**January 2008**

# HEFCE strategic review of sustainable development in higher education in England

**Report to HEFCE by the Policy Studies Institute, PA Consulting Group and the Centre for Research in Education and the Environment, University of Bath**

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## GLOSSARY OF TERMS

| | |
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| ADK | Active Document Keeper |
| BREEAM | Building Research Establishment Environmental Assessment Method |
| CETL | Centres for Excellence in Teaching and Learning |
| CREE | Centre for Research in Education and the Environment |
| C-SCAIPE | Centre for Sustainable Communities Achieved through Integrated Professional Education |
| ESRC | Economic & Social Research Council |
| EHEI | Enterprise in Higher Education Initiative |
| EMAS | Eco-Management & Audit Scheme |
| EMS | Estates Management Statistics |
| ESD | Education for Sustainable Development |
| GIA | Gross internal area |
| GIS | Geographical Information Systems |
| GRI | Global Reporting Initiative |
| HE | Higher Education |
| HEA | Higher Education Academy |
| HEFCE | Higher Education Funding Council for England |
| HEFCW | Higher Education Funding Council for Wales |
| HESA | Higher Education Statistics Agency |
| HR | Human Resources |
| KPT | Key Performance Target |
| LWEC | Living With Environmental Change |
| NERC | Natural Environment Research Council |
| NHS | National Health Service |
| PA | PA Consulting Group |
| PSI | Policy Studies Institute |
| PVC | Pro-Vice Chancellor |
| RAE | Research Assessment Exercise |
| RC | Research Council |
| RELU | Rural Economy and Land Use |
| SD | Sustainable development |
| SDRN | Sustainable Development Research Network |
| SG | Steering Group |
| SME | Small and medium enterprises |
| Student FTE | Student full-time equivalent |
| VC | Vice Chancellor |
| WLC | Whole Life Costing |

## EXECUTIVE SUMMARY

This Strategic Review of Sustainable Development in Higher Education in England had the following aims:

- Establish a baseline of sustainable development in the sector, against which HEFCE can measure progress and publicise what the sector is already doing (A1)
- Learn from institutions' experience about the conditions for embedding sustainable development, including barriers and drivers (A2)
- Identify key issues which present opportunities and challenges for the sector and investigate possible policy responses (A3)
- Evaluate HEFCE's approach and refine HEFCE's priorities (A4)
- Raise the profile of sustainable development in the sector (A5).

HEFCE also posed the following key research questions that it wished the review to address:

- *To what extent do the strategic plans and other corporate documents and policies of HEFCE-funded higher education institutions and the various bodies which fund higher education demonstrate an engagement with sustainable development?*
- *What are the successful processes used to embed engagement with sustainable development issues within institutions?*
- *How can institutions' experiences, both positive and negative, of embedding sustainable development be used by policy makers and institutions to encourage others to do likewise?*
- *What are the needs or requirements of different constituencies, in particular students, employers and professions, in relation to the sustainable development agenda?*
- *How can we usefully generate and manage a debate around some of the key sustainable development issues that present opportunities and challenges for the sector?*
- *How can we encourage development of curricula in relation to sustainable development?*
- *What can we learn from the experiences of other sectors and countries?*
- *What can we learn from the interface between various elements of this strategic review?*

The review began with a letter to the Head of Institution of all 132 Higher Education Institutions (HEIs) in England, inviting them to take part in the review and to identify the relevant contact for sustainable development (SD) in the HEI. Responses were received from 93 HEIs. These were then followed up, separately or in a coordinated way, as appropriate, in respect of the three strands of the review, relating to SD research, SD teaching and HEI estates management and procurement. Four case studies of individual HEIs were also undertaken.

Probably the most important finding of the review is that SD activity is very disparate in the HEI sector: it is very widely dispersed within different HEIs; it varies widely across HEIs, with some engaging in multiple, coordinated institution-wide SD activities involving hundreds of staff, some having only a few active individuals, and some no identified activities at all. Moreover, different HEIs have different perceptions of what SD is and how it should be appropriately pursued (if at all) within the institution.

For the purpose of this review, activity related to sustainable development was defined as activity that contained '*a significant element related to either or both of the natural environment and natural resources, PLUS a significant element related to either or both of economic or social issues*'. Although this definition was widely accepted by HEIs, it emerged very early on in the review that SD lacks an adequate and consistent definition in the sector. Moreover, it is clear that there is currently no single definition of SD which would command consensus across the sector, making it difficult for HEFCE to adopt a generic approach to SD. However, it is clear that it will need to do this if it wishes to generate a definitive and comprehensive baseline for SD activity in HEIs. This is one of the most challenging conclusions for HEFCE of this Review.

HEIs that display a genuine, institutional commitment to SD and implement cross-institutional programmes of activity are better placed to coordinate and monitor such activity (whether that be research, teaching or efforts within estates management) than those that lack such commitment and coordination. There is evidence that increased commitment generates more activity and enables more internal collaboration. If HEFCE wishes to continue to monitor SD within HEIs, increasing the number of HEIs that coordinate SD in this way will be important.

It is obvious from this review that there is more SD activity in HEIs than there was twenty years ago and there is some slight evidence that it is still increasing (although lack of historical data precludes any firm conclusions about trends of this kind). However, there remain a number of barriers that prevent the take-up of SD. A lack of interest in SD, a focus on mono-disciplinarity and a lack of incentives to engage in SD are common hurdles to adoption. Specific barriers identified in the review include the structure of the Research Assessment Exercise (RAE), the conservatism of some professional bodies, difficulties of communication between multiple sites, the age and condition of some estates, consequences of highly devolved budgeting, current procurement practices and the poor return on investment of some estate investments related to SD.

There are a number of ways in which HEFCE could take a more active role in driving SD across the sector, such as the adoption of sectoral targets within estates management or through a concerted effort to devise a pedagogy that promotes 'sustainable development literacy'[1], which some HEIs already seem to be doing for themselves. A key question for HEFCE is the extent to which it wishes to drive the SD agenda, or alternatively simply respond to it. If the former, then, as noted above, it will need to win broad acceptance across the sector as to what SD entails and the main issues relevant to it.

This Executive Summary now reports on the conclusions and recommendations from each of the strands and the case studies, and then gives some more general conclusions and recommendations.

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[1] Defined later in this report as possessing 'Intellectual skills that enable individuals and groups both to make wise judgements and to understand the context and implications of the debate about sustainable development.'

## SD RESEARCH: CONCLUSIONS AND RECOMMENDATIONS

### Conclusions

- SD research was identified in over two thirds of English HEIs and the definition of such research adopted in this review was generally acceptable to HEIs. However, for a baseline of SD research to be definitive, the definition would need to be enforced. For it to be comprehensive, HEIs would need to be required to generate data on research outputs according to the definition and to report them to HEFCE when required.
- SD research activity is very varied, with involvement ranging from single individuals to hundreds of researchers across whole institutions. Broader SD research activity seems to require institutional co-ordination.
- Submissions of SD research to the 2001 RAE were surprisingly low, given the apparent activity. Reasons for this revealed by the research are the disciplinary organisation of the RAE panels and the perceived low status of journals in which SD research is predominantly published. There may be others.
- HEIs publish SD research across practically the full range of academic literature, making it very difficult to arrive at a full quantitative assessment of SD research. It is currently very difficult and time-consuming to generate a comprehensive citation record of SD research from English HEIs.
- High-level, centralised coordination of SD research not only encourages such research, but increases the ability of HEIs to report on it. Such coordination is likely to be a requirement if a robust picture of SD research is to be generated on a regular basis.
- The scale of SD research is largely driven by the scale of SD research funding, which seems to have increased compared with, say, twenty years ago. SD research will not increase further without a further increase in the funds devoted to it. It is not clear that the Research Councils are currently committed to such an increase.
- Research that is explicitly about SD will be encouraged when and if SD is made a specific and major category in Research Council thinking and RAE assessments.
- SD research will be encouraged when Research Council and RAE evaluations require operational (not just notional) interdisciplinarity. For academics in some disciplines this may well bring costs and inconvenience.
- Measures of the quantity of SD research say little about its usefulness to research users. It may be that further investigation could identify important qualitative distinctions between different types of SD research in terms of their influence and application.

### Recommendations

- HEFCE should consider new ways of defining and analysing RAE submissions and journal citations if it wishes the SD baseline to contain these elements. Future analysis of RAE submissions would be aided considerably by improved indexing and cataloguing of citations. HEFCE should also consider whether and how to support the use of institutional online depositories and other digital research cataloguing and management systems for the monitoring and reporting of SD research activity.
- HEFCE should consider more closely the relationship between the RAE and SD research activities and the ways in which different panels treat multidisciplinary research in general and SD research more specifically. If HEFCE wishes the

RAE in future to generate more robust data about SD research, then it seems likely that SD research will need to be more explicitly characterised in the RAE process, with submissions that count as SD research being explicitly identified. It is currently not clear that RAE 2008 will permit the identification of SD research any more easily than RAE 2001.

- One way of indicating the scale of SD research would be through consideration of its inputs (in terms of funding), rather than its outputs (in terms of journal publications).
- Of course, the RAE is not the only possible process through which the extent of SD research can be assessed (although it is the process most closely and exclusively related to HEFCE). To obtain a broader perspective and assessment of the quality and quantity of SD research, HEFCE could consider convening a group of SD research funders (perhaps analogous to the Environmental Research Funders Forum) and draw together a wider body of evidence on the priorities, inputs and outputs of SD research.

## SD TEACHING: CONCLUSIONS AND RECOMMENDATIONS

### Conclusions

- English HEIs vary greatly in their treatment of SD in the curriculum, for a variety of reasons.
- This diversity of treatment is probably necessary given the current variety of conceptions of, and challenges to, SD.
- There are institutions, schools, departments and individual academics for whom sustainable development is a low priority or no priority at all.
- The achievement of interdisciplinarity in teaching presents serious challenges, although examples of innovative good practice do exist. Barriers include both disciplinary conservatism and wider matters of management and governance in the sector.
- There is currently a lack of connection between the development of SD teaching and the emphasis on skills in higher education.
- There are differences of opinion (among SD supporters) about whether SD is an agenda HEIs should drive, or one that they should respond to. Overall, our data points to the conclusion that SD is most usefully seen as an element in the overall HE/policy/institutional marketplace to which institutions, and parts of institutions, respond according to their particular circumstances and their reading of the costs and opportunities. Reducing costs and increasing opportunities (and the ease of taking them up) looks a better bet than top-down regulation through mission statements and declarations of principle, though these have their place. In brief, HEIs are likely to adopt something into their strategic plan because they want to do it, rather than because they are required to do it. And for SD education to work, people need to *want* to do it.
- There was some evidence that the words 'sustainable development' in course titles don't recruit well. This may tell us something about what employers want (or are perceived to want) and so about the skills agenda too.

**Recommendations**

- The database of SD teaching submitted with this review can be sorted by institution. Each HEI should be sent its own folder and asked if it wishes to add or delete anything. If this process were repeated at regular intervals a moving record would exist of the state of engagement of the sector with sustainable development teaching.
- Detailed consideration should be given to measures to facilitate interdisciplinarity in course design and teaching. Such measures need to be designed with due reference to a wide range of issues including: financial management/cost centres; RAE categories and overall design; subject benchmarks.
- A working party should be convened to examine the opportunities for linking sustainable development into the mainstream skills agenda in higher education.
- Leadership should be provided for the sector through the creation of opportunities for sustainable development teaching coupled with clear and consistent support for those who take advantage of them.
- League tables of sustainable development teaching in higher education should be avoided absolutely.

## SD IN ESTATES & CORPORATE MANAGEMENT: CONCLUSIONS AND RECOMMENDATIONS

**Conclusions**

- The data collection carried out for the study required considerable input from HEIs. Only a minority responded – 22 to the estates strand and 17 to the finance and procurement strand. Possible reasons for the low response include the lack of time available to consult potential respondents in advance and the tight deadline for the return of completed questionnaires.
- At least 100 responses from the 132 English HEIs are required to create a credible baseline.
- Although great caution is necessary when interpreting results from such small samples, the results do suggest some interesting findings.
- While there is evidence of promoting more sustainable transport, there appears to be less appetite for reducing parking.
- Some HEIs are treating SD issues very seriously. A significant minority wish to become exemplar organisations.
- There are some 'easy wins' for HEIs who want to promote SD activity, such as identifying and promoting more sustainable choices to decentralised buyers.
- Several of those responding said that completing the questionnaire had been helpful to them in identifying and considering important and relevant issues.
- A pilot questionnaire about staff, student and community communication and engagement with SD was sent to seven directors of Human Resources (HR) who were requested to complete the questionnaire and to identify any issues or problems with the questionnaire. Only one response was received, which is insufficient to draw any conclusions.

**Recommendations**

- HEFCE should consult further with HEIs to establish the causes of the low response.

- In the light of this consultation, HEFCE should decide whether to reduce the scope of the exercise in order to reduce the burden on respondents and whether to collect the information on a compulsory or voluntarily basis.
- HEFCE should consider commissioning a robust and replicable survey of students on the extent to which SD is perceived to be relevant to their studies and whether it is included in their course (the existing research is not fit for this purpose).
- HEFCE should consider monitoring the attitudes of business and professional bodies to SD and whether it should be included in relevant courses (the existing research is not fit for this purpose).
- HEFCE should consider asking self-assessment questions on whether Knowledge Transfer activities are providing input into SD.

## SD CASE STUDIES: CONCLUSIONS AND RECOMMENDATIONS

### Conclusions

Many of the conclusions from the case studies echo the findings from the other strands of work in this review. It is specifically worth mentioning the following:

- The lack of a consistent definition of SD in HEIs makes it difficult for them to identify and coordinate SD activities even when they want to. The reasons for this are various, but relate to the facts that SD often emerges in HEIs as the initiative of individuals; it then spreads across departments in an organic but unpredictable way; different groups and individuals within the institution may have different perceptions of SD; and it is often not the focus of any definite governance arrangements.
- SD is not well defined between institutions. Some key individuals in institutions, who might be regarded as SD-active, deliberately avoid the use of the term altogether.
- HEIs that have sought to introduce SD tend to have started with its introduction into teaching or research rather than into estates or wider corporate management.
- Some case studies showed that HEI SD activity can have regional or community connections.
- Ultimately SD activity needs to derive from and reflect the initiative and priorities of the HEI concerned, and to be fully 'owned' by those who engage in and drive it. Attempts to encourage and promote SD in HEIs must therefore start from and reflect the perceptions of SD in the HEI concerned.
- The (limited) evidence available from the case studies indicates that only a minority of students (albeit sometimes an active and vocal minority) are currently actively concerned with SD. It is therefore not apparent from the case studies that students will be a major driving force in causing HEIs to prioritise SD.
- SD activities in HEIs are often the result of the initiative of one or two people. A major challenge is the institutionalisation of this initiative, so that it ceases to be wholly dependent on the initiators (who may move on) and so that connections can be made across the HEI, without undermining the enthusiasm, commitment and ownership of the impulse.
- When SD activity does become established across an HEI, it can become the lever of wider cultural change, promoting positive cross-institution interactions that may have nothing to do with SD.

The case studies have identified a number of barriers to SD in the institutions studied, including the structure of the RAE, the conservatism of some professional bodies, difficulties of communication between multiple sites, the age and condition of some estates, consequences of highly devolved budgeting, current procurement practices, and the poor return on investment of some estate investments related to SD.

The case studies also identified how external stakeholders (including professional associations and advisers, local government, central government, regional bodies and Research Councils) could act as enablers for SD.

### Recommendations

There are three broad areas in particular where HEFCE might wish to consider itself playing an enabling role, namely in:

- addressing or helping address, where practicable, the current barriers to SD adoption reported;
- helping enable even more effective working with key stakeholders, particularly Research Councils and professional bodies;
- securing funding for SD-rich estates renewal, refurbishment, and new-build.

## GENERAL CONCLUSIONS AND RECOMMENDATIONS

### A Baseline of Sustainable Development (A1)

The notion of a baseline implies a measurable state against which subsequent developments can be compared. It is crucial that the state to be measured is adequately and consistently defined. Unfortunately it has become clear through this review that sustainable development (SD) lacks an adequate and consistent definition in the HE sector.

While the definition of SD used in the Review did not prove explicitly or overtly controversial, it was clear from some of the returns in both teaching and research that the respondents were defining SD in their own way, which in some cases differed from the definition in the review. The Baseline that has been generated is therefore indicative rather than definitive and in any case could not be comprehensive given the resources of the project. There are several strong conclusions for HEFCE to emerge from this:

1. If HEFCE wants a definitive baseline for SD it will need to adopt, and be prepared to enforce, a definition of SD that has measurable indicators. The definition adopted in this review would serve the purpose and was widely accepted, but did not command universal support. It is unlikely that any other definition would either, so any attempt to enforce an adopted definition would be controversial and might be resisted.

2. It would probably be easier, and less contested, for an external body like HEFCE to define SD in respect of a research baseline (with reference to any or all of the funding inputs, the research outputs or the RAE process) than in respect of teaching, because research areas are often specified *a priori* in some detail, while HEI curricula are much more the creation of those who are going to teach them.

3. With reference to HEFCE's Key Performance Target (KPT) to revisit the SD baseline in 2011, this is certainly both feasible and desirable. For teaching we

have proposed that the submitted database be regularly updated by an approach to each institution. HEFCE might also wish to commission its update by a repeat of the search process. This would be much easier than creating the database in the first place. Through such a process HEFCE would get a picture of:
   a. The number of relevant courses (modules and units) (this is a very imperfect benchmark, but is not meaningless!)
   b. The number of institutions engaged
   c. The degree of engagement of each institution
   d. The spread of courses across disciplines
   e. The incidence of interdisciplinarity
4. For SD research a revisitation of the baseline in 2011 would reveal changes in each of the four components of the baseline, namely: where SD research is being carried out, the extent of funding and staff and student engagement in it; the number of submissions of SD research to RAE 2008; and the number of citations of SD research in the major relevant journals. As noted above, the last two components would indicate the trend in SD research over the period, rather than its absolute extent, because of the lack of a universally agreed definition of SD research.
5. For corporate and estates management, there is a case for an annual or two-yearly revisitation. The EMS are collected annually and the collection of other indicators and self-assessment of progress would provide a broad picture and offer the opportunity to understand the relationships between progress and the ways that SD is being managed and supported.

**Experience in Embedding Sustainable Development (A2)**

There is no question that institutions which have adopted an institution-wide commitment to SD (however they define it) generate more activity, and more joined-up activity, than those which have not. The barriers to take up of SD are well rehearsed and evident throughout the different sections of this review, but essentially amount to lack of interest in SD; silo or mono-disciplinary thinking and institutional organisation, which militate against the cross-departmental activity that is essential for SD; and lack of incentives or priority to engage in SD.

Increased public awareness in SD has reduced the first of these factors, but the others are still well entrenched in academic thinking and HEI practice. Those institutions that are determined to remove these barriers through systematic, institution-wide action find that, over time, they can make progress in doing so, and there is much evidence in this review of their success. But they remain the exception rather than the rule, and the external incentives are not yet adequate to significantly accelerate the process of persuading more institutions to join the relatively small number that have so far set off down this path.

**Key Challenges and Opportunities for SD in HEIs (A3)**

The current opportunities for SD in HEIs are clear and are similar to those facing other public sector organisations:

- Government is increasingly committed to SD (in rhetoric at least) which should encourage those HEIs who are in any case inclined to take it more seriously
- Key environmental factors (energy, water, waste disposal) are more expensive than they were, which gives greater incentives for their careful management

The challenges are equally clear:

- The extent to which HEIs have a clear conception of what SD is, and how it should be pursued, varies widely across the sector
- The traditional disciplinary organisation of HEIs militates against SD thinking and activity
- HEIs have strong existing priorities in respect of teaching and research which are not necessarily related to SD
- Traditional estates management tends not to give systematic attention to the management of natural resources, even when it becomes economic. There is no evidence that estates management in HEIs is any different in this respect.
- Change requires commitment and resources, which may be scarce, and often involves disruption, which is resisted.

**HEFCE's Approach and Priorities (A4)**

There is little doubt that, if it is conceptualised as the integration of thought and action across environmental, economic and social concerns, there is more SD activity in HEIs than there was twenty years ago, and there is some slight evidence in this review that it is still increasing (although lack of historical data precludes any firm conclusions about trends of this kind). This is in line with public perceptions and priorities generally. So far HEFCE's approach seems to have been to engage in low-key initiatives that raise the profile of the issues in the sector and encourage it to respond, without requiring much in terms of commitment or engagement.

This review has revealed a distinction between those (relatively few) HEIs, or SD-active individuals within them, who feel that they should *drive* the SD agenda in or through their institution and those who are content to respond to it. There seems to be a similar choice before HEFCE: is it going to continue largely to respond to the priorities and initiatives coming from government and wider society? Or is it going to take a more active role in driving the SD agenda through the sector, perhaps faster than its take-up in society as a whole?

If HEFCE wishes to move from the former more towards the latter role, this review gives some clear guidance on the kinds of changes that will be required, although they will obviously have to be thought through in far more detail than is possible here.

Some examples are:

- HEIs: making it a requirement for HEIs to publish an SD strategy and show how it is being implemented (reporting on teaching, research, estates management).
- Research: establishing a high-level working group to think through how to make research assessment genuinely supportive of SD; working to convince Research Councils to sustain and increase funding for SD research.
- Teaching: making a concerted, high-level effort to devise a pedagogy that promotes sustainable development literacy, enabling all students to understand the context and implications of the debate about sustainable development, and then providing adequate incentives for that pedagogy to be taken up.
- Estates management: adopting sectoral targets for those elements of estates management which are already subject to reporting requirements, and introducing new reporting requirements and targets for those which are not.

      ▪    Generally restructuring HEFCE's budgets and support to show that it is serious about rewarding good SD performance and withholding support where it is lacking.

## Raising the profile of SD in the sector (A5)

SD now has sufficient profile in the sector and in society at large for rhetorical flourishes in its favour, or tokenistic actions, to be more likely to engender scepticism rather than raise its profile further. For HEFCE further to raise the profile of SD in the sector, it will need to engage in substantive action, commit resources, and require HEI responses, along the lines of the suggestions above. This will entail working positively and proactively with those HEIs that have already made institution-wide progress in SD and rewarding them for pushing the boundaries back further while at the same time making it clear to those less engaged that more will be required of them in due course and eventually levying sanctions on the worst performers.

It might be advisable to engage on this course in one, or relatively few, areas, where the consensus about the need for concerted social action is relatively well established, for example in respect of climate change. It is possible that a HEFCE-led, sector-wide programme of action on climate change, devised and executed with those HEIs that are already most advanced in addressing the issue, would engender both the inspiration and experience to tackle other areas and in due course SD as a whole.

However, the review has also highlighted the considerable breadth of important ongoing sustainable development research. Efforts to encourage consolidated action on a particular issue should not be implemented in a way that discourages the undertaking of this equally valuable work.

## Responses to key research questions

The review suggested the following answers to the key research questions posed by HEFCE at the outset.

*To what extent do the strategic plans and other corporate documents and policies of HEFCE-funded higher education institutions and the various bodies which fund higher education demonstrate an engagement with sustainable development?*

Some HEIs have strategic plans and policies in relation to SD, others do not. There does not seem to be any systematic relationship between the existence of such plans and policies and the strength of SD activity within the HEI. Some HEIs without them are relatively active in relation to SD; some with them are not. However, where an HEI has such a plan or policy and has sought to use it to promote SD activity across the institution, then there is evidence that the activity is more joined up across the institution than in institutions without a plan or policy. Strategic plans and policies relating to SD are therefore useful for promoting SD activity in an HEI, provided that the HEI engages in such promotion in a systematic and energetic way.

*What are the successful processes used to embed engagement with sustainable development issues within institutions?*

SD activity within HEIs is still largely the result of initiatives of individual enthusiasts and champions of SD within the institution. Where the champion is a senior staff member, the activity may be promoted strategically through the institution, such that activities in different areas, disciplines and departments become joined up and seem to be 'embedded' in the institution. However, with few exceptions, this embeddedness remains fragile and the activity remains vulnerable to the departure of the key staff. There is therefore little evidence of generic 'successful processes' which can be used to embed SD engagement within institutions.

*How can institutions' experiences, both positive and negative, of embedding sustainable development be used by policy makers and institutions to encourage others to do likewise?*

There are two preconditions for embedded SD activity in the academic life of an HEI: the provision of finance for SD research; and the encouragement and recognition of interdisciplinary activity in both research and teaching. Much has been learned in recent years about how to stimulate successful interdisciplinary work in teaching and research, but the continuing predominance of disciplinary structures in both HEIs and the RAE presents ongoing challenges in the persuading of academics to make the investment of their time and career in pursuing an interdisciplinary path. HEI funding institutions therefore need to intensify their efforts to encourage interdisciplinary work and finance SD research; if these efforts are sustained HEIs are likely to respond by changing their structures more fundamentally than at present to embed SD activity more securely within them.

*What are the needs or requirements of different constituencies, in particular students, employers and professions, in relation to the sustainable development agenda?*

Although we did not seek for it explicitly, we found less evidence of demand for SD in HEIs that we had expected. The students in our case study institutions were not demanding SD modules or courses; and no one suggested to us that employers or professional associations were becoming more insistent that graduates from HEIs had either a working or expert knowledge of SD issues. This lack of demand for SD from HEIs is undoubtedly a problem for and a constraint on the intensification of SD activity within HEIs and those who wish to promote it.

*How can we usefully generate and manage a debate around some of the key sustainable development issues that present opportunities and challenges for the sector?*

There is an active debate about SD issues in many HEIs, undertaken largely by individual enthusiasts and champions in a context that remains lukewarm, if not outright sceptical, in respect of the importance of SD. If HEFCE wishes to take the debate in HEIs further, it needs to go beyond the champions and find ways to engage with the structures that determine how the bulk of HEI activity is carried out, and the sceptics who are still largely in control of these structures. Two important such structures are the Teaching and Learning Committees, which exist in practically all HEIs, but very few of which actively promote SD.

*How can we encourage development of curricula in relation to sustainable development?*

By engaging with Teaching Committees HEFCE can seek to transmit an expectation that HEIs will take SD issues seriously and incorporate them as appropriate in their courses, but all the evidence of this review suggests that HEIs will need to start teaching SD because they want to, and they will decide how it is be incorporated into their curricula. Any attempt by HEFCE to impose a standard approach to SD in curricula would both generate opposition and conflict and be most unlikely to result in effective pedagogy. Our research has shown that there is great diversity in the teaching of SD issues, which is to be welcomed and encouraged as a sign of creativity in approaching these complex issues, and there could be a role for HEFCE in providing a forum within which academics could share, exchange and seek to develop their experiences of SD teaching.

*What can we learn from the experiences of other sectors and countries?*

Our review has drawn heavily on the self-assessment processes of the NHS. There are undoubtedly some corporate management systems that can be effectively used in HEIs (indeed, some are already effectively using them). However, the core HEI activities of teaching and research make higher education sufficiently different from other sectors to make SD experience in other sectors of limited relevance to HEIs. The same applies to some extent to other countries, where the institutional structures relating to teaching and research differ greatly from those in England. Individual researchers and lecturers involved in SD issues in their teaching and research are clearly significantly engaged in international research (for example, through European Framework programmes), and discuss their teaching courses and modules with colleagues from different countries, sometimes through the conferences of relevant academic societies (e.g. the International Society for Ecological Economics). Perhaps the best way that HEFCE and other UK funding institutions can promote learning from other countries is to ensure that there are adequate resources for UK academics to engage in these cross-country contacts in this way.

*What can we learn from the interface between various elements of this strategic review?*

The case studies suggest that most HEIs, when considering a response to SD issues, focus initially on teaching and research. There is no doubt that it is possible to tackle the estates component of SD separately from teaching and research. There is evidence that, as in many other sectors, few HEIs manage their use of environmental resources even to achieve all cost-neutral resource savings, let alone going well beyond this. Many HEIs will struggle to contribute to public sector targets for the reduction of greenhouse gases and waste generation without further initiatives from HEFCE, which are likely to need to go beyond exhortation and one-off demonstration measures if they are to be effective. As has been seen in other sectors, organisations need targets and financial incentives (positive or negative) to achieve them if systematic progress in these areas is to be made.

The areas of teaching and research are quite different and it would be quite inappropriate to seek to stimulate SD activity in these areas through targets and incentives to achieve them. SD research is best encouraged through funded research programmes; teaching on SD issues will be introduced by academics because they feel it is a necessary element of the pedagogy of their courses. While our research was not able to show any automatic relationship between SD research and teaching, it is clearly likely that academics engaged in SD research will seek to include insights from it in their teaching, and that academics teaching elements of SD will be more likely to apply for research grants when appropriate calls for research are announced. In this way, SD research programmes are

likely to stimulate SD pedagogy, while encouraging more effective SD pedagogy will both help define SD research agendas and ensure more high quality applications to SD research programmes when they are instituted.

# 1    INTRODUCTION

This is the report of the HEFCE Strategic Review of Sustainable Development in Higher Education in England being carried out by the Policy Studies Institute (PSI), PA Consulting Group (PA) and the Centre for Research in Education and the Environment (CREE), University of Bath.

The Strategic Review has the following aims:

- To establish a baseline of sustainable development in the sector, against which HEFCE can measure progress and publicise what the sector is already doing (A1)
- To learn from institutions' experience about the conditions for embedding sustainable development, including barriers and drivers (A2)
- To identify key issues which present opportunities and challenges for the sector and investigate possible policy responses (A3)
- To evaluate HEFCE's approach and refine HEFCE's priorities (A4)
- To raise the profile of sustainable development in the sector (A5).

HEFCE also wished to see addressed a number of key research questions. These were:

- *To what extent do the strategic plans and other corporate documents and policies of HEFCE-funded higher education institutions and the various bodies which fund higher education demonstrate an engagement with sustainable development?*
- *What are the successful processes used to embed engagement with sustainable development issues within institutions?*
- *How can institutions' experiences, both positive and negative, of embedding sustainable development be used by policy makers and institutions to encourage others to do likewise?*
- *What are the needs or requirements of different constituencies, in particular students, employers and professions, in relation to the sustainable development agenda?*
- *How can we usefully generate and manage a debate around some of the key sustainable development issues that present opportunities and challenges for the sector?*
- *How can we encourage development of curricula in relation to sustainable development?*
- *What can we learn from the experiences of other sectors and countries?*
- *What can we learn from the interface between various elements of this strategic review?*

We first discuss our approach to the review and address general issues of sustainable development (SD) and higher education institutions (HEIs, section 2). We then focus separately on research, teaching and estates and corporate management in HEIs (sections 3, 4, 5). Section 6 presents key evidence and conclusions from four case studies of different HEIs' approaches to and engagement with SD. Section 7 sets out our conclusions and recommendations, and gives our answers to the key research questions above. Supplementary material from our research is presented in a number of Appendices.

# 2        GENERAL APPROACH TO THE REVIEW

## 2.1        THE NATURE OF HIGHER EDUCATION INSTITUTIONS

A review of sustainable development in higher education must proceed from an understanding of the core purposes and functions of HEIs. In the context of this review, the core purposes of HEIs are taken to be:

- To *generate* advanced knowledge and understanding of the world and of the role of humans and the impacts and implications of human activities within it. HEIs pursue this purpose through
    - *Research*, and
    - *Teaching*

    both of which should lead to in-depth *learning*.

- To *certify* advanced knowledge, through decisions about and assessments of
    - *What* is researched, taught and learned (decisions about curricula and research programmes); and
    - *How well* it is researched, taught and learned (assessment of teaching and research).

- In addition, HEIs are
    - Major employers, procurers of goods and services, users/consumers of natural resources and owners of land and buildings, and important local and community institutions.

## 2.2        ORGANISATION OF THE REPORT

Section 3 focuses on the development of a baseline of SD research across English HEIs. It provides information on the extent of SD research activity across the sector, including levels of staff engagement and funding, and on the number of submissions of SD research to the RAE 2001. An Access database of SD research submissions and an Endnote library of SD research citations, both supplied on an accompanying CD, support this section.

Section 4 concentrates on SD teaching and is supplemented by a CD on which a database of SD teaching can be found. The chapter provides a detailed overview of SD teaching across England's higher education (HE) sector.

Section 5 covers the benchmarks for estates and corporate management.

Section 6 focuses on four case-study institutions to highlight what can be learnt from their experiences implementing sustainable development across their activities. The case studies draw together the findings of sections 3-5 of this review. Some of the key issues

that present opportunities and challenges for the sector and the possible policy responses to them are considered.

Finally, section 7 presents the final conclusion and recommendations to emerge from this Strategic Review of Sustainable Development in Higher Education in England.

Data gathered through the review are anonymised. Each HEI is referred to by a number and is identifiable by the authors. Where information is publicly available and no editing or re-formatting has been undertaken or the HEI has given its permission, the HEIs in question are referred to by name.

## 2.3    HEIS AND SUSTAINABLE DEVELOPMENT

In the tender for this review, it was proposed to adopt the definition of sustainable development (SD) used by the UK Government in its 2005 SD strategy, namely that the goal of SD is "*to enable all people throughout the world to satisfy their basic needs and enjoy a better quality of life, without compromising the quality of life of future generations*"[2]. From this definition it is clear that HEIs potentially have a very important role to play in the achievement of SD, both in terms of their core purposes of knowledge generation and certification (in seeking *inter alia* to answer questions like 'how can basic needs be satisfied and quality of life improved?' and 'how can natural resources and the environment contribute to this without compromising the future?') and as major organisations themselves.

As our tender noted, SD is widely recognised to have economic, social and environmental dimensions. Measures to promote SD normally seek to achieve progress across all the dimensions simultaneously, and to minimise the trade-offs between them, in recognition that the benefits arising across the different dimensions are not completely interchangeable. Historically, the term SD was adopted because of a perception that processes of economic and social development were having serious environmental impacts which threatened to undermine the viability of those processes (i.e. they were environmentally unsustainable). A focus on SD was intended to result in greater attention being paid to the environmental dimension and impacts of development. It is therefore appropriate, in any work on SD, to ensure that consideration of the environmental dimension is at its heart, while giving due weight to the other two dimensions. This is the approach that was adopted in this review.

Our tender also noted that a conceptualisation of SD, which has been useful in both understanding the idea and in evaluating the extent to which it is being achieved, is in terms of maintenance of the asset base (the 'capital stock') of society, where the capital stock has manufactured, environmental, human and social components (sometimes called 'the four capitals'). In this formulation, sustainable development becomes a process of increasing all four components of the capital stock and therefore increasing the benefits that flow from it and contribute to quality of life.

