresses this question, drawing on recent work by members of the South West Learning for Sustainability Coalition (Vare & Scott, 2007).

A key question is what any over-arching focus ought to be.

Focus [1]

For example, should schools focus on:

> facilitating change in our ability to deal with the problems of the present, and how we live now, by promoting behaviour change, a shift in habit, or a switch in how things are thought about, where the need for this has been clearly identified and socially agreed.

We might term this learning for sustainable development where education's role in sustainable development is a broadly instrumental one of passing on 'what works' to the next generation. The case studies show that schools are beginning to do this both through the curriculum (formal and extended) and in relation to how the school operates as an institution in its local community.

Focus [2]

Or should schools focus on:

> facilitating change in our ability to deal with an uncertain and unknown future by building students' capacity to think critically about [and beyond] what is known now and what experts say, and to test out sustainable development ideas.

We might term this learning as sustainable development where education's role in sustainable development is seen as promoting a social learning process of improving the human condition whilst living within the Earth's capacity to support life. The case studies provide less evidence of this in terms of curriculum, though the emphasis in Case 2 on challenging preconceptions, and appreciating difficulties, does seem to do this.

In reality, of course, Focus [1] and Focus [2] are both needed. The first is important for two reasons: there are clear benefits to organisations, families, and individuals to be had in the short term, as well as wider environmental and social benefits; and we just have to do the obvious things – for example, there are few good arguments against insulating roof spaces where we can. But, of course, not everything's as simple as insulation. This takes us to the second focus and, because we shall need to think and work in profoundly

different ways, we also need to be able to engage with difficult questions that we don't yet fully understand.

In this sense, Focus [2] not only complements Focus [1], it makes it meaningful, because our long-term future will depend less on our compliance in being trained to do the 'right' thing now, and more on our capability to analyse, to question alternatives and to make our own decisions when we need to. Thus, Focus [2] involves the development of learners' abilities to make sound choices in the face of the inherent complexity and uncertainty of the future, because, the argument goes, by learning throughout our lives we equip ourselves to choose most advantageously as the future unfolds.

As already noted, much of what schools currently do in this area is predominantly Focus [1] as the cases illustrate. However, schools can work on Focus [2] by recognising and acting on the very many tensions that surround sustainable development – engaging students in these. These tensions include:

- is sustainable development actually impossible because development (i.e., economic growth on the Western global-capitalist model) cannot be sustained?
- is it free trade that needs to be promoted rather than fair trade, because the former is a better poverty eradication strategy?
- is overseas aid problematic rather than useful in helping developing economies flourish because it creates dependence?
- should the air freighting of fresh fruit and vegetables into this country be discouraged because it adds to CO_2 emissions?
- is the key role of human-produced CO_2 in global climate change really proven?
- do personal freedoms need to be curtailed in order to limit destabilising changes; eg, to climate and resource availability?
- is nuclear power now necessary if we are to reduce our carbon footprints?

And so on – this list is a very long one. Though expressed as simple questions here, inviting 'yes'/'no' responses, none of these issues is at all simple, nor do any admit of easy solutions. However, the issues are important, not just to us here and now, but to everyone across the world both

now and for the future. Such existential issues, appropriately raised, ought to be inherently motivating.

For Focus [2], examples of practical issues that might be raised with students include:
- should schools buy as much food and drink as possible from local sources; or should they continue to bring it from all over the world through trade with other countries where price and quality are the main things that matter?
- should schools strongly promote fair trade in what is bought?
- should schools emphasise recycling and the composting of waste, or should they try not to create waste in the first place?
- should schools allow parents to drive their cars up to the school gates, or should students have to walk, cycle, or use public transport?

Again, this is a brief selection from a long list, and the case studies provide some examples of what, and how, this is being done. The cases suggest that it is not just that these issues are dealt with that's important, but that the whole school community is involved in their resolution.

The DCSF is encouraging schools to have an outward-looking, globally-minded and future-focused curriculum that enable students to engage in open-ended ways with the hugely significant debates that are happening in the wider world, the outcomes of which will surely affect their lives. So, it is not just the eight doorways that matter, but it is the tensions that schools enable students to face up to when they go through them that are crucially important, and a school that doesn't raise these in what it does with its students (and staff), is missing much of the point about sustainable development, and losing valuable opportunities for learning by all concerned.

