

# Developing the Sustainable School: thinking the issues through

## Acknowledgements

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**South West Learning for  
Sustainability Coalition**



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## Preface and Purpose

As noted in the Acknowledgements, this work is a response to a call from DCSF in 2009 for more research into the link between the work of sustainable schools and national ESD indicators. As such, it builds on much previous work and owes a particular debt to: ESRC-funded research CREE did with the University of Lancaster [*Natural Capital: metaphor, learning & human behaviour; 2004*]; our Anglo-German Foundation-funded research [*Indicators of progress in Education for Sustainable Development: the state of the art; 2006*]; the Specialist Schools and Academies Trust-funded research [*Raising Standards: making sense of the sustainable school; 2008*]; evaluation studies of school development programmes in the South-west of England, funded by GOSW [2007 – 2009], and to work by Ken Webster [2004; 2009] whose writing and thinking on sustainable school development shaped underlying thinking.

It needs to be noted at the outset that this report does not quite do what DCSF called for in terms of accountability, external and summative evaluation, or indicator framing; put simply:

*How can we know what the development of sustainable schools is contributing to UK sustainable development?*

... where the “we” refers to government, and “sustainable schools” to all schools in the aggregate. In the end, this research has adopted a development / internal and formative evaluation framing:

*How can we know how effectively the development of the sustainable schools is progressing?*

... where the “we” refers to all stakeholders in the school, and “the sustainable school” to the one institution in its community. Thus it has a different focus and starting point. It does, however, do something new in that it looks at the idea of the sustainable school in terms of a contribution to sustainable development, and uses the four capitals models of Herman Daly and Donella Meadows to do so. In doing this, it builds on previous work about the developmental stages that a sustainable school might go through on its journey, and the result is three sets of descriptors [12 texts in all] that might guide a school’s thinking about what it wants to do next.

It is, of course, possible to see two sides to this coin: [i] the sense of an heuristic – a rather embryonic and sketchy map to the terrain left by those who’ve travelled part of the way and reflected on the journey; or [ii] the sense of a set of instructions – a rather detailed and certain plan to be followed, and evaluated against. It is in the former sense that all what follows has been written.

The report begins with considerable ground clearing and the introduction of terms and issues, and this takes up more than half of the main body of the text. The twelve descriptor texts then follow from page 16, and the two annexes contain other descriptors, one from Ofsted, and the other from Chris Gayford’s recent work for WWF. Whilst it might be tempting to go straight to the descriptors, absorbing some of the background first may help a critical take on the arguments.

The main audience for the report is anyone (policy maker / school leader / teacher / governor / inspector / advisor / trainer / researcher / ...) who thinks about how a sustainable school might be conceptualised and how it might develop, and it is the South West Coalition’s hope that the research will make a small contribution to this understanding.

## Introduction: mapping the ground

It ought to be obvious that what goes on in a school that sets out to take sustainability seriously in what it does across its campus, curriculum and community has to link to wider attempts to change social practice to more sustainable (or, at least, less *unsustainable*) ways of operating, which many now call *sustainable development*<sup>2</sup>. In other words, that what schools do, as social institutions, makes a contribution to wider efforts at sustainability: doing their bit, as it were.

Schools are not alone in having this expectation placed upon them as it now falls to all institutions: hospitals, banks, car dealerships, estate agents, broadcasters, supermarkets, hedge funds, hair dressers, etc., to, not only do something about sustainability, but also *learn* about what they do through doing this. The significance of this meta-level aspect to education (that is to say *learning*) for sustainable development (ESD) can be hard to appreciate, especially when so much emphasis is placed on changing behaviour with the need to understand, and build capacity, played down. Schools, however, along with colleges and universities, can be under no such illusions, as they have the extra imperative of remembering that their *raison d'être* is to help young people learn about such matters (along with a host of other things). For these institutions, it seems clear that, if choices have to be made between helping young people learn and, say, saving carbon, then it is the former that needs to take priority. Fortunately, however, such stark choices do not normally need to be made, as the two can usually be achieved together. See Scott (2010) for an exploration of this issue.

For most schools engaged in sustainability-focused work there are links to wider sustainability matters which are, superficially at least, fairly obvious:

- ✚ DCSF's focus on the 8 doorways (including energy, water, travel, traffic, purchasing and waste) gives a link to attempts to reduce resource and energy use and develop alternatives
- ✚ DCSF's *every child matters* focus, and the elaboration on this by the Sustainable Development Commission: *Every Child's Future Matters*.<sup>3</sup>
- ✚ the DfID / DCSF / NGO focus on the global dimension, global citizenship<sup>4</sup> and global learning, and on well-being, which connects to attempts to increase inter-cultural understanding and, more sharply, to decreasing poverty and enhancing quality of life, with links to the UN's millennium development goals
- ✚ NGO support for environmental education that is linked to international attempts to avoid species loss, habitat destruction, deforestation, and to enhance stewardship, and biodiversity more generally, and
- ✚ the curriculum focus on citizenship with both in-school and school-community opportunities to practice the development of citizenly (*action competence*) capability<sup>5</sup>.

These foci map, albeit uneasily, onto a common way of thinking about sustainable development as requiring improvement in environmental, economic, and social spheres at the same time, with minimal trades-off between these, although this last condition is not always fully appreciated.

In the next section, there is an exploration of the idea that a means of indicating

<sup>2</sup> And many don't, of course, for a wide range of reasons: ideological, philosophical, and pragmatic.

<sup>3</sup> [http://www.sd-commission.org.uk/file\\_download.php?target=/publications/downloads/ECFM\\_report.pdf](http://www.sd-commission.org.uk/file_download.php?target=/publications/downloads/ECFM_report.pdf)

<sup>4</sup> In Wales, global citizenship is conjoined with ESD (as ESDGC) to emphasise this linkage

<sup>5</sup> Two recent reports (Ofsted, 2010, and Keating et al., 2009) have highlighted the link between sustainability and curriculum, as have thoughtful new books such as Webster & Johnson (2009). The helpfulness of ideas around action competence, a concept that was evolved in Denmark in the context of health and environmental education in the 1980/09s has yet to be appreciated in the UK. See Jensen & Schnack (1997).

development is necessary if we are to know something about what we are achieving, and if we are to be able to plan sensibly. As EF Schumacher noted:

That which is good and helpful ought to be growing and that which is bad and hindering ought to be diminishing. ... We therefore need, above all else, ... concepts that enable us to choose the right direction of our movement and not merely to measure its speed.<sup>6</sup>

### Progress Sought: indicators needed

Given the nature of the sustainable schools initiative, it is clear why the Government should want to be able to demonstrate (ie, indicate) the link between schools' work and the country's development, through policy and practice, of more sustainable ways of living. There are a number of dimensions to this, but two stand out, albeit for quite different reasons. One would give rise to *external* judgements, and the other to *internal* ones.

The external relates to national sustainable development indicators. Defra<sup>7</sup> publishes a set of national sustainable development indicators which cover a very broad range of socio-economic activity deemed to be germane to sustainability.<sup>8</sup> There are two indicators [ #47 / #48] directly focused on education. The first, 'educational attainment', is determined to be the proportion of 19 year-olds with level 2 qualifications and above<sup>9</sup>. The second, 'sustainable development education', Defra notes, is "to be developed", and it goes on to say:

"It has not been possible to find a simple way of measuring progress on education for sustainable development. Research in 2008 indicated that evidence of sustainable development could be inferred from changes in three areas:

**1 Policy** – reviewing and re-orienting education policies. Government departments responsible for education, training and the environment, and those guided by education policy (e.g. Ofsted, exam boards and Local Authorities)

**2 Programme and practice** – integration, leadership and building personal and social capacity. Individual universities, colleges, schools and third sector bodies providing training

**3 Personal and social** – developing understanding and skills. Individual universities, colleges, schools and third sector bodies providing training through a range of approaches including inspections, research and evaluation studies, alongside data gathered from ongoing attitudinal surveys.

For each, evidence will be sought. This third category of evidence, particularly any survey evidence of attitudinal change or levels of knowledge, will be most relevant and presented here when data are available."<sup>10</sup>

Clearly, 2 & 3, above, link to what *individual* schools do, but only in a quite diffuse way, as any indicator will aggregate a set of judgements that will be arrived at externally, and made at the sector level, and will likely say nothing about how an individual school is faring in, or equally crucially, *understanding*, its own journey towards sustainability, and learning from this. This problem that Defra has of finding an indicator for 'sustainable development education' has been grappled with extensively. See Reid et al. (2006) for a

<sup>6</sup> Quoted without citation in Meadows (1998)

<sup>7</sup> <http://www.defra.gov.uk/sustainable/government/progress/data-resources/sdiyp.htm>

<sup>8</sup> These include CO<sub>2</sub> emissions per end user, renewable energy, household waste per person, bird populations, river quality, economic output, fear of crime, childhood poverty, healthy life expectancy, road accidents, and so on.

<sup>9</sup> In 2008, this stood at 77%, having risen from 66% in 2004. In 1990, under an old, and not totally compatible, measure, it was 52% of 19 to 21 year olds.

<sup>10</sup> For an extensive exploration of the difficulties, see Huckle, 2006a-d.

thorough review of the history of this development and its many pitfalls.<sup>11</sup>

The most straightforward way of indicating that schools are doing something has been put forward by Dorset Local Authority<sup>12</sup> and by Paul Vare, one of the UK's members of the UNECE indicator group. They independently proposed that the baseline indicator ought to be that schools have developed their own contextually-appropriate indicator, and were actively monitoring this<sup>13</sup>; a key distinction is that Vare proposed this as an indicator of *learning* in the broad domain of sustainability rather than an indicator for sustainable development *per se*. Clearly, an eco-school's<sup>14</sup> green flag might be thought of as one such indicator, but the fragmented view of sustainability which eco-schools presents, the way that success is possible without the whole-hearted involvement of the entire school, along with the relative ease with which such flags are obtained (and renewed)<sup>15</sup>, means that this will not, of itself, do<sup>16</sup>. Neither will any of the increasing number of awards that are available to schools.<sup>17</sup>

The second, internal, response relates to the ability of schools to be able to make such judgements for *themselves* about how they are progressing. As noted above, these will, one way or another, be related to how the institution understands the idea of sustainability, and the commitments that it has to being a sustainable school by 2020. There are a number of ways of addressing this.

