

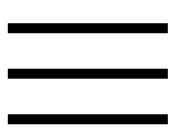


Sustainability policy, current law, legislation and what is on the stocks

Sustainable development policy and its basis in theory

What is sustainable development?

1. Ask a British lawyer a few years ago what he understood about sustainable development, and he might know a sustainable argument from an unsustainable one, but regarding sustainable development there would be a scratched chin or two. We all know about whether a submission is arguably or legally sustainable but what do we know beyond that? I hope a little more, soon.
2. But it is not that type of sustainability we are concerned with today.
3. Sustainability is making sure all of our businesses, public services, national resources, and economy have the means to continue in the years ahead at a micro and macro level. It is a highly emotive subject as we are being essentially forced to wake up to the fact that there are limits to the natural resources available to mankind. While we are proficient at thinking about our future financial sustainability and investing in economic resources, our society has been less triumphant in looking after the human, social and environmental resources that we rely on.
4. One of the solutions is 'sustainable development' and it is best thought of as a process for growth that understands investing and maintains not just financial resources but human, social and environmental resources, all at the same time.
5. For the purposes of a very basic grounding it suffices to say the basic underpinning principle of learning to live within the earth's natural environmental limits without materially impacting upon our wealth or happiness is the key bottom line. But talking about bottom lines there are in fact three to mention.
6. This idea of the "triple bottom line"¹ proposes that an organisation's licence to operate in society comes not just from satisfying stakeholders through improved profits (the economic bottom line), but from improving its environmental and social performance also. As such, it encompasses environmental responsibility, social awareness and economic profitability.

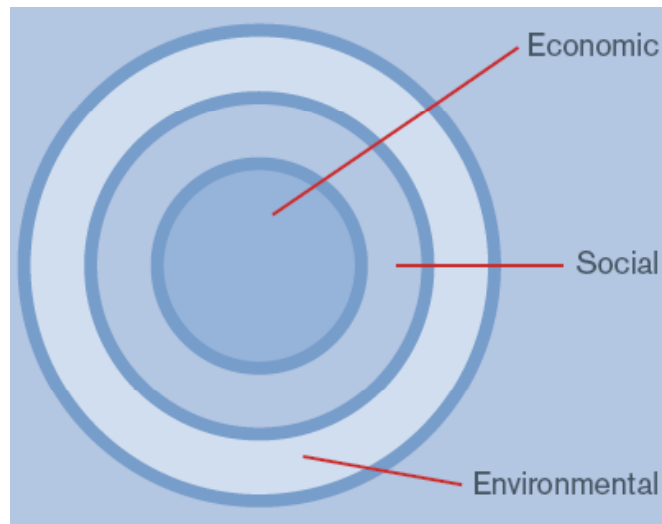


7. There are two accepted schools of thought based on the triple bottom line, the Three Pillars model and the Russian Doll model.
8. The Three Pillars model sees sustainability as merging of the economic enterprise, social well-being and environmental integrity. In the Russian

1. First coined in 1994 by John Elkington, the English sociologist, who for the past 30 years has concerned himself with issues of the environment and, more recently, sustainability.

Doll model, economic activity is at the epicentre as the basis of wealth creation, which drives the development engine but at the same time is constrained by environmental and social conditions. Thus:

Russian Doll



Three Pillars



2. In August 2008 climate negotiators have made unexpected headway towards a new international treaty to combat global warming, easing a logjam that has held up progress for years. Representatives of rich and poor nations, meeting at a conference in Accra, Ghana, are nearing consensus on a way to control emissions of greenhouse gases from rapidly developing countries such as China and India, under a treaty which will take effect after the Kyoto protocol expires in 2012. The US has refused to join any arrangement that does not also tackle these emissions, but the rapidly industrialising countries have refused to accept the overall reduction targets that would be imposed on the rich nations which have been responsible for most of the pollution to date. But now agreement is beginning to coalesce around a plan that would instead oblige developing nations to set targets for specific, highly polluting industries such as cement, steel, and aluminum.

9. So people who talk about the triple bottom line are not just a bunch of open-toed, tree-hugging weirdos. Businesses are becoming more and more globally aware that sustainability issues have to be considered within the context of doing business, in the same way as factors such as competition rules and advertising policy. However, I am no politician, just a mere lawyer, but I see and read all around me that the agenda for change has arrived and our laws and contracts are beginning to reflect this. We shall see this more and more, here and globally, even if there is a mismatch in timing between the environmental and electoral impact of change. I think we all know that no one nation alone can resolve the problems of global warming and CO₂ emissions.² They have no definable boundaries. Short of international action commonly agreed and commonly followed through, it is hard even for a large nation to make a difference on its own.
10. So why are we conferencing on it today? Because it concerns all of us and in the construction and allied professions we are uniquely equipped to run

with the ball (here and overseas) and make a contribution to improving our credentials as players in more sustainable development.³ Even the cynics cannot argue that sustainability is anything but virtuous, even if in China and India we may feel our endeavours make little or no change to the macro picture now.⁴

11. It was Edmund Burke⁵ who said “No one could make a greater mistake than he who did nothing because he could do only a little.”
12. It is no longer universally acceptable for businesses to provide their shareholders with the biggest possible financial return on their investment (short-termism) if this is to the detriment of other stakeholders, as eventually we all pay the price. With the huge shake in the faith of the world’s financial institutions, this is truer today than at any other time since the industrial revolution.
13. The concept of sustainability is therefore of increasing importance in all areas of the private and public sectors. All the reliable evidence shows the earth is at a critical crossroads. While revolutionary advances in science and technology have lifted humanity and its condition to new heights of prosperity and longevity in many parts of the world, hundreds of millions of people are vulnerable to the impacts of hazards and natural disasters and a host of other challenges. At the same time, human activity, especially in the last 100 years, is threatening the health of the environment and potentially posing risks of unprecedented magnitude to our shared future.
14. With the ever-increasing need to become more environmentally friendly, governments are urging companies to incorporate sustainability at the design process. Most of you will know that the United Kingdom Government has launched its Code for Sustainable Homes, and is moving (slowly) towards all “zero-carbon homes” by 2016 and all new non-domestic buildings be zero carbon by 2019. Yes, pigs might fly, but that is the target.

