

CBA

UPDATE

SUPPORTING THE CONCRETE BLOCK INDUSTRY

SPRING 2011

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Chairman's report



Andy Littler
Chairman and CBA Update Editor

The current business climate leads me to write this report as a curate's egg of optimism and uncertainty. Let us start with the good news, nine months ago the very future of our CBA was in doubt as several major manufacturing members resigned for varying reasons, though with a common thread of wishing to support fewer and larger trade associations. This desire has now been satisfied as a result of the British Precast Concrete Federation becoming a full member of the Mineral Products Association. This turn of events has, at a stroke, brought Aggregate Industries and CEMEX back as welcome returning members and leaves us only without Tarmac Building Products of the aggregates and cement producing large manufacturers.

Also on the good news front the fight back against timber frame house construction looks to be going particularly well. For GB (England, Wales and Scotland) in Quarter 1, 2009 the timber frame manufacturers could claim that a record 27% of new dwellings started were theirs. Timber frame building was claimed to be faster and more environmentally acceptable. It was finding particular favour in social housing. By Q3, 2010 that share had dropped dramatically to 21% but nothing really prepared us for the decline to 16% by Q4, 2010. These figures look even better when one considers that in the second half of 2010 social housing constituted a greater percentage of new starts than usual and that sector has had an unusually large degree of timber framed dwellings. Volume house builders such as Taylor Wimpey are increasingly committed to masonry, even reversing historic practice in Scotland.

If we pivot a timber frame share at 20% and current concrete block output at c.40 million m² then arguably 46 million m² might be sold if there were no timber frame houses (this assumes aircrete will also benefit). It follows that for every 1% gain in market share our industry will sell an additional 300,000m² equivalent to

£1.8 million in extra revenue. At a modest 10% margin that 1% added share will more than fund the whole of CBA's operation in 2011. My case rests – as it did in the 2010 report.

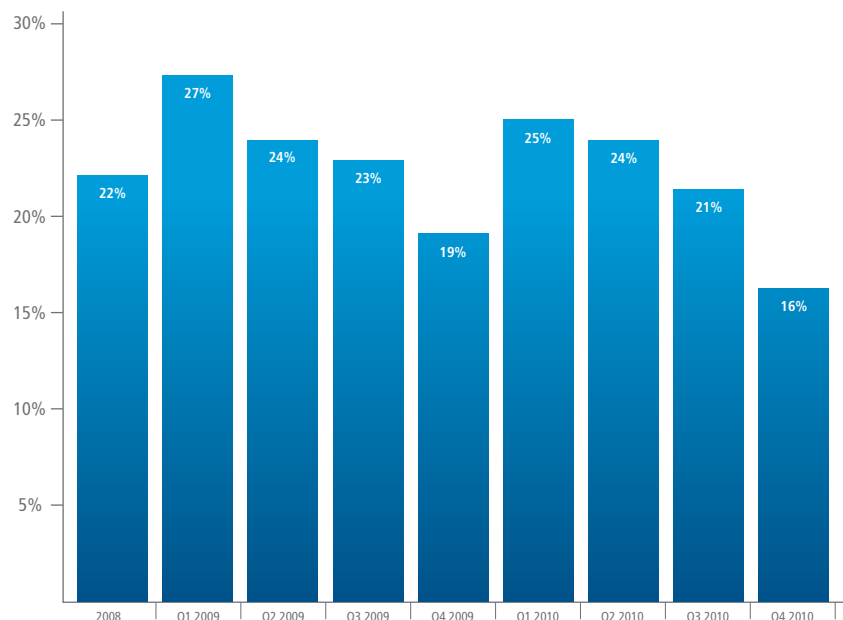
It would be naive for CBA or indeed the Modern Masonry Alliance to claim that this shift to masonry construction was entirely our doing but we have surely played a part. At every opportunity representatives of MMA/CBA have tried to hammer home the messages that concrete blocks are sustainable from local factories using high levels of recycled content and avoid unnecessary fire and flooding risks. Increasingly the benefits of thermal mass associated with heavyweight construction are being recognised as is the flexibility, convenience and longevity of masonry build.

A glance at the BIS Construction Price Indices gives a heads up on price movements for concrete blocks against our competitors, timber frame and to a lesser extent fabricated steel. The news is also very encouraging for our industry. From November 2009 to November 2010

block prices hardly moved, up 1% perhaps. In contrast imported softwood was up 17%, imported plywood up 32% and fabricated steel up a whopping 25%. In the past we have claimed that building the fabric of a building in masonry was 15% less expensive than in timber frame, this differential has surely now moved north of 20%. Market trends outlook forecasts averaged out would indicate flat concrete block volumes 2011 and 2012 compared to 2010. GB housing starts in 2010 were 112,000, up on the 2009 figure of 85,000 and 104,000 for 2008. I would remind everyone that prior to that around 200,000 homes were started in GB consistently since the 70's. Whilst 2011 is unlikely to yield more than 120,000 starts and possibly only 105 - 110,000, nevertheless the trends away from timber frame and also towards houses rather than apartments all favour blocks. Similarly commercial development if coming out of a trough.

Quite what the net effect of a continuing shortage of mortgage funds, high initial deposit requirements and the lack of confidence brought about by a squeeze

Timber frame market share in GB



A message from the British Precast Chief Executive

United we stand [divided we fall]

on disposable income adds up to is hard to call. Against this there is an undoubted pent up demand for housing and should the government wish to kick start some growth and reduce unemployment then directing money towards construction is a proven way to proceed. Elsewhere in this Update the MMA's Plan B to government states that every £1 invested in construction generates £2.84 in economic activity and £0.92 of every £1 spent is retained in the UK. These are figures to trumpet wherever and whenever possible.

I hope that the contents of this CBA Update are both encouraging and informative. Our association is here to promote concrete blocks and the contents aim to unashamedly do so. Issues around fires in timber frame build are explored and anyone can read from the direct quotes reported that there are a host of concerns, notably at the construction phase and as a result of DIY repairs. Progress by the MMA is laid out and as ever Gerry Pettit has given a comprehensive technical review of the year. On top of this an excellent 8 page A4 CBA brochure, Aggregate Block Solutions for Part L1A of the Building Regulations has been published and circulated to members. The practical benefits of BPCF's "Raising the Bar" initiative are outlined, thermal mass benefits explained and Martin Clarke tells us how full membership of the Mineral Products Association is appropriate to the times we are in.

Finally I would urge you to read my 10 selling points for masonry construction. This is intended to be an easily accessible guide to all those involved in promoting or selling our products. Please circulate it widely within your companies and make sure that staff use it. They may not immediately make a sale for your company but they will be increasing sales for our industry – and that is what we are all about.

Good luck and best wishes for 2011.