This ability to track the development of practice across campus, community and curriculum is something that DCSF and others have taken seriously. In the case of the DCSF, this is through the use of the **s3**<sup>18</sup> documentation; DCSF notes,<sup>19</sup>

“The s3 tool has been designed for teachers, school leaders, pupils, governors, local authorities and parents. It provides schools with a voluntary way to record and report their efforts to promote sustainable schools, as an integrated part of their Ofsted SEF. For some schools, parts of **s3** may be pasted directly into the relevant Ofsted SEF sections. Based on Ofsted's self-evaluation form, the interactive tool enables schools to record their evidence around the eight sustainable development ‘doorways’ of the national framework and report improvements and benefits to the school and community. Based on responses it also recommends action that schools can take to the next stage of development.”

This seems, anecdotally at least, to have had a mixed reception from those practitioners who have actually seen and tried to use it<sup>20</sup>. In as much as the doorways map onto sustainability, then so does (or doesn't) the **s3**. Its power undoubtedly lies in relation to the wrapping together of the doorways and the Ofsted self evaluation process (the SEF)<sup>21</sup> which can encourage schools to include matter relating to doorways (and, partially at least, sustainability) in their reporting to Ofsted. Now that Ofsted has changed its SEF,

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<sup>11</sup> The UN's Economic Commission for Europe (UNECE), and initiatives such as ARIES, have also laboured long and hard in this vineyard, though to no great practical effect. See

<http://www.unece.org/env/esd/SC.EGI.htm> and <http://www.unece.org/env/esd/SC.EGI.htm>

<sup>12</sup> Dorset ESD strategy (2000): “Each school should be able to identify their own indicators of success. They will be unique to that school; depending on their location, phase, best practice and circumstances within which the school operates’

<sup>13</sup> Whilst there is definitely something in this idea, and its simplicity appeals, the issue of tokenism is acute, and there would need to be other indicators indicating how effective the indicator was at indicating ...

<sup>14</sup> <http://www.eco-schools.org.uk/>

<sup>15</sup> It ought to be much more difficult to renew the flag than it was to get it for the first time in order to show development, but it isn't.

<sup>16</sup> This is not to detract from the utility of eco-schools as a framework within which to get started, mobilise commitment, and develop from. It does, however, question just what a Green Flag tells the world.

<sup>17</sup> These, too, would seem too easy to get to be worth very much.

<sup>18</sup> The s3+ is for use by local authorities.

<sup>19</sup> <http://publications.teachernet.gov.uk/default.aspx?PageFunction=productdetails&PageMode=publications&ProductId=DFES-03973-2006&>

<sup>20</sup> One headteacher, for example, who took sustainability seriously confirmed that she used the **s3** in order to draft the school's SEF text.

<sup>21</sup> <https://forms.ofsted.gov.uk/login.aspx?ReturnUrl=%2findex.aspx>

the **s3** is having to be re-designed, and this is work in progress.

The **s3**, however, only enables schools to score their work in relation to each of the doorways and SEF headings, and then to add these scores up. It has two parts. Part A (*Supporting School Improvement*) allows an evaluation of achievement across the six headings of the SEF; ie, the six dimensions of school performance and improvement:

- 1 Characteristics of your school
- 2 Views of learners, parents / carers, community and other stakeholders
- 3 Achievement and standards
- 4 Personal development and well-being
- 5 The quality of provision
- 6 Leadership and management

... using 16 questions which provide a maximum score of 90. Part B (*Supporting Sustainable Development*) does the same in relation to the 8 doorways:

- |    |                      |    |                             |
|----|----------------------|----|-----------------------------|
| 1  | Food and drink       | 2a | Energy                      |
| 2b | Water                | 3  | Travel and traffic          |
| 4  | Purchasing and waste | 5a | Buildings                   |
| 5b | Grounds              | 6  | Inclusion and participation |
| 7  | Local well-being     | 8  | Global dimension            |

... using 10 questions which also provide a maximum score of 90. It is possible to select descriptors under four evaluatory headings<sup>22</sup>:

*Getting started      Satisfactory      Good      Outstanding*

... which have a broad correspondence to Ofsted's school inspection descriptor headings (See Annex 1), although this judgement-focused language is unhelpful when it comes to institutional development. Schools are invited to come to a view of the totality of the school experience by summing these scores numerically. As a rough guide, DCSF would like all schools to be reaching the following milestones, taking A & B together:

<b>Date</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>
<b>Points</b>	60 to 119	120 to 150	151 to 180

Considerable care has gone into the development of the **s3**, with its 108 separate descriptors, and a school using the document carefully to gain insight into how it might develop its sustainability work would likely be well positioned. The **s3** is handicapped, however, by being wordy and complex, and hence hard to use, and also because it uses the eight doorways which do not map particularly well onto sustainability if taken in the round<sup>23</sup>. The part B descriptors that relate to *supporting sustainable development*, and which are of most interest when it comes to the development of sustainable development indicators, seem under-developed when compared to the part A ones. The descriptors mostly take on the same form. Most 'satisfactory' descriptors begin: "We have audited and understood ..."; all the 'good' descriptors begin: "We involve pupils and staff in the delivery and monitoring of ..."; and all 'outstanding' descriptors begin: "We encourage pupils and staff to apply what they have learned about ...". All these then relate to a specific doorway issue, for example: "We involve pupils and staff in the delivery and monitoring of *our water conservation work* ...". Ultimately, however, it is the fragmentation of ideas that the **s3** represents which makes it not only hard to use, but also misleading, as learning is divorced from sustainability which is fractured into parts *never to be put together again*.

But is it possible to draw on these ideas and produce something that is at once more

<sup>22</sup> It needs to be noted that, although these headings (and much of the **s3** text) are evaluatory, they also have the capacity to be useful in planning and development terms. That is, they also have heuristic value.

<sup>23</sup> The lack of a biodiversity indicator is the most egregious example of this, but it is not the only one. See Scott (2008)

whole and easier to use – whilst being complex enough to be meaningful? It is to this question that the paper now turns.

### **Beyond Indicators: developing descriptors**

Another tack is to suggest that it is sensible to think about stages<sup>24</sup> that schools can go through in their institutional journey towards being more sustainable, and to approach this by writing what are, in effect, *progress descriptors*<sup>25</sup> which would have two linked functions: [i] as a way of gaining an understanding of progress made; and [ii] as a means of scoping the next developmental steps that might be taken.

Building on Ken Webster's (2004) excellent beginnings, it has been possible to set out broad stages in the onward development of a sustainable school. The following (Stage Model 1) was developed from work carried out for the Specialist Schools and Academies Trust [SSAT] (Scott, 2008) which drew on DCSF, National College, SSAT, and Government Office case studies of school practice, and on the broader literature<sup>26</sup>, and is one way of thinking about these stages and their connection. Each of the stages encompasses a range of developments and does not represent a static picture. Inevitably, institutions will vary considerably in the way that they move through, and between, such stages.

**Stage zero** is exemplified by the Headteacher who said: "What's the sustainable schools initiative?" But it could be that there's quite a lot going on in such a school through the work of interested teachers in clubs and out of school activities – or even through teachers just doing what they're supposed to do – teaching about biodiversity, ecological systems, social structures, or global poverty, for example.

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, developing links with community groups and NGOs, and a few small projects, perhaps including some in the community. There may be attempts at recycling and perhaps even waste reduction, but no commitment or resource input 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 different aspects of sustainability, 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 (within and outwith the school) who can bring influence to bear on leaders and governors.

<sup>24</sup> Another way to express this is to refer to the *steps* that schools can take on their institutional journey towards being more sustainable. There are advantages to this language, not least that it locates the agency and responsibility firmly with the school, but also that it embodies movement. Despite this, the notion of *stages* is persisted with in this section as this was the original language used.

<sup>25</sup> Gayford (2009) has established two sets of stage descriptors in relation to student learning. This impressive, and as yet under-exploited, work is set out in Annex 2. One important aspect of it is its championing of student agency.

<sup>26</sup> See Scott (2008) for an explanation of the background to this work.

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.

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. There may well be local sourcing of food for the kitchens, for example. 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 – and 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 could be that schools at this stage will be both role models and advocates for socio-environmental change. It seems certain that there is, as yet, insufficient school experience from which to say much more about stage three.

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 with any confidence<sup>27</sup>. However, the school buildings and campus are probably eco-restorative in that they contribute to social, cultural and natural capital stocks.

<sup>27</sup> This was thought the case at the time. As will be seen in what follows, it is not the case now, although stage 4 is seen, not just as open-ended, but, rather, *without* end.

In parallel to this, Webster's latest book with Craig Johnson (2009), sets out four descriptors: *exploratory*, *assimilating*, *strategic*, and *eco-restorative*, being the equivalent to stages 1 to 4, above. These Model 2 stage descriptors are:

**Stage 1 Exploratory**

Individually or as an eco-team activities in school are developed with whatever few resources and money are available. This stage tends to be uncritical and if the curriculum element means anything it is reinforcing a 'do with less', recycle, you've heard it all before list of handy hints and small projects. This is fine when exploring Stage 1. It's a moral agenda really, and focussed on individual behaviour change. Community involvement or outreach is there but more or less on a project basis. Work at stage 1 can generate real enthusiasm but it's probably big on frustration too.

**Stage 2. Assimilating**

Is money finding its way from the school or college managers into day to day or term to term purchasing: light bulbs, energy supply choices, carbon offsetting, paper and so forth? If schools are not reaching into their bank accounts it's a fair estimate that sustainability is not being assimilated. In the community, more permanent features emerge such as shared gardening, reuse and recycling schemes, openness to the community. In the curriculum, the social and economic aspects of the issues are investigated, as well as choices about commitment to (individual) action. This might bring some tensions as the simple 'to do' lists of Stage 1 become critiqued. Is recycling a good idea? Should prices reflect full costs? What's in it for me? Will this add up anyway?

**Stage 3. Strategic**

At this stage, school and college take a strategic view using capital projects to obtain major cuts in say carbon emissions (at least 60%). The building now has the potential to support pedagogy – it exemplifies and sets the context for the school's operation which then filters through (let's say) into a mutual exchange between school and community – local food suppliers, selling / buying surplus electricity or sharing water treatment facilities or a car club and so forth. The school is helping counter the loss of social capital. In the curriculum, the job might be a great deal tougher. Perhaps the role and usefulness of essentially 'closed loop' models is demonstrated through the campus and enters mainstream curricula as a debate in design and technology, business, science, humanities and economics. Meanwhile, the overall sense in the school is of discussing the transition to a low carbon future with the community and the choices that need to be made. Learning for change. Many students see this as aspirational as new skills and job opportunities unfold and the school/college refurbishment shows what can be achieved.