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[2] UK Government (2005) *Securing the Future: The UK Government Sustainable Development Strategy. London: HMSO.*

HEIs have substantial manufactured capital (e.g. buildings) which needs to be appropriately maintained and replaced; they use and have major impacts on environmental capital (e.g. through their use of energy and water, and their emissions of carbon dioxide); as noted above one of their core purposes, in relation to their students, their staff and their other employees, is the development of human capital; and the social capital of their staff-student relationships, and links into the wider community, are fundamental to their effective operation and sharing their knowledge with those who can benefit from it. We considered in our tender, therefore, that the four-capitals approach to assessing contributions to SD provides a rigorous methodology for assessing and integrating all the elements of HEIs' corporate contribution to SD and we will use this approach to help us draw conclusions about our work.

Our aim (A1) is to seek to establish a baseline of HEIs' activity across the three broad areas of research, teaching and estates management and procurement. This baseline will seek to give answers to the following questions:

- To what extent are HEIs aware of, and do they care about, the emerging SD agenda and their own combined environmental, economic and social impacts? This is a question about *awareness* and *values* which is returned to briefly below.
- To what extent do they strive in their work to consider SD issues in an integrated way, with an appreciation of their interaction and inter-connection, which are central to the SD concept, rather than their separateness?
- To what extent do they both generate advanced knowledge (conceptual, theoretical and practical) about the interactions between environmental, economic and social dimensions of humans and human activities in the world *and* seek to give that knowledge practical effect in their own management and development of the human, social, manufactured and natural capital over which they have influence or control?

All English HEIs were given a chance to respond to this review in respect of their SD research, teaching and estates management (because all HEIs were written to about the review and asked to make such a response if they wished).

There is a further set of questions about the extent to which HEIs *should* pay attention in their work to the SD agenda. It is indisputable that social values are undergoing a profound shift towards a new perception of the importance of SD. HEIs are substantial recipients of public funds and as such might be expected to reflect this shift at least to some extent in their work.

Our work on the baseline of HEIs and SD has shown how far such an expectation is currently being realised. In this final report of the HEFCE Strategic Review of Sustainable Development in Higher Education in England, we reflect, in the light of our results, on just how responsive HEIs are being to the new public policy priority of SD, how they might be encouraged to be more responsive if this seems desirable and how such encouragement might be reconciled with traditional and important values of academic independence.

## 2.4    INITIAL CONTACT WITH INSTITUTIONS

As agreed with HEFCE and the Review Steering Group, initial contact with HEIs was made at the highest level, via a letter to Heads of Institutions from the Steering Group

Chair, Dr. Geoffrey Copland CBE. The letter introduced the review and stressed that there was no expectation - in the commissioning of the review – 'that institutions have been, or should have been, active in respect of sustainable development issues'. It was agreed that all HEIs should be given an opportunity to have their activities included in the review and, as such, letters were sent to the 132 universities and higher education colleges in England for which HEFCE is responsible.

The initial response to the letter to Heads of Institutions was excellent. 93 HEIs returned a completed 'contacts form', providing contact details of individuals with an overall responsibility for SD and, if applicable, details of individuals responsible for SD in the context of teaching, research and estates management and procurement.

At the request of HEFCE, no systematic follow up was made in respect of HEIs that did not provide contact details. However, the variety of methodological approaches adopted in the review mean that very little significant institutional activity has been missed as a result of this. Any omissions that have been identified are acknowledged and discussions of how similar omissions could be avoided in a repeat of this exercise are included where relevant.

# 3        A BASELINE OF SD RESEARCH IN ENGLISH HEIS

**POLICY STUDIES INSTITUTE**

## 3.1        INTRODUCTION

Research is one of the fundamental activities undertaken by HEIs in their role as knowledge generators. Through the generation of evidence across the whole range of issues into which they conduct research, HEIs also have an important role to play in the development of public policy. Although the process of research contributes almost by definition to the creation of social and human capital, the knowledge generated by HEIs is vital for the maintenance and development of manufactured and environmental capital as well. In seeking to integrate insights and efforts from different disciplines, SD research has a distinctive contribution to make to knowledge generation.

In recognition of the interdisciplinary nature of SD research, researchers within HEIs are increasingly working both across departments and across institutions in multidisciplinary consortia. This development is supported by a growing number of, and increased funding for, cross-Research Council initiatives. For example, the new Living With Environmental Change (LWEC) Initiative, led by the Natural Environment Research Council (NERC), involves over ten different partners (including Research Councils, Government Departments and the devolved administrations) and, over its proposed 10-year duration, is likely to involve a significant number of HEIs.

The multifaceted nature of SD research, with its focus on interdisciplinarity and cross-cutting themes, means that the work of SD researchers frequently cuts across schools and departments. In turn, their involvement may be fluid such that their composition changes over time. In this context, and as expected, a precise assessment of SD research within English HEIs proved a complex task.

Four components make up the baseline of SD research for this strategic review:

1. A list of the major HEI institutions and centres that undertake SD research.
2. Research funding through, and research staff and students engaged in, these institutions for such research.
3. Submissions of SD research to Research Assessment Exercise (RAE) 2001 and the panels through which it was submitted.
4. Citations of SD research from English HEIs in the major journals that publish such research.

The methods used to construct each of these, and the resultant data, are detailed below. In addition to this written section of the review, two electronic files that have been provided on CD support the baseline of SD research:

1. Microsoft Access database of submissions of SD Research to RAE 2001
2. EndNote library of citations of SD research

## 3.2 OVERALL APPROACH

### 3.2.1 Data collection

An early, over-riding conclusion that emerged during data collection was that it is very difficult to define, and therefore identify, SD research.

One aspect of this is the distinction between research that relates directly to the processes or concept of SD, which is frequently interdisciplinary, and a much wider body of research, that may be narrower and often more technical in focus, but that may still have an important contribution to make to SD. For example, research into the development of hydrogen fuel cell technology may have few characteristics that distinguish it from any other type of chemical engineering or materials science. Yet hydrogen fuel cells are likely to play a key role in a transition to a low carbon economy, which itself may be identified as an important priority for SD. As such, any research associated with the technology could be deemed 'SD research'.

After consultation with the UK's Research Councils, it was agreed that for the purpose of the Review 'sustainable development research' would be defined as:

> '…*research which contains a significant element of work related to either or both of the natural environment and natural resources, PLUS a significant element of work related to either or both of economic or social issues*'.

In general, the Research Councils felt that – providing the term 'natural environment' was used loosely enough to include managed landscapes – the definition adequately captured both the environmental and the social/economic dimensions of SD research.

However, while this was the definition that we put to HEIs, we allowed them to interpret the research which complied with it. Put succinctly, we did not feel that we had the authority to tell HEIs that research they identified to us as 'SD research' was not in fact SD research, even when it was not apparent that it complied with the above definition. Had we tried to do this, the result would probably have been argumentation, in which we were loath to engage, and loss of goodwill, which we did not wish to risk. The result is that the research baseline is very much as defined by HEIs and may have differences in interpretation of the above definition. Some may even have decided to ignore it in order to boost their 'SD research profile'. This is an issue which HEFCE will need to address if it wishes to construct a more objective SD research baseline. We would only warn that it would be a contested process.

In order to construct the baseline, a questionnaire was drafted to gauge the level of HEI engagement with SD research. The questionnaire, which was devised with input from HEFCE and HEFCE's RAE manager, requested information on any centres or departments within HEIs in which SD research was being undertaken. The full questionnaire can be found in the Appendix 3a but its key questions are as follows:

1. Centre/Institute Name
2. Department
3. Contact name (if appropriate)
4. No. of permanent/contract SD research staff
5. No of PhD students

6. No of discrete research projects (2005/06)
7. Approximate total level of external SD research funding *(Total for all projects running during the academic year 2005/2006)*
8. Main source(s) of external SD research funding *(e.g. EU, Research Councils, Gov.)*
9. SD research areas
10. 2001 RAE panel(s) through which SD research was submitted
11. Main journals for publishing SD research *(max. 5)*

HEIs were asked to provide information about the three centres and/or departments in which the most SD research is taking place and to provide details of any additional SD research groups or centres. Responses to questions 1-9 provided the majority of the data necessary to generate components one and two of the SD research baseline (a list of the major HEI institutions and centres which undertake SD research; research funding through, and research staff and students engaged in, these institutions for such research).

Data generated by questions 9-11 was used, together with information from other sources, to inform the final two components of the baseline (submissions of SD research to RAE 2001 and the panels through which it was submitted; citations of SD research from English HEIs in the major journals that publish such research).

### 3.2.2    Questionnaire responses

Questionnaires to HEIs were sent out from mid-February onwards, a process that was coordinated closely between the teaching and research strands of the review.

Research questionnaires were initially sent to individuals whose names were provided by the HEI as a contact for research. Questionnaires were also sent, together with requests for teaching information, to individuals named as an overall contact for SD and to individuals named as a joint contact for teaching and research.

Efforts were also made to include HEIs that did not provide contact details in response to the initial mailing but where SD research was known to be taking place. This was primarily done by contacting all of the Research Centres listed in the Guide to Research Centres and Evidence Providers that has been compiled by the Sustainable Development Research Network (SDRN)[3]

In total, 53 completed questionnaires (or alternative responses) were collected. In addition, 11 research centres returned completed forms (Appendix 3b) in response to contact that was made via the SDRN Guide to Research Centres. In total, therefore, 64 institutions provided detailed data on SD research activity.

The data provided by HEIs via the completed questionnaires and forms confirms that there is considerable SD research taking place across the country. Such research activity takes place within and across a wide variety of departments and disciplines, at scales that range from single researchers working in isolation to virtual and institution-wide schools, which encompass the work of hundreds of researchers.

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[3] http://sdrn.rechord.com/post.php?p=315

In turn, there is encouraging evidence of the recent emergence of new centres. When asked to provide information related to the 2001 RAE, six HEIs stated that submissions to RAE 2001 were not applicable because their research centre or group was created post-2001. For example, an applied research group focused on sustainable urban drainage systems was set up as recently as October 2006.

Though the questionnaire successfully captured much of the research intended, it is by no means a perfect tool. Very few HEIs sought further clarification about the definition of SD research before completing the questionnaire, but several voiced unease when faced with the task of assessing such activity:

> 'I've tried to fill this in but there is so much going on here re. SD it is difficult to pull it all together'

> HEI 107

> 'As, by definition, Sustainable Development research is multi disciplinary, to single out research funding in just three Departments or Centres would be a distortion of the whole as would any ad hoc estimation of research funding in this area'

> HEI 139

> 'To be honest, it's difficult to draw boundaries around our research and be clear cut about what is and is not 'sustainable development', as I am sure you realise.'

> HEI 82

Others highlighted the efforts involved in encouraging staff engagement:

> 'Please find some research replies from […] I don't think this reflects our full range, I think it more reflects the difficulties in getting colleagues to engage with these surveys.'

> HEI 42

For several, SD research simply did not fall within the Institutions' primary objective(s):

> 'I have looked through the questionnaire and feel that the definition of sustainable development does not fall within our remit as a monotechnic musical institution'

> HEI127

### 3.2.3    Additional data collection

To ensure that as much SD research as possible was captured by the review, the search terms developed by the CREE project team researching SD teaching (appendix 4c) were used to search the websites of all HEIs that did not complete research questionnaires. This enabled further identification of departments, centres and research groups undertaking SD research. The search did not allow the collection of detailed data on funding or levels of staff engagement, but it was possible – using the information held on websites – to identify the main areas of SD research each HEI is engaged in.

In addition, the responses provided by HEIs to HEFCE's SD Action Plan consultation were also searched for any references to SD research activity. In particular, the responses to Question 4 of the consultation, which asked HEIs *What other activities are you engaged in which support the agenda for sustainable development?'* were considered. As above, any reference to research activity, together with the type of research activity taking place, was recorded.

The following sections detail how this data, together with that collected via completed questionnaires, forms and from the input of consultees, was used to construct the four components of a baseline of SD research in HEIs in England.

## 3.3 A BASELINE OF SD RESEARCH

### 3.3.1 Components 1 and 2: Identification of the major HEI institutions and centres which undertake SD research, and their associated levels of staff engagement and funding

Levels of funding for SD research vary greatly depending on research type, with technology-based research often generating substantially more funding than other, no less significant forms of SD research. For this reason, levels of staff engagement were taken as the primary means for identifying the main HEIs and centres where SD research is taking place.

Table 3a lists the main institutions engaged in SD research in England, according to the data collected on staff engagement. The list is based on all the HEIs that report more than 20 full-time equivalent (FTE) research staff working on SD.

A very small number of HEIs that undertake a significant amount of SD research are missing from the above list, either because they did not respond to our contact or because their responses were not conducive to inclusion in the above analysis.

The Universities of York and Cambridge are missing from the list because their written provisions of data, which in both cases highlighted a wealth of SD research activity, did not include precise figures on funding or staff engagement directly related to SD research. If these were available, there is no doubt that both Universities would feature in Table 3a.

**Table 3a: Main HEIs engaged in SD research in England**

| Institution name | Total Perm. Staff | Total Contract Staff | Total Staff | Total PhD students |
|---|---|---|---|---|
| Cranfield University | 92 | 22 | 114 | 95 |
| De Montfort University | 14 | 9 | 23 | 35 |
| Kingston University | 19 | 1 | 20 | 10 |
| Loughborough University | 44 | 40 | 84 | 50 |
| Oxford Brookes University | 52 | 17 | 69 | 90 |
| Royal Holloway College | 17 | 5 | 22 | 23 |
| Sheffield Hallam University | 52 | 8 | 60 | 18 |
| University of Birmingham | 16 | 6 | 22 | 30 |
| University of Brighton | 23 | 10 | 33 | 31 |
| HEI 79 | 32 | 72 | 104 | 28 |
| HEI 81 | 11 | 12 | 23 | 19 |
| University of Gloucestershire | 20 | 3 | 23 | 10 |
| University of Hull | 45 | 6 | 51 | 28 |
| University of Keele | 18 | 4 | 22 | 18 |
| University of Leeds | 19 | 4 | 23 | 27 |
| University of Liverpool | 14 | 12 | 26 | 0 |
| University of Manchester | 34 | 5 | 39 | 59 |
| University of Newcastle | 100 | 0 | 100 | 30 |
| University of Northampton | 16 | 15 | 31 | 16 |
| University of Nottingham | 109 | 55 | 164 | 165 |
| University of Oxford | 4 | 60 | 64 | 35 |
| University of Southampton | 110 | 78 | 188 | 266 |
| University College London | 75 | 59 | 134 | 107 |

Similarly, although the Universities of Birmingham and Oxford feature in the list, data held on both Institutions is based on returns from specific centres; neither provided an institutional response. Had they done so, it is very likely that considerably more activity would have been reported.

Table 3b lists the major centres or departments where a significant amount of SD research is underway, together with the total funding and staff engagement in each of these.

The results in Tables 3a and 3b are based on questionnaire responses, but a search of the websites of HEIs that did not respond to our contact also uncovered a large amount of additional SD research activity. To complement this, a search of HEI responses to the consultation on HEFCE's SD Action Plan highlighted activity in a small number of institutions that would otherwise have been missed. A summary of the findings of these searches is presented in Table 3c.

### *Areas of Research*

When providing information about their research activity, HEIs were also asked to list the research areas (for example, ecological economics, environmental health) that they would use to describe the centre or department's work. Again the multifarious nature of SD research was apparent.

In order to summarise the different types of research taking place within English HEIs, 30 'research area' categories were devised. These were based on the research categories used in the SDRN Guide to Research Centres and Evidence Providers[4], together with a number of new categories that were added to ensure all types of research were included. Table 3d is based on questionnaire responses and additional information from both web searches and HEFCE's SD Action Plan consultation and summarises the number of centres and departments engaged in each of these research areas.

Having categorised the research areas, three broad themes emerged: research areas related to **cross-cutting issues (C)**; research which can be considered **sectoral (S)**, in that it relates directly to a distinct economic sector; and research that is focused on the **environmental management of natural resources (E).**

### *Summary of SD research activity and total funding and staff engagement*

In total, of the 132 English higher education institutions included in this review, over two thirds - 89 in total - are engaged in SD research.

Across the 54 HEIs that provided detailed information about staff engagement, 1651 staff were reported to be engaged in SD research, made up of 1070 permanent research staff and 581 contract research staff. In addition, a total of 1356 PhD students are undertaking SD research. The figures for all of these would have been substantially larger had it been possible to include the additional research activity detailed on HEI websites, for which such numbers were not available.

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[4] http://sdrn.rechord.com/post.php?p=315

**Table 3b. Major centres, departments and research groups engaged in SD research in England**

| Institution Name | Centre/Institute/Department | Total Perm. Staff | Total Contract Staff | Total Staff | Total External Funding[2] |
|---|---|---|---|---|---|
| Cranfield University | Sustainable Systems Department | 92 | 22 | 114 | > £1 million |
| University of Newcastle | Institute for Research on Environment and Sustainability | 100 | 0 | 100 | > £1 million |
| University of Nottingham | Energy Technology Research Institute | 109 | 55 | 164 | > £1 million |
| University College London | Geography Department | 50 | 50 | 100 | £500,000 - £1 million |
| Canterbury Christ Church University | Dept. Geographical and Life Science | 7 | 3 | 10 | £100,000 - £250,000 |
| De Montfort University | Institute of Energy and Sustainable Development (IESD) | 20 | 10 | 35 | > £1 million |
| Loughborough University | Sustainable Research School | 44 | 40 | 84 | > £1 million |
| Oxford Brookes University | Oxford Institute for Sustainable Development (OISD) | 50 | 15 | 65 | > £1 million |
| University of Hull | HERI (Hull Environmental Research Institute) | 45 | 6 | 51 | £500,000 - £1 million |
| University of Oxford | Environmental Change Institute | 27 | 37 | 64 | > £1 million |
| University of Southampton | School of Ocean and Earth Science | 50 | 34 | 84 | > £1 million |
| University of Southampton | School of Civil Engineering and the Environment | 20 | 60 | 64 | > £1 million |
| HEI 79 | | 20 | 60 | 80 | > £1 million |
| Aston University | School of Engineering and Applied Science | 9 | 3 | 12 | £250,000 - £500,000 |
| Sheffield Hallam University | Materials and Engineering Research Institute (MERI) | 11 | 4 | 15 | £500,000 - £1 million |
| Staffordshire University | Inst. for Environment, Sustainability and Regeneration | 9 | 4 | 13 | £100,000 - £250,000 |
| University of Birmingham | International Development Department | 16 | 6 | 22 | £100,000 - £250,000 |
| University of Brighton | School of Arts and Communication | 12 | 0 | 12 | £100,000 - £250,000 |
| University of Brighton | School of Environment | 9 | 6 | 15 | £250,000 - £500,000 |
| University College London | Bartlett School of Planning | 18 | 1 | 19 | £250,000 - £500,000 |
| University of Gloucestershire | Countryside & Community Research Unit | 13 | 3 | 16 | £500,000 - £1 million |
| University of Keele | RI for Law, Politics and Justice | 13 | 4 | 17 | £500,000 - £1 million |
| University of Leeds | Sustainability Research Institute | 15 | 4 | 19 | £500,000 - £1 million |
| University of Liverpool | Inst. for Sustainable Water, Integrated Man. & Ecosystem Research | 1 | 12 | 13 | £100,000 - £250,000 |
| University of Manchester | Inst. for Development Policy & Management (IDPM) | 34 | 5 | 39 | > £1 million |
| University of Northampton | Centre for Sustainable Wastes Management | 8 | 12 | 20 | £250,000 - £500,000 |
| University of Southampton | School of Geography | 33 | 7 | 40 | £250,000 - £500,000 |
| University of Teeside | CLEMANCE (Clean Environment Management Centre) | 2 | 10 | 12 | £500,000 - £1 million |
| HEI 55 | | 12 | 0 | 12 | £500,000 - £1 million |
| HEI 79 | | 12 | 12 | 24 | £500,000 - £1 million |
| HEI 81 | | 7 | 10 | 17 | £500,000 - £1 million |
| HEI 95 | | 8 | 4 | 12 | £250,000 - £500,000 |
| HEI 114 | | | 12 | 12 | £500,000 - £1 million |

**Table 3c. Additional SD research, based on electronic searches of HEI websites and responses to HEFCE's SD Action Plan consultation**

| Institution Name | Centre/Institute/Department |
|---|---|
| Birkbeck College | Birkbeck Institute of Environment |
| Bournemouth University | School of Conservation Sciences; Sustainable Design Research Centre |
| Brunel University | Brunel Research in Enterprise, Innovation, Sustainability and Ethics |
| City University, London | Department of Health Management and Food Policy |
| Cumbria Institute of the Arts | Faculty of Science and Natural Resources |
| Harper Adams University College | Innovation for Sustainable Farming; Sustainable Technology and Rural Economy |
| Imperial College London | Department of Civil and Environmental Engineering |
| King's College London | Geography Department; Centre for Environmental Assessment, Management and Policy; War Studies |
| London School of Hygiene & Tropical Medicine | Public and Environmental Health Unit |
| London South Bank University | London Food Centre |
| Manchester Metropolitan University | Centre for Air Transport and the Environment |
| Middlesex University | Flood Hazard Research Centre |
| Nottingham Trent University | School of Architecture, Design and the Built Environment |
| Open University | Centre for Technology Strategy |
| Royal College of Art | Helen Hamlyn Research Centre |
| School of Oriental and African Studies | Department of Development Studies; Law, Environment & Development Centre |
| University of Bradford | Geography and Environmental Science Department |
| University of Bristol | Environmental Sustainability Research Group |
| University of Central Lancashire | School of Natural Resources; Centre for Research in Fire & Explosion Studies |
| University of Derby | Geography, Earth, Environment & Sport (GEES) |
| University of Durham | Department of Geography |
| University of Essex | Centre for Environment and Society |
| University of Greenwich | Natural Resources Institute; School of Architecture and Construction; Pharmaceutical, Chemical & Environmental Sciences |
| University of Huddersfield | The Centre for Enterprise, Ethics and the Environment; Centre for Wetlands, Environment and Livelihoods |
| University of Kent | Durrell Institute of Conservation and Ecology |
| University of Leicester | Department of Geography |
| University of Lincoln | Centre for Sustainable Architecture & Environments |
| University of Plymouth | Centre for Sustainable Futures; Marine Institute; Centre for Wetlands, Environment and Livelihoods |
| University of Portsmouth | Geography Department & School of Environmental Design and Management; Centre for the Economics and Management of Aquatic Resources |
| University of Sheffield | Environment Division |
| University of Sunderland | Health, Society & Environment |
| University of Sussex | Science and Technology Policy Research; Institute of Development Studies |
| University of Warwick | Energy and Sustainability Group; Globalisation Group |
| University of Westminster | Sustainable world cities, planning, design and transport, including the Centre for Sustainable Development |
| Writtle College | Centre for Environment & Rural Affairs; Centre for the Arts & Design in the Environment |

**Table 3d: Research areas, themes and the number of centres/departments engaged in each**

| Research Area | Total | C | S | E |
|---|---|---|---|---|
| Natural Resource Management | 32 | | | X |
| Water Resources and Management | 25 | | X | |
| Agriculture, Food and Fisheries | 23 | | | X |
| Sustainable Cities and the Urban Environment | 22 | | X | |
| Sustainable Energy and Renewables Technology | 22 | | X | |
| Resource Use and Efficiency, and Waste Management | 22 | | | X |
| Corporate Sustainability, Environmental Regulation and Management | 21 | | | X |
| Coastal and River Management | 21 | | | X |
| Policies and Strategies for SD | 19 | X | | |
| Global Environmental Change | 19 | X | | |
| Sustainable Design | 16 | X | | |
| International Development | 16 | X | | |
| Sustainable Consumption and Pro-Environmental Behaviour | 15 | X | | |
| Sustainable Construction and Property | 15 | | X | |
| Environmental Health | 15 | X | | |
| Social Dimensions of SD | 15 | X | | |
| Environmental Risks, Values and Ethics | 14 | X | | |
| Rural Development and Economies | 14 | X | | |
| Governance, Citizenship and Participation | 12 | X | | |
| Sustainable Transport | 12 | | X | |
| Education and Learning for SD | 12 | X | | |
| Globalisation, Trade and Environment | 8 | X | | |
| Spatial Planning | 8 | X | | |
| Engineering, Materials and Manufacturing | 8 | | X | |
| Environmental Costs and Benefits | 7 | X | | |
| Other | 7 | n/a | | |
| Sustainable Leisure and Tourism | 6 | | X | |
| Measuring and Monitoring SD (inc. SD indicators) | 5 | X | | |
| Sustainable Heritage / Historic Environment | 4 | | | X |
| Sustainability Appraisal and Assessment | 3 | X | | |
| **Total engaged in each research type** | | **198** | **110** | **123** |

At this point it is important to reiterate the fact that HEIs may have interpreted the definition of SD research differently and that the above data almost solely reflects that which HEIs chose to supply. The relevance of various interpretations was highlighted during consultation with one of the RAE panel chairs, who noted the absence of a newly established institute for hazard and risk research from the list of leading SD centres. Although not surprised by the absence, because the centre itself is unlikely to consider its work 'SD research', he suggested their research could easily fit our agreed definition. As a result, it was suggested there is almost certainly 'more going on than meets the eye' and that attempts to monitor SD research will always be hampered by problems of definition, interpretation and identification.

Given this, it is very difficult to gauge levels of total funding across the English HE sector, especially when based on the estimated data that HEIs provided. However, of the centres and departments detailed in completed questionnaires, 16 reported receiving more than £1 million

external funding for SD research projects, while a further 49 received between £100,000 and £1 million (Table 3e).

**Table 3e: Total funding across English HEIs**

| Summary of Funding | No. of centres/departments |
|---|---|
| Less than £100,000 | 32 |
| £100,000 - £250,000 | 19 |
| £250,000 - £500,000 | 17 |
| £500,000 - £1 million | 13 |
| More than £1 million | 16 |

What the above does not capture accurately is the amount of funding received by those Institutions receiving more than £1 million, though there is some indication that the amounts being channelled into leading SD research centres are considerable. For example, the University of Loughborough's Sustainability Research School reports holding research contracts with a value of £23 million, while the University of Cambridge estimates 'over £45 million is currently spent on research specifically related to sustainable development'.

The sources of this funding are varied (Table 3f). UK central government bodies, in particular Defra, DTI (now the Department for Business, Enterprise and Regulatory Reform) and the Environment Agency, provided funding to 44 of the centres and departments undertaking SD research, while 38 received funding from European public sector institutions. The UK's Research Councils were cited as the third main source of SD research funding, the most commonly referenced being the Economic and Social Research Council (ESRC). Industry and NGOs also provide funding to many Institutions.

**Table 3f. Sources of funding for SD research**

| Funder Type | Total |
|---|---|
| UK central government bodies | 44 |
| EU | 38 |
| Industry/business | 24 |
| Research Council (unspecified) | 23 |
| ESRC | 16 |
| UK-NGOs | 13 |
| EPSRC | 12 |
| UK local government bodies | 10 |
| NERC | 8 |
| Professional associations | 7 |
| UK regional government bodies | 5 |
| Other overseas | 4 |
| Other | 4 |
| Other research councils (BBSRC; AHRB etc) | 3 |

It cannot be claimed that the research activity detailed in the above sections is a comprehensive assessment of everything going on. Moreover, the definitional issues and lack of comparable data mean that the level of research cannot be directly compared with that in particular disciplines. This means that it is not possible to say how, for example, the number of HEIs (16) reporting funding of more than £1 million in the year of assessment (2005-6) compares with the number with a comparable level of engagement with other major areas of policy concern (e.g. health,

education, economic development), some of which may overlap with SD. While our snapshot of SD research may suggest to some that, in a minority of institutions at least, it is thriving, others may regard the data as showing rather a low level of research activity, given the range of possible research that our definition of SD research could include.

As the first exercise of its kind, no definite conclusions can be drawn about trends in SD research over time or in terms of focus or disciplinary composition. However, the fact that over two thirds of HEIs are undertaking some SD research, coupled with evidence of the establishment of a number of new research centres and groups in recent years, suggests a positive trend and an increasing investment in the area. As noted earlier, it is likely that increased SD research activity will only come about if there is increased funding for it.

### 3.3.2 Component 3: Submissions of SD research to RAE 2001 and the panels through which it was submitted

In total, 141,794 journal articles were submitted to the RAE in 2001. Of these, 3863 were submitted to the Geography assessment panel (UoA 35) and a further 5579 submitted collectively to the Built Environment (UoA 33) and Civil Engineering (UoA 28) panels and the joint Earth Sciences and Environmental Sciences panel (UoA 20-21).

In order to cope with this quantity of material and take account of the already discussed definitional difficulties related to SD research, two complementary approaches were adopted for the complicated task of identifying all SD research submissions to RAE 2001.

The first involved identifying the main journals in which HEIs publish SD research and identifying all the RAE 2001 submissions of SD research through these journals. The second approach relied on a much wider but necessarily less in-depth search of the entire database of RAE 2001 submissions.

### *Identification of key SD journals*

Question 11 of the SD research questionnaire asked HEIs to name up to five journals in which they aimed to publish SD research. Responses proved very dependent on the nature of the research centre and the breadth of the research undertaken. Smaller centres with a more defined focus on one or two research areas often listed several titles covering a similar subject area; larger centres (where research covered a much wider spectrum of disciplines) found listing only five journals difficult and, in some instances, felt unable to respond at all.

| | |
|---|---|
| *'Varies enormously'* | HEI 69 |
| *'Very wide-ranging'* | HEI 60 |
| *'Too varied to list'* | HEI 107 |
| *'Very broad range. No explicit short list'* | HEI 109 |

These comments are supported by the information provided by those that did respond. In total, 213 different journals, covering nearly all disciplines, were cited by HEIs. A full list of these can be found in Appendix 3c.

Our research concentrated only on those named by more than one HEI. Table 3g lists the top 14 major journals identified by our research, all of which were named by three or more institutions. Table 3h lists an additional 24 journals, which were named by two or more HEIs.

| Table 3h. Additional SD research journals |
| --- |
| Area |
| Building Research and Information |
| Business Strategy and the Environment |
| ICE Proceedings, Construction Materials |
| Environment and Urbanization |
| ICE Proceedings, Engineering Sustainability |
| Economic Geography |
| Environment and Planning C |
| Environment and Planning D |
| Environmental Pollution |
| Geographical Journal |
| Hydrological Processes |
| Journal of Consumer Policy |
| Journal of Environmental Planning and Management |
| Journal of Geophysical Research |
| Journal of Property Research |
| Planning Theory and Practice |
| Regional Studies |
| Resources, Conservation and Recycling |
| Risk Analysis |
| Solar Energy |
| Town Planning Review |
| Trans. Institute of British Geographers |
| Waste Management |

| Table 3g. Major SD research journals |
| --- |
| Environment and Planning A |
| Sustainable Development |
| Energy and Buildings |
| Urban Studies |
| Ecological Economics |
| Journal of International Development |
| Environmental Science and Technology |
| Journal of Corporate Citizenship |
| Journal of Environmental Management |
| Journal of Industrial Ecology |
| Local Environment |
| Science of the Total Environment |
| Global Environmental Change |
| Journal of Renewable Energy[5] |

The questionnaire also asked institutions to name the 2001 RAE panel(s) through which SD research was submitted. Although UoA 35 – Geography – was named by significantly more institutions than any other panel, many other panels were also named. In total, HEIs submitted SD research to 26 of the 69 2001 RAE panels, ranging from Pharmacy (UoA 9) and Sociology (42), to Chemical Engineering (27) and Economics and Econometrics (38) (see Table 3i for the panels cited by more than 5 HEIs; a full list of all the panels can be found in Appendix 3d)

**Table 3i. Main RAE 2001 panels to which SD research submitted and the number of HEIs naming each panel in their response**

| Unit of Assessment | Total |
| --- | --- |
| 35. Geography | 19 |
| 33. Built Environment | 9 |
| 28. Civil Engineering | 7 |
| 20. Earth Sciences | 5 |
| 30. Mechanical, Aeronautical and Manufacturing Engineering | 5 |
| 43. Business and Management Studies | 5 |
| 34. Town and Country Planning | 5 |

Having identified the main 2001 RAE panels, consultation took place with the chairs of these panels. Chairs were asked whether they felt any HEIs or institutions were missing from those

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[5] Added following consultation with Chair of RAE 2001 Civil Engineering (UoA 28) panel

identified as leading centres; whether any journals were missing; or whether there were any ways they felt that the criteria of their respective panel encouraged or discouraged the submission of SD research. Responses to the first two of these points were fed directly into the subsequent search process.

### Submissions of SD research through key SD journals

The RAE 2001 database contains citation details of all research outputs, including journal articles, submitted by HEIs. Once the main SD journals were agreed upon, the database was searched and all submissions to the 38 journals identified in tables 3g and 3h were extracted.

The number of submissions to each of these varied enormously. For example, while 197 submissions were journal articles published in *Urban Studies*, only 16 submissions were published in the journal *Energy and Buildings*. The number also differed greatly for the two journals identified by most HEIs as publishing SD research, *Environment and Planning A* and *Sustainable Development*, which had 204 and 16 respectively.

Having extracted all relevant submissions, it was necessary to establish whether the publications met the adopted criteria for SD research. To do this a keyword search of each article, using the search terms developed by CREE (Appendix 4b), was carried out. Keywords are used to provide a very concise summary of the main topics of journal articles and as such provided a quick and transparent means of making an initial determination of whether a submission was SD research[6].

If a publication article was found in an electronic journal with keywords, the article was considered SD research if it met one of the following criteria:

1. If the keywords of the article contained one or more of the search terms, or
2. If the article title contained search term 1 'sustainable development' or term 2 'sustainability', or
3. If the abstract contained search term 1 'sustainable development' or term 2 'sustainability'

If keywords were not easily accessible via the electronic journal, then an article's abstract was considered. In these cases, a publication was considered SD research if it met one of the following criteria:

1. If the article's title contained search term 1 'sustainable development' or term 2 'sustainability', or
2. If the article's abstract contained one or more of these search terms.

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[6] Before beginning the full task, a brief, initial trial was undertaken using the 42 articles submitted to RAE 2001 through the Geographical Journal. This involved first carrying out a keyword search of each publication to determine which could be considered SD research. The abstract of each publication was then read to see if this additional information supported the keyword-based decision on whether the article constituted SD research. The keyword search missed four journal publications that, on reading their abstracts, were felt to meet the agreed definition of SD research. However, all four articles contained the search terms 'sustainability' or 'sustainable development' in either their titles or their abstracts. A search of publication abstracts and titles for these two terms was therefore added during the search process.

In some instances, and without explanation, online abstracts for relevant articles were not available. In these cases, the articles were not considered.

