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# Environmental Chronology

# A Chronology of the Green Movement



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# Part 1

- ☞ The increased requirements in Building, Health and Safety and other Regulations covering 'Green' materials and products in design.



# Part 1 Regulations and 'Green' materials

- ➡ You could be forgiven for thinking the title of the paper suggest that there is legislation out there encouraging the use of 'Green' materials
- ➡ I do not think this is quite the case
- ➡ but what there is is legislation that:
- ➡ controls, in some cases discourages and sometimes bans the use of
- ➡ shall we say 'Violet' material,



# Part 1 Regulations and 'Green' materials

- ➡ As a consequence we are having to consider other materials
- ➡ which are 'less Violet'
- ➡ and in some cases 'Green' materials.



# **‘Violet’ Materials**

- ➡ **‘Violet’ chosen as it is at the opposite end of the spectrum from ‘Green’**
- ➡ **meaning: ‘any material that is unfriendly to humans or the environment or whose performance diminishes in use or over time’**



# Regulations V vested interest

- ☞ What we now need is Legislation that drives us towards 'Green' options
- ☞ rather than just more of the 'Violet' materials we use already
- ☞ I wonder if the next round of Building Regulations will help?
- ☞ will vested interest resist change or prevent it from happening?





# Obstacles

- ☞ Regrettable there is also legislation out there
- ☞ and policemen that patrol its zone of influence,
- ☞ that will continue to maintain technical barriers (despite European Treaties)
- ☞ making their use less easy than their familiar but 'Violet' counterparts



# Chronology of 'Green' agenda, legislation & awareness pre1999

☞ There are a number of different threads running through this chronology:

- International Forum
- Publications, Guidance and Methods
- Ethical Financial Activity
- Legislation
- Green Movements
- Product Quality



# Legislation & 'Green' awareness

- ➡ International Forum establish the targets for all of us to achieve
- ➡ Guidance and methods shows us how
- ➡ Ethical Finance shows us all by example



# Legislation & 'Green' awareness

- ➡ Legislation is implemented by governments when the populous fails to respond
- ➡ Green movements start when governments fail to act in a responsible manner
- ➡ Product Quality



# 1832 Quakers Founded Friends Provident

- 👉 Financial provisions created by a community
- 👉 for the benefit of the community
- 👉 More about them in 1984



# 1955 Building Regulations and Health

➡ BRS Report BR 289



# 1955 Building Regulations and Safety

➡ BRS Report BR 290



# 1956 The First Clean Air Act

- ➡ To control Smog (Smoke and Fog)
- ➡ Meant some fires and boilers could not be used in certain areas if they generated smoke
- ➡ Generated a range of smokeless fuels





# 1957 The Treaty of Rome

- ➡ The beginnings of the Common Market
- ➡ Established rule that no member state could create or maintain technical barriers against goods or services from other member states



# 1959 M1 UK's first Motorway

☞ re-routed to save a forest,



# 1961 Public Health Act

- ➡ Sets the way for a new system of National Regulations
- ➡ to replace Local By-laws



# 1961 Construction (General Provisions) Regulations

☞ SI 1961/1580



# 1962 Silent Spring

- ➡ Book by Rachel Carson
- ➡ galvanises public outrage over use of pesticides.
- ➡ USA



# 60's USA bid for the Moon

- ➡ President John F Kennedy
- ➡ Sets deadline for the end of the decade
- ➡ To land a man on the moon and bring him safely back home
- ➡ Before the Russians



19/08/2010



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# 1965 Unsafe at any speed

- ➡ Book by Ralph Nader
- ➡ kick starts the US Consumer Movement.
- ➡ Detroit USA



# 1965 Building Regulations

- ➡ Apparently a big change from what had gone before
- ➡ Much more stringent than Local By-laws and now nation-wide except London
- ➡ Introduced 'Deemed to Satisfy Provisions'
- ➡ Set the standard for future legislation for the Construction Industry
- ➡ 7 amendments follow, up to 1971





# 1965 Nuclear Installations Act

- ☞ Imposes a duty of care on licensee's to ensure that certain matters do not cause injury to any person or damage any property of any person.



# 1968 Construction (Working Places) Regulations

☞ SI 1966/94



# 1968 British Board of Agrément Established

- ➡ Offers manufacturers opportunity to have 3rd party independent assessment and test of products
- ➡ which do not meet 'Deemed to Satisfy provisions' of the Building Regulations, current British Standards or Code of Practice
- ➡ but achieve a useful purpose and need some form of verification.



# 1968 BBA Agrément Certificates

- ☞ They became a useful promotional aid and helps get Building Regulation approvals
- ☞ Equivalent bodies exist throughout Europe
- ☞ But there is reluctance to accept another country's Certificates



# 196\_ USA bid for the Moon

- ➡ Apollo 8
- ➡ NASA's first circumnavigation of the moon



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# Earthrise

- ☞ That marbled bowling ball called Earth appeared over the lunar Horizon for the first time to a human,
- ☞ When an astronaut realised he could obliterate the Earth behind his thumb
- ☞ He realised how reliant he was on the Earth for his survival and how lost he would be without it



# 1969 Performance parameters & performance specification in architectural design.

➡ BRS CP 23/69:



# 1969 Performance specifications for building components.

➡ BRS CP 37/69:





# 20 July 1969

## USA bid for the Moon

- ➡ Apollo 11
- ➡ Neil Armstrong and Buzz Aldrin
- ➡ Land on the moon in the Sea of Tranquillity



19/08/2010



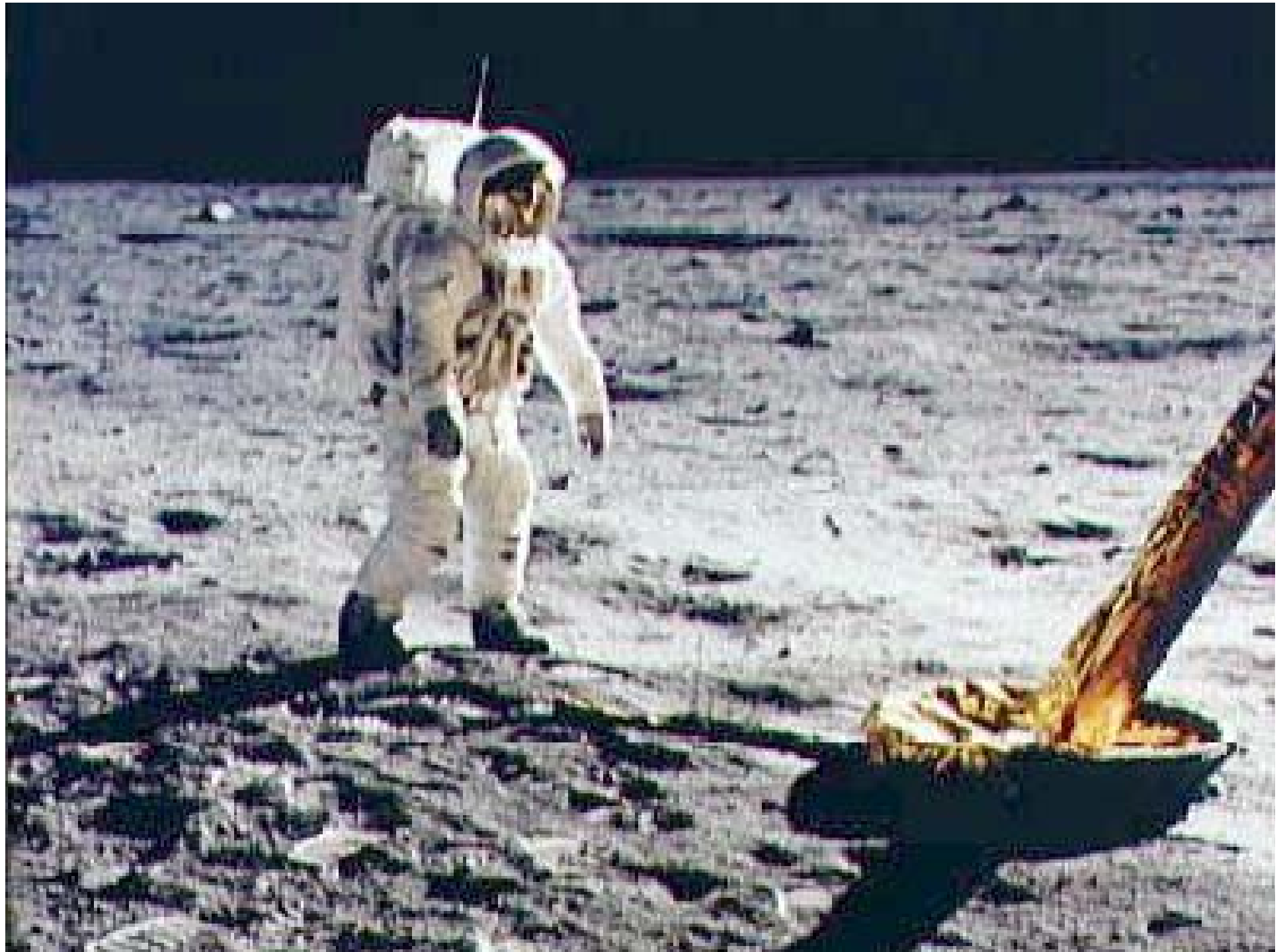
Chronology © NGS Brian Murphy 1999-2003

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21:51 20 July 1969



**One small step for man  
One giant leap for Mankind**



# 1970 Power to the people

- ➡ USA: First concerted shareholder action campaign on an ethical issue
- ➡ launched against General Motors.



# Energy Crisis



# 1970's First Oil Crisis

- ➡ OPEC (Organisation of Petroleum Exporting Countries) predominantly Middle East countries, producing most of the worlds crude oil,
- ➡ create a cartel to fix the price of a barrel of oil significantly higher than previously
- ➡ USA, UK and many other countries who were reliant on outside sources for fuel suffered greatly at rising costs

# 1970's First Oil Crisis

- ➡ Although USA is a major producer of Crude oil it still purchases much of its oil elsewhere since it is a prolific consumer of fuel
- ➡ It became viable for the UK to extract North Sea Oil and Gas



# 1970's First Oil Crisis

- ☞ The Chinese centuries earlier invented the wok to reduce their demand for fuel since they had no natural resources of fuel and so little tree coverage to burn.
- ☞ Unlike in the West we use vast amounts of energy to heat water to heat food to then throw away the hot water and eat the food.





# 1970's First Oil Crisis

- ➡ Initially the Chinese suffered like everybody else, after a while they decided to become less dependant on fuel rather than pay the extra cost.
- ➡ They set about looking at every aspect of their lives and sought to improve their efficiency and to reduce their demands by asking the whole population and all the work forces to put suggestions forward.

# 1970's First Oil Crisis

- ➡ Unlike the West who would have taken the top ten ideas and implemented them
- ➡ the Chinese set about implementing them all
- ➡ pay back periods and unprofitable did not come into the question
- ➡ Australia Power Utilities insulated buildings for free so they would not have to build any more power stations

# 1970's Second Oil Crisis

- ➡ When the second oil crisis occurred,
- ➡ this time generated by the OPEC countries being concerned about the way their resources were being squandered by the West
- ➡ the USA, UK and many other countries dependant on outside fuel sources
- ➡ stood back in horror, and paid even more for their crude oil.

# 1970's Second Oil Crisis

- ☞ The Chinese just stood back and said “Crisis, What crisis?”.
- ☞ They were almost autonomous of the world oil market and probably will remain so despite a growing population
- ☞ OPEC's achieved their goal with the Chinese and Australia, not so the West
- ☞ Now the USA goes to War to defend its oil sources.