**Stage 4. Evolved to eco-restorative**

The sustainability agenda does not leave the *idea* and structure of schooling untouched. How could it? Under many pressures, social and economic as well as environmental, schools evolve and perhaps downsize and relocalise to suit a low carbon economy. The community/school boundary gets very indistinct with a mix of one to

one, local practical and vocational skills in the community being blended with more part-time teaching and ICT based relationships – a network school. Systems thinking represents a preferred worldview with educators and learners when designing curriculum, campus and community (3Cs) programmes. The school buildings and campus are possibly ‘eco-restorative’ – they produce more energy than is used and enhance biodiversity and social capital. Meaning and purpose is enhanced in this evolution. Curriculum is focused on learning for change (in society) and is highly personalised. The buildings / management of learning spaces is responsive, and flexible.

Looking at both of these it is possible to see not only their similarity, but also the mismatch between the **s3**'s ‘outstanding’ grade for *supporting sustainable development*, and the notion of *eco-restorative*, with the latter's being *very much* more demanding (and much more realistic of a truly sustainable school).

However, these descriptors, although much more easy to use than the **s3** because of their less fractured nature, are still not really fit for purpose because they do not map sufficiently convincingly onto our ideas of sustainable development itself, and because they do not differentiate sufficiently between ideas which are packed into each descriptor in a single block of text that tries to cover all aspects of the sustainable school. Because of this, these descriptors are not yet much better than is the **s3** at mapping onto sustainable development and indicators.<sup>28</sup>

In what follows there is an introduction to the development of a set of structured descriptors that do link sustainable schools with sustainable development. This begins with a focus on leadership because of its crucial nature.

### The Centrality of Leadership

The DCSF's foregrounding of *curriculum*, *campus* and *community* within the sustainable schools initiative is not helpful on one significant point: it takes the eye away from the importance of leadership, and suggests to the unwary that this might not be as crucial as it obviously is<sup>29</sup>. Each of the stage models set out above indicates the key dimension of having an institutional leadership that understands the issues, and *owns* the process of addressing them. Model 1 does this explicitly; model 2 more implicitly.

The following text, originally published by the Specialist Schools and Academies Trust (Scott, 2008) sets out a range of attributes that might characterise effective leadership in sustainable schools, and without which nothing very much will be embedded within both school culture and practice.

The establishment of ...	
<b>A</b> a vision which is ...	<ul style="list-style-type: none"> <li>✚ co created with those with a direct stake in the endeavour</li> <li>✚ fully congruent with the ethos of the institution</li> <li>✚ widely endorsed, informing everything the institution does</li> </ul>
<b>B</b> a high-trust culture that ...	<ul style="list-style-type: none"> <li>✚ empowers governors, staff, students and parents, providing opportunities to get involved and take responsibility</li> <li>✚ devolves leadership, and maximises collective and shared responsibility</li> <li>✚ involves students in planning and decision-making</li> <li>✚ demonstrates innovation, risk-taking, security, resilience and</li> </ul>

<sup>28</sup> Some structured differentiation *is* needed, but much less than in the **s3**.

<sup>29</sup> Despite this, it is clear from other sources that DCSF fully appreciates the importance of school leadership and its distributed nature (Fullan, 2005; Harris, 2008) to the sustainable schools initiative, and the role of young people in this.

	<p>flexibility</p> <ul style="list-style-type: none"> <li>✚ values a diversity of views as a way of engaging people</li> <li>✚ is committed to learning by everybody – and from experience</li> <li>✚ has regular, open reviews of progress made</li> </ul>
<b>C</b> an institution that ...	<ul style="list-style-type: none"> <li>✚ is a hub for activity for and with its local community</li> <li>✚ builds and fosters mutually-supportive partnerships that support life-long learning and community well-being</li> <li>✚ brings real-world issues into the curriculum through the involvement of community groups</li> </ul>
<b>D</b> an organisation where issues around sustainability ...	<ul style="list-style-type: none"> <li>✚ have a high profile across the work of the institution, and in its community links</li> <li>✚ are fundamental to, and integral across, the institution’s work rather than being add-on or fragmented</li> <li>✚ are raised in different settings, as appropriate, and treated as holistically as possible</li> <li>✚ represent one of the institution’s key ethical stances</li> <li>✚ 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</li> <li>✚ 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</li> </ul>
<b>E</b> a social learning community with a systemic view of the world and a heightened sense of place that ...	<ul style="list-style-type: none"> <li>✚ has a growing awareness of its environmental impact (footprint), has a strategy for steadily reducing it, and uses these as foci for learning</li> <li>✚ values outdoor, environmental, experiential and exploratory learning as a means of effectively engaging with real-world issues in authentic settings</li> <li>✚ is outward-looking, and whose work is embedded not only in its local context (socially, economically, environmentally, and culturally), but which has tangible links<sup>30</sup> to real communities in other parts of the world</li> <li>✚ recognises that <i>p/lace</i> is now a global phenomenon that raises moral issues of inter-dependence and shared responsibility, in relation to social and environmental justice</li> <li>✚ 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</li> </ul>

The notion that everyone, especially young people, has a role to play in leadership and development is clear. The SSAT text goes on:

“**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

<sup>30</sup> The vagueness of this term: “tangible links” is addressed later in the report. It is not changed here as this is a quote from published text.

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."

Thus, the extent to which a school, has developed these characteristics, and has locked them into how it operates, can be used as a measure of how well positioned the school is to become more sustainable. The '*locked in*' notion is particularly crucial as development will not take place in a progressive way unless there is firm ground upon which to build – ground that will not shift or be eroded with, for example, the arrival of a new school leader.

A running theme throughout this paper has been the need to find a way of indicating how schools contribute to sustainable development, not only in relation to the education that they provide to young people, but also in other ways representative of the idea of sustainable development. In the next section, the metaphor of capital is examined as a means of modelling the relationship between the human political economy and the earth.

### The Metaphor of Capital

As already noted, sustainable development is widely recognised to have social, environmental and economic dimensions<sup>31</sup>, and so schools should expect to be making a contribution in all these areas at the same time. One effective way of thinking about this is in terms of the asset base we draw on for our civilisation and well-being. This (Daly, 1973; Meadows, 1998) has been described in terms of four 'capitals'.<sup>32</sup> These are:

*Natural capital*    *Built capital*    *Human capital*    *Social capital*

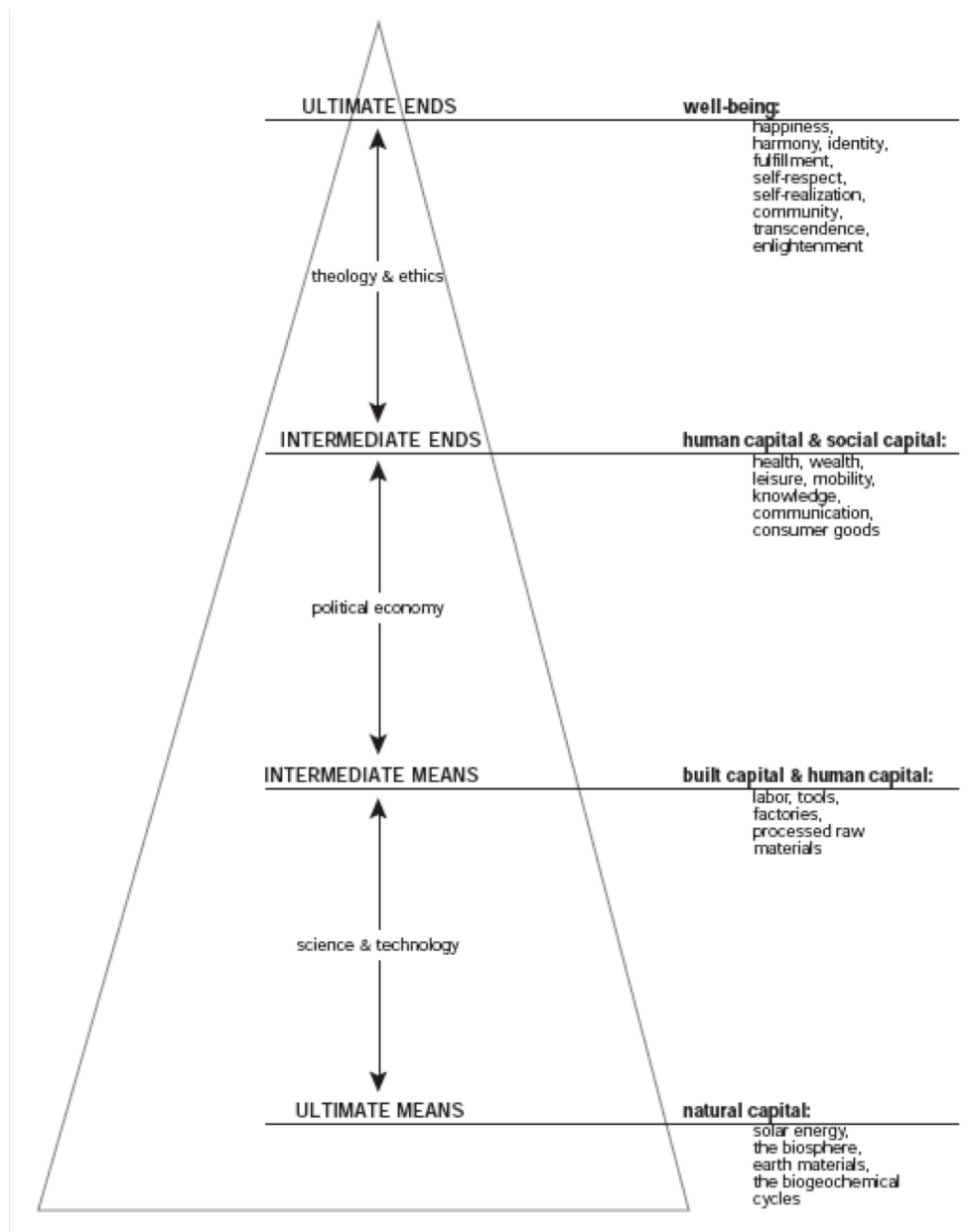
Daly initially expressed this relationship in the form of a triangle, and this is set out in Fig. 1 (overleaf).

Daly's triangle models the relationship between the human political economy and the earth. The triangle aims to represent how all life and the economic transactions that underpin it are ultimately supported from within the biosphere. It also sets out the ends to which these are put. It is significant that what really matters (to Daly) is beyond "health, wealth, ... knowledge, ... consumer goods" which are merely means to a fulfilling end. As Reid et al. note (2006):

"the triangle serves to illustrate one model from which indicators for measuring SD trends over time and context might be derived, particularly for governance purposes. In this case, indicators are targeted at a measurable quality or characteristic of an aspect of SD at the various levels of the triangle, or perhaps more importantly here, at the connections and relationships between them."