Key characteristics of effective sustainable school leadership in action
Looking at what little research has been done so far on sustainable schools and their leadership, and drawing in particular on recent work for the NCSL by a team led by WWF-UK. Table 4.2 sets out what seem to emerge as attributes that characterise effective leadership in sustainable schools.

Table 4.2 Attributes that characterise effective leadership in sustainable schools

The establishment of …	
A a vision which is …	• co created with those with a direct stake in the endeavour • fully congruent with the ethos of the institution • widely endorsed, informing everything the institution does
B a high-trust culture that …	• empowers governors, staff, students and parents, providing opportunities to get involved and take responsibility • devolves leadership, and maximises collective and shared responsibility • involves students in planning and decision-making • demonstrates innovation, risk-taking, security, resilience and flexibility • values a diversity of views as a way of engaging people • is committed to learning by everybody – and from experience • has regular, open reviews of progress made
C an institution that …	• is a hub for activity for and with its local community • builds and fosters mutually-supportive partnerships that support life-long learning and community well-being • brings real-world issues into the curriculum through the involvement of community groups
D an organisation where issues around sustainability …	• have a high profile across the work of the institution, and in its community links • are fundamental to, and integral across, the institution's work rather than being add-on or fragmented • are raised in different settings, as appropriate, and which are treated as holistically as possible • represent one of the institution's key ethical stances • enable the national curriculum to be taught more effectively, core priorities to be more readily accomplished, the *Every Child Matters* agenda realised through close connections with the community, and student achievement to be broadened and heightened • are not just focused on behaviour change in terms of known problems, but also on the building of students' capability for critical and independent thinking for the future

E a social learning community with a systemic view of the world and a heightened sense of place that …	• has a growing awareness of its environmental impact (footprint), has a strategy for steadily reducing it, and uses these as foci for learning • values outdoor, environmental, experiential and exploratory learning as a means of effectively engaging with real-world issues in authentic settings • is outward-looking, and whose work in embedded not only in it local context (socially, economically, environmentally, and culturally), but which has tangible links to real communities in other parts of the world • recognises that place is now a global phenomenon that raises moral issues of inter-dependence and shared responsibility, in relation to social and environmental justice • understands that [1] it can, and should, contribute not just to maximising learning and skills acquisition (its tradition role), but also to enhancing social cohesion, as well as [2] lessening its need for natural resources and its creation of waste, and maximising the efficiency of its buildings

Of course, A, B and C, here, are rather familiar; in essence they describe a particular view of an effective school. In this sense, in relation to sustainable schools, their presence in this table is necessary rather than exceptional. These are rather generic attributes. Much the same can be said of section D in that, although 'sustainability' is highlighted in the left-hand column, other words could be substituted and the right-hand column need not be changed at all. *Health*, for example, *Faith*, or *Enterprise* are all possibilities, and it is only the ethical point that constrains this list. Thus, although important, these are also generic. It follows from this that it is the issues highlighted in section E which are key if we are to have any sense of what's particular about the leadership of sustainable schools. What is set out in E is undoubtedly the business of sustainable schools, although it is not all necessarily new, owing much to environmental and development education in times past.

Another way of thinking about campus, community and curriculum

The DCSF's aim is that all schools should be 'sustainable schools' by 2020. This cannot mean that all schools should actually be sustainable in the fullest sense because the timescale is far too short, but schools can be expected to

have taken on board the philosophy and priorities, and to have made some progress towards sustainability. It will be impossible to make progress that is much in advance of what the wider society can achieve as schools (or any other institution) cannot exist as islands of sustainability in a sea of 'business as we know it now'. But that doesn't mean that nothing can be done, or that we cannot have some understanding of such progress

It follows from this that we need a framework to help us understand any progress that is made. Sustainable development is widely recognised to have social, environmental and economic dimensions, and so schools should expect to be making progress in all these areas at the same time. One good way of thinking about this in terms of schools is in terms of the asset base we draw on for our civilisation and well-being. This can be described in terms of four 'capitals'. These are:

Natural capital	eg, energy sources, raw materials, biodiversity, ecological systems
Manufactured capital	eg, buildings and equipment that have to be maintained and replaced
Human capital	eg, people's knowledge, skills, and capabilities
Social capital	eg, human relationships, and connections with the community and wider society

In these terms, a school that is making progress towards a being sustainable school can be thought of as one which:
• manages its use of the earth's natural capital in such a way as to minimise its depletion
• has buildings and equipment which are fit for purpose and as efficient as possible
• maximises its contribution to human capital through its core business of educating students, and also members of the wider community, thus developing capacity for social action and further learning
• maximises its contribution to social capital by adding to social cohesion, community well-being and mutual understanding, both locally and globally

This is a helpful way of seeing the issues in a wider context and it also makes it clear that schools are very important, especially in relation to human and social capital. But, as the sustainable schools initiative makes clear, part of that focus on increasing human capital has to include helping learners develop a critical, and operational, understanding of the whole issue of sustainability itself.

This argument reminds us that, if we are to achieve the win-win-win outcomes that the sustainable schools initiative seeks, all the four capitals are important, each doorway needs to be seen as connected to the others in the sense that they open onto the same space, and focusing on the whole life of the school, ie on: curriculum, campus and community, is crucial.

And this reinforces the view taken at the outset of this booklet that the kind of emphases and developments that are sought are of this form:

Curriculum

Student learning that integrates academic, practical and ethical concerns, that acknowledges the significance of the issues raised by the sustainable schools initiative to the whole of humanity both now and in the future, that recognises the existence of different perspectives on problems and what might now be done, that understands the complexities and uncertainties in data, and that appreciates the argument for involvement at a personal / social level in addressing concerns.

Campus

Greater awareness by governors, leaders, teachers and students of how the issues raised by the sustainable schools initiative impact on all aspects of school life, and how what the school does, as a community, might change and develop in particular ways, leading, for example, to a more integrated consideration of issues, cost savings, the creation of school buildings and grounds that can provide models of sustainability in practice, and hence act as positive teaching resources, and an enhanced involvement of students in decision-making.

Community

Increased local community involvement in all aspects of school life, the opening up of the school for community use, and its inspiration to the community of ways of more sustainable living; but also the recognition that the idea of community is now more appropriately seen at the global level, given our economic interdependence, our social linkages, and our shared environmental problems.

It is encouraging as well that the case studies included here make reference to this framework, even though the language of 'capital' is not explicitly used, and there is little sense of how progress might be made in the future. In other words, the power of the capital model is not just its ability to make judgements looking backwards, but its power to help plan future activity. The final part of this booklet suggests how this might be done.

Sustainable schools: being effective, raising standards

DCSF is funding longitudinal research on work in 12 schools that WWF-UK has supported over time, and there will be a report in 2008. Ofsted itself will report on a separate study of 45 schools in 2009. We are likely to get much more light shed on these important issues when both these studies can be read.

Whether one thinks of raising standards of student achievement in terms of SATs scores, GCSE grades, or entry to higher education (the narrow view), or one includes a much wider set of desirable student capabilities and skills in this (the broad view), getting valid and convincing data on the causal linkage between particular educational experiences and outcomes (in this case student achievement) is tricky. This is especially the case where both the experiences and the outcomes are not obviously linked in any temporal or spatial way. Sustainable school experiences can, by their nature, be diffuse, spread over time and place, be part of the general ethos, as well as part of the subject curriculum, enrichment activities or visits, etc, and may very well not be labelled as being sustainable. Further, what schools are trying to do in terms of awareness, understanding, skills, etc in relation to sustainability, many students will come across in other contexts, for example, at home, in

social groups, and through an increasing variety of media, and this makes it even more difficult to disentangle what is influencing what.

Thus, plausibility of accounts can be a more helpful way of thinking about relationships between experience and outcome than, say, a statistically valid measure that is unlikely to be forthcoming anyway. Therefore, we might look to accounts of students, teachers, governors, parents and community members for indications of impact and effectiveness. The DCSF research reporting in 2008 is setting out to capture aspects of this.