# There is a lesson to be learned

- ➡ On their own individuals feel incapable of making any difference
- ➡ Together they can move mountains
- ➡ only Governments can orchestrate and galvanize all of the people at the same time
- ➡ Governments must act and act swiftly



# One bit at a time

- ☞ We can all do our bit for the environment, no matter how small,
- ☞ Everything we do now will have a long term effect because its likely to be there for a long time.
- ☞ Lots of little interventions will lead to a great deal,
- ☞ the more you do, the more you might influence others around you.



# We did not learn then

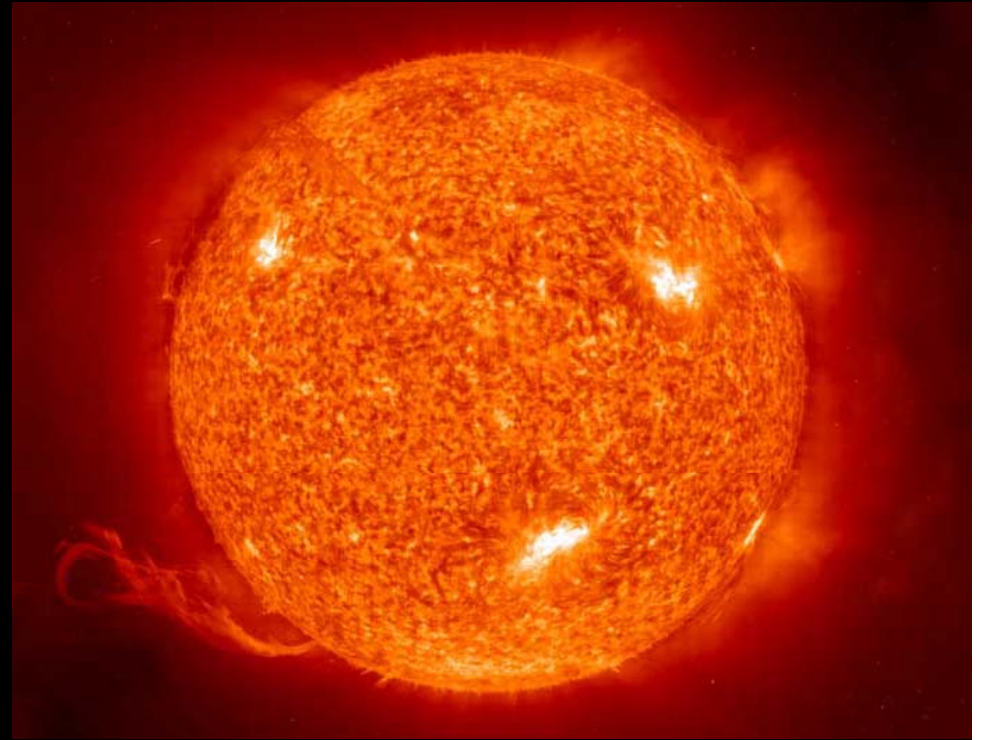
- ➡ For a decade or so Energy Consciousness was high on the agenda
- ➡ The AJ published extensively on the subject
- ➡ As a technician and student I read about it and saw it happening extensively in Europe but I never experienced it in the UK



# 1 Planet



# 1 Sun





# World Resource Consumption

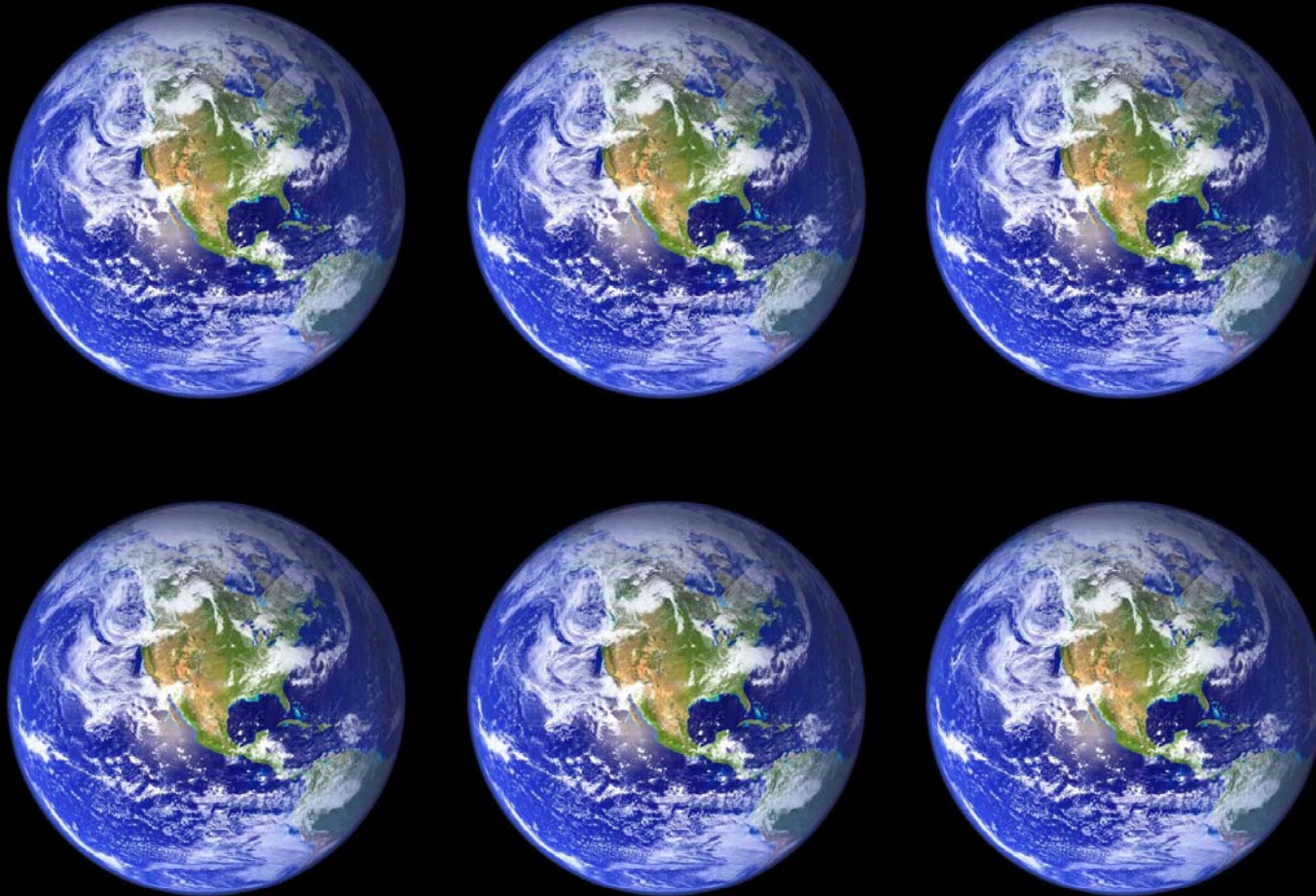


# Comparative figures

- ➡ USA consumes 6 times the international average of energy per capita
- ➡ UK uses 3 times the international average of energy per capita



# 6 Worlds for USA



# 3 Worlds for UK



# We did not learn then

- ➡ Some practices set out to do something
- ➡ Some have specialised in it
- ➡ For many it was a fashion-thing
- ➡ Most never touched it
- ➡ Were they still reeling from the 1965 Building Regulations?
- ➡ If they were, their in for a shock in the future



# Will we learn this time?

- ➡ I think we will
- ➡ because legislation will eventually force us to
- ➡ or we can take the initiative and address the issues ourselves now
- ➡ you are here today
- ➡ which is a step in the right direction



# 1971 5th amendment to 1965

## Building Regulations

- ➡ Following Ronan Point Tower block collapses after a gas explosion
- ➡ Part D revised to take account of accidental overloading by local explosion in buildings over 5 storey
- ➡ And deal with progressive collapse scenario
  - (Too late for 09/11/2001 towers in future)





# 1971 Greenpeace founded

- ➡ 2 Canadians unhappy about US nuclear testing
- ➡ rode rubber boats into the US Nuclear testing areas
- ➡ to disrupt and prevent activity
- ➡ and draw public attention to what is still happening





# 1972 Building Regulations

- ➡ Metric version of the Building Regulations
- ➡ brings together all the past 7 amendments and 1965 Regulations



# 1973 CITES

- ➡ **Convention on International Trade of Endangered Species**
- ➡ **Appendix I & II.**
- ➡ **Includes timber species to be avoided**



# 1973 BS 4949 Glossary of terms relating to Building Performance



# 1974 Control of Pollution Act

☞ to control pollution of surface water



# 1974 Health & Safety at Work Act

- ➡ designed to protect the employee from environmental hazards in the workplace
- ➡ This act continues to enable the enactment of European Directives.
- ➡ Examples:
  - VDT Operator Directive
  - Manual Handling Directive
- ➡ SI 1974/



# 1975 Everyday details

- ➡ AJ Series
- ➡ To reintroduce Architects to the basics of buildings



# 1975 AJ Specification series

👉 100975>



# 1978 What has become of Performance Specification

👉 AJ Study 9: 150278





# 1980 Recommendations for performance standards in building:

- ➡ BS 6019
- ➡ Contents and Presentation



# 1981 Government White Paper

- ☞ Maggie Thatcher gave UK industry 11 years advance notice of need for quality and competitiveness as we go into the European Market,
- ☞ giving us a head start on the road to QA and product quality.



# 1981 Government White Paper

- ➡ The Design side of the Construction industry hardly noticed it was going on
- ➡ and did little to support the changes that took place.
- ➡ 18 Years later the DETR has to remind us
- ➡ to comply with Building Regulations Regulation 7.



# 1981 Quality control on building sites

➡ BRE IP 28/81



# 1982 Traditional Housing:

- ➡ A BRE study of quality
- ➡ BRE IP18/82



# 1982 Material control to avoid waste.

☞ BRE Digest No. 259 March '82:



# 1983 Detailing and specification

👉 AJ series 010683➤



# 1984 Ethical Finance

- ➡ 1984 after 6 years of campaigning DoT approved in principle the Stewardship Unit Trust
- ➡ After a further 5 years it is launched.
- ➡ They set out only to invest in businesses and countries who have similar ethical goals





# 1984 'Acid-Rain'

- ➡ Friends of the Earth launch campaign on 'Acid-rain'
- ➡ Combustion products from UK power stations
- ➡ carried by prevailing winds across the North Sea and
- ➡ dropped in rainwater
- ➡ Substantial damage is done to Scandinavian forests



**Industrial Pollution:**  
**Dioxins**  
**Acid Rain**  
**Smoke**  
**Smog**



# 1984 'Greenhouse effect'

- ➡ Scientific Community warn of 'Greenhouse effect'.
- ➡ CO<sub>2</sub> from burning of fossil fuels collects in the atmosphere and act like greenhouse or conservatory
- ➡ Many people accept it
- ➡ Governments resist believing it