<sup>31</sup> Rather than seeing sustainable development as separable into these three components, a more useful way of viewing it is: **The Environment** – the limited (and ultimately limiting) framework within which development takes place. **Social development** – the purpose of sustainable development. **The economy** – the means whereby development will be effected. The advantage of this is that the link with sustainable development is not lost even though the idea has been disaggregated. It clearly links back to Brundtland and the World Conservation Strategy, and makes immediate sense.

<sup>32</sup> Sometimes, a fifth capital "financial" can be included in arguments similar to these. Here, whilst the need for financial capital in appropriate forms is assumed, issues relating to it are not addressed.



**Figure 1** *Indicators and Information Systems for Sustainable Development*<sup>33</sup>  
 Meadows notes:

“At the base of the triangle<sup>34</sup>, supporting everything, are what Daly calls the ultimate means out of which all life and all economic transactions are built and sustained. This is natural capital, the matter of the planet, the sun’s energy, the biogeochemical cycles, the ecosystems and the genetic information they bear, and the

<sup>33</sup> Reprinted from Meadows, D., 1998. *Indicators and Information Systems for Sustainable Development. Report to the Balaton Group*. The Sustainability Institute, Hartland Four Corners. Meadows notes (pps. 41/42): “The framework I suggest is based on a diagram Herman Daly drew more than twenty years ago. It pictures the relationship between the human economy and the earth in a way that is, to me, logical, systematic, and clarifying. Daly originally drew it as a triangle or pyramid, and for historical purposes I will use that symbolism, though the shape is not necessary to the logic. For a discussion of the drawbacks of this model, please see Meadows’ paper. <http://www.nssd.net/pdf/Donella.pdf>

<sup>34</sup> The use of a triangle, with its broad base and apex, is a problematic image as it implies that once you are focused on ultimate ends your mind need not have much concern for the “ultimate means out of which all life and all economic transactions are built and sustained” (Daly), and so a less linear image which allows the enlightened, fulfilled and happy to bear natural capital in mind might be much more useful.

human being as an organism. These ultimate means are not created by us; they are the heritage we were born into, and out of them we fashion everything we have or know. They are studied by the sciences and converted through technology to intermediate means.

The intermediate means are tools, machines, factories, skilled labor, processed material and energy — built capital and human capital and raw material. These intermediate means define the productive capacity of the economy. Economists call them inputs to the economy (systematically ignoring nature's unpriced inputs from the level below). Intermediate means are necessary but not sufficient to accomplish all higher purposes. Managing, valuing, distributing, maintaining, and using these intermediate means is the concern of economics and politics, or the political economy.

The intermediate ends are the goals that governments promise and economies are expected to deliver — consumer goods, health, wealth, knowledge, leisure, communication, transportation — what economists call output. They are what everyone wants, but they by no means guarantee satisfaction, as is revealed by societies where intermediate ends are abundant but people still feel their lives are empty. That is because intermediate ends are not ends in themselves, but instruments to achieve something yet higher. The conversion of intermediate ends to ultimate ends depends on an effective ethic or religion or philosophy that can answer the question: what are health, wealth, and education for? At the top of the triangle is the ultimate end, desired for itself, not the means to the achievement of any other end.”

With the Daly / Meadows work in mind, the SSAT monograph discussed earlier, argued that:

“a school that is making progress towards being a 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 transparent 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.”

These ideas are already reflected in the two Models outlined above. What follows is a synthesis of these ideas into a new Model based around the capital conceptual framework.

Although there are four capitals in play here, it is clear from the model (and from real life) that it is helpful to see these in combination. For example, *built* capital [BC] needs both *human* and *social* capitals [HC] & [SC] if it is to be created, and *built* and *human* capitals go hand in glove in creating knowledge, health, and material possessions. Experience

shows that social capital is a fundamental aspect of any technological change<sup>35</sup> or innovation and this is relevant to any education reform, particularly sustainable schools agenda.

Thus it is, in schools, where the *social* capital of the school embedded in its community both draws on and enhances *human* capital (knowledge, skills, understanding, capability, ...) – and, still in schools, where a focus on *natural* capital (eg, energy, biodiversity, ...) fits with one on *built* capital (eg, buildings, grounds, materials, waste, ...). We should note at this point that changes in *natural / built* [NBC] capital stocks are much easier to identify and measure, than are similar changes to *human / social* [HSC] capital. This is reflected in the sustainable development indicators that do exist, and in the difficulty of indentifying ones relating to ESD, as has been noted by Defra.

In what follows, therefore, the building of descriptors around the development of the sustainable school is based around these two foci [*natural / built & human / social* capital], and around leadership with which we begin.

### Capital-based Descriptors, and Leadership

In what follows, three sets of descriptors are set out with titles developed from those recently used by Webster & Johnson: *initial exploration; some assimilation; more strategy; and towards restorative*.

The titles of these *steps on the journey* are, to a degree, self-explanatory and set out a story line: from initial ideas and exploration, to doing more (hopefully doing it better) with more people involved, on to being much more strategic (with integrated thinking) about what is done and why, and then to something which, as already noted, has to be both open-ended and without end – and genuinely open to the innovation and creativity that will be needed as, for example, our carbon-fuelled resource base is eroded<sup>36</sup>. This is, perhaps, best regarded as a continuing process of becoming (more) sustainable, and the development of the social learning that this implies (and which sustainable development needs). It is when a school is taking these steps that it might, with some justification be seen as a 'sustainable school'. It will certainly have its own journey planner.<sup>37</sup>

It is important to stress that what is set out in what follows is not a checklist, recipe card or embryonic national planning tool for everyone to use. Rather, it is a set of ideas for schools (with others) to think about and use in their own planning and development – in their own way. If aspects of it are found useful more or less intact, so be it, but that is not its purpose. Because of this, it seems inevitable that what follows will have more developmental than evaluative value, particularly as schools shift to *more strategic* and then *restorative* thinking. A consequence of this is that, despite its links to clear thinking about sustainable development (Daly & Meadows), it may not be all that helpful to those looking for easy measures of ESD that can be reported at the national level – but then, establishing a measureable ESD indicator that was worth the effort of measurement was always going to be a difficult circle to square.

Because of its over-riding significance, *leadership* is considered first as, without this, little of any moment will be achieved.

<sup>35</sup> See Hawken *et al.* (1999) *Natural capitalism - creating the next industrial revolution*. These points about social capital inform the South West Coalition's work on *Linking for a Change*: <http://www.linkingforachange.org.uk>

<sup>36</sup> This is surely not the only serious issue we shall face in the future, but it will do as an illustration.

<sup>37</sup> It is, of course, impossible to be a sustainable school if it is an island in a sea of business as usual, and it follows that there will need to be a degree of co-evolution between school, community and wider society if significant developments are to take place.

## **Leadership**

### **1. Initial exploration**

The school leadership does not yet understand the significance of sustainability issues to young people's education, and has not considered (or has rejected as irrelevant) that such issues might usefully inform young people's current learning as well as their development of awareness, skills and capability. It does not actively support teachers, and others, who already carry out this work. Whilst there may be an awareness of sustainable schools initiatives, their significance is not really grasped by school leaders. Sustainability work in the school is characterised by the work of isolated teachers and young people, or of small groups which may tend to adopt a behaviour-change focus, and there may well be some latent frustration in this. There has been little or no financial contribution to making sustainability-focused change, or to staff professional development.

### **2. Some assimilation**

School leaders have some limited awareness of what sustainable schools initiatives set out to do, and understand something of the utility for learning that a focus on sustainability can have. A co-ordinator post may be funded with schemes such as Eco-schools in place, and the school may acknowledge the significance of existing school-community interchange resulting in some formal recognition of what already goes on. This falls short, however, of an endorsement of sustainability as a key feature of how the school sees itself, or a recognition that it is important to students' lives and to society's positive evolution. The ethos of the school does not relate to these issues, and a critical consideration of sustainability is not actively promoted through the curriculum whilst narrow behaviour change is the main focus. However, enthusiastic staff and students (and possibly others) are getting things done, building up experience and developing a critical mass that will increasingly bring internal influence to bear on school leaders to match the external pressures that are building up. Modest investment is available to effect simple infrastructure changes and save recurrent costs (eg, energy-efficient light bulbs).

### **3. More strategy**

The school leadership sees sustainability as one of its key drivers, and 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 campus and/or curriculum. It is a key feature of any federation and cluster arrangements. Senior staff provide active leadership and welcome empowered staff, governors and students into this process through inclusive decision-making processes. Appropriate plans and policies will be written, and teacher professional development for all staff will be used strategically. Increasingly, there will be emphases on making sustainability a significant aspect of the life of the school, and central to student learning, and one of the things the school is known for. Sustainability will be the focus of much discussion and debate across the school and community in relation to curriculum, campus and community and their intersection. 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 and managed fashion. A more critical approach to learning and to school management is seen to be necessary as the tensions and uncertainty inherent in sustainability are exposed, and the implications of the breadth of sustainability for the entire operation of the school begin to be fully appreciated.

Greater investment in professional development is seen to be essential if pedagogy is to be made more suitable, appropriate learning domains identified, carbon emissions reduced, and plans are made [i] to enable the significant expenditure that will be needed if the barriers to greater sustainability presented by current infrastructure are to be surmounted, [ii] to identify both how teaching has to change, and ideas about learning be developed, and [iii] to enable the necessary focus on raising social capital as the school and its community develop together.

#### 4. Towards restorative

The school, through its re-thought vision / mission statements has reoriented its ethos to a focus on learning as sustainability. This has fundamentally changed how curriculum is conceived, what and how the school teaches, how this links with the community, and how the campus is managed, and how all of these are integrated. Leadership is active and devolved, encouraging staff, governors and students to participate meaningfully. Sustainability is a very significant aspect of the life and work of the school, which is known for this focus. In the institution, the exchange between school and community is extensive, two-way, and real, and can contribute both as a role model, and as an advocate for socio-environmental change. Owing to focused capital investment, increasingly the school's ecological / carbon footprint is reduced, with the enhanced ability of the institution to lead sustainability initiatives, and serve to enhance open-minded, open-ended learning that is focused on change and on raising student capability and confidence. Crucially, the school's commitment and orientation to sustainability is so embedded in its ethos and practice, and within succession planning for example, that this is *sustainable* in the more quotidian sense.