When combined, these two approaches identified 277 examples of SD research that were submitted to RAE 2001. A full list of all these articles can be found in the electronic Access database that accompanies this section of the review. The panels through which these examples were submitted were broadly in keeping with the responses provided by HEIs via questionnaire returns. Geography (UoA35) received a large proportion of the submissions as did Town and Country Planning (UoA34) (see Table 3j).

**Table 3j. UoA panels through which SD research was submitted, RAE 2001**

| Unit of Assessment | Total submissions |
|---|---|
| Geography (35) | 74 |
| Town and Country Planning (34) | 53 |
| Built Environment (33) | 23 |
| Business and Management Studies (43) | 19 |
| Politics and International Studies (UoA 39) | 16 |
| Joint Panel: Agriculture, Food Science and Technology and Veterinary Science (15, with UoA 16 & 17) | 15 |
| Joint Panel: Earth Sciences and Environmental Sciences (21, with UoA 20) | 14 |
| Sociology (42) | 9 |
| Joint Panel: General Engineering and Mineral and Mining Engineering (26, with UoA 31)) | 7 |
| Law (36) | 7 |
| Economics and Econometrics (38) | 6 |
| Community-based Clinical Subjects (2) | 4 |
| Chemical Engineering (27) | 4 |
| Mechanical, Aeronautical and Manufacturing Engineering (30) | 4 |
| Art and Design (64) | 4 |
| Biological Sciences (14) | 3 |
| Joint Panel: Social Policy and Administration and Social Work (40, with UoA 41) | 3 |
| European Studies (48) | 3 |
| Education (68) | 3 |
| Accounting and Finance (44) | 2 |
| Linguistics (56) | 2 |
| Psychology (13) | 1 |
| Physics (19) | 1 |
| *Total submissions of SD research* | *277* |

It may be considered that 277 submissions across the whole field of SD, representing just 0.2% of total RAE 2001 submissions, is surprisingly small. There are a number of possible explanations for this.

One reason for this is that, even though 38 different journals were identified as the main outlets for SD research, the total number of RAE submissions to these journals was only 1915. This relatively small number of submissions could be linked to several factors. One possibility is that the journals are not regarded as academically prestigious and therefore not perceived as being of a necessarily high quality for RAE submission. This would suggest an absence within academia of esteemed, peer-reviewed SD journals. This is supported somewhat by a stark contrast between the 16 submissions published in *Sustainable Development*, the second most cited SD research

journal according to HEIs, and the number of submissions to journals that are clearly identifiable as the 'leading journals' of their respective disciplines. For example, 920 RAE submissions were published in the *British Medical Journal,* while 996 were published in *The Lancet.*

The chair of the RAE 2001 Geography panel felt that this was a factor, citing geography journals as an example. Though *Transactions of the Institute of British Geographers* is recognised as a world class geography publication, he conceded it did not generally publish a lot of SD research. Instead, it is the Royal Geographical Society's less prestigious title *Area* in which SD research is more likely to be found.

Another possibility is that these figures reflect (or confirm) the fact that SD research is multidisciplinary in nature and as such is submitted to an even wider range of publications than was reported in the questionnaires. These journals cannot be easily identified by title or subject area. Rather than there being 'leading SD journals', which is what the research sought to identify, it may be that an increasing range, and a very large number, of journals are publishing SD research. Of course this makes the task of identifying and quantifying SD research submissions even more difficult. Such a trend towards interdisciplinary publication is recognised in the report of the 2001 RAE Geography panel, which identified 'the increasing number of papers by geographers in the leading journals of other disciplines'[7] as an indicator of the extensive amount of interdisciplinary research taking place within Geography.

In addition, it is likely that some SD research has not been captured using the methodology adopted. Full keyword and abstract searches of all RAE submissions, which were not possible within the constraints of this review, would no doubt have identified more examples of SD research.

The discrepancy between the amount of ongoing research detailed in components 1 and 2 of the SD research baseline, and the relative lack of SD research submissions to RAE 2001, may also be an indication of the relatively recent nature and growth in SD research, as identified by some RAE panel chairs. Despite being the largest panel in 2001, the Business and Management Studies panel received 'very little' SD research in 2001, although the panel's chair expects far more to be submitted to RAE 2008. Another panel chair commented:

*'SD was not so popular as a title in 2001 as it is now and was not specifically highlighted at the time. I do not think that this discouraged submissions and certainly some of the Energy Systems type research groups submitted papers that would fit into the SD category'*

Chair, Mechanical, Aeronautical and Manufacturing (MAM) Engineering panel

The role of Research Council (RC) funding should also be considered. One panel chair felt that neither the ESRC nor NERC had invested particularly heavily in SD research either before or since 2001. With the exception of its Environment and Human Behaviour New Opportunities Programme (2002-2004), the chair felt the ESRC is still reluctant to fund environmental research while, conversely, NERC shies away from funding research that is not explicitly 'science'. This division between the ESRC and NERC creates problems for researchers concerned with integrative concepts like sustainable development and may lead to them avoiding association

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[7] http://www.hero.ac.uk/rae/overview/docs/UoA35.pdf

with such research, or at least defining their work as such, in order to improve their chances of securing funding. An increasing number of cross-RC programmes, such as the Rural Economy and Land Use (RELU) programme, are evidence of RCs attempting to address this.

Finally, a point that emerged during research with the case studies is the extent to which RAE 2001 favoured single discipline research over multidisciplinary research. This is discussed in more depth in Section 6.

### 3.3.3 Component 4: Citations of SD research from English HEIs in the major journals that publish such research.

The fourth component of the baseline of SD research in English HEIs is a citation record of SD research from English HEIs. Given the relatively small number of RAE submissions that were identified to be included in the third baseline component, an effort was made to compile as full a citation record of SD research as possible. To do this, searches of individual electronic journals were supplemented by searches, using the pre-defined search terms, of the following databases:

- Web of Knowledge (indexes: *Environment and Planning A; Sustainable Development; Energy and Buildings; Urban Studies; Ecological Economics; Journal of Environmental Management* )
- Science Direct (indexes: *Global Environmental Change*)
- Wiley Interscience (indexes: *Sustainable Development*; *Journal of International Development*)

Based on these searches a total of 1677 examples of SD research, as defined for the purpose of this Review, were identified in the main SD journals since 2000. A complete record of these is stored as an EndNote library on the CD that accompanies this section of the review.

Academic freedom requires that individuals who have an interest in SD should be free to pursue SD research. However, the scale of SD research, like all activities that require external funding, is completely dependent on the funding that is made available for it, and therefore on the priorities of funders. One conclusion from this, which HEFCE may like to explore in the future, is that an indication of the level of SD research could be constructed by a review of research funding (i.e. the inputs to such research), rather than an attempted survey of the outputs. Reviewing the inputs would certainly be simpler; research funders may find it easier to agree on what should count as SD research; and having determined the inputs it would then be more manageable to assess the resulting SD research outputs.

## 3.4 CONCLUSIONS AND RECOMMENDATIONS

### 3.4.1 General conclusions

- There is no universally accepted definition of SD research, which makes it impossible to assess definitively where and to what extent it is taking place. This means that the baseline of SD research which has been generated, and especially its components 3 and 4 (submissions to the RAE and citations of SD research respectively), is indicative only of the level of SD research as defined in this Review, rather than in any absolutely accepted sense.

- Nevertheless, the definition of SD research that was adopted proved acceptable to the great majority of HEIs, which identified SD research activity in line with this definition. With very few exceptions, the leading centres of SD research according to the adopted definition responded positively to the Strategic Review.

- Over two thirds of HEIs – 89 in total – appear to be engaged in SD research, 54 of which gave details of this research. Activity ranges from that undertaken by one or two researchers working in isolation, usually within a Geography or Environmental Sciences Department, to that which is managed at an Institutional scale across multiple disciplines and involving sometimes hundreds of researchers. There is some evidence that the level of SD research activity has increased since 2001.

- Despite this level of research activity, there were relatively few submissions of SD research to the RAE 2001. Doubtless a more comprehensive methodology would have increased the number identified, but the results do indicate a disproportionately low level of SD research submissions to RAE 2001, relative to the level of identified research activity. One factor may be the limited ability of the RAE to deal with multidisciplinary research, as discussed in Section 6. It would be very interesting to revisit this issue in respect of RAE 2008 and see if the situation has changed.

- The nature and definition of the RAE also has an important influence on what research is carried out and where it is published. At present SD research is not explicitly identified in the RAE, so that attempts to estimate its extent from RAE returns are both time-consuming and likely to be partial. If HEFCE wishes the RAE in future to generate more robust data about SD research, then it seems likely that SD research will need to be more explicitly characterised in the RAE process, and submissions that count as SD research explicitly identified.

- The citation record of SD research from English HEIs, although far from being comprehensive, is of course much more extensive than the 2001 RAE submissions. Searching for such research is a time-consuming and lengthy process that could not be comprehensively carried out during this Review. HEFCE should consider ways of defining and analysing RAE submissions and journal citations if it wishes to retain components three and four of the baseline in the future.

- HEFCE has a Key Performance Target (KPT) to revisit the baseline of this research in 2011. For SD research each of the four components of the baseline that have been reported on here can be revisited in 2011. However, it should be recognised that for components 3 and 4 (submissions to the RAE and citations of SD research respectively), such a revisitation will give an indication only of the *trend* in SD research, rather than its absolute extent, because of the lack of a universally accepted definition of SD research, as noted above.

- High-level, centralised coordination of SD research greatly increases the ability of HEIs to provide accurate data on such activity. Institutions where SD research takes place, for example, in a dedicated cross-departmental school or research institute, found it easier to provide information about their research activity than those where research takes place in a less formalised manner, across disparate areas of the institution. A possible corollary of this

is that such lack of coordination limits the scope for internal, interdisciplinary collaboration between researchers; it seems likely that the more researchers are aware of each other's work, the greater the probability that they will work together.

▪ Like the RAE, this Review made no effort to assess the value to users (for example, government departments or agencies) of the research it identified or the knowledge-transfer activities that HEIs employ to disseminate it. While it would be virtually impossible to carry out any meaningful assessment of the relative contribution of different types of research to the overall achievement of SD, it is likely that further research, perhaps for a subsequent review, could identify important qualitative distinctions between different types of SD research in terms of their influence and application. HEFCE may like to consider commissioning such research in the future.

### 3.4.2    Specific recommendations

▪ HEFCE should consider new ways of defining and analysing RAE submissions and journal citations if it wishes the SD baseline to contain these elements. Future analysis of RAE submissions would be aided considerably by improved indexing and cataloguing of citations. HEFCE should also consider whether and how to support the use of institutional online depositories and other digital research cataloguing and management systems for the monitoring and reporting of SD research activity.

▪ HEFCE should consider more closely the relationship between the RAE and SD research activities, and the ways in which different panels treat multidisciplinary research in general and SD research more specifically. If HEFCE wishes the RAE in future to generate more robust data about SD research, then it seems likely that SD research will need to be more explicitly characterised in the RAE process, and submissions that count as SD research explicitly identified. It is currently not clear that RAE 2008 will permit the identification of SD research any more easily than RAE 2001.

▪ One way of indicating the scale of SD research would be through consideration of its inputs (in terms of funding), rather than its outputs (in terms of journal publications).

▪ Of course, the RAE is not the only possible process through which the extent of SD research can be assessed (although it is the process most closely and exclusively related to HEFCE). To obtain a broader perspective and assessment of the quality and quantity of SD research, HEFCE could consider convening a group of SD research funders (perhaps analogous to the Environmental Research Funders Forum), a draw together a wider body of evidence on the priorities, inputs and outputs of SD research.

# 4 A BASELINE OF SD TEACHING IN ENGLISH HEIS

## CENTRE FOR RESEARCH IN EDUCATION AND THE ENVIRONMENT (CREE), UNIVERSITY OF BATH

## 4.1 INTRODUCTION

This section of the review focuses on teaching in English HEIs. In addition to this written element, the report of the research into teaching also includes an electronic database of courses. This is available on CD and can be searched using Active Document Keeper (ADK) software.

Work towards establishing a baseline of SD teaching in English HEIs has focused centrally on the formal curriculum. There is, of course, a significant tacit or 'hidden' curriculum in any educational institution and where evidence of this has emerged in the course of this project it has not been ignored. Every effort has also been made to identify courses which contextualise themselves broadly in terms of sustainable development, or which have a sustainable development element integrated within them.

The section begins with a summary of the overall approach adopted in the development of a baseline of SD teaching across the English HE sector. It goes on to discuss software chosen to assist with this task and the way in which a database of SD teaching was compiled. A discussion of key issues arising from the exercise - including those surrounding definition, interdisciplinarity and pedagogy – then follows.

## 4.2 OVERALL APPROACH

### 4.2.1 Initial request for data

Following the initial contact with HEIs, as detailed in section 2.4, contact was made with all individuals named as a contact for teaching. The data collection instrument used for this purpose is shown in Appendix 4a. It was designed in such away as to enable both minimal and maximal responses according to the inclination of the respondent, and a full range of responses along this continuum were, in fact, received. Where no response was forthcoming, the enquiry was followed up with a further request for data after a lapse of approximately 10 weeks. In all, responses were received from 61 HEIs in relation to teaching.

### 4.2.2 Web searches

HEIs use their websites to make public information about their courses. This information may be entirely factual (such as a list of the content of a particular offering), or may reveal something about the institution's underlying values (as when a course is described in terms of the contribution graduates might be expected to make to solving social problems). The website of every HEI in England was searched using a standard set of search terms (Appendix 4b). The search terms were designed to reflect the definition of sustainable development used elsewhere in the project, with one variation. This was that where a course was described by the host HEI as relating to sustainable development or sustainability this was simply accepted without question, regardless of definitional considerations.

Each HEI designs its website in its own way and provides its own internal search engine. Hence, while websites are a rich source of data about courses it should be noted that such data are retrieved in a very wide range of presentational styles and formats, and with widely varying amounts of supporting detailed information.

### 4.2.3    Interviews

A purposive sample of 10 academics with responsibilities for sustainability-related teaching was formally interviewed. Of these interviews, three were conducted face-to-face and seven on the telephone. Respondents were selected for their potential to contribute insights under project aims A2, A3 and A4. Interviews were semi-structured, with the structured element in each case being provided by a common interview schedule (Appendix 4c). It should be noted that this interview schedule was intended to prompt the widest possible discussion with respondents, not to constrain such discussion.

### 4.2.4    Personal communications

Thirty-nine individuals with known interests in sustainable development and higher education were contacted by email and invited to submit their views (Appendix 4d), of whom 13 responded. In addition, an approach for information was made to 163 members of the Environmental Association for Universities and Colleges, through the good offices of its Executive Director. Finally, an invitation to attend and address the HEA Sustainability and the Curriculum: Progress and Potential event at the University of Bradford in July 2007 was accepted, leading to a number of useful conversations.

### 4.2.5    Searches

Searches were made of identified databases and websites. A summary of sources searched and findings appears in Appendix 4e.

### 4.3    DATABASE

### 4.3.1    Software

The construction of a database of courses was an important aspect of aim A1, to establish a baseline of sustainable development in the sector against which HEFCE can measure progress and publicise what the sector is already doing. Following a detailed consideration of alternatives, the software selected for this purpose was Active Document Keeper (ADK), which provides a simple framework for the management of folders. Information on this software package and on how to acquire and install it is provided in Appendix 4f. The advantages of this particular package for this work are:

- The folder structure enables flexibility in uploading data from different sources presented in different formats and with different degrees of detail.
- The structure is intuitive in use.
- Content is searchable for keywords across all folders, or within folders.
- The total dataset may be sorted initially by institution, by subject discipline, or by course level. It may also be disaggregated to permit engagement with a particular institution or, perhaps, representatives of a particular subject discipline.
- The database is easy to update.

- Courses are represented in the terms preferred by the institutions responsible for them. The pedagogic intentions of HEIs are not forced into an externally determined pro-forma.

### 4.3.2    Structure and content

Within the database the basic unit of account is the document. Each document provides details of a course. In every particular case it should be clear from the text whether this means a programme or a module or unit. Relative numbers of programmes and modules are provided in the appendices, distinguished by institution (Appendix 4j) and subject area (Appendix 4i). Doctoral studies have also been included where information regarding these is available, but in this respect it should be noted that the reporting practices of HEIs vary very widely. The database contains more than 1,600 documents.

All documents are headed in a format which sets out the name of the providing HEI, the subject area and the level of the course. The database is searchable as a whole, or across any of these three dimensions. The disciplinary headings (Appendix 4g) have been derived from the HESA guidance for allocating cost centres for students in 2006-07. As the intention is to make the database intuitively usable, courses have been allocated to more than one heading where this seems likely to be helpful.

It is not claimed that this database is complete. This is firstly because the inclusion of material is dependent on the HEI that owns it making it detectable by one of the approaches used here and secondly because at the margin issues of definition and degree render a final, universally agreed verdict on completeness extremely difficult. The database is qualitatively rich. However, quantitative judgements and comparisons should be made with caution. For example, there is no readily available standard of comparison between an HEI with 10 qualifying courses each of which has a small element of sustainable development teaching and an HEI with one intensive, focused offering that is resourced to a high level. Even if such a comparison were possible, it would be complicated by factors such as the quality of both teaching and recruitment in particular cohorts. The achievement of a quantitative common denominator to enable direct comparison or ranking of HEIs for sustainable development teaching is, in the opinion of the authors, methodologically impossible. If such a thing were to be attempted it would certainly involve a project quite different from the present one, both in terms of its scale and its intrusiveness.

## 4.4 KEY ISSUES FROM THE RESEARCH

### 4.4.1 Centrality of sustainable development within teaching

For a relatively small number of HEIs education for sustainable development (ESD) is explicitly at the heart of the institution's identity. For example, HEI 41 has in 2007 published a book in which it states that its:

> … approach to ESD is to develop in students an understanding of the nature of society and its relationship with the environment, together with the capabilities and potential to promote justice in the distribution of economic, social and environmental assets now and for the future.
>
> (Roberts and Roberts (eds), 2007)

Similarly, HEI 37 endorsed an institutional vision statement in 1999 which commits it to the development of global citizens who understand the need for sustainable development.

However, one issue that arises here (and repeatedly for the study as a whole) is the heterogeneity of HEIs. So, for example, HEI 106 has within it a school that is itself larger than many other institutions. Within this school sustainable development is recognised as a fundamental underpinning of all (or almost all) teaching, but the Head of School reports that using the terms 'sustainable development' or 'sustainability' in the titles of courses is not conducive to recruitment. His view is that students may appreciate – even expect - sustainable development content, but within a wider disciplinary framework.

At the other extreme, of course, one finds institutions (some of them heavily specialised in particular disciplinary areas) that have both provided a nil return to this study and yielded no data to other methods of enquiry. There are also disciplinary areas (for example: Clinical Dentistry; Anatomy and Physiology) for which no includable course content has been found. Every point between these extremes is populated. Looking at this overall picture one sees not a coherent process of policy development across the sector, but a pattern more consistent with a very varied group of HEIs (in terms of their specialisms, strengths, size, history, geographical location and so on) engaging with a very wide variety of students (in terms of academic level, prior attainment, interests, ambitions, etc.) through a market place in which sustainable development – and sustainable development related teaching – is but one element on both the supply side and the demand side.

This said, if SD is only one aspect on the supply side, then it is an extremely rich and productive one. Appendix 4h provides a list of key words abstracted from courses included in the database. The variety is little short of astonishing. This is in spite of the fact that the distribution of courses across subject area headings tends to be lumpy. Perhaps unsurprisingly, the most strongly represented are: Geography, Earth, Marine and Environmental Science; Architecture, Built Environment and Planning; Business and Management Studies; Sports and Leisure Studies; and, Civil Engineering.

The overall picture that emerges here is very much consistent with the analysis provided by Professor Mark Cleary, Vice-Chancellor of the University of Bradford, at the July 2007 HEA Sustainability and the Curriculum Conference.

Professor Cleary highlighted the significance for HEIs of the following issues:

- Will ESD help the bottom line?
- Does it accord well with the range of university activity (learning and teaching; research and knowledge transfer; community)
- Importance of divergent views and assumptions
- Universities will need to showcase sustainability through activities and partnerships.

The evidence is consistent with the existence in England of a sector in which individual HEIs are addressing these matters in ways which they find appropriate to their own institutional contexts.

One aspect of HEIs' responses is the view they take of their proper role in society. Some describe themselves as change agents, driving the sustainability agenda forward. Others see themselves as responsive to wider social issues, of which sustainability is one. Of course, there are also institutions which – at the institutional level – do not accept the significance of sustainability for their teaching at all. It should also be noted that the formal view taken by an institution may or may not correspond to that of particular academics within it, or of middle managers.

### 4.4.2 Definition of sustainable development

There is evidence that HEIs define sustainable development in a wide variety of ways, although where a definition is explicitly called for the famous 1987 Brundtland Definition is the one most frequently offered. Clearly, many institutions are engaged in teaching as an academic activity through which to develop the concept of sustainable development and are doing so along a number of different intellectual dimensions. For example, Imperial College London prefaces a masters programme in sustainability as follows:

> Although sustainability of human livelihood and enterprise is an old phenomenon, synonymous with the emergence of *Homo sapiens*, the modern notion of 'sustainable development' arose in the last quarter of the 20th century in response to growing international recognition of two related phenomena. First, the failure of attempts to reproduce the development achieved in the high-income, industrialised nations of the world among less industrialised, low-income countries; and, second, the negative environmental impacts produced by conventional high-consumption and through-put approaches to industrial development.

London Metropolitan University has an undergraduate programme 'Issues in Sustainable Development Field Course' which 'provides practical field-experience in examining and measuring tourism and environment interactions, and in applying sustainability criteria.' Staffordshire University has a distance learning MSc in 'Governance and Sustainable Development' delivered through a virtual learning environment which sets out its assumptions about sustainable development as follows:

> Sustainable development implies new directions in the government and management of society: 'bottom-up' approaches instigated by communities as well as 'top-down' government, market forces harnessed for the needs of all, localisation as well as globalisation. This award explores the interface between sustainable development and

international relations with reference to the government and management of trade, South-North interaction, international decision-making and local coping.

At the University of Northumbria at Newcastle an MSc in 'Disaster Management and Sustainable Development' sets out to address:

The skills required for evaluation and planning in the core areas of early warning, preparedness, immediate and long-term response systems, and sustainability with a focus on: hazard and disaster information systems; bio-physical and political ecological environments of hazard; environmental and human vulnerabilities and resilience; the role of institutions in disaster management; and capacity building in institutional development (international, transnational, governmental and civil societal).

It would be possible to provide a great many more examples from the database, but the point here is simply that any attempt to narrow the focus of sustainable development teaching within a particular definition (however thoughtful or politically convenient) would seem oddly limiting when many institutions are exploring its limits so creatively. There is a strong sense here of HEIs being properly educational, that is, enabling their students to cope with their own unfolding lives or, to put it another way, promoting 'sustainable development literacy' as this term is used by Professor Cleary (see 4.1 above), to mean:

Intellectual skills which enable individuals and groups both to make wise judgements and to understand the context and implications of the debate about sustainable development.

Further, this much can be said without any reference to the work of the two sustainability-related Centres for Excellence in Teaching and Learning (CETLs), though these clearly add substantially to the overall picture. At Kingston University, the Centre for Sustainable Communities Achieved through Integrated Professional Education (C-SCAIPE) is focused on the built environment and aims to enable graduates studying on professional courses to develop a deeper understanding of sustainability. The University of Plymouth has made its own recent internal sustainability curriculum audit available to this review and this is included as an additional document, in its entirety, within the Database.

Interviewees responded in a variety of ways to the definition in use within the review. Respondents at HEIs 71, 49, 140 and 11 found it satisfactory. From HEI 106 came the view that it was seriously problematical, since it tended to underplay the social dimension of sustainability and particularly the significance of participation. Similar objections were raised by HEIs 69 and 39. However, all respondents accepted the need for a consistent definition (of some sort) in the establishment of a baseline.

### 4.4.3    Interdisciplinarity

Interdisciplinarity in higher education is not only of interest in the context of sustainable development. The Higher Education Academy (HEA) has, since 2005, supported an Interdisciplinary Teaching and Learning Group to explore all aspects of cross-disciplinary collaboration. However, it is quite clear that the whole question of interdisciplinary working, its opportunities and its difficulties, looms large in the minds of those who wish to promote sustainable development. This is addressed in different ways in different institutions. One interesting model is that of the Waste and Energy Research Group at the University of Brighton, which has organised workshops to bring together staff from different schools to discuss how

they might complement each others' teaching (http://www.brighton.ac.uk/werg/). Another is the infusionist curriculum development process underway at HEI 58, where it is reported that staff have developed new interdisciplinary programmes at both undergraduate and graduate level and have also worked on infusing the sustainability agenda into already established programmes.

Some respondents were very positive about progress towards interdisciplinary teaching in their institutions. For example, HEI 140 reported that they were "very good" at interdisciplinary teaching, and HEI 11 stated that most programmes were becoming more interdisciplinary with a movement towards more common elements in the first year undergraduate curriculum. HEI 69 had tried to develop cluster groups of disciplines but as yet this had had relatively little impact at undergraduate level. HEI 72 reported that while interdisciplinarity did cause problems it was, nevertheless, administratively quite straightforward to arrange the mixing of modules across disciplinary boundaries. HEI 39 reported strong movement towards more interdisciplinary working following the appointment of a new Vice-Chancellor. HEI 37 emphasised the usefulness of 'keystone' or 'capstone' modules to incorporate sustainable development into the structure of the curriculum.

A number of obstacles to interdisciplinary teaching were identified:

- The focus upon cost centres for purposes of financial administration.
- The continuing disciplinary basis of Research Council (RC) funding. Of course, RCs do make an appeal to interdisciplinarity, but there was a feeling among respondents that this was not always fully represented within their practice.
- Related to this, RAE categories tend to create difficulties for interdisciplinary research, and so HEIs may prefer to appoint staff with a single-discipline focus. This then has consequences for what is taught.
- There are particular issues around integrating the social aspects of sustainability into natural science-based courses.
- Much interdisciplinary work is reported in 'grey literature' or in relatively low-status journals. This is in part because interdisciplinary journals tend to have lower status. Hence academics may prefer to focus elsewhere.

Within the database it is clear that the majority of identified courses do have a particular disciplinary orientation. However, interesting examples of interdisciplinary teaching can be found. Examples include:

HEI 56 offers a BSc (Hons) in Biology with Business. This it describes as follows:

> This course enables the student to study environmental aspects of biology and elements of business that are particularly relevant to companies with strong scientific and technological interests, along with either microbiology or molecular biology and genetics.

> Typical topics covered include: economics; databases; statistical data analysis; contract law and legal writing; marketing; the company and its environment; network economics and the information economy; quality control for business; managing the sustainable organisation; international aspects of business; microbiology; ecology; conservation; environmental assessment, regulation and management; microbiology or molecular biology and genetics; research methods; and the final year project.

At HEI 71 an honours degree in 'Life, Environment and People' involves the study of:

pattern, process and relationship in living systems, including concepts of differentiation and integration, self and non-self, symbiosis and competition, degeneration and decomposition, chaos and complexity, life history strategies, succession. Discussion groups on topical issues, e.g. 'the relevance of biodiversity', 'biotechnology and bioengineering', 'food and food webs', 'sustainability and vitality', 'changing cultures', 'human needs and values'.

HEI 107 has a BSc (Hons) in 'Geography and Mathematics' which includes compulsory modules on quantitative analysis and environmental issues. HEI 29 provides a BSC (Hons) in Outdoor Studies with Ecology which "prepares you for professional participation in scientific fieldwork or environmental education".

Again there are many other examples.

It is interesting to consider the above discussion in the light of a 2007 research paper by Kate Sherren of the Fenner School of Environment and Society at the Australian National University, Canberra, published online by The Environmentalist (Sherren, 2007). Based on a study of expert opinions at two international sustainability events in 2005, Sherren presents what she terms a 'sustainability canon'.

> This canon includes in its core Ecology, Economics, Applied Ethics, Environmental Science, Cultural Studies, Policy and Political Science, Resource Management and International Relations or Development Studies. Topics educating in the third pillar of sustainability, society, are largely relegated to elective status by experts… These include Human Geography, Anthropology, History, Public Health and Sociology.

This international analysis is informative, but it must be noted that it appears to understate the significance of Geography in the English case.

### 4.4.4    Skills

This review is reporting within a wider context of higher education policy, of which one important aspect is the 2006 Leitch Review of Skills in the UK (HMSO, 2006) which considers appropriate actions for higher education within the context of a need to enhance national economic competitiveness and growth. This is not the place to discuss the matter, but it is quite clear that views do differ about the appropriateness of such an approach within the context of sustainable development. On the one hand, it may be felt that future growth may require a 'greening' of skills. One the other, it may be argued that sustainable development necessarily challenges the very foundations of a growth-based agenda.

In this context, the work of this review suggests that there is significant teaching in relation to sustainability skills. Much of this does not occur in courses that have 'sustainable development' in their title. The Database may be searched for references to specific skills, though often these are buried deep within HEIs' internal course documentation.

It is possible for HEIs to take skills seriously without seeing themselves and their teaching solely as a means to the end of meeting centrally mandated skills targets. Hence, for example, the University of Plymouth CETL, while promoting a critical approach to the understanding of the place of sustainable development in modern society, has a highly developed skills policy known as 'Skills Plus'. This it describes as follows:

The university's Skills Plus strategy has been developed to help provide a better learning experience for you as students. Recognising the increasingly competitive graduate labour market, Skills Plus helps ensure that you will leave the University of Plymouth with not only a good degree, but also additional skills and qualities that make you more employable.

Skills Plus is helping programme teams to provide opportunities for you to develop:

- Knowledge and understanding
- Intellectual skills
- Transferable skills
- Subject specific skills
- Personal Development Planning
- Career management skills
- An awareness of business and working practices, including through work placements and work experience
- An awareness of the global economy.

Further, a questioning, adaptive approach to the mainstream agenda of economic growth is a marketable skill in itself. One example is the work of the Centre for International Development and Training at the University of Wolverhampton, which provides customised course design and consultancy to clients around the world.

Finally, it should be noted that it is possible to combine core skills with a questioning approach. The Royal Academy of Engineering's 2007 publication 'Educating Engineers' (Royal Academy of Engineering, 2007) notes:

Engineering businesses now seek engineers with abilities and attributes in two broad areas - technical understanding and enabling skills. The first of these comprises: a sound knowledge of disciplinary fundamentals; a strong grasp of mathematics; creativity and innovation; together with the ability to apply theory in practice. The second is the set of abilities that enable engineers to work effectively in a business environment: communication skills; teamworking skills; and business awareness of the implications of engineering decisions and investments.

It is this combination of understanding and skills that underpins the role that engineers now play in the business world, a role with three distinct, if interrelated, elements: that of the technical specialist imbued with expert knowledge; that of the integrator able to operate across boundaries in complex environments; and that of the change agent providing the creativity, innovation and leadership necessary to meet new challenges.

It would be wise not to understate the differences between those who see sustainable development as giving rise to a specific subset of skills within the wider skills agenda and those who see it as a means to achieve fundamental modifications to that agenda across its entire range. Nevertheless, all interviewees felt that the interface between sustainable development and skills was an area of opportunity for HEIs.

### 4.4.5    Pedagogy

Mention was made in section 4.4.4 of the work of the Royal Academy of Engineering, which has been particularly innovative in its promotion of problem solving pedagogies for sustainable development through its Visiting Professors Scheme. There are many other examples of good pedagogic practice to be found in the database. Examples include:

HEI 14 offers a BA (Hons) in 'Garden Design: Arts and Environment' as part of which:

> you'll learn about organic practice, conservation, soil and plants at the same time as developing your design skills, creativity and fully-rounded knowledge of garden making. From conception and planning to the creation and management of landscapes, you'll master all stages of the garden design process, making models and prototypes as well as producing a variety of graphics to convey your designs… History and culture, different people's needs and environmental responsibility all play important roles in creating gardens and smaller site-specific public spaces, and on graduation you'll have a full understanding of how these components interact when fulfilling a client's brief. You'll also spend time working with the local community, designing rural estates, urban spaces, sculpture parks and show gardens and on live projects.

At HEI 65 a full-time HND in Construction Management has issues of sustainability embedded in its curriculum and uses pedagogies that include projects, presentations, group work, role play and case studies. HEI 70 has an undergraduate 'Sustainability Project' module within its School of Engineering and Applied Science which:

> is in the form of a case study wherein students assume roles and investigate the sustainability of one aspect of the production or use of a "product". Background information is provided and students are required to assess the information available and prepare a case as to whether the topic under investigation is sustainable or not; and if not, make proposals as to how it may be made sustainable.

> A report shall be prepared to present the conclusions. The presentations will be in the form of a public inquiry, public meeting or similar forum in which the students put forward and defend their conclusions and recommendations. The scope and structure allows the project to be multi-disciplinary with students from different subject groups across the school.

It has not been within the scope of this review to consider the pedagogy of HEIs as a whole, but it is clear that examples of good practice do exist in relation to sustainable development. Further, and in general, good sustainable development pedagogy is often simply good pedagogy. Hence its promotion is broadly consistent with a commitment to improve quality in the sector.

### 4.5    CONCLUSIONS AND RECOMMENDATIONS

### 4.5.1    General conclusions

- English HEIs are extremely heterogeneous in their treatment of sustainable development within the curriculum. Factors influencing this situation include variations in the size, history, traditions, staffing, academic focus, research interest, geographical location, market

- characteristics and management philosophy of different institutions. Whether the sector would benefit from more or less heterogeneity is a question beyond the scope of this report.

- There is a clear niche in the academic marketplace for institutions that wish to champion sustainability in particular conceptions. However, HEIs more widely are engaged in an educative process which serves, over time, to enhance society's understanding of what sustainable development might require through innovative and varied course content and pedagogy. It is important to make this point, since there exists in the relevant literature an influential strand of thought which argues that, from a sustainability perspective: "despite our unrelenting search for new knowledge, we do know quite enough already" (Jucker, 2002). This is not a view that seems compatible with the practice or philosophy of the great majority of institutions.

- There are institutions, schools, departments and individual academics for whom sustainable development is a low priority or no priority at all. These should not be confused with those who wish to mount a considered intellectual challenge to the concept (or to aspects of it). Such challenges are fundamental to the way in which HEIs and academics within them tend to see their work. It might also be argued that they contribute essentially to the robustness of the sustainability concept.

- The adoption of a single, agreed definition of sustainability or sustainable development for teaching across HEIs is probably neither desirable nor possible.

- The achievement of interdisciplinarity in teaching presents serious challenges, although examples of innovative good practice do exist. Barriers extend well beyond issues of conservatism among disciplinary practitioners and touch upon much wider matters of management and governance in the sector.

- The discourse of skills in higher education presents both opportunities and threats to the advancement of sustainable development in teaching. Nevertheless, this seems potentially an important area in which to move forward.

