



# Sustainable Construction Strategy

Presentation to Construction Materials Working Group

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# Ultimate Purpose

- To drive forward a sustainable, innovative and productive industry sector



# The Objectives

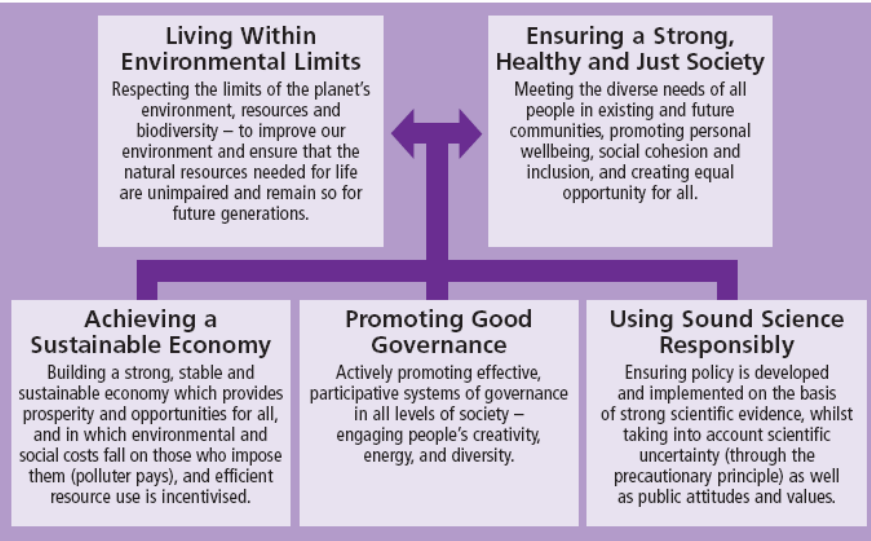
- Rapidly improve and promote a sustainable built environment
- Build on and take forward the construction industry change agenda to enhance the efficiency with which the industry uses resources
- Support the development of a committed, skilled and adaptable workforce
- Create market certainty to allow us to innovate and compete internationally



# What's new?

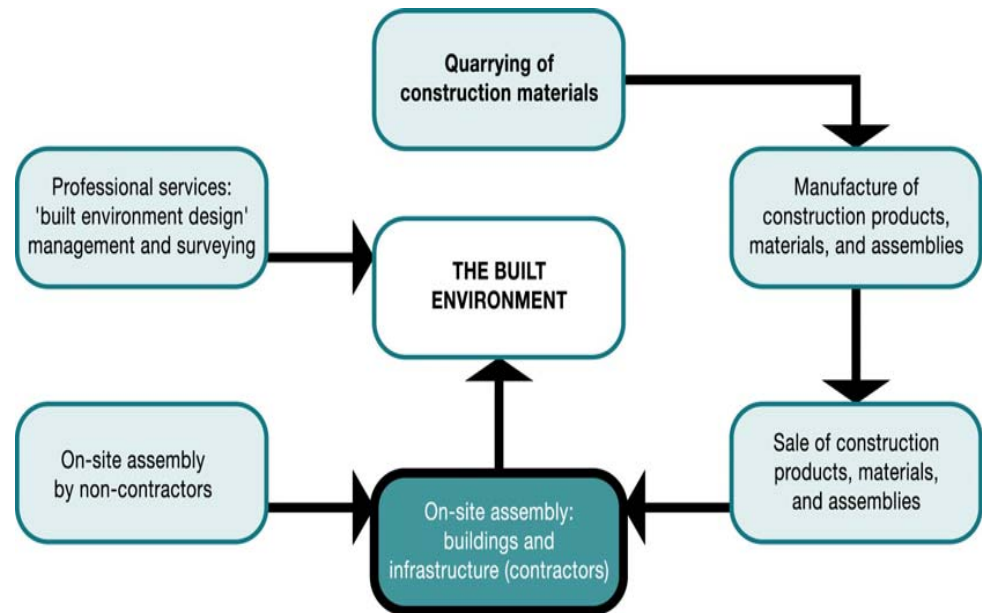
- Cross-departmental engagement
- Focal point and framework for the future
- A Vision, with Targets and Milestones
- Priority setting
- Pragmatic and practical approach
- Monitoring and evaluation
- Clarification and simplification