Back to that illusive definition

3. The Middle East Centre for Sustainable Development (MECSD) is blazing a trail to meet the demand for Green Certified Sustainable Development, in Dubai and across the region. See *Green Dubai 2008*. MECSD is an initiative developed in line with the Dubai Strategic Plan 2015, as laid out by His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai. MECSD has been established to provide accredited internationally recognised certification along with services and systems that will develop and maintain better green development and sustainable usage practices. Also, in Abu Dhabi according to its Urban Planning Council (UPC), the new regulations for green buildings in the emirate are in the final stages and expected to be implemented in January 2009.

One can see from Foster and Partners’ claims earlier this year that the UAE has turned the corner now that Abu Dhabi is building the first zero-carbon, zero-waste city in the world. The *Masdar* development in Abu Dhabi is a 6 km sq, car-free “walled-city” scheme. The development is being driven by Abu Dhabi’s Future Energy Company and will include a new HQ for the company as well as a new university.

4. In China now they are hungry to learn how their industries can be made more sustainable; while all eyes were on Beijing in August for the Olympics we saw the smog, rate of economic growth, urbanisation and industrial development and the unprecedented forces on the country’s infrastructure, society and environment.

5. Politician and philosopher, 1729-1797.

15. Sustainable development has a diversity of meanings to different folk depending on the wants of the development or scheme and the participant you speak to for a view. Sustainable development does not just mean diminishing the carbon footprint.
 16. The scope of sustainable development goes way beyond the mere energy efficiency of a building or development. Sustainability is linked in the context of urban regeneration to the legacy of the development (a term we hear a lot about in the context of the 2012 games) and its impact on the local community. This can entail concentrating on issues like use of local labour during the building phase and access to essential services (hospitals, schools, retail) and employment.
 17. Sustainable development is thus a broadly used phrase and idea, has diverse meanings and provokes many different responses people’s understanding of the concept.
 18. Few, when pressed, will argue that the reservoir of natural resources inherent in the earth’s geological globe is infinite. Unlike other natural sustainable resources on earth, energy resources once excavated and abstracted become depleted with time. What is more, the processes of exploration and excavation are often destructive and wasteful, resulting in harmful effects on the environment.
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19. In wider terms, the concept of sustainable development is an attempt to combine growing concerns about a range of environmental issues with socio-economic policy issues on a micro and macro economic standpoint. Given any construction project or development impacts on individuals, society and the natural environment, sustainable development has the potential to address fundamental challenges for the built environment and humanity, now and into the future. With the ever-increasing need to become more environmentally friendly, governments are urging the corporate world and local authorities to integrate sustainability at the design stage and in their regulatory regimes when authority to build is granted. In the mix of the subject we embrace in this conference are the energy and water consumption, site waste, bio-diversity, and embodied energy used in the materials selected and the fuel consumed by the construction teams to get to the workplace and the suppliers who deliver materials to site to allow the building process to take place.
20. This process of drawing together environmental and socio-economic questions was most famously expressed in the Brundtland Report's definition of sustainable development which you will hear more about today as meeting:
- "the needs of the present without compromising the ability of future generations to meet their needs".⁶*
21. It is really about caring, not just about the here and now, but about the long-term well-being - the future - so we may not harm the planet irreparably. It means not using up resources faster than the planet can replenish or re-stock them and joining up economic, social and environmental goals.
22. Sustainable development has become such a central concern everywhere for the construction industry. Hitting my Google search button produced no less than 21,400,000 international hits and 1,940,000 domestic ones! Such is the mass of material written on the subject from so many interest groups and viewpoints it is hard to know where to start. Just look at what central government alone has to offer. (See Appendix 1)
23. On these shores the UK Government, the Scottish Executive, Welsh Assembly Government and the Northern Ireland Administration have agreed upon a set of principles that provide a basis for sustainable development policy in the UK. For a policy to be sustainable, it must respect all five principles:
- (i) Living within environmental limits
 - (ii) Ensuring a strong just society
 - (iii) Achieving a sustainable economy
 - (iv) Using sound science responsibly
 - (v) Promoting good governance
24. In terms of focusing its efforts, the UK has identified four priority areas for immediate action, shared across the UK, these are:
- (i) Sustainable Consumption and Production - the Government says to live within our resources, we need to achieve more with less. This requires us to change the way we design, produce, use and dispose of the products and services we own and consume.
 - (ii) Climate Change and Energy - the Government says we need to secure

6. WCED, 1987, p. 43. Norwegian prime minister Gro Harlem Brundtland's definition and the concepts expressed in the report *Our Common Future* identify the dependency of humans on the environment to meet needs and well-being in a much wider sense than merely exploiting resources: "ecology and economy are becoming ever more interwoven - locally, regionally, nationally and globally".

a profound change in the way we generate and use energy, and in other activities that release these gases, to reduce greenhouse gas emissions in the UK and worldwide whilst at the same time preparing for the climate change that cannot be avoided.

- (iii) Natural Resource Protection and Environmental Enhancement - the Government says understanding the limits of the natural resources that sustain life and our economy is essential as key industrial sectors are directly and indirectly reliant on functioning ecosystems.
- (iv) Sustainable Communities - the Government says its aim is to look after the places in which people live and work, for example by developing green, open spaces and building energy-efficient homes.

25. However, enough of politics; let's look at the current legal framework.

Contract, legislation and sustainable development

26. To support the Government's sustainable development policy there have been a number of EU Directives and statutes passed over the years (see Appendix 2) but all have more oblique roles apropos sustainable development since they tend to have broadly environmental roots. The truth is there has been a mass of guidance and policies permeating the industry, but little in the way of primary legislation. What of the current landscape? What we are seeing and reading is evidence that guidance will before long turn into legislation as, if truth be told, sustainability is still only paid lip service to in many projects as the contracts are silent on what it means with any specificity, and what is to apply. Usually there are no sanctions (aka teeth) to bite if unsustainable construction practice is perpetrated (if contractually defined). Yet in all this we see some trends developing.

