Sustainable Development: Drivers and Barriers on Office Buildings in Bristol

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Abstract

This paper seeks to explore and contribute to the underlying notion of sustainability and environmental management in office buildings within the Bristol, Southwest of England. This is important because the activities of office organisations impact greatly upon both the internal and external environment of an organisation. The paper focuses on the key drivers and barriers associated with effective implementation of sustainable environmental management particularly on existing office buildings. The study also examines the environmental management programmes being undertaken in office buildings.

Introduction

Environmental issues are emerging with increasing challenges for many business organisations in recent years particularly in areas of stringent legislative and regulative measures, commercial and stakeholder pressures to raise environmental standards of business practices (Elliot et al, 1996). In responding to the above external pressure for change in environmental performance, Strachan (1997, pp 10-17) argues that the environmental concerns have been forced onto both the strategic and operational agendas of many firms which have led to a plethora of environmental management within the business community, with the most recent being that of the generic environmental management standard such as British Standard Institution (BSI) BS 7750, EU Eco-Management Auditing Scheme (EMAS) and International Organisation for Standardisation (ISO) environmental management system ISO 14001. These environmental management standards are now recognised by the governments, national and international business community as a move towards "sustainable development". Moore (2005, pp 326-339) explains that *sustainability is a concept, a goal and a strategy which speaks to the reconciliation of social justice, ecological integrity and the well being of all living systems on the planet*. Rezaee and Elem (2000, pp 60-67) also argue that in the era of environmental consciousness, businesses are shifting away from environmental compliance towards environmental management that continuously improves their environmental advances.

The Labour Government declared its intention on environment when it assumed power in 1997 with the statement by the Rt Hon John Prescott, MP, Deputy Prime Minister and Secretary of State for the Environment, Transport and the Regions *sustainable development is central to this Government's vision for the future of the UK. Government needs to make full contribution to this process, leading by example in the way it conducts its own business* (Prescott, 1999, p1).

The integration of sustainability issues such as efficient energy, recycling, green cleaning, etc, into environmental management of businesses will not only bring with it commercial benefits but could also help to retain high calibre of employees to the organisation. For instance Quazi (2001) reports a study of McKinsey covering 403 senior executives from around the world revealed that 68 per cent of them agreed that organisations with poor environmental record would find it increasingly difficult to recruit and retain high calibre staff. Shiers (2000, pp 352-365) also argues that sustainability issues in UK commercial buildings provide evidence that such developments are fundamentally better, more healthy, less expensive to run, more "socially responsible" and more attractive to occupiers and the public. It embraces living within environmental limits, ensuring a strong, healthy and just society and achieving a stable, durable economy of which everyone has a role to play.

However, Gibson (2005) argues that many organisations have integrated sustainable environmental management programmes into their daily business practices since 1980s, but the promised benefits have not been really materialised. This article will therefore examine the key drivers and barriers associated with effective implementation of sustainable environmental management in office buildings particularly within Bristol.

Research Methodology

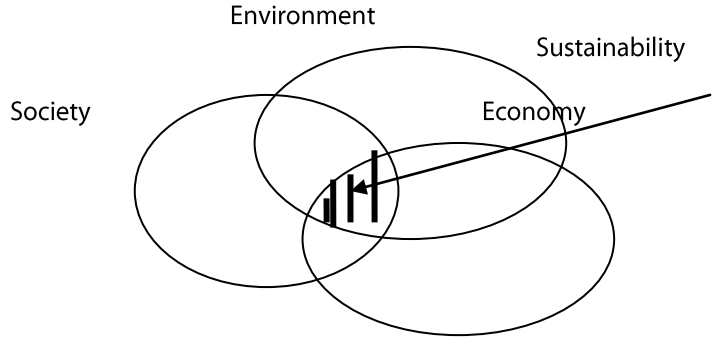
This paper is based on mixture of survey study conducted by the researchers on twenty five (25) offices sampled within the Bristol city. Data were gathered from both questionnaires and interviews. Both postal and self administered questionnaires were adopted for this study because of the dispersed nature of office buildings in Bristol. Five (5) interviews consisting of semi-structured and structured were also used to provide an in depth knowledge on sustainable environmental management in office buildings. Quantitative and qualitative researches were used to analyse both the questionnaire and interviews respectively. In addition to the questionnaire and interviews as a source of primary data, a reasonable number of government documents, journals, textbooks and international standards were reviewed for secondary source for this research.