In summary, at this point, the school has a devolved and shared leadership that has created a social learning community with a systemic view of the world<sup>38</sup> and a heightened sense of place that ...

- ✚ understands that it can, and should, contribute not just to maximising learning and skills acquisition (its traditional role), but also enhance social cohesion, lessen its need for natural resources and the creation of waste, maximise the efficiency of its buildings, and has a strategy for steadily reducing it, and a strategy for making all these a foci for learning.
- ✚ is outward-looking, with its work impacting on the local context (socially, economically, environmentally, and culturally), with the understanding that *place* is a global phenomenon that raises moral issues of inter-dependence and shared responsibility in relation to social and environmental justice which have to be addressed: for example, through mutual partnership with real communities<sup>39</sup> in other parts of the world.
- ✚ values exploratory, experiential, outdoor and environmental learning as a means of effectively engaging with real-world issues in authentic settings, and understands the need for appropriate pedagogies and communications that enables the student voice to contribute to the understanding of their own learning, and to the development of the school and community.

<sup>38</sup> There is insufficient space here to re-emphasise the value of a systems approach to thinking about and understanding sustainability. The need to do this is, however, assumed throughout.

<sup>39</sup> Criteria for setting up such links might include that: they are founded on mutual learning, there is a parity of esteem between partners, there are openly-negotiated aims and objectives and a commitment to setting stereotypes aside, and that all young people in the schools are able to participate and benefit.

## Human & Social Capital<sup>40</sup> – HSC

### 1. Initial exploration

Individual staff contribute to un-coordinated clubs and out of school activities that tend to focus, fairly uncritically, on externally-identified behaviour change with little link to the curriculum. There is formal, but mostly unconnected teaching about biodiversity, ecological systems, energy, social structures, development, poverty, trade, etc, through mostly conventional takes on curriculum where the *campus* and *community* are mainly seen as resources, with the latter not yet viewed as a source of active partnership in collaborative learning, and the former not itself seen as a valid focus of enhancement. Learning, and learning outputs, are predominantly viewed in academic terms, and sustainability issues tend to be seen as external to the school and its work, with learning mostly seen as something done by students, and then within narrow, defined limits. Where there is a developing understanding of the aims of the sustainable schools initiative (and ESD more widely), there will be growing levels of dissatisfaction with this 'business as usual' approach, and this leads to a greater examination of how well conventional approaches and assumptions meet student needs, and an active exploration of other possibilities.

### 2. Some assimilation

There is a growing understanding that links between campus, community and curriculum can both enhance student (and staff) understanding and skills, and potentially result in wider learning, greater community cohesion, and also, for example, enhanced biodiversity and reduced carbon footprint; with this, comes the realisation that the campus and community can be more than mere resources. There is growing understanding of the need to link the formal and informal curricula and help students make connections if learning is to be optimised; and a growing awareness of the significance of the breadth and reach of sustainable schools initiatives, with their focus not only on learning, but also on tangible sustainability improvements. As the tensions within sustainability come to be recognised, there is a growing realisation that there is a need to focus on learning as well as on behaviour change, that these are not alternatives, but that each is a necessary but insufficient focus<sup>41</sup>, that a focus on sustainability will contribute to enhancing student achievement, and that student learning can contribute to sustainability, both now and life-long. There is also an increasing recognition that responsibility for stimulating learning has to involve both the formal and informal curriculum, and these must be seen as an integrated whole; there is also an understanding that responsibility for teaching can usefully be seen as a partnership with NGOs, businesses, and community organisations where the key contributions of the teacher are pedagogical and in the building of relationships. The value, in themselves, of eco-schools and similar approaches begin to be questioned where they are recognised as initiatives isolated from the curriculum and the life of the school as a whole. The investment in modest changes to infrastructure means that there is growing scope for using the school as a positive teaching resource, and that the ethos of the school needs to relate to these issues, in a specific way. The limitations of viewing student learning only in terms

<sup>40</sup> Space does not allow an exploration of the vital, but complex, concept of social capital. See, for example, Putnam (2000) and <http://www.nationalcollege.org.uk/index/leadershiplibrary/leadingschools/working-in-partnership/ecm/school-families-communities/understanding-social-capital.htm> for key aspects of the argument.

<sup>41</sup> Of course, not all behaviour change is necessarily beneficial – even where it does appear to be reducing a burden. Webster & Johnson (2009) make the point that changing what we do *just* to do less harm is not what we need to be aiming for. Rather, it needs to be a question of building "benign cycles which restore capital" (Webster; *per. comm.*).

of exam success is recognised, as is the need to find a way of thinking about how social capital can be conceived, supported and evaluated.<sup>42</sup>

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 reveal the tensions and contradictions that are inherent in sustainable development, and ideas of what needs to be learned are opened up.

### 3. More strategy

Schools start to think in terms of social capital in relation to networks and learning, and how to enhance and measure this. Human capital is understood to involve more than academic knowledge and the development of skills and capabilities are to the fore. Students, staff, and others, are encouraged to be open-minded learners through expansive and exploratory pedagogies that are open-ended, experiential and negotiated with students and the community.

A broad range of themes is identified which capture the essence of the learning necessary for success within which learning outcomes can be agreed. As a first draft, these could be conceived as follows, where school leavers<sup>43</sup> are enabled to be:

... **academically excellent:** They ...

- ✚ have a strong sense of intellectual integrity and ethics
- ✚ have age-appropriate knowledge of pertinent areas of study
- ✚ reach a high level of achievement in enquiry skills, problem-solving, collaboration and communication
- ✚ are critical and creative thinkers, with an aptitude for continued self-directed learning
- ✚ are adept at learning in a range of ways, including first-hand enquiry and ICT

... **knowledgeable across disciplines:** They ...

- ✚ examine critically, synthesise and evaluate knowledge across areas of study
- ✚ expand analytical and cognitive skills through learning experiences in diverse subjects
- ✚ have the capacity and willingness to participate in collaborative learning and to confront unfamiliar problems
- ✚ have flexible and transferable skills for further study and/or employment

<sup>42</sup> There is also a growing understanding of how young people's learning and well-being can benefit from a focus on the sustainable school. See Barratt Hacking *et al.*'s research (2010) for the DCSF.

<sup>43</sup> This set of attributes has been developed from *The Melbourne Experience* which, although originally focused on graduates, has, if appropriately interpreted for age and experience, a generic applicability across sectors and phases. See: <http://www.unimelb.edu.au/about/attributes.html>  
These are similar to the six areas of QCDA's personal learning and thinking skills [PLTS: *independent enquirers, creative thinkers, reflective learners, team workers, self-managers & effective participants*]; see: <http://curriculum.qcda.gov.uk/key-stages-3-and-4/skills/plts/index.aspx> and to the ideas set forth in the Cambridge Primary review (Alexander, 2009)

**... active in communities:** They ...

- ✚ participate in initiating and implementing constructive change in their communities (including the school itself)
- ✚ have developed interpersonal and decision-making skills, including an awareness of personal strengths and limitations
- ✚ mentor future generations of learners
- ✚ engage in meaningful public discourse, with a growing understanding of community needs

**... attuned to cultural diversity:** They ...

- ✚ value variety and difference in and between cultures
- ✚ are well-informed citizens able to contribute to their communities wherever they choose to live, study or work
- ✚ have an understanding of the social and cultural diversity in their community
- ✚ respect indigenous, and other, knowledge, cultures and values

**... active global citizens:** They ...

- ✚ accept social and civic responsibilities
- ✚ are advocates for improving the sustainability of the environment
- ✚ have a broadening global understanding, with a high regard for human rights, equity and ethics.

Learning programmes in these schools have a wide range of the following characteristics<sup>44</sup> of effective ESD. They ...

1. let young people see that the school takes sustainability seriously, making it a strong focus of the school development plan, and using it to create an inclusive school ethos.
2. are positive in their approach to sustainability, taking young people's aspirations seriously and giving them hope for the future through being honest with them and encouraging an open, questioning approach.
3. listen to, and take account of, young people's environmental and community perspectives, involving them in thinking about, and responding to, issues, and helping them make connections between ideas.
4. value the natural and cultural worlds, involving young people in outdoor learning enabling them to work with local groups in and out of school, seeing both school and community as learning resources.
5. involve young people in developing and modelling sustainable school practices, improving the quality of their surroundings and school buildings, integrating this with curriculum activities.
6. understand that sustainable development is a social learning process, and are open to learning from evaluated case studies of school practice drawn from a range of contexts, while acknowledging that what needs to be done and learned may vary dramatically from one setting to another.

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<sup>44</sup> These have been developed from work presented at a TIDE~ seminar in 2004 – see <http://www.tidetailk.org/Tidetalk/articles/Growing%20ideas.html> – and from recent research for DCSF (2010) *Evidence of Impact of Sustainable Schools*

7. set out to help young people to manage sustainable development choices, and make judgements about the need for the compromises trades-off between desired goals.

In relation to social capital, schools fully accept the idea that a broad view of sustainability needs to be taken in relation to what the school teaches, how it links with the community, or how its own campus is managed, and about all three of these in an integrated fashion. There will 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. As shown above, the exchange between school and community is more extensive, and more real and it adds to social capital. It could be that schools at this point will be both role models and advocates for socio-environmental change.

#### **4. Towards restorative**

If schools are to take the next necessary steps then some substance will need to be added to the skeletal framework of ideas, such as those set out above. In doing this, learning outcomes will need to be specified and agreed. Whilst there is much to be said for these being negotiated locally, there is also the need to identify a suitable framework of ideas from which to begin. A convincing start was made on this over ten years ago.

Following a consultation process, in 1998 the Government's Panel for Sustainable Development Education (SDEP) wrote a report as a contribution to the (then current) review of the English national curriculum. In it, it identified seven key concepts (it also called them principles / dimensions) of sustainable development. These are:

**1. Interdependence – of society, economy and the natural environment, from local to global**

Understanding how people, the environment and the economy are inextricably linked at all scales from local to global.

**2. Citizenship & stewardship – rights and responsibilities, participation and co-operation**

A sense of responsibility for personal and group actions, and an awareness of their likely impact on natural and human communities, both locally and globally.

**3. Needs and rights of future generations**

Appreciation that the quality of life of future generations is endangered or enhanced by actions we take now.

**4. Diversity – cultural, social, economic and biological**

Respecting and valuing both human diversity – cultural, social and economic – and biodiversity.

**5. Quality of life, equity and justice**

Appreciating why equity and justice are essential to sustainability and that basic needs are vital everywhere in the world.

