

‘Collective responsibility for a sustainable industry’



Celebrating 25 years in 2013

Robin Nicholson CBE RIBA Hon FStructE Hon FCIBSE

A senior partner, Cullinan Studio

Chair, Cambridgeshire Quality Panel

Non-Exec Director, NHBC

Hon Prof, University of Nottingham

CIC Chairman 1998-2000

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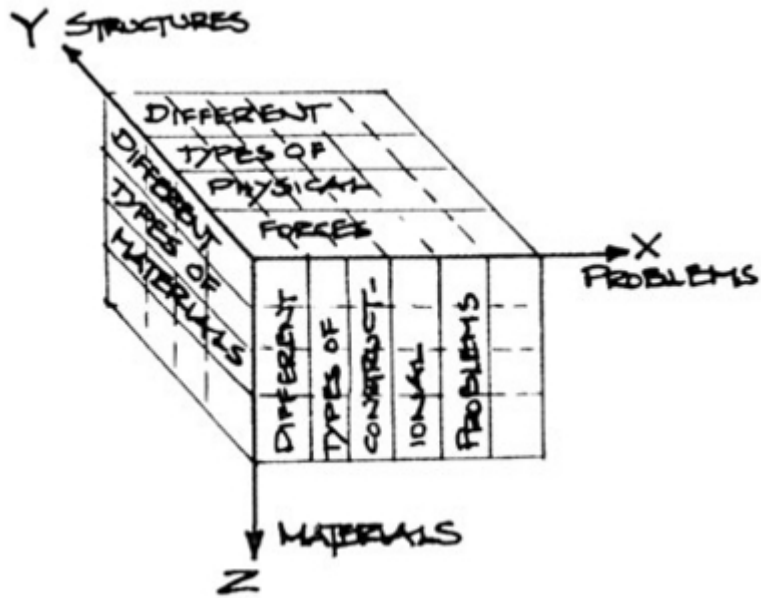
Congratulations to CIC

- Ted Happold's Vision: BIC>CIC
- Latham, New Labour > Egan + CUBE
- CIC, the Institutions and the Edge
- New Professionalism

Some difficult issues:

- The desire for endless growth
- Keeping the oil in the ground
- The decline of professionalism
- Delivering buildings that work





Ted Happold (1930-1996) had a vision
 ‘ of the building industry having **one voice** to serve society and protect the consumer ’ 1987



‘The decision to go forward with the formal proposal to found the Building Industry Council was taken at a meeting at the Goring Hotel on 15 June 1987. The 8 page brochure outlining the case for BIC was formally launched by the four proposing institutions RIBA, CloB, CIBSE and IStructE ..

BIC, under Ted Happold’s Chairmanship met for the first time on 6 January 1988’

Tony Southgate

A PROPOSAL TO FOUND A

BUILDING INDUSTRY COUNCIL

‘THE building industry only exists to serve society and the industry’s overall objective should be to serve and protect the consumer. To achieve this there is a need for collective decision-making and, therefore, unity. We, architects, builders, services engineers and structural engineers, propose to found a BUILDING INDUSTRY COUNCIL.....it is hoped as well as expected that those who share these ideals will soon join the organisation’

‘There have been previous attempts to enable all those in the field of construction to speak with one voice but only in a limited way and even this has been restricted by differing political viewpoints. The cause is that the construction industry is in fact not one industry but several.....’

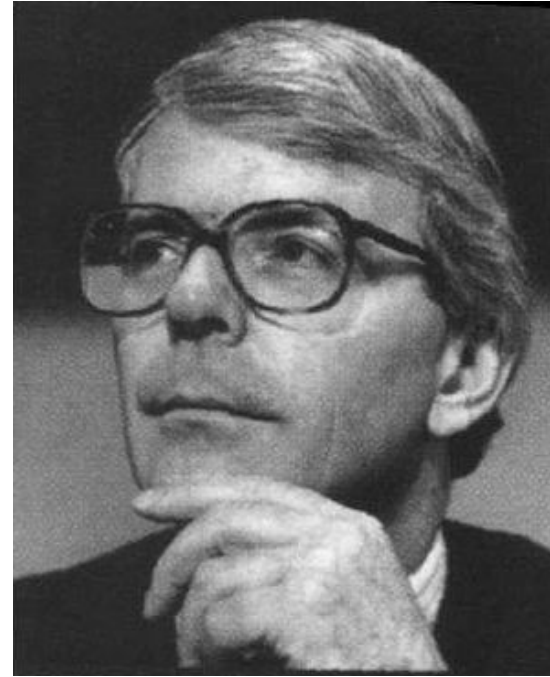
‘Perhaps there now is a chance that members of the building industry could speak with one voice. It would seem sensible to find a way of achieving this that is acceptable to the building industry as a whole; prior to attempting the far more difficult task of achieving a consensus within the construction industry.’

‘To achieve better performance, the industry needs to develop acceptance that trying to restrict practice to suit individual professions will not work and set about ensuring that the full range of skills and knowledge are available in the industry; that quality assurance methods, codes, standards, agreements and contracts are provided so that the product is what the client needs; and that the British building industry is well equipped to stand on its own in Europe and the rest of the world’.

(Extracts from ‘A Proposal to Found a Building Industry Council’. September 1987)

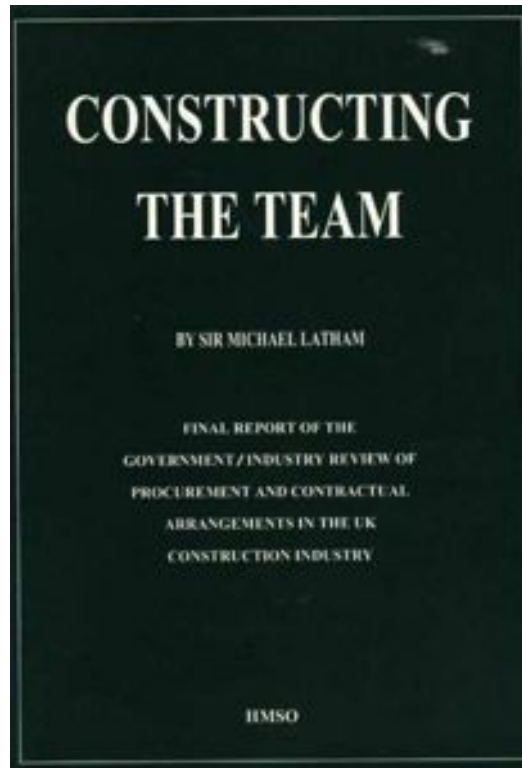


Ian Dixon, CIC Chairman 1991-94



Rt Hon Sir John Major PM 1990-97

Sir Michael Latham – 'Constructing the Team' 1994: DoE/Industry



- 1994 'Constructing the Team' with 53 recommendations + later 12 Working Groups
- 1994 **CIC championed** 'Latham Conference'
- 1995 CIB established by John Gummer with Latham as first Chair
- 1996 **Ian Dixon appointed** CIB Chair with Don Ward as Chief Exec
- 1996 Part II Housing Grants, Construction and Regeneration Bill
- 1997 New Labour elected

Change in the Construction Industry

An account of the
UK Construction Industry
Reform Movement 1993–2003

David M. Adamson
and Tony Pollington

Routledge Studies in Business Organisations and Networks

 Routledge
Taylor & Francis Group

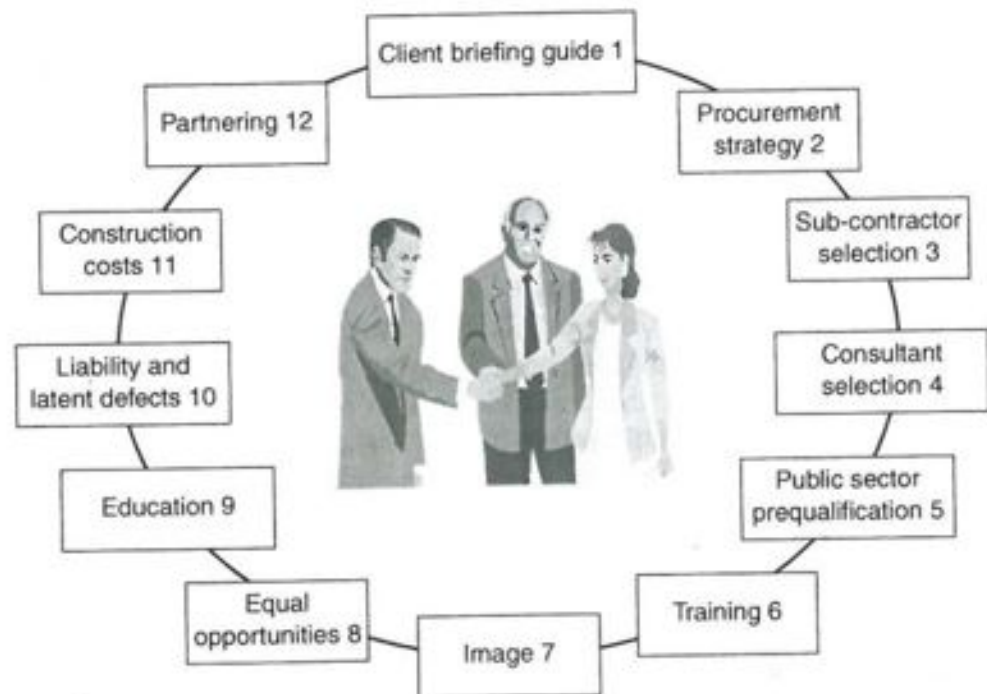


Figure 6.1 The CIB working groups, 1994–1996.