Andy Littler

Many important events have taken place in Leicester over the years, perhaps none more so than the British Precast Concrete Federation EGM held in December at which my members voted unanimously for the Federation to join the Mineral Products Association (www.mineralproducts.org). As I write we are now full members of the MPA and we have brought a major customer group for mineral products into their network. The multi-product structure of the MPA mirrors that of British Precast; I have been involved with many of the MPA's predecessor bodies. This experience will I think stand the precast industry in good stead as we work together as CBA and the Modern Masonry Alliance with other MPA interests in cement, mortar, aggregates and The Concrete Centre to create a better future for you.

We know by now when it's the time to be focussed on product sector interests and when it's the time to combine together to fight for shared interests. That is the art of running a federated structure. What is in this for CBA as you move into our Federation as a full product association? For many of you it will be additional membership services and advantages but for all of you it will be increased visibility in the corridors of power. It is simply not possible to be heard any longer as a small association. By combining with the MPA as one of the country's major power bases we and you will be heard and seen much more. That is my pledge to you and your colleagues.

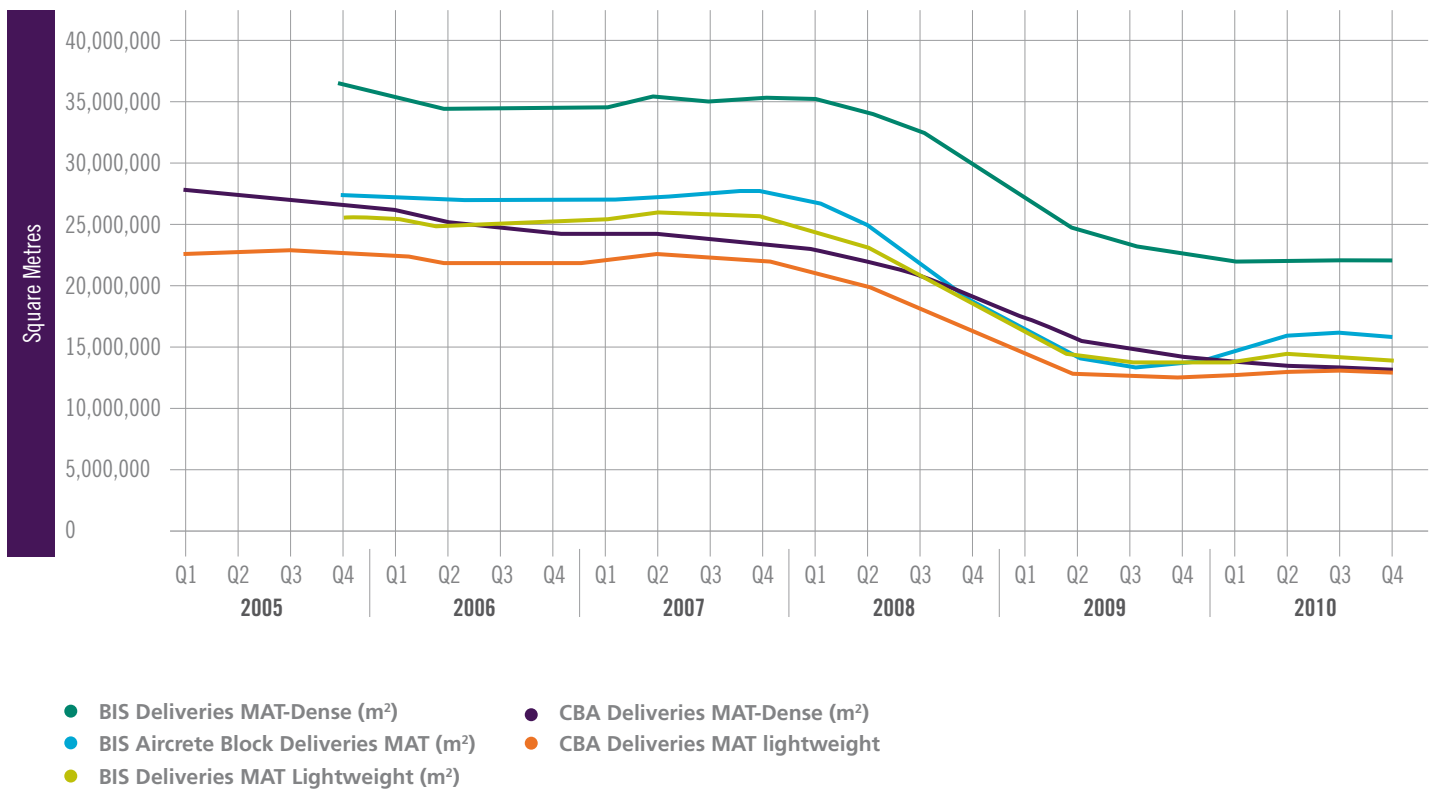
On February 10th we launched our Raising the Bar scheme at the Action Sustainability conference – see www.bpcfcharter.com – the first such building product scheme in the world. It is our answer to the recession – a way of creating clear space in the eyes of customers between you, the members, and other systems and non-members. We want to secure market rewards for those of you investing in quality and service, in innovation and sustainability, in health and safety, and in responsible sourcing. The current destructive erosion of margins must be fought and Raising the Bar is the way forward.

I joined the concrete products industry in 1972 just before Conbloc became part of ARC Concrete for whom I worked. Half of my working life was with the ARC group, now Hanson UK, before in 1990 I joined the British Cement Association and then came to BPCF in 2002. If I have learned anything it is that division and disunity serve no purpose and are usually hugely damaging to commercial life and to the delivery of key messages to the market. The repositioning of CBA within British Precast and your renewed support for the Modern Masonry Alliance gives aggregate blocks a strong and deep base to develop a better future in a very challenging era.

Martin Clarke

Output graphs

GB Deliveries – CBA Stats and National Statistics for Construction from the Department of Business, Innovation and Skills (BIS)



Construction Output by Sector - £ billion at 2005 constant prices

	2005	2006	2007	2008	2009	2010 Forecast	2011 Forecast	2012 Forecast
Housing total	20.6	21.1	20.9	17.3	13.8	15.3	15.3	15.5
Commercial/Industrial and non Public non housing	36.1	39	41.4	42	36	38.1	37.8	37.6
Private Repair and Maintenance	17.8	17.3	17	17.5	15.9	15.5	14.5	14.2
Number of housebuilding starts in GB	209000	209000	216000	104000	85000	112000	105000	110000

These block deliveries figures show a flat output for the last 18 months now. There has been a small move back from lightweight to dense blocks. Total blocks made in GB amount to c. 36 million m² annually at present with lightweights comprising about 38% of these.

Innovation – Electro Conductive concrete blocks

A UK company, Electro Conductive Concrete Ltd (ECCL) are currently working with the Building Research Establishment to test concrete, renders and concrete blocks in electromagnetic shielding applications. A UK block manufacturer is involved.