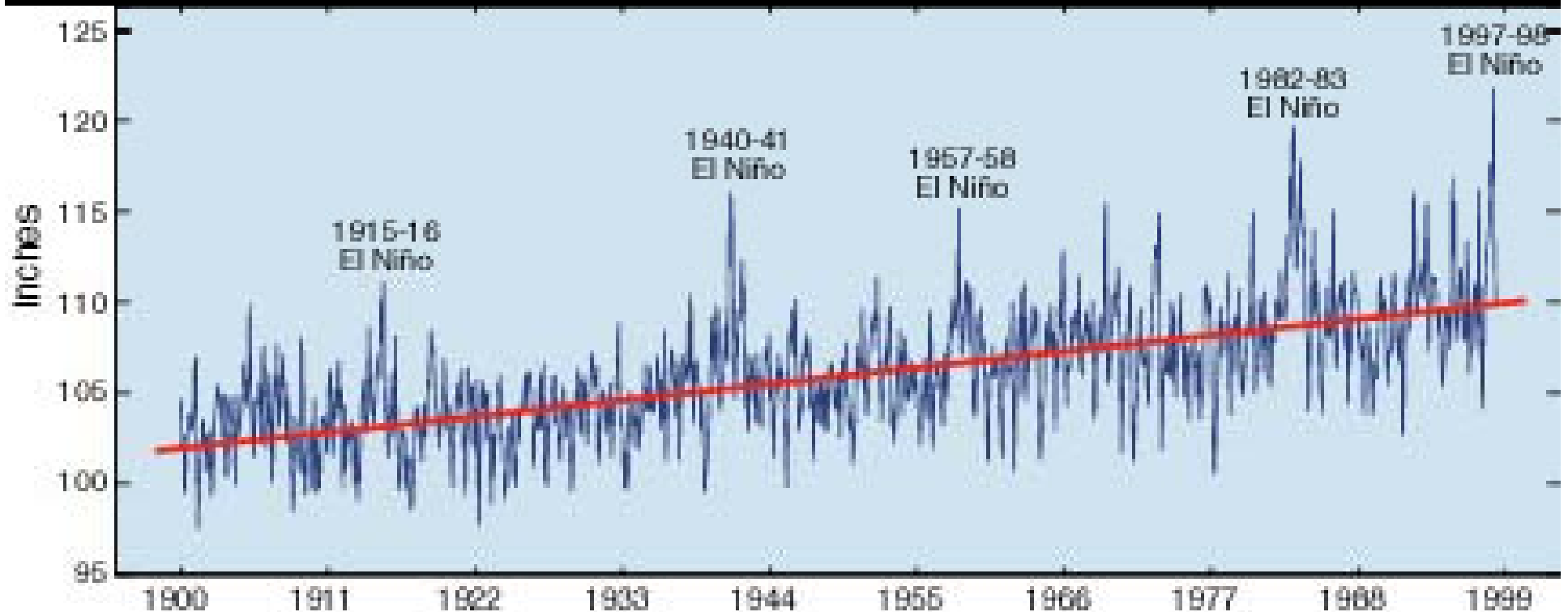
# Fossil fuel coal power stations: Burning of Fossil Fuel: Global Warming

25% -33% efficient  
66-75% Heat up  
cooling towers:  
Global Warming

Toxic Flue Fumes:  
Acid rain



# Long term sea level trend: 8" rise in 100 years El Nino peaks



# Deforestation

- ➡ Deforestation by lumber companies for the building industry and other uses
- ➡ Forest clearing by fire by farmers
- ➡ and acid-rain damage to forests
- ➡ The planets vegetation can not convert Carbon Dioxide  $\text{CO}_2$  to Oxygen  $\text{O}_2$  fast enough to maintain a balance



# 1985 Building Regulations

- ➡ Radical new approach
- ➡ Minimal Regulations termed in Performance Requirements
- ➡ Introduces 'Approved Documents' replacing 'Deemed to Satisfy Provisions'
- ➡ Part D deals with Toxic Substances
- ➡ Separate volumes will allow simplified amendment of parts



# 1985 Live Aid

- ☞ raises money for the Ethiopian Famine following Band Aid's Christmas Single.
- ☞ the people pay where Governments fail.
- ☞ Red Nose day continues to the end of this Century and probably beyond





# 1985 Ionising Radiations Regulations

- ✎ imposes duties on employers to minimise the risk of exposure to Radon,
- ✎ a naturally occurring radio active gas,
- ✎ which can seep from rocky ground into buildings,
- ✎ protective measures are generally adopted in many developments where employees are not the only ones at risk.



# 1985 Ionising Radiations Regulations

- ☞ The use of aluminium in damp proof membranes is a solution
- ☞ BBA Agrément Certified products exist.
- ☞ depending upon the level of gas release, passive or active ventilation below the membrane to the building exterior is also in use.
- ☞ Wimlas Certified Products exist.



# 1985 Performance Specification

☞ AJ series 170485>



# 1985 Using experience and publications in building design

➡ BRE IP13/85



# 1985 Meeting building designer's needs for trade information

➡ BRE IP14/85



# 1985 Housing defect prevention unit

➡ BRE Defect Action Sheet 63 Aug '85



# 1986 European Community Regulations

☞ EEC 3626/86.