- Potential synergies exist between the development and dissemination of pedagogies appropriate to sustainable development teaching in higher education and the enhancement of pedagogic quality across the sector more widely.

### 4.5.2    Specific recommendations

It is recommended that HEFCE consider the following actions:

- The database can be sorted by institution. Each HEI should be sent its own folder and asked if it wishes to add or delete anything. If this process were repeated at regular intervals (say, every 24 months) a moving record would exist of the state of engagement of the sector with sustainable development teaching. Those institutions not presently directly engaged with HEFCE's work in the area would be given regular opportunities to so engage. Finally, awareness of ongoing changes in the sector would assist HEFCE in determining how best to direct its own efforts.

- Detailed consideration should be given to measures to facilitate interdisciplinarity in course design and teaching. Such measures need to be designed with due reference to a wide range of issues including:
  o   Financial management/cost centres
  o   RAE categories and overall design
  o   Subject benchmarks.

- A working party should be convened to examine the opportunities for linking sustainable development into the mainstream skills agenda in higher education.

- In the most general terms, leadership should be provided for the sector through the creation of opportunities for sustainable development teaching coupled with clear and consistent support for those who take advantage of them. Such leadership is likely to be widely welcomed.
- League tables of sustainable development teaching in higher education should be avoided absolutely. Any such table would be meaningless and divisive.

# 5 A BASELINE OF SD CORPORATE AND ESTATES MANAGEMENT IN ENGLISH HEIs

## POLICY STUDIES INSTITUTE

## 5.1 INTRODUCTION

In the first stage of this review, we accessed Estates Management Statistics (EMS) data and read the diverse literature including the value scoping study undertaken by SQW Consulting. We discussed benchmarking with approximately 40 people drawn from the sector or involved with different areas of sustainable development. We also contacted key associations and sought their input but with limited success.

The feedback received during the consultation exercise following the interim report has been taken into account wherever possible. Many useful suggestions have been incorporated into the benchmarking proposals. The scope has been widened to cover a wide range of sustainable development issues.

The proposed benchmarking tool for corporate and estates indicators is made up of five parts.

1. Quantified estates performance measures derived from EMS returns.

2. A section on estates targets that institutions may have set (these are placed in the context of the government's targets).

3. Questions on how sustainable development is managed and reported.

4. A section on tools and frameworks used to support sustainable development activity.

5. A set of self assessment questions covering various dimensions of activity. These require responses from different managers who are responsible for different strands of activity.

## 5.2 EMS PERFORMANCE STATISTICS

There are a range of relevant indicators contained within the EMS. Additional indicators continue to be added. These are analysed and reported in detail by HEFCE on an annual basis. To avoid duplication, this annual report should form part of the benchmarking. The report of performance in 2005-6 is due to be published in February 2008. The top-line resource consumption, emissions and recycling statistics for English HEIs are as follows.

### 5.2.1 EMS data summary: England

| | 2001/02 | 2002/03 | 2003/04 | 2004/05 | 2005/06 |
|---|---|---|---|---|---|
| Energy consumption kW/h (D38A) psm GIA (D11) C1 | 287 | 283 | 272 | 274 | 277 |
| Energy consumption kW/h (D38A) per student FTE (D4) C1 | 4,168 | 3,556 | 3,559 | 3,459 | 3,389 |
| Notional energy emissions (kg CO2) psm GIA (D11) C1 | | | 74.7 | 73.5 | 72.9 |
| Water consumption m³ (D38B) psm GIA (D11) C1 | 0.98 | 0.89 | 0.91 | 0.91 | 0.96 |
| Water consumption m³ (D38B) per student FTE (D4) C1 | 13.6 | 10.7 | 11.6 | 11.6 | 11.5 |
| Recycled waste proportion | | | | 12% | 14% |

This section of the report covers the results of two strands of the corporate and estates baseline providing indicators on different aspects of corporate and estates management. The first was sent to Directors of Estates and the second to Finance Directors. A questionnaire was also sent to seven HEI Human Resources (HR) Directors as a pilot. Only one responded, which is not sufficient for drawing any conclusions.

### 5.3 INFORMATION COLLECTED FROM HEI ESTATES MANAGEMENT

The estates contact identified in the study from our initial contact with HEIs was asked to complete a questionnaire seeking information on target setting, SD reporting, systems and tools used to support SD management, and to assess the HEI's progress towards SD.

It was accompanied by a covering letter explaining the purpose of the exercise with an assurance that the results would only be used for statistical purposes. Only 22 HEIs responded out of 132 sent the questionnaire even after a reminder had been sent. This is insufficient to draw any conclusions about the sector as a whole.

The responses received are analysed below. Those placed in the lowest quartile of the recent People & Planet 'Green League' are under-represented. Although they are not reliable indicators of overall sector performance, the results below illustrate the pattern of responses.

### 5.3.1 Estates and facilities management target setting

The most common use of targets is for energy and emissions.

| | No. of respondents who have set a target |
|---|---|
| 1. Estates $CO_2$ emissions | 14 |
| 2. Road vehicles emissions | 4 |
| 3. Carbon neutrality to be achieved by a stated date | 0 |
| 4. Energy efficiency | 13 |
| 5. Waste arisings reduction (volume) | 8 |
| 6. Recycling percentage of waste | 11 |
| 7. Water consumption reduction | 9 |
| 8. Renewable energy | 4 |
| *Base* | *22* |

The examples below illustrate the kind and scale of targets being set with most key achievement dates being set between 2010 to 2012 but with varying baselines dates for assessing progress.

**1. Estates CO2 emissions**

- 15% below 2000/2001 by 2010/2011

- Target for 5 years ending 2006 was 8.8% reduction; achieved

- 20% reduction on 2003 levels by 2010

- 15% of 2005/06 by 2011 (20% stretch)

- 60% reduction by 2050 on 2004/05 baseline, with milestone targets 11% by 2010 and 20% by 2015.

- University Carbon reduction targets from a 2005 baseline. 3% in 2006/7, 10% by 2010, 60% by 2050

- 5,000 tonnes by 2011-12

- 15% reduction by 2013

- 10% reduction in carbon dioxide emissions by 2010/11 (cf 2004/05 levels);

- 10% against 2000/01 base year by 2010/11

**2. Road vehicles emissions**

- These are included in overall estates target and account for approx. 3.4% of the 2015 target.

- 5% reductions every 3 years

- 5% against 2006/07 base year by 2013/14

**3 Carbon neutrality to be achieved by a stated date**

- 'Soft target' to 'remain significantly below the sector averages by 2012'

- 3% carbon reduction by 2006/7, 10% by 2010, 60% by 2050

**4 Energy efficiency**

- 15% below 1999/2000 by 2012

- 20% reduction on 2003 levels by 2010

- 15% of 2005/06 by 2011 (20% stretch)

- 15% reduction over 3 years, compared to baseline 2004/05

- 20% reduction in gas, 5% reduction in electricity against 2000/01 base year by 2010/11

**5 Waste arisings reduction (volume)**

- 5% reduction by 2010 & 25% reduction by 2020 relative to 2004/05

- 25% by 2005
- 40% by 2010 (was 30%)
- 45% by 2015 (was 33%)
- 50% by 2020
- Waste minimisation target – 5% per year from 2008 as an outline target

**6 Percentage recycling of waste**

- 40% increase by 2010 & 75% increase by 2020 relative to 2004/05

- 40% by 2008

- 50% by autumn of 2009

    o Provisional target of 75% by 2014 under consideration.

**7 Water consumption reduction**

- 15% below 2000/2001 by 2010

- 'Soft target' to 'remain significantly below the sector averages by 2012'

- 20% reduction on 2003 levels by 2010

- 10% of 2005/06 by 2011 (15% stretch)

- 30% reduction over 3 years compared to baseline 2004/05

- 20% reduction against 2000/01 base year by 2010/11

**8 Renewable energy**

- Complete initial investigation. Maintain 'green' electricity supply contract (98% of

purchased electricity is from renewable sources)

- 100% green electricity already purchased

It is helpful to understand how many HEIs are setting targets because it is likely to signify a longer term and more strategic approach but it is difficult to interpret this information given the different baselines and ways of expressing targets. A 'strong' approach to target setting would be to impose targets; weaker ones would be to require or request conformity of approach wherever targets are being set.

| SD commitment indicators and use of management tools | |
|---|---|
| Evidence of a public commitment to SD by the Vice Chancellor/Principal. | 14 |
| Do Boards of Governors review SD progress annually? | 8 |
| Existence of a publicly available policy statement on SD | 12 |
| Does it identify activities and policies agreed in the main areas of SD activity? | 9 |
| Do institutions publicly aspire to be a 'pathfinder' or exemplar sustainable community? | 10 |
| Do institutions employ at least one full-time member of staff responsible for co-ordinating or managing the environmental dimensions of SD? | 12 |
| Do institutions provide regular opportunities for staff to discuss SD policy and practice? | 16 |
| Do institutions provide regular opportunities for students to discuss SD policy and practice? | 9 |
| Do institutions work in partnership on SD issues with local communities, local businesses or other local stakeholders? | 15 |
| *Base* | *22* |

| Do institutions make use of wide-ranging SD reporting systems and, if so, which ones? | |
| --- | --- |
| Use of Global Reporting Initiative (GRI) | 1 |
| Use of Global Higher Education for Sustainability Partnership assessment questionnaire | 0 |
| Have institutions signed up to the Copernicus Universities Charter for Sustainable Development? | 0 |
| Have institutions carried out a comprehensive environmental audit identifying all the environmental impacts of the institution? | 4 |
| Do institutions operate a 'whole organisation' approach to resource management with an integrated system for managing issues such as energy and water in order to achieve circular flows with resources recovered and recycled? | 5 |
| Do institutions operate a ring-fenced revolving investment fund to support SD initiatives and strategies? | 5 |
| Do institutions ever use the `Natural Step' framework for analysing complex SD problems? | 0 |
| *Base* | 22 |

| Use of audit and management systems | |
| --- | --- |
| ISO 14001 | One achieved and six working towards |
| EcoCampus and stage reached: | None |
| Business in the Community Environmental Index: | 8 |
| Business in the Community Corporate Responsibility Index: | 6 |
| ECO-Management and Audit Scheme (EMAS): | None |
| Other audit and management systems: | One using ISO9001 for estates management, three using various forms of internal audit and review for energy and one using a consultancy. |

| Use of energy and carbon management systems | |
| --- | --- |
| Carbon management from the Carbon Trust | 5 |
| The Energy Consortium (TEC) | 13 |
| Carbon Neutral Company | 1 |
| Internally generate or adapted internal systems | 3 |

| Number of BREEAM rated buildings accredited at different levels | |
| --- | --- |
| Excellent | 4 |
| Very Good | 9 |
| Good | 2 |
| Pass | 0 |

## 5.4      SELF ASSESSMENT OF PROGRESS

Respondents were asked to give a score on a variety of dimensions between 0 and 9 where 1-3 was described as 'basic', 4-6 as 'getting there' and 7-9 as 'excellence'. The results are shown below.

| Energy/Carbon<br><br>Statements | Assessor score | Number of responses |
|---|---|---|
| Do not monitor carbon emissions and have no initiatives in place to reduce emissions | None (0) | 1 |
| Monitor energy use and carbon emissions and make ad hoc initiatives to improve performance. Staff and students are actively supported in reducing their energy consumption. | Basic (1-3) | 6 |
| Have a clear strategy for reducing energy consumption and promoting energy efficiency. Some energy is resourced from renewables. There is a strategy for reducing IT energy consumption | Getting there (4-6) | 10 |
| Set and monitor ambitious carbon reduction targets which are not to be achieved by renewable energy alone. Energy is strategically managed and co-ordinated with procurement and capital investment. You have funds for carbon reduction initiatives and employ an Energy Manager (or equivalent), who is responsible for reducing energy use. | Excellence (7-9) | 5 |
| *Base* | | *22* |

| Waste reduction and recycling<br><br>Statements | Assessor score | Number of responses |
|---|---|---|
| You have no initiatives in place to reduce or recycle waste. | (0) | 0 |
| The physical environment is clean and you comply with legislation. Basic waste segregation takes place. Staff and students are supported in minimising use of paper and other consumables | Basic (1-3) | 5 |
| You have a strategy for reducing waste. You clearly segregate waste and send most waste streams for recycling (e.g. paper, cardboard, glass). You monitor waste to landfill and actively reduce it through minimisation, reuse and recycling. You consider waste when making procurement decisions. | Getting there (4-6) | 14 |
| You implement and apply the waste hierarchy and have a waste manager. You have a waste strategy with targets and monitoring systems and you continuously reduce waste. Waste is strategically managed through integration with the procurement function (e.g. you purchase some biodegradable items and require suppliers to reduce packaging) and you are aware of the final destination of your waste. Contracted-out services have waste reduction targets. You work with local enterprises to create local markets for waste | Excellence (7-9) | 3 |
| *Base* | | *22* |

| Water | Assessor score | Number of responses |
|---|---|---|
| **Statements** | | |
| You have no initiatives in place to reduce water use. | None (0) | 2 |
| Staff and students are aware of the need to reduce water use and some initiatives are taken (e.g. turning off dripping taps). | Basic (1-3) | 8 |
| You have systems in place to reduce water use (e.g. water efficient operations, low-flush toilets) and all staff and students are actively encouraged to reduce usage. | Getting there (4-6) | 9 |
| Your water use is monitored and targets set for reduction. Catering, laundry and facilities contracts specify low water use. You use grey water where possible and actively seek out opportunities to recycle water. New buildings are designed to minimise water wastage. | Excellence (7-9) | 3 |
| *Base* | | *22* |

| Chemical use | Assessor score | Number of responses |
|---|---|---|
| **Statements** | | |
| You meet basic legal requirements for chemical use. | None (0) | 0 |
| You are compliant with oil storage regulations. You minimise the use of hazardous substances (e.g. chemicals, cleaning products). | Basic (1-3) | 15 |
| You set targets to reduce unnecessary and excessive chemical use. You purchase products with low volatility and emissions (e.g. low-VOC paints, furniture and carpets without a chemical finish). | Getting there (4-6) | 6 |
| You have a strategic and innovative approach to chemical use minimisation (e.g. using different cleaning processes such as steaming) and have monitoring processes for targets. You engage with suppliers to encourage and require them to use less hazardous chemicals in their products. | Excellence (7-9) | 0 |
| *Base* | | *22* |

| Biodiversity | Assessor score | Number of responses |
|---|---|---|
| **Statements** | | |
| There are no measures in place to safeguard biodiversity. | None (0) | 1 |
| The outside of your building creates a pleasant environment for pedestrians and each site has maintained green spaces. | Basic (1-3) | 5 |
| You have usable green spaces where biodiversity is encouraged (e.g. a wildlife garden, green roofs) and protected. You minimise covering over natural areas (e.g. by using grass rather than paving) | Getting there (4-6) | 9 |
| You acknowledge the wellbeing benefits of nature and have a budget for grounds maintenance that maximises the impact of nature on health (e.g. nature walks). You aim to provide 'green' views to everyone in the institution and your institution contributes to local biodiversity action plans. You monitor biodiversity on your grounds and are aware of any species of high biological importance. | Excellence (7-9) | 6 |
| *Base* | | *22* |

| Design of new and refurbished buildings<br><br>Statements | Assessor score | Number of responses |
| --- | --- | --- |
| The environmental impacts of new buildings are factored into design but are not a primary consideration when planning new buildings. | None (0) | 0 |
| The whole life cost and running cost of new/refurbished buildings are considered at the design stage and factors such as energy use, building materials, recycling, services and location are considered. | Basic (1-3) | 9 |
| High-quality design is based on maximising the health impacts and minimising the environmental impacts of the building. These impacts are measured. The process has stakeholder input. All new and refurbished buildings are BREEAM assessed. You design to achieve at least a Very Good BREEAM rating. You undertake post-construction evaluation and monitoring of buildings performance to ensure high standards are met and maintained. | Getting there (4-6) | 11 |
| New/refurbished buildings are designed to reflect and anticipate changing needs e.g. by incorporating structural flexibility. All new and refurbished building projects are designed to achieve an Excellent BREEAM rating. | Excellence (7-9) | 2 |
| *Base* | | *22* |

| Estates policies and performance management<br><br>Statements | Assessor score | Number of responses |
| --- | --- | --- |
| You have no set policies on environmental performance. | None (0) | 1 |
| Your institution does not have an energy policy, but there is some in-house monitoring of parameters such as energy consumption, water usage and waste generation. | Basic (1-3) | 8 |
| Your institution has a stand-alone facilities management policy, or has integrated these issues into a wider sustainable development or environmental plan. In addition, you set targets and monitor and improve performance and results are communicated to staff and students | Getting there (4-6) | 11 |
| Your institution has a fully integrated environmental management system (e.g. ISO14001, BS8885). Improvements in performance and compliance against your policy are assessed on a regular basis and the findings are communicated. Facilities management is fully integrated with other departments in order to maximise positive sustainable outcomes. | Excellence (7-9) | 2 |
| *Base* | | *22* |

| Travel planning and management Statements | Assessor score | Number of responses |
|---|---|---|
| There is no active management of cycling or public transport. | None (0) | 2 |
| You promote cycling, public transport use and walking to reduce car use by staff, students and visitors. All location maps and information (for visitors, students and new staff) highlight the public transport options. | Basic (1-3) | 5 |
| Your institution attends local transport planning meetings to discuss planning (e.g. cycle lanes, 20mph buffer zones, safe pedestrian crossings). Your site is a pleasant and safe environment for pedestrians and cyclists. Your transport solutions take account of access for people with disabilities | Getting there (4-6) | 5 |
| You provide resources towards local sustainable transport options. You monitor progress against plans and tackle non-performance. You work with your local public transport operators to review services and routes to meet full site access. Your integrated public transport planning is designed to meet staff, student and visitor needs. You undertake on-site traffic counts to help planning | Excellence (7-9) | 10 |
| *Base* | | *22* |

| Service design & minimising travel Statements | Assessor score | Number of responses |
|---|---|---|
| Transport is not usually considered when designing services. | None (0) | 1 |
| Transport is considered when designing services, with a view to maximising access. Public transport information is made available to staff and visitors. | Basic (1-3) | 7 |
| Effort is made to reduce or eliminate unnecessary journeys. You encourage use of public transport (e.g. loans for travel passes; meetings coinciding with public transport timetables) and working from home, where appropriate. Student and staff travel is monitored. Maps of sites show walking, cycling and public transport options. Where feasible, you offer alternatives to private car travel. | Getting there (4-6) | 13 |
| Reducing the need to travel is a key criterion for re-designing your services including use of IT networks and video conferencing. Planning tools such as GIS (Geographical Information Systems) are used to maximise transport and travel efficiency. You monitor and evaluate student, staff and delivery travel, and have targets for reducing unnecessary trips. Staff incentives exist for use of public transport, cycling and walking to and during work. You develop an integrated transport plan. | Excellence (7-9) | 1 |
| *Base* | | *22* |

| Walking & cycling<br><br>Statements | Assessor score | Number of responses |
|---|---|---|
| You do not provide any cycling facilities or make any attempts to facilitate walking. | None (0) | 0 |
| You provide basic cycle facilities (e.g. cycle parking at some sites). You have a bicycle users group, or other information-sharing systems for cyclists. You seek staff opinion on measures to improve walking access. You have an information system with maps and guidance. | Basic (1-3) | 6 |
| There is some provision for cyclists at most of your sites (cycle parking, changing areas, showers, etc.) You offer staff bike loans or bike purchase at discount rates. A pedestrian audit has been carried out on sites and access routes. | Getting there (4-6) | 14 |
| All of your sites have covered, secure cycle parking, changing areas, showers and storage for clothing. There are safe and, where possible, traffic-free routes to your buildings for pedestrians and cyclists. You monitor whether people feel safe and happy walking and cycling to work and address concerns. Your cycle mileage rates are competitive with those for driving and staff who walk or cycle are given benefits of equal or greater value than any subsidy offered on car parking. | Excellence (7-9) | 2 |
| *Base* | | *22* |

| Car parking<br><br>Statements | Assessor score | Number of responses |
|---|---|---|
| Car parking is free or charges are not enforced. | None (0) | 4 |
| Car parking charges are enforced and spaces limited to deliberately discourage use. | Basic (1-3) | 7 |
| Car use is monitored and reduction targets are set. | Getting there (4-6) | 7 |
| You use incentives and disincentives to manage down the need for car parking. You regularly survey the local car parking market and identify the open market value of your car parking spaces. This is communicated to staff and either a) non-essential car users pay this rate; or b) non-driving staff are given benefits of equivalent value to any subsidy. | Excellence (7-9) | 3 |
| *Base* | | *22* |

## 5.5 ETHICAL INVESTMENT AND PROCUREMENT INDICATORS

### 5.5.1 Introduction

A questionnaire covering ethical investment policy and procurement issues was sent out using a mailing list supplied by the British Universities Finance Group and supplemented in the few cases where no contact was identified from the project's central contacts database. The questionnaire received considerable input from the Association of University Procurement Officers. The timescale for completion was tight but nevertheless, the response was low. Only 17 questionnaires were returned within the time available (two more arrived too late to include). This is not sufficient to provide reliable sector information.

The questionnaire consisted entirely of self assessment questions. If the Finance Director was not the appropriate person to respond on procurement, s/he was asked to pass on the procurement questions to the most appropriate person

The results of the self-assessment exercise are outlined below.

| Ethical investment policy<br><br>Statements | Assessor score | Number of responses |
|---|---|---|
| There is no stated policy on the investment and management of the institution's resources. | None (0) | 6 |
| You recognise the importance of ethical investment and are beginning to develop an ethical investment policy. | Basic (1-3) | 7 |
| You are developing investment criteria in consultation with stakeholders in order to assess what you want to encourage and what should be avoided. You have reviewed your banking arrangements in the light of these consultations. | Getting there (4-6) | 2 |
| You have a published policy on ethical investment identifying the criteria you employ when making decisions within a framework of risk management. You have reviewed all investments and ensured all meet the criteria set. | Excellence (7-9) | 1 |
| Not applicable | | 1 |
| *Base* | | *17* |

| Procurement policy and procurement management | Assessor score | Number of responses |
|---|---|---|
| **Statements** | | |
| There is no institution policy to procure sustainably and no evidence to suggest that it is taken seriously at departmental level in your institution. | None (0) | 3 |
| There is a simple sustainable procurement policy in place endorsed by the VC/Principal. The policy is publicly available and communicated to staff and key suppliers. | Basic (1-3) | 9 |
| There is a sustainable procurement strategy covering risk, process integration, marketing, supplier engagement, measurement and a review process. | Getting there (4-6) | 3 |
| Procurement is an integrated strategic function of your institution and a key contributor to SD. Strategy is: reviewed regularly, externally scrutinised and directly linked to organisations' EMS. A detailed review is undertaken regularly to determine future priorities. | Excellence (7-9) | 2 |
| *Base* | | *17* |


| Central procurement staff | Assessor score | Number of responses |
|---|---|---|
| **Statements** | | |
| There is no SD procurement champion and no training on SD procurement has been given. | None (0) | 2 |
| Sustainable procurement champion identified. Some or all procurement staff have received basic training in sustainable procurement principles. Key staff have received advanced training on sustainable procurement principles. | Basic (1-3) | 10 |
| Targeted refresher training given on latest sustainable procurement principles and practice. Performance objectives and appraisal include sustainable procurement factors. | Getting there (4-6) | 3 |
| Sustainable procurement included in competencies and selection criteria. Achievements are publicised and used to attract procurement professionals. Staff focus is on SD benefits achieved. | Excellence (7-9) | 2 |
| *Base* | | *17* |

## Procurement and supply chain

| Tendering<br><br>Statements | Assessor score | Number of responses |
|---|---|---|
| You don't apply environmentally and socially responsible procurement practices. | None (0) | 3 |
| You promote environmentally and socially responsible procurement practices. You have developed model environmental clauses which are used in some or all contracts. You undertake expenditure analysis and key sustainability impacts are identified. Key contracts start to include general sustainability criteria. Contracts are awarded on the basis of value-for-money, not lowest price. Detailed expenditure analysis is undertaken, key sustainability risks are assessed and used for prioritisation. Key suppliers are targeted for engagement and views sought on procurement policy. | Basic (1-3) | 6 |
| You use questionnaires covering sustainability issues as part of the supplier selection process. You include clauses in the specification referencing environmental standards, such as eco-labels, where appropriate. You evaluate some or all tenders using whole-life costing and environmental award criteria. All contracts are assessed for general sustainability risks and management actions identified. Risks managed throughout all stages of the procurement process. Targets to improve sustainability are agreed with key suppliers. Targeted supplier engagement programme in place, promoting continual sustainability improvement. Two way communications between procurer and supplier exists with incentives. Supply chains for key spend areas have been mapped. | Getting there (4-6) | 6 |
| You commit to only specifying environmentally and socially responsible goods, where these exist (e.g. recycled paper, 'A' rated energy efficiency ratings, fairly traded & eco-labelled when appropriate). Whole Life Costing (WLC) is an integral part of your procurement process and Invest to Save is common practice. You regularly monitor contracts against environmental, health and social benefits, as well as cash releasing savings. Detailed sustainability risks assessed for high impact contracts. Project /contract sustainability governance is in place. A life-cycle approach to cost/impact assessment is applied. Sustainability Key Performance Indicators agreed with key suppliers. Barriers to sustainable procurement have been removed. | Excellence (7-9) | 2 |
| Base | | 17 |

| Supplier management | Assessor score | Number of responses |
|---|---|---|
| **Statements** | | |
| You don't discuss SD issues with suppliers. | None (0) | 2 |
| You include discussions of SD at some supplier briefings and contract performance management meetings. Key suppliers are targeted for engagement. Key supplier spend analysis is undertaken and high sustainability impact suppliers identified. Detailed supplier spend analysis undertaken. | Basic (1-3) | 10 |
| You have used risk methodology, supplier environmental questionnaires, or something similar, to assess environmental and reputational risk associated with important contracts. A general programme of supplier engagement has been initiated, with senior manager involvement. Supply chains for key spend areas have been mapped. | Getting there (4-6) | 4 |
| You have established an environmental supply chain programme with selected suppliers. This monitors their performance and may include training programmes and supplier visits. Key suppliers targeted for intensive development. Sustainability audits and supply chain improvement programmes in place. Suppliers recognised as essential to delivery of organisations' sustainable procurement strategy. Best practice shared with other/peer organisations. Suppliers recognise they must continually improve their sustainability profile to keep the business. | Excellence (7-9) | 1 |
| *Base* | | *17* |

| Decentralised purchasing | Assessor score | Number of responses |
|---|---|---|
| **Statements** | | |
| No advice or guidance is provided to decentralised buyers. | None (0) | 3 |
| Staff purchasing at departmental level are made aware of SD issues when making purchasing decisions. Some sustainable options are highlighted. | Basic (1-3) | 9 |
| Many sustainable options are highlighted to internal purchasers and they are encouraged to select the most sustainable options. You monitor their use. Training is provided for those regularly purchasing goods and services. | Getting there (4-6) | 3 |
| There is a comprehensive knowledge base to support sustainable purchasing across the institution. Making appropriate choices has become the default option for the majority of decentralised purchases. | Excellence (7-9) | 2 |
| *Base* | | *17* |

| Procurement measurement and results<br><br>Statements | Assessor score | Number of responses |
|---|---|---|
| Key sustainability impacts have not been identified. | None (0) | 7 |
| Detailed appraisal of the sustainability impacts of procurement activity has been undertaken. Measures have been implemented to manage the identified high risk impact areas. | Basic (1-3) | 7 |
| Sustainability measures refined from general departmental measures to include individual procurers and are linked to development objectives. | Getting there (4-6) | 2 |
| Benefit statements have been produced. Measures are used to drive SD strategy direction. Benefits from sustainable procurement are clearly evidenced. Independent audit reports available in the public domain. | Excellence (7-9) | 1 |
| *Base* | | *17* |

| Reducing packaging & waste through procurement<br><br>Statements | Assessor score | Number of responses |
|---|---|---|
| You don't consider waste and packaging at procurement. | None (0) | 0 |
| You prefer products and packaging that can be re-used or recycled. You strive to make 'common sense' changes to contracts to minimise packaging and waste. Waste is factored in to some or all procurement decisions, (e.g. asking suppliers to specify weight and type of packaging, so that it can be evaluated). | Basic (1-3) | 11 |
| The cost of waste disposal is monitored and factored into procurement processes (WLC). You have a policy commitment to buy goods made from post-consumer waste (i.e. recycled), and you segregate waste for recycling. | Getting there (4-6) | 4 |
| You negotiate with suppliers to reduce packaging and specify product sizes to suit your needs (thus eliminating waste). You avoid disposable products where possible. You investigate packaging 'take-back' options with suppliers and reduce the amount of waste your institution generates by better managing contracts. | Excellence (7-9) | 2 |
| *Base* | | *17* |

| Supporting local businesses through procurement<br><br>Statements | Assessor score | Number of responses |
|---|---|---|
| You don't specifically consider regeneration issues of local supply when procuring goods or services. | None (0) | 1 |
| There is an awareness in your institution of the contribution local procurement can make to regeneration and you have some projects running that maximise this contribution. You advertise your tenders locally, as well as in other appropriate media. | Basic (1-3) | 9 |
| You support local small and medium sized enterprises (SMEs), by communicating with them, and holding 'Meet the Buyer' events. You have agreed how to define 'local' in an appropriate way for your institution and have undertaken research into local supply opportunities, and ensured that procurers act on the results. | Getting there (4-6) | 6 |
| You have formed mutually beneficial partnerships with local suppliers and have researched the benefits to the local community of using them. You work with local SMEs and social enterprises, facilitating access to your contracts, (e.g. meetings, training sessions). You encourage fair and open competition, including making local suppliers aware of opportunities. | Excellence (7-9) | 1 |
| *Base* | | *17* |

## 5.6 PILOT EXERCISE ON STAFF, STUDENT ENGAGEMENT WITH SD

A pilot questionnaire about staff, student and community communication and engagement with SD was sent to seven Directors of HR who were requested to complete the questionnaire and to identify any issues or problems with the questionnaire. Only one response was received which is insufficient to draw any conclusions.

## 5.7 CONCLUSIONS AND RECOMMENDATIONS

### 5.7.1 Conclusions

- The data collection carried out for the study required considerable input from HEIs. Only a minority responded – 22 to the estates strand and 17 to the finance and procurement strand. Possible reasons for the low response include the lack of time available to consult potential respondents in advance and the tight deadline for the return of completed questionnaires.
- At least 100 responses from the 132 English HEIs are required to create a credible baseline.
- Although great caution is necessary when interpreting results from such low samples, the results do suggest some interesting findings.
- While there is evidence of promoting more sustainable transport, there appears to be less appetite for reducing parking.
- Some HEIs are treating SD issues very seriously. A significant minority wish to become exemplar organisations.
- There are some 'easy wins' for HEIs who want to promote SD activity, such as identifying and promoting more sustainable choices to decentralised buyers.
- Several of those responding said that completing the questionnaire had been helpful to them in identifying and considering important and relevant issues.

- A pilot questionnaire about staff, student and community communication and engagement with SD was sent to seven Directors of HR who were requested to complete the questionnaire and to identify any issues or problems with the questionnaire. Only one response was received which is insufficient to draw any conclusions.

### 5.7.2 Recommendations

- HEFCE should consult further with HEIs to establish the causes of the low response.
- In the light of this consultation, HEFCE should decide whether to reduce the scope of the exercise in order to reduce the burden on respondents and whether to collect the information on a compulsory or voluntarily basis.
- HEFCE should consider commissioning a robust and replicable survey of students on the extent to which SD is perceived to be relevant to their studies and whether it is included in their course. (The recent study commissioned by HEA 'Employable Graduates for Responsible Employers' (Cade, A., 2007) provides some insight into students' views but is based on an on-line survey in which respondents were recruited through advertisements seeking participants. It is impossible to calculate response rate or assess sample bias: it does not provide a firm basis for creating a baseline).
- HEFCE should consider monitoring the attitudes of business and professional bodies to SD and whether it should be included in relevant courses. (The survey of businesses used in the HEA commissioned study mentioned above achieved a response rate of less than 10%. This is not sufficient to provide robust baseline data).
- HEFCE should consider asking self-assessment questions on whether Knowledge Transfer activities are providing input into SD.

# 6 LEARNING FROM EXPERIENCE: FOUR CASE-STUDIES

## P.A. CONSULTING

## 6.1 PURPOSE

The principal purpose of the case-studies was to learn from institutions' experience about the conditions for embedding sustainable development, including barriers and drivers (aim A2 of the strategic review). In undertaking the studies it was also possible to consider some of the key issues which present opportunities and challenges for the sector and to investigate possible policy responses (A3), as well as to obtain some material relevant to A4: an evaluation of HEFCE's approach and a refinement of HEFCE's priorities.

It is important to stress the particular emphasis on securing learning insights. The cases selected were chosen precisely because of their potential to provide such insights. There was no attempt to in any way seek to 'audit' the SD work of the institutions chosen, nor to use their choice as case-studies to signal any perceived status or position in any putative league-table.

### 6.1.1 Selection criteria

Whilst the potential to provide learning insights was paramount, the final selection of institutions as case-studies was also guided by a desire to include a range of mission types, as well as institutions from differing regional economies and with different governance arrangements.

Finally, the studies were chosen to reflect an anticipated range of approaches to SD and differing levels of incorporation of SD into the values, activities, and management of the institutions.

### 6.1.2 The choice of case-studies

On the basis of these criteria the following four institutions were chosen (in alphabetical order):

- Birmingham
- Cambridge
- Kingston
- Wolverhampton.

### 6.1.3 Approach

The format for each case-study involved extensive desk-based research before and after an institutional visit. The latter lasted for up to a day and typically involved one-on-one consultations with:

- the senior level sponsor for SD
- the principal SD co-ordinator/change agent

- a range of academics and administrators
- the Guild or Union officer responsible for ethical and environmental issues.

It was a reflection of the way in which SD is often dispersed across the institution that in several cases it took some time to co-ordinate the baseline information requested and to arrange visits. Accordingly all visits were made in July and it was typically necessary to use proxies for the 'student voice' – mainly Guild and Union officers; those responsible for arranging student SD placements; and actual student publications on SD.

Given the potential burden placed on institutions by visits of this kind it is pleasing to note that in fact institutions remarked that they found the visits helpful, causing them to reflect on the institutional history of SD, on what they had achieved, and on their plans for the future.

There was also an interest in the idea of regional follow-up seminars; a view that this was the right way to move forwards; and a keenness on the part of case-study institutions to become involved in the design and delivery, if appropriate.