# Scope of the Strategy



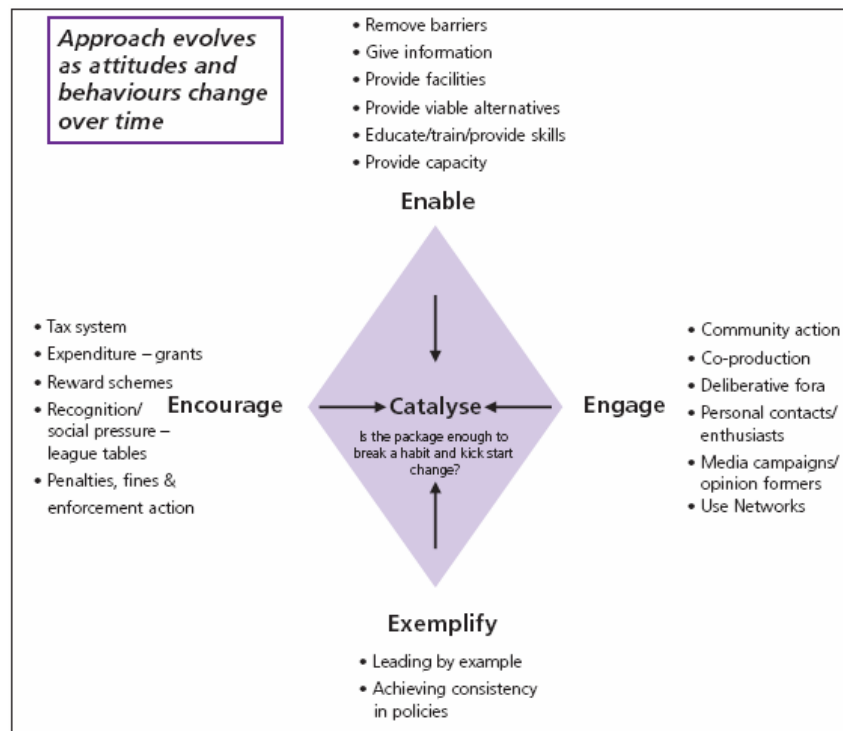
- Within the context of the Government's Sustainable Development Strategy

- Cradle to Grave Processes



# The Deliverables

- A Strategy that sets out what industry and Government departments will do to promote sustainable development so that the construction industry can contribute to the delivery of a One Planet Economy
- An implementation plan that includes clear targets and actions for Government and industry to promote sustainability by:
  - Engaging and involving people
  - Leading by example
  - Building industry capacity
  - Providing a clear regulatory framework



# A vision for Sustainable Construction

- Sustainable Consumption and production
- Climate change and energy
- Natural resources and enhancing the environment
- Creating sustainable communities

- Procurement
- Integrated Teams
- Design
- Innovation

# Government responses and industry initiatives

- **Climate Change & Energy**
  - Energy White Paper
  - Building a Greener Future: Towards Zero Carbon Development
  - Review of Sustainability of Existing Buildings
  - Energy Performance in Buildings Directive
- **Sustainable Consumption & Production**
  - Waste Strategy for England
  - Site Waste Management Plans
  - Developing a Strategic Approach to Construction Waste
  - Construction Products Directive
- **Natural Resource Protection**
  - Water Efficiency in New Buildings



# Government responses and industry initiatives

- **Sustainable Communities**

- The Egan Review – Skills for Sustainable Communities

- **Planning Policy**

- Building Regulations
- Building Control
- Planning for a Sustainable Future – White Paper
- Planning Policy Statement: Planning and Climate Change