Literature Review

Sustainability was first described by Brundtland Commission as *development which meets the needs of the present generation without compromising the ability of future generation to meet their own needs* (WCED, 1987). Environmental Management (EM) on the other hand involves the identification of processes, tools and instruments through which environmental resources may be used in more balanced way or, in other words, how such resources may be managed (Filho, 1997). *Sustainable environmental management of office buildings can therefore be defined as a multi-layered management process which offers indefinite future office buildings sustain and rehabilitate the quality of natural and built environment, and sustain and transform an organisation's economic capacity to meet the intended and health needs of its employees* (Owusu, 2006).

The above definitions suggest an adoption of approach that treats environmental issues such as energy, air quality, waste, water, etc, within the office building as one of the dominant factors in the development and implementation of business strategies. It requires management approach that is practical, continuous improvement, effective and above all fair principles for the sound management of environmental issues.

In expressing his views on sustainability, Tietenberg (1994) said "that at a minimum, future generations should be left no worse off than the current generations." In other words, the actions of present generations in using resources should not reduce the standard of living of future generations below that of present generations. This is a difficult challenge, in the sense that each of the "three-pillars" (i.e. environment, economy and society) has different paradigm of operating, but the issues of sustainability tends to focus on integration of the above three elements in decision-making of a project.



After Brundtland definition, many alternative and diverse interpretations have been expressed about this same concept. Although Brundtland definition focused on 'two-pillar model', reflecting environment and development concerns, many of these new interpretations are based on 'three-pillar' or 'triple bottom line' concept (Jenny et al, 2004). The 'three-pillar' model separates development issues into social and economic factors, emphasising that 'material gains are not sufficient measures or preserves of human well-being (Jenny et al, 2004). *Sustainable development is about much more than just bringing the environment into development. If things are going to change, what we need is not abstract notions, nor doom and gloom, but practical, effective and above all fair principles for the*

sound management of the planet. Because development that's sustainable has to work for the poor as well as for the planet (DEFRA, 2005).

Currently, it has been suggested that there are over seventy definitions of sustainable development in circulation (Pearce et al, 1989). Some of the alternative definitions expressed on sustainable development include;
At the "Forum for the Future Annual Report, 2000" sustainable development was defined as 'a dynamic process which enables all people to realise their potential and to improve their quality of life, in ways which simultaneously protect and enhance the earth's life support systems' (RICS, 2004).
"At its heart is the simple idea of ensuring a better quality of life for everyone, now and for the generations to come. This means achieving 4-key strands;
Social progress which recognise the needs of everyone
Effective protection of the environment
Prudent use of natural resources
Maintenance of high and stable levels of economic growth and employment (DETR, 1999a).
'In principle, such as optimal (sustainable growth) policy would seek to maintain an "acceptable" rate of growth in per-capita real incomes without depleting the national capital asset stock or the natural environmental asset stock' (Turner, 1988).
'Sustainable development should be a process which allows for the satisfaction of human necessities without compromising the basis of that development, which is to say the environment' (Trzyna, 1995).
"Improving the quality of human life while living within the carrying capacity of supporting ecosystems," while sustainability is 'a characteristics of a process or state that can be maintained indefinitely' (WCU, 1991).
This proliferation is not only a reflection of the complexity of defining sustainability for a wide variety of actors, from individuals to communities to organisations, but also signalled a mounting concern over the deteriorating health of natural and social systems and a growing recognition of the economic benefits of sustainability. Although they may differ in scope depending upon whether they are designed for individuals, companies, or national governments, most definitions of sustainability share the same foundation and a number of characteristics emerged and must be considered. Among them include;
The need to balance the production and use of resources and environment to achieve a stable climate;
Ability to improve the quality of life and reduction of waste;
Development needs to take account the relationship between economic, environment and social issues;
Equitable distribution of development- both individuals within the present generation and future generations.

However, there are sections of people who still hold the view that the "concept of sustainability" remains contestable by its nature and therefore do not give recognition to it. For instance Pezzey (1989) who produced a ten-page listing of the most common definitions used in the decade of the 1980s was one of the critics. There are also large volumes of writings on sustainable development which reveals that there is no agreement on exactly what sustainable development means and that the concepts ambiguity diminishes its usefulness (Pearce et al, 1989).