To date the shielding of electromagnetic interference has been achieved by creating a Faraday cage, by building a room of welded steel sheets or lining an existing space with copper sheeting or foils. This reflects the unwanted electromagnetic interference.

Electromagnetic shielding is classified in two fields, lower (below 500 MHz) and higher frequency (up to 20GHz) as well as magnetic and electrical fields. By adopting various specialist concrete mixes ECCL claim to be able to shield throughout the frequency range.

The higher frequency product is Anechoic, absorbing rather than reflecting the unwanted signals. The lower frequency solution has a high magnetic permeability as well as conductivity and both reflects and absorbs signals. Amongst other elements of the concrete mix, carbon and magnetite are employed. Potential applications include custodial, military, secure conference and MRI scanning rooms.

The great advantage of using concrete products rather than Faraday cages is that they can be fitted in to normal building construction, absorption is linear implying the thicker the structure the higher the absorption provided – good news for concrete block providers.



MRI scanning room constructed from copper, could concrete blocks replace this?

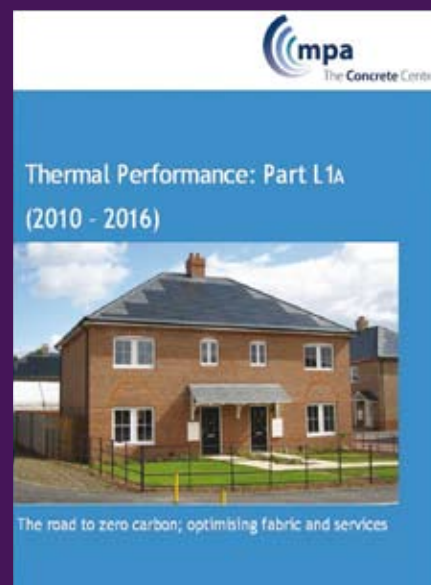
MMA/HBF Futures Group working well

The Modern Masonry Alliance/Home Builders Federation Futures Group is an initiative started by the MMA which meets to seek and promote masonry and concrete solutions for house building. CBA members including Gerry Pettit are active on the group. This is an excellent example of CBA talking directly to its customers in a relaxed but productive forum.

An early achievement of the Futures Group has been the writing of a practical guide – “Thermal Performance: Part L1A (2010 – 2016) The road to zero carbon; optimising fabric and services”. This thoroughly researched document covers the Part L challenge, SAP design issues, thermal properties of walls and floors and whole life performance.

Whilst all types of masonry are covered, CBA representation on the group has ensured that concrete blocks are well represented in a variety of building fabric designs.

The Concrete Centre has facilitated the brochure which will be launched at ECOBUILD in March. Thereafter it is freely downloadable from www.concretecentre.com



Ten reasons to use concrete blocks

We at the CBA are convinced that using masonry is simply the best way to build. However there is no point in just talking to ourselves, we must promote our advantages, particularly over timber frame construction. Getting this message across involves you all, the management and sales staff of manufacturing members and associates. The more that people extol the superior qualities of masonry construction the better. We need to get our message across to builders, architects, developers, inspectors, social housing providers and builder's merchants. Set out below are bullet points to work in to the conversation whenever discussing a buildings fabric.

□ Tried and trusted building method

- Concrete blocks have been in use for over a hundred years and there are very few cases where they have failed. A masonry constructed home has a life of 150 years plus. Consider this against an NHBC 60 year guarantee, that life is due to concerns over timber longevity, not blocks or bricks.

□ Available off the shelf for immediate use

- Over 4000 builder's merchants and DIY sheds stock aggregate concrete blocks and full load deliveries can be ordered direct from a manufacturer on a next day basis. Timber frame has nowhere near this level of convenience.

□ Thermal Mass

- The assertion that masonry has higher embodied CO₂ than lightweight timber frame construction needs challenging. Over the whole building the initial embodied energy is only 5% higher

and a study by Arup (see article by Tom de Saulles on page 15) and this is cancelled out after 11 years due to the thermal mass of the masonry structure storing and reradiating heat. Even the lower embodied CO₂ of timber frame is questionable as calculations do not account for emissions from transport to UK ports.

□ Made locally in the UK

- 90 plants operated by 50 companies produce concrete blocks and two thirds of blocks are delivered less than 40 miles from source. Local production of this high bulk/low value product makes sense. Manufacturing provides well paid year round employment. When 4 out of 5 of our young people are out of work why are we importing boatloads of timber and plywood from abroad? Local food and drink are constantly being promoted, why not building materials?

□ Meets new Part L Regs

- The new CBA publication "Aggregate Block Solutions" for Part L1A 2010 of the Building Regulations details 18 designs for external walls giving U values between 0.20 and 0.28 W/m²K (the new standard for England and Wales is sub 0.30). There are dozens of other design options by varying block and insulation type and thickness, wall ties and finishes.

- Interestingly the increased demand for low external wall U values makes the use of aggregate versus aircrete blocks more attractive. Assuming a conventional 100mm brick outer leaf, partial fill by phenolic insulation

and a 100mm lightweight aggregate block inner leaf then only 5mm of extra insulation (55mm compared to 50mm) is necessary compared to a wall employing an aircrete 100mm inner leaf.

- Similarly the 10 approved design solutions for AD L1A – Separating wall thermal by-pass, are shown. All these result in a U value of 0.00W/m²K and can be used in SAP 2009.

□ High recycled content

- Lightweight blocks regularly contain 70% recycled content, principally by product ashes from coal fired power stations.
- Dense blocks have lower recycled contents but often use fly ash, crushed building and demolition waste and glass cullet.

□ Fireproof

- There is no possibility of concrete blocks catching fire in contrast to timber frame homes which are particularly susceptible to fires as the building is under construction and have been set alight as a result of electrical and plumbing installation and repair.

□ Use in high flood risk areas

- Flood damage is far more serious when wood rather than masonry has to be repaired

- Capable of meeting all levels in Code for Sustainable Homes

- Compliant with all Social Housing requirements

Modern Masonry Alliance leads the fight for market share

The MMA continues its fight to reverse 10 years of market share gain from timber frame construction which peaked at 27% in 2009 but is now down to 16%.

This is despite the fact that 50% of homes built in 2009 were in the Social housing sector in which timber frame enjoys a much greater share, in 2010 this trend continued with 59% of homes built being part or fully publicly funded. This has involved the re opening of existing timber frame sites under various schemes such as Kick Start.

The CBA Omnibus survey conducted in October 2009 mirrored the public perception of the late 80's MORI survey with both sets of respondents confirming a massive 93% of the public prefer to live in a brick and block built house. It is time to give consumers what they want and stop the massive imports of timber which are damaging our economy and costing the UK much needed jobs.