- **Rethinking Construction**

- **Housing**

- Calcutt Review of Housebuilding Delivery
- The Code for Sustainable Homes

# Climate Change & Energy

- **Building a Greener Future: Towards Zero Carbon Development**
  - Consultation ended 8 March 2007
  - The importance of housing in delivering real emissions reductions
  - Low and zero carbon <sup>1</sup> technologies – costs could be reduced significantly for each doubling of installed capacity <sup>2</sup>
  - Zero carbon homes are expected to save 25% of targeted emissions from the domestic sector
- **Review of Sustainability of Existing Buildings**
  - Examined the scope for reducing energy and carbon in the existing housing stock – best case 25% of target
  - Three main levers – the planning system, the Code for Sustainable Homes and Building Regulations

<sup>1</sup> For a new home to be genuinely zero carbon it will need to deliver zero carbon (net over the year) for all energy use in the home – this will require renewable or very low carbon energy in addition to high levels of insulation

<sup>2</sup> Based on research conducted by M. Himmels, the International Energy Agency and the Government Performance and Innovation Unit, and Code for Sustainable Homes cost reviews, English Partnerships/Housing corporation

# Implications for Product Manufacturers

- Progressive reductions in CO<sub>2</sub> emissions
  - Reduce embodied energy
  - Maximise energy performance in-use
  - Consider transport impacts; use of rail and waterways, back-loads, bio fuels, load sizes
  - Establish the carbon footprint for products and identify quick wins



# Sustainable Consumption & Production

- Waste Strategy for England 2007
- Site Waste Management Plans
- Developing a Strategic Approach to Construction Waste
- Construction Products Directive



# Waste Strategy for England 2007

- Construction one of priority sectors
- Resource efficiency
- Priority waste materials
- Defra products and materials unit
- Targets



# Waste Strategy for England - Objectives

- **Decouple waste growth, encourage prevention and re-use**
- Meet and exceed Landfill Directive targets for biodegradable municipal waste (2010, 2013, 2020)
- Increase diversion of, and better integrate, non-municipal waste
- Secure investment in waste infrastructure
- Get most environmental benefit from investment through recycling and energy recovery

# Rationale for waste interventions

- Reducing **greenhouse gases** – notably methane from landfill sites (but also saving energy through re-use and recycling)
- Improving **resource efficiency** – saving energy/carbon, scarce materials, renewable energy recovery
- Protecting **public health** through safe management of hazardous substances
- Protecting **ecosystems** (soils, groundwater, emissions to air)
- Safeguarding social **amenity** – eg reducing fly-tipping by households and businesses