# 1986 Element Design Guide

👉 AJ 020786>





# 1987 Achieving quality on building sites.

👉 NEDO

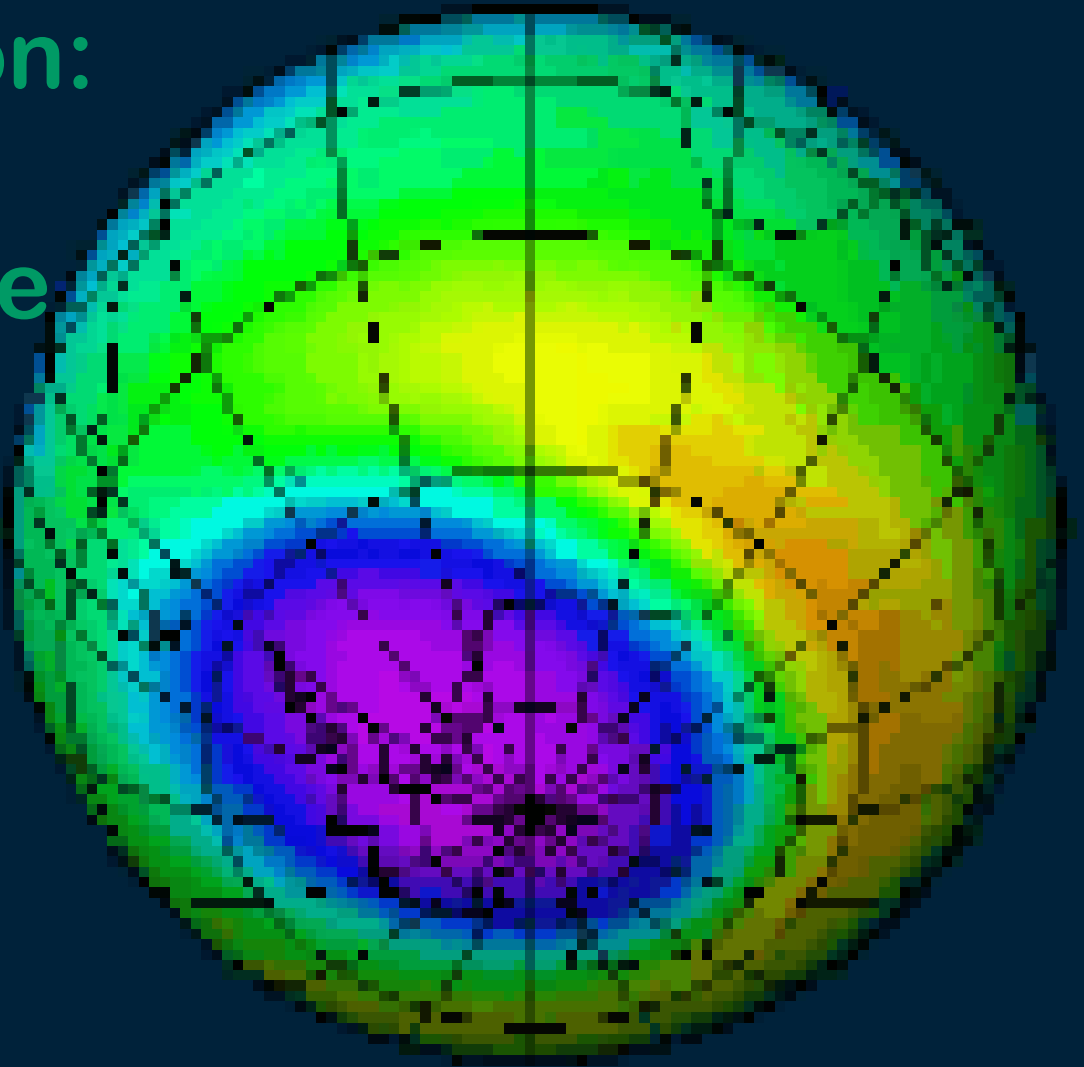


Ozone Depletion:  
More UV light  
reaches surface

Ocean's Krill:  
Crustaceans  
and Plankton  
stocks first to  
be diminished

Disruption of  
the marine

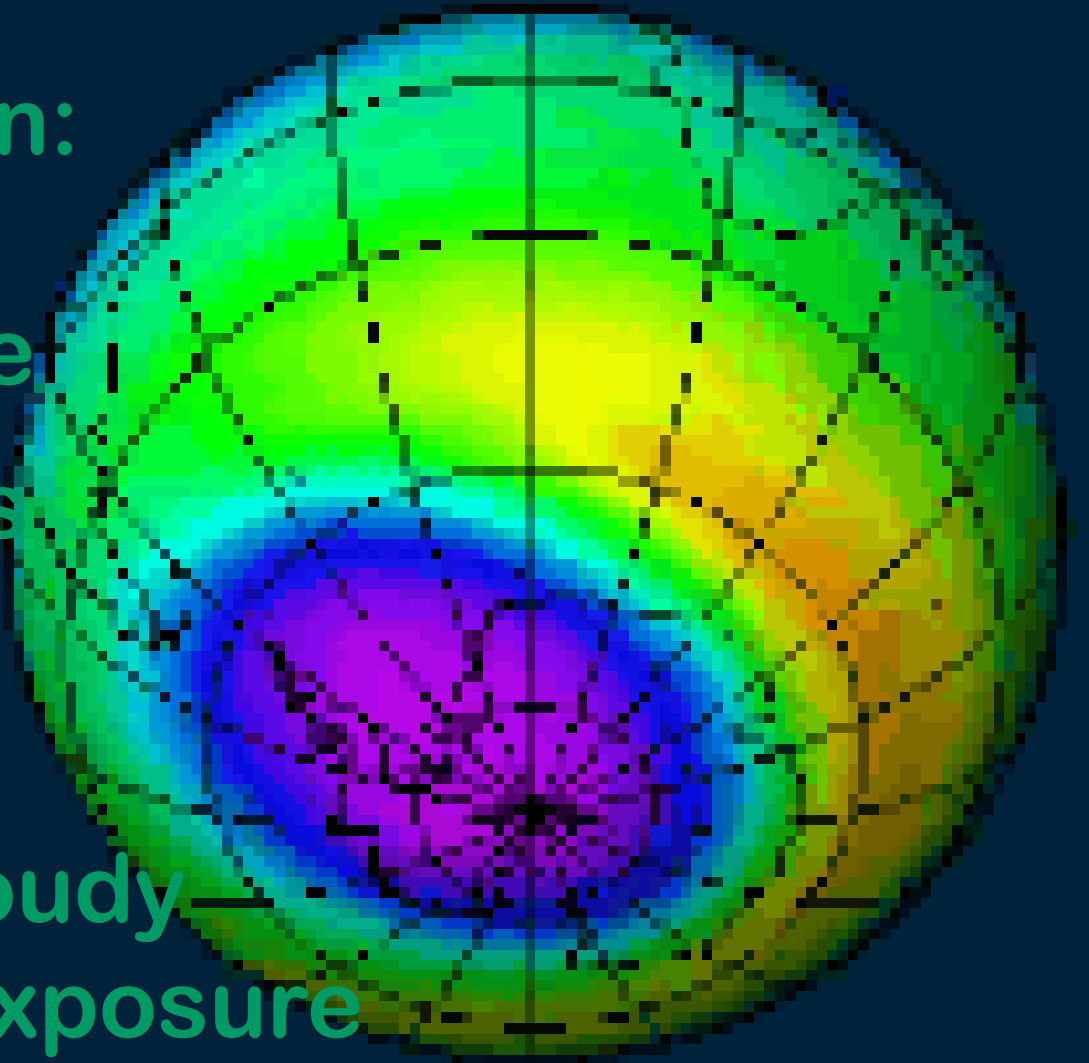
food chain especially for whales



Ozone Depletion:  
More UV light  
reaches surface

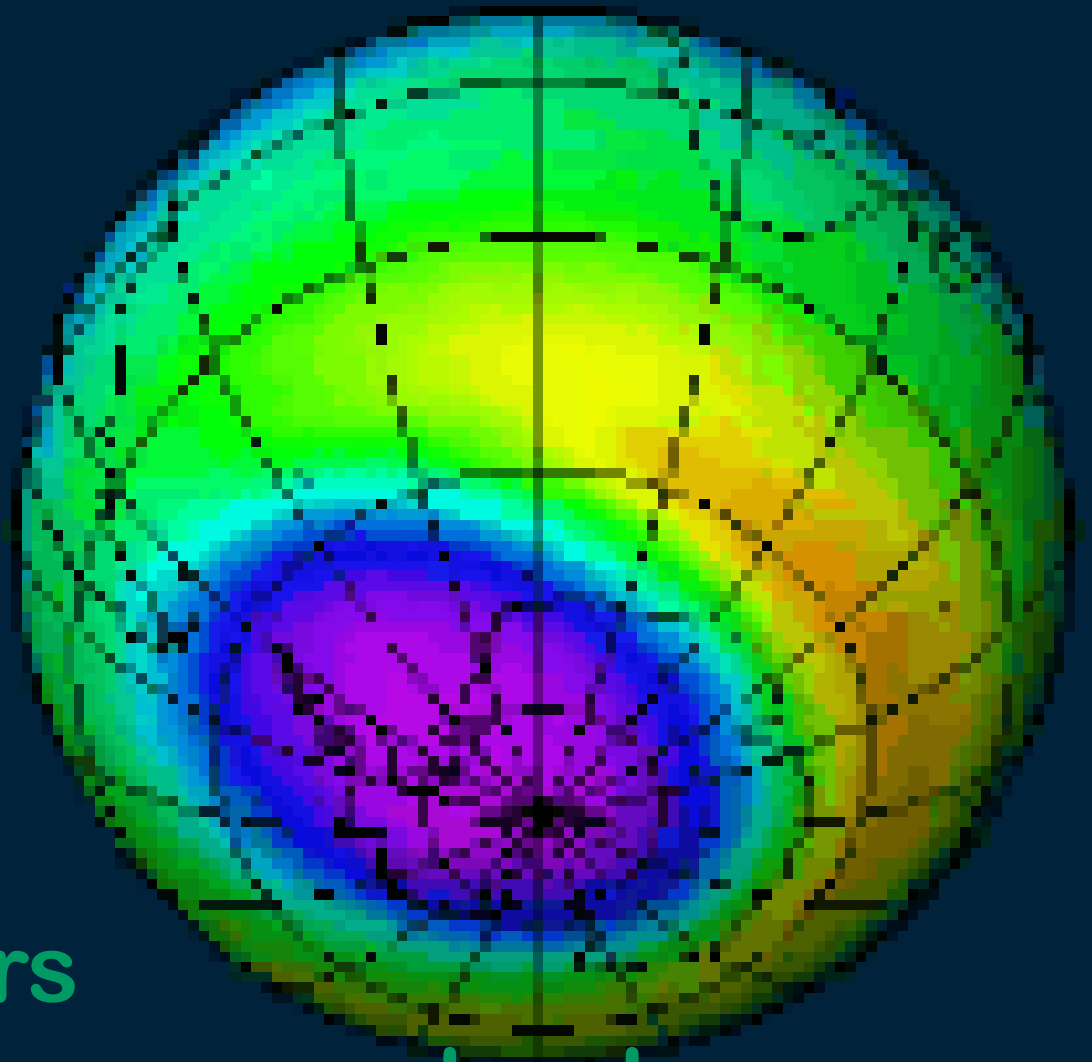
Damage to Eyes  
of animal stock  
and humans

Making eyes cloudy  
after years of exposure  
and Cataracts



Use of CFCs:  
In refrigeration  
systems,  
thermal  
Insulation

Used to clean  
computer  
microprocessors  
to ensure they are squeaky clean  
but now lemon oil and water  
does the job just as well

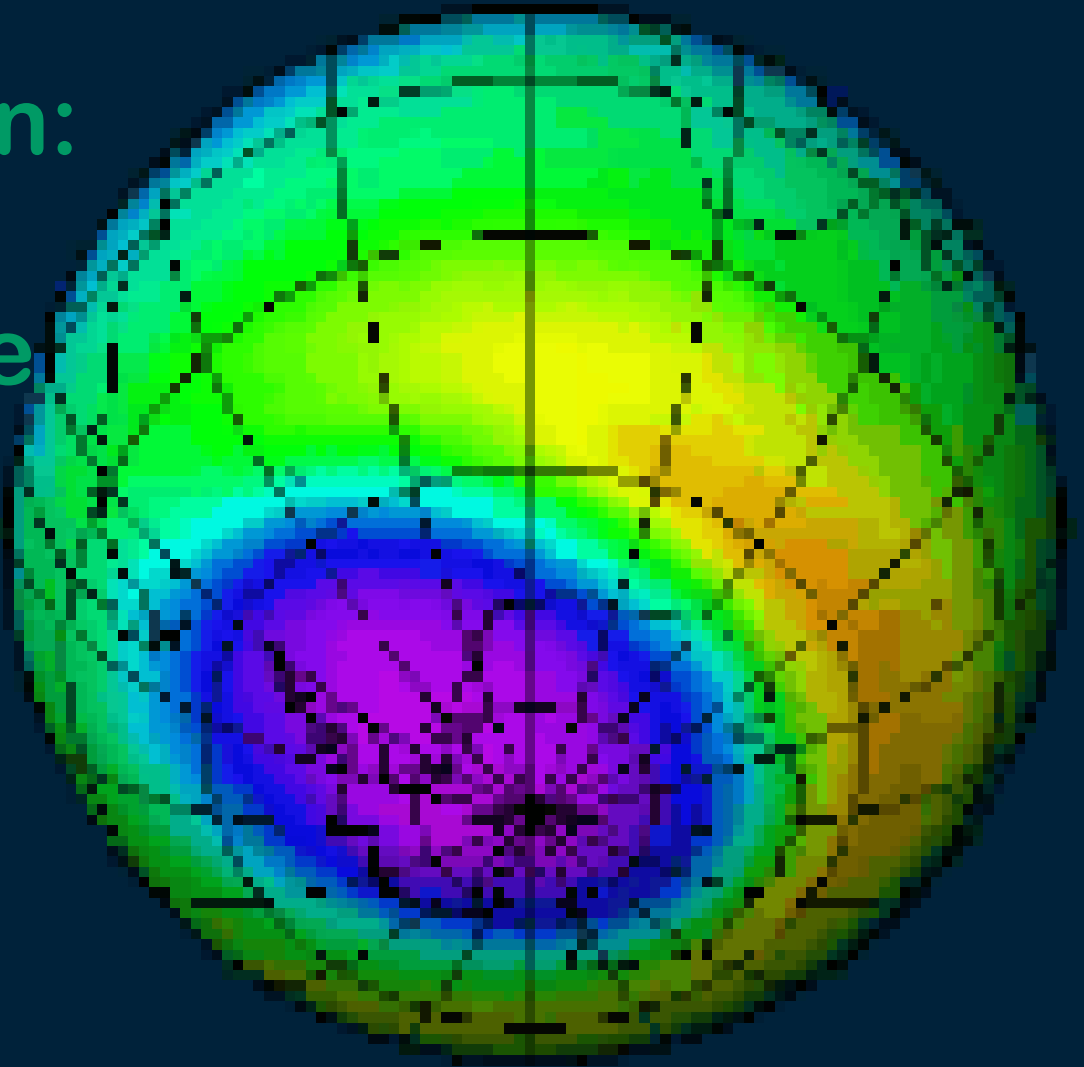


Ozone Depletion:  
More UV light  
reaches surface

Higher risk of  
sunburn

Early ageing of  
skin, wrinkling  
even risk of  
skin Cancer

Damage to Eyes



# 1987 Montreal Protocol

- ➡ an agreement on limiting use of Ozone Depleting Chemicals signed.
- ➡ Ozone O<sub>3</sub> helps to protect us from the UV in Sunlight
- ➡ ODC's are to be phased out
- ➡ Too little to late?
- ➡ too long to deadline



# 1987 Montreal Protocol

- ☞ But USA seeks to swap credits with the underdeveloped countries
- ☞ so it can continue to waste more than its fair share of fuel and resources
- ☞ and destroy more ozone than anybody else.



# Ozone Depleting Chemicals

- ☞ Chlorine and Bromine are big problems
- ☞ CFCs, HCFCs and HFAs used as a blowing agent in foamed plastics contain chlorine.
- ☞ In insulation and joint filler boards and sealant backing rods
- ☞ and in refrigerant systems





# Ozone Depleting Chemicals

- ☞ Chlorine and Bromine are a big problem
- ☞ CFCs (Chloroflourocarbons) used as a blowing agent in foamed plastics contain chlorine.
- ☞ Used in insulation and joint filler boards and sealant backing rods
- ☞ and in refrigerant systems



# Ozone Depleting Chemicals

- ➡ Blowing agents percolate out of the plastics and into the atmosphere
- ➡ diminishing the performance of the board
- ➡ Refrigerants may be released from systems
- ➡ They are then free to attack Ozone in the Earth's protection layer.



# Ozone Depleting Chemicals

- ➡ HCFCs (HydroChloroFluoroCarbons or Hydrogenated CFC) have a lower ODP (Ozone Depletion Potential)
- ➡ so are being dealt with less urgently,
- ➡ but as less CFCs are around then the % of HCFCs increase and their effect over a long period is increased.