The MMA aggressively promotes the many benefits of masonry including the widely acknowledged assertion that building the fabric of a home from brick and block is 15% to 20% cheaper than with timber frame. Building in masonry supports the local economy and is truly sustainable. The campaign has been a key factor in changing perceptions and creating an environment where private and increasingly public sector house builders are turning to masonry.

The scrapping of Modern Methods of Construction targets and the November 2010 decision by Grant Shapps, the Housing Minister, to scrap the housing standards for the public sector is another step in the journey to rid this country of poorly thought out rules which have added cost, encouraged timber frame imports

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The MMA believes the use of timber frame in high rise structures presents a major hazard to construction workers, fire officers, residents and nearby premises.

and restricted the number's of homes built. The MMA has been supportive of the work being undertaken by the Association of Chief Fire Officers and the association of British Insurers to highlight and provide evidence about the dangers of timber frame fires. Horrific fires in Glasgow and Basingstoke have provoked calls for an urgent review of regulations. The MMA believes the use of timber frame in high rise structures presents a major hazard to construction workers, fire officers, residents and nearby premises. This concern is reflected in the actions of the HSE who are calling for such structures to have two fireproof and secure means of escape during construction and precluding building within 20 metres of existing structures.

Commenting on return to masonry, Mike Leonard, Director of the MMA said, "With a difficult economic outlook it has never been so important that we win more market share. It is time to support our local economy and make sure our public money stays in the UK."

There are some big challenges ahead including a shortly to be published report on embodied energy from Paul Morrell, the Government's Chief Construction Advisor.

We are also seeing timber frame industry backed false propoganda predicting the death of the cavity wall as we move to higher levels of insulation.

We should not expect the timber frame industry to accept a reduction in market share gracefully. We know they have at least £400k to support "above the line" marketing activities next year and this is heavily supported by match funding from the Nordic countries.

The adjacent advertisement will be used by the MMA in selected house building and social housing publications during 2011.

This is our industry and we must stand together to get our message across to protect it and make sure we have the capacity and the skills when we return to volume house building in order to provide homes for the millions who are waiting.

Timber frame buildings – a burning issue



In the Spring 2010 CBA Update I wrote a piece – Timber frame industry in “total denial” over fire risk analysing the recent history of major fires in timber frame residential buildings, particularly those during construction.

One year on we and our colleagues in the MMA and BPCF are continuing to highlight these problems in a responsible and factual manner. During the last 18 months developments include:-

- July 2009 CLG Fire and Rescue Service circular reports that:-

“In recent years there has been an increase in significant fires involving large timber framed buildings especially during the construction phase, which has highlighted the potential for rapid fire growth and fire spread”.

“At incidents involving timber framed buildings, particularly during the construction phase, fire spread is likely to be extremely rapid and the unprotected structure liable to early collapse. High levels of radiated heat are also likely, constituting a hazard to fire fighting personnel with the possibility of offsite fire spread to adjacent structures. Evidence relating to a number of fires in large timber

framed buildings under construction indicates that once the fire is established, fire fighting tactics are likely to be in the defensive”.

- 23rd August 2010 – 4 storey timber framed block of 60 flats under construction totally destroyed in Yoker area of Glasgow.
- 11th September 2010 – BBC News reports that more than 100 fire fighters and 12 specialist support vehicles tackled a major fire in a block of 60 timber framed flats in Basingstoke.

Hampshire FRS chief officer John Bonney, President of the Chief Fire Officers Association, attended the scene and issued a warning about the danger of timber framed buildings.

“When these buildings catch fire the actual structure burns. It often leads to total collapse and that puts the safety of our fire fighters at risk”.

He added that fire spread was a major concern at the incident and that the Chief Fire Officers Association “was right to be increasingly concerned about the number and severity of fires in timber framed buildings under construction”.

- December 2009 – Association of British Insurers report, Tacking Fire: A case for action proposes *inter alia* “The UK governments, construction industry and insurance industry need to set up task forces to urgently consider what can be done to better understand the fire performance of Modern Methods of Construction (MMC) building types and how to reduce the risks associated with them. The task force should also consider how these building types can be more easily identified by the Fire and Rescue Service, the insurance industry and others.
- 17th December 2010 – Greater London Authority publishes its report in to fire risks in tall and timber-framed buildings, key findings and recommendations from the report are:-
 - There is a need to improve fire safety during the construction phase of timber-framed buildings. We call for a mandatory requirement to inform the Fire Brigade of new timber-framed sites so they are better prepared to tackle fires if they occur. Partial occupation of timber-framed sites should be forbidden.
 - The fire risk assessment process must be improved by ensuring the

Get Britain Building launches Plan B

people conducting them are properly qualified for the task. We call on the CLG to draw up mandatory minimum standards of competence for training and accrediting all assessors.

- Residents of tall buildings need better information about evacuation procedures and the way DIY modifications, like installing extra plug sockets, can compromise fire safety measures.
- The CLG should ensure all social landlords publish a full register of fire risk assessments online; provide existing and new residents with better information about what to do in the event of fire; and ensure that inspecting for unauthorised or damaging works are part of routine estate inspections by housing staff.
- Anecdotally it is reported that some HSE officials are insisting on two means of fireproof escape from buildings over 3 storeys high and that construction to take place at least 25 metres from adjacent occupied buildings.
- The CLG Fire Statistics Monitor April 2009 to March 2010 makes a special analysis of fires in buildings of timber frame construction. One conclusion arrived at is that, "The distribution of the area of damage for buildings under construction of i) timber frame and ii) no special construction gives the impression of differing patterns between buildings" There were 9 fires in timber frame buildings under construction where fire and heat damage was over 100m² in extent and the same number of fires for dwellings of no special construction. Considering that only 20% of dwellings under construction were timber framed and very few other buildings are then arguably fire damage of 100m² in extent was at least five times more likely and probably more than ten times more likely than for other buildings under construction.

Get Britain Building, the largest coalition of those involved in, and concerned with the built environment, has launched 'Plan B', which aims to unite the industry behind a common plan to return to economic growth for the good of UK plc.

'B' is, perhaps obviously, for Building and the plan sets out the economic and social benefits of continuing to invest in the construction industry: a realistic and accessible way to create two and a half million real jobs, maintain manufacturing capacity and the skills needed for the long term prosperity of the nation as a whole.

Commenting on the launch Mike Leonard, spokesperson for GBB and Director of the MMA said, "The market for new homes is showing signs of softening and we are facing up to the biggest public sector cuts of our lifetime which are becoming ever clearer in the days and weeks that have followed the Spending Review on October 20th. There has never been a more important time to unite as an industry and make sure our politicians know and appreciate the contribution that the building industry can make to the long term economic recovery of Great Britain.

The Coalition Government is clearly committed to massive spending cuts and tax rises to reduce the massive debt burden. Rising unemployment is likely to be one of the consequences of this action and it is for this reason that we believe that having our Plan B is vital for maintaining and creating real jobs."

