

Comments re:  
**BREEAM for Schools Draft**

For the attention of:  
**Fiona.Fanning@dfes.gsi.gov.uk**

July 30<sup>th</sup> 2004

Dear Fiona,

Below is the response of the Association for Environmentally Conscious Building (AECB) to the Draft document BREEAM for Schools. We welcome the fact that there is to be a rating system for the sustainability of new school buildings. We would like to see a rigorous scheme that goes far beyond BREEAM for Offices in its environmental detailing. We would like to see the use of “compulsory” aspects of the assessment, i.e. some points which **must** be addressed in order to achieve a satisfactory rating.

## INTRODUCTION

- We strongly endorse the statement that it is important to ‘...encourage the development and procurement of more sustainable schools...’

## EXPLANATION OF BREEAM

- We note that the “weighting system” for adjusting credit values will have a considerable impact on the final outcomes - as with BREEAM offices and EcoHomes. The weighting system needs to be clearly explained and agreed, so that those using the system understand which sustainability issues are being emphasised, and why.

## DESCRIPTION OF THE PROJECT

### Aims and objectives

‘...to promote understanding of the issues and develop a commitment to education for sustainable development.’

- We agree that “Education for Sustainable Development” is an important objective. Students should be encouraged to understand their own environment - natural and built - and the implications of their school on the wider environment. We would encourage the education programme to consider the full “life cycle” of products and systems used, and the implications at each stage – harvest/mining, processing/manufacture, installation, use and disposal/re-use.

## BREEAM ISSUES

### Management

- We recommend that Site Analysis should be a **compulsory** aspect of the BREEAM assessment. If the local site conditions are not adequately considered in the design process, the implications for the environment and for users can be wide ranging and long-term. For example, passive solar orientation, provision of shelter and understanding of microclimatic conditions allow designers to optimise comfort levels and prevent unnecessary use of non-renewable resources.

## Energy

- There should be no place for mechanical cooling systems with good design of school buildings in the UK. The use of external shading, thermal lagging, insulation and passive cooling measures should be encouraged.
- Use of solar thermal water heating should be encouraged, particularly for swimming pools.
- There should be no possibility under BREEAM schools for electrical resistance space heating to be specified, unless totally powered by **on-site** renewable energy systems.
- Light fittings should be capable of taking low energy light bulbs only.
- Low maintenance / long-life materials should be considered, as well as low maintenance systems.
- The accessibility and legibility of metering information should be considered. Metering provides opportunities for education – of both students and staff – regarding consumption levels.
- Information gained by testing energy performance “in-use” should be collated in order to build up knowledge of what works in practice, in order to substantiate theoretical energy models and u-value calculations.

## Transport

- Broadly agree - no further comment

## Environmental conditions

- The BREEAM issues list includes “Low VOC emitting building components” in Finishes and Furnishings. We recommend that the DfES also look seriously at the risks associated with the use of other chemicals used in synthetic materials - for example chemicals such as phthalates used in the manufacture of PVC flooring, (especially important in schools with nursery sections) and brominated flame retardants used on furniture and electrical equipment, amongst many others.
- Acoustic issues are of course an important consideration in the satisfactory functioning of schools. Care should be taken that the health gained through good acoustics is not undermined by the use of materials which could pose a potential health risk (e.g. synthetic foamed materials).

## Health and safety

- We suggest that the DfES look at passive measures for improving indoor air quality through avoidance of materials which cause air pollution risks, and inclusion of materials which improve internal air quality – for example hygroscopic materials such as clay.

## Water

- We strongly agree with the comment that ‘Consideration should be given to the incorporation of water reduction features...’ and would argue that reduction measures should be compulsory before consideration of additional water measures such as rainwater harvesting.
- WCs that flush with less than 6 litres of water should be compulsory. I.E. either dual flush WCs or single flush WCs using 4.5 litres per flush
- We agree that “mains leak detection” and “sanitary supply shutoff” controls are highly desirable.
- In the list of water reduction features, we suggest the inclusion of waterless urinals and automatic shut off taps with aerated heads
- We would like to emphasise that a well designed rainwater harvesting system can be used to flush WC’s, without the need to use additional chemical treatments or UV disinfection.
- We actively discourage the use of greywater systems as part of a sustainable water strategy, because of the need for strong chemical treatment and the high levels ongoing maintenance which

are required. More water can be saved by specifying low flush WC's than will be "gained" through use of a greywater recycling system.

## Materials

- We strongly agree with the need to discourage the use of hazardous materials in all buildings – and particularly in buildings, such as schools which house vulnerable sections of the population (babies, children, adolescents, the ill and the elderly are considered to be particularly vulnerable to certain types of chemicals.)
- Low risk materials should be used in preference to materials whose properties and longevity are "as yet unknown". The precautionary principle is "specify benign".
- We strongly agree with the principle of using materials which minimise impact on the environment and taking into account the full life cycle of materials. It should be recognized that "environmental impact" includes the health implications in all phases of material use – from extraction through to manufacture, use and disposal.
- The non-recyclability of materials has very long term implications. Designers should be encouraged to design for disassembly and re-use of components, as well as non-hazardous disposal at the end of useful life.
- It should be noted that interior items such as surface finishes may be considered "minor" in terms of volume of material; however these are the materials most often touched by occupants, and also have a major affect on indoor air quality.
- We also agree that Durability and "Design for longevity" are important material properties to aim for. Good construction detailing should be used in preference to chemical protection of materials.

## Land use and Ecology

- Broadly agree, but would like to add that planting/ land/ ecology measures can also be used to influence site microclimate (e.g. through clever use of deciduous shading), and hence the comfort levels experienced in the building and surrounds.

## Pollution

- Broadly agree - no further comment

## DELIVERY OPTIONS

- We agree that assessments must be carried out in a consistent and independent manner.

I trust that our comments will prove useful. We would like to provide additional feedback for subsequent phases of the development of BREEAM for Schools or other sustainability measures for the DfES.

Yours sincerely



Cath Hassell  
On behalf of the committee of the AECB