# Ozone Depleting Chemicals

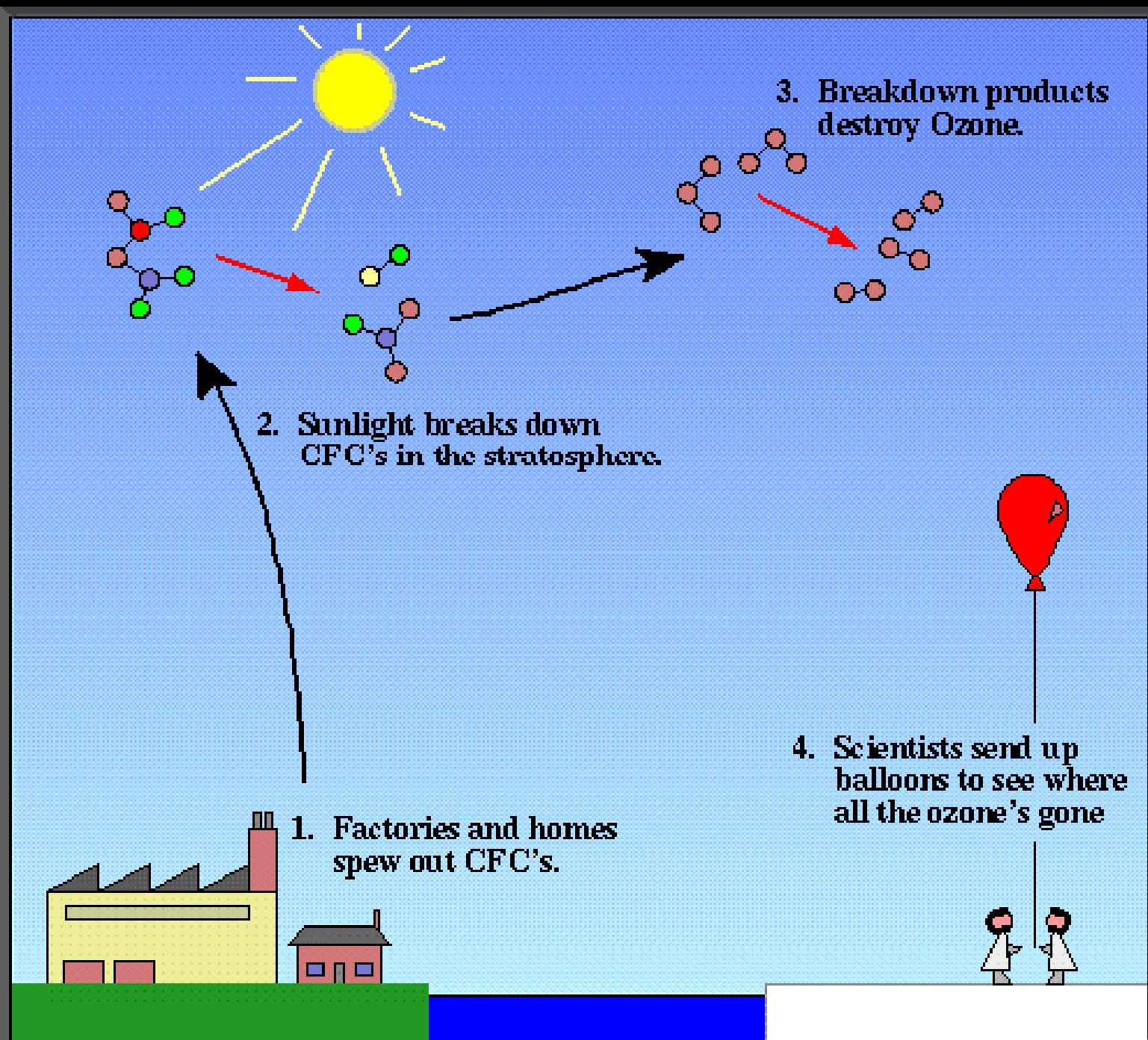
- ☞ We can do our bit not to specify not permit the use of CFCs and HCFCs
- ☞ HFAs (HydroFluoroAlkane) should also be avoided since they are a wider group containing HFCs and HCFCs
- ☞ be persistent with manufacturers to determine what their boards contain



# Ozone Depleting Chemicals

- ➡ Halons (Halogenated Hydrocarbon) fire fighting agent
- ➡ contain Bromine have a very high ODP
- ➡ used in fire extinguishing systems
- ➡ These need to be phased out.





# Catalysts

- ☞ Some act as catalysts (not part of the reaction but encourage others to react)
- ☞ so have a greater potential to destroy even more Ozone.



# 1987 Co-ordinated Project Information (CPI)

- ➡ Out line of principles
- ➡ Drawing Manual
- ➡ Specification Manual
- ➡ Common Arrangement of Work sections (CAWS)
- ➡ Quantity Surveying Manual/ SMM7
- ➡ CCPI Committee for Co-ordinated Project Information.





# 1987 World Commission on Environment and Development

- ➡ Introduction of the idea of sustainable development, it states:
- ➡ “the needs of the present are [to be] met
- ➡ without compromising the ability
- ➡ of future generations to meet their own needs.”



# 1987 Control of Asbestos at Work Regulations

- ➡ designed to prevent occupational exposure to asbestos,
- ➡ it was used in a variety of forms until 1980's
- ➡ but still persists in some applications where a suitable alternative is still sought.
- ➡ Many more Acts and Regs. follow



# 1988 Substances for use at work: the provision of information

☞ HS(G)27:1988: 2nd. edition



# 1989 COSHH in construction - a BEC guide

☞ **BEC S/89 1989.**



# 1989 Electricity At Work Regulations

☞ SI 1989/653



# 1989 The London Hazards Centre:

☞ Toxic Treatments.



# 1989 CFCs and the Building Industry.

➡ BRE Information Paper 23/89



# 1989 Building Design and Use: response to climate change

➡ Neil Milbank

➡ AJ 020889.





# 1989 The Control of Substances Hazardous to Health in the construction industry

☞ HSE 1989



# 1989 Lausanne Conference

➡ 103 countries votes for ban on Ivory trading,



# 1989 Construction Products Directive 89/106/EEC

- ➡ To be implemented by '1992' the beginning of the 'Single Market'.
- ➡ Essential Requirements
- ➡ EC Mark
- ➡ ETA European Technical Approvals
- ➡ National Agrément Certificates,
- ➡ BSI Kitemark



# 1989 General Criteria for suppliers'

## declaration of conformity

➡ BS 7541 = EN 45014

➡ Enable some control over what is  
actually delivered to site

➡ helps control specification  
substitution

➡ The Director of the manufacturer  
signs to say:

➡ it is what it claims to be

➡ and meets the specification

# 1989 Water Act

- ➡ A code of practice for water conservation, access and recreation



# 1989 Amendments to Building Regulations

- ➡ SI 1989/1119
- ➡ A concerted effort to tackle energy issues amendments to Approved Documents:
  - ➡ F Ventilation
  - ➡ J Heat Producing Appliances
  - ➡ L Conservation of fuel and power



# 1990 Environmental Protection Act

- ➡ Section 33 controls the disposal of controlled waste (E.g.. Commercial waste from building sites) except in accordance with a waste management licence.
- ➡ It also controls the keeping and disposing of controlled waste in a manner likely to cause pollution of the environment or harm to human health.



# 1990 Environmental Protection Act

- ➡ Section 34 imposes a Duty of Care on those that produce, transport, handle or dispose of controlled waste, and includes prevention of contravention by others, prevention of escape of waste, the use of authorised waste disposers, and introduction of paperwork to enable audit trails.





# 1990 Environmental Protection Act

- ➡ Part 1 introduces IPC “Integrated Pollution Control” for industrial processes which have a significant potential for pollution.
- ➡ The Secretary of State has the power to make regulations prescribing processes for which an authorisation is required.



# 1990 Environmental Protection Act

- ☞ but it only controls 'significant potential'
- ☞ are there hundreds of little people doing a lot of harm?



# 1990 The Control of Substances Hazardous to Health (Amendment) Regulations

☞ SI 1990/2026



# 1990 Man made mineral fibres

☞ HSE EH46:1990



# 1990 Rosehaugh Guide (Buildings and Health).

☞ Curwell, March and Venables.



# 1990 Review of Rosehaugh Guide

☞ Pages 45-48 AJ 121290



**Industrial Pollution:**  
**Dioxins**  
**Acid Rain**  
**Smoke**  
**Smog**



# 1990 A Real Wood Guide.

- ➡ **Forests Forever:**
- ➡ **Statistical information on sources and UK uses.**





# 1991 BRE Digest 358

☞ and many others, 02 91



# 1991 Green Architecture

- ☞ Vale & Vale
- ☞ Thames and Hudson



# 1991 Greening the Practice

👉 AJ 271191



# 1991 Guide to the preparation of specifications

👉 **BS 7373**



# 1991 Building Regulations

- ➡ SI 1991/2768
- ➡ Acknowledges:
- ➡ CPD Construction Products Directive
- ➡ Construction Products Regulations
- ➡ Regulation 7 Materials and Workmanship
- ➡ ‘proper materials’



# 1991 Building Regulations

- ➡ Older parts still current
- ➡ Approved Documents:
  - ➡ D Toxic Substances (1985)
  - ➡ F Ventilation (1990)
  - ➡ J Heat Producing Appliances (1990)
  - ➡ L Conservation of fuel and power (1990)



# 1991 Construction Products Regulations

- ➡ In time for '1992' the beginning of the Single Market.
- ➡ Implements the Construction Products Directive (89/106/EEC)
- ➡ Reinforced by Building Regulation 7
- ➡ and Scottish Technical Standards Regulation 11.



# 1991 Construction Products Regulations

- ➡ Essential Requirements
- ➡ EC Mark
- ➡ ETA European Technical Approvals
- ➡ National Agrément Certificates,
- ➡ BSI Kitemark





# 1991 EC Urban Waste Water Treatment Directive

- ☞ stops member states dumping sludge at sea by 1998.
- ☞ Plenty of time to dump all the things you won't know how to deal with later.



# 1991 EC Directive on Hazardous Waste 91/689/EEC

- ☞ requires monitoring of special waste from its creation to destruction
- ☞ and the Environment Agency to be informed every time it is moved.



# 1991 The Water Resources Act Section 85.

- ☞ controls the causing or knowingly permitting of any poisonous, noxious or polluting matter or any solid entering controlled water (lakes, ponds, rivers, estuaries, ground-water, and certain coastal waters)



# 1991 BRE Launches BREEAM

- ➡ the 1st Method of assessing the environmental features of building and scoring them.
- ➡ Initially for New offices,
- ➡ subsequent issues over the following 4 years address similar issues on:
- ➡ Existing Offices, new supermarkets and Superstores, new Industrial Units, new Housing



# 1991 BREEAM

- ➡ Only a voluntary scheme
- ➡ Approx. 30% of office developments are adopting the assessment
- ➡ and use it as an aid to promote the buildings
- ➡ and achieving high occupancy rates
- ➡ Tel: 01923 664462
- ➡ **BREEAM@BRE.CO.UK**



# 1991 How green is your office?

- ➡ Environmental Quality.
- ➡ Review of BREEAM
- ➡ AJ 130391



# 1991 BREEAM 2/91 New Superstores and Supermarkets



# 1991 Environmental Protection Regulations





# 1991 Water Resources Act



# 1991 Environmental Protection (Prescribed Processes and Substances) Regulations

☞ (updated many times)



# 1992 Conference on Performance Specification

☞ IofAAS York on 09 06 92



# May 1992 Benoy Environmental

- ➡ Teresa Martinez
- ➡ Head of Environment Unit
- ➡ Benoy Environmental
- ➡ Set up to offer independent consultancy to Benoy Architectural and other practices



# 1992 Management of Health and Safety at work Regulations

☞ SI 1992/



# 1992 Management of Health and Safety at work (Amendment) Regulations

☞ SI 1992/2865:



# 1992 Personal Protective Equipment at Work Regulations (PPE)

☞ SI 1992/2966



# Controlled Waste Regulations 1992





# 1992 Workplace (Health, Safety And Welfare) Regulations

☞ SI 1992/3004:



# 1992 Personal Protective Equipment (EC Directive) Regulations

☞ SI 1992/3139



# 1992 Manual Handling Operations Regulations- guidance on Regulations 1992

☞ HSE L23

☞ Limit of 20kg (40lbs) for one man  
operation

☞ thereafter more men or lifting  
equipment

☞ influences methods of building  
blockwork walls

☞ and density of blocks manufactured



# 1992 Management of health and safety at work:

- ➡ Interpretation and Guide to the Management of Health and Safety at Work Regulations 1992.
- ➡ HSE L21



# 1992 HCFCs: Hidden CFCs.

- ➡ Publication
- ➡ Greenpeace International



# 1992 Woodmark

- ➡ the Soil Association Certificate of Responsible Forestry.
- ➡ Soil Association:



# 1992 Green specification

👉 AJ 150492



# 1992 Rio Earth Summit

- ☞ placed sustainable development at the top of the international agenda.
- ☞ nations signed up to new environment agenda for the next century: Agenda 21





# Agenda 21

- ➡ **Agenda 21 relies on local action,**
- ➡ **each council is to prepare its own strategy its Local Agenda 21 to achieve sustainable development**



# Agenda 21

- ☞ It acknowledges environmental problems and solutions are linked to social and economic problems.
- ☞ It emphasises the importance of involving people, especially disadvantaged groups in seeking solutions



# 1992 BS 7750 Environmental Management Systems

- ☞ the first standard of its kind in Europe to assess and monitor companies environmental performance
- ☞ helps to ensure companies comply with environmental legislation and regulations
- ☞ helps to ensure products or services are produced, packaged delivered and disposed of in an environmentally friendly way.