7 CIC Chairmen 13 June 2012 – (sans titres)



- Jack Pringle – Architect
- Gordon Masterton – Civil Engineer
- Keith Clarke – Architect
- Nick Raynsford – Housing
- Stuart Henderson – Chartered Builder
- Turlogh O'Brien – Chemical Engineer
- Michael Dickson – Structural Engineer
- Robin Nicholson – Architect
- Christopher Vickers – Surveyor
- Robin Wilson – Civil Engineer
- Ian Dixon – Chartered Builder
- Ted Happold – (geologist) Civil Engineer

Partners in Building Prosperity

How Government and the Construction Industry can work together to build future prosperity

- A Manifesto for the UK Construction Industry

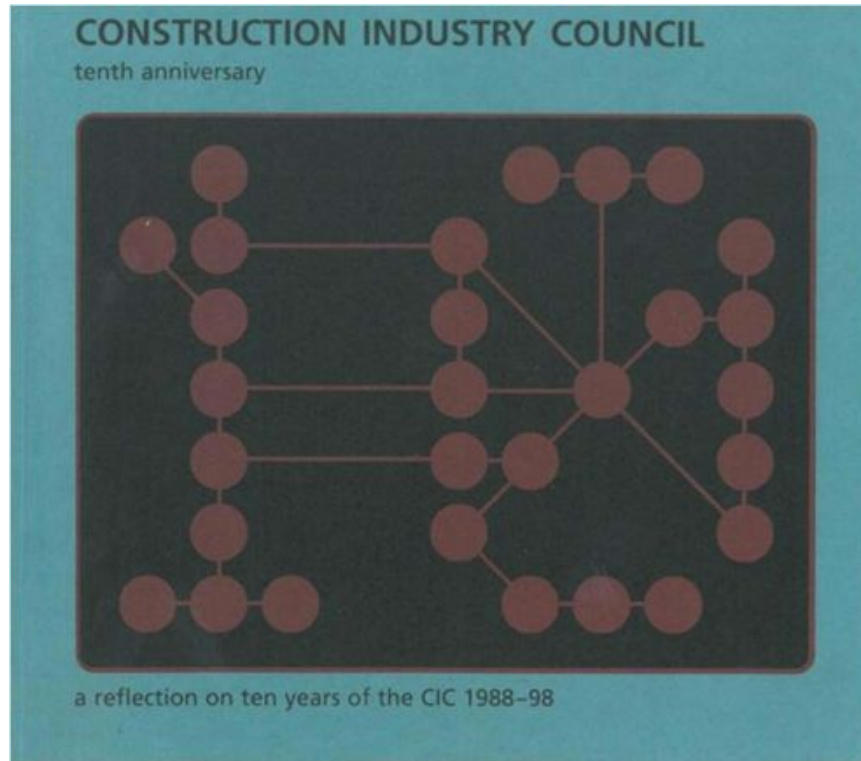


'Partners in Building Prosperity'

December 5, 1996
Cross-party Manifesto
written by Alastair Mclellan

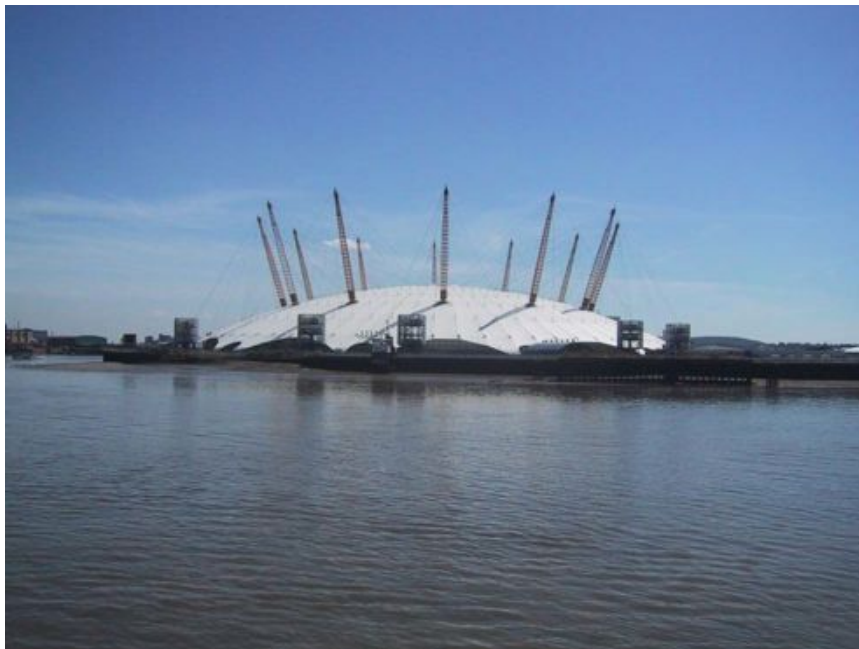
CIC as 'honest broker' for the Industry

- Importance of construction to UK 8.8% GDP
- Building a Strong Economy with '10 points to improve the PFI'
- **Developing Quality of Life promoting 'sustainable development'**
- Cementing the Partnership including 'Government as best practice client'

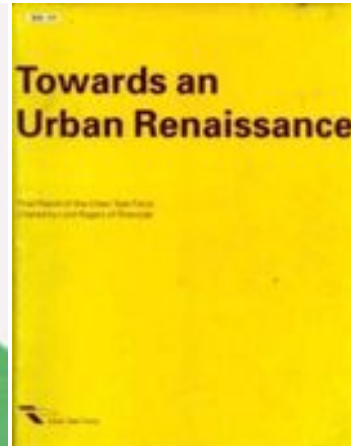


‘forty heads on one peacock :
reflections on ten years of CIC’

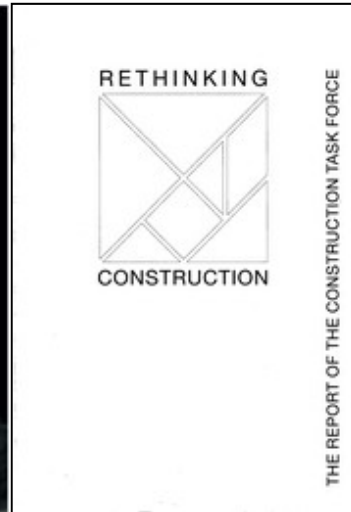
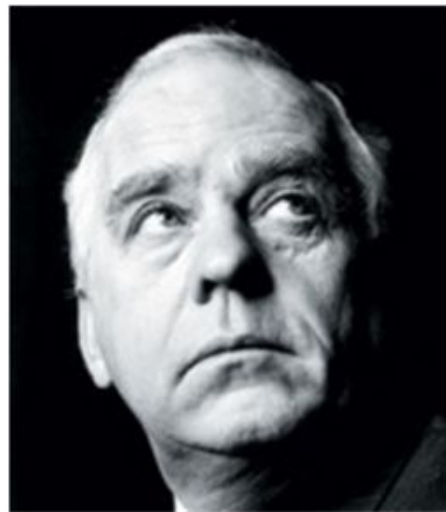
RN – ‘ we are charged with taking forward the vision of the founders of CIC . Great potential (of) proposal to establish a leadership programme in partnership with Cranfield .’



MD – ‘(the dome) is a shining example of concurrent working to clear objectives, of client designer, manager, constructor and many specialist suppliers . **The Happold Memorial Lecture to be given by Sir Crispin Tickell on issues of sustainability facing the construction industry.**’



‘Better value ’



- New Labour elected 1st May 1997
- Rethinking Construction Nov 1998 > **Movement for Innovation**
- Urban Task Force Report June 1999 > **CABE**

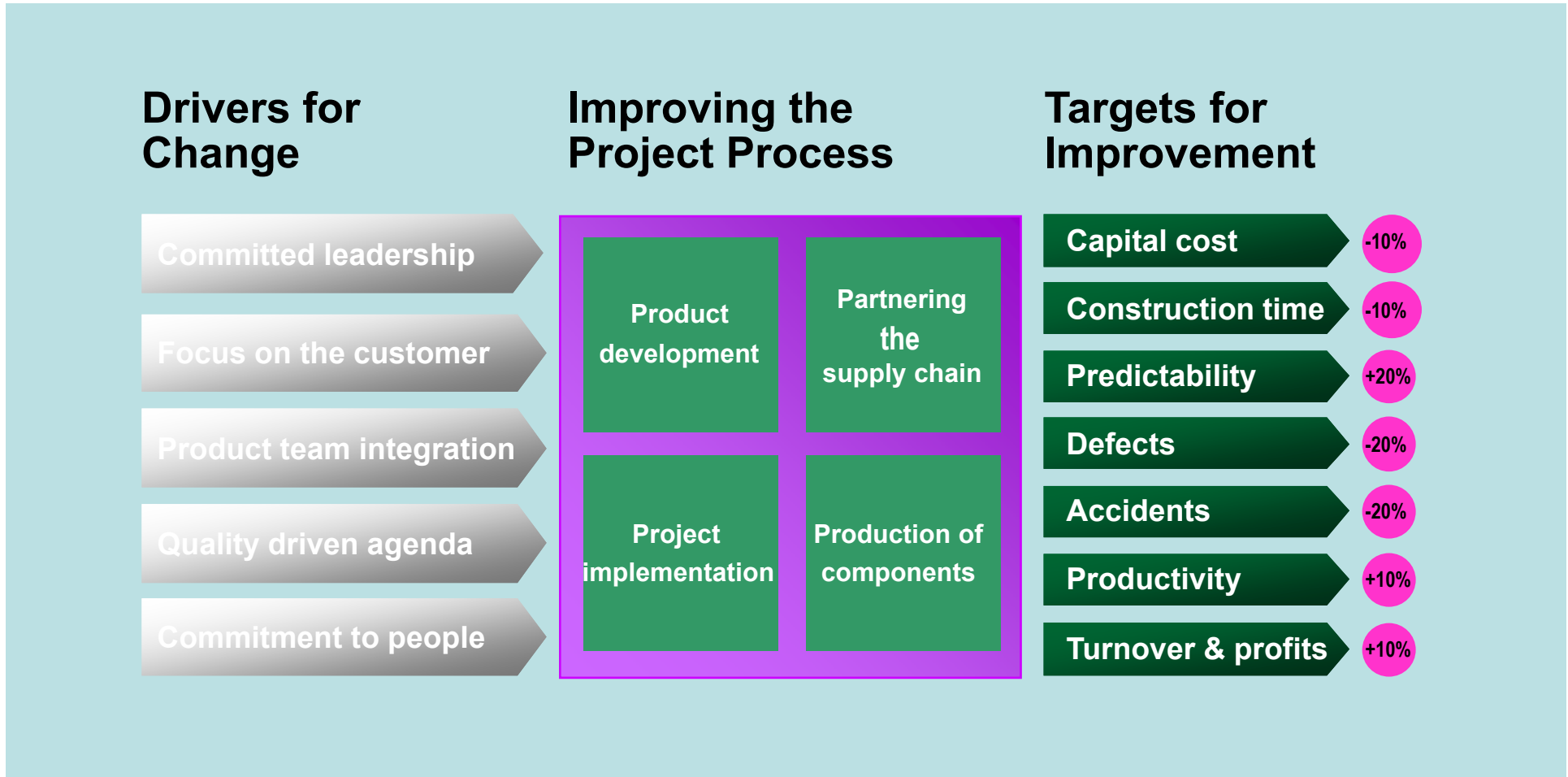
Egan Report 1998 - 'Rethinking Construction'