Nevertheless, lack of clarity is not without its merits. It has allowed people with conflicting interest to reach a common ground upon which concrete policies have been established. For instance the critics of sustainable development insist that if it is to achieve its true goal, development should grow from within and rely on sustainable forms of resource use and this has been adopted into built environment. To acknowledge this view European Union (EU) has adopted sustainable use of resources among its Seven Thematic Strategies (air pollution, sustainable use of resources, waste prevention, the marine environment, recycling, pesticides, soil, and the urban environment) to serve as solid approach for environmental policy-making at EU level since 2002 (EC, 2005, pp 5-6). Also, the establishment of United Nations Environment Programme (UNEP) to serve as an 'International Environmental Watchdog' in terms of monitoring of global environmental change is a common ground for the two conflicting views.

Overview of UK Government and Environmental Issues

The various UK Governments have made it a commitment to play a leading role of integrating environmental issues into all government processes through policy formulation and operations. For instance, in 1990, the Government White Paper "The Common Inheritance" introduced new institutional reforms and the requirement of all government departments to develop their own strategies for integrating sustainable development into their operations (DoE, 1990). Following those reforms the Labour Government put the concern of sustainability issues into the heart of policy making and appointment of new Parliamentary Environmental Audit Committee to scrutinise government departments' policies and operations in 1997.

The Government delivering his strategies on sustainable development in 1999 recognised that policies will take into account ten guiding principles which also reflect Rio Declaration on Environment and Development. Among the principles established by UK Government on sustainable development strategy include putting the people at the centre; taking a long term perspective; taking account of costs and benefits; creating an open and supportive economic system; combating poverty and social exclusion; respecting environmental limits, the precautionary principle; using scientific knowledge; transparency, information, participation and access to justice; and making the polluter pay. It is interesting to note that some of the above principles are legal, others could be described as approaches to decision making. Also, the introduction of government interventions through well-designed environmental taxes (e.g. polluter pays) and other economic indicators to discourage individuals and organisations behaviour that damages environment have been efficient mechanisms necessary to achieve environmentally sustainable development (HMT, 2002).

In 2005, the UK Government sustainable strategy "Securing the Future" stated that environmental issue should be an *integral part of policy making from the start, rather than dealing with consequences of neglect down the line* (DEFRA, 2005). With this a new sense of purpose and principles for sustainable development and new shared priorities have been agreed upon across the UK to tackle environmental issues and these include;

- *A new integral vision building on the 1999 strategy-'A Better Quality of Life' (social progress, effective protection of the environment, prudent use of natural resources and maintenance of high and stable levels of economic growth and employment) with stronger international and societal dimensions.*
- *Community Action 2020 –Together We Can- helping people involve in community engagement.*
- *Stronger partnership with key business sectors such as the food, tourism and construction industries.*
- *Five principles- with a more explicit focus on environmental limits, ensuring a strong, healthy & just society, achieving a sustainable economy, using sound science responsibly and promoting good governance.*
- *Four agreed priorities- Sustainable consumption and production, climate change, natural resource protection and sustainable communities, and a new indicator set, which is more outcome focused, with commitments to look at new indicators such as on wellbeing* (DEFRA, 2005).

The government commitments and principles shown above seem a movement towards a clear action of involving people, business, voluntary organisation and government departments to promote sustainable environment within the United Kingdom. However, little progress has been achieved in sustainable environmental management, particularly on buildings in UK. For instance, a report issued by National Audit Office (1994) on the Buildings and Environment identified that buildings contribute about 50 per cent of total carbon emissions in UK. And with that one begins to question the possibility of UK Government declaration to cut down her overall emissions of greenhouse gasses by 12.5 per cent below 1990 levels over the period 2008-2012.

There are number of reasons that account for low environmental performance of buildings. Firstly, it is observed that much of the government's commitment to sustainable environmental policies and operations are geared towards managing performance of its own estates without much integration of the private sector developments. Also, the behavioural attitude of individuals, businesses and the state has not changed to bring the necessary effect expected in environmental performance (Darnton, 2004).

Environmental Management within Office Buildings

Environmental issues have become an increasing concern in human activities and more especially on built environment. According to Baldwin et al (1993) the construction and use of buildings is probably the greater impact on the global environment than any other human activity. The reason that account for this assessment is not far fetched. Buildings have long life which runs into decades and sometimes into centuries. Throughout their life cycle various alterations, fit-outs, refurbishments, operations and demolition will be carried out through the burning of fossil fuels which cause pollution emissions to the environment (Baldwin et al, 1993). There are other reasons that account for increasing environmental issues on development generally.