# 31/12/1992 Europe Arrives 'The Single Market'

- ➡ but status quo prevails
- ➡ You can carry on specifying by BS until EN's arrive to replace them
- ➡ Many European Directives follow
- ➡ which in turn will be implemented by Regulations or Acts in each member state.



# 1992 Technical Barriers

- ☞ You should no longer expect to see technical barriers placed by the Regulatory Policemen.
- ☞ You should not create your own Technical Barriers in excluding materials from Europe.



# 1992 the "new approach" to technical harmonisation and standards

➡ DTI Standards:



# 1992 Construction Products.

👉 DTI Standards:



# 1993 Clean Air Act

- ☞ controls atmospheric pollution from fires and furnaces.
- ☞ controlling the quality of the Services Installation we install.





# 1993 CE Marking of Construction Products

- ➡ Directive 93/68/EEC
- ➡ Rationalises the EC Marking procedures previously described in numerous EC Directives



# 1993 Noise and Statutory Nuisance Act

- ☞ LA powers increased enabling them to take action against noise in the street, from equipment, machinery, loud-speakers, faulty alarms.
- ☞ Consideration needed in the building fabric and services installations in building.



# 1993 Ecolabelling of Building materials and Building Products

➡ BRE Information Paper 11/93



# 1993 BREEAM 1/93 New Offices

👉 Scheme updated



# 1993 BREEAM 4/93 Existing Offices



# 1993 BREEAM 5/93 New Industrial Units



# 1993 The Green Construction Handbook

👉 J T Design & Build & Arup



# 1993 The Green Construction handbook

👉 AJ Review 070793 and 210793.





# 1993 Chemicals (Hazard Information and Packaging) Regulations

- ➡ (CHIP).
- ➡ SI 1993/ :
- ➡ Useful in CDM Risk assessments



# 1993 Personal Protective Equipment

- ➡ (EC Directive) (Amendments) Regulations
- ➡ SI 1993/3074:



# 1994 Personal Protective Equipment

- ➡ (EC Directive) (Amendments) Regulations
- ➡ SI 1994/2326:



# 1994 July Best Practice in the Specification of Offices

- ➡ BCO British Council for Offices
- ➡ Sets out to initiate a debate about office design and thus improve the design process
- ➡ Addresses Design, floor plans, structure, indoor climate control, Services, Fire protection, security, materials and finishes, management manuals and training.



# 1994 Construction (Design & Management) Regulations

- ➡ (CDM) SI 1994/3140:
- ➡ Required consideration during the design stage and when choosing materials and methods of construction to avoid difficult or dangerous activities for building workforce and employees,
- ➡ Designs should now be safe,
- ➡ safety measures should be the last resort.



# 1994 CDM

- ☞ Requires risk assessments to be carried out throughout the whole procurement process including:
  - design,
  - manufacture,
  - construction,
  - maintenance, refurbishment, change of use
  - demolition
  - recycling



# 1994 CDM

☞ **Must take into account:**

- material excavator/miner,    - manufacturer,
- supplier,                                - stockist,
- fabricator,                               - contractor,
- installer,                                - applicator,



# 1994 CDM

- ➡ **Must take into account:**
- ➡ **building occupants, maintenance staff,**
- ➡ **refurbishers, demolition contractor and recycle contractors.**





# 1994 Control of Substances Hazardous to Health

- ➡ (COSHH) SI 1994/3246:
- ➡ Requires employers to identify hazards,
- ➡ carry out risk assessments,
- ➡ and provide the appropriate measures to reduce the risks to human health



# 1994 COSHH

- ➡ Designers now need to think harder about the materials we specify.
- ➡ Architect's responsibility to consider human friendly alternatives.
- ➡ We have stopped using Asbestos because of legislation,
- ➡ Ceramic Fibre products have all but disappeared from the market



# 1994 COSHH

- ➡ **Manufacturer's required to release product data sheets**
- ➡ **describing the materials the ingredients,**
- ➡ **risks in their use,**
- ➡ **precautions to be adopted,**
- ➡ **safe methods of disposal etc.**



# 1994 Environmental Handbook for Building and Civil Engineering Projects.

- ➡ Vol. 1 - Design and Specification.
- ➡ Overview in checklist format with references to good practice.
- ➡ CIRIA



# 1994 Energy and Global Warming

- ➡ Impacts of not-in-kind and next generation CFC and HCFC alternatives.
- ➡ US Dept of Energy:



# 1994 Building Regulations (amendment) Regulations

☞ SI 1994/1850



# 1994 Managing Construction for health and safety

- ➡ Construction (Design and Management) Regulations
- ➡ HSE L54 1994



# 1994 Embodied Energy and Carbon Dioxide Emissions for Building materials.

➡ BRE PD 109/94





# 1994 Amendment to Building Regulations

- ➡ SI 1994/1850
- ➡ Amendment to:
- ➡ L1 Conservation of Fuel
- ➡ Regulation 14
- ➡ Energy rating for new dwellings



# 1994 Latham Report 'Constructing the Team'

- ➡ Called for:
- ➡ 30% reduction in real costs over a 6 year period
- ➡ move towards TQM Total Quality Management
- ➡ right first-time, every-time (Zero Defects)
- ➡ not much about 'Green' here but the above are steps in the right direction



# 1994 PPG 9 Planning Policy Guidance: Nature Conservation

- ➡ Sets out Government Objectives for nature conservation
- ➡ describes the role of Planning Authorities
- ➡ advises on nature conservation issues
- ➡ states development control criteria



# 1994 Jan Benoy Corporate Environmental Policy

- ➡ Launched to promote the activity of its Environment Consultancy
- ➡ Written in terms that suggest dependence on economical viability
- ➡ Benoy can get away with doing nothing.
- ➡ The person who ran the department is no longer with the practice
- ➡ We are not aware of any efforts on this issue.



# 1995 Control of substances hazardous to health

- ➡ General Approved Code of Practice,
- ➡ HSE 2nd. edition 1995.



# 1995 BREEAM 3/95 New Housing

☞ The Environmental Standard Award



# 1995 Environmental Impact Assessment:

- ➡ a Comparative Review.
- ➡ Spon.



# 1995 Building Regulations (amendment) Regulations

☞ SI 1995/1356





# 1995 Environmental Policy and Information

☞ for RIBA members



# 1995 Environment Act

## ☞ Chapter 25



# 1995 Ethical investment:

- ➡ Stewardship breaks £500m barrier
- ➡ only 6 years after its launch



# HECA Home Energy Conservation Act 1995



# 1996 The Special Waste Regulations

- ➡ implements EC Directive 91/689/EEC
- ➡ 5 more years worth of sludge discharged whilst it was in the making
- ➡ still plenty of time to dump some more before end of 1998.



# 1996 Construction Resources established

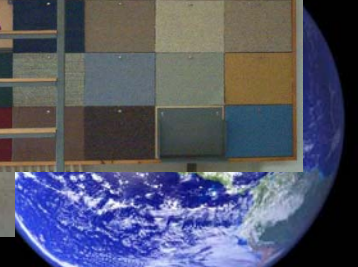
- ➡ sets out to research a Green approach, the availability of product which are:
- ➡ “high quality products that combine
- ➡ the highest possible levels of comfort and performance
- ➡ in the buildings that people live and work in
- ➡ with the lowest possible impact on the environment”.







Showroom  
Exhibition  
Education Centre  
Training Centre  
Facilitator  
Consultants  
Bookshop  
Building Supplier



**Construction Resources 16 Great Guildford Street Southwark London SE1 0HS**

19/08/2010

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# 1996 Construction (Health, Safety and Welfare) Regulations

☞ SI 1996/1592:





# 1996 Personal Protective Equipment (EC Directive) (Amendments) Regulations

☞ SI 1996/3039: 1996



# 1996 Specifying for Greener Building

➡ Stephen Curwell.

➡ AJ 110196



# 1996 Building for Sustainability

➡ **Barrie Evens**

➡ **AJ 180196**



# 1996 Making London Sustainable

➡ Herbert Girardet

➡ AJ 290296



# 1997 Energy in Inverness

- ➡ RIAS Convention
- ➡ AJ 150597



# 1997 Water as a planning constraint

➡ Brian Waters

➡ AJ 290597



# 1997 Material Gains

- ☞ reviews Good Practice in the selection of construction materials.
- ☞ Addresses blacklisting
- ☞ AJ 290597



# 1997 A material difference

- ➡ Sustainable Engineering:
- ➡ Materials and Methods:
- ➡ Brian Sims
- ➡ Building Services Journal: 000797





# 1997 Futures: Time to make a difference

- ➡ Mike Evamy
- ➡ Design Week 040797



# 1997 Missing the Green

➡ Andy Cook

➡ Building: Technical: Environment:  
180797



# 1997 The Future is Green

- ☞ Jonathon Porritt (FotE)
- ☞ Design: Summer 97



# 1997 Dec Kyoto Climate Summit

- ➡ 13 years after the scientific community warns about the 'Greenhouse effect'
- ➡ Summit agrees targets for reducing 'Greenhouse gas' (GHG) emissions by 5.2%
- ➡ The goal is to reduce our CO<sub>2</sub> requirements by the year 2010 by 20% off the 1990 levels
- ➡ Legally binding on the developed world



# 1997 Dec Kyoto Climate Summit

- ➡ two contentious elements of the protocol were not detailed
- ➡ they will be developed at Conference of the Parties (COP)
- ➡ Emissions trading and Clean Development Mechanism (CDM)
- ➡ See COP4 Nov 1998



# Producer Responsibility Obligations (Packaging Waste) Regulations 1997



# 1998 Brownfield Site Movement

- ➡ The Government announces plans to relax restrictions on the London Greenbelt and other Greenfield sites to free up land to make room for the many thousands of houses needed for the growing population
- ➡ In reaction a group of eminent members of the Construction Industry promote the use of all derelict land before **wasting the Greenbelt and other sites**



# 1998 Sir John Egan Report 'Rethinking Construction'

- ➡ Client-led task force critical of Construction Industry calls for
- ➡ “a radical change in the way we build”
- ➡ not much in this for the drive to ‘Green’ solutions
- ➡ a little on reduction in waste in materials
- ➡ but aims to cut costs will discourage the use of ‘Green’ materials.





