

## EDGE Debate

### ‘UK construction resources – is there a plan?’

Monday 4<sup>th</sup> July 6:30pm

Institution of Civil Engineers, One Great George Street, London

The UK construction industry consumes some 400mt of construction materials annually and accounts for nearly 30% of UK road freight. Home produced material for construction is significant accounting for 20% of the UK’s manufactured goods at the same time as exporting 10% of output. However, in the last decade imported building material to the UK nearly doubled and now represents over 25% of all construction materials/products used in the UK.

Should we be reducing our reliance on imported building materials? Is it possible to produce more with less in the UK construction industry? Where will the materials required to retrofit our existing building stock in the UK come from?

These are just some of the questions the Edge debate on resource hopes to clarify.

#### Chair:

Dr Scott Steedman CBE – BRE Global

#### Speakers:

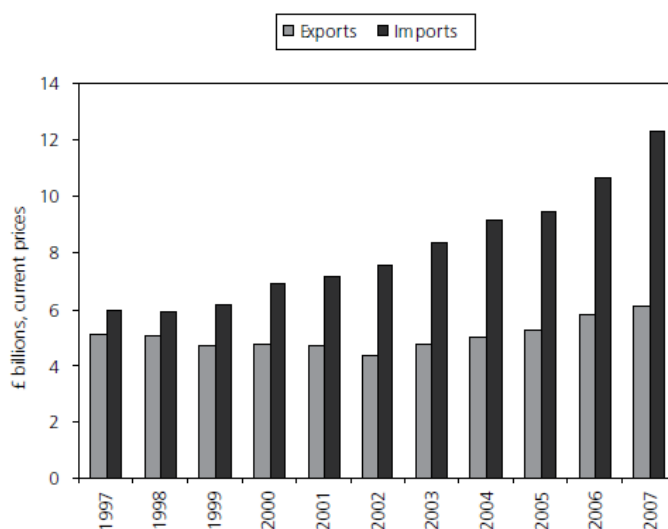
Jane Thornback – Construction Products Association

Gillian Hobbs – BRE

Hugh Mulcahey – Buro Happold

John White – CEO Timber Trade Federation

Figure 14.4 External trade: building materials



Source of data: Table 14.6

(Ref: 2008 Annual Construction Statistics OfNS)

## Notes of meeting on July 4<sup>th</sup> 2011 at Institution of Civil Engineers, London

Dr Scott Steedman CBE started the evening by introducing the 4 speakers and posing the following questions that he felt the meeting could address:

- Are there limits to the UK construction resource?
- Should we reduce our reliance on construction imports?
- Is it possible to build more with less?
- Is the UK buildings energy efficiency retro-fit programme a resource problem?

Jane Thornback (construction products association - CPA) maintained that UK manufacturing is alive and well with construction related manufacturing representing some 20% of all UK manufacturing. The ownership of UK manufacture has seen a dramatic change – Pilkington (Japan), Corus (Indian), Cemex (Mexican). Jane stressed that these businesses must invest in the UK and remain manufacturing in the UK, however, UK energy supply cost and security and redtape may perhaps be an issue that affects future investment decisions.

The CPA is currently working with the EU on Resource Efficiency Action Plans for various materials (plasterboard, flooring...) and it is also producing a guide to low carbon refurbishment. Design for deconstruction is also expected to be a future driver.

Gilli Hobbs (BRE) highlighted the composite nature of modern building systems and the potential problem these could cause downstream in deconstruction. The move to off-site construction should help reduce waste and increase efficiency in construction but measurement and benchmarking will be critical if we are to gauge success. Construction is on target to reduce construction waste to landfill by 50% by 2012. Gilli mentioned the waste policy review with aggregates, timber and copper on the list of 10 critical items.

Gilli asked all present to follow the waste hierarchy to help conserve resources:

- Minimise
- Re-use
- Re-cycle
- Recover energy
- Landfill

Hugh Mulcahey (Buro Happold) approached the subject from a building occupier/use view, energy is a resource and we are wasting it! Hugh maintained the challenge should focus on energy first before tackling material resources for construction. The link between energy cost and steel price was graphically illustrated. Further comparative evidence was presented on the static nature of transport energy since the 1970's versus the reduction in buildings and industry energy use over the same period. Hugh highlighted the need for more research in the 'cost' of moving construction materials around, perhaps up to 20% of all UK freight transport is linked to construction in some form or another. There was a side step in discussion around the location of places of work, rural versus urban....are we really developing in the correct locations.

John White (Timber Trade Federation) sees sustainability driving many aspects of construction, responsible sourcing is key to reputation and something the timber industry has led. Sustainable agendas will see increasing use of timber in the future and the UK's timber resource is increasing. Construction is timber's biggest customer taking up to 70% of available material. Engineered timber products are becoming increasingly important, however, like much timber that is imported the material is exchange rate sensitive. John is of the opinion that we should not wait for government to regulate, the market will sort itself out.

Dr Scott Steadman then opened the discussion to the floor noting the following themes from the talks heard:

- Is there an energy price issue that will affect construction materials?
- Is there capacity in UK manufacturing to supply the construction industry?
- Are we struggling to re-cycle and/or re-use in the construction industry?
- Are our designers being creative enough regarding use of existing assets?

Audience – An architect highlighted a preference to use local materials but regularly found themselves being asked to consider cheaper imports (ie Bath Stone from France for Bristol Shopping Centre, bricks from Belgium). More hard information on transport and manufacture energy is required.

Edge member – A member of the audience agreed stating that a sustainable economy (construction project) means creating local work.

Audience – A plea to not just think about energy was made. We should consider water, transport and the social impact (ie social sustainability). At the Olympic Park many of these issues have started to be tackled on a large scale for the first time including rail and water transport.

Edge member – The 80% CO2 reduction by 2050 was queried in relation to embodied CO2...how much does the £10bn of construction imports account for?

Audience – Carbon leakage such as this meant that we should be measuring consumption not just production.

Edge member – Emerging countries are generating increased competition in construction materials/products and the danger is that the carbon leakage will only increase.

Audience – Why not just minimise new construction and get better at retrofit. A lack of data exists on the existing stock.

Panel – we should be building more for less (materials).

Audience – It was proposed that over-design is common place in the industry for a number of reasons.

Panel – Why do engineers still use a factor of safety of 1.4 for weight of materials in their design?

Edge member – With increasing wealth (cost of thought) and decreasing materials costs we face an uphill battle to refine our designs.

Panel – An example of 100+ design codes existing relating to the design of retaining walls. How can it be possible to be efficient to design?

Edge member – The retro-fit programme could be a great opportunity to get this right with efficient design and low carbon materials. However we face a real problem in the skills available, in particular the white van man/builder needs to have proper instruction.

Panel – The industry is aware of the problem and working with the government on the green deal.

Audience – The topic of end of life was raised. How can we make our construction products more re-useable? Is there R&D happening here?

Audience – Asset management also needs to be considered – the silos need joined up thinking.

Edge member – We have operational energy regulations, should we not also have waste and materials use regulations to drive down materials use.

Edge member – Is there a perfect storm approaching in terms of provision of energy?

Edge member – The social impact of our demands (consumption) needs to be given more thought.

Panel – Final summing up remarks from the panel were questioning should we be constructing new at all? Is the supply chain talking to each other enough? Are we being complacent about energy security?

Dr Scott Steadman finished by thanking the panel members and the audience for a lively discussion.