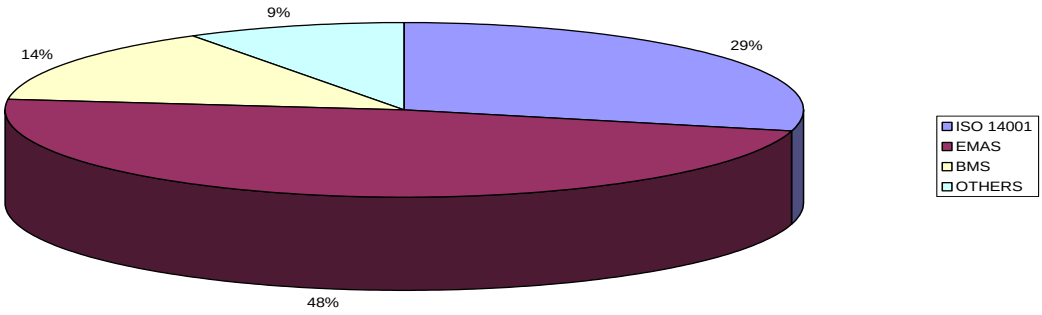
First, the experience has shown that economic development leads to resource depletion, pollution, congestion and degradation of the rural and urban environment (DETR, 1994). Also, the rapid increase in world population and its associated resources consumption are putting more constraints on the environment, unless development is wisely guided (DETR, 1994). Additionally, the increasing complexity of legislation, standards, guidelines and corporate social responsibility being faced by organisations to protect the health needs of the workers as well as reducing environmental impact. For instance an organisation in UK does not only face the Environmental Protection Act 1990, but also European Community and World Health Organisation legislations as well. Failure to

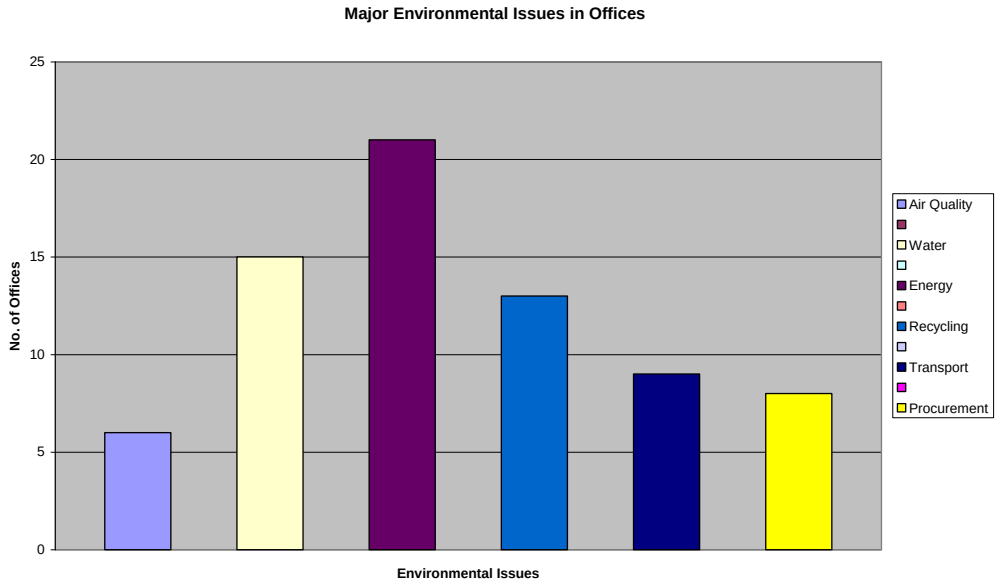
comply with the legislation could lead to imprisonment or a fine which in turn can ruin the reputation of the organisation.

Currently, environmental management issues have been placed under the responsibility of facilities management department in certain organisations. For instance in the NHS all mandatory guidance on environmental management is issued through NHS estates and facilities management department which enable high quality and safe patient care to be delivered (Department of Health, 2005). In recognition of the above role Nutt and McLennan eds (2000) argue that an increasingly proactive and assertive facility management need to emerge, one which has more coalesced its activities into the primary business of the host organisation, rather than remaining as a supportive activity responding to a prescribed set of expectations and duties.

The figures below illustrate the major environmental management strategies and practices within office buildings in Bristol respectively. Key environmental management practices include air quality, energy efficiency, green cleaning, water usage efficiency, recycling and light pollution.

Environmental Management Strategies in Offices





Source: *Owusu (2006)*

The high percentage of office buildings in Bristol had EMAS in their environmental management strategies whilst a small proportion also engages in general indoor environmental management without being affiliated to any recognised institution like ISO or EMAS for actual supervision of their organisations environmental performance. Also a significant number of office buildings have installed Building Management Systems & Controls for their building services such as lighting, ventilation, space heating and cooling, as well as water services at timed controlled methods. It is observed that the adoption of environmental management strategies such as ISO 14001, EMAS and BREEAM by office buildings in Bristol are basically voluntary and economic reasons without any legislative binding.