- Too slow
- Too expensive
- Too dangerous
- Designers designing for themselves
- Little research into users' needs
- No performance measurement and NO FEEDBACK LOOP
- Little interest in life cycle costing

Underpinned by 'Lean Thinking' by Womack and Jones

Toyota concept of 'muda' = Waste ie any activity that does not add value

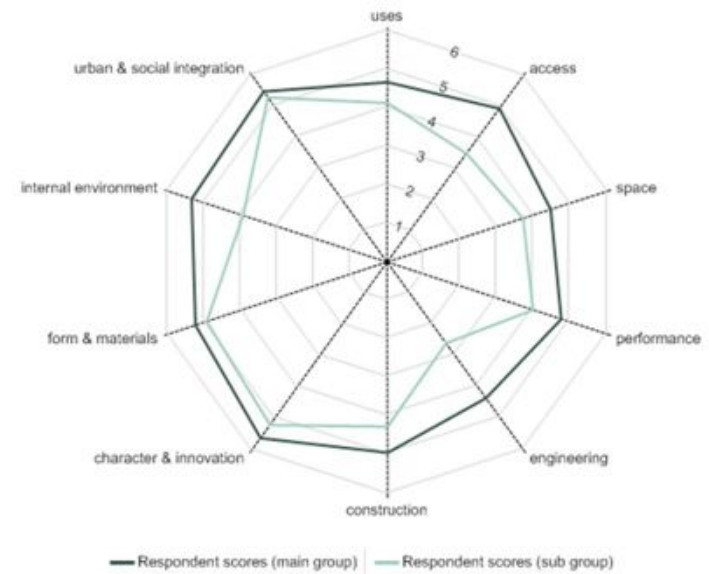
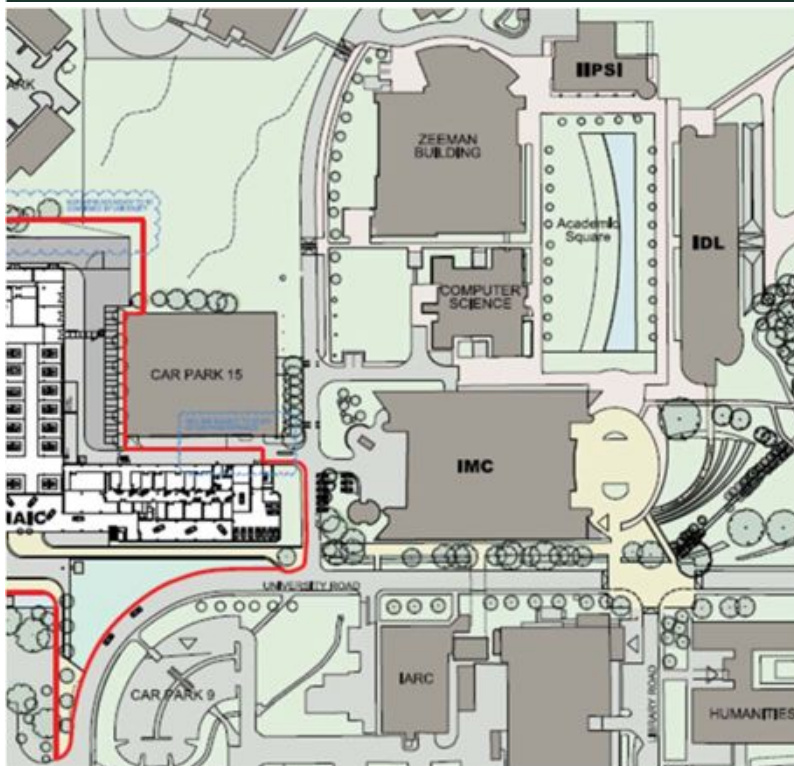
M4I chaired by Alan Crane under John Hobson's DETR Patronage with the separate Housing Forum. **Learning from Demonstration projects was key.**



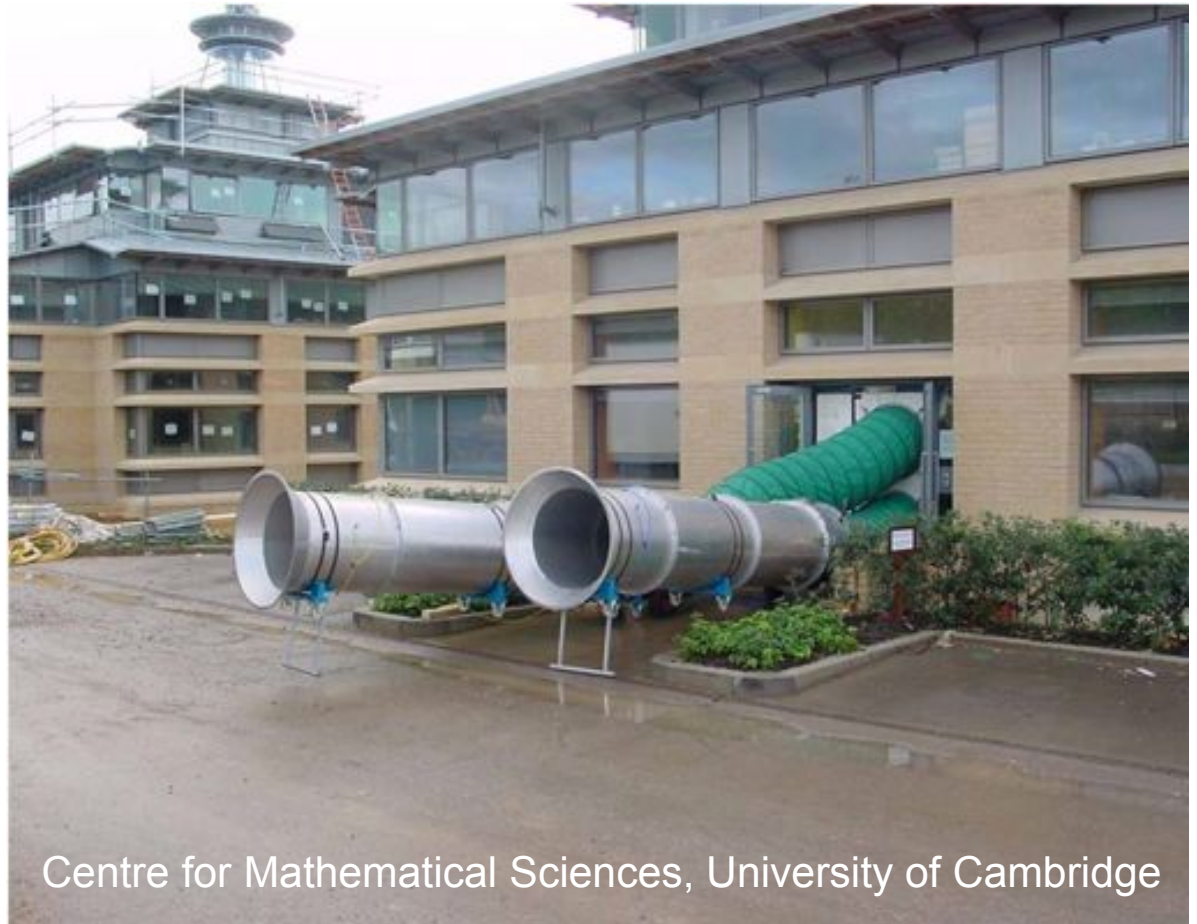
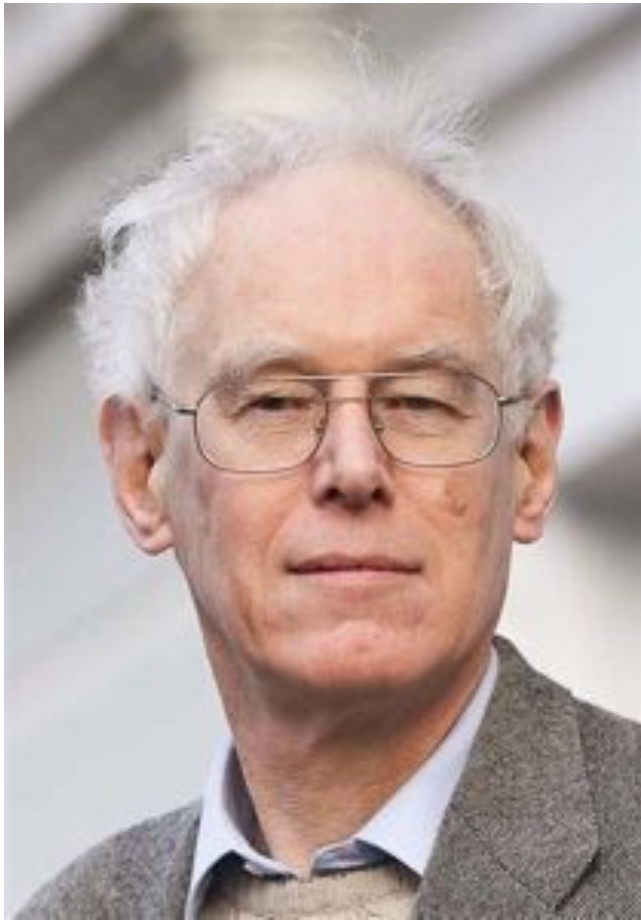
but Egan did not mention design **or sustainability**

The 'TEAM' of secondees were tireless in championing change but CRISP's Knowledge Capture Task Group Report by Cooper + Blyth (Jan 2002) 'Lessons learned from M4I and Housing Forum Demonstration Projects' found that change was fiercely resisted.