Every £1 invested in construction generates £2.84 in GDP; provides 56p return to the Exchequer and retains 92p within the UK. The construction industry consists of 300,000 companies, 3,000,000 employees – representing 10% of GDP and 8% of the electorate.

Construction equates to sustainable economic growth and real jobs; and Plan B would save or create tangible opportunities for design; professional and technical services; builders and allied crafts and trades; mining and quarrying; manufacturing and distribution; fixtures and fittings and installers; building material supply chain, contractors and

sub contractors and plant equipment; conveyancing and estate agencies and social housing providers and maintenance to name but a few...

Mike, together with the BMF, FMB and the HBF took Plan B to the Liberal Democrat, Labour and Conservative Conferences in September and early October and had many meetings with MPs and political commentators as well as speaking at fringe meetings.

Mike Leonard says, "We are now starting to understand the scale of the cuts but have yet to feel the consequences. It is vital that everyone on CBA plays their part in contacting their local MP and Councillors to ensure they understand just how vital our industry is to future employment and economic recovery of the UK, we have only to look across the water to Ireland to see the what happens if you don't find ways to grow our economy and create wealth and employment"

For more information and show support for Plan B visit

www.getbritainbuilding.org

or contact

Mike Leonard on 07778 842831

or by email:

mike.leonard@modernmasonry.co.uk

Plan B

Create 2.5 million real jobs

Every £1 invested in construction generates £2.84 in economic activity. 56p of every £1 spent on construction is retained in the UK.

Download Plan B and call your MP:
WWW.GETBRITAINBUILDING.ORG

Changes to regulations



Late 2009 saw consultations on proposed revisions to Part L of the Building Regulations for England & Wales and Section 6 of the Building Standards for Scotland. CBA Technical Committee submitted comments to both consultations.

Both sets of new Regulations came into effect on 1 October 2010 and follow largely the same lines as they both reflect the software used to calculate CO₂ emissions, SAP2009 for dwellings and iSBEM for other buildings.

Both sets of regulations have changes impinging on our business and these include:

- Improvements to fabric U-values
- The introduction of thermal mass as a factor to be used in CO₂ emissions calculations
- New procedures for dealing with thermal bridging
- Requirements for addressing the heat lost by the recently identified separating wall thermal by-pass mechanism

At the consultation stage we welcomed the introduction of the recognition of thermal mass. This will give us a small but useful benefit in CO₂ emissions calculations for the 2010 regulations.

Along with many other commentators we were critical of the plans to set up a scheme to provide quality assured accredited construction details (ACD) for England & Wales with a 25% loading applied to all accredited construction details (ψ -values) used which were not sourced from such a scheme. We took the view that applying loadings to input values for CO₂ emissions calculations not quality assured was the thin end of the wedge and if accepted for ACDs it left the door open for all values used in calculations to have a loading applied if not governed by a QA scheme. This objection was not heeded and Government have since found difficulty in getting a scheme off the ground. CLG wanted several providers, rather than repeat the monopoly situation

currently enjoyed by Robust Details Ltd so there are 3 companies in the frame hoping to provide quality assured ACDs. Industry, including CBA, has called for there to be one scheme and 3 providers if we must have such a scheme. It now appears that we will have 3 schemes and 3 providers which is the worst possible outcome for us as this will be the most costly outcome and the distinct possibility that we will need to have ACDs available in all 3 schemes.

In the meantime, default ACDs with no applied 25% loading, have been specially added to the guidance on how to use SAP2009, for use as a temporary measure. CBA is now in discussions with potential ACD suppliers about ensuring that suitable generic ACDs are available for members to use.

Scotland has not gone down the same path but produced a new set of ACDs available for free download.

CBA comments on some woolly proposals for a massive and costly training programme for the whole construction team so as to ensure better compliance with the regulations were heeded.

We pointed out that site supervision was needed and this would be less costly to apply and achieve better results than the training programmes proposed.

CBA guidance on meeting the U-value requirements, Robust Details designs to address the separating wall thermal by-pass, where to find thermal bridging solutions and values to use for thermal mass in SAP and iSBEM calculations (ψ -values) is available for builders in the form of flyers covering Part L1A of the England & Wales regulations and Section 6 of the Scottish regulations. The information is also available for all on the CBA website.

Part L1A in England & Wales is off to a slow start as the bank of plot registrations is expected to carry many home builders into 2012 before they have to apply the new requirements. This slow start is helpful to CLG as SAP2009 and iSBEM were not available for 1 October 2010 and their quality assured ACD scheme will take several more months to get established.

Further changes are proposed to the thermal regulations for 2013 and 2016, but CLG staff reductions and whether there will be the funding to pay for the consultants used to prepare recent changes to Part L could make these revisions problematic. Notwithstanding these difficulties, it is expected that the Industry Advisory Groups will be invited to meet in 2011 as the first stage in the consultation process for the 2013 revision of the England & Wales revision regulations.

CBA comments on the apparent fixation with reducing elemental U-values with every step change to the regulations, so much favoured by insulation manufacturers, are now being heeded as there is now a recognition that these are leading to diminishing returns. The end point for elemental U-value changes is expected to be reached with the 2016 regulations.

SAP2009



CBA commented on this consultation initiated by BRE who developed the CO₂ emissions software. Our comments were largely favourable as one of the significant changes was that thermal mass was proposed for inclusion in the calculation process.

We took the opportunity to complain about the illogicality of applying a penalty of 25% to other than quality assured ACDs in the hope that it would have some effect but we were told that SAP2009 had to reflect the decision of CLG.

Code for Sustainable Homes



A consultation on the proposed revision of the Code for Sustainable Homes (CSH) to bring it into line with the new thermal regulations for England & Wales took place. CBA argued that the proposal to remove the sound insulation indicator in favour of indicators such as security was wrong as sound insulation was an important aspect of sustainability and the security requirements being advocated were often

demanding by insurers anyway. The revised Code for Sustainable Homes (CSH) has kept sound insulation as an indicator and not included security as we proposed.

Zero carbon



The previous Government introduced the concept of zero carbon buildings and it soon became clear that the term needed defining were it to progress beyond being more than a sound-bite. We are now close to having a quantified definition or, more precisely, 2 linking definitions according to home type.

The Zero Carbon Hub has been working to clarify definitions and achievable targets and to make proposals to Government. They have held 2 series of workshops designed to obtain industry input to their findings and proposals. CBA have attended both and given aggregate block industry input.

We are now at the point where so-called Fabric Energy Efficiency Standards (FEES) have been accepted by government as the end point for 2016 (for dwellings in England & Wales) in order to meet zero carbon requirements. These are:

- For detached, semi-detached and end of terrace homes 46KWh/m²/year
- Terraced homes and apartments 39KWh/m²/year

The use of fabric energy efficiency levels is intended to provide flexibility of design choices.