## Waste generates greenhouse gases and is a drag on the economy

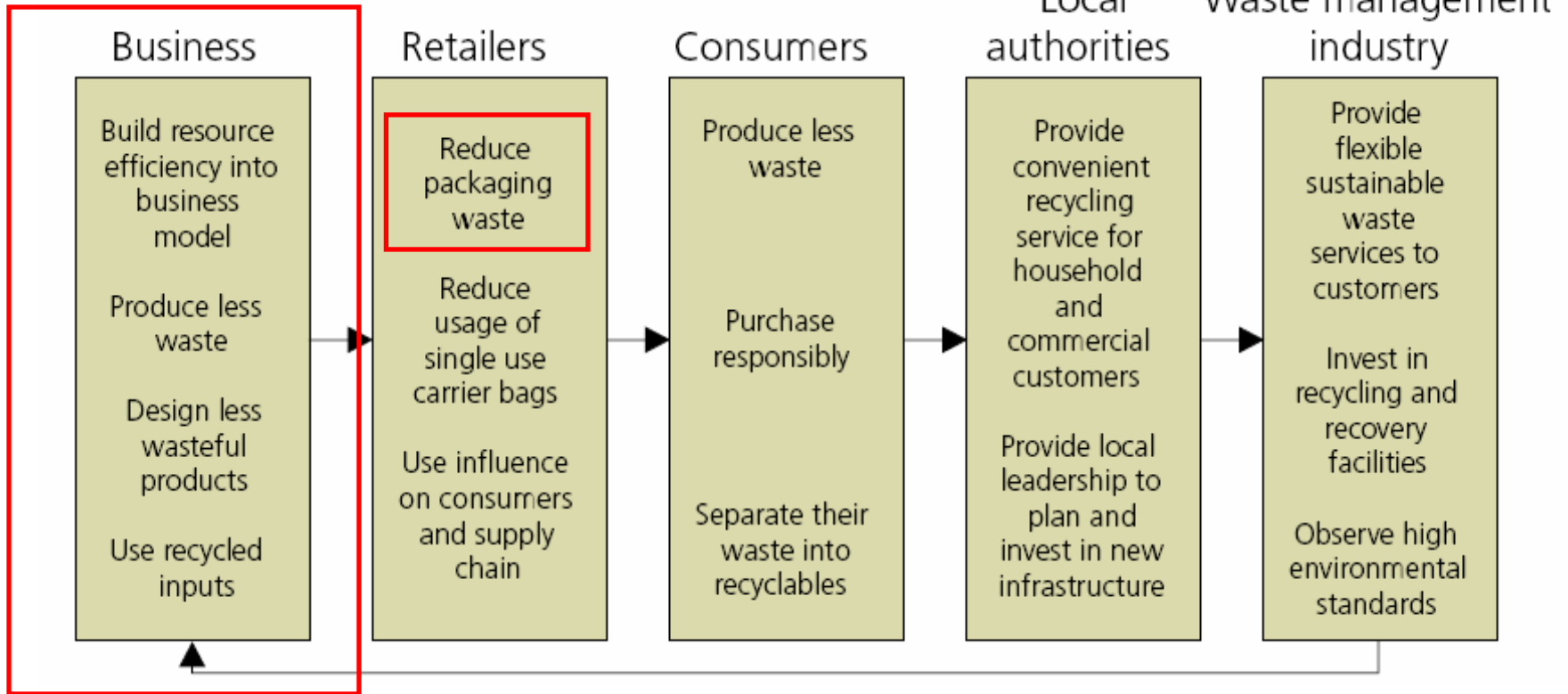
### Notes:

- Methane emissions from landfill are 3% of UK greenhouse gas emissions
- Waste reduction, recovery and recycling has big resource savings and climate change benefits
- Manufacturing could save £3 billion through waste minimisation measures – making products with fewer materials
- As landfill tax rises, waste will become even more expensive

# Moving to a low waste economy requires shared responsibility

Less waste, more material recovery, energy from waste and much less landfill

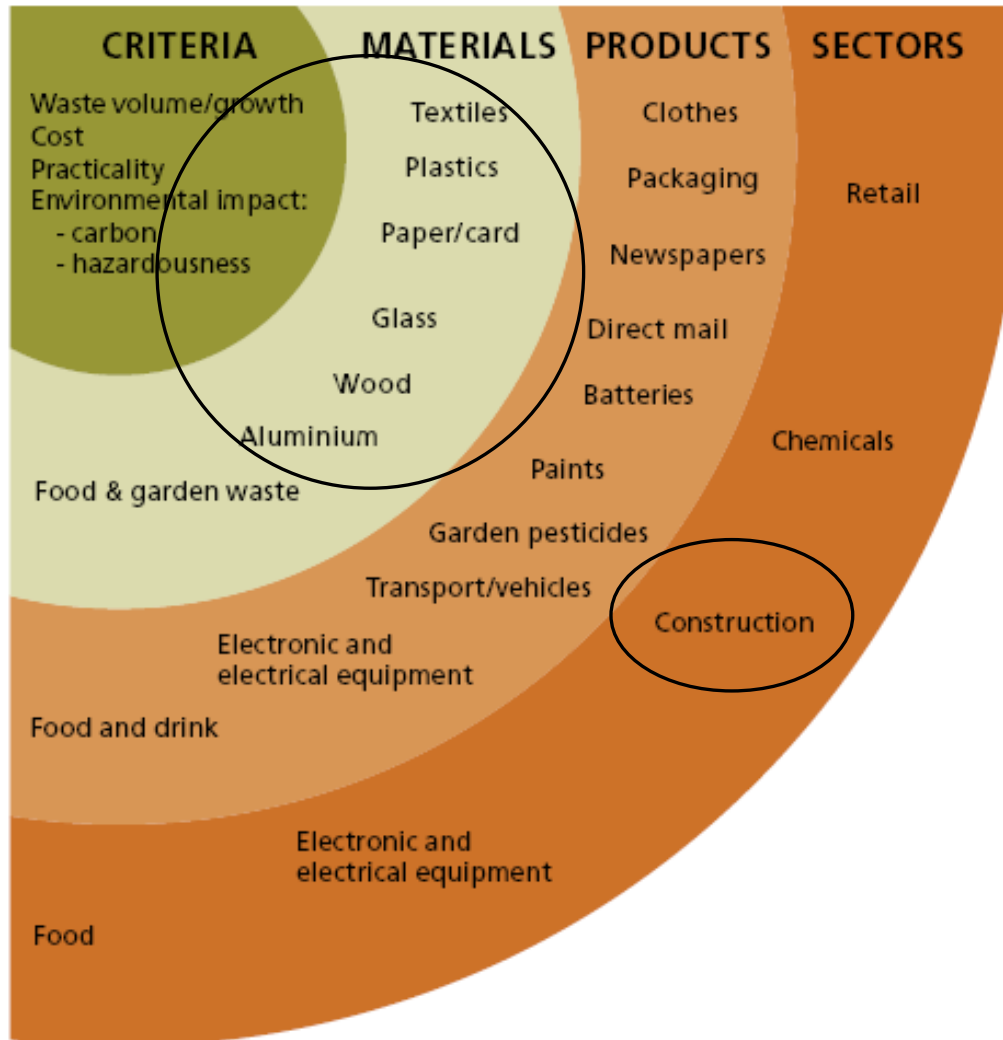
**REDUCE**      **REUSE**      **RECYCLE**      **RECOVER**      **DISPOSE**