- 300 Demonstration projects but 'pebble in the pond' model didn't work
- Rather there were 'islands of learning'
- Survey showed that unless it made a difference to the bottom line
- Written accounts distrusted as mere 'spin'



DQI from IMC > IDL > IIPSI > NAIC

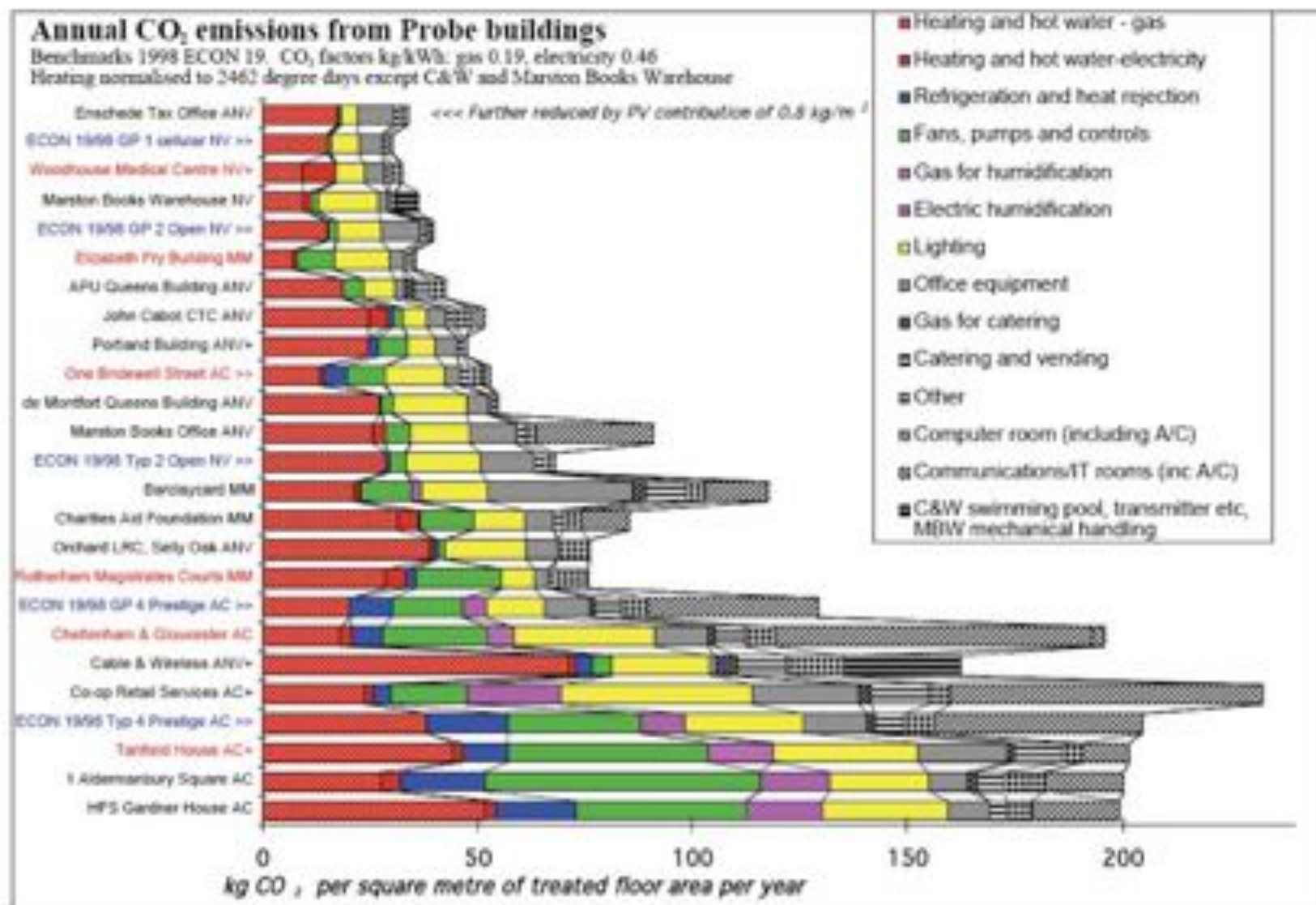


Centre for Mathematical Sciences, University of Cambridge

Bill Bordass, co-author 23 Probe Studies 1995-2002

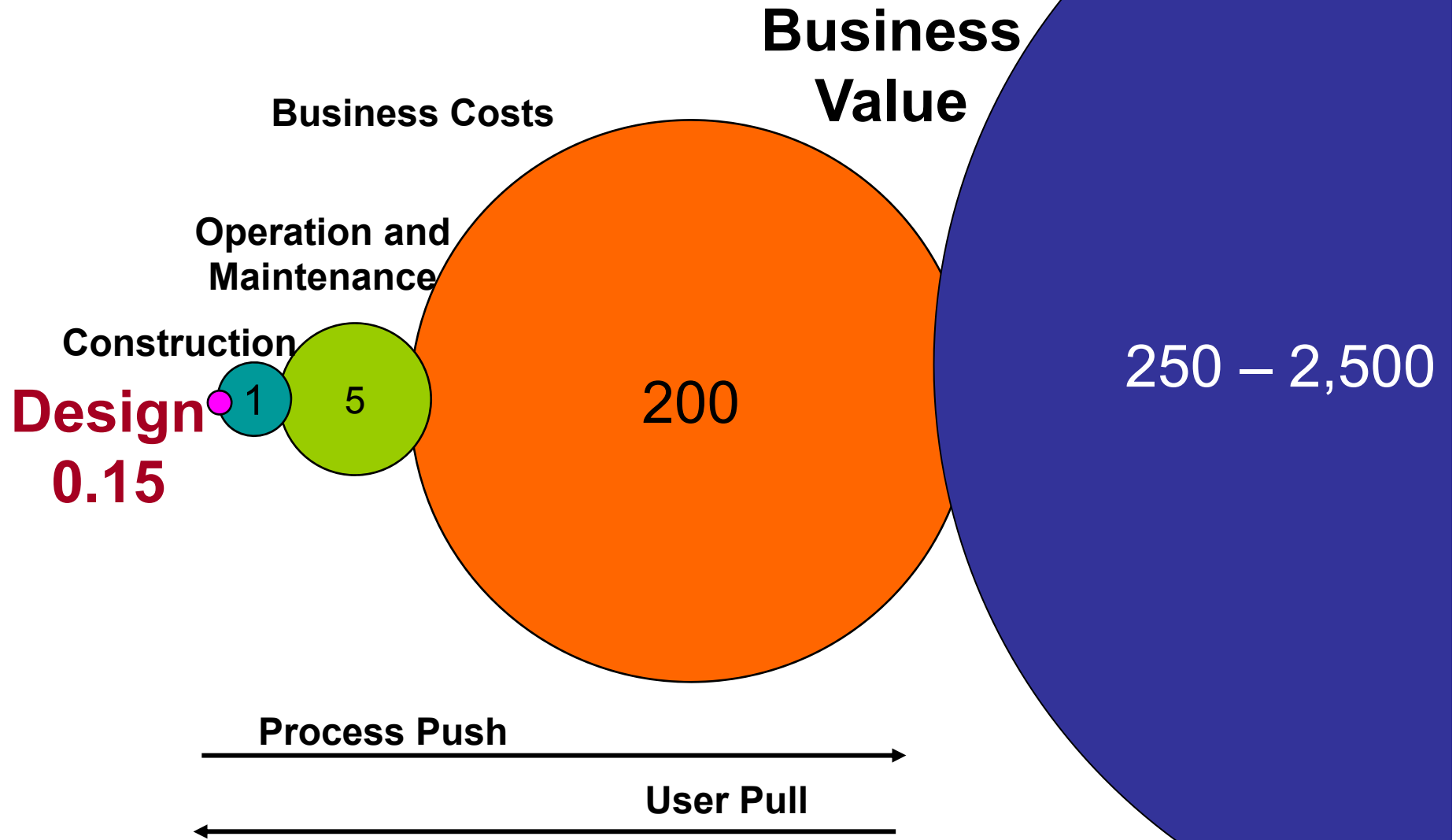
See <http://www.usablebuildings.co.uk>

Report CO2 emissions like this ...



Source: Probe team www.usablebuilding.co.uk

What the customer really needs



Source: Royal Academy of Engineering + Arup Foundation
Image - Don Ward but I increased design from 0.1 to 0.15!



Evidence that:

- People work more productively in well designed offices
- Well designed schools improve children's ability to learn
- The design of hospitals can help patients recover more quickly
- The design of streets can reduce crime
- Better designed houses will increase in value quicker than the average



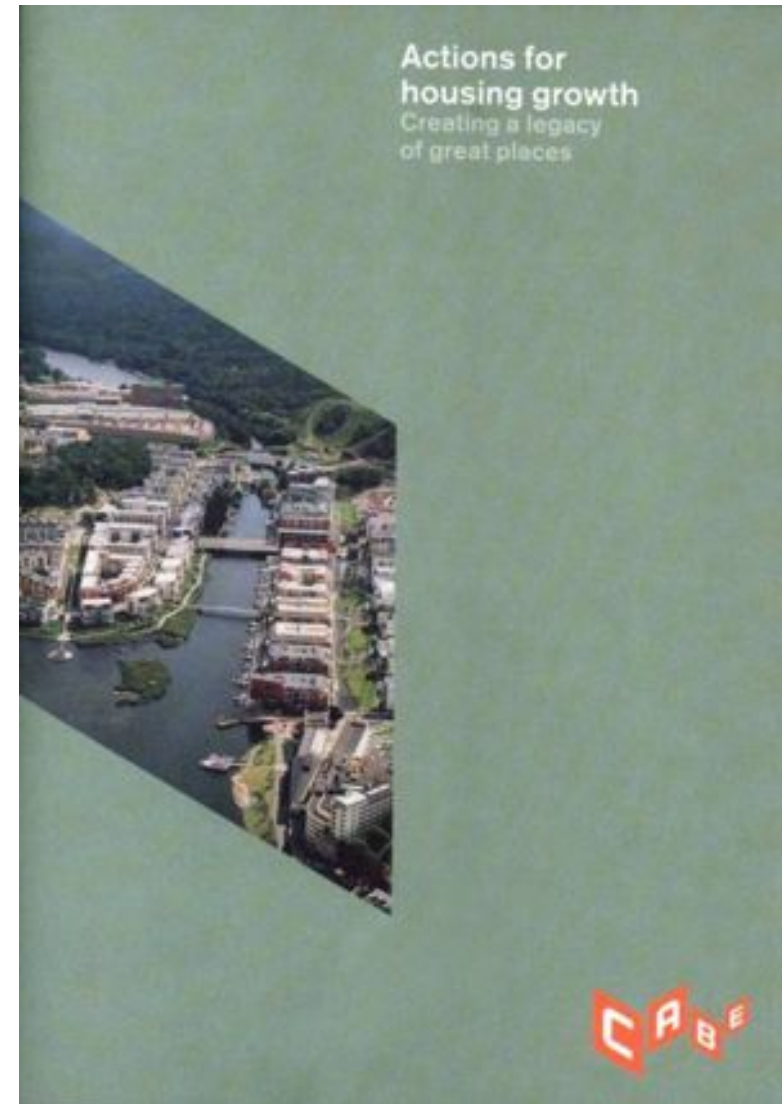
CABE Enabling

programme helped public sector clients be better public sector clients:

(Community) Arts projects
Community Regeneration
Government Housing programmes
Health projects
School projects
Police stations

By 2010 there were

- 258 enablers supported by
- 38 staff



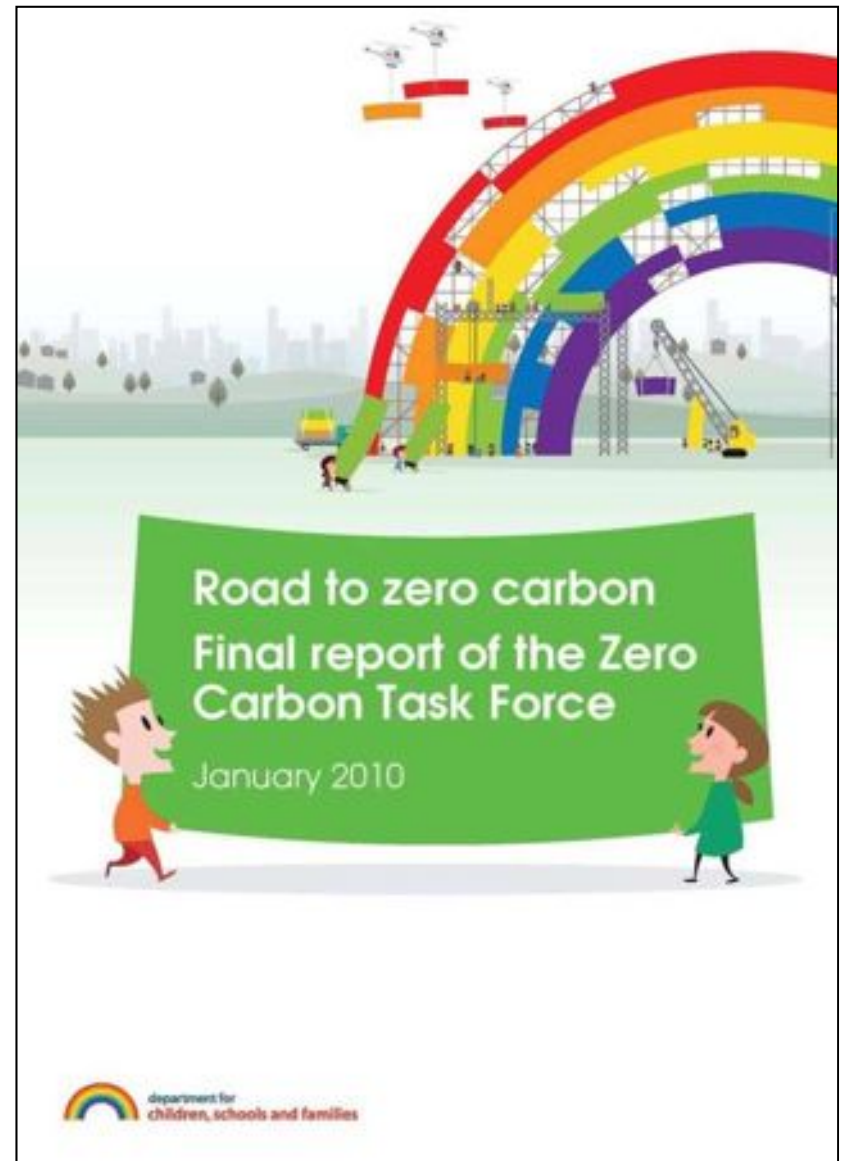
Only 18% of new housing across England could be classed 'good' or 'very good'
29% so poor they should not have been given planning consent (based on site visits to 300 developments, 33 in each of the nine regions) using the Building for Life framework
2004, 2005, 2006





from CABE's Schools Audit July 2006 (ie funded thro' PFI before BSF)

**Halve the demand,
double the efficiency,
halve the carbon in the
supply**



Ashley C of E Primary School, Walton-on-Thames



Inspired leadership (Head then Governors) 2 eco-monitors per class
report week's performance every Friday to Assembly (target
<100kWh/day rewarded by £10 for special projects) **spread to parents**
who can win membership of 100 Club (target < 100kWh/week) 300watt
computers replaced by 15watt laptops . occasional carbon free
Fridays eco-driver display unit in lobby 51% reduction in electricity
use in year 1 80% in year 3 **Ashden Award 2009**

We all like winning awards but who checks whether the buildings work?

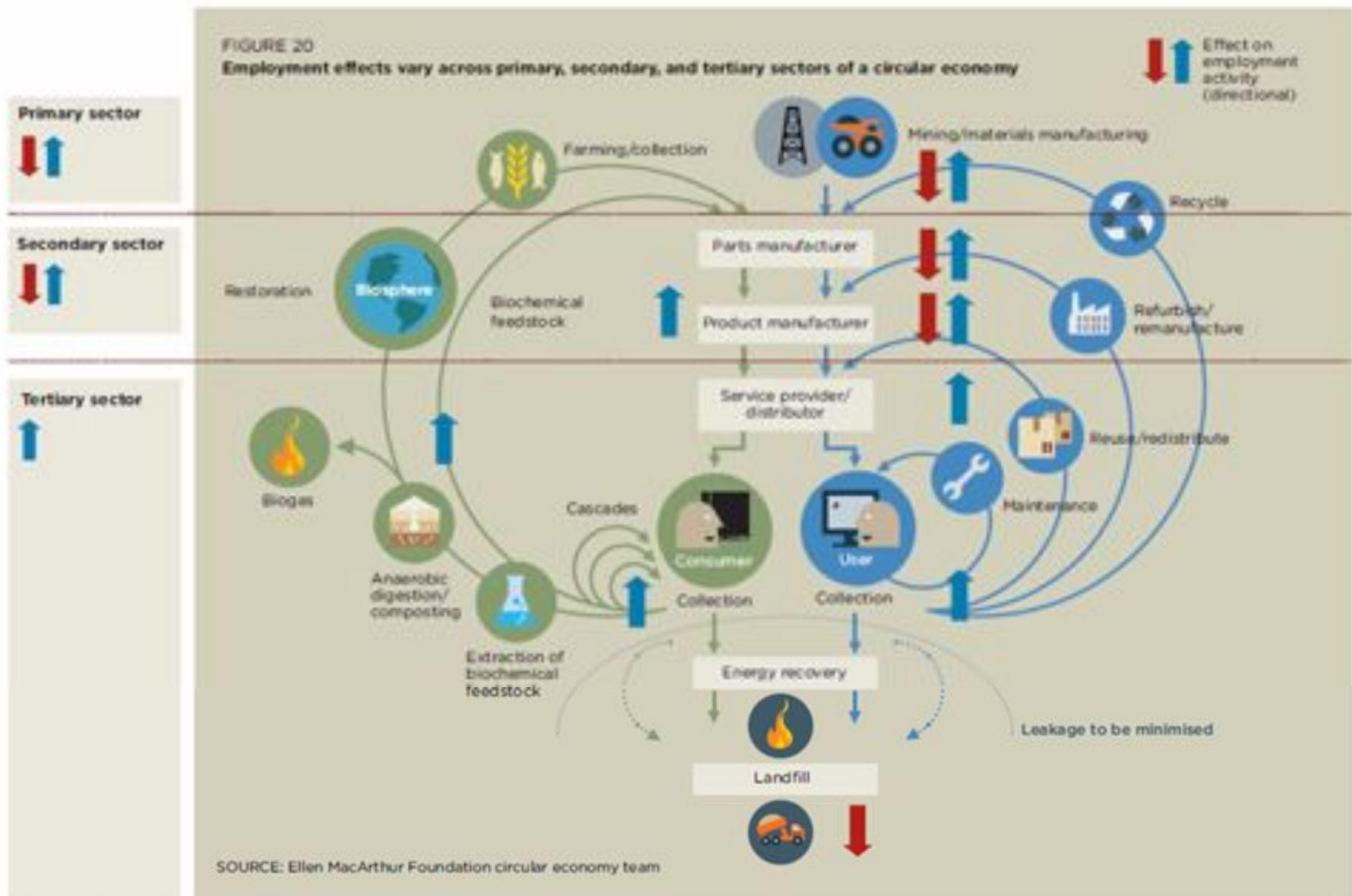


Architype won Ashden Award 2009 for their sustainable design of buildings to minimise carbon emissions including St Lukes Wolverhampton which won the RIBA Sorrell Foundation Schools Award 2010