The final stage in the process of setting the parameters for zero carbon compliance is to set the compliance levels and the following have been put forward to Government:

- For detached homes 10kg CO₂/m²/year
- For other homes excluding apartments 11kg CO₂/m²/year
- For low rise apartments 14kg CO₂/m²/year

Other building types in England & Wales will need to be zero carbon by 2019.

Different objectives and timetables apply in Scotland.

Robust details



It was clear that the changes to the Building Regulations calling for measures to address the separating wall thermal by-pass could most easily be met by filling the cavities of separating walls with mineral wool. That would mean amendments to all the robust details for such walls which were

generally for clear cavities. As both CBA and APA were affected by this and the mineral wool industry had the most to gain CBA approached Eurisol, as the trade association for the mineral wool producers, (now called MIMA) to see whether we could work together with them to save duplication of effort and costs.

As a result a consortium of APA, CBA and MIMA worked together and all the lightweight aggregate block RDs using blocks with a density of 1350-1600kg/m³ and all dense aggregate block RDs using blocks with a density of 1850-2300kg/m³ have now been amended to permit them to be filled with either blown or built-in mineral wool.


This was the outcome of a test programme on walls sound tested before filling, retrofitted with blown mineral wool and the walls being made good and then sound tested again. This demonstrated that there is little effect on the acoustic performance of walls as a result of filling 75mm cavities with mineral wool although improvements in performance are possible with wider cavities and consequently opportunities for more CSH credits. Filling the cavities of timber-framed separating walls appears to reduce the acoustic performance.

The RDs which can now be filled with mineral wool to comply with Building Regulation requirements is given below.

Robust Details code	Mineral wool filled cavity width	Block type	Block type
E-WM 1	75mm	Dense (Density 1850-2300kg/m ³)	Plaster
E-WM 2	75mm	Lightweight (Density 1350-1600kg/m ³)	Plaster
E-WM 3	75mm	Dense (Density 1850-2300kg/m ³)	Parge coat and drylining
E-WM 4	75mm	Lightweight (Density 1350-1600kg/m ³)	Parge coat and drylining
E-WM 11	100mm	Lightweight (Density 1350-1600kg/m ³)	Parge coat and drylining
E-WM 16	100mm	Dense (Density 1850-2300kg/m ³)	Parge coat and drylining
E-WM 17	75mm (Incorporating Isover mineral wool)*	Lightweight (Density 1350-1600kg/m ³)	Drylining on dabs
E-WM 18	100mm	Dense (Density 1850-2300kg/m ³)	Plaster
E-WM 19	100mm (Incorporating Monarfloor Bridgestop)*	Lightweight (Density 1350-1600kg/m ³) or dense (Density 1850-2300kg/m ³)	Parge coat and drylining
E-WM 20	100mm (Incorporating Isover mineral wool)*	Lightweight (Density 1350-1600kg/m ³)	Drylining on dabs



Eurocode 6

 Eurocode 6 commonly known as EC6 (BS EN 1996) replaced BS 5628 as the UK design code for masonry on 1 April 2010 when BS 5628 was withdrawn. It should be used for all buildings other than small dwellings and similar small buildings of up to 3 storeys although it is still possible to design to withdrawn standards such as BS 5628.

EC6 requires the normalised strength of masonry units rather than the unit strength. This takes into account the effect of unit shape (width and height) and is needed as units in mainland Europe are traditionally made to different dimensions to those used in the UK.

A new CBA data sheet giving normalised unit strengths is now available for download on the CBA website. This enables normalised strengths to be identified for all common unit strengths and sizes.

CBA has participated in the development of design guides explaining how to use EC6 and in the preparation of the national annexes to the various parts of EC6 which give values to be used in the UK where national choice can be exercised.

Early feedback from designers using EC6 is that it produces more conservative designs than designs to BS 5628 so these designers have been reverting to BS 5628. Work is continuing to find ways to correct the conservative design outcomes using EC6 which are permissible within the limits imposed by the standard.

PD 6697 (Recommendations for the design of masonry structures to BS EN 1996-1-1 and BS EN 1996-2)

The withdrawal of the three parts of BS 5628 with the introduction of EC6 saw the loss of BS 5628-3 which provided much

basic guidance on the use of masonry as well as aspects of BS 5628-1 and BS 5628-2. This information is not to be found in BS EN 1996-2 which is the part of EC6 closest in content to BS 5628-3. A consortium of masonry associations, APA, BDA and CBA helped fund the production of PD 6697 called a 'Published Document' by BSI so as to ensure this vital information on the use of masonry in the UK is in a current BSI document and not lost.

Sustainability



EN 15804 'Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products' is expected to be published in 2011 after a lengthy series of working group meetings which has seen an ISO standard published in 2007 being extensively adapted for publication and use as a CEN standard.

This new standard will provide a standardised basis for environmental profiling in Europe. It will open up the market to organisations other than BRE in the UK to carry out product profiling but BRE will still have the links to the Green Guide and Ecohomes/Code for Sustainable Homes.

We have been actively involved in the process of developing this standard to provide a manufacturing input and balance.

ISO 21929-1 'Sustainability in building construction – Sustainability indicators – Part 1: Framework for the development of indicators and a core set of indicators' is also getting close to publication. It introduces all three pillars of sustainability and thus includes fire safety, sound insulation, serviceability, maintainability and adaptability as sustainability indicators.

We have been actively involved in the drafting and development of this standard.

BS EN 771



We should see amended versions of BS EN 771-3 and BS EN 771-5 published this year as all parts of EN 771 have been revised in a similar manner. The changes will be largely superficial but readers will find a new annex on factory production control. However, it has been ensured that this is guidance only and so general in nature that it is only an example of a scheme.

A more comprehensive review of the EN 771 series of standards will commence in 2011 where we expect to continue to play an active part. At this time, changes to address sustainability related issues will need to be considered and I chair the committee in CEN/TC125 (the European masonry standards committee) responsible for developing the sustainability content for masonry standards.

Construction Products Regulation (CPR)



After a long debate and numerous changes the CPR has completed its various committee stages and is expected to come into force in July 2013 and replace the existing Construction Products Directive. The major impact on the UK building materials industry will be that CE marking of products will be mandatory under the CPR. Being a regulation rather than a directive means that it becomes law in all EU member states without the need for national implementation. Various briefing and discussion meetings with CLG and other industries are anticipated to understand how the CPR will be understood in the UK as there are always issues relating to language and interpretation of terms used. After that process we will need to review exactly what information will need to be given on CE marking of aggregate blocks and we will consider preparing any necessary guidelines for CBA members.



A subdued 2011 is likely for concrete blocks

By Glen Ford, HobsonFord Associates

2010 was a better year than many people dreaded, but there are few signs of a sustained recovery that will return volumes to pre-recession levels in the near term. The main opportunity is further afield, when inevitably the dire shortage of housing will have to be addressed.