**6. Sustainable change – development and carrying capacity**

Understanding that resources are finite and that this has implications for people's lifestyles, and for economic and political priorities.

**7. Uncertainty, and precaution in action**

Appreciating that there are a range of possible approaches to sustainability and that situations are constantly changing, indicating a need for critical thinking and lifelong learning.

The Panel explained the rationale underpinning this selection:

“The first concerns the interdependent nature of the world. This gives rise to the need for a participative response through the exercise of citizenship and stewardship ... The third through sixth concepts cover further key dimensions of sustainable development, leading to the seventh which, as a logical consequence of those that precede, is concerned with the limits of knowledge and exercise of the precautionary principle.”

Although these ideas were briefly taken up by QCA in the early 1990s, they were not built on when DCSF developed the National Framework for Sustainable Schools with its eight doorways<sup>45</sup>. They remain, however, a valid framework for critical and creative thinking which complement the doorways as ways to think about sustainability across community, curriculum and campus, and as a means of identifying learning outcomes. The Panel recognised this potential, and the report also set a range of generic and indicative learning outcomes for each of the key concepts. It did this in two ways:

- [i] in relation to *values and dispositions, skills and aptitudes, and knowledge and understanding*; and
- [ii] in terms of what might be learned at the end of each of the five key stages of formal schooling (age 5 to 19).

This detail is set out at <http://www.bath.ac.uk/cree/publications/index.html>

In its *key concepts* report to QCA, the Panel recognised the necessary limitations of what they outlined, calling for “further elaborative work [and] exemplification”. It is certainly the case that, despite their being 10+ years old, these ideas remain the best starting point for any school wishing to think through what young people might learn in relation to sustainability. This is hardly surprising, given that the issues the world faces have not got any less serious, or more narrow, in those intervening years.

### ***Natural & Built Capital – NBC***

In many ways this ought to be the easiest category to write descriptors for in that aspects of the area lend themselves to quantifiable measurements, for example, in relation to reducing energy and water use. It is also the only one that has some possible end-points. In this sense, the following, although rather brief compared to other descriptors, seem appropriate:

<b><i>1. Initial exploration</i></b>
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Limited, responsive, changes are made following conventional framings, for example in relation to recycling and composting initiatives by Local Authorities and / or NGOs.

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<sup>45</sup> In February, 2010, the Education and Training Inspectorate in Northern Ireland published: *Effective Practice in Education for Sustainable Development in a Sample of Primary, Post-primary and Special Schools in Northern Ireland*. This report uses the 7 key concepts although it repeats the error first made by QCA by terming these key concepts of ESD rather than sustainable development.

## **2. Some assimilation**

There is a growing understanding that active steps need to be taken on all fronts, including planning to enhance biodiversity,<sup>46</sup> as well as reducing footprints. With awareness raised, piecemeal, opportunistic change occurs, for example a school transport plan, the care of the school grounds, monitoring energy and some other resource use, and all improvements that are feasible without a strategic review or significant investment have been made.

## **3. More strategy**

Following revisioning, a carbon reduction strategy is evolved and agreed with all stakeholders<sup>47</sup>, along with a biodiversity enhancement strategy; these are implemented, monitored and audited as a normal part of school review that embraces both curriculum and campus activities (ie, human and social capital measures), and involves everyone. The school has identified all the changes that can bring about improvement and has a costed plan to put these into effect over a specified timescale. There is also a plan to use any financial savings made to support the further development of the sustainable school.

## **4. Towards restorative**

In a sustainable school, over time, the ...

1. Net amount of energy imported from the grid reduces; when possible, net energy exports increase.
2. Amount of water brought in from external sources, and the amount of waste water and sewage sent off site for treatment reduces; when possible, this is minimised.
3. Amount of waste organic matter composted and used in the community rises; when possible to 100%.
4. Biodiversity value of the grounds and community increases.
5. Carbon footprint of the school's transport falls; when possible to zero.
6. Waste sent to landfill reduces; when possible to zero.
7. Use of virgin raw materials only happens where this is part of a benign (ie restorative) biological cycle fuelled by renewables.

The rate at which progress is made in making these shifts depends not only on leadership and context, but also on the rate of investment in buildings, energy systems and the like. As such, the notion of discrete points has limited utility, except in that institutions can themselves identify what these should most usefully be, seeing progress in either absolute terms, or as percentage improvements; for example, setting year-on-year percentage reduction targets might be useful in some circumstances.

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<sup>46</sup> A range of opportunities for doing this are available, including the Botanic Gardens Education Network: [www.bgen.org.uk](http://www.bgen.org.uk) – Breathing Places Schools: [www.bbc.co.uk/breathingplaces/schools](http://www.bbc.co.uk/breathingplaces/schools) – an ecosystems approach: [www.defra.gov.uk/wildlife-pets/policy/natural-enviro/eco-approach.htm](http://www.defra.gov.uk/wildlife-pets/policy/natural-enviro/eco-approach.htm) –and the Biodiversity Benchmark scheme: <http://www.wildlifetrusts.org/index.php?section=corporate:biodiversity:whatisit>.

<sup>47</sup> This will include using procurement policy to influence supply chains.

## Concluding Remarks

In all this, however, two things are clear: progress through each of these is independent of each other, and leadership sets limits on what can be achieved. If it is effective, school leadership can lead to the evolution of carbon reduction and biodiversity enhancement strategies, to curriculum re-orientation and effective student learning, and a rethinking and enhancement of the school's contribution to social capital. Unless school leaders understand the issues, and are in the vanguard of change, however, little of real substance will be possible. It is for this reason that the recent work of the *National College* around sustainable schools and leadership is of such significance. See, for example, Birney & Reed, 2009 and Porritt *et al.*, 2009, and the case studies of practice that they set out.

The approach that this research has taken is a development / internal and formative evaluation framing where the core question is:

*How can we know how effectively the development of the sustainable school is progressing?*

where the “we” refers to all stakeholders in the school, and “the sustainable school” to the school in question, in its community. It has set out to have heuristic value in the sense of a rather embryonic and sketchy map to the terrain left by those who've travelled before and reflected on the journey. As such, the report is only of value if it is of use in the on-going conceptualising and developing of the Sustainable School – and the thinking through of the issues.

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<b>Annex 1</b>	<b>Ofsted's Descriptors when Judging the Effectiveness of ESD</b>
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These criteria were consistently used by Ofsted during the three years of its survey to maintain continuity.

<p><b>Outstanding</b></p> <p>(1)</p>	<p>The school has embedded learning about sustainability within the curriculum and life of the school and is working with the community to advance a whole-school approach to sustainability. Parents and governors are important partners in this process. There is a coherent and systematic programme of continuing professional development which supports the development of sustainability and includes opportunities for feedback on current issues. Staff are working as a team to implement commonly agreed aims and objectives. The school monitors and reviews physical, procedural and attitudinal changes and adjusts its plans accordingly. Effective use is made of the wider school, local environment and neighbourhood community to foster an active involvement in practising the principles of sustainability. Pupils play an integral and often leading part in this process. There is a clear understanding of the issues raised at both local and global level. Approaches to teaching and learning actively promote the development of environmentally and socially responsible values and behaviour. There is a high degree of consistency between the school ethos and the values which underpin sustainability. As a result of participating in democratic processes within the school and the locality, pupils frequently take the lead in creating the impetus for sustainable change. There is a policy which achieves high rates for reduced consumption, re-use and recycling of resources. Water and energy conservation is taken fully into account in school planning and development. There is a purchasing policy with criteria which take into account cost versus impact on the environment, sustainability and fair trade. Pupils take informed action at home and in the community.</p>
<p><b>Good</b></p> <p>(2)</p>	<p>The school has identified a minimum entitlement for learning about sustainability across the curriculum. The staff development programme supports training on aspects of sustainability. There is clear coordination of sustainability with a named person responsible. Staff are consulted and sometimes involved in setting aims and objectives for sustainability. There is a clear programme of wider use of the school and community to support sustainability principles and learning. There is a well-established programme of activities which enables pupils to play a role within their local area. Links are being established between local and global issues. There are opportunities to investigate, enquire and debate the principles which underpin sustainable development. The promotion of sustainability is clearly planned within the informal curriculum provision. Pupils have the opportunity to debate the complexity of issues associated with sustainability and, on occasions, are able to act purposefully. The school actively encourages reduced consumption, re-use and recycling of a wide range of materials on a regular basis. There is a clear policy and practice to minimise the use of water and energy. The school purchases, whenever possible, materials which minimise damage to the environment. The school helps pupils to develop an understanding of the principles underlying greener lifestyles.</p>

<p><b>Satisfactory</b></p> <p>(3)</p>	<p>The school has developed an appreciation of how learning about sustainability can be used within the curriculum. Individual staff identify training courses they wish to attend in order to familiarise themselves with aspects of sustainability. Information is shared between interested staff. The school is aware of the need to clarify objectives which support the development of sustainability. Individuals use the wider school environment to develop active learning. The school has some involvement in working in the local community and the local area. There is an awareness of the global perspective. Enrichment opportunities linked to sustainable development are evident in some school planning. Activities outside lessons complement and raise the profile of sustainability. Pupils debate issues linked to sustainability but outcomes are less tangible. The school is aware it should re-use and recycle, so it provides facilities for the collection of some materials. Pupils and staff are encouraged to conserve energy and water. Some materials are purchased which minimise damage to the environment. There is awareness of the basic principles underlying greener lifestyles.</p>
<p><b>Inadequate</b></p> <p>(4)</p>	<p>There is an acknowledgment of sustainability principles in some areas of the curriculum. There is little evidence of, or interest in, raising awareness of sustainability which is not perceived as having relevance to school priorities. Few staff are aware of sustainability concepts. Little use is made of the wider school environment to promote active learning. Links with the community do not support sustainability principles and pupils have only a basic understanding behind the reasons for their involvement. The global perspective is discussed in some curriculum areas, but often without clear links being made to the local agenda. Enrichment opportunities rarely reflect sustainability values, and sustainability has a very low or non-existent profile around the school. Pupils have limited opportunities to contribute to changing and improving their learning environment. The school is aware it should re-use and recycle but little is achieved in this direction. The learning environment is often drab and unwelcoming. For example, litter is a problem, and displays inside and furniture outside are neglected. There is little tangible evidence that pupils are encouraged to conserve energy and water. The school does not have a clear purchasing policy and there is a general lack of awareness of the basic principles underlying greener lifestyles.</p>

## Annex 2 Gayford's Descriptors when Judging the Effectiveness of ESD

In his report for WWF (2009), Gayford sets out two parallel, but interconnected, aspects to the progression of content and process within sustainable schools. These have each been divided into four **stages** each of which was assessed according to six qualities (descriptors) for **content** and five for **process** identified. Gayford notes that, in practice it was observed that most pupils could be operating at different stages with regard to different descriptors, and says that the model is best able to provide a general impression of the stage at which individuals are operating rather than an accurate assessment of what they have achieved. He also notes that each description of a stage is "a simplified 'thumbnail sketch' and many more examples could have been included".