Zaha Hadid Architects won Stirling Prize 2011 for Evelyn Grace Academy





Re-use renew only then recycle

<http://www.thecirculareconomy.org>

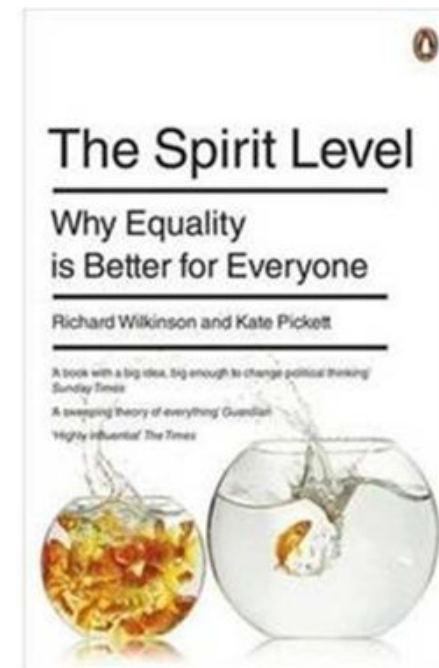






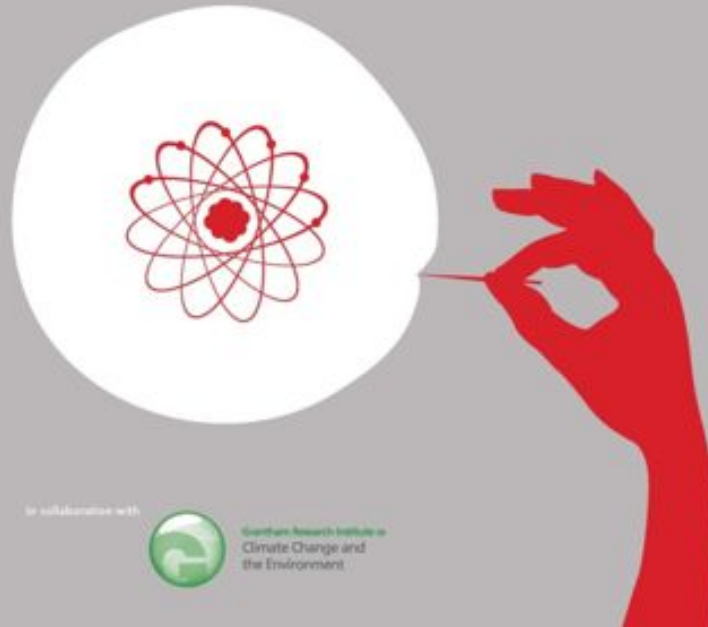
Sustainable Development Commission

SDC June 2000 – March 2011 advised UK
Governments on sustainable development



'Prosperity without Growth' by Tim Jackson
was published by SDC in 2009; it was the
most downloaded report in SDC's 9-year life

Unburnable Carbon 2013:
Wasted capital and stranded assets



Carbon Tracker

In collaboration with



Grantham Research Institute on
Climate Change and
the Environment

“Between 60-80% of coal, oil and gas reserves of publicly listed companies are ‘unburnable’ if the world is to have a chance of not exceeding global warming of 2°C”

“The value of UK (energy) Utilities have fallen by three quarters from the peak” Economist 12 Oct 2013

THE SOCIAL AND ECONOMIC VALUE OF CONSTRUCTION

The Construction Industry's
Contribution to
Sustainable Development
2003



A Report by
Professor David Pearce OBE for
nCRISP

the Construction Industry Research and Innovation Strategy Panel

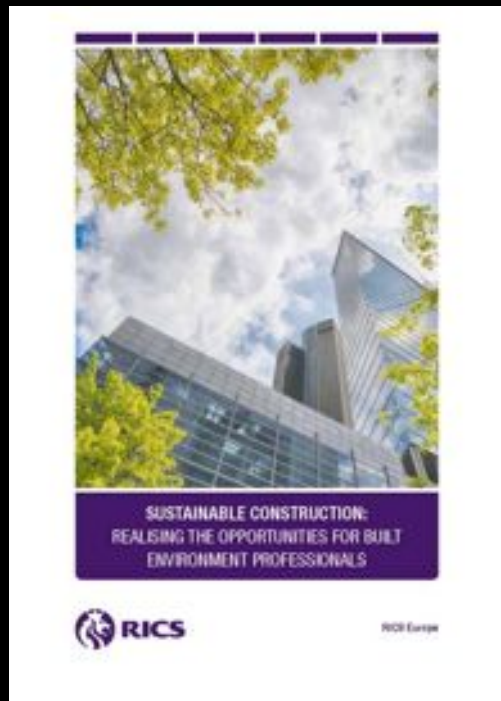
nCRISP
nCRISP

“Sustainable development means that some indicator of quality of life (QOL) must be rising over time .

Traditional economics focused on machinery and infrastructure (man-made capital) as the main engine of economic growth. Later the role of human capital .was found to be a vital ingredient of economic success .The wider notion of QOL has recently brought to the fore two other capital notions: social capital and natural capital.”

CIC's Dilemma

- CIC represents construction professionals
- but CIC has to earn it's keep
- without stealing the limelight

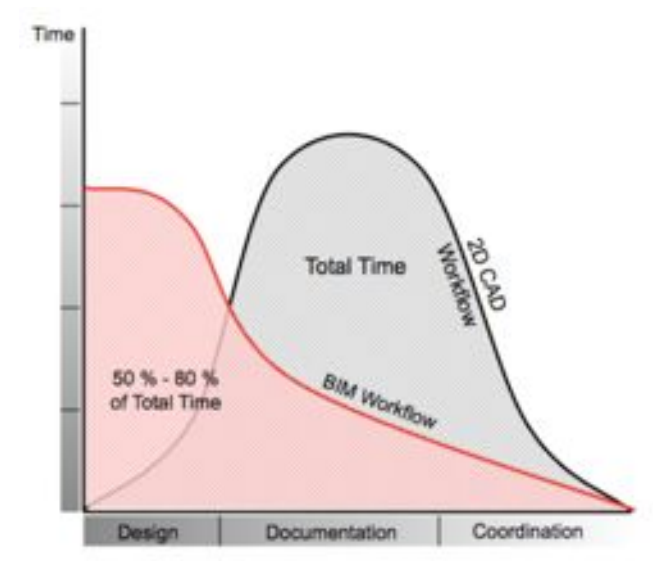


25 years on what has CIC done?

- Developed DQI
- Approved Inspectors Register
- Building Control Performance Standards Advisory Group
- Adjudication Nominating Body
- National Occupational Standards
- CIC Consultants Contract
- Appeals Tribunal (Human Rights Act 1998)
- **Secretariat for Constructing Excellence**
- Offsite Housing Review
- **Support for Chief Construction Advisor**

25 years on what is CIC doing?

- Managing APG for Excellence in the Built Environment and supporting 2050 Group
- Refreshing DQI
- Responding to Consultations
- **Promoting BIM** – Regional Hubs
- Education and Skills – E4BE



Of course there are continuing issues, with some distinguished exceptions:

- Short-termism (and centralising control) of the Treasury and VAT on retrofit
- Progressive loss of technical knowledge in Whitehall
- Silo professions (and Government Departments)
- Lack of a coherent let alone a single voice!
- Conflict between the many little and the few large/global
- So no surprise that there is a lack of leadership
- The massive waste by procurement systems
- Deliberate avoidance of paying (suicidal fees) on time
- **Lack of performance feedback/data and poor controls**
- Lack of interest in embodied energy
- Privatisation of research knowledge
- 2.4m in fuel poverty in the 8th richest country in the world
- Need for more than a few more affordable homes
- **And prices are now rising .**





The Edge is a 'voluntary' multi-disciplinary think-tank:

- Founded 1996 under auspices of the Arup Foundation; Associate Member CIC 2013
 - Meets monthly in one of our offices in London
 - Holds by-invitation debates in London ++
- www.edgedebate.com

Recent debates coincide with some of CIC's concerns:

- Building a state of equilibrium (aka the 'no growth' economy)
- The geo-politics of low carbon growth
- UK construction resources – is there a plan?
- Is an Institute of the Built Environment the answer to 'a fragmented and ineffective industry'?





'The focus on Carbon is distracting us from saving carbon' – Debate no 40 on 10 June 2010
Bill Bordass, Bridget Rosewell, Guy Battle, Paul Morrell (chair), Sunand Prasad, Stephen Hill



'New Professionalism' Debate 54 on 20 Feb 2013 with CIOB, CIBSE, CIC. Rab B chair, RIBA, RICS

'Professionalism and ethics in a changing economy'

Stephen Hill, David Lorenz, Peter Dent, Thomas Lutzkendorf 2012

How ethical are professional codes of conduct?

' the codes of conduct of ARB and RIBA are mainly concerned with reasonable standards of competence and diligence **standards that "even my hairdresser could meet"** (Jeremy Till quoted by Hill et al)

'The duty upon members of the ICE to behave ethically is in modern words **"to do the right thing Sustainable Development is central to civil engineering and the ICE equally recognising the need to protect and enhance the environment and to use resources in a way that does not disadvantage future generations."** from ICE Code of Conduct

'Other professionals may feel less constrained and argue that their first responsibility is to their client's shareholder value . (but) the 1881 Royal Charter of the RICS describe(s) one of the principal tasks of the surveyor as **"securing the optimal use of land and its associated resources to meet social and economic needs."**

Some elements of a new professionalism

These are a draft set of actions proposed by the Edge and reproduced in the editorial of the January 2013 Special Issue of **Building Research and Information journal**. They are aimed at what the individual professional can do:



1. Be a steward of the community, its resources, and the planet. Take a broad view.
2. **Do the right thing**, beyond your obligation to whoever pays your fee.
3. Develop trusting relationships, with open and honest collaboration.
4. Bridge between design, project implementation, and use. Concentrate on the outcomes.
5. Don't walk away. **Provide follow-through and aftercare**.
6. Evaluate and reflect upon the performance in use of your work. Feed back the findings.
7. **Learn from your actions and admit your mistakes. Share your understanding openly.**
8. Bring together practice, industry, education, research and policymaking.
9. **Challenge assumptions and standards.** Be honest about what you don't know.
10. Understand contexts and constraints. Create lasting value. Keep options open for the future.

'We need an Institute of the Built Environment'



- Richard Rogers 1995 - Arup Foundation
- Peter Rogers et al 9/2004 - Building
- Terry Wyatt 5/2013 – Edge Debate



Terry Wyatt wants a Royal Institution of Building Engineers
Mike Murray proposes a National College of Design Leadership...(IDBE?)