The chart below summarises the total of aircrete and aggregate concrete block sales since 1970, with the respective colours indicating the various economic periods. Previous recessions have been typified by a sharp recovery after the recession has reached its bottom – with volumes rebounding by an average of 26% within 2 years of the end of the recession. But that is unlikely to be repeated over the coming years because of problems with mortgage finance, the main constraint on new housing.

This is a financial constraint on demand – not a reflection of a lack of demand for housing. But in the near term, reductions in public housing and a squeeze on consumers, via reduced disposal income and public sector job losses, will mean a mild double dip for the housing market, with activity continuing to soften in 2011. Likely rises in interest rates later in 2011 will mean no early change in sentiment should be expected.

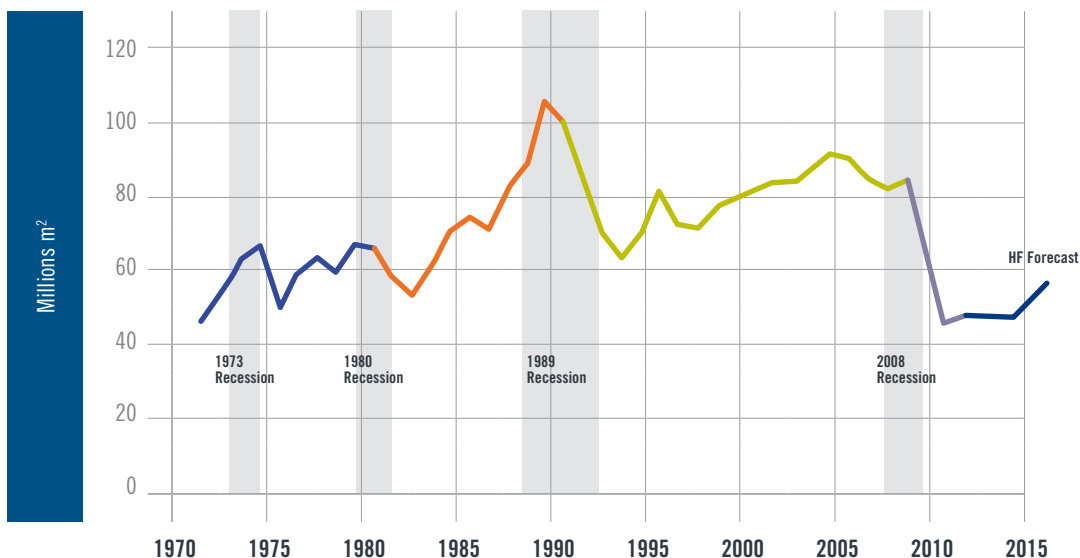
The housing market remains in major crisis – the demand for housing continues to outstrip supply, with population growth at record levels, at around 400,000 per year, compared to around 100,000 per year over the 30 year period from 1971 to 2001. This means the underlying demand for housing is much greater than it has

been in the past – but this is unlikely to feed through to substantial increases in new build in the near future because of finance constraints.

The non-housing market will be affected by the squeeze on public finances in the near term also, as confidence will need to strengthen before we will see renewed and sustained growth.

Our central forecast is for subdued demand in 2011-2012, as the economy absorbs the effects of public sector cuts. The potential for substantial upside is clear, but there is far too much uncertainty to predict when this will translate into volumes or even how, as the current model of high home ownership seems in doubt given the ongoing problems with mortgages.

Aircrete and Aggregate Block Deliveries for Great Britain (source: Government statistics)



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Achieving ISO and gaining competitive advantage

CBA members may be aware that British Precast launched their "Raising the Bar" scheme in London on the 10th February, 2011, to comply members are required to:-

- Sign up to the British Precast "Sustainability Charter"
- Provide Key Performance Indicator (KPI) data on an annual basis
- Agree to a set of Objectives and Targets for the concrete industry and
- Implement an Environmental Management System (EMS), complying with ISO 14001

By raising the Bar, members should not only demonstrate improved sustainability credentials, but also gain competitive advantage. Financial savings often outweigh the cost of gaining independent certification to ISO 14001.

A convenient way of getting started on the EMS journey is to carry out a "Baseline Review" of your current environmental credentials, this helps answer some important questions:

- Is an Environmental Policy in place, appropriate to your business activities?
- Is the company fully aware of all appropriate Legal & Other Requirements?
- Are systems in place to identify and prioritise significant environmental aspects & impacts?
- Are all appropriate procedures in place to meet the requirements of the ISO 14001 standard?
- Are KPI measurements in place, covering raw materials, utilities, waste and training etc?
- Have objectives and targets been set to demonstrate continuous improvement?

Once this review has been carried out over a 2-3 day period, an implementation

plan is designed to put in place necessary policies and procedures to enable independent certification. A lot of the procedures needed to show compliance simply involve documenting what your business is already doing and once in place, you can expect to achieve tangible benefits from:

- Documenting existing activities means that these duties are carried out more consistently and records maintained to demonstrate what is and isn't being done.
- Expressing KPI data in terms of "units per tonne product" and submitting the data to British Precast for analysis, can help identify poor control and waste of resources after comparison is made to industry benchmarks. Recent examples where companies have seen real benefits include:
 - Identifying a long-standing water leak after comparing actual water usage to the industry standard
 - Theft of diesel discovered after benchmarking annual usage of fuel use per tonne product moved in the yard
 - Waste levels to be far worse than expected, after monitoring different waste streams and disposal routes
 - Discovering very low alternative cementitious materials and secondary aggregates usage until benchmarking with raw material usage data
 - Excessive consumption of energy per tonne, encouraging the introduction of an energy efficiency program. This resulted in excellent suggestions from the workforce as to where energy was being wasted.
- Increasing awareness of legal compliance issues companies frequently identifies business areas

that fall short of meeting Local Authority Permits, Waste Duty of Care and water discharge / abstraction licences etc. Once these problems are corrected, risk of legal non-compliance is minimised. For instance one manufacturer was not aware that the Packaging Waste Regulations affected them until they carried out a "Baseline Review". They immediately joined a Packaging Compliance Scheme and have avoided prosecution by the Environment Agency.

- Having independent confirmation that your policies and procedures meet ISO 14001, allows companies to substantiate their "green credentials" in marketing literature and web sites etc.

Finally, gaining independent certification to ISO 14001 can have direct benefits in securing new business. As Building Regulations become more onerous and schemes such as the Code for Sustainable Homes and Responsible Sourcing of Materials (BES 6001) are adopted in the construction industry, specifiers and architects need to demonstrate that the materials included in their designs are increasingly more "Sustainable".

Concrete product manufacturers are now being asked for proof that they have independently certified ISO 14001 in place as part of the tendering process, since it helps gain points during Code for Sustainable Homes and BES 6001 assessments.