### 4.2.1 Content knowledge and understanding

**Stage 1.** This seems to begin with awareness of a number of issues that impact on sustainability. The links to the bigger picture are not apparent, or where these exist they are very basically understood. Such issues frequently centre on the following: the school as a safe environment; aspects of healthy living; saving energy; recycling; improvement of the school estate, particularly the grounds such as setting up a wildlife area; transport; and some aspects of international understanding that may include fair trade.

The school as a safe place often focuses on whether they are the victims of bullying (this can include name-calling as well as the physical aspects of bullying). Here there is emphasis on making friends, welcoming newcomers and the need to be inclusive. Bullying is viewed as an important matter, particularly by younger pupils, and the need to befriend or protect those with 'special needs' is often quite highly developed. Healthy living focuses on a healthy diet (fresh vegetables, food cooked on the premises and the availability of drinking water) as well as the opportunity for exercise (indoors and outside).

Improvements to the school estate are usually seen as enhancing the grounds as a resource for learning, play or boosting physical fitness. For example, introducing or improving existing play equipment or 'livening up' areas within the school by decorating. Overall the conception is to make the school a more interesting or exciting place for learning or relaxation.

Links to wider issues are often difficult to discern except that it is accepted by the staff in the school that an environment that is more conducive to learning and pupil attendance will have an effect on overall pupil involvement with the life of the school. There is often an understanding of the need for conservation, particularly in terms of saving energy, water and other resources, such as paper. The need for this is often understood in terms of saving money or in the case of paper to save trees. (Recycling is frequently limited to paper in schools, for practical reasons.)

There is almost always confusion between the sort of trees that are used for paper pulp and the more general issue of trees that form the major 'natural' forests, including the equatorial rainforests and the conservation of biodiversity that often centre on these regions. However, there is a growing recognition that forests are places where animals live. To conserve wildlife their habitats need to be retained. The importance of conserving wildlife is mainly in anthropomorphic terms such as '*you would not like it if you were made extinct*' or '*they [animals] have as much right to live as we do*'. There is no concept of an overall balance of nature or that plants are anything more than the food or part of the habitat of the animals.

Any link between energy conservation and climate change has usually not yet emerged, but there is an emergent concept of climate change in terms of the melting of ice caps (which is often associated with threats to the survival of polar bears) and increased flooding, which is understood to be caused by air pollution.

Transport usually relates mainly to journeys in relation to school attendance and consequently they are concerned with ways of reducing or optimising the use of motorised transport.

The global dimension is mainly concerned with what people eat or wear, and the types of dwellings they have. Where pupils have even heard of fair trade, it is usually understood in terms of straightforward 'fairness' and is often expressed as *'the farmers get paid a very small amount in comparison with the cost of things in the supermarket'*. Links between poverty and environmental degradation or population migrations are not made at this stage. Pupils at this stage do not know about the term 'sustainability' in relation to the environment. Appreciation of different perspectives on issues related to sustainability is very under-developed, with a general acceptance of the authoritative attitudes or views of teachers or other 'important adults'. An overall rationale or personal philosophy is very limited, and aspects of sustainability are considered in a fragmentary way, or with very simplistic generalisations.

**Stage 2.** This stage appears to involve a more comprehensive range of issues that relate to sustainability, with an increasing appreciation of global issues. However, much of the understanding still focuses on the local environment, particularly the school buildings and estate. Views about the school as a safe place still focus on the role of important adults to maintain a safe environment. But there is often an increased expectation that they have a personal role as well, apart from simply reporting unacceptable incidents. This role may involve more mature pupils acting as 'counsellors' who need to have an understanding of the importance of confidentiality. Others may think that it is important actively to befriend children who are new to the school or who appear to be socially isolated. Bullying and its prevention are still seen as important issues. Social inclusion is well represented, as is the need to avoid discriminatory behaviour. Interestingly, racial discrimination is often mentioned but gender discrimination much less so.

The school as a healthy and health promoting environment is more clearly understood. This relates to healthy eating, with emphasis on fresh and, where possible, locally grown produce, as well as on the importance of exercise. Sometimes the conflict between personal preference for certain types of foods that are classified as unhealthy and the need to eat more types of 'healthy food' is appreciated. The availability of drinking water throughout the day is often emphasised.

There is the beginning of a clearer awareness of some of the major global issues and of how these are linked to local actions within the school, but this is in its early stages. Connections between different actions carried out by themselves and others are beginning to emerge more clearly. For example, links between actions that are desirable in relation to sustainability and their financial costs; also the connection between what different sections of society may want and their impact on sustainability.

Actions are seen to follow a longer chain of consequences, so that if one thing happens then others follow. For example, with regard to recycling and waste management, this can reduce the amount of landfill, and landfill itself can have undesirable consequences, such as unsightliness and the shortage of suitable sites; and the possible alternative of incineration has its disadvantages. Furthermore, it is appreciated that there are energy implications associated with recycling that should not be disregarded (for example, where journeys are undertaken specifically to recycling sites). There are consequently the beginnings of an understanding that actions intended to bring about improvements can also have undesirable side-effects. Elsewhere, other links are being made, such as between poverty, fair trade and environmental protection. A sense of 'fairness' still pervades, and other economic factors are either disregarded or seen as of much less importance, such as the need for each stage of the supply chain between producer and purchaser to be economically sustainable.

Diversity, particularly biodiversity, is still largely considered in terms of endangered species, with emphasis on large and exotic animals in distant places. However, habitat preservation is more firmly established as a supporting concept in maintaining biodiversity. There are emergent understandings of the importance of maintaining biodiversity in order to preserve a natural balance in nature. For example, it is sometimes said that if one type of animal is removed from a system then others may either lose a vital food source or will lose a natural predator and they will then become over-abundant. Pupils appreciate the significance of the development of special areas in the school grounds or locally that encourage diversity of flora and fauna, but they don't really make links with sustainability – these are largely treated as areas of interest and a focus for study.

Energy conservation and its importance is more firmly established and is linked to a more extended chain of consequences, such as climate change resulting in droughts, the melting of ice caps and floods. The causes of these changes are often put down to increasing industrialisation, power stations and the ever growing volume of motorised transport. Here a concept of 'greenhouse gases' is usually articulated, where it is simply thought of as '*a blanket that traps heat around the Earth*'. Their own role in reducing these effects is more clearly appreciated and often includes rigorous attention to switching off lights and other electrical apparatus when not in use, closing doors and windows in cold weather, etc.

Appreciation of alternative perspectives that can have a different rational basis is beginning to become apparent but there is still an overriding feeling that there is clearly one 'right' perspective. With regard to an overall rationale there is an increasing awareness of personal responsibility towards the environment in which each has a contribution to make, however small; and also that a number of different factors all contribute to sustainability. There are the beginnings of an appreciation of the role of large commercial organisations and the major decision-makers in environmental sustainability.

**Stage 3.** At this stage a more holistic view of sustainability is emerging. There is an appreciation of many more examples of factors that affect sustainability. These examples are both local and global. The implications of local actions are seen to have possible global impacts and vice versa. This is seen in the understanding of the importance of actions such as the conservation of resources through reuse or recycling as well as energy conservation and the possible impact on global climate change. Healthy living is still an important matter and continues to focus on a healthy diet and exercise, but also for older students a greater awareness of the effects of legal and illegal drugs. Safety and security continue to be matters of concern but pupils have an increasing appreciation of their own role in this and their contribution to addressing problems that might arise, for example by acting as 'counsellors', which includes a responsibility to the victims of bullying. Diversity within their own community is something that is now more clearly appreciated, as is the need to be inclusive. This is starting to extend further than the immediate confines of the school. The promotion of active citizenship and local improvement continues to develop and this includes increasing involvement with activities within the school that offer opportunities for pupils to express their views and preferences.

Diversity is still seen largely as a matter of biodiversity, with more emphasis now on the maintenance of habitats that will sustain diverse animal and plant populations. The importance of balanced populations where each organism is integral to the system is beginning to be appreciated. However, the damaging effect of international trade, particularly in animals or parts of animals or in activities such as logging, are seen as an important factors, with less awareness of the need to develop effective agriculture in areas where animals are endangered. This especially centres on tropical environments. There is growing awareness of the reduction of so-called 'natural' areas for plants and animals in their own locality and the need to develop these in order to maintain populations of native fauna, mainly birds and butterflies. Thus, connections are more widely appreciated between different aspects of environmental protection, and the consequences of different actions are more clearly understood. There is a growing link being made between 'ethical' matters and activities that promote sustainability.

There is an increased appreciation of different perspectives on particular environmental issues. This includes conflicts between economic, social and environmental interests. An example is the need for farmers to grow crops to produce high yields or to maximise animal production against the concerns of those with animal rights interests or those who wish to preserve areas for indigenous wildlife. Pupils are more aware of the nature and scale of the use of resources such as energy and water, both within the school and elsewhere, and there is a greater appreciation of the wider impacts of these in relation to sustainable living and also of the difficult dilemmas that this raises. Reduction of use of these resources and the management and reduction of waste are seen as important and something where they have a personal responsibility. The social and economic use of motorised transport and the range of different interests involved are also appreciated. An overall rationale or personal philosophy is becoming more defined and comprehensive, and is less simplistic with a larger number of caveats, more alternatives and less certainty about what is the 'right' approach to take.

**Stage 4.** At this stage the basic issues such as healthy living and safety and security are accepted as aspects of life, where the individual has a responsibility for their own health and safety but it is important to work collaboratively with those in authority and to see this as a collective responsibility. Individual differences within the community are even more clearly appreciated, both in terms of needs and expectations and the need to reconcile these as far as is reasonable.

They are even more interested in aspects of conservation of resources within the school and in the local community and are frequently concerned with the need for monitoring the effectiveness of various measures taken. The understanding is now much more holistic, with a large number of examples of factors affecting sustainability drawn locally, nationally and globally. This tends to give an appreciation that almost anything ultimately has an impact on sustainability. At the same time the fact that there are often legitimate competing ideals and demands in relation to the major environmental issues of the day is more clearly recognised, but also there is emphasis on the need for evidence, rather than isolated examples, to support arguments.