'We need an Institute of Building Performance' Bill Bordass ++

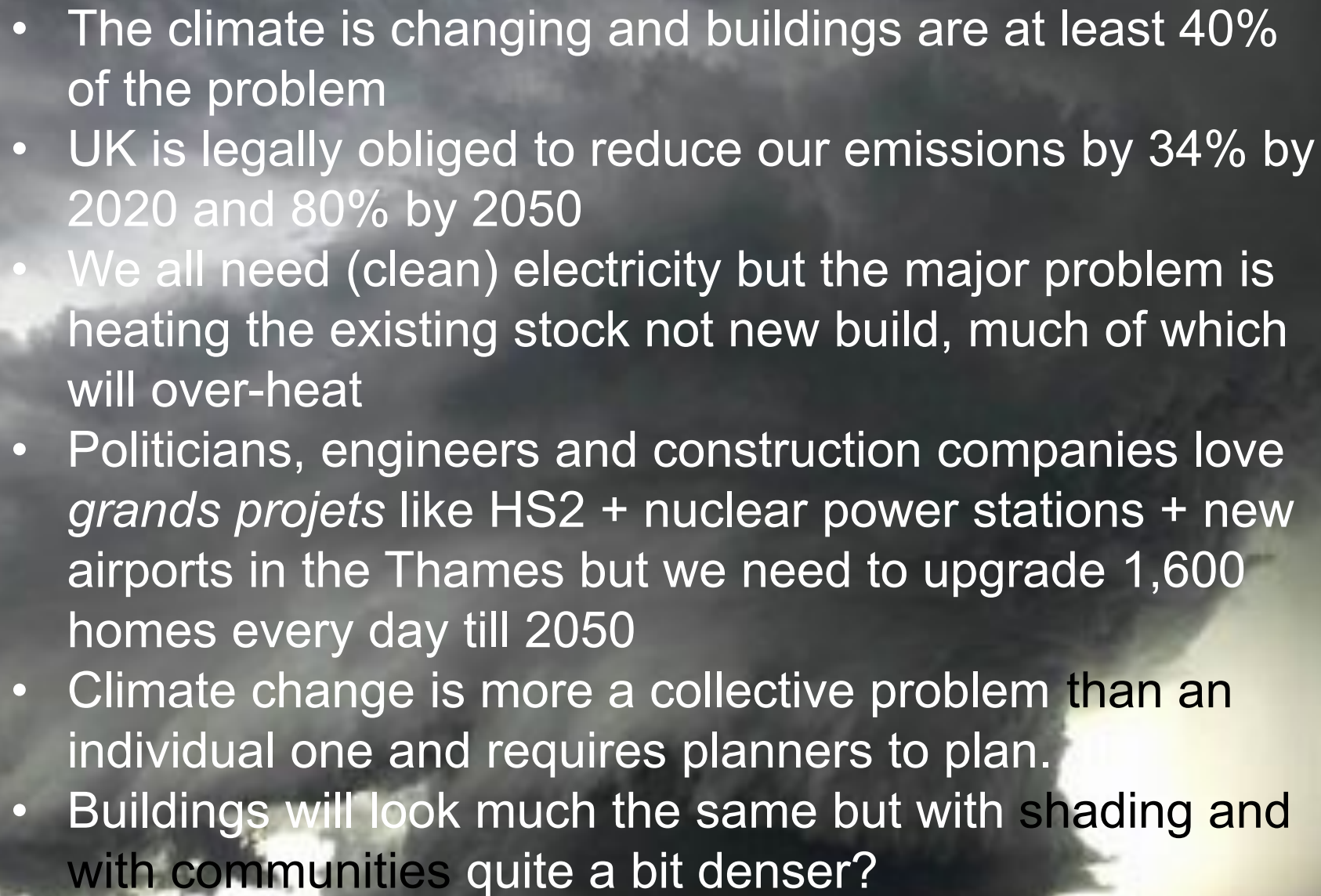
Edge Commission of Enquiry into how our Professional Institutions are planning to tackle the current and pressing challenges to

- Regain public trust and respect in the industry
- Reinvigorate professionalism and offer value to society
- Address the long-term in a short-termist economic culture
- Respond to the challenges of on-line learning (MOOCs) and judgement/endorsement (cf Trip Advisor for hotels)
- Radically improve building performance
- Develop a more inter-disciplinary practice
- Continue to convince members that their services are worth the membership fees.

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs"
Bruntland Commission 1987

Katrina 2002
\$8.2bn US ('05)
1.2m homes



- 
- The climate is changing and buildings are at least 40% of the problem
 - UK is legally obliged to reduce our emissions by 34% by 2020 and 80% by 2050
 - We all need (clean) electricity but the major problem is heating the existing stock not new build, much of which will over-heat
 - Politicians, engineers and construction companies love *grands projets* like HS2 + nuclear power stations + new airports in the Thames but we need to upgrade 1,600 homes every day till 2050
 - Climate change is more a collective problem than an individual one and requires planners to plan.
 - Buildings will look much the same but with shading and with communities quite a bit denser?

70m tonnes of construction and demolition waste used to go to landfill; 2012 target to reduce by 50% but back then 13m tonnes went straight to landfill each year

54% of UK school electricity is used when no one is there!

In UK and USA we throw away:

- 50% salads
- 53% bread
- 25% fruit
- 20% vegetables

= £5bn UK food to landfill pa





'Traffic in towns' Colin Buchanan published by Penguin 1964



Seoul tears down motorway and builds park with river instead



Aylesbury Estate, Southwark, London

- 2,700 dwellings for 10,000 people,
- completed in 1977
- now being demolished



“The Tiger Woods’ golf course in Dubai uses 4 million gallons of (de-salinated) water every day” Observer 10th Jan 2010

Consumption used to be a fatal condition .



“ generally where climate is concerned 80% of world-wide emissions stem from 20% of the population. Staggeringly, according to Anderson (Prof at Tyndall Centre for Climate Change) fully 50% are the result of the lifestyles of just 1%.”

Stop the Apocalypse Andrew Simms 2013



We have always made houses suitable for the particular climate until .



Willis Carrier invented air-conditioning in 1902

Designing a building to be air-conditioned tends to double its energy use!



Santiago de Chile

Early scheme for Liverpool Waters



Al Burj, Dubai – every m² floor space needs 1.5m³ concrete to hold it up (Simon Smith)
The Shard – Ancient or Modern?






Some say UK needs 300k new homes pa but
70% of new housing in London is sold to foreigners

“To meet the challenges of the 21st century, buildings need to perform much better: as sustainable assets, for their occupiers and for the environment. For example, UK Government policy is for new buildings to be zero carbon within a decade; and for the energy and carbon efficiency of the existing stock to improve dramatically.

To respond to these targets, the construction industry will need to provide a very different service .”

Bill Bordass paper on Soft Landings Sept 2010





If we build new houses at the rate we are building them it would take 236 years to replace the existing stock. The USA declared Independence 236 years ago

- 80% of the homes we will be living in in 2050 already exist
- Climate Change Act 2011 – 34% reduction by 2020 + 80% by 2050







‘Long life, low energy, loose fit’

Alex Gordon president of the RIBA 29 July 1999



SOLAR TWO - MOJAVE DESERT, CALIFORNIA

“Every hour the sun beams onto Earth more than enough energy to satisfy global energy needs for an entire year.

Solar energy is the technology used to harness the sun's energy and make it usable. Today, the technology produces less than one tenth of one percent of global energy demand” National Geographic



There are 900 community energy projects in UK and



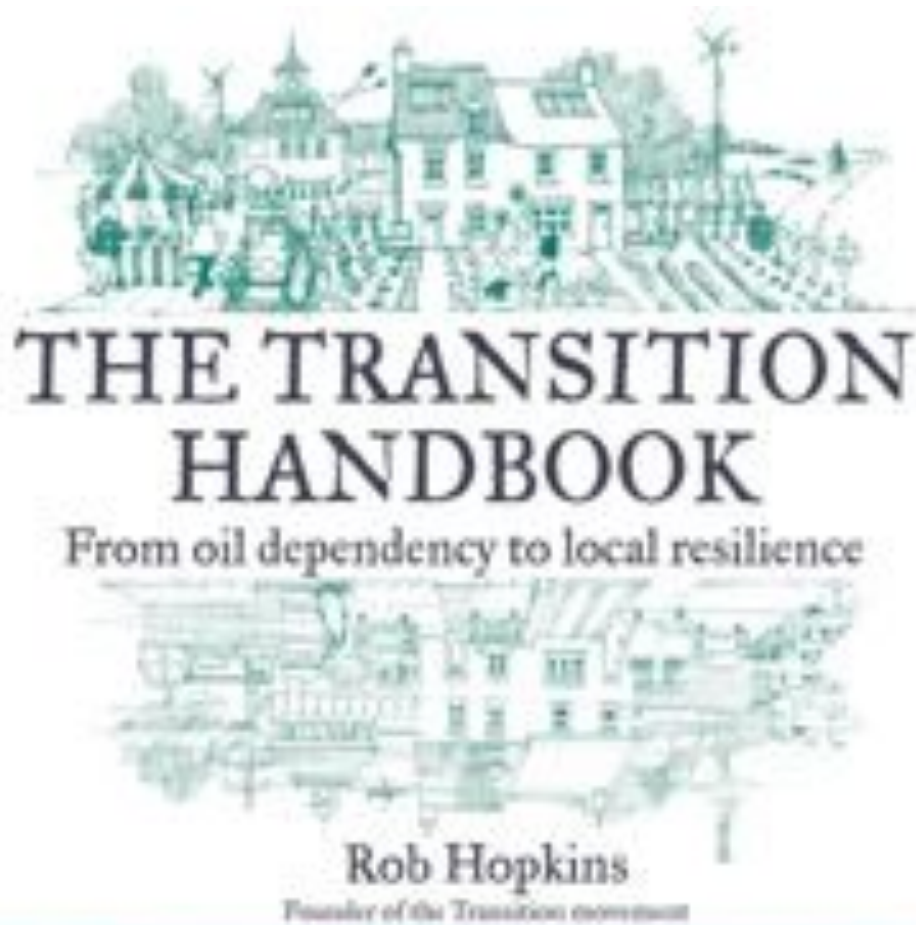
24th August – 8th September



AGM 6 Sept 13 Lewes – OVESCO has 5 installations = 191 kW

In Germany 22% of electricity is from renewables
but 46%/51% renewables is generated by individuals and (586) groups.

“an integrated place-based view of energy can help maximise local generation”
Hywel Lloyd in ‘the hot book’



‘The single most important message is the way it (the Transition Town) brings people together in a community ’

Ed Miliband at TT Conference in Lewes
25 May 2009





Dongtan
Eco city
Shanghai
Arup
2005- !

We are a trading nation and BIS agrees that “**The Construction Sector is a key sector for the UK economy.**” This sector is construction contracting + professional services + products and materials, comprising 2.93m jobs.

‘UK Construction: An economic analysis of the Sector’ – BIS July 2013.