27. There is a discernible and increasing trend towards a market requirement for sustainable development. Green developments can be more marketable particularly where whole life costing⁷ is taken into account, and developers and some clients are using sustainability as a positive differentiator. The Energy Performance Directive⁸ requires information about the energy efficiency of buildings to be provided when they are sold, rented out or constructed. This requirement has been implemented in England and Wales by the Energy Performance of Buildings (Certificates and Inspectors) (England and Wales) Regulations 2007.

28. The Energy Performance Certificate is required for all buildings when they are constructed, sold or let.

29. The Display Energy Certificate will be required for public buildings and those occupied by public authorities which have a total useful area greater than 1000m² and provide a public service to a large number of people and are therefore frequently visited by those people (e.g. a school, hospital, government or local authority building). These certificates will show the actual energy usage of a building and will need to be displayed from 1 October 2008.

30. In addition, new regulations also require that all air conditioning systems above 250 kW are inspected by January 2009. Those over 12kW must be inspected by 4 January 2011. This work must be carried out by an accredited inspector.

31. Thus, the application now of Energy Performance Certificates⁹ (EPCs) to all buildings the day after this conference (1 October 2008) will bring the issue to the fore and we are likely to see an increase in "green leases".¹⁰

7. Essentially, whole life costing (WLC) is a means of comparing options and their associated cost and income streams over a period. Costs to be taken into account include initial capital or procurement costs, opportunity costs and future costs. Only those options that meet the performance requirements for the built asset should be considered. Awareness of Whole Life Costing (WLC) is growing within the UK construction industry. It has been identified as a mechanism to deliver improved value for money and government clients are targeted with using WLC.

8. (2002/91/ EC)

9. From 1 October 2008 all buildings whenever sold, built or rented will need an Energy Performance Certificate (EPC) on a scale of A-G. The most efficient which should have the lowest fuel bills - are in band A. Since 6 April 2008 so far as commercial buildings are concerned EPCs have been required for their sale, rental or construction.

10. The concept of "green leases" have been introduced in Australia to address the split incentives, information asymmetry and supply chain issues faced by the commercial office market sector.

A "green lease" is a lease between the landlord and tenant of a corporate building with an additional set of schedules compared a "normal" lease contract. Green leases include a legal basis for monitoring and improving energy performance, which provides mutual contractual lease obligations for tenants and owners to achieve resource efficiency targets (e.g. energy, water, waste) and to minimise the environmental impacts of an organisation's estate. This ensures that a building operates at an agreed level through regular monitoring and addressing issues as they arise.

The role of contract law

32. Contractually, the stage at which sustainability aims need to be addressed is at the birth of a project feasibility stage. Simply applying the concept “sustainable development” to projects is meaningless unless it is given an explicit meaning or purpose, and one which is bespoke to the specific project and to the particular environment in which that project is located. Only once these objectives have been ascertained can they be reflected in the employer’s requirements/specification (or the equivalent performance requirement), and be carried through into the drafting of the construction contract. Without clear realisable objectives, there is a real danger that the desired outputs will not be met.
 33. There are a number of contract-invoked mechanisms for clients to choose from to ensure sustainable best practice. The most palpable is to ensure that specification and design criteria take account of the long-term sustainability of the project - not just in terms of the design life of materials but also in terms of the costs of operation and maintenance over the lifetime of the asset. Is the building suitable for its setting? Is it fittingly located? Has the ability of users to pay for long-term operation and maintenance been considered? One can see that there are tensions in this because, on an individual project basis, some interests are short term: the contractor’s interest outside PFI and facilities maintenance is usually build period plus defects liability period. The owners’ interest may be the next 30 years.
 34. It is also very important that the entire construction team buys into the process (it is part cultural and part educational) and “buy-in” can be achieved through either strict drafting of absolute requirements, such as the specification of more sustainable products like say condensing boilers or greywater flushing systems, or by softer “green” partnering contracts. Specific customised contract drafting can be adopted to incentivise a project team. Here are some non-exhaustive examples to set us off:
 - (i) Prohibited or deleterious materials clauses are frequently put in contracts and provide an inventory of materials not to be used, or codes and standards to be complied with on pain of some contract penalty. This type of clause can be adapted to include a positive absolute obligation to use sustainable materials, for example softwood from sustainable forests or materials recommended in the BRE Green Guide to Specification, which provides guidance on the relative environmental impacts of over 250 elemental specifications.
 - (ii) Alternatively, a contractor might be given a compensable right to an extension of time for any procurement difficulty in obtaining specified materials or products for the sustainable objectives of a project. A pain/gain share mechanism could be used as on some BAA T5 contracts, with the contractor and design team sharing a monetary benefit if, as an example, the development is procured within very specific deliverables, such as energy efficiency ratings, reuse of demolition arisings like masonry and cementitious waste, using Forest Stewardship Council (FSC) certified timber or other recycling/waste management targets on things like aggregates and sand.
 - (iii) There are, of course, also a number of current contractual provisions in many standard form contracts, which can be tailored to address sustainability. Change of law clauses, like NEC Option T and clause 2.15 of the JCT 2005 Design and Build dealing with changes in statutory requirements, normally carry an implied term by the
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contractor not to complete the work in a manner which contravenes relevant building regulations or other statutory requirements as to methods of construction. These matters are best addressed expressly; even in non-D&B contracts, the contractor cannot be indifferent to matters of design, statutory and regulatory responsibility for the following reasons:

- Frequently the drawings or bills expressly impose some design responsibility on the contractor.
 - The contractor's express or implied duties as to workmanship and the supply of materials may import some element of design responsibility on sustainability issues.
 - The duty of conforming to Building Regulations, Part L etc. makes it necessary for the contractor to give some consideration to whether the works as designed by the architect are in accordance with statutory requirements.
 - There are express duties under clause 2.15 upon the contractor to bring to the architect's attention any discrepancy in or divergence between the documents there set out, and under clause 2.17 any divergence between the statutory requirements and design documents.
- (iv) Commonly, the risk of any cost impact of a change in legislation sits with the employer. In a long-term development project like a PFI hospital, these additional costs can be high, for example mandatory testing and rating against the Code for Sustainable Homes.¹¹ Addressing who is best placed to manage this risk at the outset is important, as over say the next three years changes in the law in the sustainability field will inevitably be introduced and will likely be costly to meet.
- (v) Management and treatment of site waste may also be expressly addressed in the contract. Whilst obviously since 6 April 2008, any construction project worth more than £250,000 in value that is unable to provide evidence of a *Site Waste Management Plan* (SWMP) can be fined, smaller jobs and larger ones can also include a contractual stipulation to comply with the CIRIA, Construction Waste and Resources guidance on sustainable building and construction waste, and consider more effective use of a SWMP. Thus, identify who is responsible for producing the SWMP and ensure that it is followed - and make sure that they know who they are! Different individuals may be responsible during the planning stages and the construction stages. They must know that they are responsible and what they are responsible for achieving. They must have sufficient authority to ensure that others comply with the SWMP. This process must identify the types and quantities of waste that will be produced at all stages of the work programme/plan. This process must also identify waste management options including reference to the waste hierarchy, on and off-site options, and pay particular attention to arrangements for identifying and managing any hazardous wastes produced.
- (vi) Then there is conditions precedent, which can be added to a contract to introduce something of a contractual sharp stick to certifying PC. One possibility might be imposing now a top *Energy Star* BREEAM standard, i.e. the newest Building Research Establishment Environmental Assessment Method (BREEAM) standard,¹² as a condition of the certification of practical completion of a project or

11. The new Code regulations (which replace Eco-Homes) for providing for mandatory ratings do not apply to properties (individual or as part of an ongoing development) where the initial notice, full plans or Building Notice have been received by the relevant Local Authority Building Control body prior to 1 May 2008.

12. Launched on 1 August 2008, staggeringly the new standard aims to help non-domestic buildings become zero-carbon by 2019.

milestone. So one could make a good score on key elements such as energy efficiency and water consumption compulsory, not optional now. This requirement could be linked to funding requirements or obligations in a lease or development agreement to ensure the contract package is back to back.

- (vii) One could also borrow from the world of process engineering performance- related liquidated and ascertained damages if the as-built project was outside stated parameters of efficiency at given constants provided the clause was not construed as a penalty.
- (viii) In addition, there are a number of contractual stipulations that directly or indirectly address sustainability. These range from use of value-engineering and risk register clauses to encourage innovation and efficiency of design, use of 'Recycling' or 'Wastage' clauses to promote minimal waste, appointing an Environmental Compliance Officer on-site, instituting systems such as waste management plans, to ensuring procurement of sustainable materials by setting up framework arrangements with particular suppliers. Take, for instance, clause 13.2 of FIDIC Conditions of Contract for EPC/ Turnkey Projects (Silver Book), a value-engineering clause. This gives the contractor the option (not the requirement) to:

“at any time ‘submit a written proposal which’ (in the Contractor’s opinion) will if adopted, (i) accelerate completion, (ii) reduce the cost to the employer of executing, maintaining or operating the Works, (iii) improve the efficiency or value to the employer of the completed Works, or (iv) otherwise be of benefit to the Employer.” [Emphasis added]

The only difficulty with this condition is that the contractor cannot recover the cost of preparing any proposal. This means that except where the contractor is confident that his proposal will be adopted, there is no real incentive to propose efficiencies. Furthermore, there are difficulties with evaluation of value-engineering provisions. FIDIC resorts to the standard valuation procedure but some of such clauses attempt to evaluate the “benefit” in restitutionary terms to the employer and allow the contractor a percentage share. This is because alterations to design that improve value or efficiency may in fact diminish the capital cost of the project and consequently may result in a decrease in the overall construction cost - again, little enticement to the contractor to propose unilaterally such changes.

- (ix) Then there are those provisions requiring contractors to “use all reasonable endeavours” to maximise cost recovery by reusing, recycling, selling, or otherwise commercially exploiting any arisings, waste or reusable process parts which are also becoming more common. Points to observe here are the various criteria to which such provisions are subject (commonly they are qualified with the words:

“without derogating from any other obligation of the Contractor under this Contract” and “to the extent permissible by Law and practicable”).

- (x) The obligation also tends to be limited to reasonable endeavours rather than absolute ones. Such requirements also need to be clear as to who “owns” the wastage and therefore any financial advantage from recycling. One more factor to think about is cost treatment: in target cost contracts any financial benefit could be treated as a credit, so reducing the overall project cost. Debatably, a better incentive to encourage recycling and low wastage would be to allocate any proceeds 50:50 with the contractor.
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- (xi) For long-term framework agreements - where the client is procuring a number of projects over a period - an employer might also consider using specific environmental Key Performance Indicators (KPIs) to measure overall environmental performance. The main benefit of using KPIs as a gauge of performance is that they can be moulded to suit the client's specific requirements, can be adjustable during the term and therefore sensitive to market trends, and can also be framed to reward good performance rather than simply discipline bad performance.
35. In regard to what the standard forms are doing on sustainability, JCT was the first, through Professor Peter Hibberd's¹³ efforts, to provide for this in its Framework Agreement last year. Soon we can expect the JCT family (which accounts for something like 70% of vernacular projects) to do so more widely once their drafting committee has completed its work.

Sustainable development and the addition of project finance constraints

36. In addition to the substantive law and the general law of contract, it may not be so widely known that there are two chief environmental and social standards that the international financial institutions and banks, which fund international projects, have initiated and which have great bearing on major projects that they fund. These are the Equator Principles and the European Principles for the Environment (EPE).
37. For those that need a gentle refresher, project financing is a method of funding in which the lender looks primarily to the revenues generated by a single project both as the source of repayment and as security for the exposure. It plays an important role in financing development throughout the world for things like power plants, dams, desalination plants, hospitals and highways. Project financiers encounter social and environmental issues that are both complex and challenging, particularly with respect to projects in the emerging markets. Whilst five or so years ago private banks may have cared about sustainability because it was good for their reputation and brand, now it is about their bottom line. There is emerging evidence of a correlation between good environmental and social behaviour and good financial performance.¹⁴
38. The first set of standards, the *Equator Principles*, were first launched in June 2003¹⁵ and revised in 2006 and apply to projects over 10 million US dollars. The Equator Principles are a set of voluntary environmental and social guidelines for so-called "ethical project finance".
39. The *Equator Principles* have been adopted by over 40 financial institutions, which represent more than 80% of project financing around the world. Each Equator Bank is obliged to publicly report annually on progress and strengthening the social and environmental standards and public consultation elements.
40. The second set of standards were created in June 2006. Entitled the *European Principles for the Environment* (EPE) they were launched by the European Investment Bank (EIB). With the endorsement of the European Commission, the EPE were adopted by four other major European investment banks. The EPE is an initiative launched in response to the drive for increased harmonisation of environmental principles, practices and standards associated with the financing of projects. The initiative is founded on the commitment of the five signatory European-based Multilateral Financing Institutions (MFIs) to ensuring environmental

13. General Secretary of the JCT.

14. In a recent survey of bankers, IFC found that 65% reported tangible benefits from sustainable policies. The Sustainable Banking Awards co-organised by the *Financial Times* and IFC have shown that banks are using sustainability as a driver for business growth and asset quality.

