



CONSTRUCTION WORKING GROUP UPDATE

MATERIALS COMMUNITY MEETING – 25 Jan 07

Dr Philip Ramsey – VP Technology, Pilkington

Construction Working Group Update

Construction Working Group started in Sep 2006

2 steering committee meetings held (29th Sep, 12th Jan)

Drafting Terms of Reference

Agreed to follow Energy WG's approach

Objective: Develop a Strategic Research Agenda and Deployment Plan for the UK Materials supply chain in the Construction Sector over a 5, 10 & 20 year horizon.

Define key materials research and development needs

*Task Groups: Housing, Commercial Buildings, Infrastructure
Develop an R&D roadmap for Construction Materials covering:
Status/value, SWOT, Drivers, R&D needs, Barriers, Recommendⁿs*

Construction Working Group – Steering Committee

Membership of Steering Committee:

Phil Ramsey	Pilkington	Glass (chair)
Tim Broyd	ex CIRIA now Halcro	Research
John Brumwell		DTI
Graham Couchman		BRE
John Davenport	TWI	Composites
Cliff Fudge	H+H Celcon	Concrete
Denzil Spencer	lbstock	Ceramics
John Tebbit		CPA (sec)
Roy Wakeman		Timber
<i>Corus member now left</i>		Metals

Other potential members: Plastics, Designers, Insulation, C-Trust,
Large Contractors, CIBSE, Universities, DEFRA, RDAs, etc

Suggestions and volunteers welcome !

Working Groups and Town Meetings will ensure much wider involvement

Construction WG – Not “Starting from Scratch”

For example: Materials IGT Workshop, May 06

Tech Strategy for Built Environment – May 05

Drivers:

- Sustainability (in all its guises)
- Security, terrorism, vandalism
- Robustness to changing climate
- Self-maintaining / healing, self-diagnosis
- Health – germs, comfort, entertainment
- Safety (during construction and use, eg fire resistance)
- Off-site construction
- IT – communication, smart appliances

Barriers to Innovation:

- Client Behaviour
 - Purchase bespoke solutions
 - Not aware of available innovations
 - Risk averse
 - Capital cost, not whole life cost
- Gov responsibility for policy split over several departments / agencies
- Adversarial & fragmented supply chain
- Difficult to protect innovation (?)
- So, innovation tends only to occur to:
 - Solve specific problems
 - Make a statement
 - Meet new regulations

What about materials-related issues?

An Example from the Glass Industry

Reduced energy loss through windows

U-values (W/m^2K):

Single Glazing 5.4

Double Glazing (IGU) 2.8

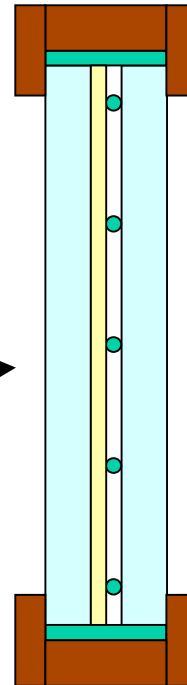
IGU with Low-E and Ar 1.1

Triple Glazing with Low-E and Ar 0.8

Vacuum Glazing 0.3-0.4

Also need to include solar heat gain

Same basic points for other leading edge window technologies:
eg Switchable, Self-Cleaning, etc.
And probably in the rest of the industry



All about Materials Issues

- Spacer material
- Surface condition
- Low-E coating
- Sealing
- Framing

Numerous process issues

- Not the glass
- The additional materials
- Hybrid systems
- Joining technologies