It is appreciated that individuals have a part to play through their own behaviour but also that governments and commercial organisations have a significant contribution to make. The role of the individual in affecting policy is beginning to emerge, as well as the persuasive effect of the purchasing power of the consumer. Examples of this can be seen in policies over the use and management of motorised transport in urban environments, or choosing particular types of goods that make less impact on the environment. Matters such as recycling are seen as less straightforward, with aspects that detract from the effectiveness of this activity as well as the positive effects.

Connections are seen between many more factors related to the environment and these are closely related to the consequences of actions. For example, the matter of conservation of elephant populations in Africa, their role in encouraging tourism, their destructive behaviour towards local human populations and the possible negative impact of tourism. Another example is the impact of vehicular traffic, power stations and air transport on climate change, where the importance of evidence as well as the need to protect livelihoods and to take account of the real financial implications of actions all need to be considered.

There is growing awareness that there are many different perspectives to be taken into account and that it is often impossible to reconcile all of these. Therefore the role of decision-makers is important, and the law has an essential contribution to make. However, the law on its own is insufficient, and education and persuasion are also important factors. Links between sustainability and 'ethics', such as matters related to human rights and individual freedoms, are now much more clearly appreciated. An overall rationale is difficult to achieve but a personal philosophy generally sees the individual as central in terms of direct personal behaviour, power to persuade others including governments, and power through being aware consumers.

#### 4.2.2 Process abilities

The progression identified here relates to the different types of process abilities, competencies and actions identified with regard to the five different descriptors of qualities.

**Stage 1.** This includes direct involvement in environmental improvement activities, usually with careful and explicit direction from adults. Often this involves pupils persuading other adults (such as parents) to assist. Sometimes this also involves directly raising money for the work to be done by professionals. These frequently result, for example, in creating a small wildlife area, or enhancing the play/recreation facilities or the areas used for growing plants. Activities also include practical conservation measures such as recycling and saving water and energy, but these are mainly promoted and initiated by adults within the school and the pupils take an interest in progress.

There are the beginnings of empathy towards individuals in the school who are different from themselves, particularly those who have physical special needs or who are experiencing language difficulties, such as those who have recently arrived from other countries. Some are quite proactive in trying to ensure that these individuals are not left out and make friends. Pupils are actively involved in initiatives to help them remain healthy, such as healthy eating and taking exercise (for example regularly participating in the 'walking bus' to and from school), but this is mainly by following direct guidance from responsible adults within the school. They actively participate, under careful supervision, with measures to improve safety around the school. This may include anti-bullying initiatives such as 'buddy' schemes.

There is little opportunity to show leadership skills in the practical aspects of environmental improvement but some pupils may be particularly proactive in getting aspects of the work done. At this stage, pupils are willing to be involved, such as taking part in a rota of duties for watering plants or maintaining food supplies on bird feeders. Cooperation is usually heavily supervised and much of the activity involves cooperation with ideas suggested by adults. There are the beginnings of involvement in the decision-making process, including representation on the school council. This is seen as an important and possibly exciting activity and one with which they are keen to be involved.

The notion of representation of other people's views is introduced and some pupils show emerging leadership skills. There are the beginnings of an appreciation of what ideas may be realistic, generally linked to economic viability or the time and effort required and whether the change is likely to be to the benefit of the whole school community. The ability to challenge authority figures appropriately is very limited. Initiative is limited and tends to build directly on ideas that have been previously suggested.

Most of the projects devised to bring about environmental improvement centre on the school and its estate and much less frequently the immediate local environment. Schemes that have a wider perspective, such as focusing on another geographical region or community in a distant location are primarily to extend understanding of different lifestyles and communities or may have a charitable function. Pupils at this stage take little responsibility for their own learning, although they enjoy finding things out under close supervision.

**Stage 2.** Direct involvement in activities to improve the environment and to conserve resources and energy continues as a feature at this stage, with more involvement in the decision-making process and in the generation of ideas. Teachers are still the major motivators and those who control and direct much of the activity. Cooperation more naturally occurs within friendship groups and can result in a fair amount of initiative being shown in alternative ways of bringing about desired outcomes. Leadership skills are beginning to emerge more clearly among some members and this can include evidence of the ability to listen as well as express opinions. These may or may not be the more obvious natural peer group leaders and some pupils can find this is something at which they can excel even though they may not show comparable excellence elsewhere.

The ability to be involved in decision-making is increasing and pupils are more proactive in ensuring that they are canvassing opinion when representing ideas in formally constituted contexts, such as a school council or eco council, and generating ideas about new initiatives. The existence of a school council is valued, but in a few cases there are the beginnings of a critical view when the outcomes of ideas put forward by the school council result in few being implemented or there are long delays. There are the beginnings of a willingness to mildly challenge both each other and those in authority and the ability to provide some rationale for the challenge, but they are also willing to listen to and consider alternative ideas. The ability to accept decisions made democratically about which they do not agree is becoming established.

Healthy living and enhancing safety are still features. Pupils express dietary preferences but are willing to accept that certain types of food are more 'healthy' and will include more of these in their meals in school and claim that they will do so when they have a free choice elsewhere. They are more aware of their personal safety and their security within the school. There is an appreciation that they have a personal responsibility as well as being willing to report incidents appropriately.

Empathy with peers who are considered 'different' is fairly well established and is sometimes expressed in more formal structures such as 'buddy schemes' or the use of friendship benches, which are actively adopted by pupils at this stage. Anti-bullying approaches have similar qualities to those described at Stage 1 but may take more proactive forms such as the identification of pupils who appear to be the target of bullying. They are more likely to be involved in simple forms of peer counselling, where confidentiality is taken seriously. It is notable that there is often a gender difference, with girls rather than boys being more willing to take these responsibilities.

The range over which projects and initiatives are directed is increasing and there is an increased tendency to look out from the school and its estate to the local community and beyond and to try to gain from the expertise of those living locally. Initiatives that look out more internationally begin to have a more explicit focus on aspects of sustainability, even if there is still a strong 'charitable' dimension.

Pupils at this stage are developing more facility to access information to support their learning and activities related to learning for sustainability and they are beginning to take some initiative in this direction.

**Stage 3.** The school and grounds continue to be the focus for much of the practical activity, including quite ambitious projects to enhance the environment. This might include creating significant changes to the recreational areas or improving the scope for learning activities outside, such as creating a pond, or redecorating rundown areas within the buildings. Active participation in day-to-day measures to reduce the environmental impact of the school continues to be apparent. This still includes practical activities, such as reducing energy and water consumption, waste management such as recycling (including paper but sometimes cans and mobile phones).

Pupils are generally willing to participate, and this is enhanced by increased opportunities to become involved in the decision-making process and to monitor changes. Pupils are beginning to take a lead in this under the careful guidance of well-motivated teachers. Leadership emerges both in terms of ways of cooperating with practical tasks and making the case for changes within the decision-making process. There is even a clearer understanding that to challenge the *status quo* is permitted, provided that this is done using acceptable means and supporting ideas with reasoned argument. Levels of criticism can be quite high if it is felt that insufficient progress is being made with new initiatives. The ability to negotiate effectively is not well developed yet.

Pupils are encouraged to find out more for themselves about local resources to assist with their projects and this includes the use of the internet, local government and voluntary organisations. Consequently they show considerably improved ways of accessing information and more initiative in seeking assistance. Levels of cooperation can be quite high, particularly among certain groups of well-motivated pupils. With regard to improving the facilities of the school or finding more effective ways of reducing their environmental impact, pupils are more willing to approach decision-makers within the school and even responsible officers within their local community.

Listening skills and the ability to appreciate alternative views and ways of doing things are now more apparent than at Stage 2. Pupils are beginning to see their role even more clearly as one of advocating behaviours that should enhance sustainability; this extends to the home and even to others elsewhere in the school. There is now even more interest in activities extending beyond the school – taking the advocating role into the local community and identifying projects that can relate to sustainability in distant environments. However, the latter may still be restricted to fundraising for organisations that champion conservation in some form or another.

With regard to matters of ensuring a healthy lifestyle and personal safety, pupils are beginning to advocate healthy diets and taking exercise, even sometimes arguing for the right to be able to cycle to school rather than to be taken by car. Safety is seen in a wider perspective and as an issue where they have a collective responsibility. Anti-bullying and inclusiveness are seen in the context of the school including a diverse range of people, which in itself is valued. Again, initiatives such as ‘buddy’ schemes and peer counselling are undertaken, and in the latter case the need for training and issues such as confidentiality are carefully maintained.

**Stage 4.** In this stage, the school buildings and grounds begin to emerge more clearly as an intended model for sustainable behaviour. Participation is an important aspect of pupil behaviour. This includes involvement of pupils in monitoring the effectiveness of their initiatives, which might include conservation of resources and energy. There is an even greater tendency to seek the expertise of those outside the school to assist with this and to be proactive in a variety of ways to get things done. Communication of ideas is seen to be an important part of the process of enlisting the assistance of a wider range of people within the school community. Pupils are keen to take the initiative in this and use their skills in accessing information to make this more effective.

In collaboration with well-motivated members of staff and others, pupils may take on quite ambitious projects such as making useful objects from recycled materials or generating energy from solar sources. Pupils are much more proactive with regard to school council type activities, drawing up agendas, keeping records, suggesting ideas, representing constituencies of pupils, lobbying for support, and following up afterwards. Ideas are often more realistic in terms of economic viability and the time and effort involved. Pupils actively seek additional assistance and expertise from within and outside the school, again using the internet, local government, local businesses and voluntary organisations. Cooperation is actively sought and can be very high among the most motivated. Leadership skills are further developed, including showing initiative and listening skills. The ability to appreciate, and where appropriate, accept alternative views is more clearly identified.

Activities relating to healthy lifestyles extend beyond diet and exercise and include a broader appreciation of well-being. The concept of the school and community containing a diverse population, with different needs and often different lifestyles, is appreciated and seen positively. Health and safety are again considered in a broad context and often interrelated to include a wide range of matters that will enable them to maintain a healthy lifestyle. Actions to help others remain both safe and healthy are frequently advocated. This may involve direct participation in planning visits outside the school, with emphasis on developing risk awareness.

Pupils are clearly advocating behaviours that they see as environmentally sustainable, both within and outside the school – particularly at home, where they may be taking the lead. Interest and concern for global and local issues is much more clearly identified and this includes awareness of political, social, cultural, scientific and technological aspects. There is a strong wish to find out more, and to publicise and communicate information, ideas and opinions with regard to these issues, many of which are the major environmental issues of our time.