### 6.1.4 Layout of the rest of this chapter

The remainder of this chapter is arranged as follows:

- a section on *initial observations* reflects on some important generic themes and issues arising from the case-studies;
- *phases of adoption of change* is a section which presents a model for organisational change specifically developed for the purposes of this research. It also incorporates a summary of the key findings, matched against the model;
- the next section, *findings*, looks in detail at the outcomes of the case-studies;
- the next three sections present respectively *barriers*, *drivers*, and *stakeholder-specific enablers*;
- a final section considers potential implications for HEFCE.

The case-studies themselves are presented in Appendices 6.

### 6.2 INITIAL OBSERVATIONS

Before reporting on the findings of the case-studies in more detail it is worth making nine initial observations concerning:

1. *Visibility of SD*

   HEIs appear to struggle to obtain a clear overview of SD activities in their institution. This is a very important finding for this review – and has also presented a systematic operating constraint for the researchers.

   The reasons are various and typically reflect one or more of the following:

   - the 'bottom-up' approach to SD which has typified so much of the growth of SD in English HEIs, particularly in early stages;
   - the extent to which SD is characteristically associated with a multi- or cross-disciplinary approach to teaching and research. Consultees have regularly pointed

out that good SD work is often woven into the fabric of wider institutional initiatives, or at the very least interleaved. In some sense this is a very welcome problem if it indicates a degree of embedding of SD

- definitional issues, as discussed in the next observation;
- general institutional governance arrangements; and
- the specific (often inadequate) arrangements for organising and managing SD in the institution.

2. *Language*

There is a significant set of linguistic and definitional problems around 'sustainable development' as a term including at least the following:

- a number of those we consulted dislike the particular term – feeling it has undesirable connotations – and do not use it in their institution;
- different institutions have their own – differing – definitions of SD; and
- some key players in institutions are reported to have associated SD with one particular element or strand of SD – for example, ethical investment – which has received significant media attention, and to have then judged the attractiveness of SD as a whole by the perceived attractiveness of this particular element.

In undertaking the case-studies we have been alert to these issues, but in some cases they run deep.

3. *Initial focus*

Consistent with the overall mission of each institution, the four HEIs have typically focused initially on introducing SD (or elements thereof) into teaching or research, or both. None of our case-studies focused initially on estate management or wider SD issues relating to the institution as an enterprise, and none so far appears to have seen this as a priority in the same way. This finding sits neatly with the results of similar research into SD in global higher education. A recent report for the OECD, '*Higher Education for Sustainable Development*', (Johnston, 2007) found that interdisciplinary SD research centres were integral to the embedding of SD within institutions at a strategic level. Although the research found occasions when SD activity initially focused on estates management – and indeed, the work of the Environmental Association of Universities and Colleges (EAUC) suggests similar examples do exist in the UK – it recommends HEIs prioritise SD research in order to drive change in teaching and other areas of activity.

4. *The regional dimension*

As in other areas of institutional activity there is an important regional dimension. For example, Kingston University has been very successful in involving small and medium enterprises (SMEs) in its collaborative SD work with the local and sub-regional community, securing a basis for project work and some interesting placements. Indeed some of these SMEs, particularly around the creative arts, are run by Kingston alumni.

The University of Wolverhampton, on the other hand, whilst having a similar mission to Kingston, operates in a regional economy where historically many of the SMEs were in supply chain arrangements in manufacturing sectors which are no

more. The University reports that the remaining SMEs are hard pressed, and there is therefore comparatively little opportunity to involve SMEs in SD work.

This has proportionately limited the scope for Wolverhampton to build strong SD links to the community.

5. *The need to 'buy' SD*

Across the case-studies it was emphasised that university staff (and other stakeholders) need to buy in to SD; it cannot be sold to them. A comparison was drawn in one consultation with *enterprise*. Whilst many see a clear role for enterprise in HE institutions it was noted that the Enterprise in Higher Education Initiative (EHEI), a major well-funded intervention, was widely seen as having been unsuccessful in embedding enterprise – despite the existence of funding on a scale unlikely to be repeated – in part because it was seen (not necessarily correctly) as trying to 'sell' enterprise. Perception, it must be concluded, is all. This has obvious implications for how SD is promoted in HEIs.

6. *(Even when led from the top) SD-related change needs to be based on enabling bottom-up ownership and development*

This was a consistent observation across the case-studies, with all institutions taking a broadly enabling approach to the development of SD.

7. *Student involvement in SD*

It was clear from the proxy sources consulted that a significant minority of students are highly committed to SD. This commitment is often strongly values-driven and in some cases part of the attractiveness of SD appears also to be that it is seen as partly counter-cultural.

Similarly the case study HEIs have often been pleasantly surprised at the number of students wanting to take courses with an SD dimension and have noted high levels of in-course commitment. Student involvement in community SD placements has also been strong in some institutions.

But we were advised in the case study institutions that these students represent a minority. It has not emerged from the case studies, contrary to the research team's prior expectations, that the student body as yet represents a key stakeholder group in influencing institutional SD policy and development, though unions and guilds are playing an increasingly important role. This finding may not be representative of the majority of the sector as a whole and the issue will certainly benefit from further research (see also paragraph 5.7.2)

The majority of students (the often less vocal majority) are seen by consultees as predominantly focused on graduating and obtaining employment.

Our studies did not, as yet, reveal any such interest, beyond a widespread support for procurement of fair-trade tea and coffee.

8. *The pivotal role of one or two people*

Given that the development of SD in the case study institutions has been predominantly bottom-up, starting typically with a number of enthusiasts, it might be expected that responsibility for growth of SD activity could be traced back to a relatively small number of individuals. In fact it has emerged from most of the case-

studies undertaken that very often literally *one person* (or sometimes two) has played an early SD leadership role.

In one of our case-studies that person was now a Pro-Vice Chancellor (PVC), but as other cases have revealed it is typically the standing of the person in the academic community, and his or her ability to influence colleagues whose respect he or she has, that matters most, rather than any senior managerial title as such – although clearly an individual might have both.

This is an important observation since it might have been thought that PVC-level sponsorship was necessary for effective SD growth, as it has been for the take-off of many other major initiatives in higher education. The case-studies reveal that this is not the case, although as discussed below it may be a pre-requisite for full embedding. This further emphasises the grass-roots origins of much of the growth in SD activity.

9. *SD as a lever for cultural change*

The final observation is potentially particularly exciting. One of the research aims of this review is to identify levers which have been used, and may in future be used, to stimulate the growth of SD activity in HE institutions.

What has emerged from the case-studies, however, particularly those conducted at Birmingham and Cambridge, is the extent to which, with its emphasis on cross- and inter-disciplinary working, SD growth has *itself* been an important lever for cultural change, helping break down traditional silos (even, in some cases, where these have been hitherto reinforced as a result of assiduous application of devolved budgeting).

## 6.3 PHASES OF ADOPTION OF CHANGE

This section of the chapter presents a model for organisational change specifically developed for the purposes of this research. The model draws on experience of modelling change elsewhere, but in particular it also reflects the rich body of evidence emerging from the four case-studies.
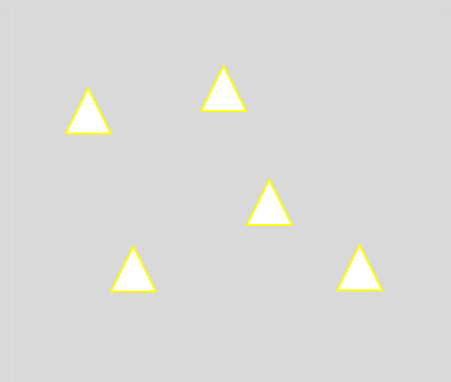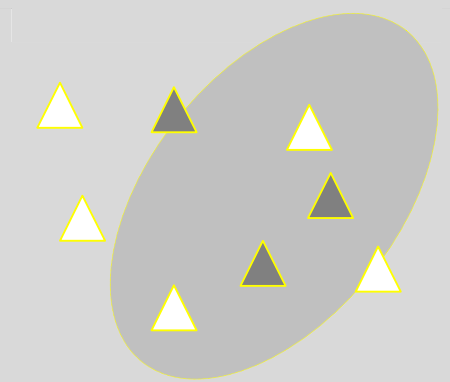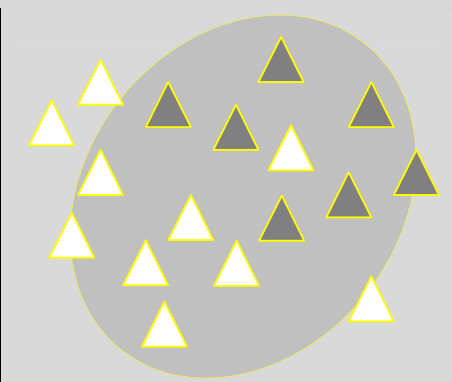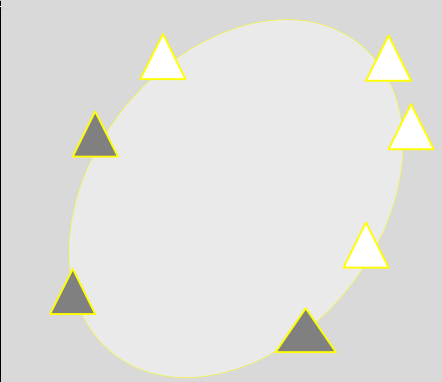
The model is presented in the graphic overleaf, which sets out four key phases of SD adoption:

- grass roots enthusiasts
- early adopters
- getting really serious
- full commitment.

In practice, of course, no institution falls neatly into a single phase, and this was particularly true of the case-study institutions – which were for the most part at (differing) transition points from one phase to another.

The graphic also incorporates a summary of the key findings, matched against the model. These are then discussed further in the following section.

## Four phases of SD adoption

| Phase one | Phase two | Phase three | Phase four |
|---|---|---|---|
|  |  |  |  |
| **Grass roots enthusiasts** | **Early adopters** | **Getting really serious** | **Full commitment** |
| ▪ Confined to individual enthusiasts and small teams, with a bottom-up approach<br>▪ Values-driven<br>▪ Activity principally in teaching and research<br>▪ Often unaware of one another's work, and therefore some duplication of effort<br>▪ Links more likely with other HEIs than internally<br>▪ Sometimes element of counter-culture | ▪ Senior management involvement (often limited), sometimes on a partly opportunistic basis<br>▪ (Enabling) Steering group set up<br>▪ Largely still (enabled) bottom-up<br>▪ Statement on SD drafted for HEI's next strategic plan<br>▪ Formulation of initial policy and procedure on SD<br>▪ Staff invited to buy SD, not sold it<br>▪ Setting of first and sometimes quite modest targets, often for baselining purposes, and without clear or compelling sanctions<br>▪ SD has little organisational impact and no operational impact<br>▪ VC has overall 'watching brief' | ▪ Significant involvement of senior management by the end of this phase, resulting in a senior sponsor with real ownership<br>▪ VC/governance level active interest<br>▪ Steering group taking firmer directive role (yet still collegial where possible)<br>▪ Small team of SD change agents in place, often at least partly virtual<br>▪ SD playing a significant role in both teaching and research across the HEI, and full SD estates policy and practice in operation<br>▪ SD beginning to be joined-up<br>▪ Extensive use of quantified targets, with an effective system of sanctions<br>▪ SD becoming embedded in HR | ▪ VC/governance level ownership<br>▪ Values-driven/woven into fabric<br>▪ HEI is an SD institution in the same way that it might be a research-intensive or widening participation HEI<br>▪ SD is therefore captured in mission and in five-year strategy, and is organisationally and operationally embedded<br>▪ Most activity is sufficiently 'on message' that it is integrated, but there are some who fall at least partly outside the cultural circle<br>▪ Joined-up approach where the 'talk' in research and teaching is where possible 'walked' in estates practice<br>▪ Virtuous circle of enhancement |

## 6.4 FINDINGS

This section discusses further the findings summarised in the previous graphic and in so doing illustrates in some detail the model which under-pins them. This and subsequent sections on barriers, drivers and enablers have two over-riding purposes, for two different audiences:

- *for institutions* they provide a critical overview, particularly for the benefit of institutions at an early stage of SD adoption. The model discussed is descriptive rather than prescriptive;
- *for policy makers* they provide the detailed understanding of the life-cycle of SD adoption and of the potential leverage points, which is necessary in order to undertake an effective review of policy in this area.

The findings are also summarised on an institutional basis in Appendices 6. Of the four case-studies all are at least at, or in transition to, phase two, and one or two are transitioning into phase three. None are as yet at phase four.

### 6.4.1 Phase one: Grass roots enthusiasts

This all-important first phase was clearly characterised across all four case-studies as driven by enthusiasts and small teams of academics, with an exclusively bottom-up approach to SD centred on teaching and research. For some academics part of the attraction of being involved at this stage was that they were working outside the normal culture; all were highly values-driven.

It was clear that academics were often unaware of other SD work in the same institution. There was therefore some considerable duplication of effort and few opportunities to learn from others, save perhaps colleagues at other institutions.

### 6.4.2 Phase two: Early adopters

In this second phase institutions begin as full organisations to engage with the SD agenda. The force for change remains largely enabled bottom-up, with senior management involvement still limited (cf earlier remarks in observation 8), and often partly opportunistic. Typically in this phase the Vice-Chancellor (VC) or Head of Institution adopts an overall 'watching brief'.

The 'early adopters' phase sees a first round formalisation of arrangements to start to embed SD. It is therefore at this stage that a steering group (SG) is normally set up, with the chair typically an interested Dean, Head of Human Resource or Registrar.

The SG has a predominantly enabling role, joining up the grass roots enthusiasts where useful and appropriate (as illustrated graphically in the model by the circle capturing most of the small white triangles carried over from phase one). The SG also has a role in encouraging and enabling new activity (represented by dark triangles). As the graphic illustrates some will resist what they see as an unnecessary move to formalisation, and these individuals or teams are represented by the triangles wholly or partly outside the circle in phase two.

The SG in this phase typically (in sequence) drafts an institutional position paper on SD, produces a statement on SD for incorporation in the next strategic plan, and provides a

formulation of initial SD policy and procedure. The SG may also – at this point in consultation with senior management – begin to set some often quite modest targets, frequently for baselining purposes, and without clear or compelling sanctions, in the general area of estates management.

This is a phase of modest and restrained 'institutionalisation' of SD for two reasons: a proper concern not to be seen to be 'selling' SD, on the one hand; and, on the other, a caution at this still relatively early stage about the implications of embracing SD too rapidly.

This phase has, in consequence, little organisational impact and virtually no operational impact, though it does potentially significantly advance the overall establishment of SD in the institution.

### 6.4.3    Phase three: Getting really serious

In contrast to the previous phase this is a stage of adoption typically characterised by significant organisational and operational changes to further the cause of SD and, as illustrated in the graphic of the model, to bring most activities decisively within an institutional sphere of influence.

By the end of this third phase, but sometimes only by then, there is typically significant involvement of senior management, resulting in a senior sponsor with real ownership. Often the individual concerned has been upwardly managed to this end through much of the third phase by the steering group, or specific influential and politically astute individuals. The end of this phase also results in an active interest on the part of the VC or Head of Institution and on the part of the governing body.

Whilst continuing to play a broadly enabling role with regard to teaching and research the steering group is seen to be taking a firmer, more directive role (still collegial where possible), with respect to estates management and wider institutional interests. This phase therefore sees the introduction of a full SD estates policy and practice, and the extensive use of quantified targets, with an effective system of monitoring and the (still somewhat cautious) use of sanctions. There is still a tendency, however, to favour a self-monitoring system, based on getting operating units to see that 'properly understood' it is in their own best interests to fall in line.

This phase also typically sees the assembling of a small team of SD change agents, under the initial direction of the chair of the steering group, with a brief to champion the cause of SD in a joined-up way across teaching, research and estates management (broadly construed). Rightly anxious to avoid creating stand-alone units, differentiated from the main institutional business, the chair will often ensure that the team is at least partly virtual, with agents remaining where they can most readily influence colleagues.

Finally SD starts to become embedded in core management support functions. For example in the area of Human Resource, SD starts to feature in job descriptions and in the recruitment process.

### 6.4.4    Phase four: Full commitment

This final phase sees SD as absolutely integral to the institution, so that as the graphic illustrates most SD-related activities fall (as it were invisibly) under a broad institutional umbrella, and are relatively seamlessly integrated into the overall business of the university or college. There is full ownership by the VC or Head of Institution and by the governing body. By this stage the HEI just *is* an SD institution in the same way that it might be a research-intensive institution, or one committed in all that it does to widening participation.

Whilst the institution will as the occasion arises operate opportunistically, its approach to SD is likely to be significantly values driven overall. SD is captured prominently in the institution's mission and in its five-year strategy, and is organisationally and operationally fully embedded, although a small number of those who are actively involved will remain, by personal choice, at least partly outside the overall cultural circle.

There is a strikingly joined-up approach internally, where the 'talk' in research and teaching is wherever possible 'walked' in estates management practice. The institution is also effectively and productively joined up with other HE institutions with similar levels of commitment, both nationally and internationally, and with a range of other stakeholders in the community and business – to benchmark, share good practice, lobby and act as a united pressure group.

SD is fully embedded in core management support functions. For example in the area of Human Resource, SD features in job advertisements, in job descriptions, recruitment, induction, staff development, appraisal, and rewards and promotions practice.

Finally there is a virtuous circle of enhancement, with SD activity being constantly refreshed and renewed.

### 6.5    BARRIERS

There are currently considerable barriers, and/or perceived barriers, to further adoption of SD. For the purpose of this review perceived barriers are real barriers.

The table below summarises the principal barriers which have emerged through the consultation process for the case-studies. As often happens when there is a range of consultees, not all barriers are universal across the sample: one person's barrier is another's enabler. As discussed below this was true, for example, with respect to the role of professional bodies.

Whilst one or two barriers are arguably within the control of individual institutions, the majority can only be overcome with outside intervention.

| Barrier | Comment |
|---|---|
| *RAE* | All four universities consulted believe that SD research typically benefits from a cross-disciplinary or multi-disciplinary approach – a point that has been made elsewhere in this review.<br><br>Whilst the two most research intensive universities both saw the RAE exercise, even with recent modifications, as certainly failing to encourage such cross- and multi-disciplinary research, there were differing views across the two institutions as to the extent to which the RAE ultimately represented a barrier.<br><br>A leading researcher at one of the universities maintained that he had held back from getting more involved in SD research, since there would be a three-year lead time before he could start to produce publishable outputs, and these would then be measured against an insufficiently flexible system based on unhelpful units of assessment.<br><br>His counterpart at the other university took the view that whilst the RAE was scarcely enabling of research across discipline boundaries his university had found a way of living with the RAE and it was not therefore an actual barrier as such. |
| *The role of professional bodies* | For some consultees professional bodies acted as a barrier. One reason given was a perceived conservatism on the part of these bodies. A second was that the sheer scale and scope of these bodies' professional requirements left little time for innovation around SD.<br><br>Given the number of professional bodies in existence – as discussed later – securing their buy-in to the SD agenda is of the greatest importance.<br><br>It should be noted, however, that engineering might be one exception in relation to professional bodies (as discussed in the Cambridge case study). |
| *Institutions on multiple sites* | This was reported as a serious barrier. *Culturally* it is more difficult to build initial support for SD across dispersed academic communities, and *practically* there are perceived to be numerous problems:<br><br><ul><li>the sort of collaborative research which crosses conventional academic boundaries is held by some to be more difficult to undertake in a multi-site institution – not because academics necessarily need physical proximity to conduct their research, but because they need to belong to a relatively cohesive research community in order to build the very relations which are a pre-requisite for successful collaboration;</li><li>analogous arguments hold for teaching – with the added complication that students, as well as academics, may not always be in the right place; and thirdly</li><li>there is a particular irony that stimulating an interest in SD teaching in a multi-site institution can potentially have adverse environmental impacts in direct proportion to the success of the teaching initiative, since it can lead to much additional bussing and/or car journeys.</li></ul> |

| Barrier | Comment |
|---|---|
| *Age and vintage of estate* | Several of the case-study institutions reported that a particular barrier to a more SD-friendly approach to estates management was the fact that much of their HEI's buildings' stock was coming up for renewal and replacement at the same time. The sheer scale and scope of the challenge – further exacerbated by the fact that many of these buildings were of a vintage where deterioration, once set in, was rapid – meant that there was an inevitable pragmatic emphasis on dealing with immediate estate problems, rather than including potentially more SD-friendly alternatives in the options appraisal. |
| *The consequences of highly devolved budgeting* | Across the sector as a whole, as across the case-study institutions, there has been a sustained move over some years towards devolving budgets. This has many benefits, not least in terms of incentivising smaller units to operate as strategic business units, but it was widely reported as a barrier to the sort of ready collaboration required for SD research – and in particular SD teaching. 'SD modules', or modules with a significant SD element, are often offered as second, third or (depending on the degree length) fourth year options and deans in particular were reported to be reluctant to lose the unit funding which they would otherwise receive to their own budgets.<br><br>This is one barrier which can potentially be overcome at institutional level, but the size of the challenge is considerable, and deans or other responsible parties will need to be convinced – especially given all the other pressures and demands on their operating unit – that the cost-benefit analysis stacks up. Currently few are. |
| *Current procurement practice* | For most of the consultee institutions current procurement practice represents a further barrier. HEIs struggle to hold a strong corporate line on procurement and typically many purchases are made which do not conform to espoused policy and practice. The perceived or assumed right to procure by personal or unit choice remains one of the touchstones of higher education.<br><br>This non-conforming behaviour raises many problems for the SD cause. Two examples:<br><br>• *equipment and consumables* – where there is a policy to procure SD-friendly equipment and consumables institutions report that they currently struggle to prevent purchases based on price when equipment which is not 'A' rated is less expensive, or less when environmentally friendly consumables are cheaper;<br>• *travel* – this is an area where an SD approach has the potential to have a very significant impact, given the relevance of travel to individual institutions' activities and budgets. It is also perhaps the single area where the right to personal choice is most staunchly defended. |
| *Poor ROI* | Case-study consultees regularly reported that the payback time for SD-friendly estates development, in the absence of significant additional financial incentives from third-parties, often meant that when projects were appraised they were rejected as providing an unacceptable rate of return on investment. |

## 6.6     DRIVERS

This section, by contrast, summarises the predominantly institution-internal positive forces for the adoption of SD, as they have emerged from the case-studies. The enabling role of stakeholders is deliberately separated out in the next section, with the result that the table below has few entries. This genuinely reflects the fact that in many cases the purely internal factors positively influencing the adoption of SD are, in essence, relatively simply stated.

| Drivers | Comment |
|---|---|
| *Key individual(s)* | For the institutions consulted this was perhaps the single most important driver in phases one and two, and often remained important subsequently.<br><br>Historically the role of this individual or individuals has, almost by definition, been unplanned. It might, of course, be possible for an institution now to plan to grow SD *ab initio* and to poach a key individual to kick-start the process, but the history of SD adoption in the institutions consulted often seems to have had a strong element of 'the right person in the right place at the right time' which it would not necessarily be easy to replicate in a more self-consciously planned initiative.<br><br>Such an attempt would also run counter to the key observation captured in the model offered in this report – namely that the early phases of successful SD adoption to-date have been uniquely characterised by organic, grass-roots, unplanned, development. |
| *Existing base of relevant cross-disciplinary interests* | It has been stressed at various points in this report that there is a crucial multi-disciplinary dimension to SD teaching and research. It is therefore relatively unsurprising that an existing institutional base of such interests should be a powerful driver. |
| *Presence of a specialist institution* | Finally, the prior existence of a specialist SD delivery unit has proved an important driver in some cases. Wolverhampton, for example, has long had its internationally recognised Centre for International Development and Training (CIDT), which has been a niche player in the SD space within the university for many years. As HEIs develop a more institutional approach to SD such units can have an important catalyst role in advancing SD adoption. |

## 6.7     STAKEHOLDER-SPECIFIC ENABLERS

It was decided to separate out stakeholder-specific enablers from other drivers since the former are potentially more amenable to positive outside influence and therefore might provide important leverage points for future SD policy delivery. The table below accordingly summarises the interesting role of external stakeholders as enablers of SD adoption.

| Enablers | Comment |
|---|---|
| *Professional bodies* | Whilst some consultees identified professional bodies as presently constituting a clear barrier to SD, this has not been a uniform finding. Cambridge, for example, has found that it has been able to work very much in partnership with the Royal Academy of Engineering to forward the SD agenda in engineering teaching and research, with the academy even providing funding for key professorial appointments.<br><br>This finding highlights the absolute importance of involving the professional bodies in future SD policy and practice. |
| *Research councils* | Consultees saw an increasingly important enabling role for the research councils, especially because of their ability to fund major collaborative research programmes as well as individual projects. |
| *Local authorities* | All four case-study institutions have developed (variably strong) relationships with their local authorities. Given the increasing role of local authorities as delivery agents of central Government policy on SD, their role as key players and enablers in the community, and their specific responsibilities regarding such matters as planning permissions, it is unsurprising that they should feature in this table. |
| *Professional advisers* | Professional advisory bodies such as the Regional Development Agencies and The Carbon Trust are also recognised by case-study institutions as having the potential to play an increasingly strong role over the next few years as SD enablers. |
| *Regional higher education associations* | Consultees saw these associations as able to play a significant enabling role in SD adoption: promoting the cause, sharing good practice, and serving as an effective lobbying agency or even broker. London Higher, for example, has now established a committee-level responsibility for SD. |
| *Central government* | As the primary source of funding for SD adoption central government is recognised by consultees as a crucial stakeholder and key enabler. |

## 6.8 POTENTIAL IMPLICATIONS FOR HEFCE

The case-studies have identified three broad areas in particular where HEFCE might wish to consider itself playing an enabling role, namely in:

- addressing or helping address, where practicable, the current barriers to SD adoption reported;
- helping enable even more effective working with key stakeholders, particularly Research Councils and professional bodies;
- securing funding for SD-rich estates renewal, refurbishment and new-build.

Intervention in these areas would most certainly aid and might even accelerate the type of organic growth of SD adoption identified quite clearly in several of the case-study write-ups, which follow in the Appendix.

It is, however, also worth reflecting that with respect to SD adoption the centre of gravity of the four institutions studied lies, on average, close to the mid-point of the model for SD-related organisational change presented in this report. If these institutions are representative of the sector, then it is our view that, if there is to be anything resembling a step-change in SD adoption across the sector, so that over the next five

years significant numbers of HEIs reach phase three, and a select group phase four of the model, consideration will need to be given to supplementing HEIs' own efforts with a more proactive approach from HEFCE, as discussed in the next and final chapter.

# 7     CONCLUSIONS AND RECOMMENDATIONS

## 7.1     GENERAL CONCLUSIONS AND RECOMMENDATIONS

As noted at the beginning of this report, this Strategic Review had the following aims:

- Establish a baseline of sustainable development in the sector, against which HEFCE can measure progress and publicise what the sector is already doing (A1)
- Learn from institutions' experience about the conditions for embedding sustainable development, including barriers and drivers (A2)
- Identify key issues which present opportunities and challenges for the sector and investigate possible policy responses (A3)
- Evaluate HEFCE's approach and refine HEFCE's priorities (A4)
- Raise the profile of sustainable development in the sector (A5).

This concluding section of the review assesses the nature and utility of the baseline that has been established (A1) and comments on and discusses the lessons across the other objectives that have arisen from the research that has been carried out. Each section of the review has provided its own specific conclusions and recommendations in respect of each of the objectives, which will not be repeated here. The purpose of this section is to draw together the conclusions and recommendations that have emerged from the Review as a whole.

### 7.1.1     A baseline of sustainable development (A1)

The notion of a baseline implies a measurable state against which subsequent developments can be compared. It is crucial that the state to be measured is adequately and consistently defined. Unfortunately it has become clear through the project that sustainable development (SD) lacks an adequate and consistent definition in the HE sector. This is probably inevitable in respect of corporate and estates activities given that these cover a wide range of activities. Here the 'definition' has been constructed and much of it has been codified within a set of questions asked of HEIs.

The definition of SD which was used in the project in regard to teaching and research was that the activity being analysed should *contain a significant element related to either or both of the natural environment and natural resources, PLUS a significant element related to either or both of economic or social issues'*. This definition did not prove explicitly or overtly controversial, but it was clear from some of the returns in both teaching and research that the respondents were defining SD in their own way, which in some cases differed from the above. The baseline that has been generated is therefore indicative rather than definitive and in any case could not be comprehensive given the resources of the project. There are several strong conclusions for HEFCE to emerge from this:

1. If HEFCE wants a definitive baseline for SD it will need to adopt, and be prepared to enforce, a definition of SD that has measurable indicators. The definition adopted in the project would serve the purpose, and was widely

accepted, but did not command universal support. It is unlikely that any other definition would either, so any attempt to enforce an adopted definition would be controversial and might be resisted.

2. It would probably be easier, and less contested, for an external body like HEFCE to define SD in respect of a research baseline (with reference to any or all of the funding inputs, the research outputs or the RAE process) than in respect of teaching, because research areas are often specified *a priori* in some detail, while HEI curricula are much more the creation of those who are going to teach them.

3. With reference to HEFCE's KPT to revisit the SD baseline in 2011, this is certainly both feasible and desirable. For teaching we have proposed that the submitted database be regularly updated by an approach to each institution. HEFCE might also wish to commission its update by a repeat of the search process. This would be much easier than creating the database in the first place. Though such a process HEFCE would get a picture of:

   a. The number of relevant courses (modules and units) (this is a very imperfect benchmark, but is not meaningless!)
   b. The number of institutions engaged
   c. The degree of engagement of each institution
   d. The spread of courses across disciplines
   e. The incidence of interdisciplinarity

4. For SD research a revisitation of the baseline in 2011 would reveal changes in each of the four components of the baseline, namely: where SD research is being carried out, the extent of funding and staff and student engagement in it; the number of submissions of SD research to RAE 2008; and the number of citations of SD research in the major relevant journals. As noted above, the last two components would indicate the trend in SD research over the period, rather than its absolute extent, because of the lack of a universally agreed definition of SD research.

5. For corporate and estates management, there is a case for an annual or two-yearly revisitation. The EMS are collected annually and the collection of other indicators and self-assessment of progress would provide a broad picture and offer the opportunity to understand the relationships between progress and the ways that SD is being managed and supported.

### 7.1.2 Experience in embedding sustainable development (A2)

There is no question that institutions which have adopted an institution-wide commitment to SD (however they define it) generate more activity, and more joined-up activity, than those which have not. The barriers to take up of SD are well rehearsed and evident throughout the different sections of this review, but essentially amount to lack of interest in SD; silo or mono-disciplinary thinking and institutional organisation, which militate against the cross-departmental activity that is essential for SD; and lack of incentives or priority to engage in SD.

Increased public awareness in SD has reduced the first of these factors, but the others are still well entrenched in academic thinking and HEI practice. Those institutions that are determined to remove these barriers through systematic, institution-wide action find that, over time, they can make progress in doing so, and there is much evidence in this review of their success. But they remain the exception rather than the rule, and the external incentives are not yet adequate to significantly accelerate the process of persuading more institutions to join the relatively small number that have so far set off down this path.

### 7.1.3    Key challenges and opportunities for SD in HEIs (A3)

The current opportunities for SD in HEIs are clear and are similar to those facing other public sector organisations:

- Government is increasingly committed to SD (in rhetoric at least) which should encourage those HEIs who are in any case inclined to take it more seriously
- Key environmental factors (energy, water, waste disposal) are more expensive than they were, which gives greater incentives for their careful management

The challenges are equally clear:

- The extent to which HEIs have a clear conception of what SD is, and how it should be pursued, varies widely across the sector
- The traditional disciplinary organisation of HEIs militates against SD thinking and activity
- HEIs have strong existing priorities in respect of teaching and research which are not necessarily related to SD
- Traditional estates management tends not to give systematic attention to the management of natural resources, even when it becomes economic. There is no evidence that estates management in HEIs is any different in this respect
- Change requires commitment and resources, which may be scarce, and often involves disruption, which is resisted.

### 7.1.4    HEFCE's approach and priorities (A4)

There is little doubt that, if it is conceptualised as the integration of thought and action across environmental, economic and social concerns, there is more SD activity in HEIs than there was twenty years ago, and there is some slight evidence in this Review that it is still increasing (although lack of historical data precludes any firm conclusions about trends of this kind). This is in line with public perceptions and priorities generally. So far HEFCE's approach seems to have been to engage in low-key initiatives that raise the profile of the issues in the sector, and encourage it to respond, without requiring much in terms of commitment or engagement.

This review has revealed a distinction between those (relatively few) HEIs, or SD-active individuals within them, who feel that they should *drive* the SD agenda in or through their institution, and those who are content to respond to it. HEFCE's approach to date seems to have been to seek to facilitate, rather than drive, SD across the sector, and it will need to decide whether this is still the appropriate choice in a context of perhaps greater social and political commitment to SD. If HEFCE decides to continue to focus on facilitating change within the sector, it then faces a further choice as to whether it should seek, as now, to do so across the sector as a whole, or whether to concentrate on facilitating the work of HEIs that are seeking to drive change, hoping thereby to encourage the uptake of SD throughout the sector, or try to combine the two approaches.

If HEFCE wishes to be more proactive, both in terms of requiring minimum standards of engagement with SD from HEIs and of giving more support to SD leaders among HEIs, this review gives some clear guidance on the kinds of changes that will be required, although they will obviously have to be thought through in far more detail than is possible here.

Some examples are:

- HEIs: making it a requirement for HEIs to publish an SD strategy and show how it is being implemented (reporting on teaching, research, estates management).
- Research: establishing a high-level working group to think through how to make research assessment genuinely supportive of SD; working to convince Research Councils to sustain and increase funding for SD research.
- Teaching: making a concerted, high-level effort to devise a pedagogy that promotes sustainable development literacy, enabling all students to understand the context and implications of the debate about sustainable development, and then providing adequate incentives for that pedagogy to be taken up.
- Estates management: adopting sectoral targets for those elements of estates management which are already subject to reporting requirements, and introduce new reporting requirements and targets for whose which are not. The recent decision by HEFCE's Welsh equivalent, HEFCW, to introduce sustainable buildings standards for all new-build construction projects[8] provides a valuable example of how this may be pursued. Sectoral targets will be a necessary first step if HEFCE wishes to follow up the Chief Scientific Adviser's suggestion that the higher education sector should seek to achieve early the government's targets on carbon reduction.
- In general, if HEFCE wishes to obtain a comprehensive picture of SD activity in the sector and to be able to require the SD sector as a whole to give a lead on SD, it will need to become more directive than it has been to date, establishing minimum reporting requirements and, in due course, minimum performance requirements, as well as giving incentives and rewards for high performance.