The *Sustainability Yearbook 2006*, published jointly by Sustainable Asset Management and PriceWaterHouseCoopers, says that it has been able to show a conclusive link between performance on sustainability issues and financial performance, and a correlation to creation of shareholder value.

15. The Equator Principles Financial Institutions (EPFIs) have consequently adopted these Principles in order to ensure that the projects they finance are developed in a manner that is socially responsible and reflects sound environmental management practices. By doing so, negative impacts on project-affected ecosystems and communities should be avoided where possible, and if these impacts are unavoidable, they should be reduced or mitigated appropriately.

protection and promoting sustainable development globally and across all sectors of their activities.

41. What both sets of principles require is that borrowers meet certain environmental criteria before a project is considered for investment. Unlike the Equator Principles, the EPE do not rehearse specific principles. Instead, in its place, it refers back to the guiding environmental principles embedded in the EC Treaty (in particular, the polluter pays, precautionary and prevention principles and the theory that environmental damage should as a priority be rectified at source), together with the project-specific practices and standards incorporated in EU secondary environmental legislation.
42. Particular weight is given in the EPE to EU legislation on environmental impact assessment, industrial installations, water and waste management, air and soil pollution, nature protection and occupational health and safety.
43. The EPE cover the respective regions of operations of each EPE Bank, in particular the Member States of the EU and the European Economic Area countries, together with the EU Acceding, Accession, Candidate and potential Candidate Countries (Bulgaria, Romania, Croatia, and Turkey). Whilst the EU approach and the relevant secondary legislation is the main point of reference, projects in these regions should also comply with any obligations and standards upheld in relevant Multilateral Environmental Agreements, being international conventions designed to combat global environmental problems - known as MEAs for short. The signatories will assess compliance with the EPE before agreeing financing.
44. For co-financed projects, the signatories will seek to agree a common approach to the project with the other financing institutions involved and, where possible, based on or consistent with the EPE.
45. The Equator Principles and EPE speak to whether a particular project should be funded in the first place. However, once a project has been given the all clear for investment, neither the World Bank nor the European Bank for Reconstruction and Development (EBRD) nor EIB has detailed standard procedures in their contractual bidding documents spelling out how the thesis of environmental protection and sustainable development should be carried forward during the design and construction phase. One might think this not so perverse, as the entire point of “sustainable development” is that each project takes account of its own idiosyncratic environment. One cannot be too rigid.

Local laws

46. When considering any infrastructure project in the international arena, you cannot overlook local law, in particular local planning by-laws, requirements for environmental impact assessments, any environmental and health and safety legislation, in addition to any construction costs or standards that have obligatory effect. A government can influence the infrastructure industry and promote sustainable development in a number of ways - in its role as procuring authority as well as “regulator” and “legislator”.

Worldwide standards

47. Governments, as regulators and legislators, can compel the industry to admit certain sustainable development principles by legislating accordingly. In the European perspective, the *Energy Performance of*
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Buildings Directive 2003 is particularly relevant here, and has since gone through public consultation this summer (2008) to look to recast it.¹⁶ There are also numerous examples in the United Kingdom of government-introduced legislation that promotes the principles of sustainable development, most recently The Sustainable Communities Act which received the Royal Assent on 23 October 2007. The aim of the Act is to promote the sustainability of local communities. It begins from the principle that local people know best what needs to be done to promote the sustainability of their area, but that sometimes they need central government to act to enable them to do so. It provides a channel for local people to ask central government to take such action. It is also a new way for local authorities to ask central government to take action which they believe would better enable them to improve the economic, social or environmental well-being of their area.

48. There may also be non-binding initiatives to promote sustainable development. As procurers of some of the biggest infrastructure projects, governments have the opportunity to require contractors/consultants to provide records of compliance with sustainable development initiatives as a tender precondition. This is in addition to the use of specific contractual mechanisms.
49. It is worth remarking here that “Agenda 21”, being the action plan for sustainable development for the world in the 21st century drawn up at the UN “Earth Summit” in Rio in 1992 and released by the United Nations’ Division for Sustainable Development in 1992, lays down certain environmental and developmental aims for countries to follow in pursuing sustainable development ideals. It includes a division promoting sustainable construction industry activities. While these measures are not specifically focused on infrastructure projects, they are, like many of the policies and principles found in this area, sufficiently broad church to be relevant to those involved in infrastructure- connected projects.
50. FIDIC has also published guidelines on Project Sustainability in its 2004 Guidelines. Lastly, ISO 14000,¹⁷ ISO 14001, ISO 14004 and the myriad of ISO 14000 standards and information related to environmental management define environmental management systems. While the ISO standards are voluntary, they are seen as one of the more momentous international initiatives for sustainable development and are intended to spotlight companies’ attention on environmental issues.
51. The UK Government’s own initiatives are also prime examples. A strategy document, *Building a better quality of life - a strategy for more sustainable construction*, was first issued in April 2000 and was updated in March 2005 entitled *Securing the Future*. When first introduced, this document represented a defining moment in the UK industry as it described steps which the industry could take in order to go some way to achieving the, generally accepted, admirable aim of sustainable development in construction. The document sets out the following ten general principles for the construction industry to follow:

- Reuse existing built assets
- Design for minimum waste
- Aim for lean construction
- Minimise energy in construction
- Minimise energy in building use

16. By April 2008, the EU Commission had initiated 17 infringement cases against Member States that have failed partially or completely to implement the Energy Performance of Buildings Directive (EPBD). Consequently, the EU Commission decided to recast the Directive and launched a public consultation which opened until 20 June 2008. The aim of the recasting is to simplify and clarify the current Directive, strengthening certain requirements.