If you need advice on any of the issues raised in this article, one route would be to contact Norman Richards, who is the Environmental Consultant appointed by British Precast to administer the "Sustainability Charter" scheme and provide guidance and support on your Environmental needs.

Contact details:-

Office 0116 253 6161
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A whole life CO₂ argument for concrete blocks



In an age of growing environmental awareness, the use of concrete in buildings can lead to questions regarding its embodied CO₂. Often it is perceived as higher than that of many alternative construction materials. In the case of timber frame housing, the difference compared to masonry construction is actually quite small at around 4-6% for the average house. This is because with the exception of the blockwork and timber frame, all the other construction materials used are common to both house types and account for most of the embodied impacts, for example, UPVC windows, brick facade, roof structure, carpets etc. Over the life of a masonry home, this difference becomes even less significant since the CO₂ emissions resulting from heating, lighting and hot water will be many times greater.

So, this puts the embodied CO₂ issue into context, but there is another important factor to take account of, which is the affect of the thermal mass provided by the blockwork. Over the life of the building, this has the potential to tip the overall CO₂ balance in favour of masonry construction. Blocks and other heavyweight materials can enhance fabric energy efficiency in well insulated homes by capturing and later releasing free heat from the sun and internal sources such as cookers, electrical appliances and people. This in turn can reduce the load on the boiler and, over time, offset the slightly higher embodied CO₂ in a masonry home. Put another way, these savings can be viewed as payback for the investment in the embodied CO₂ of a block inner leaf.

This sounds good in theory, but to establish the credibility of this argument The Concrete Centre commissioned Arup to compare the embodied and operational CO₂ emissions of a masonry home with an equivalent timber frame home, taking into account the likely impact of climate change on their thermal performance over the 21st century. The reason for factoring this in was to include the affects of our warming climate and the ability of thermal mass to avoid or reduce the future need for domestic air-conditioning; another likely source of domestic CO₂ emissions in the coming years.

The research showed that the additional embodied CO₂ in an average semi-detached masonry home can be offset in as little as 11 years if the design seeks to include the following:

- High levels of insulation and airtightness
- Some south facing windows to maximise solar gain in winter
- Continuous background heating (young family, retired occupants, underfloor heating).

The research also showed that increasing the thermal mass further by, for example, including a concrete upper floor will increase the offset period due to the higher level of embodied CO₂, but further reduces annual emissions, ultimately leading to the lowest whole life CO₂ footprint of all the options considered in the study. To put these findings into context, the overall CO₂ saved (embodied and in-use) over the 21st century when compared to the lightweight home was around 7-10% for a typical masonry home with a timber upper floor, and 10-15% when a concrete upper floor is added. Whilst this study was completed back in 2006, a recent check

using the latest embodied CO₂ data for construction materials confirmed the research remains valid.

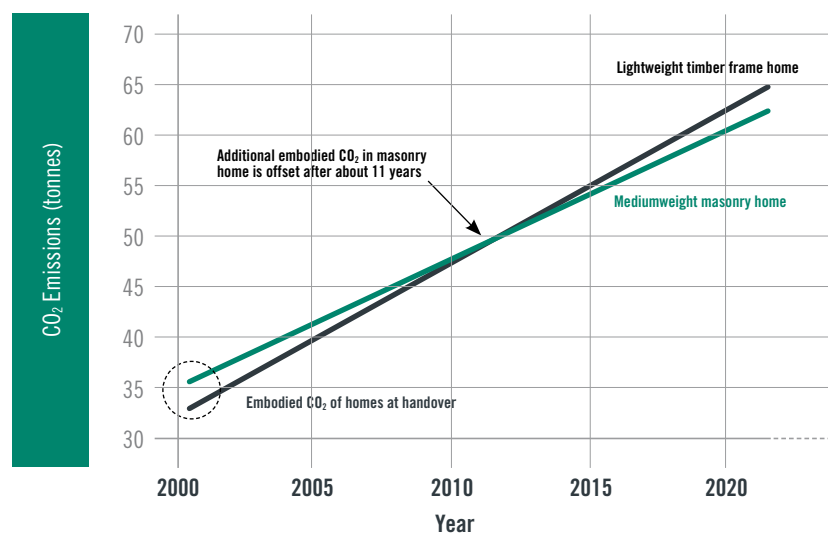
For more information, a technical paper on this research can be downloaded from the Concrete Centre: www.concretecentre.com/Embodied_and_operational_carbon_dioxide_emissions_from_housing

Conclusions

The thermal mass in concrete blocks has an important role to play in the 21st century by helping to both mitigate and adapt to climate change. The potential whole life CO₂ savings provided by blocks can outweigh any additional embodied impacts when compared to timber frame construction. Whilst it may not always be possible to realise these savings, thermal mass is nevertheless playing an increasingly important role in fabric energy efficiency and recent changes to construction regulations and standards are beginning to reflect this.

Tom De Saulles
MPA – the Concrete Centre

Embodied and in-use CO₂ emissions from light and mediumweight homes (North/south orientation, continuous heating). Arup/TTP research, 2006



Dates for your diary

British Precast / Masonry First	Tuesday 1st – Thursday 3rd March	Ecobuild	ExCel, London
CBA	Wednesday 9th March	CBA AGM	Nottingham
	Tuesday 15th – Thursday 17th March	National Institute of Housing (Scotland) Annual Conference and Exhibition	SECC, Glasgow
	Thursday 24th – Sunday 27th March	The National Homebuilding and Renovation show	NEC, Birmingham
ICT	Wednesday 13th – Thursday 14th April	39th Annual Symposium National Structural Concrete Specification Use and Application	Staverton Park Hotel, Daventry
British Precast	Wednesday 18th May	Precast 2011 – Annual Conference and Awards Lunch	Ramada Jarvis, Leicester
	Saturday 21st – Sunday 22nd May	The Scottish Homebuilding and Renovation show	SECC, Glasgow
BIBM	Thursday 9th – Friday 10th June	BIBM Congress and Exhibition	Centre of Congress Acropolis, Nice
CBA	Wednesday 15th June	CBA Council meeting	
SAIE	Wednesday 5th – Saturday 8th October	SAIE – Precast Technologies	Bologna Fiera, Bologna, Italy

CBA technical helpline

CBA Technical Helpline is staffed on a rota basis by volunteers from the Technical Committee. Its function is to promote the use of aggregate blocks and raise the profile of CBA and its members. This it does through the provision of free technical advice on the selection and correct application of aggregate concrete blocks.

By accessing www.cba-blocks.org.uk, enquirers have the option of sending their enquiry by email or by telephone. Those seeking advice include members of the general public, builders, architects, engineers and members of CBA



Most questions posed are relatively straightforward but by no means could all of them be so described.

CBA Technical Helpline: 0116 222 1507

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