### 7.1.5    Raising the profile of SD in the sector (A5)

SD now has sufficient profile in the sector and in society at large for rhetorical flourishes in its favour, or tokenistic actions, to be more likely to engender scepticism rather than raise its profile further. For HEFCE further to raise the profile of SD in the sector, it will need to engage in substantive action, commit resources, and require HEI responses, along the lines of the suggestions above. This will entail working positively and proactively with those HEIs that have already made institution-wide progress in SD and rewarding them for pushing the boundaries back further while at the same time making it clear to those less engaged that more will be required of them in due course, and eventually levying sanctions on the worst performers.

Given this, there is a case to be made for HEFCE to engage on this course in one, or relatively few, areas, where the consensus about the need for concerted social action is relatively well established, for example in respect of climate change. It is possible that a HEFCE-led, sector-wide programme of action on climate change, devised and executed with those HEIs that are already most advanced in addressing the issue, would engender both the inspiration and experience to tackle other areas and in due course SD as a whole.

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[8] Two principal standards must now be met for all new buildings that are funded from Welsh Assembly Government capital monies either directly or through assembly-sponsored government bodies:
(i) All new buildings must achieve an overall Building Research Establishment Environmental Assessment Method excellent standard upon completion.
(ii) A minimum of 10% of the total value of the building materials used should be derived from recycled and reused content.

However, the review has also highlighted the considerable breadth of important ongoing SD research. Efforts to encourage consolidated action on a particular issue should not be implemented in a way that discourages the undertaking of this equally valuable work.

### 7.1.6 Responses to key research questions

The review suggested the following answers to the key research questions posed by HEFCE at the outset.

*To what extent do the strategic plans and other corporate documents and policies of HEFCE-funded higher education institutions and the various bodies which fund higher education demonstrate an engagement with sustainable development?*

Some HEIs have strategic plans and policies in relation to SD, others do not. There does not seem to be any systematic relationship between the existence of such plans and policies and the strength of SD activity within the HEI. Some HEIs without them are relatively active in relation to SD; some with them are not. However, where an HEI has such a plan or policy and has sought to use it to promote SD activity across the institution, then there is evidence that the activity is more joined up across the institution than in institutions without a plan or policy. Strategic plans and policies relating to SD are therefore useful for promoting SD activity in an HEI, provided that the HEI engages in such promotion in a systematic and energetic way.

*What are the successful processes used to embed engagement with sustainable development issues within institutions?*

SD activity within HEIs is still largely the result of initiatives of individual enthusiasts and champions of SD within the institution. Where the champion is a senior staff member, the activity may be promoted strategically through the institution, such that activities in different areas, disciplines and departments become joined up and seem to be 'embedded' in the institution. However, with few exceptions, this embeddedness remains fragile and the activity remains vulnerable to the departure of the key staff. There is therefore little evidence of generic 'successful processes' which can be used to embed SD engagement within institutions.

*How can institutions' experiences, both positive and negative, of embedding sustainable development be used by policy makers and institutions to encourage others to do likewise?*

There are two preconditions for embedded SD activity in the academic life of an HEI: the provision of finance for SD research; and the encouragement and recognition of interdisciplinary activity in both research and teaching. Much has been learned in recent years about how to stimulate successful interdisciplinary work in teaching and research, but the continuing predominance of disciplinary structures in both HEIs and the RAE presents ongoing challenges in the persuading of academics to make the investment of their time and career in pursuing an interdisciplinary path. HEI funding institutions therefore need to intensify their efforts to encourage interdisciplinary work, and finance SD research; if these efforts are sustained HEIs are likely to respond by changing their structures more fundamentally than at present to embed SD activity more securely within them.

*What are the needs or requirements of different constituencies, in particular students, employers and professions, in relation to the sustainable development agenda?*

Although we did not seek for it explicitly, we found less evidence of demand for SD in HEIs that we had expected. The students in our case study institutions were not demanding SD modules or courses; and no one suggested to us that employers or professional associations were becoming more insistent that graduates from HEIs had either a working or expert knowledge of SD issues. This lack of demand for SD from HEIs is undoubtedly a problem for and a constraint on the intensification of SD activity within HEIs, and those who wish to promote it.

*How can we usefully generate and manage a debate around some of the key sustainable development issues that present opportunities and challenges for the sector?*

There is an active debate about SD issues in many HEIs, undertaken largely by individual enthusiasts and champions in a context that remains lukewarm, if not outright sceptical, in respect of the importance of SD. If HEFCE wishes to take the debate in HEIs further, it needs to go beyond the champions and find ways to engage with the structures that determine how the bulk of HEI activity is carried out, and the sceptics who are still largely in control of these structures. Two important such structures are the Teaching and Learning Committees, which exist in practically all HEIs, but very few of which actively promote SD.

*How can we encourage development of curricula in relation to sustainable development?*

By engaging with Teaching Committees HEFCE can seek to transmit an expectation that HEIs will take SD issues seriously and incorporate them as appropriate in their courses, but all the evidence of this review suggests that HEIs will need to start teaching SD because they want to, and they will decide how it is be incorporated into their curricula. Any attempt by HEFCE to impose a standard approach to SD in curricula would both generate opposition and conflict and be most unlikely to result in effective pedagogy. Our research has shown that there is great diversity in the teaching of SD issues, which is to be welcomed and encouraged as a sign of creativity in approaching these complex issues, and there could be a role for HEFCE in providing a forum within which academics could share, exchange and seek to develop their experiences of SD teaching.

*What can we learn from the experiences of other sectors and countries?*

Our review has drawn heavily on the self-assessment processes of the NHS. There also are undoubtedly some corporate management systems that can be effectively used in HEIs (indeed, some are already effectively using them). However, the core HEI activities of teaching and research make higher education sufficiently different from other sectors to make SD experience in other sectors of limited relevance to HEIs. The same applies to some extent to other countries, where the institutional structures relating to teaching and research differ greatly from those in England. Individual researchers and lecturers involved in SD issues in their teaching and research are clearly significantly engaged in international research (for example, through European Framework programmes), and discuss their teaching courses and modules with colleagues from different countries, sometimes through the conferences of relevant academic societies (e.g. the International Society for Ecological Economics). Perhaps the best way that HEFCE and other UK funding institutions can promote learning from other countries is to ensure that there are adequate resources for UK academics to engage in these cross-country contacts in this way.

*What can we learn from the interface between various elements of this strategic review?*

The case studies suggest that most HEIs, when considering a response to SD issues, focus initially on teaching and research. There is no doubt that it is possible to tackle the estates component of SD separately from teaching and research. There is evidence that, as in many other sectors, few HEIs manage their use of environmental resources even to achieve all cost-neutral resource savings, let alone going well beyond this. Many HEIs will struggle to contribute to public sector targets for the reduction of greenhouse gases and waste generation, without further initiatives from HEFCE, which are likely to need to go beyond exhortation and one-off demonstration measures if they are to be effective. As has been seen in other sectors, organisations need targets and financial incentives (positive or negative) to achieve them if systematic progress in these areas is to be made.

The areas of teaching and research are quite different and it would be quite inappropriate to seek to stimulate SD activity in these areas through targets and incentives to achieve them. SD research is best encouraged through funded research programmes; teaching on SD issues will be introduced by academics because they feel it is a necessary element of the pedagogy of their courses. While our research was not able to show any automatic relationship between SD research and teaching, it is clearly likely that academics engaged in SD research will seek to include insights from it in their teaching, and that academics teaching elements of SD will be more likely to apply for research grants when appropriate calls for research are announced. In this way, SD research programmes are likely to stimulate SD pedagogy, while encouraging more effective SD pedagogy will both help define SD research agendas and ensure more high quality applications to SD research programmes when they are instituted.

# 8    APPENDICES

## 8.1    APPENDICES 3

### Appendix 3a: SD Research Questionnaire

**HEFCE Strategic Review of Sustainable Development in Higher Education**

**Research related to Sustainable Development**

This questionnaire aims to gauge the extent of sustainable development research within your institution. For the purpose of this Strategic Review, sustainable development research is defined as

> *'research which contains a significant element of work related to either or both of the natural environment and natural resources, PLUS a significant element of work related to either or both of economic or social issues'.*

This questionnaire refers **only** to research within your institution that you feel fits this definition, referred to hereafter as 'SD research'. Examples of SD research areas include: ecological economics, the sociology of sustainable consumption, land use and communities, environmental health etc. When considering staff engagement, please include all staff that undertake SD research, regardless of the proportion of their time spent on such research.

1.   Does your institution have any research centres/institutes that engage in SD research?
YES *(please go to Q2.)*
No *(please go to Q4.)*
2.   If yes, please provide the following details for each research centre/institute.

*If you have more than three research centres/institutes, please provide details of the* **three** *that receive the most research funding, and provide just the names of any subsequent groups in the space provided.*

| i. | **Centre / Institute Name** | |
|---|---|---|
| | **Department** | |
| | **Contact name** *(if appropriate)* | |
| | **No. of permanent SD research staff** | |
| | **No. of contract SD research staff** | |
| | **No. of PhD students** | |
| | **No. of discrete SD research projects** *(For the academic year* **2005/2006)** | |
| | **Approximate total level of external SD research funding** *(Total for all projects running during the academic year* **2005/2006)** | < £100,000 ☐<br>£100,000 – £250,000 ☐<br>£250,000 - £500,000 ☐<br>£500,000 - £1 million ☐<br>> £1 million ☐ |
| | **Main source(s) of external SD research funding**<br><br>*(e.g. EU, Research Councils, Gov.)* | |
| | **SD research areas**<br><br>*(see examples above)* | |
| | **2001 RAE Panel(s) through which SD research was submitted** | |
| | **Main journals for publishing SD research** *(max. 5)* | |

| ii. | Centre / Institute Name | |
|---|---|---|
| | Department | |
| | Contact name *(if appropriate)* | |
| | No. of permanent SD research staff | |
| | No. of contract SD research staff | |
| | No. of PhD students | |
| | No. of discrete SD research projects *(For the academic year 2005/2006)* | |
| | Approximate total level of external SD research funding *(Total for all projects running during the academic year 2005/2006)* | < £100,000 ☐<br>£100,000 – £250,000 ☐<br>£250,000 - £500,000 ☐<br>£500,000 - £1 million ☐<br>> £1 million ☐ |
| | Main source(s) of external SD research funding *(e.g. EU, Research Councils, Gov.)* | |
| | SD research areas *(see examples above)* | |
| | 2001 RAE Panel(s) through which SD research was submitted | |
| | Main journals for publishing SD research *(max. 5)* | |

| iii. | Centre / Institute Name | |
|---|---|---|
| | Department | |
| | Contact name *(if appropriate)* | |
| | No. of permanent SD research staff | |
| | No. of contract SD research staff | |
| | No. of PhD students | |
| | No. of discrete SD research projects *(For the academic year 2005/2006)* | |
| | Approximate total level of external SD research funding *(Total for all projects running during the academic year 2005/2006)* | < £100,000 ☐<br>£100,000 – £250,000 ☐<br>£250,000 - £500,000 ☐<br>£500,000 - £1 million ☐<br>> £1 million ☐ |
| | Main source(s) of external SD research funding *(e.g. EU, Research Councils, Gov.)* | |
| | SD research areas *(see examples above)* | |
| | 2001 RAE Panel(s) through which SD research was submitted | |
| | Main journals for publishing SD research *(max. 5)* | |

3.  Other SD research groups/centres engaged in SD research

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……………..……………………………………………………………………………………………………….

4.  If you do not have any research centres, in which *departments* within your institution do researchers receive the most funding to undertake SD research *(please list 3 main departments)*?

| i. | **Department** | |
|---|---|---|
| | **Contact name** *(if appropriate)* | |
| | **No. of permanent SD research staff** | |
| | **No. of contract SD research staff** | |
| | **No. of PhD students** | |
| | **No. of discrete SD research projects** *(For the academic year **2005/2006**)* | |
| | **Approximate total level of external SD research funding** *(Total for all projects running during the academic year **2005/2006**)* | < £100,000 ☐<br>£100,000 – £250,000 ☐<br>£250,000 - £500,000 ☐<br>£500,000 - £1 million ☐<br>> £1 million ☐ |
| | **Main source(s) of external SD research funding** *(e.g. EU, Research Councils, Gov.)* | |
| | **SD research areas** *(see examples above)* | |
| | **2001 RAE Panel(s) through which SD research was submitted** | |
| | **Main journals for publishing SD research** *(max. 5)* | |

| ii. | **Department** | |
|---|---|---|
| | **Contact name** *(if appropriate)* | |
| | **No. of permanent SD research staff** | |
| | **No. of contract SD research staff** | |
| | **No. of PhD students** | |
| | **No. of discrete SD research projects** *(For the academic year **2005/2006**)* | |
| | **Approximate total level of external SD research funding** *(Total for all projects running during the academic year **2005/2006**)* | < £100,000 ☐<br>£100,000 – £250,000 ☐<br>£250,000 - £500,000 ☐<br>£500,000 - £1 million ☐<br>> £1 million ☐ |
| | **Main source(s) of external SD research funding** *(e.g. EU, Research Councils, Gov.)* | |
| | **SD research areas** *(see examples above)* | |
| | **2001 RAE Panel(s) through which SD research was submitted** | |
| | **Main journals for publishing SD research** *(max. 5)* | |

| iii. | **Department** | |
|---|---|---|
| | **Contact name** *(if appropriate)* | |
| | **No. of permanent SD research staff** | |
| | **No. of contract SD research staff** | |
| | **No. of PhD students** | |
| | **No. of discrete SD research projects** *(For the academic year* **2005/2006***)* | |
| | **Approximate total level of external SD research funding** *(Total for all projects running during the academic year* **2005/2006***)* | < £100,000 ☐<br>£100,000 – £250,000 ☐<br>£250,000 - £500,000 ☐<br>£500,000 - £1 million ☐<br>> £1 million ☐ |
| | **Main source(s) of external SD research funding**<br><br>*(e.g. EU, Research Councils, Gov.)* | |
| | **SD research areas**<br><br>*(see examples above)* | |
| | **2001 RAE Panel(s) through which SD research was submitted** | |
| | **Main journals for publishing SD research** *(max. 5)* | |

5. Other departments engaged in SD research

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Please feel free to provide any further information that you feel is relevant to our review of SD research within your institution …………………………………………………………… ………….…………
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Thank you for taking the time to fill in this questionnaire. Please return to Kate McGeevor k.mcgeevor@psi.org.uk as soon as possible.

## Appendix 3b. SD Research Form

**HEFCE Strategic Review of Sustainable Development in Higher Education**

**Research related to Sustainable Development**

The form below aims to gauge the extent of sustainable development research within your research centre/group. For the purpose of this Strategic Review, sustainable development research is defined as

*'research which contains a significant element of work related to either or both of the natural environment and natural resources, PLUS a significant element of work related to either or both of economic or social issues'.*

This questionnaire refers **only** to research within your institution that you feel fits this definition, referred to hereafter as 'SD research'. Examples of SD research areas include: ecological economics, the sociology of sustainable consumption, land use and communities, environmental health etc. When considering staff engagement, please include all staff that undertake SD research, regardless of the proportion of their time spent on such research.

Please provide the following details for your research centre/group.

| i. | **Centre/Institute Name** | |
|---|---|---|
| | **Department** | |
| | **Contact name** *(if appropriate)* | |
| | **No. of permanent SD research staff** | |
| | **No. of contract SD research staff** | |
| | **No. of PhD students** | |
| | **No. of discrete SD research projects** *(For the academic year **2005/2006)** | |
| | **Approximate total level of external SD research funding** *(Total for all projects running during the academic year **2005/2006**)* | < £100,000 ☐<br>£100,000 – £250,000 ☐<br>£250,000 - £500,000 ☐<br>£500,000 - £1 million ☐<br>> £1 million ☐ |
| | **Main source(s) of external SD research funding** *(e.g. EU, Research Councils, Gov.)* | |
| | **SD research areas** *(see examples above)* | |
| | **2001 RAE Panel(s) through which SD research was submitted** | |
| | **Main journals for publishing SD research** *(max. 5)* | |

If there are any other centres or departments within your university whose research activities you feel are relevant to this review, please provide contact details below:

Name of Centre/Institute…………………………………………………………………………
Contact Name and Position…………………………………………………………………………...
Email …………………………………………………………………………………………………….

Please feel free to provide any further information that you feel is relevant to our review of SD research within your centre/group……………………………………………………………………………
………………………………………………………………………………..…………………………
…………………………………………………………………………..…..………………………
…………………………………………………………………………..…………………………
………Thank you for taking the time to provide this information. Please return this completed form to Kate McGeevor (k.mcgeevor@psi.org.uk) as soon as possible

## Appendix 3c. List of all journals cited by HEIs as publishing SD research

| JOURNAL | TOTAL |
| --- | --- |
| Environment and Planning A | 7 |
| Sustainable Development | 5 |
| Energy and Buildings | 4 |
| Urban Studies | 4 |
| Ecological Economics | 4 |
| Journal of International Development | 4 |
| Environmental Science and Technology | 3 |
| Journal of Corporate Citizenship | 3 |
| Journal of Environmental Management | 3 |
| Journal of Industrial Ecology | 3 |
| Local Environment | 3 |
| Science of the Total Environment | 3 |
| Global Environmental Change | 3 |
| Building Research and Information | 2 |
| Area | 2 |
| Business Strategy and the Environment | 2 |
| ICE Proceedings, Construction Materials | 2 |
| Environment and Urbanisation | 2 |
| Engineering Sustainability | 2 |
| Environment and Planning C | 2 |
| Environment and Planning D | 2 |
| Environmental Pollution | 2 |
| Geographical Journal | 2 |
| Hydrological Processes | 2 |
| ICE Proceedings | 2 |
| Journal of Consumer Policy | 2 |
| Journal of Environmental Planning and Management | 2 |
| Journal of Geophysical Research | 2 |
| Journal of Property Research | 2 |
| Nature | 2 |
| Planning Theory and Practice | 2 |
| Public Administration and Development | 2 |
| Regional Studies | 2 |
| Resources, Conservation and Recycling | 2 |
| Science | 2 |
| Solar Energy | 2 |
| Town Planning Review | 2 |
| Waste Management | 2 |
| ACI Materials | 1 |
| Acta Oecologica | 1 |
| Agricultural and Forestry Entomology | 1 |
| Agricultural Ecosystems and Environment | 1 |
| Agriculture Hydrology and Water Quality | 1 |
| Alternatives | 1 |
| Antiquity | 1 |
| Applied Catalysis | 1 |
| Applied Geography | 1 |
| Biocontrol Science and Technology | 1 |
| Biodiversity and Conservation | 1 |
| Biological Conservation | 1 |
| Biomass and Bioenergy | 1 |
| Bio-resource Technology | 1 |
| British Medical Journal | 1 |
| Buildings and Environment | 1 |
| Business Ethics: A European Review | 1 |
| Cement and Concrete Research | 1 |
| Chartered Institute of Water and Environmental Management | 1 |
| Critical Social Policy | 1 |

| JOURNAL | TOTAL |
| --- | --- |
| Cultural Studies | 1 |
| Current Issues in Tourism | 1 |
| Desalination | 1 |
| Design Journal | 1 |
| Development and Change | 1 |
| Development Education Research | 1 |
| Development in Practice | 1 |
| Earth Heritage | 1 |
| Earth Surface Processes and Landforms | 1 |
| Ecology and Society | 1 |
| Economic Botany | 1 |
| Economic Geology | 1 |
| Educational Philosophy and Theory | 1 |
| Educational Review | 1 |
| Educational Studies | 1 |
| Energy and Fuels | 1 |
| Environment and Behaviour | 1 |
| Environment and Development Economics | 1 |
| Environment Development and Sustainability | 1 |
| Environment International | 1 |
| Environmental Education Research | 1 |
| Environmental Geochemistry & Health | 1 |
| Environmental Health Perspectives | 1 |
| Environmental Planning and Management | 1 |
| Environmental Politics | 1 |
| Environmental Science Journals | 1 |
| Environmental Values | 1 |
| Eos | 1 |
| Estuarine Coastal and Shelf Science | 1 |
| Ethics, Place and Environment | 1 |
| Ethology | 1 |
| Eurasian Geography and Economics | 1 |
| European Journal of Soil Science | 1 |
| European Planning Studies | 1 |
| FAO Fisheries Technical Papers | 1 |
| General Management International | 1 |
| Geoforum | 1 |
| Geology Today | 1 |
| Geomorphology | 1 |
| Geophysics Research Letters | 1 |
| Geoscientist | 1 |
| Greener Management International | 1 |
| Health Policy | 1 |
| Housing Studies | 1 |
| Hydrology and Earth System Sciences | 1 |
| IEEE | 1 |
| Impact Factor > 2.0 | 1 |
| International Development | 1 |
| International EIA Review | 1 |
| International Journal of Agricultural Sustainability. | 1 |
| International Journal of Consumer Studies | 1 |
| International Journal of Environment and Sustainable Development | 1 |
| International Journal of Heritage Studies | 1 |
| International Journal of LCA | 1 |
| International Journal of Management Practice | 1 |
| International Journal of Sustainable Development & Planning | 1 |
| International Journal of Urban and Regional Research | 1 |
| International Relations | 1 |
| IUCN | 1 |

| JOURNAL | TOTAL |
|---|---|
| Journal for Industrial Ecology | 1 |
| Journal for Sustainable Product Design (up until 2006) | 1 |
| Journal of Applied Ecology. | 1 |
| Journal of Architectural Conservation | 1 |
| Journal of Business and Economics | 1 |
| Journal of Chemical Technology & Biotechnology | 1 |
| Journal of Cleaner Production | 1 |
| Journal of Colloid and Interface Science | 1 |
| Journal of Consumer Culture | 1 |
| Journal of Developing Societies | 1 |
| Journal of Development Studies | 1 |
| Journal of Earth Surface Processes and Land Forms | 1 |
| Journal of Economic Geography | 1 |
| Journal of Environment and Development | 1 |
| Journal of Environmental Planning | 1 |
| Journal of Environmental Psychology | 1 |
| Journal of Environmental Radioactivity | 1 |
| Journal of Ethnopharmacology | 1 |
| Journal of Geography in Higher Education | 1 |
| Journal of Hydrology | 1 |
| Journal of Law and Society | 1 |
| Journal of Philosophy of Education | 1 |
| Journal of Primary Care Research and Development | 1 |
| Journal of Public Mental Health | 1 |
| Journal of Remote Sensing and the Environment | 1 |
| Journal of Risk Research | 1 |
| Journal of Rural Studies | 1 |
| Journal of Social Issues | 1 |
| Journal of Solid Waste Technology and Management | 1 |
| Journal of South Asian Development (current) | 1 |
| Journal of Strategic Change | 1 |
| Journal of Sustainable Tourism | 1 |
| Journal of the Electrochemical Society | 1 |
| Journal of the Institute for Historic Building Conservation | 1 |
| Journal of the Society of American Civil Engineers: | 1 |
| Land Use Policy | 1 |
| Marine Ecology Progress Series | 1 |
| Measurement Science & Technology | 1 |
| Mental Health Review | 1 |
| Mountbatten Journal of Legal Studies | 1 |
| Natural Disasters | 1 |
| Natural Resources Forum | 1 |
| Capitalism Nature Socialism | 1 |
| Organization Studies | 1 |
| Political Studies Journal | 1 |
| Proceedings of ASCE | 1 |
| Progress in Development Studies | 1 |
| Protosociology | 1 |
| Public Health | 1 |
| Publication in a research monograph | 1 |
| Quarterly Journal of Engineering Geology and Hydrogeology | 1 |
| Radical Philosophy | 1 |
| Renewable Energy | 1 |
| RHUL | 1 |
| Risk Analysis | 1 |

| JOURNAL | TOTAL |
|---|---|
| SDRN Journal | 1 |
| Sociologia Ruralis | 1 |
| Soil Biology / Biochem | 1 |
| Soil Use and Management | 1 |
| Solar Energy Materials and Solar Cells | 1 |
| Studies in Conservation | 1 |
| Sustainable Energy | 1 |
| Technology Analysis and Strategic Management | 1 |
| The Geographical Journal | 1 |
| Third World Quarternary | 1 |
| Toxicological Sciences | 1 |
| Transactions of the Institute of British Geographers | 1 |
| Transport Reviews | 1 |
| Transportation Research Part F | 1 |
| UNESCO | 1 |
| Urban Water | 1 |
| Volcanology | 1 |
| Waste and Resource Management | 1 |
| Water International | 1 |
| Water Research | 1 |
| World Development | 1 |
| World Futures | 1 |
| WWF | 1 |
| Property Management | 1 |
| Journal Environmental Law | 1 |
| Statute Law Review | 1 |
| Journal of Public Economics | 1 |
| International Journal of Sociology and Social Policy | 1 |
| Climatic Change | 1 |
| Energy Policy | 1 |
| Philosophical Transactions of the Royal Society | 1 |
| Design Studies Journal | 1 |
| Design Management Review | 1 |
| Experimental and Applied Acarology | 1 |
| Building Services Engineering Research and Technology | 1 |
| International Journal of Ventilation | 1 |
| International Development Planning Review | 1 |
| Habitat International | 1 |

**Appendix 3d. List of all 2001 RAE panels to which SD research submitted**

| Units of Assessment | Total |
|---|---|
| 35. Geography | 19 |
| 33. Built Environment | 9 |
| 28. Civil Engineering | 7 |
| 20. Earth Sciences | 5 |
| 30. Mechanical, Aeronautical and Manufacturing Engineering | 5 |
| 43. Business and Management Studies | 5 |
| 34. Town and Country Planning | 5 |
| 15. Agriculture | 4 |
| 17. Veterinary Science | 4 |
| 21. Environmental Sciences | 4 |
| 26. General Engineering | 4 |
| 31. Mineral and Mining Engineering | 4 |
| 16. Food Science and Technology | 4 |
| 38. Economics and Econometrics | 3 |
| 9. Pharmacy | 2 |
| 14. Biological Sciences | 2 |
| 27. Chemical Engineering | 2 |
| 29. Electrical and Electronic Engineering | 2 |
| 39. Politics and International Studies | 2 |
| 42. Sociology | 2 |
| 64. Art and Design | 2 |
| 13. Psychology | 1 |
| 18. Chemistry | 1 |
| 32. Metallurgy and Materials | 1 |
| 62. Philosophy | 1 |
| 68. Education | 1 |
| 40. Social Policy and Administration | 1 |
| 41. Social Work | 1 |

**8.2       APPENDICES 4**

**Appendix 4a: Request for Teaching Information**

<u>**Sustainable Development in Higher Education**</u>

We have been asked by HEFCE to undertake a strategic review of sustainable development in higher education and as part of this review we are collecting information on teaching in English universities that relates in any way to sustainable development.

We see this as an opportunity for universities to report the good work they are doing.

**It should be stressed that the remit of the review is to establish a baseline of sustainable development activity in the sector. There is no expectation that institutions have been, or should have been, active in respect of sustainable development issues. In addition, every effort has been made to reduce the administrative burden of this Review on the Institutions involved.**

However much, or however little you can tell us please do contact us. Even if all you can send us is a URL, the name of someone we should contact, or a course name, we'll be pleased to hear from you.

*We would like to hear about courses in your university that concern <u>any one</u> of the following.*

| |
|---|
| **1. Environmental, social, or economic sustainability** |

| |
|---|
| **2. Sustainable development, or education for sustainable development (ESD)** |

| |
|---|
| **3. Natural resources conservation and management**<br>**AND EITHER**<br>**(a) social justice OR (b) economic development** |

| |
|---|
| **4. The natural and/or built environment**<br>**AND EITHER**<br>**(a) social justice OR  (b) economic development** |

Please simply email:  S.R.Gough@bath.ac.uk

*Or write to: Stephen Gough; Dept of Education; University of Bath; Bath; BA2 7AY*

THANK YOU VERY MUCH FOR YOUR HELP

## Appendix 4b: Search Terms for Teaching

We include courses (programmes, modules, etc.) that return significant hits against the terms below, in the following combinations:

| 1 only | 2 only | 3 + 5 | 3 + 6 | 4 + 5 | 4 + 6 |
|--------|--------|-------|-------|-------|-------|

**Term 1:** Sustainability

**Term 2:** Sustainable development

| **Term set 3:** | conservation + resources | OR |
| | conservation + natural + resources | OR |
| | resource + conservation | OR |
| | resource + efficiency | |

| **Term set 4:** | environment + nature | OR |
| | natural environment | OR |
| | conservation + environment | OR |
| | protection + environment | OR |
| | biodiversity | OR |
| | landscape | |

| **Term set 5:** | justice + social | OR | |
| | justice + society | | OR |
| | social equality | | OR |
| | human rights | | OR |
| | fair trade | | OR |
| | poverty | OR | |
| | exploitation | | |

| **Term set 6:** | economic efficiency | OR |
| | economic development | OR |
| | trade | OR |
| | income distribution | OR |
| | wealth distribution | OR |
| | micro-credit | OR |
| | social enterprise | OR |
| | supply chain | OR |
| | SME | |

**Appendix 4c: Interview Schedule (Outline Guidance for Semi-structured Interview): Teaching in HEIs in England.**

**HEFCE Strategic Review of Sustainable Development in Higher Education in England**

1.  This research project is using the following definition of sustainable development teaching: *teaching that contains a significant element of work related to either or both of the natural environment and natural resources, PLUS a significant element of work related to either or both of economic or social issues OR teaching that expressly considers itself to be concerned with issues of sustainability or sustainable development'.* How do you react to this definition?

2.  How central is sustainable development to the work of your institution?

3.  What are the opportunities for HEFCE to promote sustainable development in and through higher education in England?

4.  What are the barriers to the promotion of sustainable development in and through higher education in England, and can HEFCE do anything to help remove them?

5.  Do you have any comments on the merits of this, or any previous initiative in sustainable development and higher education in England?

6.  How central to progress in sustainable development teaching is inter-disciplinary working, and what are the enablers and barriers in relation to this?

7.  In your institution, what links exist between teaching and research and estates management?

8.  Is it the proper role of an HEI to drive the sustainability agenda forward, or should they rather be properly seen as social institutions which have a duty to respond to wider trends and issues in society, of which sustainable development is one?