# 1998 Sir John Egan Report 'Rethinking Construction'

- ➡ Client-led task force critical of Construction Industry calls for:
- ➡ “a radical change in the way we build”
- ➡ Year-on-year target:
- ➡ 10% cut in construction costs and time
- ➡ 10% profit and increase in turnover
- ➡ 10% improvement in productivity



# 1998 Sir John Egan Report 'Rethinking Construction'

- ➡ Worker conditions to change
- ➡ 20% reduction in injuries
- ➡ improved working conditions



# 1998 Sir John Egan Report 'Rethinking Construction'

- ➡ Construction should change:
- ➡ integration of design and construction
- ➡ increased standardisation
- ➡ Use of lean construction techniques
- ➡ end to competitive tendering
- ➡ phase out formal contracts



# 1998 Sir John Egan Report 'Rethinking Construction'

- ➡ Ideas for implementation
- ➡ £500m of demonstration projects
- ➡ Nick Raynsford to chair steering committee to take reforms forward
- ➡ New Forum for best practice in housing



# 1998 Sir John Egan Report 'Rethinking Construction'

- ➡ Roger Humber CEO of House Builder's Federation says:
- ➡ Planning system needs a shake up to allow sustainable development and integrated transport systems.
- ➡ Egan failed to address sustainability
- ➡ Egan fails to address small projects which are the bulk of the £58bn-a-year industry



# 1998 Construction Best Practice Programme

- ➡ Following the Egan Report Rethinking Construction
- ➡ Identifies, publicises and supports the use of improved business and management practices for the Construction Industry
- ➡ Funded by DETR and is steered jointly by Government and the CIB Construction Industry Board



# 1998 Euro-Agrément agreed by UEAtc

- ➡ This will allow any materials producer to seek an Agrément Certificate for their product in their own country
- ➡ At the same time have the product assessed for any other pre-agreed European state where it wishes to promote the product.



# 1998 Euro-Agrément

- ☞ The certificate will have:
- ☞ a front cover indicating the initiating and co-operating institutions
- ☞ an annex covering national provisions and regulated requirements





# 1998 Euro-Agrément

- ➡ Each pre-agreed state will take a minimalist approach
- ➡ and accept the overlapping areas already carried out by the initiating Institute
- ➡ It will be then be acceptable in those pre-agreed UEAtc member country
- ➡ as a pre-agreed confirmation.



# 1998 First ETA awarded in UK

- ➡ 9 years after the Construction Products Directive issued
- ➡ the European Technical Approval for Hilti GmbH for 2 of it's anchor products
- ➡ Rawlplug are hot on their heels and awarded first ETA to a UK company
- ➡ Structural sealant glazing systems were also awarded ETA



# 1998 General Criteria for suppliers' declaration of conformity

☞ BS EN 45014 (Formerly BS 7514)



# 1998 Hockerton Housing Scheme

- ➡ implements its Local Agenda 21
- ➡ 11 years after the initial idea suggested and
- ➡ 6 years after the Rio Earth Summit
- ➡ The first UK public demonstration of a Local Agenda 21 makes the press.
- ➡ reviewed in Building Services Journal Feb. 98.



# Zero Energy Development



Reduce demand  
for artificial light  
and heating:  
Outdoor living  
Conservatory life  
sunny warm cave  
to retreat to in  
the cold of night



# 1998 Services for Housing

- ➡ Implementation of Agenda 21.
- ➡ Building Services Journal: 000298





# 1998 The Muck Stops Here

- ➡ Environmental Liability
- ➡ By Tim Smithers and Nic Seal.
- ➡ Estates Gazette 100198



# 1998 From design to dustbin

- ➡ Life Cycle Assessment
- ➡ Garath Gardner
- ➡ Building 030498





# 1998 Life Cycle Assessment

- ➡ Technical Notes
- ➡ Nigel Howard and Suzy Edwards
- ➡ AJ 110698



# 1998 Keener to be Greener

➡ Ruth Slavid

➡ AJ 230798



# 1999 Principles of element design

➡ 3rd edition

➡ Peter Rich & Yvonne Dean



# 1998 Stewardship

- ➡ reaches £1bn of ethical assets in 9 years
- ➡ doubling in value in 3 years.
- ➡ This policy has consistently outperformed FTSE All-share index and the UK Equity General Pension Fund Sector.
- ➡ (Source: Reuters Hindsight)
- ➡ 1998 UK Ethical investment market passes £2bn



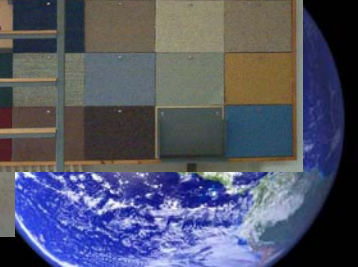
# 1998 Ecological Building Centre

- ➡ In the third year since it's establishment
- ➡ Construction Resources launches the new EBC to:
- ➡ Promote,
- ➡ Exhibit,
- ➡ Educate in appropriate application of,
- ➡ Train in the use of,
- ➡ and sell 'Green' materials and services.





Showroom  
Exhibition  
Education Centre  
Training Centre  
Facilitator  
Consultants  
Bookshop  
Building Supplier



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# 1998 EBC Ecological Building Centre

- ➡ Southwark London
- ➡ Lucy Pedler Architect & Product Specialist
- ➡ Exhibits include: tools, materials, methods of construction, finishes, furniture
- ➡ 1:1 scale 3D cutaways of traditional, modern and alternative construction and acoustic methods



# Nov 1998 COP4

- ➡ 4th Conference of the Parties (COP4)
- ➡ implementation of the Kyoto Protocol (Dec 1997)
- ➡ UN Framework Convention on Climate Change (UNFCCC)





# GHG Emissions Trading or Carbon Trading

- ☞ Was added to the Kyoto Protocol at the last minute
- ☞ largely to ensure the continuing participation of USA
- ☞ which required some “flexibility” in the way it was to achieve its GHG emissions reduction target



# GHG Emissions Trading or Carbon Trading

- ➡ Carbon trading allows industrialised countries trying to achieve their legally-binding emissions reductions targets to trade carbon [dioxide] on newly-created international commodities markets
- ➡ Countries whose emissions are below their legal reduction limit would be entitled to sell the “unused” portions to countries who are experiencing difficulty meeting targets.



# Clean Development Mechanism (CDM)



# 1998 Nov Environment & Energy Helpline launched

- ➡ Freephone 0800 585794
- ➡ Jointly funded by DTI & DETR
- ➡ Combines the best of BRE's
- ➡ Energy Efficiency Best Practice Programme
- ➡ Environmental Technology Best Practice Programme
- ➡ [www.etsu.com/etbpp](http://www.etsu.com/etbpp)
- ➡ [www.environment.detr.gov.uk/bpp/helpline.htm](http://www.environment.detr.gov.uk/bpp/helpline.htm)



# Packaging (Essential Requirements) Regulations 1998



# Groundwater Regulations 1998



# BRECSU Design Advice Service launched

- ☞ Telephone: 01923 664258 Fax: 664787
- ☞ Backed by DETR
- ☞ Part of Energy Efficiency Best Practice Programme
- ☞ For New build and Refurbishment of minimum 500m<sup>2</sup>
- ☞ [WWW.bre.co.uk/brecsu](http://WWW.bre.co.uk/brecsu)
- ☞ [brecsu@bre.co.uk](mailto:brecsu@bre.co.uk)



# 1999 Greening Commercial Property BCO Conference

- ➡ The issues are being taken seriously by owners, developers, and users of commercial buildings
- ➡ British Council for Offices hosted conference
- ➡ Reported in AJ 25 Feb 99
- ➡ Includes 2 building studies





# 1999 British Board of Agrément

- ➡ promote the ETAG and EC Mark
- ➡ British Board of Agrément seek UK market input
- ➡ work starts on European Technical Approval Guidelines
- ➡ 17 ETAG are already in development
- ➡ ETAG for partition kits is accepted by the EC



# 1999 ETAG

- ➡ ETAG for 9 different building elements required including:
  - prefabricated wood-based load-bearing stressed skin panels
  - sandwich panels
  - connectors for timber trussed rafters, etc.
  - vetures (insulated cassette panels)
  - fire stopping materials
  - civil engineering movement joints

# 1999 DETR Reviews the Building Regulations

- ☞ The need to improve energy efficiency and reduce greenhouse gas emissions, leads to a review of Part L
- ☞ CO<sub>2</sub> being a primary contributor from energy production.



# 1999 DETR Reviews the Building Regulations

- ➡ Possible outcome will be:
- ➡ substantial increasing fabric insulation standards
- ➡ new efficiency requirements of AC, ventilation and lighting systems
- ➡ requirement for airtightness testing & services commissioning



# 1999 DETR Reviews the Building Regulations

- ☞ Use of whole building CO<sub>2</sub> performance indices to show compliance
- ☞ embracing maintenance, repair and refurbishment into areas for consideration
- ☞ this might help to deal with existing housing stock



# 1999 Building Regulation 7

- ➡ 18 years after the 1981 government white paper on quality and competitiveness
- ➡ Revised guidance from DETR is issued to ensure 'proper materials' are used
- ➡ Even the building regulations policemen don't seem to demand 'quality products'



# 1999 UK Tax incentive for donations to charity

- ☞ Did the Labour Party wait until after Red Nose Day to launch the incentive?



# March 1999 HAPM Conference Forum

- ➡ 'A Recipe for Greenhousing'
- ➡ Housing Association Property Mutual
- ➡ Publishers of the Component Life Manual
- ➡ HAPM want to add a 'Environmental Ingredient' to the manual to allow designers to choose materials for their buildings for their 'Greenness'





# March 1999 HAPM Conference Forum

- ➡ Invited 4 organisations to describe their methods of evaluating the 'Greenness' of materials and how they are used by practitioners
- ➡ Evaluation included: embodied energy, recyclability, scarcity, socio/economic issues and many other factors
- ➡ They included computer databases and evaluation toolkits to score the buildings



# March 1999 HAPM Conference Forum

- ➡ After the presentations there was time to question the speakers further
- ➡ The Forum was completed by a non-binding vote
- ➡ The audience was invited to vote on their preferred method
- ➡ HAPM went away to evaluate them and develop the 'Environmental Ingredient'



# March 1999 Public & Media opposition to GM Food:

- ➡ Public gets to grips with Genetically Modified Food
- ➡ Clearer labelling demanded,
- ➡ large numbers of Retailers ban most GMF from their shelves until further investigation.
- ➡ after the recent Beef fiasco can government investigation and statements be trusted?