Drivers and Barriers of Sustainable Environmental Management

There is little doubt that the world is moving on the threshold of unsustainable environment with regards to excess energy, waste and climate change. Businesses have acknowledged the responsibility of improving their environmental performance through the development and implementation of sustainable policies such as energy reduction, waste minimisation, etc, which translates the strategy into action and demonstrable evidence of progress (BIFM, 2005a). These turn to have balancing effect on the corporate budget with cost savings and workplace performance. Quazi (2001) argues that in the business world, environmental performance and economic performance are positively linked and that a company without an environmental management system is likely to lose out to a rival that has one. Also the concerns of maintaining customer relationship, stakeholders' interests and avoiding media exposure can have substantial impact on the reputation of the organisation. RICS (2004) argues that even though compliance by the government and business to sustainable environmental management constitutes a key drive for change, it also represents an increasing acceptance of standards of good practice.

Nevertheless, sustainable environmental management is not only a matter of compliance but involvement of the "top management" of businesses as well. The role of the government is also very significant particularly through policy planning, incentives and management of its own estates procurement practices (RICS, 2004). In UK there a number of factors which have been identified through the literature review as the driving force for implementing sustainable environmental management within the business. These include: the increasing Legislation and EU Directives places increasing scrutiny on organisations reporting in terms of environment and Corporate Social Responsibility (CSR). the evidence of effective business risk management and the provision of public perception through saleability (BIFM, 2005a). Government commitments through awareness creation and incentives. Financial imperative in terms of net savings (profits).

However, the above provisions have not effected any significant improvement in environmental management. The reasons accounts for such slow attitude for implementing sustainable environmental management programmes are not far fetched. Firstly, the public and business understanding in sustainable environment tends to be low. A report submitted by Darnton (2004) on public awareness and understanding of sustainable development revealed that about 34% of England population in the year 2001 understand sustainable development and that figure had not changed since 1996/7. He argues that even those working on the field of Sustainable Development tend to use multiple definitions which in turn translate difficulties in implementing sustainable environmental management in office buildings. Strachen (1997) argues that the complexity of integrating environmental and business considerations will require firms to transform themselves into "learning organisations" or "companies" with the aim of expanding its capacity to create its future.

Secondly, lack of "top management" involvement in environmental issues tends to affect the progress of environmental programmes in organisation. According to Nutt and McLennan (2000) the integration of environmental issues into top management businesses will help to raise ethical expectations of customers, legislators and other ethical stakeholder interests. Pojasek (2005) also argues that top management endorsement is important, but it is only one part of the improvement process in environmental management. The author argues that the employees' who are working day-in and day-out constitute a major resource that help facilitate change in organisation's environmental performance.

Thirdly the use of de-regulation and other economic instruments by the UK government to promote environmental performance in organisations have not produced any useful results. Spedding (1996) argues that although the "polluter pays" underpins most legislation, the principle often has practical difficulties with regards to its enforcement. This suggests that there is no proper coordination between the policy planning and

implementation strategies involving mechanisms used to enforce sustainable environmental management in organisations.

The behavioural attitude of people and businesses plays a key role in the sustainable environmental management. This is because environmental management programmes are being carried out by the employees within an organisation. In this regard Rutherfoord et al (2000) argue that through long-term process of learning and education individual attitudes and values could be changed. Spedding (1996) also argues that the business community is unlikely to adopt sound environmental practice voluntarily unless there are commercial benefits. However, the author argues that with the advent of competitive tendering as a common practice coupled with increasing legislation businesses are moving towards broader and closer scrutinise beyond the core services.

Furthermore, it is argued that sector inertia and an apparent lack of evidence of market demand for sustainable environment, together with lack of information and expertise are recorded as the most important obstacles or barriers to a more sustainable built environment (RICS, 2004). These obstacles tend to affect office building occupiers accessibility to sustainable environmental management initiatives and presentation of such initiatives in a well understood and practical manner.

Summary and Recommendations

Securing the commitment of board level management will provide a significant impact on effective implementation of sustainable environmental management in office buildings. This is because policy document which contains sustainable environmental management programmes need to be endorsed at the board level so as to ensure its effective delivery within office buildings. Lent and Wells (1992) argue that the closer the environmental management champion is to the decision-making process, the greater the chance of the message being heard. Also the commitment of the board level management will contribute to the provision of financial resources needed for effective implementation of environmental management programmes and also increase the commitment of employees' to environmental issues.