## Appendix 4d: Individuals Approached via Personal Contact to Provide Views on SD Teaching

| | |
|---|---|
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| R Matthew | r.matthew@admin.gla.ac.uk |
| SL Miles | milessl@BISHOPBURTON.AC.UK |
| Stephen Sterling | srs@srsterling.org.uk |
| TC Shields | t.c.shields@bham.ac.uk |
| Vala Ragnarsdottir | vala.ragnarsdottir@bristol.ac.uk |

## Appendix 4e: HEFCE Project: A Summary Report of Searching Database and Website

### 1. Database search

| Name of database | Search date | Found | Note |
|---|---|---|---|
| AEI, Australian Educational Index<br>BEI, British Educational Index<br>ERIC, Education Resources Information Centre | 17/4/2007 | Some | Academic articles about University of Bournemouth, University of Plymouth and Manchester Metropolitan University |
| COPAC (academic and national library catalogue) | 17/4/2007 | Some | Refs of teaching material for London South Bank University |
| IBSS, International Bibliography of the Social Sciences | 18/4/2007 | None | |
| PSYCINFO (psychological abstracts) | 18/4/2007 | None | |
| ESRC society today (ESRC database previously known as REGARD)<br><br>http://www.esrc.ac.uk/ESRCInfoCentre/index.aspx | 18/4/2007 | None | |
| CERUK , Current Educational Research in the UK   http://www.ceruk.ac.uk/ceruk/ | 16/5/2007 | None | |
| ERA, Educational Research Abstracts http://www.tandf.co.uk/era/ | 16/5/2007 | a few | A few refs of Loughborough University (ecodesign), and UK business school and SD |
| Institute: Social Sciences (previously known as SOSIG, Social Science Information Gateway)<br>http://www.intute.ac.uk/socialsciences/ | 18/5/2007 | a few | University of North London (tourism) |
| QUESTIA (online academic library)<br><br>http://www.questia.com/Index.jsp | 18/5/2007 | a few | Related articles to University of Newcastle (CO2 reduction on tourism), University of Northumbia (poverty and SD), University of Teesside (chemical technology) |

## 2a. Focused Search

| Name of website and address | Search date | Found | Note |
|---|---|---|---|
| Campus Ecology  http://www.nwf.org/campusecology/index.cfm | 19/4/2007 | none | |
| Copernicus Campus  http://www.copernicus-campus.org/ | 19/4/2007 | none | |
| Education for a Sustainable Future  http://www.education.ed.ac.uk/esf/ | 19/4/2007 | none | |
| Concord Consortium  http://www.concord.org/ | 19/4/2007 | none | |
| Environmental Association for Universities and Colleges (EAUC)  http://www.eauc.org.uk/ | 19/4/2007 | none | |
| Forum for the Future http://www.forumforthefuture.org.uk/ | 19/4/2007 | a few | Masters course "Leadership for sustainable future" jointed with University of Middlesex |
| Global Learning, Inc.  http://www.globallearningnj.org/ | 20/4/2007 | none | |
| HEPS  http://www.forumforthefuture.org.uk/education/heps_page107.aspx | 20/4/2007 | a few | Document "Learning and Skills for Sustainable Development: Guidance for Higher Education Institutions" includes examples of many universities (pp.23-27) |
| International Association of Universities  http://www.unesco.org/iau/ | 20/4/2007 | none | |
| IUCN http://www.iucn.org | 20/4/2007 | none | "Green MBA" in Dominican University of California < http://www.greenmba.com/ > |
| Learning for a Sustainable Future http://www.lsf-lst.ca/ | 23/4/2007 | none | |
| Second Nature  http://www.secondnature.org/index.htm | 23/4/2007 | none | A very good database for sustainability course/programmes but all universities are American (or Canadian) |
| Second Nature Resource Center  http://efswest.madwolftech.com/Resource_Center/Second_Nature/second_nature.nsf/resource_center_courses.html | | | |
| Sustainable Development Research Network (SDRN)  http://www.sd-research.org.uk/index.php | 3/5/2007 | a few | University of Manchester |
| Sustainable Development on Campus: Tools for Campus Decision Makers  http://www.iisd.org/educate/ | 3/5/2007 | none | |
| Sustainability Education  http://www.urbanoptions.org/SustainEdHandbook/ | 3/5/2007 | none | |
| The Cloud Institute for Sustainability Education  http://www.sustainabilityed.org/index.html | 7/5/2007 | none | |

## 2b. Focused Search cont.

| Name of website and address | Search date | Found | Note |
|---|---|---|---|
| Teaching and Learning for a Sustainable Future http://www.unesco.org/education/tlsf/ | 7/5/2007 | none | |
| World Resources Institute (WRI) Education Center http://www.wri.org/ | 14/5/2007 | none | |
| UNESCO http://portal.unesco.org/ | 14/5/2007 | none | |
| ULSF Association of University Leaders for a Sustainable Future http://www.ulsf.org/about.html | 14/5/2007 | a few | Rich information of curriculum and programs related to universities all over the world including the UK. Also there were useful links related to English universities; e.g. Kingston University Sustainability Team www.kingston.ac.uk/sustainability/, University of Bradford - Higher Education Environmental Performance Improvement Program www.heepi.org.uk/, and University of Hertfordshire www.herts.ac.uk/envstrat/ <br><br> Also there is a link to Sustainable Universities Initiative Syllabi Database www.sc.edu/sustainableu/Syllabi.htm |
| University of Florida Sustainability Indicators August 2001 http://www.sustainable.ufl.edu/indicators.pdf | 14/5/2007 | none | |
| Sustainable Development on Campus: tools for campus decision makers http://www.iisd.org/educate/ | 14/5/2007 | none | |
| Education for Sustainable development toolkit http://www.esdtoolkit.org/default.htm | 14/5/2007 | none | |
| Campus Ecology Program http://depts.washington.edu/poeweb/resources/suscampus.html | not available | | |
| Southwestern Ecoliteracy Project http://www.ecoliteracyproject.org/ | not available | | |

## 3. HEA subject networks

| Name of website and address | Search date | Found | Note |
|---|---|---|---|
| Art, Design and Media http://www.adm.heacademy.ac.uk/ | 27/5/2007 | none | |
| Bioscience http://www.bioscience.heacademy.ac.uk/ | 27/5/2007 | a lot | Found a lot of programmes from around 10 universities, e.g. Imperial College, Leeds Metropolitan University, University of Gloucestershire and more. |
| Built Environment (CEBE) http://www.cebe.heacademy.ac.uk/ | 28/5/2007 | a lot | Found a lot of programmes, e.g. De Montfort University, Oxford Brooks University, Plymouth University and more. |
| Business, Management, Accountancy and Finance (BMAF) http://www.business.heacademy.ac.uk/ | 28/5/2007 | none | |
| Economics http://www.economicsnetwork.ac.uk/ | 28/5/2007 | none | |
| Education (ESCALATE) http://escalate.ac.uk/ | 28/5/2007 | none | |
| Engineering http://www.engsc.ac.uk/ | 28/5/2007 | a few | University of Loughborough, University of Cambridge, University of Hertfordshire |
| English http://www.english.heacademy.ac.uk/ | 28/5/2007 | none | |
| Geography, Earth and Environmental Sciences (GEES) http://www.gees.ac.uk/ | 29/5/2007 | some | Bournemouth University, University of Kingston, University of Leeds |
| Health Sciences and Practice http://www.health.heacademy.ac.uk/ | 29/5/2007 | none | |
| History, Classics and Archaeology http://www.hca.heacademy.ac.uk/ | 28/5/2007 | none | |
| Hospitality, Leisure, Sport and Tourism (HLST) | 28/5/2007 | a lot | Found a lot of programmes, e.g. London Metropolitan University, Leeds Metropolitan University, Liverpool John Moores University and more. |
| Information and Computer Sciences http://www.ics.heacademy.ac.uk/ | 31/5/2007 | some | Durham University, University of Hull, University of Sunderland |
| Languages, Linguistics and Area Studies (LLAS) http://www.llas.ac.uk/index.aspx | 1/6/2007 | a few | University of Kingston, University of London |
| Law (UK Centre for Legal Education - UKCLE) | 28/5/2007 | none | |
| Materials (UK Centre for Materials Education) http://www.materials.ac.uk/ | 28/5/2007 | none | |
| Maths, Stats & OR Network (MSOR)  http://www.mathstore.ac.uk/ | 28/5/2007 | none | |
| Medicine, Dentistry and Veterinary Medicine (MEDEV) http://www.medev.ac.uk/ | 28/5/2007 | none | |
| PALATINE - Dance, Drama and Music http://www.palatine.ac.uk/ | 28/5/2007 | none | |
| Philosophical and Religious Studies http://www.palatine.ac.uk/ | 1/6/2007 | some | University of Hull, University of Birmingham and more. |
| Physical Sciences http://www.physsci.heacademy.ac.uk/Home/Index.aspx | 28/5/2007 | none | |
| Psychology http://www.psychology.heacademy.ac.uk/ | 29/5/2007 | a few | University of Surrey |
| Sociology, Anthropology and Politics (C-SAP) http://www.c-sap.bham.ac.uk/ | 29/5/2007 | none | |
| Social Policy and Social Work (SWAP) http://www.swap.ac.uk/ | 29/5/2007 | none | |

## 4. Professional and Learned Society

| Name of website and address | Search date | Found | Note |
|---|---|---|---|
| Royal Academy of Engineering http://www.raeng.org.uk/ | | a lot | University of Surrey, De Montfort University, Imperial College and more |
| Royal Institute of British Architects http://www.riba.org/go/RIBA/Home.html | 1/6/2007 | some | University of Reading, University of East London, |
| Royal Society of Chemistry http://www.rsc.org/ | 1/6/2007 | none | |
| The Royal Society http://www.royalsoc.ac.uk/ | 1/6/2007 | none | |
| Royal Town Planning Institute | 1/6/2007 | a few | De Montfort University, University of Newcastle upon Tyne |
| Institution of Environmental Science http://www.ies-uk.org.uk/ | 1/6/2007 | none | |
| Royal Institution of Chartered Surveyors http://www.rics.org/ | 1/6/2007 | none | |
| Institution of Mechanical Engineers http://www.imeche.org/ | 1/6/2007 | none | Mentioned sustainable design research centre in Bournemouth University |
| Institution of Civil Engineers http://www.ice.org.uk/homepage/index.asp | 1/6/2007 | none | |
| Institution of Chemical Engineers | 1/6/2007 | none | |
| Institute of Financial Services | 1/6/2007 | none | |
| Energy Institute http://www.energyinst.org.uk/index.cfm | 1/6/2007 | a few | Portsmouth University |
| Chartered Institute of Waste Management http://www.iwm.co.uk/ | 1/6/2007 | a few | A course list includes "sustainable waste management" in e.g. University of Leeds, University of Southampton and University of Middlesex |
| Chartered Institution of Purchasing and Supply http://www.cips.org/ | 1/6/2007 | none | |
| Chartered Institute of Water and Services Management | 1/6/2007 | none | |
| Chartered Institution of Building Services Engineers http://www.cibse.org/ | 1/6/2007 | none | |
| The British Academy for the Social Sciences and the Humanities http://www.britac.ac.uk/ | 2/6/2007 | none | |
| Academy of Learned Societies for the Social Sciences http://www.acss.org.uk/ | 2/6/2007 | none | |
| Royal African Society http://www.royalafricansociety.org/ | 2/6/2007 | none | |
| African Studies Association of the UK http://www.asauk.net/ | 2/6/2007 | none | |
| Association of Business Schools http://www.the-abs.org.uk/ | 2/6/2007 | a few | A list of university teaching CSR and SD education |
| Association of Research Centres in the Social Sciences http://www.arciss.ac.uk/ | 2/6/2007 | none | |
| British Academy of Management http://www.bam.ac.uk/ | 2/6/2007 | none | |
| British International Studies Association http://www.bisa.ac.uk/ | 2/6/2007 | none | |
| Centre for Policy Studies http://www.cps.org.uk/ | 2/6/2007 | none | |
| Development Studies Association http://www.devstud.org.uk/ | 2/6/2007 | none | |
| Institute for Public Policy Research http://www.ippr.org.uk/ | 2/6/2007 | none | |
| Regional Studies Association http://www.regional-studies-assoc.ac.uk/ | 2/6/2007 | none | |

## Appendix 4f: Active Document Keeper: Information on Use and Installation

**OrionSoftLab.com**
*Utilities for Windows 9x/ME/NT/2000/XP to fit your need*

**Home** | **Localization** | **Support** | **Press Room** | **Partners** | **Contact us** | **GuestBook** | **Resources**

Description
Download
Screenshots
Registration

**Free Newsletter**

E-mail | Join

**TRY NOW** (3.0Mb)     **BUY NOW** ($29.90)

Active Document Keeper

Active Document Keeper is a document storage and management system for home or office use. The internal storage system allows you to store various electronic documents in one or several document databases. The document database can be stored in files on a local or network disk or using client-server database (MS SQL, Oracle, MySQL, etc.). Multiple network users can work with one document database simultaneously .The ADK compresses documents, that helps you to save a disk space. The backup capabilities would help you if your document database has lost or corrupted.Documents can be added to the document database by several ways: imported from a files on a disks; obtained from a scanner or digital camera; pasted from the clipboard; or created directly from ADK. The integration in the Windows Explorer simplifies document importing in the ADK database. By using the QuickDocuments feature you get the ability to create documents by one mouse click.

All documents are organized in folders, this structure looks like files and folders on your hard disk. The ADK enables you to create your own hierarchical trees for more useful representation of documents. But unlike a disk file system you can create references from several folders to one document, what gives you a possibility to create a flexible cross-referenced documents organization structure.  ADK offers you an intuitive Explorer-like interface.

You can add text notes to individual documents to simplify the searching in document database. A powerful ADK search mechanism helps you to locate any document quickly and easily. The ADK can perform searching in the document contents for Word, Excel and PDF documents. All documents in the database have a convenient preview. You can print any document directly from the ADK without launching external applications.

If you want to:

Get a flexible documents organization

Quick create, edit and print any documents
Have a preview of all documents
Save space on your hard drive

The main features of the Active Document Keeper:

**PDF Documents support.** Now you can store the PDF documents in the ADK database

**Images support.** JPEG, PCX, BMP, TGA, PNG image formats supported

**Acquiring images from a scanner or digital camera.** You can scan your paper documents or obtain images from a digital camera directly from the ADK.

**New Database Configuration Wizard.** Now you can easy create new document databases and open existings with Database Configuration Wizard

**New Document Import Wizard.** Now you can easy fill the ADK document database by importing documents from your local or network disks using the Document import Wizard.

**Using multiple document databases.** The ADK can work with a several databases. By using Create Database and Open Database you can create new databases and switch between existing ones.

**OLE DB Providers Support.** The ADK allows you to place your document database in information sources accessed by OLE DB providers. This may be SQL server, Microsoft Access database or any ODBC datasource

**Database Backup.** You can create multiple backups of the all your documents and quickly restore damaged or lost document database

**Using                              compression.**                    All                    documents

are stored in the internal database using compression. The ADK compresses documents up to several times

**Document preview**. When you select a document at the same time you can see its image

**Direct document printing**. You don't need to start another application to print a document, just click 'Print' button on the ADK toolbar

**Explorer-like interface**. All documents are represented in the *Folders*, as files on the disk.

**Quick document creation**. Documents may be loaded from files, pasted from clipboard or created directly from ADK

**Every document may have notes to be easily searched in the database**

**Windows Explorer integration**. You may add documents to the ADK's database by using the 'Send to...' menu item in the file context menu on right mouse button.

**Home Page** | **Description** | **Download** | **Register** | **Screenshots**

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## Appendix 4g: Disciplinary (Cost Centre) Headings

01 Clinical Medicine
02 Clinical Dentistry
03 Veterinary Science
04 Anatomy and Physiology
05 Nursing and Paramedical Studies
06 Health and Community Studies
07 Psychology and Behavioural Sciences
08 Pharmacy and Pharmacology
10 Biosciences
11 Chemistry
12 Physics
13 Agriculture and Forestry
14 Earth, Marine and Environmental Sciences
16 General Engineering
17 Chemical Engineering
18 Mineral, Metallurgy and Materials Engineering
19 Civil Engineering
20 Electrical, Electronic and Computer Engineering
21 Mechanical, Aero and Production Engineering
23 Architecture, Built Environment and Planning
24 Mathematics
25 IT and Systems Sciences, Comuputer Software Engineering
26 Catering and Hospitality Management
27 Business and Management Studies
28 Geography
29 Social Studies
30 Media Studies
31 Humanities and Language Based Studies
33 Design and Creative Arts
34 Education
35 Modern Languages
37 Archaeology
38 Sports Science and Leisure Studies
41 Continuing Education

**Appendix 4h: Key Words Appearing in a Sustainable Development related Course Title**

| | | |
|---|---|---|
| 3D | Crafts | Futures |
| Accounting | Crop improvement | Garden |
| Adventure | CSR | Gender |
| Advocacy | Culture | Gender |
| Aerospace | Design | Geochemistry |
| Africa | Designer | Geohazard |
| Aid | Developing Countries | Geology |
| Airport | Disaster | Geoscience |
| American (Studies) | Distribution | German |
| Animal Welfare | Earth System | Global |
| Anthropology | East Asia/n | Globalisation |
| Arts | Ecology | Governance |
| Asia Pacific | Economic Growth | Graphic Design |
| Assessment | Economics | Graphics |
| Automotive | Ecotourism | Green |
| Automotive Engineering | Energy | Hazard |
| Aviation | English | Health Promotion |
| Biochemical | Entrepreneurship | Heritage |
| Biodiversity | Environmental | History |
| Bioethics | >Environmental | Horticulture |
| Biogeochemistry | Economics | Housing |
| Biology | >Environmental | Human |
| Botanical | Education | >Human Geography |
| Building Services | >Environmental | >Human Resource |
| Business ethics | Engineering | >Human rights |
| Change | >Environmental Issues | Hydrogeology |
| Charity | >Environmental | Industrial |
| Child Care | Protection | Industry |
| Citizenship | Equine | Inequality |
| Clean | Estate | Informatics |
| Clean-up | Ethics | Infrastructure |
| Climate Change | Ethnobotany | Innovation |
| Coastal | Europe | Intelligent |
| Communication | European Studies | Intelligent Building |
| Community | Event Management | Interior |
| Conference Management | Farm Management | Interior Design |
| Conflict Resolution | Fashion | International Development |
| Conservation | Film | International Relations |
| Construction | Flood | Investment |
| Consultancy | Fluid Flow | Jewellery |
| Consumerism | Food | Justice |
| Consumption | French | Land |
| Contaminated land | Freshwater | Land Economy |
| Corporate Finance | Fuel | Landscape |
| Countryside | Fundraising | Latin America/n |
| Countryside Management | Furniture | Law |

| | | |
|---|---|---|
| Leadership | Public | >Sustainable |
| Learning | Public Health | Development |
| Life Cycle | Railway | >Sustainable Engineering |
| Limits | Recreation | >Sustainable Future/s |
| Livelihoods | Recycling | >Sustainable Solutions |
| Low-carbon | Regeneration | System |
| Manufacturing | Regional | Technology |
| Marketing | Renewable Energy | Textile |
| Material/s | Resource/s | Theology |
| Media | Responsibility | Third world |
| Motor Sport | Restaurants | Town |
| Motorcycle | Risk | Trade |
| Nature | River | Training |
| Negotiation | Rural | Transport |
| Nuclear | Safety | Transportation |
| Ocean | Secondary | Travel |
| Organisation/s | Security | Urban |
| Outdoor | Social Change | Urban Design |
| Outdoor Education | Social Corporate | Urban Planning |
| Packaging | Social work | Urban Renewal |
| Participatory | Society | Urbanism |
| Petroleum | Sociology | Values |
| Policy | Software | Waste management |
| Politics | Soil | Water |
| Pollution | Solutions | Water supply |
| Poverty | South East Asia/n | Wellbeing |
| Power | Spanish | Wildlife |
| Primary (Education) | Sports Management | Wildness |
| Product | Supplier | Wine |
| Property | Surveying | Woodland |
| Protection | Sustainable | World Transition |
| Prototyping | >Sustainable Cities | Zoology |

## Appendix 4i: Distribution of Documents by Subject Headings

| | Number of documents in the database | | |
| --- | --- | --- | --- |
| | Programme | Module | Total |
| 00 Sustainability | 63 | 28 | 91 |
| 01 Clinical Medicine | 1 | 0 | 1 |
| 02 Clinical Dentistry | 0 | 0 | 0 |
| 03 Veterinary Science | 12 | 2 | 14 |
| 04 Anatomy and Physiology | 0 | 0 | 0 |
| 05 Nursing and Paramedical Studies | 2 | 0 | 2 |
| 06 Health and Community Studies | 24 | 4 | 28 |
| 07 Psychology and Behavioural Sciences | 0 | 0 | 0 |
| 08 Pharmacy and Pharmacology | 0 | 0 | 0 |
| 10 Biosciences | 41 | 10 | 51 |
| 11 Chemistry | 5 | 4 | 9 |
| 12 Physics | 0 | 0 | 0 |
| 13 Agriculture and Forestry | 35 | 5 | 40 |
| 14 Earth, Marine and Environmental Sciences | 331 | 65 | 396 |
| 16 General Engineering | 65 | 11 | 76 |
| 17 Chemical Engineering | 14 | 0 | 14 |
| 18 Mineral, Metallurgy and Materials Engineering | 9 | 0 | 9 |
| 19 Civil Engineering | 88 | 8 | 96 |
| 20 Electrical, Electronic and Computer Engineering | 3 | 1 | 4 |
| 21 Mechanical, Aero and Production Engineering | 43 | 8 | 51 |
| 23 Architecture, Built Environment and Planning | 227 | 20 | 247 |
| 24 Mathematics | 3 | 2 | 5 |
| 25 IT and Systems Sciences, Computer Software Engineering | 7 | 2 | 9 |
| 26 Catering and Hospitality Management | 5 | 0 | 5 |
| 27 Business and Management Studies | 174 | 50 | 224 |
| 28 Geography | 160 | 20 | 180 |
| 29 Social Studies | 177 | 37 | 214 |
| 30 Media Studies | 3 | 1 | 4 |
| 31 Humanities and Language Based Studies | 13 | 5 | 18 |
| 33 Design and Creative Arts | 55 | 5 | 60 |
| 34 Education | 16 | 13 | 29 |
| 35 Modern Languages | 12 | 0 | 12 |
| 37 Archaeology | 5 | 1 | 6 |
| 38 Sports Science and Leisure Studies | 91 | 29 | 120 |
| 41 Continuing Education | 1 | 1 | 2 |
| Interdisciplinary | 294 | 57 | 351 |

## Appendix 4j: Distribution of Documents by HEIs

| | Number of documents in the database | | | |
| --- | --- | --- | --- | --- |
| | Programme | Module | 0ther documents | Total |
| Anglia Ruskin University | 36 | 0 | 0 | 36 |
| The Arts Institute at Bournemouth | 1 | 0 | 0 | 1 |
| Aston  University | 1 | 1 | 0 | 2 |
| The Arts London, University of | 6 | 0 | 0 | 6 |
| Bath Spa University | 6 | 0 | 0 | 6 |
| Bath, University of | 15 | 8 | 0 | 23 |
| Bedfordshire, University of | 4 | 0 | 0 | 4 |
| Birkbeck College | 10 | 0 | 0 | 10 |
| Birmingham College of Food, Tourism and Creative Studies | 0 | 3 | 0 | 3 |
| Birmingham, University of | 19 | 0 | 0 | 19 |
| Bishop Grosseteste University College, Lincoln | 0 | 1 | 0 | 1 |
| Bolton, University of | 1 | 0 | 0 | 1 |
| Bournemouth University | 26 | 0 | 0 | 26 |
| Bradford, University of | 3 | 0 | 0 | 3 |
| Brighton, University of | 9 | 8 | 0 | 17 |
| Bristol, University of | 9 | 42 | 0 | 51 |
| Brunel, University of | 13 | 0 | 0 | 13 |
| Buckinghamshire Chiltern University | 0 | 0 | 0 | 0 |
| Cambridge, University of | 16 | 0 | 0 | 16 |
| Canterbury Christ Church University | 5 | 0 | 0 | 5 |
| Central England, University of | 14 | 0 | 0 | 14 |
| Central Lancashire, University of | 17 | 1 | 0 | 18 |
| Central School of Speech and Drama | 0 | 0 | 0 | 0 |
| Chester, University of | 9 | 2 | 0 | 11 |
| Chichester. University of | 2 | 5 | 0 | 7 |
| City University London | 6 | 0 | 0 | 6 |
| Conservatoire for Dance and Drama | 0 | 0 | 0 | 0 |
| Courtauld Institute of Art | 0 | 0 | 0 | 0 |
| Coventry University | 36 | 0 | 0 | 36 |
| Cranfield University | 2 | 9 | 0 | 11 |
| Cumbria, University of | 22 | 0 | 0 | 22 |
| Dartington College of Arts | 0 | 0 | 0 | 0 |
| De Montfort University | 13 | 1 | 0 | 14 |
| Derby, University of | 5 | 0 | 0 | 5 |
| Durham, University of | 3 | 1 | 0 | 4 |
| East Anglia, University of | 6 | 0 | 0 | 6 |
| East London, University of | 7 | 2 | 0 | 9 |
| Edge Hill University | 1 | 5 | 0 | 6 |
| Essex, University of | 5 | 0 | 0 | 5 |
| Exeter, University of | 16 | 8 | 0 | 24 |
| Falmouth, University College | 6 | 0 | 0 | 6 |

| | Number of documents in the database | | | |
| --- | --- | --- | --- | --- |
| | Programme | Module | 0ther documents | Total |
| Gloucetershire, University of | 22 | 3 | 0 | 25 |
| Goldsmiths College, University of London | 0 | 0 | 0 | 0 |
| Greenwich, University of | 23 | 0 | 0 | 23 |
| Guildhall School of Music & Drama | 0 | 0 | 0 | 0 |
| Harper Adams University College | 10 | 0 | 0 | 10 |
| Hertfordshire, University of | 8 | 0 | 0 | 8 |
| Heythrop College | 0 | 2 | 0 | 2 |
| Huddersfield, University of | 9 | 0 | 0 | 9 |
| Hull, University of | 13 | 0 | 0 | 13 |
| Imperial College London | 7 | 1 | 0 | 8 |
| Institute of Cancer Research | 0 | 0 | 0 | 0 |
| Institute of Education | 4 | 0 | 0 | 4 |
| Keele, University of | 4 | 1 | 0 | 5 |
| Kent, University of | 16 | 0 | 0 | 16 |
| Kings College London | 10 | 0 | 0 | 10 |
| Kingston University | 72 | 5 | 0 | 77 |
| Lancaster University | 40 | 24 | 0 | 64 |
| Leeds College of Music | 0 | 0 | 0 | 0 |
| Leeds Metropolitan University | 9 | 3 | 0 | 12 |
| Leeds, University of | 31 | 1 | 0 | 32 |
| Leicester, University of | 3 | 0 | 0 | 3 |
| Lincoln, University of | 14 | 0 | 0 | 14 |
| Liverpool Hope University | 2 | 0 | 0 | 2 |
| Liverpool Institute for Performing Arts | 0 | 0 | 0 | 0 |
| Liverpool John Moores University | 22 | 1 | 0 | 23 |
| Liverpool, University of | 11 | 1 | 0 | 12 |
| London Business School | 0 | 0 | 0 | 0 |
| London Metropolitan University | 5 | 35 | 0 | 40 |
| London School of Economics and Political Sciences | 10 | 0 | 0 | 10 |
| London School of Hygiene and Tropical Medicine | 1 | 0 | 0 | 1 |
| London South Bank University | 7 | 0 | 0 | 7 |
| London, University College | 17 | 2 | 0 | 19 |
| London, University of (other institutes) | 0 | 0 | 0 | 0 |
| Loughborough University | 8 | 0 | 0 | 8 |
| Manchester Metropolitan University | 9 | 1 | 0 | 10 |
| Manchester, University of | 16 | 0 | 0 | 16 |
| Middlesex University | 13 | 0 | 0 | 13 |
| Newcastle upon Tyne, University of | 55 | 34 | 0 | 89 |
| Newman College of Higher Education | 4 | 0 | 0 | 4 |
| Northampton, University of | 9 | 0 | 0 | 9 |
| Northumbia, University of | 25 | 0 | 0 | 25 |
| Norwich School of Arts and Design | 0 | 0 | 0 | 0 |
| Nottingham Trent University | 19 | 0 | 0 | 19 |
| Nottingham, University of | 19 | 2 | 0 | 21 |
| Open University | 5 | 23 | 0 | 28 |
| Oxford Brookes University | 12 | 1 | 0 | 13 |
| Oxford, University of | 4 | 0 | 0 | 4 |

| | The number of documents in the database | | | |
| --- | --- | --- | --- | --- |
| | Programme | Module | 0ther documents | Total |
| Plymouth, University of | 49 | 0 | 1 | 50 |
| Portsmouth, University of | 52 | 0 | 0 | 52 |
| Queen Mary, University of London | 12 | 0 | 0 | 12 |
| Ravensbourne College of Design and Communication | 2 | 0 | 0 | 2 |
| RCN Institute | 0 | 0 | 0 | 0 |
| Reading, University of | 18 | 0 | 0 | 18 |
| Roehampton University | 9 | 2 | 0 | 11 |
| Rose Bruford College | 0 | 0 | 0 | 0 |
| Royal Academy of Music | 0 | 0 | 0 | 0 |
| Royal Agricultural College | 3 | 0 | 0 | 3 |
| Royal College of Art | 1 | 0 | 0 | 1 |
| Royal College of Music | 0 | 0 | 0 | 0 |
| Royal Holloway, University of London | 4 | 1 | 0 | 5 |
| Royal Northern College of Music | 0 | 0 | 0 | 0 |
| Royal Veterinary College | 3 | 1 | 0 | 4 |
| Salford, University of | 20 | 0 | 0 | 20 |
| School of Oriental and African Studies | 1 | 0 | 0 | 1 |
| School of Pharmacy | 0 | 0 | 0 | 0 |
| Sheffield Hallam University | 15 | 0 | 0 | 15 |
| Sheffield, University of | 16 | 0 | 0 | 16 |
| Southampton Solent University | 4 | 0 | 0 | 4 |
| Southampton, University of | 12 | 17 | 0 | 29 |
| St Georges, University of London | 0 | 0 | 0 | 0 |
| St Marks & St John, College of | 7 | 0 | 0 | 7 |
| St Mary's University College | 4 | 0 | 0 | 4 |
| Staffordshire University | 11 | 0 | 0 | 11 |
| Sunderland, University of | 7 | 1 | 0 | 8 |
| Surrey, University of | 7 | 2 | 0 | 9 |
| Sussex, University of | 13 | 0 | 0 | 13 |
| Teesside, University of | 18 | 1 | 0 | 19 |
| Thames Valley University | 6 | 1 | 0 | 7 |
| Trinity & All Saints | 0 | 0 | 0 | 0 |
| Trinity Laban | 0 | 0 | 0 | 0 |
| University College for the Creative Arts at Canterbury, Epsom, Farnham, Maidstone, Rochester | 4 | 0 | 0 | 4 |
| Warwick, University of | 6 | 0 | 0 | 6 |
| West of England, University of | 28 | 2 | 0 | 30 |
| Westminster, University of | 17 | 0 | 0 | 17 |
| Winchester, University of | 6 | 12 | 0 | 18 |
| Wolverhampton, University of | 9 | 0 | 0 | 9 |
| Worcester, University of | 9 | 0 | 0 | 9 |
| Wrritle College | 17 | 0 | 0 | 17 |
| York St John University | 0 | 0 | 0 | 0 |
| York, University of | 14 | 0 | 0 | 14 |
| **Total number of documents** | **1326** | **273** | **1** | **1600** |

**8.3      APPENDICES 5**

**Appendix 5a**

| Office use only | ID Number: | | | |
|---|---|---|---|---|

**psi**

**Policy Studies Institute, 50 Hanson Street, London, WIW 6UP**

# Higher Education
# Sustainable Development
# Baseline 2007

# Estates Questionnaire

Name of Institution:

......................................................................................................

Completed by:

Name

......................................................................................................

Position

......................................................................................................

Date

......................................................................................................

## Introduction

We have been commissioned by HEFCE to provide benchmark information on sustainable development in the English Higher Education Sector. The purpose of the study is to provide a benchmark against which future progress of the sector can be assessed.

This benchmarking tool for estates is made up of five parts.

6. Quantified estates performance measures derived from EMS returns.
7. A section on estates targets that your institution may have set (these are placed in the context of the government's targets).
8. Questions on how sustainable development is managed and reported.
9. A section on tools and frameworks used to support sustainable development activity.
10. A set of self assessment questions covering various dimensions of activity.

The findings will be used to assess the sector as a whole, not the performance of individual institutions. All respondents will be emailed a copy of the final report.

If you have any queries please email Malcolm Rigg on m.rigg@psi.org.uk.

## SECTION 1
## EMS Performance

The following can be derived from the EMS statistics but it would be helpful if you could complete this section. It may also help you in reviewing your overall return.

**Please state year to which information applies**_____

| Category | Amount |
|---|---|
| Total energy emissions | |
| Estimated energy consumption | |
| Total water consumption | |
| Non-residential energy emissions per m2 | |
| Non-residential energy consumption per FTE | |
| Use of renewable energy sources | |
| Non-residential water consumption per m2 | |
| Waste mass total | |
| Waste mass recycled | |
| Student FTE per car space | |
| Total net internal area of HE estate | |
| Number of FTE students | |

## SECTION 2
## Estates and Facilities Management Targets

Have you set targets for each of the following? (Government targets are shown below)

*Please mark* ☒ *in relevant box*

|  | Yes | No | If yes, please describe target and date for achievement |
|---|---|---|---|
| 1 Estates CO2 emissions | ☐ | ☐ | |
| 2 Road vehicles emissions | ☐ | ☐ | |
| 3 Carbon neutrality to be achieved by a stated date | ☐ | ☐ | |
| 4 Energy efficiency | ☐ | ☐ | |
| 5 Waste arisings reduction (volume) | ☐ | ☐ | |
| 6 Percentage recycling of waste | ☐ | ☐ | |
| 7 Water consumption reduction | ☐ | ☐ | |
| 8 Renewable energy | ☐ | ☐ | |

---

**Key Government targets**

**Carbon emissions**
- reduce carbon emissions by 12.5% by 2010-11, relative to 1999/2000 levels
- reduce carbon emissions by 30% by 2020, relative to 1999/2000 levels

**Road vehicles:**
- reduce carbon emissions from road vehicles used operations by 15% by 2010/11, relative to 2005/06 levels

**Carbon neutral:**
- estates to be carbon neutral by 2012

**Energy efficiency:**
- to increase energy efficiency per m2 by 15% by 2010, relative to 1999/2000 levels
- to increase energy efficiency per m2 by 30% by 2020, relative to 1999/2000 levels

**Waste arisings:**
- to reduce waste arisings by 5% by 2010, relative to 2004/05 levels
- to reduce waste arisings by 25% by 2020, relative to 2004/05 levels

**Recycling:**
- to increase recycling figures to 40% of their waste arisings by 2010
- to increase recycling figures to 75% of their waste arisings by 2020.

**Water consumption**
- reduce water consumption by 25% by 2020, relative to 2004/05 levels
- reduce water consumption to an average of 3m3 per person/year for all new office builds or major office refurbishments

**Renewable energy**
- Source at least 10% of electricity from renewables by March 2008
- Source at least 15% of electricity from Combined Heat and Power by 2010

## SECTION 3
## Sustainable Development commitment and use of frameworks and tools

*Please mark ☒ in **one** box on each row*

**Management engagement with Sustainable Development**

| | | Yes | No | Don't Know |
|---|---|---|---|---|
| **1** | Is there a public commitment to Sustainable Development by the Vice Chancellor/Principal? | ☐ | ☐ | ☐ |

Comments:

**Board of Governors engagement with Sustainable Development**

| | | Yes | No | Don't Know |
|---|---|---|---|---|
| **2** | Do the Board of Governors review Sustainable Development progress reviewed annually? | ☐ | ☐ | ☐ |

Comments:

**Publicly available policy**

| | | Yes | No | Don't Know |
|---|---|---|---|---|
| **3** | Is there a publicly available policy statement on Sustainable Development? | ☐ | ☐ | ☐ |

Comments:

| | | | | |
|---|---|---|---|---|
| **4** | If yes: does it identify activities and policies agreed in the main areas of sustainable development activity? | ☐ | ☐ | ☐ |

Comments:

| | | | | |
|---|---|---|---|---|
| **5** | Does your institution publicly aspire to be a 'pathfinder' or exemplar sustainable community? | ☐ | ☐ | ☐ |

Comments:

**Sustainable Development staffing**

|   |   | Yes | No | Don't Know |
|---|---|---|---|---|
| **6** | Do you employ at least one full-time member of staff responsible for co-ordinating or managing the environmental dimensions of Sustainable Development | ☐ | ☐ | ☐ |

Comments:

|   |   | Yes | No | Don't Know |
|---|---|---|---|---|
| **7** | Does your institution provide regular opportunities for staff to discuss Sustainable Development policy and practice? | ☐ | ☐ | ☐ |

Comments:

|   |   | Yes | No | Don't Know |
|---|---|---|---|---|
| **8** | Does your institution provide regular opportunities for students to discuss Sustainable Development policy and practice? | ☐ | ☐ | ☐ |

Comments:

|   |   | Yes | No | Don't Know |
|---|---|---|---|---|
| **9** | Does your institution work in partnership on Sustainable Development issues with local communities, local businesses or other local stakeholders? | ☐ | ☐ | ☐ |

Comments:

**Use of wide-ranging Sustainable Development reporting systems**

|   |   | Yes | No | Don't Know |
|---|---|---|---|---|
| **10** | Do you use The Global Reporting Initiative (GRI)? www.globalreporting.org | ☐ | ☐ | ☐ |

Comments:

|   |   | Yes | No | Don't Know |
|---|---|---|---|---|
| **11** | Do you complete The Global Higher Education for Sustainability Partnership (GHESP) assessment questionnaire? | ☐ | ☐ | ☐ |

Comments:

|   |   | Yes | No | Don't Know |
|---|---|---|---|---|
| **12** | Have you signed up to the Copernicus Universities Charter for Sustainable Development? | ☐ | ☐ | ☐ |

Comments:

**Systems, framework and tools for strategically managing sustainable development**

|  |  | Yes | No | Don't Know |
|---|---|---|---|---|
| **13** | Have you carried out a comprehensive environmental audit identifying all the environmental impacts of the institution? (Partial audits are covered later). | ☐ | ☐ | ☐ |

Comments:

| **14** | Do you operate a 'whole organisation' approach to resource management with an integrated system for managing issues such as energy and water in order to achieve circular flows with resources recovered and recycled? | ☐ | ☐ | ☐ |
|---|---|---|---|---|

Comments:

| **15** | Do you operate a ring-fenced revolving investment fund to support sustainable development initiatives and strategies? | ☐ | ☐ | ☐ |
|---|---|---|---|---|

Comments:

| **16** | Do you ever use the `Natural Step' framework for analysing complex sustainable development problems? | ☐ | ☐ | ☐ |
|---|---|---|---|---|

Comments:

## SECTION 4

## Use of audit and management systems and support

Which, if any, of the following have you achieved or are you working towards?