17. One of more than 15,000 voluntary International Standards published by the International Organisation for Standardisation (ISO).

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- Avoid polluting the environment
 - Preserve and enhance biodiversity
 - Conserve water resources
 - Respect people and their local environment
 - Set targets (benchmarks and performance indicators)

52. The forward to the publication *Securing the Future* was written by the then prime minister, Tony Blair, and is reproduced here as it provides a good overview and illustrates the aims of the government at that time:

“In 1999 my government first set out our strategy to help deliver a better quality of life through sustainable development. Six years on, we have reviewed that strategy to take account of changes within the UK - devolution to Scotland and Wales, and to regional bodies and local government - and internationally with the World Summit on Sustainable Development in 2002.

Make the wrong choices now and future generations will live with a changed climate, depleted resources and without the green space and biodiversity that contribute both to our standard of living and our quality of life. Each of us needs to make the right choices to secure a future that is fairer, where we can all live within our environmental limits.

That means sustainable development.

This is an agenda for the long-term. There is no magic wand that government or any one else can wave to make sustainable behaviour and activity the norm overnight. We will only succeed if we go with the grain of what individuals and businesses want, and channel their creativity to confront the environmental challenges we face. Development, growth, and prosperity need not and should not be in conflict with sustainability.

Over the past six years, scientific opinion has moved decisively to an almost universal consensus that climate change is happening and is the result of human activity. That means we can move the debate from whether there is a problem to how to deal with it.

Yes, climate change represents a potentially catastrophic threat, but it is within our control to address it - and address it we must. Climate change will not only affect the UK but all parts of the world, and it stands to most damage those areas least able to adapt to it particularly sub-Saharan Africa. However, we must also respond to this challenge at home.

Our 2003 Energy White Paper set us on a clear path to a low carbon economy. Our task now is to deliver at home and find ways to get international agreement through the G8 and other forums to strengthen the global effort to tackle climate change.

Although climate change is the most serious global environmental threat, promoting new, modern, sustainable ways of living, working, producing and travelling also stand to achieve wider benefits to human health and well being. We need to maintain our duty of care towards our natural resources, for our own benefit and for the benefit of future generations.

We are increasingly aware of the need to make care for the environment an integral part of policy making from the start, rather than dealing with the consequences of neglect down the line. We need to regard the local environment as a major public service (like the NHS or education) which benefits us every day. Looked at this way, it is clear why policies to promote better quality environments also have the capacity to have long-term social and economic benefits.

Often those people who are most economically and socially disadvantaged

also live in degraded environments with fewer jobs, unsafe and ugly streets. Our goals are a strong economy, and decent homes in places with clean, safe and green public spaces, where people are able to lead healthy lives, and enjoy the environment around them. So our new strategy contains not only a commitment to create sustainable communities but a commitment to give a new focus to tackling environmental inequalities as well.

The response to the consultation for this strategy made clear that what was needed in this strategy was a move into action. So the strategy includes clear actions to promote sustainability by involving people, leading by example and by demonstrating our commitment to deliver:

- Our new Community Action 2020 programme will give people the opportunity in every community in the country to make a difference locally - or globally. We have seen what some communities have done with Local Agenda 21 - I want to see that energy, throughout the country, coming up with local solutions and actions - on transport, on waste, on energy and on creating places where people want to live.
- Government will lead by example. The UK Government buys £13 billion worth of goods and services each year. For the wider public sector this figure is £125 billion. We want to ensure that we spend your money sustainably, starting with a commitment to buy cleaner cars and by our new offsetting scheme to reduce the carbon impacts of unavoidable air travel.
- In this document we show how every government department will contribute to this strategy. I want every government department to produce its own action plan by the end of the year so we can ensure delivery.
- To show we are serious about delivery, we will stop reporting our own progress and hand that task over to a strengthened Sustainable Development Commission, which will act as the independent 'watchdog' of government progress.

This is a truly challenging agenda. It will involve working across departmental boundaries and through all levels of government - from the neighbourhood to the United Nations. It involves channelling the power of business by stimulating the market to innovate and to produce more cost-effective and sustainable options for all purchasers.

It needs the commitment of voluntary groups, and it involves influencing the individual everyday choices we all make. Most of all, it means focusing on long-term solutions, not short-term fixes. Targeting prevention now, rather than putting right later. Ensuring we get the full environmental, social and economic dividend from every pound we spend.

We have spent a long time getting to grips with the concept of sustainability. I want to declare a moratorium on further words. I want this new strategy to be a catalyst for action to secure our future."

The shape of things to come - where are we going?

53. Whilst in the past, only lip service was paid to the notion of "sustainable development", increasingly the ideal of actively embracing sustainable development is being given shape and form, through persuasion, regulation, legislation and now through contract - there is considerable agreement among employers, developers, building technologists, fund managers, institutions, government and analysts that environmental sustainability is making and will make a very real impact on everything from how clients and the corporate world procure buildings, view the construction process, how business is audited through to energy prices. Higher energy and material prices are now affecting our everyday lives in
-

commerce, in industry and in our homes. We need to adopt the fairest and safest way to protect ourselves against the effects of insecure and costly high carbon energy supplies and catastrophic climate change. The period ahead is going to be less about compliance per se than about innovation and entrepreneurial solutions to what we build or refurbish. We literally must change the way we think, from the cradle to the grave. In addition, business, as the Brundtland commission foresaw, is still where much of the action is. Business being what it is, there is an increasing concern that even the best-intentioned and professionally run corporate-responsibility initiatives cannot deliver sustainable development on the scale needed without the long arm of the law; no one wants “greenwashing”. What is needed is the wide recognition that what we do has an effect, doing nothing or too little is not an option¹⁸ - more carrot than stick. Who knows?

Simon Tolson
September 2008

18. Not unlike the *butterfly effect*, which encapsulates the more technical notion of sensitive dependence on initial conditions in chaos theory and non-linear behaviour. Small variations of the initial condition of a dynamical system may produce large variations in the long-term behaviour of the system.