Although it observed that majority of office buildings in Bristol have sustainable environmental management programmes in placed, the provision of initial cost has been one of the key barriers facing their implementation. It is therefore recommended that government incentives in the form of monetary assistance and monitored by an organised body should be provided to assist the effective implementation of sustainable environmental management in office buildings. Also, there should be provision of government incentives in the form of "environmental awards" to deserving office buildings which integrate sustainability issues into their environmental management processes.

Attitudes of the employees contribute a significant step for successful implementation of environmental management in office buildings. This is because once the detailed sustainable environmental management document is approved at the board level the actual environmental management process is carried out by the employees. Employees' behavioural change will therefore play significant roles in carrying out sustainability issues in office buildings. In recognition of this Zabel (2005) cites the work of Werner (1999) that sustainability will not be achieved until humans accept more responsibility for the environmental consequences of their reproductive and consumptive behaviours.

Substantial changes at the level of individual employee's behaviour encompasses learning processes and it is therefore necessary to provide training for employees to understand the appropriate environmental management tool through process definition so as to enhance environmental performance of office buildings in Bristol. In recognition of this Darnton (2004) reports the House of Commons Select Committee as saying that *learning is a key driver for sustainable change*.

The setting out of unified code of standardisation will contributes a significant step for effective implementation of sustainability issues in office buildings. Evidence from the study indicates that most office buildings in Bristol have integrated sustainability principles such as ISO 14001, EMAS, BMS, etc, into their organisational activities. However, there is no unified national code for standardisation to monitor the sustainability principles in office buildings. The emergence of the above different standards could easily create confusion and inefficiency in sustainable environmental management in office buildings. It is therefore necessary to have a unified national code of standardisation through the government policies so as to promote resource efficiency in energy, water, paper, waste management and air quality in office buildings. It could also be used as a measure of best practice (benchmark) among the office buildings in Bristol.

There should be provision of explicit building regulatory measures from the policy makers to enforce office buildings integrate sustainable principles into their activities to enable the organisations thrive in the short,

medium as well as longer term. Lack of statutory requirements therefore constitutes a substantial barrier to the progress of sustainable buildings being echoed by the Bristol City Council. This also confirms the report made by Sustainable Buildings Task Group (2004) that there is no explicit statutory requirement that the Building Regulations should cover sustainability issues. The provision of statutory requirement is important because it was observed that environmental management in office buildings was characterised by both voluntary initiative and win-win policy approach which is not likely to improve environmental performance.

Conclusions

It is identified that offices in Bristol recognise environmental issue as an issue of importance in the sense that majority of the organisations have integrated formal sustainable environmental management policies into their buildings. Environmental considerations such as efficient energy management, water, air quality, waste recycling, transport and procurement were some of key issues identified in office buildings in Bristol. Environmental management strategies like ISO 14001, EMAS, BMS, etc, are some of the sustainability principles which have been implemented in office buildings in Bristol. The findings of this study would tend to suggest that those environmental management principles identified in office buildings are voluntary measures and not subject to any enforced mechanisms. The integration of sustainability issues into environmental management of office buildings are driven by environmental issues, financial imperatives, legislation, government, customers and stakeholders interests. But, the implementation of sustainable environmental management in office building is hampered by initial cost, staff attitudes, lack of management support and lack of availability of time.

However, recommendations such as securing the board level commitment, staff environmental training programmes, government policies towards behavioural change, targeted approach, unified national code of standardisation and strict enforcement of mechanisms to drive both public and private sector office organisations to integrate sustainability programmes into their organisational activities will collectively provide an effective framework for the implementation of sustainable environmental management in office buildings.

Bristol is the South west regional capital of England which is characterised by varied businesses including High Tech/ICT (e.g. Orange, Hewlett Packard), Government Administrative Institutions (e.g. Bristol City Council, GOSW), Financial and Insurance Institutions (e.g. Royal Bank of Scotland, Lloyds TSB, NatWest), Higher Educations (e.g. University of Bristol, UWE, City of Bristol College), Health Institutions (e.g. Southmead Hospital, NHS Transplant) and Media Services (e.g. Bristol Film Office). In conclusion it is envisaged that the current reliance on voluntary initiatives and economic incentives by the existing office buildings in Bristol to implement sustainable environmental management is not likely to have a major impact and must therefore be controlled with statutory requirements.

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