*Please mark* ☒ *in **one** box only*

**1**   ISO 14001

| | |
|---|---|
| Achieved | ☐ |
| Working towards | ☐ |
| Not used | ☐ |

**2**   Do you use EcoCampus and if so, what stage have you reached?

*Please mark* ☒ *in **one** box only*

| | |
|---|---|
| Bronze | ☐ |
| Silver | ☐ |
| Gold | ☐ |
| Platinum | ☐ |
| Not used | ☐ |

Do you use any of the following?

*Please mark* ☒ *in **one** box on each row*

| | **Yes** | **No** | **Don't Know** |
|---|---|---|---|
| **3**   Business in the Community Environmental Index | ☐ | ☐ | ☐ |
| Comments: | | | |
| **4**   Business in the Community Corporate Responsibility Index | ☐ | ☐ | ☐ |
| Comments: | | | |
| **5**   ECO-Management and Audit Scheme (EMAS) | ☐ | ☐ | ☐ |
| Comments: | | | |
| **6**   Do you use any other audit and management systems? | ☐ | ☐ | ☐ |
| If yes please specify: | | | |

**Energy and carbon management**

Which, if any, of these do you use to support your energy and carbon management?

| | | Yes | No | Don't Know |
|---|---|---|---|---|
| **6** | Carbon Management from the Carbon Trust | ☐ | ☐ | ☐ |

Comments:

| | | | | |
|---|---|---|---|---|
| **7** | The Energy Consortium (TEC) | ☐ | ☐ | ☐ |

Comments:

| | | | | |
|---|---|---|---|---|
| **8** | Carbon Neutral Company approach to carbon management | ☐ | ☐ | ☐ |

Comments:

| | | | |
|---|---|---|---|
| **9** | Other? (please specify) | ☐ | |

Comments:

**BREEAM rated buildings**
Please write the number of buildings in each category

**10 How many** buildings on your estates have been accredited to BREEAM standards at the following levels?

Number of buildings

| | |
|---|---|
| Excellent | ☐ ☐ |
| Very good | ☐ ☐ |
| Good | ☐ ☐ |
| Pass | ☐ ☐ |
| None | ☐ ☐ |

## SECTION 5
## Self assessment of progress so far

On the following pages you will find a series of questions. Some may not be relevant to your institution; others may be relevant to only parts of it. Please use the comments box to provide further information. There is no presumption that your institution should be progressing every area associated with sustainable development. The purpose is to provide an aggregated overview of sustainable development in the sector.

There are three levels: basic, getting there, excellence. Decide which you think best describes your institution, and assess where you think you are within that level. Write in one score for each category/criteria (0-9). Record zero if you haven't achieved basic. Add if, for instance, you thought your institution was in the 'getting there' category, you would then decide whether you were at the high end (6), the middle (5) or at the lower end (4). Scoring excellence assumes that you have achieved most of the basic elements. Score all criteria that are relevant to your organisation or mark N/A in the box provided.

**Example:** Please place only <u>**one**</u> score in box **per criteria**

$$\boxed{5}$$

### 5A      Facilities and Estates Management

### Energy/Carbon

Please place your score in <u>**one**</u> box only

| | | |
|---|---|---|
| You do not monitor carbon emissions and have no initiatives in place to reduce emissions | None (0) | |
| You monitor energy use and carbon emissions and make ad hoc initiatives to improve performance. Staff and students are actively supported in reducing their energy consumption. | Basic (1-3) | |
| You have a clear strategy for reducing energy consumption and promoting energy efficiency. Some energy is resourced from renewables. There is a strategy for reducing IT energy consumption | Getting there (4-6) | |
| You set and monitor ambitious carbon reduction targets which are not to be achieved by renewable energy alone. Energy is strategically managed and co-ordinated with procurement and capital investment. You have funds for carbon reduction initiatives and employ an Energy Manager (or equivalent), who is responsible for reducing energy use. | Excellence (7-9) | |
| Not applicable | | |

Comments:

## 5A    Facilities and Estates Management continued…

### Waste reduction and recycling

Please place your score in **one** box only

| | | |
|---|---|---|
| You have no initiatives in place to reduce or recycle waste. | None (0) | |
| The physical environment is clean and you comply with legislation. Basic waste segregation takes place. Staff and students are actively supported in minimising use of paper and other consumables | Basic (1-3) | |
| You have a strategy for reducing waste. You clearly segregate waste and send most waste streams for recycling (e.g. paper, cardboard, glass). You monitor waste to landfill and actively reduce it through minimisation, reuse and recycling. You consider waste when making procurement decisions. | Getting there (4-6) | |
| You implement and apply the waste hierarchy, and have a waste manager. You have a waste strategy with targets and monitoring systems and you continuously reduce waste. Waste is strategically managed through integration with the procurement function (e.g. you purchase some biodegradable items and require suppliers to reduce packaging) and you are aware of the final destination of your waste. Contracted out services have waste reduction targets. You work with local enterprises to create local markets for waste | Excellence (7-9) | |
| Not applicable | | |

Comments:

### Water

Please place your score in **one** box only

| | | |
|---|---|---|
| You have no initiatives in place to reduce water use. | None (0) | |
| Staff and students are aware of the need to reduce water use and some initiatives are taken (e.g. turning off dripping taps). | Basic (1-3) | |
| You have systems in place to reduce water use (e.g. water efficient operations, low-flush toilets) and all staff and students are actively encouraged to reduce usage. | Getting there (4-6) | |
| Your water use is monitored and targets set for reduction. Catering, laundry and facilities contracts specify low water use. You use grey water where possible, and actively seek out opportunities to recycle water. New buildings are designed to minimise water wastage. | Excellence (7-9) | |
| Not applicable | | |

Comments:

## 5A    Facilities and Estates Management continued…

### Chemical use

Please place your score in **one** box only

| | | |
|---|---|---|
| You meet basic legal requirements for chemical use. | None (0) | |
| You are compliant with oil storage regulations. You minimise the use of hazardous substances (e.g. chemicals, cleaning products). | Basic (1-3) | |
| You set targets to reduce unnecessary and excessive chemical use. You purchase products with low volatility and emissions (e.g. low-VOC paints, furniture and carpets without a chemical finish). | Getting there (4-6) | |
| You have a strategic and innovative approach to chemical use minimisation (e.g. using different cleaning processes such as steaming) and have monitoring processes for targets. You engage with suppliers to encourage and require them to use less hazardous chemicals in their products. | Excellence (7-9) | |
| Not applicable | | |

Comments:

### Biodiversity

Please place your score in **one** box only

| | | |
|---|---|---|
| There are no measures in place to safeguard biodiversity. | None (0) | |
| The outside of your building creates a pleasant environment for pedestrians and each site has maintained green spaces. | Basic (1-3) | |
| You have usable green spaces where biodiversity is encouraged (e.g. a wildlife garden, green roofs) and protected. You minimise covering over natural areas (e.g. by using grass rather than paving). | Getting there (4-6) | |
| You acknowledge the wellbeing benefits of nature and have a budget for grounds maintenance that maximises the impact of nature on health (e.g. nature walks). You aim to provide 'green' views to everyone in the institution and your institution contributes to local biodiversity action plans. You monitor biodiversity on your grounds and are aware of any species of high biological importance. | Excellence (7-9) | |
| Not applicable | | |

Comments:

## 5A    (Cont) New and refurbished buildings

### Design of new and refurbished buildings

Please place your score in **one** box only

| | |
|---|---|
| The environmental impacts of new buildings are factored into design but are not a primary consideration when planning new buildings. | None (0) |
| The whole life cost and running cost of new/refurbished buildings are considered at the design stage and factors such as energy use, building materials, recycling, services and location are considered. | Basic (1-3) |
| High-quality design is based on maximising the health impacts and minimising the environmental impacts of the building. These impacts are measured. The process has stakeholder input. All new and refurbished buildings are BREEAM assessed. You design to achieve at least a Very Good BREEAM rating. You undertake post-construction evaluation and monitoring of buildings performance to ensure high standards are met and maintained. | Getting there (4-6) |
| New/refurbished buildings are designed to reflect and anticipate changing needs e.g. by incorporating structural flexibility. All new and refurbished building projects are designed to achieve an Excellent BREEAM rating. | Excellence (7-9) |
| Not applicable | |

Comments:

### Estates policies and performance management

Please place your score in **one** box only

| | |
|---|---|
| You have no set policies on environmental performance. | None (0) |
| Your institution does not have an energy policy, but there is in-house monitoring of parameters such as energy consumption, water usage and waste generation. | Basic (1-3) |
| Your institution has a stand-alone facilities management policy, or has integrated these issues into a wider sustainable development or environmental plan. In addition, you set targets and monitor and improve performance and results are communicated to staff and students. | Getting there (4-6) |
| Your institution has a fully integrated environmental management system (e.g. ISO14001, BS8885). Improvements in performance and compliance against your policy are assessed on a regular basis and the findings are communicated. Facilities management is fully integrated with other departments in order to maximise positive sustainable outcomes. | Excellence (7-9) |
| Not applicable | |

Comments:

## 5B    Transport and travel

### Travel planning and management

Please place your score in **one** box only

| | | |
|---|---|---|
| There is no active management of cycling or public transport. | None (0) | |
| You promote cycling, public transport use and walking to reduce car use by staff, students and visitors. All location maps and information (for visitors, students and new staff) highlight the public transport options. | Basic (1-3) | |
| Your institution attends local transport planning meetings to discuss planning (e.g. cycle lanes, 20mph buffer zones, safe pedestrian crossings). Your site is a pleasant and safe environment for pedestrians and cyclists. Your transport solutions take account of access for people with disabilities | Getting there (4-6) | |
| You provide resources towards local sustainable transport options. You monitor progress against plans and tackle non-performance. You work with your local public transport operators to review services and routes to meet full site access. Your integrated public transport planning is designed to meet staff, student and visitor needs. You undertake on-site traffic counts to help planning | Excellence (7-9) | |
| Not applicable | | |

Comments:

### Service design & minimising travel

Please place your score in **one** box only

| | | |
|---|---|---|
| Transport is not usually considered when designing services. | None (0) | |
| Transport is considered when designing services, with a view to maximising access. Public transport information is made available to staff and visitors. | Basic (1-3) | |
| Effort is made to reduce or eliminate unnecessary journeys. You encourage use of public transport (e.g. loans for travel passes; meetings coinciding with public transport timetables) and to work from home, where appropriate. Student and staff travel is monitored. Maps of sites show walking, cycling and public transport options. Where feasible, you offer alternatives to private car travel. | Getting there (4-6) | |
| Reducing the need to travel is a key criterion for re-designing your services including use of IT networks and video conferencing. Planning tools such as GIS (Geographical Information Systems) are used to maximise transport and travel efficiency. You monitor and evaluate student, staff and delivery travel, and have targets for reducing unnecessary trips. Staff incentives exist for use of public transport, cycling and walking to and during work. You develop an integrated transport plan. | Excellence (7-9) | |
| Not applicable | | |

Comments:

**5B      Transport and travel continued…**

**Walking & cycling**

Please place your score in **one** box only

| | |  |
|---|---|---|
| You do not provide any cycling facilities or make any attempts to facilitate walking. | None (0) | |
| You provide basic cycle facilities (e.g. cycle parking at some sites). You have a bicycle users group, or other information-sharing systems for cyclists. You seek staff opinion on measures to improve walking access. You have an information system with maps and guidance. | Basic (1-3) | |
| There is some provision for cyclists at most of your sites (cycle parking, changing areas, showers etc.) You offer staff bike loans or bike purchase at discount rates. A pedestrian audit has been carried out on sites and access routes. | Getting there (4-6) | |
| All of your sites have covered, secure cycle parking, changing areas, showers and storage for clothing. There are safe and, where possible, traffic-free routes to your buildings for pedestrians and cyclists. You monitor whether people feel safe and happy walking and cycling to work and address concerns. Your cycle mileage rates are competitive with those for driving and staff who walk or cycle are given benefits of equal or greater value than any subsidy offered on car parking. | Excellence (7-9) | |
| Not applicable | | |
| Comments: | | |

**Car parking**

Please place your score in **one** box only

| | |  |
|---|---|---|
| Car parking is free or charges are not enforced. | None (0) | |
| Car parking charges are enforced and spaces limited to deliberately discourage use. | Basic (1-3) | |
| Car use is monitored and reduction targets are set. | Getting there (4-6) | |
| You use incentives and disincentives to manage down the need for car parking. You regularly survey the local car parking market and identify the open market value of your car parking spaces. This is communicated to staff and either a) non-essential car users pay this rate; or b) non-driving staff are given benefits of equivalent value to any subsidy. | Excellence (7-9) | |
| Not applicable | | |
| Comments: | | |
| Any other comments: | | |

## 8.4    APPENDICES 6

### Appendix 6a:  Case-studies

The principal lessons learnt from the case-studies are captured in the detail of the main chapter.   This appendix provides additional information on SD adoption in four institutions:

- The University of Birmingham
- The University of Cambridge
- Kingston University
- The University of Wolverhampton.

The write-up of each institution is based primarily on the consultations held and should therefore be seen as providing an illustration of SD activity at the institution, rather than a comprehensive picture or audit of all SD related work at the HEI.  It reflects those aspects of SD adoption that consultees chose to emphasise.

| University of Birmingham | |
|---|---|
| **SD history** | ▪ Birmingham has a strong history of SD adoption, dating back at least to the first half of the '90s. As elsewhere this was particularly characterised by early grass-roots activity on the part of one or two key enthusiasts. One of these joined the university in 1994 as very much a 'horizontal' Dean intent on using a broad environmental agenda as a way of effecting a quite significant culture change, breaking down traditional research and teaching silos in the university. He continued this work whilst moving up the ranks, becoming this decade a PVC whilst retaining this initial remit. He has therefore had an unusual role – resulting in his having a genuine senior management ownership of SD rather than simply taking an executive responsibility/sponsor role. <br> ▪ As early as the mid-'90s the university began to build SD links with the sub-region and region, through the City Council, the local Chamber of Commerce, and the West Midlands – in a way which was, and remains, relatively less common for a Russell Group university — and these links have remained important. <br> ▪ Again unusually for a Russell Group university, it began to develop SD links to small and medium-sized enterprises <br> ▪ The university has throughout its SD history experienced organic growth, to a point where SD research is now judged to be 'genuinely interdisciplinary, with permeable boundaries'. <br> ▪ Birmingham was part of the UK Higher Education Partnership for Sustainability (HEPS). |
| **Key areas of activity** | ▪ The focus at Birmingham, a highly research intensive university, has been far more on SD research than on teaching, though there have been teaching developments in the social sciences area, and a popular Ethics, Technology and Policy module has been developed <br> ▪ The other major focus has been on estate management, broadly construed, and Birmingham feels that through organic growth it has made attempts to embed an SD culture here right across the university – academics, cooks, gardeners and cleaners – with the result that it is now able to begin to set strong estate management targets for SD. |
| **Special features** | ▪ The University has been successful in securing Higher Education Innovation Fund (HEIF) monies, with twelve staff assisting in knowledge transfer activities through a large number of additional academic staff. <br> ▪ As part of its revised research strategy Birmingham set up nine Collaborative Research Networks (CRNs) in 2004/2005 and SD features in several, particularly the Sustainable Environment, Energy and Resources CRN run by the cross-university, interdisciplinary Centre for Environmental Research and Training CERT). The centre has been regularly successful in securing major funding from the Natural Environment Research Council (NERC) and the Engineering and Physical Sciences Research Council (EPSRC). It supports a very broad range of interdisciplinary research. The university also founded in 2006 the Institute for Energy Research and Policy as a multi-disciplinary activity which has a wide range of SD projects including the development of a hydrogen fuel cell-powered narrow boat. <br> ▪ Birmingham is undertaking a range of internal projects in corporate services designed to reduce carbon emissions, working with the Carbon Trust; specifically to target priority buildings and save energy, through use of the university's own combined heat and power station. Other projects include rolling out eco-settings on computers and associated equipment. Particular efforts are been made to reduce the carbon emissions of university run student accommodation, working with a designated energy and recycling officer and using a student run competition. <br> ▪ The university is also making considerable advances in waste management with enhanced recycling rates. <br> ▪ Birmingham's long-standing focus on building regional links has continued with the adoption of the Birmingham Eastside Scheme, the largest current city-centre redevelopment scheme in the UK, as a regional demonstrator of sustainable urban development. <br> ▪ The university was the first Russell Group University to achieve Fairtrade status. |

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| **Particular barriers, drivers and enablers** | ▪ Birmingham believes it has had a deliberate policy of finding solutions rather than identifying barriers – for example it considers that it has found a way of dealing with devolved budgeting, which others see as a barrier.<br>▪ As elsewhere the key drivers have been particular individuals.<br>▪ Birmingham works with a range of stakeholders who have had an enabling role, particularly at a regional and sub-regional level. |
| **Current organisational arrangements** | ▪ The university has operated with relatively light infrastructure support for SD, principally a Sustainability and Environmental Advisor.<br>▪ The university has an Environmental Advisory Group, a working group of the Environment, Health & Safety Committee, set up and chaired by the Head of CERT; and a Sustainability Task Group, which operates at senior management level chaired by a PVC. |
| **Operational model for SD** | ▪ At a transition point to phase three. |
| **Plans for SD** | ▪ Looking, consistent with entry to phase three, to start to embed SD in Human Resource and other corporate services<br>▪ Planning to re-position Health and Safety within a broader category of Wellbeing. |

| University of Cambridge | |
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| **SD history** | <ul><li>Cambridge is a striking example, historically and today, of a university which has developed areas of international excellence in SD teaching, research and consultancy through the interests and endeavours of individuals and groups working initially at departmental level, without the benefit (or, some in Cambridge would say, the disbenefit) of a university-wide strategy and implementation plan</li><li>It also now exhibits high levels of effective cross- and inter-disciplinary working, both in teaching and research, and has shown a considerable facility in assembling collaborative teams.</li><li>Whilst these developments have been organic and bubbling up, rather than top-down, there was an all-schools request from the Vice-Chancellor's Office early in the decade asking schools and departments to incorporate into their next strategic plan a number of key themes of their own free choice.  A number, including the Department of Engineering, chose *sustainable development* as one of their governing themes.</li></ul> |
| **Key areas of activity** | <ul><li>Sustainable development now features significantly in the teaching programme of the university as (selectively) described in the next row of this table.  It also occurs in teaching in a range of other areas including geography, plant science, zoology, and the social sciences (including development economics), biochemistry, and architecture.</li><li>SD research, typically conducted on an interdisciplinary basis, occurs increasingly in these same areas.</li><li>In estates management the university considers that the development of SD activities is at an advanced stage since it can point to many examples of sector best practice that are intended to bring about a significant and sustained reduction in the university's overall impact: Cambridge is working with the Carbon Trust in the first phase of the Higher Education Carbon Management Programme, and has an Implementation Plan that aims to cut carbon emissions by 10% over the next five years; it has developed a renewable energy strategy that will result in the on-site generation of a significant proportion of the university's energy requirements from renewable sources; the university has won three 'Highly Commended' awards in the prestigious Green Gown Awards over the last three years; and it has a policy for the design and construction of environmentally sustainable new buildings with a target BREEAM rating of Excellent (with three buildings having received Very Good ratings and four others currently in the design or construction phases expected to receive Very Good or Excellent).</li><li>Additionally on the estates side the university notes that the recently launched HEFCE on-line guide to sustainable development gives two Cambridge guidance notes (*Sustainable Procurement* and *Environmental Aspects of Vehicle Purchasing*) as examples of Sustainable Best Practice in the HE sector; an Environmental Management System based on ISO 14001 has been established to strengthen the management of environmental issues within the university, with consideration currently being given to applying for formal certification to the standard; and despite limitations posed by a historic city centre campus the university has established recycling facilities for a wide range of materials including: paper, cardboard, plastic, glass, batteries, fluorescent tubes and redundant IT equipment.  An Operational Impact Working Group has been established comprising around twenty senior staff from across the university whose responsibilities fall within the wider remit of Sustainability or Corporate Social Responsibility to co-ordinate activities in these areas</li><li>As elsewhere there is at present limited joining up between teaching and research and estates management with regard to the SD agenda.</li></ul> |
| **Special features** | <ul><li>Cambridge has arguably a wider range of special features than most HEIs, and this account is highly selective.</li></ul> |

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| | ▪ As one of the schools/departments which chose sustainable development as a governing theme the Department of Engineering has progressed SD teaching and research very significantly over the last few years. On a range of metrics engineering represents approximately 10% of the university's overall activities. The Royal Academy of Engineering has provided support to introduce concepts of sustainability over all engineering courses in the university and to fund a Visiting Chair. In direct consequence the Department of Engineering Centre for Sustainable Development has been established, conducting research into air, sea and noise pollution; clean-up of contaminated land, waste and recycling, energy-efficient use and alternative sources, sustainable development, and global warming and coastal defences.<br>▪ In the area of teaching the Centre for Sustainable Development has introduced sustainable development issues, and modules, into all undergraduate engineering courses. This has involved a significant culture shift, since value-based criteria, as well as more traditionally quantifiable and measurable criteria, are now used in engineering decision-making. The Centre has also introduced an MPhil in Engineering for Sustainable Development with the aim of producing 'engineering leaders with the understanding and skills necessary to conceive and deliver fitting solutions to society's needs and to address global challenges within a sustainability framework.<br>▪ The Cambridge Environmental Initiative (CEI), launched in 2004, is a deliberately virtual centre set up specifically to facilitate and support interdisciplinary environmental research across the university, and to promote the university's external profile in this area. It gathers and distributes information about environmental research in the university, organises colloquia, and maintains a Directory of Environmental Research.<br>▪ The Cambridge Programme for Industry is a world-class centre of excellence in leadership for sustainability. Its programmes and underpinning research cover: climate, natural resources, and biodiversity; poverty and development; ethics, governance and partnerships; sustainable consumption and production; and financing sustainability. It works with business leaders of multi-nationals, and other senior decision-makers and innovative thinkers from universities, the public sector, and civil society. |
| **Particular barriers, drivers and enablers** | ▪ Cambridge experiences fewer barriers than some consultees, but one distinctive barrier is produced by its governance structure. This means that any proposed pan-institutional SD initiatives have to be negotiated with over thirty stakeholders, and the only current regular planning vehicle is the Bursars' Committee. There is a lot of activity on the estates management front but less clarity as to who is in charge.<br>▪ The RAE has also been reported as a barrier because of its perceived adverse influence on interdisciplinary research.<br>▪ The most obvious driver is the extraordinary pool of talented academics with relatively high degrees of freedom. Other stakeholders often have a highly enabling role to play, as illustrated most clearly by the role of the Royal Academy of Engineering. |
| **Current organisational arrangements** | ▪ Current organisational arrangements at an institutional level, as described for other case-study institutions, can best be characterised as emergent in the case of Cambridge. |
| **Operational model for SD** | ▪ Cambridge does not admit of any easy conventional characterisation in terms of an operational model. |
| **Plans for SD** | ▪ One newly emerging development is very interesting, and might potentially start to address some aspects of the governance issues as they relate to SD adoption. Although the majority of students at Cambridge, as elsewhere, show limited interest in SD estates management issues, |

|  | there are exceptions.  Both the Cambridge University Students' Union (CUSU) and the individual colleges have Green Officers, but a new initiative looks especially interesting.  Cambridge students, with active support from the Cambridge Programme for Industry, are organising a Cambridge Green Week planned for the first term of each year (Fourth Week), during which they will look at a range of environmental issues facing the university and attempt to develop a set of pan-university policies and practices which colleges and university alike can potentially sign up to.  In an institution where senior managers are often said to have all the responsibility and none of the power, there is an intriguing prospect that a different set of stakeholders, students, may be able to start to help the university, and the colleges, to move forward more in concert on the SD front.<br>• There are plans to introduce a range of more modular MPhils with SD elements, particularly in the Natural Sciences. |

## Kingston University

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| **SD history** | ▪ SD adoption at Kingston began as a grass-roots movement.  It differed, however, from other case-study institutions in that from the outset it involved lecturers, academic support, estates and central administration staff.<br>▪ A successful bid was made by staff from the School of Earth Science and Geography to appoint an SD co-ordinator in 2002 which led to the formation of the Steering Group for Sustainability.  Dr Ros Taylor became the Steering Group's chair and one of the key drivers for sustainability at Kingston.<br>▪ The HR Manager took responsibility for allocating funding for the SD posts which came from HEFCE funding for cross-university initiatives.  She also represented SD interests on the Executive Group.<br>▪ The present (second) SD co-ordinator was appointed in 2005, and more recently (2006) the new University Secretary took on executive-level responsibility for SD.  The Sustainability Plan for 2007 -2010 sets out how sustainability will be integrated into all areas of the university truly embedding sustainability into the institution. |
| **Key areas of activity** | ▪ Kingston is home to one of two Centres of Excellence in Teaching and Learning (CETLs) in SD.<br>▪ An active School for Earth Science and Geography with SD courses, research and consultancy and 'live projects' such as environmental auditing on campus for environmental management students.<br>▪ Teaching includes a very wide range of courses involving elements of SD from the highly acclaimed Aerospace Engineering Design foundation degree to courses in Environmental Economics and Sustainable Cities, to masters degrees in Planning & Sustainability and Sustainable Environmental Development with Management Studies.  In all some 77 courses at Kingston are currently considered to have SD elements.<br>▪ Most Faculties and schools are now engaged with SD research through individual consultancy projects through to the focus of research centres (Sustainable Design Research Centre; Centre for Suburban Studies; Sustainable Technology Research Centre; CEESR ; Real Estate Research Centre).<br>▪ Higher than average (and growing) focus on estates management.  The university has, for example, recently joined the Higher Education Carbon Management Programme.<br>▪ Strong links into the community including a triple award winning environmental project with the Royal Borough of Kingston and the recent International Sustainability in Practice Conference. |
| **Special features** | ▪ One of the special features of Kingston is its Centre for Sustainable Communities achieved through integrated professional education (C-SCAIPE), a CETL.  Key to C-SCAIPE is the fact that the Centre, which is focused on built environment education, aims to help deliver sustainable communities by producing graduates capable of working across professions and wider stakeholder groups, taking a *holistic* approach to the concept of sustainability.  Among C-SCAIPE's objectives is to ensure that *curriculum and assessment design incorporate sustainability issues* as they relate to each subject area.  At least 30% of all modules delivered within the School of Surveying are currently claimed to refer explicitly to sustainability issues.  The Centre collaborates closely with professional bodies (for example the Royal Institution of Chartered Surveyors and the Royal Town Planning Institute) and with practitioners. |

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|  | ▪ The Kingston philosophy on SD discourages the development of a generic SD module.  Colleagues believe that SD needs to be taught in a context-specific way so that its relevance is clear to students in all subject areas, including vocational courses at undergraduate and postgraduate level   The discipline leads on this have been environmental and geographical sciences, built environment (architecture, landscape and surveying), engineering, design and business.  The SGS originally audited the level of engagement and various mechanisms, including C-SCAIPE and SGS events, are helping to further embed SD in delivery across the university over the coming years<br>▪ Another interesting feature of Kingston is that it is a member of WestFocus, a consortium of seven universities based in South and West London and the Thames Valley that works in partnership with community groups and small and medium-sized businesses to effect successful knowledge transfer.  Kingston has started to use this consortium to develop SD projects into the community, and sees this as an important growth area for 'third-leg' activities.<br>▪ Kingston was recently highly commended for the work of the Steering Group for Sustainability in the Kingston Green Guardian Awards. |
| **Particular barriers, drivers and enablers** | ▪ Situated as it is in an outer London borough Kingston sees existing transport arrangements and policy in London as an important barrier, since many staff and students would need to combine cycling with rail transport in order to avoid using a car, but find that current policy deters them.<br>▪ Linked to this the fact that Kingston is a multi-site university is a further barrier.<br>▪ The principal drivers have been seen historically as individual enthusiasts.  The University's Steering Group Sustainability, its Sustainability Team and C-SCAIPE are instrumental drivers for institution wide adoption of SD.<br>▪ Kingston is very well linked to its stakeholders and sees many of them – including professional bodies, local authorities, and the community – as important enablers who work with and through all sections of the university. |
| **Current organisational arrangements** | ▪ A three-person sustainability team, led by the SD co-ordinator, with a particular focus on taking forward the estates management agenda.<br>▪ A Steering Group for Sustainability, established for the last five years, provides a dynamic, flexible, facilitating group, committed to awareness raising and extensive networking; it has well-developed connectivity with the Sustainability Team and C-SCAIPE, with whom there is cross-representation and membership.<br>▪ A network of student 'eco angels' who are paid to spend eight hours a week principally on awareness raising.<br>▪ Executive-level ownership through the University Secretary. |
| **Operational model for SD** | ▪ Poised overall to move increasingly into phase three. |
| **Plans for SD** | ▪ C-SCAIPE, through its own development, will further integrate with wider university activity and develop a forward plan for integration with university activities.<br>▪ Members of the Steering Group for Sustainability, C-SCAIPE and the Sustainability Team will work towards a longer-term plan for integrated working to establish Kingston as a regional hub for sustainability working with the community and other educational bodies in the fields of educational delivery, research and consultancy.<br>▪ Target setting will become increasingly important over the next year.  The university's first tactic will, however, be to incentivise staff and students: it |

intends to demonstrate the potential to save money through an SD-linked approach to estates management, and to commit to a plan for sharing the savings.
- Kingston has been involving students in various ways, as eco angels, as delivery agents for SD projects in the community, and to work on its Student Eco Guide. Currently there is a very high level of engagement from a relatively small proportion of the student body, and the university will be looking to widen student involvement and buy-in by working closely with the Students' Union.

| University of Wolverhampton | |
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| **SD history** | <ul><li>Long niche history of SD work in the university, particularly through the activities of the internationally recognised Centre for International Development and Training (CIDT), established 33 years ago and working with a range of international aid agencies and funders, including ODA/DfID, NGOs and Church-sponsored groups.</li><li>Other classic phase one activity on the part of individual enthusiasts and small teams in a number of different areas – representing a relatively small proportion of the university. Very values-driven.</li><li>Now (2007) establishing a Steering Group with the Dean of the School of Applied Sciences, one of the early enthusiasts, as chair.</li></ul> |
| **Key areas of activity** | <ul><li>Major focus on teaching – such programmes as an SD module (including but by no means limited to Corporate Social Responsibility) as an elective in the Business School; significant SD elements in a suite of new Foundation Degrees in community focused public health; a degree suite in Geography and Environmental Science, with offerings in habitat management and ecology; an MSc delivered by CIDT in Leadership and Learning for Development, and a specialist module in Managing Sustainable Rural Livelihoods.</li><li>CIDT also delivers SD research and consultancy, and CPD.</li><li>Long-standing programme of SD-related research in applied science (e.g. soil erosion in China, the development of geo-textiles, work on pollution control) and a growing research programme in the Business School.</li><li>Little SD activity in the area of estates management.</li></ul> |
| **Special features** | <ul><li>CIDT delivers the prestigious Chevening Fellows' programme on Governance and Environmental Democracy, working on key SD issues with future thought leaders in a broad range of countries.</li><li>The Business School is conducting research into the implications of corporate social responsibility for SMEs. There is a particular focus on the ethics of care for board members, using stewardship theory to elaborate a concept of duty of care to stakeholders.</li><li>The new chair holder in Public Health is expected to raise the research programme in health, and in SD-related issues.</li></ul> |
| **Particular barriers, drivers and enablers** | <ul><li>The most commonly cited barriers were devolved budgeting and the fact that Wolverhampton is a multi-site institution. The principal drivers to-date have been seen as key individuals, and the presence of CIDT as a specialist institution. Wolverhampton appears so far to have had relatively less involvement with enabling stakeholders, but this is expected to change.</li></ul> |
| **Current organisational arrangements** | <ul><li>Early stage of formalisation, with Steering Group being set up.</li></ul> |

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| **Operational model for SD** | ▪ Transitioning into phase two, with the setting up of a Steering Group and new PVC-level involvement. |
| **Plans for SD** | ▪ Expectation that SD will be included in the next Strategic Plan for the university, and will then be cascaded down to departmental plans.<br>▪ Wolverhampton has a mission-led commitment to social inclusion and justice, and there is therefore potentially a significant overlap with many aspects of SD, and a growing recognition of a need to 'thread SD through the curriculum'.<br>▪ The Business School is currently planning a suite of themed BA degrees in Business Management – with a common set of core modules and a set of theme-specific modules.  One of those planned is in Business Management (CSR).  There is also a possibility that CSR could be placed in the electives available on a pan-university basis – although, as noted earlier, there are barriers which need to be overcome here with respect to both devolved budgeting and the fact that Wolverhampton is a multi-site institution.<br>▪ The Steering Group sees it as important that SD adoption takes neither a 'short-term accounting perspective' nor an 'evangelical' approach, but is based on emerging principles of good governance.<br>▪ The university considered that its inclusion as a case-study for this review also had the potential to help further the cause of SD adoption in Wolverhampton. |

**8.5     APPENDICES 7**

**Appendix 7a. Strategic Review Consultees**

**RAE Panel Chairs**

- Prof. Peter Brandon, University of Salford
- Prof. Richard Munton, University College London
- Prof. John Spence, University of Strathclyde
- Prof. Cary Cooper, Lancaster University
- Prof. Peter Liss, University of East Anglia
- Prof. John Punter, University of Cardiff
- Prof. Bryan Lawson, University of Sheffield

**Research Council Chief Executives**

- Dr. Randal Richards, EPSRC
- Prof. Keith Mason, PPARC
- Prof. John Wood, CCLRC
- Prof. Colin Blakemore, MRC
- Prof. Ian Diamond, ESRC
- Prof. Julia Goodfellow, BBSRC
- Prof. Philip Esler, AHRC
- Prof. Alan Thorpe, NERC

**University of Birmingham**

- Prof. Geoffrey Petts
- Prof. Judith Petts
- Dr Trevor Shields

**University of Cambridge**

- Dr Kate Pretty
- Martin Whiteland
- Dr Sue Jackson
- Polly Courtice
- Daniel Chandler
- Mark Kohler

**Kingston University**

- Donald Beaton
- Nicola Corrigan

**University of Wolverhampton**

- Professor Sally Glen

- Professor Patrick Rowbotham
- Dr Philip Dearden
- Dr Robert Kowalski
- Matt Swindlehurst
- Dr Silke Machold

## Organisations Formally Contacted

Letters were sent to the following bodies inviting comments on the benchmarking exercise. This resulted in an interview with EAUC but no other substantive response was received

- AHUA
- UUK
- SCOP
- AUDE
- AUPO
- BUDFG
- SCOP
- GuildHE

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