- Construction contracting had a trade surplus of £590m in 2011
- Architecture (,engineering?) and QS-ing had a surplus of £530m

but

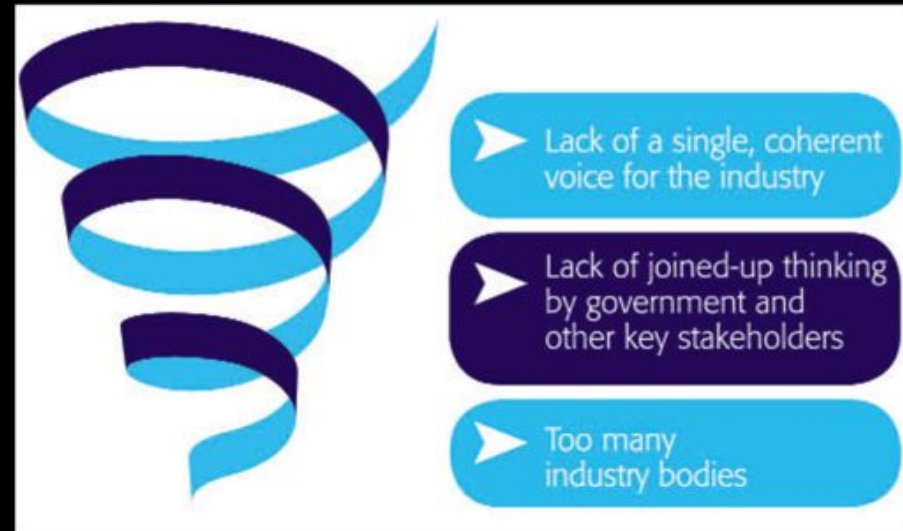
- Construction related products had a trade deficit of **£6.2bn**



Aecom Rio Olympics 2016 Hopkins/A10 Yale School of Forestry Cullinans' Shahat Garden City



2009



Key Blocker 4: Industry Structure

‘ We need to abandon our existing models that reward short-term thinking

We believe that the era of client-led change is over (!) and it is now time for the supply side to demonstrate how it can create additional economic, social and environmental value through innovation, collaboration and integrated working

Government as a client, needs to understand the enlightened thinking that better and more intelligent design improves and reduce the amount of money wasted on the procurement process

Top Ten Industry Reports Since Egan from 'Never Waste a Good Crisis'

Achieving Excellence, Office of Government Commerce, 1999

Modernising Construction, National Audit Office (NAO), 2001

Accelerating Change, Strategic Forum for Construction, 2002

Improving Public Services Through Better Construction, NAO, 2005

Be Valuable, Constructing Excellence, 2005

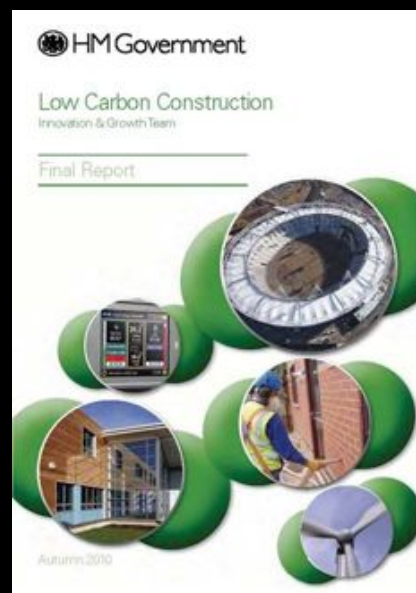
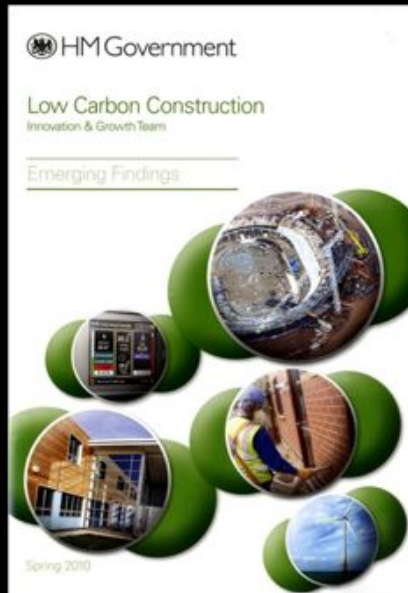
Callcutt Review of Housebuilding Delivery, John Callcutt, 2007

Construction Commitments, Strategic Forum for Construction, 2008

The Strategy for Sustainable Construction, Government/Strategic Forum, 2008

Construction Matters, Business and Enterprise, Select Committee, 2008

Equal Partners, Business Vantage and Construction, Clients' Group, 2008



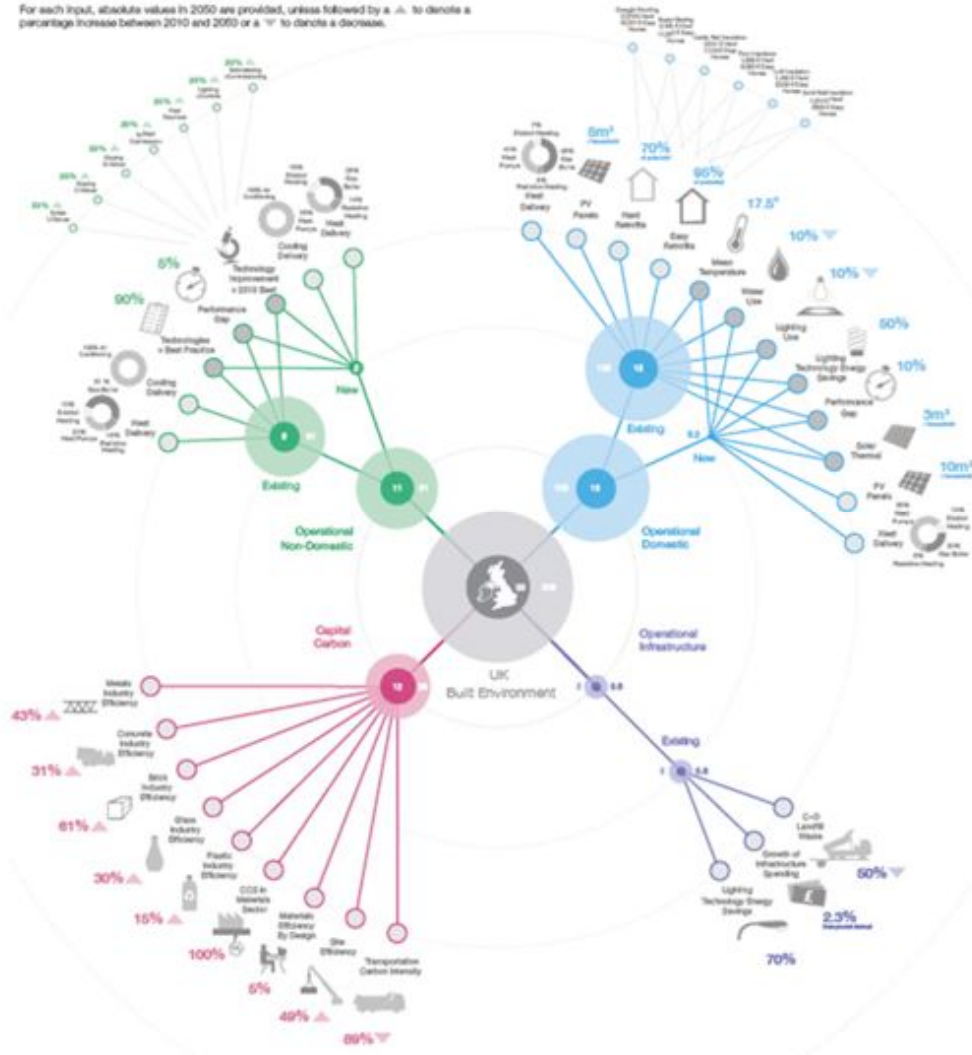
“Low Carbon Construction” operates out of BIS but is managed by the Cabinet Office and supported by CIC!

- Government Construction Board
 - Green Construction Board
- working with:
- UKGBC/ Strategic Forum
 - ICE on infrastructure
 - 2050 group on procurement

Carbon Emissions in the UK Built Environment Achieving 80% Reduction by 2050

This infographic is based on the Green Construction Board's Low Carbon Roadmap for the Built Environment. Development of the Roadmap was managed by WRAP, working in collaboration with Arup and the Climate Centre. The carbon emission sources included in the analysis and their values are based on the Roadmap. For more information visit www.greenconstructionboard.org.

For each input, absolute values in 2050 are provided, unless followed by a Δ to denote a percentage increase between 2010 and 2050 or a ∇ to denote a decrease.



Legend

- Operational Non-Domestic includes heating, cooling, ventilation, hot water, and lighting and includes heating, other appliances, and plug loads.
- Operational Domestic includes heating, cooling, ventilation, hot water, and lighting and includes heating, other appliances, and plug loads.
- Operational Infrastructure includes the emissions from water treatment, water of lighting and infrastructure and includes (CO2) water treatment, and includes emissions from the use of electricity to be used.
- Capital Carbon includes direct process emissions (indirect emissions from the manufacturing and production of UK and imported materials and products, emissions from the transport of materials, emissions associated with professional services in support of construction, and all CO2 from air).



ZERO CARBON BRITAIN

Rethinking the Future

Centre for Alternative Technology
Canolfan y Technoleg Amgen

2013



HM Government

Industrial Strategy: government and industry in partnership



Construction 2025

July 2013

Lower costs

33%

reduction in the initial cost of construction and the whole life cost of built assets

Faster delivery

50%

reduction in the overall time, from inception to completion, for newbuild and refurbished assets

Lower emissions

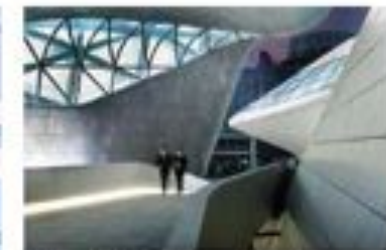
50%

reduction in greenhouse gas emissions in the built environment

Improvement in exports

50%

reduction in the trade gap between total exports and total imports for construction products and materials



The global construction market is forecast to grow by over 70% by 2025.

Global Construction 2025; Global Construction Perspectives and Oxford Economics (July 2013)

Construction Leadership Council established July 2013 ..



All Party Group for Excellence in the Built Environment **is supported by CIC**



7 Recommendations to Government:

- Set clear shorter term targets
- Be clear on it's priorities
- Give Green Construction Board more teeth
- Set up Existing Homes Hub
- Review the Green Deal
- Consult on a new Green Deal for RSLs
- Make retrofit more financially attractive

CONGRATULATIONS CIC



Just what will CIC be doing in 2038?

- One voice?
- Serving society?
- Protecting the consumer?