# April 1999 Rain Forest destruction

- ➡ Nature Magazine reports
- ➡ Daniel Nepstad an ecologist at the Woods Hole Research Centre Massachusetts
- ➡ Carries out field tests in Brazil to find far greater destruction of forests is occurring
- ➡ than can be detected by Landsat Environmental satellite image based deforestation mapping programme



# April 1999 Rain Forest destruction

- ☞ Brazilian Government estimates 17,000 square kilometres of forrest was lost in 1998 (the size of East Anglia)
- ☞ Napstad puts the figure closer to 60,000 sq km



# April 1999 RIBA CPD Green is the Colour Conference

- ➡ A practical guide to sustainable development
- ➡ DETR Government Policy
- ➡ EBC on Green materials available in the UK
- ➡ Regulations and Specification
- ➡ 4 Case studies
- ➡ BED ZED scheme
- ➡ National Trust Policy & Case studies





# Chronology 1999 to date

This is not developed thoroughly  
only added to occasionally

# June 1999 Environmental Technology Show

- ➡ ET '99 at NEC June 8-10
- ➡ CBI Conference: Profiting from the Environment
- ➡ Addresses: Pollution Control, waste management, water treatment, efficient use of energy and comprehensive management of environmental responsibilities to BS EN ISO 14001 (EMS)





# June 1999 Environmental Technology Show

- ➡ Exhibitor also address:
- ➡ Environmental IT, Health & Safety, industrial effluent and contaminated land
- ➡ European Eco-Management and Audit Scheme (EMAS) are especially featured



# 2000 European (EC) Regulation on Ozone Depleting Substances



# 2000/2001 The Contaminated Land Regulations



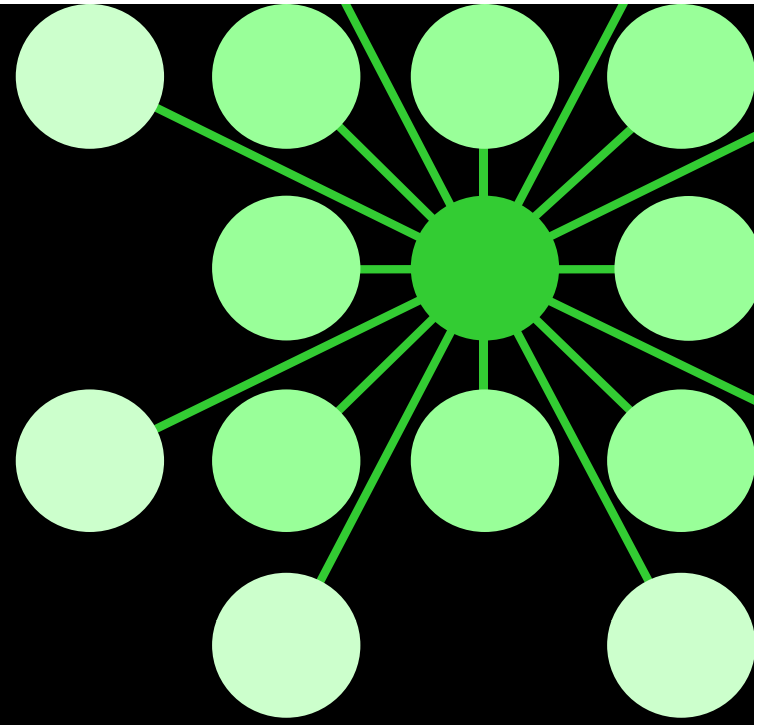
# IPPC Integrated Pollution Prevention and Control Directive



# 21/11/2001 National Green Specification Launch



# NGS



**A Specification  
for the 21st Century**

## National Green Specification

# NGS

## National Green Specification

[www.greenspec.org.uk](http://www.greenspec.org.uk)



# The Roadshow

**NGS**  
A Specification for the 21st Century  
National Green Specification  
www.greenspec.org.uk

**Who will NGS be for?**  
In October NGS set-up a Website  
www.greenspec.org.uk  
to carry out a industry wide survey  
of current practice  
Survey launch 12th November  
The results which will help to steer  
NGS

**Who is the survey for?**  
• Designers & Information Managers  
• Manufacturers, Suppliers, Merchants  
• Contractors, Sub-contractors, Specialists, Self-builders  
• Building Owners, Commissioners, Facilities Managers, Building Operators  
• Research Advisory Government

**What was the purpose of the survey?**  
• to find out:  
- what current design, product selection, specification and information practice  
- how green the profession & industry is  
- what, if anything, is preventing progress towards a more sustainable construction industry

**What was the purpose of the survey?**  
• to find out if a Green Specification will help in the quest to get greener  
• if a specification is required, to find out, what it should be  
• NGS have a good idea but had to check assumptions

**Who will NGS be for?**  
Natural Ingredient Paints  
Stains  
Oils  
Waxes  
Polishes  
Sealers

**What will NGS be for?**  
• environmentally safe  
• low VOC  
• low odour  
• low toxicity  
• low flammability  
• low fire risk  
• low impact on the environment  
• low impact on the user  
• low impact on the planet

**Who will NGS be for?**  
Thermal insulation  
Paper  
Fibre  
Hemp  
Wood  
Cellulose

**Who will NGS be for?**  
Clay Boards  
Reed & Clay  
Clay Insulates

**Who will NGS be for?**  
Compound cements  
Cellulose insulation  
Acoustic brick floor  
Timber floor insulation  
Timber frame walls  
Timber battens clad

**Who will NGS be for?**  
STEKO  
Load-bearing timber blockwork

**Who will NGS be for?**  
Healthy alternatives to common products  
• Natural ingredient paints  
• Clay based products  
• Plastics alternatives  
• PVC alternatives to roofs, floors and secondary elements  
• Chemical and fibre free materials including carpet  
• Formaldehyde free products

**Who will NGS be for?**  
Adaptable furniture with other uses through life  
Timber furniture  
Safe Upholstery

**Who will NGS be for?**  
How will the creation of NGS be paid for?  
• A number of options exist:  
- Grant funded (e.g. DETR, PIL, LTCS etc.)  
- Sponsorship from industry and professions  
- Manufacturers sponsor inclusion of products  
- User group annual membership fees

**Who will NGS be for?**  
Grant funding  
• A number of schemes have been approached:  
- DETR PIL  
- LTCS Subsidy & ES Nationwide  
- Skills and Shanks Fund  
- WRAP (not applicable)  
- FEET (only energy related)

**Who will NGS be for?**  
Sponsorship from industry and professions  
• Contractors  
• Consultants  
• Authoritative Bodies  
• Research Bodies  
• Renewable payment of say: £500/annum

**Who will NGS be for?**  
User group membership/subscription  
• An renewable membership  
- of say £50/annum for one man band  
- to say £500/annum for TGA office  
- giving access to NGS Website during NGS development

**Who will NGS be for?**  
What will be available to the User Group/Sponsors?  
• members will access Website for:  
- survey and results  
- user group discussions  
- drafts for feedback, draft reviews  
- use of elements as they are completed  
- other Website features

**Who will NGS be for?**  
What order will NGS develop in?  
• Phase 1  
- Green products & materials chosen  
- Domestic services product chosen  
• Phase 2  
- Green house General Customer  
- Commercial Services  
• Phase 3  
- DETR PIL Funded Sustainability projects

**Who will NGS be for?**  
Zero Energy Development  
• An renewable membership  
- of say £50/annum for one man band  
- to say £500/annum for TGA office  
- giving access to NGS Website during NGS development

**Who will NGS be for?**  
Methods of Assembly and Fastenings to permit deconstruction and reuse of components  
Repairs with Traditional Materials  
Conservation Quality Refurbishment  
Proximity Taps  
Low Flush Toilets  
Rainwater Harvesting Kit

**Who will NGS be for?**  
Untreated Unseasoned Unfinished Durable Species Boarding  
Tail plinth  
Protects timber from splashing

**Who will NGS be for?**  
Layering of Construction simplifies details and provides interfaces  
Timber Structures  
Curtain Walling  
Doors and Boarding

**Who will NGS be for?**  
Reclaimed repaired reused Doors  
steel frame  
timber studs

**Who will NGS be for?**  
Down-cycled Plastics into sheet form  
Recycled Concrete in Gabions & Traps

**Who will NGS be for?**  
Construction waste segregation  
Materials Protection  
Demolition & Construction Waste

**Who will NGS be for?**  
Grid Shell & Space Frame

**Who will NGS be for?**  
www.greenspec.org.uk



# 2002 The Renewables Obligation on electricity suppliers

➡ (effective 1 April 2002)



# 2002 EH40 Occupational Exposure Limits

☞ updated annually



# 2002 NGS Grant Fund Applications

- ➡ DETR PII Applications:
- ➡ with BRE on Waste and Recycled Construction Products
- ➡ with AECB and BPG for Performance Specification
- ➡ with UK CEED on local waste initiative
- ➡ with GAIA on \_\_\_\_\_



# 2002 NGS Grant Fund Applications

- ➡ DETR PII Applications
- ➡ on conversion of Greening of NBS into clauses
- ➡ on conversion of 50 PII projects into clauses
- ➡ NESTA



# 2002 Johannesburg World Summit

- ☞ criticised for excesses surrounded by poor
- ☞ has become a talking shop
- ☞ with little action in between
- ☞ last world summit to be held for some time



# 2003 NGS Grant Fund Applications

- ➡ DETR PII Applications through to 2nd stage:
- ➡ with BRE on Waste and Recycled Construction Products
- ➡ with AECB and BPG for Performance Specification
- ➡ with UK CEED on local waste initiative
- ➡ with GAIA on \_\_\_\_\_



# 2003



# BS EN ISO 14000 Series

- ➡ Greening up your act
- ➡ Applied to companies: manufacturers
- ➡ Also to Design offices
- ➡ See separate presentation





# Performance specification writing for building components.

➡ DC9:

➡ MPBW



# **‘Greener Building’: Products and Services Directory.**

- ➡ **AECB Association of Environment Conscious Builders**
- ➡ **Authors: Keith Hall and Peter Warm**
- ➡ **Translated to CD service GreenPro**
- ➡ **Now only available on Website:**
- ➡ **[www.newbuilder.co.uk](http://www.newbuilder.co.uk)**



# Good Wood Manual

- ☞ Specifying Alternatives to Non-renewable Tropical Hardwoods
- ☞ Friends of the Earth
- ☞ Now available on Website
- ☞ [www.foe.co.uk](http://www.foe.co.uk)???.com????



# FSC Forest Stewardship Council

- ➡ Mexican organisation
- ➡ Only comprehensive certification system addressing all issues
- ➡ International reputation
- ➡ Alternative schemes set up to counter FSC
- ➡ Pan European .....



# FSC-UK

➡ [www.fsc.????](http://www.fsc.????)

➡ Funded by B&Q, Focus



# B&Q DIY

- ➡ Set standards for Construction industry
- ➡ by 1999 they almost had 100% FSC timber products
- ➡ but UK and international forestry could not supply the demand
- ➡ had to open up to other certification systems





# Climate change

- ➡ Rising temperature
- ➡ Shrinking Polar Ice Caps
- ➡ Rising Sea levels
- ➡ Islands disappearing
- ➡ Coastal Lowland Flooding
- ➡ Rainfall causing River flooding
- ➡ Cliff Erosion





# The Millennium

- ➡ Realisation we had to act,
- ➡ Government's outpouring of Publications to get us to act,
- ➡ the profession and industry's apathy,



# Building Regulations Part L1 & L2 1992



# ITTO

☞ International Tropical Timber Organisation. Guidelines.



# European Construction Documents

👉 Knight



# European Standards Report

☞ **BSRIA**



# Corporate Social Responsibility



# Planning & Compulsory Purchase Act 2004 (England)

- ☞ Requires the development of Regional Spatial Strategies, to be revised every 5 years.
- ☞ A key aspect of the Act is that it enshrines sustainable development as a statutory purpose of the planning system
- ☞ The aspiration is that the planning system can be a strategic, proactive force for long-term economic prosperity, social cohesion and environmental protection.





# Sources



# I acknowledge:

- ☞ Friends Provident's Literature  
“Stewardship Ethical Investment,  
Acting on your Principles”  
for the idea and some of the content of  
this Chronology.
- ☞ and numerous other bibliography



# Also

👉 **Estates Gazette 10 Jan 98**  
**Environmental Liability The Muck Stops**  
**Here**  
**By Tim Smithers and Nic Seal.**



# Mostly

☞ My own knowledge and searches