Appendix 1

RESOURCE RESULTS

BREEAM WORKSHOP FINAL REPORT

Document Type: 

Date Added: 2008-02-25 05:49:43

The UK Green Building Council (UK-GBC) is conducting a wide ranging review of sustainability tools for the built environment, in order to provide clarity and guidance on the best tools available.

CODE FOR SUSTAINABLE HOMES - TECHNICAL GUIDE

Document Type: 

Date Added: 2008-02-07 11:23:24

Technical Guidance to the Code for Sustainable Homes. Updated April 2008.

This technical guidance manual sets out the requirements for the Code.

CODE FOR SUSTAINABLE HOMES - OVERVIEW

Document Type: 

Date Added: 2008-02-07 11:13:47

The Code for Sustainable Homes has been introduced to drive a step-change in sustainable home building practice. It is a standard for key elements of design and construction.

IMPROVING THE ENERGY EFFICIENCY OF OUR BUILDINGS: A GUIDE TO ENERGY PERFORMANCE CERTIFICATES FOR THE CONSTRUCTION, SALE AND LET OF NON-DWELLINGS

Document Type: 

Date Added: 2008-07-24 03:15:19

This guide provides an introduction to energy performance certificates for non-dwellings. It describes the scope and requirements of the Regulations that apply on construction, sale or let.

SUPPORTING AND DELIVERING ZERO CARBON DEVELOPMENT IN THE SOUTH WEST

Document Type: 

Date Added: 2008-07-22 06:03:46

This document sets out recommendations for a policy requiring zero carbon new developments in the South West region. It is designed to inform and support the review and development of policy on zero carbon development.

THE ECONOMIC AND ENVIRONMENTAL BENEFITS OF RESOURCE EFFICIENCY IN CONSTRUCTION

Document Type: 

Date Added: 2008-07-22 05:17:07

This report provides an assessment of current resource usage within the construction sector at a national and project level. This has been achieved by analysing the overall construction products.

ENERGY PERFORMANCE OF LEED FOR NEW CONSTRUCTION BUILDINGS

Document Type: 

Date Added: 2008-07-18 04:36:21

This study analyzes measured energy performance for 121 LEED New Construction (NC) buildings, providing a critical information link between intention and outcome for LEED projects.

BUILDING SUSTAINABLE TRANSPORT INTO NEW DEVELOPMENTS: A MENU OF OPTIONS FOR GROWTH POINTS AND ECO-TOWNS

Document Type: 

Date Added: 2008-07-18 02:56:46

This document is aimed at all those involved in the planning, design and construction of new housing developments. It sets out advice on how to build an effective sustainable transport system.

GREENER HOMES FOR THE FUTURE

Document Type: 

Date Added: 2008-07-18 01:41:17

The Code is the national standard for the sustainable design and construction of new homes. The Code aims to reduce our carbon emissions and create homes that are more sustainable.

STRATEGY FOR SUSTAINABLE CONSTRUCTION (FINAL STRATEGY)

Document Type: 

Date Added: 2008-06-11 08:37:38

BERR's Strategy for Sustainable Construction published 11 June 2008.

CODE FOR SUSTAINABLE HOMES: TECHNICAL GUIDE (APRIL 2008)

Document Type: 

Date Added: 2008-05-12 03:34:23

On 13 December 2006, the Code for Sustainable Homes - a new national standard for sustainable design and construction of new homes was launched.

MICHAEL FINN - SUSTAINABLE HOUSING CONSTRUCTION

Document Type: 

Date Added: 2008-04-14 05:49:29

Presentation by Michael Finn - Sustainable housing construction

SUSTAINABLE CONSTRUCTION STRATEGY (DRAFT)

Document Type: 

Date Added: 2008-02-24 08:53:31

The purpose of this Consultation is to help develop a Government / industry strategy on sustainable construction. The Consultation Document outlines proposals and seeks views on targets and ways in.

MODERN METHODS OF CONSTRUCTION: A GUIDE

Document Type: 

Date Added: 2008-02-17 11:23:04

This guide provides an accessible introduction to modern methods of construction. It will help developers, house builders, architects, planners and manufacturers to understand the variety of systems available and to appreciate.

CONSERVING ENERGY AND WATER, AND MINIMISING WASTE: A REVIEW OF DRIVERS AND IMPACTS ON HOUSEBUILDING

Document Type: 

Date Added: 2008-02-17 11:01:40

Housebuilders are under pressure to deliver sustainably-designed new housing in a rapidly changing environment, as a result of ongoing legislative changes and other initiatives to combat climate change and conserve natural resources.

SUSTAINABLE DESIGN AND CONSTRUCTION: GUIDANCE FOR PLANNERS ON PREPARING DEVELOPMENT PLAN POLICIES AT THE REGIONAL AND LOCAL LEVELS

Document Type: 

Date Added: 2008-02-16 10:34:09

This guide seeks to assist planners at regional and local levels develop policies that promote sustainable design and construction.

SUSTAINABLE DESIGN, CLIMATE CHANGE AND THE BUILT ENVIRONMENT

Document Type: 

Date Added: 2008-02-16 10:19:00

Tackling climate change involves creating sustainable places. The construction and use of the built environment currently accounts for around half of national

carbon emissions.

BUILDING A BETTER QUALITY OF LIFE - A STRATEGY FOR A MORE SUSTAINABLE CONSTRUCTION

Document Type: 

Date Added: 2008-02-11 02:19:15

This Strategy aims to provide a catalyst for change in construction across the United Kingdom. It identifies priority areas for action, and suggests indicators and targets to measure progress.

COMMON MINIMUM STANDARDS: FOR THE PROCUREMENT OF BUILT ENVIRONMENTS IN THE PUBLIC SECTOR

Document Type: 

Date Added: 2008-02-10 07:08:28

Current mandatory standards for the procurement of built environments in the public sector can be viewed in the document, Common Minimum Standards.

EFFICIENT CONSTRUCTION LOGISTICS

Document Type: 

Date Added: 2008-02-10 05:08:20

This report identifies the range of current methods and techniques of construction logistics being used, both traditional and alternative, and the role they can play in reducing material waste.