Meanwhile, what can we say about conditions for effective links with raising standards? This is a composite of what experienced headteahers said at a recent NCSL seminar:

> What really raises levels of achievement is students who are motivated by, and interested in, what they are doing. The need for effective teaching and support, and an appropriate curriculum, are givens in all this, but sustainability issues bring a distinctive and extra dimension. This is because students are focusing on significant issues in the wider world, issues that are of increasing interest to parents and the extended family and that get widely addressed in the media, and which community groups care about. Thus, these are not just things that they are taught about in some abstract way – they are issues that matter – and matter in terms of how the school operates as a community. Students understand this, and know that their involvement any consultation with them, is genuine. Thus, when students participate, they are likely to have an audience that cares about what they do and say, and it is this that makes their involvement additionally meaningful and motivating. Of course, sustainability issues are not the only ones that can do this, but such issues have a very wide reach across curriculum, campus and community, and they are of global significance.

Thus, the argument goes, when these conditions are all in place, effective teaching and learning is likely to result and achievement, in that significant broader sense, will rise.

Of course, a sustainable school is one that is not just interested in raising achievement all round, keen to work with its community in meaningful ways,

and focused on sustainable development, it is also a school that sees these as inextricably inter-linked. This is the essence of the win-win-win outcomes that are sought. Another way of saying this to go back to the 4 capital model and say that progress is needed on all fronts at the same time.

The matrix in Table 4.3 shows four very general possibilities in relation to achievement and the enhancement of sustainability.

Table 4.3 Student achievement and the enhancement of sustainability

	Sustainability not enhanced	Sustainability enhanced
Achievement raised	B An otherwise effective school that may not focus on sustainability, or do so ineffectively	C The best-case: achievement is raised and the school makes a (probably small, but positive) contribution to enhancing sustainability
Achievement *not* raised	A The worst case; there is no raising of achievement, or impact on sustainability; there may be no attempt to do the latter	D A case where there's no raising of achievement despite a contribution to sustainability

It could be that schools in [A], given the other priorities they may well have, find it difficult, in anything other than a tokenistic or rudimentary fashion to engage with the sustainability agenda. However, there must be potential for schools in [A] to become engaged as part of an achievement-raising policy. There are a lot of schools, historically, in [B] who haven't placed much emphasis on sustainability issues, although it is hard to believe that such schools don't focus on wider-world issues of some sort. The potential for

these schools to learn from others about sustainable schools, and to make a contribution, is high.

There are likely, as yet, only a few schools in [C], and some of them are featured in the case studies set out in this and other recent sources. These schools are in the best position to create their own plans to steadily enhance their contribution both to sustainability, to students and the community.

It is hard to believe that there are many (if any) schools in [D]. If there are, then that might be because 'raising standards' has been defined too narrowly. However, it is possible, just, to imagine institutions that focus so heavily on, say, reducing a carbon footprint, that other very vital matters get side-lined. In other words, the balance between learning (maximising human capital) and socio-environmental change (minimising the depletion of natural capital) is badly skewed. It is certainly possible to imagine lessons or teaching materials whose foci and purposes are unbalanced in this way.

Towards a model of institutional development

Building on Ken Webster's work, it is possible to envisage four broad stages in the onward development of a sustainable school. Webster terms these stages:

1. Exploratory
2. Assimilating
3. Strategic
4. Evolved

The following, developed from the case studies and the broader literature, is one way of thinking about these stages and their connection. As will become clear, each of the stages encompasses a range of developments and does not represent a static picture. Institutions will vary considerably in the way that they move through, and between, these stages.

The first stage is characterised by the work of individuals, with isolated curriculum inputs here and there, perhaps building on what is already done.