# Priority materials, products and sectors

## Key materials, products and sectors



- Priorities by:
- Policy criteria
- Materials (CO<sub>2</sub> diversion)
- Products (CO<sub>2</sub> and hazard)
- Sectors

## New Defra products and materials unit

- New unit working across supply chain
- Ten product roadmaps <sup>1</sup> in development – including plasterboard and (domestic) window systems
- Progress report on delivery Spring 2008
- BRE (assisting Market Transformation Programme) and WRAP helping develop evidence and policies on other products/materials

### Targeted action on materials, products and sectors - construction

- Consulting on making site waste management plans mandatory above a certain threshold
- Plasterboard manufacturers agreement – intend to extend along supply chain

*<sup>1</sup> The roadmaps examine all stages of the product's life cycle, chart the environmental impacts arising at each stage, and propose interventions to mitigate these impacts where evidence shows it would be most effective*

# Headline Waste Targets

Proposed in the UK Government's Sustainable Construction Strategy consultation document soon to be published

- By 2012, a 50% reduction of construction, demolition and excavation waste to landfill compared to 2005
- By 2015, zero net waste, at construction site level
- By 2020 zero waste to landfill

# Planning Policy

## PPS 1

- Delivering Sustainable Development
- Reduction in emissions
- Decentralised energy supply systems
- Located and designed for the climate
- Sustainability appraisals

## Building Regulations (Part L)

- Progressive tightening of the Regulations
- 25% improvement by 2010
- 44% improvement by 2013
- Zero carbon by 2016

## Building Control

- Informal consultation process underway
- Vision and Strategy
- Modernising the system
- New routes to compliance
- Improved customer guidance
- Stability and forward planning
- Capacity

# Planning for a Sustainable Future – White Paper

- finalise the Planning Policy Statement on climate change and introduce legislation to set out clearly the role of local planning authorities in tackling energy efficiency and climate change;
- work with industry to set in place a timetable and action plan to deliver substantial reductions in carbon emissions from new commercial buildings within the next 10 years;

**7.9** Local planning authorities have a crucial role to play in tackling climate change. We want to see up-to-date development plans to help secure progress against the UK's emissions targets – both through direct influence on energy use and emissions and through bringing together and encouraging action by others.