ACHIEVING GOOD PRACTICE WASTE MINIMISATION AND MANAGEMENT: GUIDANCE FOR CONSTRUCTION CLIENTS, DESIGN TEAMS AND CONTRACTORS

Document Type: 

Date Added: 2008-02-10 05:02:12

Implementing good practice waste minimisation and management (WMM) on construction projects will help reduce the significant quantities of construction waste sent to landfill and make a substantial contribution to recycling.

RETHINKING CONSTRUCTION REPORT

Document Type: 

Date Added: 2008-02-08 04:30:13

The report of the Construction Task Force is on the scope for improving quality and efficiency in UK construction. We have identified five key drivers of change which need to set the agenda for the construction industry.

WASTE STRATEGY FOR 2007 - CONSTRUCTION ANNEXE

Document Type: 

Date Added: 2008-02-08 11:42:48

Construction Annex for Waste Strategy 2007. This strategy shows how we intend to make these themes central to our future direction on waste policy.

CONSULTATION ON SITE WASTE MANAGEMENT PLANS FOR THE CONSTRUCTION INDUSTRY

Document Type: 

Date Added: 2008-02-07 04:55:00

About one fifth of all fly-tipped waste is construction and demolition waste. About one third of the bigger and nastier incidents dealt with by the Environment Agency involve construction and demolition waste.

DEVELOPING A STRATEGIC APPROACH TO CONSTRUCTION WASTE - 20 YEAR STRATEGY DRAFT FOR COMMENT

Document Type: 

Date Added: 2008-02-07 04:43:19

The waste and resources impact of construction is important in terms of profitability, non renewable resource depletion and the environmental impact of building. A 20 year strategy for developing targets and actions for...

Details...

IMPROVING PUBLIC SERVICES THROUGH BETTER CONSTRUCTION - CASE STUDIES

Document Type: 

Date Added: 2008-02-07 03:54:20

This volume of the report contains case studies of good construction practice drawn from both public and private sector organisations. The good practices that are identified in the case studies cover a number of approaches.

DELIVERING GREAT PLACES TO LIVE: 20 QUESTIONS YOU NEED TO ANSWER

Document Type: 

Date Added: 2008-02-07 03:07:39

The 20 questions that make up the CABE-Home Builders Federation Building for Life standard are supported by the government as the standard for the design quality of new homes.

BUILDING FOR THE FUTURE: SUSTAINABLE CONSTRUCTION AND REFURBISHMENT ON THE GOVERNMENT ESTATE

Document Type: 

Date Added: 2008-01-27 07:03:25

Each year government departments and agencies spend in the region of 3 billion on new buildings and major refurbishments. The government has set estate-wide sustainability.

Appendix 2

Water

Discharge to sewer - The Water Industry Act 1991

Discharges to watercourses - The Water Resources Act 1991

Oil Storage - Control of Pollution (oil storage) (England) Regulations 2001

Waste

Duty of Care - Environmental Protection Act 1990; Environmental Protection (Duty of Care) Regulations 1991

Transport of Waste - Control of Pollution (Amendment) Act 1989; Controlled Waste (Registration of Carriers and Seizures of Vehicles) Regulations 1991

Hazardous Waste - Hazardous Waste Regulations 2005

Disposal of electrical equipment - Waste Electrical and Electronic Equipment (Producer Responsibility) (WEEE) Regulations 2004 7 Restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

List of Wastes Regs 2005

Producer Responsibility Obligations (Packaging Waste) Regulations 2005

Air

Ozone depleting substances - EU Regulation on Substances that Deplete the Ozone Layer, Environmental Protection (Control on Ozone - Depleting Substances) Regulations 2002.

Greenhouse gas emissions - Climate Change Levy, European Emissions Trading Scheme (EU ETS)

Air pollution - Local Air Pollution Control (LAPC) and Local Air Pollution Prevention and Control (LAPPC)

Clean Air Act 1993

Climate Change Agreements 2006

Climate Change Levy 2001

Wildlife

Habitat Protection - Wildlife & Countryside Act 1981

Protected Species - Various

Land

Planning - Town and Country Act 1990

Environmental Impact Assessment - The Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999

Contaminated land - The Environment Act 1995; Contaminated Land (England) Regulations 2000

Achieving financial sustainability is the most important strategic task of the state in a turbulent global economic environment. The purpose of this study was to identify the patterns of development and peculiarities of the tax situation in Russia. The authors determined the most effective approaches for the formation of the tax system that would ensure the financial sustainability of the state in conditions of economic transition. Therefore, digitalization processes can serve as a catalyst for the achievement of financial sustainability by the state. The choice of tools for the internal reform of public finances is situational. However, strategic transformation (in terms of macro-level sustainability) can be achieved by performing a number of universal steps. Legislation. The Climate Mobilization Act, 2019: Local Laws 92, 94, 96, 97. The Climate Mobilization Act is the largest climate solution put forth by any city in the world. It consists of a slate of climate laws designed to dramatically cut carbon in New York City, including the following. Green roofs: Local Law 92, 94. Local laws 92 and 94 require all new buildings and buildings undergoing major roof renovations to be covered with solar panels, green roofs, or some combination of the two. The laws also require all buildings to reduce urban heat hazards. Building Energy Efficiency Grade: Local Policy on Sustainability practices. Foreword. In April 1990, the Clackamas County Board of County Commissioners assumed a leadership role in the Metro region by being the first local government to adopt an internal solid waste management policy. Led by the Department of Transportation and Development's Community Environment Division, the development of the policy involved the cooperation of many County departments. Implementation of the policy resulted in many successes, including institutionalization of the waste paper collection program throughout the County's offices, better handling of waste, and more efficient use of resources. What Is Sustainability? Sustainability focuses on meeting the needs of the present without compromising the ability of future generations to meet their needs. The concept of sustainability is composed of three pillars: economic, environmental, and social—also known informally as profits, planet, and people. Key Takeaways. Sustainability focuses on meeting the needs of the present without compromising the ability of future generations to meet their needs. How Sustainability Works. Sustainability encourages businesses to frame decisions in terms of environmental, social, and human impact for the long-term, rather than on short-term gains such as next quarter's earnings report. It influences them to consider more factors than simply the immediate profit or loss involved.