School leaders are probably not convinced or particularly supportive, but they are reasonably tolerant, and perhaps a co-ordinator is in place. There may be clubs and extension activities, and developing links with community groups and NGOs, with a few small projects, with some even in the community. There may be attempts at recycling and perhaps even waste reduction, but no commitment or resource to make any serious changes to the underlying economy of the school. The link between campus, community and curriculum will not be made in a convincing way, there will be no link made between the four capitals, no sense that a focus on sustainability might contribute to enhancing student achievement, and the ethos of the school will not relate to these issues, other than in a very general way. The approach here is one of enthusiasts getting things done, making a bit of progress at the margins, building up experience and developing a critical mass of people (in- and outwith the school) who can bring influence to bear on leaders and governors. Some of the case study schools may still be working at this stage – albeit well on the way to stage 2.

The second stage is where the school leadership has accepted the idea that a broad view of sustainability needs to be taken seriously in relation to the school's curriculum, and supports the opportunities that exist for mutually-beneficial links with the local community that involve the campus as well. It will be providing active leadership and drawing staff, governors and students into this process. Increasingly there will be emphases on making sustainability a significant aspect of the life of the school, and one of the things the school is known for. There may well be a vision that addresses sustainability, and a recognition that this is not just about what the school teaches, how it links with the community, or how its own campus is managed, but is about all three of these in an integrated fashion. Community will increasingly be recognised as global as well as local. Investment to make changes around heating, lighting, resource and water use, will probably be in place and the school will be becoming more obviously 'sustainable' in what it tries to do; waste reduction is on the agenda – and not just to save money. There will probably be projects in operation that bring benefit to the local community, and there will be more interchange with the community around issues such as transport, gardening and food. Here, more of the curriculum – and more often – has a sustainability focus, and it draws on what the school is trying to do in

its management. The approach here is more critical, and questioning is to the fore in order to open up the tensions and contradictions that are inherent in sustainable development. Most of the case study schools are at this stage – with some no doubt farther down the road than others.

The third stage needs a different way of budgeting. The aim is to reduce carbon emissions substantially at source, not through offsets. Those institutions which have been newly-built to the best sustainability standards may well be in stage 3 in terms of natural and manufactured capital, although there seem, as yet, few of these. Such buildings, for example, may be able to generate useful energy rather than using it up. These schools may not be at stage three, however, in terms of the curriculum and community links (human and social capital), as this depends on the leadership provided by governors and school leaders – depends on how they make use of the buildings as stimuli to learning, and as role models for the community. In stage three, such new buildings can support pedagogy well because they exemplify good sustainability practice. In stage three institutions, the exchange between school and community is more extensive, and more real and it adds to social capital. It seems certain that there is, as yet, insufficient school experience from which to say much more about stage three. It is doubtful whether any of the case study schools (or any schools) are fully operating at this stage.

The fourth stage probably sees the idea of a school – and perhaps education itself – changed, and it is not possible to say much more about this.

In this way of envisaging step-wise development, there is a reasonable match with how Stephen Sterling has thought about the institutional responses to the challenge of sustainability. Table 4.4 shows Sterling's description of these shifts:

Table 4.4 Institutional responses to the challenge of sustainability

State of sustainability	Institutional response	Sustainability stance
A No, or token, change	Denial/rejection/ minimalist	Very weak
B Cosmetic reform	Bolt-on	Weak
C Serious greening	Built-in	Strong
D Wholly integrative	Rebuilt/redesigned	Very strong

In all this, the precise details are not really important. It is the direction of development that matters, making sure that there are an increasing number of win-win-win outcomes – and this is something that schools should be thinking about for themselves – and building the idea of this direction of development into their planning and evaluation.

It is this important aspect of the development of sustainable schools that this booklet has attempted to assist.

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Glossary of acronyms

Defra UK Department for Environment, Food and Rural Affairs

DCSF Department for Children, Schools and Families

DfES Department for Education and Skills

DfID UK Department for International Development

ESD Education for Sustainable Development

NCSL National College for School Leadership

NGO Non Governmental Organisation

Ofsted Office for Standards in Education

QCA Qualifications and Curriculum Authority

SSAT Specialist Schools and Academies Trust

UN United Nations

UNESCO United Nations Educational, Scientific and Cultural Organisation

WCED World Commission on Environment and Development

WWF World-wide Fund for Nature

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