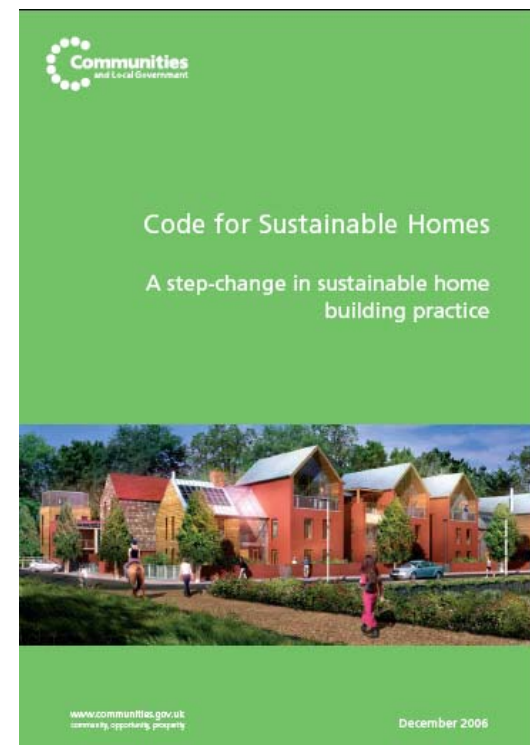
**7.10** We will expect development plans to be tested on their carbon ambition. They

# Housing

- The Code for Sustainable Homes
- Calcutt Review

# Code for Sustainable Homes

- Increase environmental sustainability of homes
- Assessment to start from April 2007
- Mandatory from April 2008?
- All publicly funded new homes to comply with Level 3 from April 2008
- A signal for the future
  - It is intended that the Code will signal the future direction of building regulations in relation to carbon emissions from the energy use in homes
  - Reward resource efficiency, as well as the use of resources that are more sustainable, by developing “Ecopoints per m<sup>2</sup>”



# Calcutt Review of Housebuilding Delivery

- Barker Review of Housing Supply
  - Government target of 200,000 zero carbon homes by 2016
  - Land, Capital, Skills, Planning system, Business models
  - Materials and methods
  - Sustainability
- 
- **Expand capacity to meet a 25% increase in house building**
  - **New material and product needs arising from the zero-carbon target**



# Innovation

## Key actions & deliverables – Working with industry government will:

- Devise a better way of measuring innovation and produce a suitable KPI
- Encourage the process of innovation taking into account the recommendations of the NESTA report
- Encourage the industry, through the National Technology Platform and the Strategic Forum for Construction, to develop clear targets for increased R&D, knowledge transfer, and the use of advanced design methods and tools by their members through:
  - Engagement with relevant Knowledge Transfer Networks – such as those on the Modern Built Environment, Materials, and Resource Efficiency
  - Encouraging better engagement with UK and European research and development funding programmes

# Innovation

## **The Technology Strategy Board, working with public and private stakeholders will:**

- Co-develop an Innovation Platform proposal on “Low Impact Buildings”.
  - The intended focus is on the reduced consumption of energy, water and materials in the built environment. Two initial priority areas are proposed:
    1. Development, including robust validation and demonstration of affordable, high-efficiency insulation technologies for solid-walled homes (approximately one third of the domestic housing stock – 7 million homes), together with integration of renewable energy systems.
    2. Technologies for new housing to meet the energy and water efficiency targets set out in the Code for Sustainable Homes and anticipated future Building Regulations, leading to net zero-carbon new dwellings by 2016 (subject to consultation).

# Construction Products

- What does all this mean for product manufacturers?
  - Better products and services, which reduce the environmental impacts from the use of energy, resources or hazardous substances
  - Cleaner, more efficient production processes
  - Shifts in consumption towards goods and services with lower impacts
  - A whole life approach to the built environment
  - Greater participation at the earlier stages of a construction project
  - Third party accreditation for environmental impacts and responsible sourcing
  - A focus on the future performance of your business
  - Raising awareness, within the workforce, of threats and opportunities to future success
  - Up-skilling and training at all levels

# Sustainable Construction Strategy

## Draft Organisational Structure

### Construction Industry

### Government as Client

