CIB TG85: R&D Investment and Impact

Outcomes of Webex 8 - 5th February 2013 (11 – 12 pm Brisbane, Australia time)

Attendees: Bakens, Wim; Bottura Barros, Mercia; Bougrain, Frédéric; Bröchner, Jan; de Oliveira, Lucia Helena; Hampson, Keith (Coordinator); Haugbølle, Kim; Heyblom, Tom; Kadefors, Anna; Sanchez, Adriana; Slaughter, Sarah; Staub, Alexandra (Speaker); Støre Valen, Marit; and Shen, Geoffrey.
Apologies: Airaksinen, Miimu; Cardoso, Francisco; Chapman, Robert; Chi, Seokho; Dewulf, Geert; Kraatz, Judy; Lehtiranta, Liisa; Leiringer, Roine; Mikkonen, Virpi; Nenonen, Suvi; Nüsse, Gregor; Robinson, Aminah; Thomas, Ken; and Wilkinson, Suzanne.

PRESENTATION – Alexandra Staub, Department of Architecture, Pennsylvania State University, U.S. – Germany: Researching Sustainability (click to view)

- Most R&D investment in construction innovation is done either through the federal or local government, sometimes jointly.
- The main funding body for construction R&D is the Federal Ministry of Transport, Building and Urban (BMVBS).
- Policy directions for funds allocation (1990 - 2010):
  - Technical improvement of building material and elements
  - Lower building cost (e.g. new material and procedures)
  - Sustainability in construction (e.g. energy saving measures, sustainability standards, material recycling, etc)
  - Studies with outcomes that can potentially change socio-political policy directions (e.g. single family housing, homes for the elderly, etc)
- There are two R&D public funding models in Germany:
  - The Federal government issues a request for proposal to which universities and other research institutions can respond to
  - Individual submissions are accepted twice a year for project funding proposals.
- Three case studies:
  - Baukulture (culture of building) was started by the Federal government in 2001. It was integrated into the national building code in 2004. Thereafter, every new building project has to consider the culture behind the design and development.
    The program *3stadt2* was carried out between 2002 and 2003, under the umbrella project Experimental Housing and Urban Design (ExWoSt). This program sponsored five model projects aiming to link community groups with public-private partnerships, with a special focus on the process behind the creation of these links. These projects were:
    - Bielefeld: restructure and expand a district at the city's edge
    - Beuel: new focus after the German capital moved from neighbouring Bonn to Berlin
    - Gelsenkirchen-Buer: counter unemployment and an eroding retail base
    - Lübeck: design a new quarter as a backdrop for the local university
    - Osnabrück: expand its concept of "*area recycling*" to renew a quarter without expanding the city's built-up surface.

    Each project had a large scale outlook and needed to develop a master plan to find new decision-making processes. The results were monitored and evaluated to determine whether the developed tools functioned as intended. Although the aim

was to develop quantitative instruments, in some cases the results were almost anecdotal.

Bielefeld and Osnabrück developed planning processes that brought together municipal planners, investors, and the public.

- Planning for Climate Change: formal efforts in this area started in 2007. The Federal government made clear that the general population had to agree with any policy decisions that would create behavioural changes.

  In 2007, the German Government initiated a series of studies relating to climate change, spatial planning and energy concepts. The scale ranged from regional to individual built objects.

  Modelvorhaben der Raumordnung (MORO) project "Raumentwicklungsstrategien zum Klimawandel" (spatial strategies for climate change) (2009-2013) is a two-phase planning study. Under this project, climate change adaptation strategies were developed and tested in eight regions encompassing different climate types. This project also included a study of climate change factors that have already been considered in regional planning by communities.

  Another study was done in 2008 to analyse building codes that would have to change to accommodate extreme weather conditions and thermal comfort, as well as an examination of the effects of expected climatic changes.
- Houses as Power Plants: currently, there is a trend towards projects that study energy consumption reduction in housing construction and operations.

  The Federal government has sponsored numerous projects to develop energy-plus houses (i.e. houses that produce more energy than that consumed).

  Development of energy-saving buildings and construction in Germany has been characterised (1977–2012) by 10-20 years delay between the energy requirements of what is technically possible and what is required by the national legislation. The government sponsors: (i) research to lower the energy requirements; and then (ii) studies to adjust the building code accordingly.

  The commercially available prefabricated "plus-energy" house (developed by the HUF) is an example of successful outcomes from public-private partnerships in this space. The energy efficiency tests were supervised by the Fraunhofer Institute.

  Some of the outcomes from government sponsored research in housing have also been developed to support the automotive industry, so the extra energy produced by the house is used to power electric cards (e.g. Effizienzhaus Plus mit Elektromobilität", 2011).

  The government has also made considerable efforts to increase awareness of these research outcomes among the general community.

Discussion

- The fact that building practices are ahead of the legislation is a little surprising, since commonly changes in the building codes take time to be implemented. It would be interesting to understand what mechanisms are in place to assure compliance, and whether or not there are regional differences.

TG85 PUBLICATIONS

General

- A TG85 congress paper session is being planned for May 7th between 3 and 5 pm, followed by a TG85 WebEx meeting and a social gathering over dinner and drinks.
- Members planning to attend the WBC13 should contact Keith or Adriana to RSVP.
- TG85 has received a Commendation Award from the CIB Programme Committee for *the most remarkable contributions to CIB from amongst the Commission and Theme Group Coordinators and Members*. This is a great acknowledgement of the team effort that has led

to the Task Group outcomes. Keith suggested that the award be collected by TG85 members attending the WBC13.

- The TG85 will consider participation in the *Construction Research Client Roundtable* to be organised by the CIB.

WBC13 Individual Congress papers

- Final version of WBC13 papers due on February 22nd. Any members who have not received comments from the reviewers should contact Keith or Adriana. This paper (and process) is independent from the TG85 book chapter.

CIB TG85 Book

- The quality of the first drafts has been great and we are moving towards standardising the format and language across all country chapters.
- Final chapter draft deadline has been moved to 22 March 2013. Timely submissions will be greatly appreciated in order to meet the publishing schedule.
- A new date has been included in the schedule to allow minor refinements of the individual chapters (e.g. updating statistics): 31 May 2013.
- Launch might happen at TG85 conference organised by Aminah Robinson in Edmonton; confirmed date and some more details will be sent in the coming weeks to TG85 members, and posted on the CIB website.
- The book will include a section defining the construction sector in chapter two. However, certain concepts that might change between countries might be useful to be defined in each chapter (e.g. SMEs might have different definitions depending on the country).
- Chapter 22 will draw conclusions from all previous chapters and will be written by Keith, Judy and Rachel Parker. A feedback round is planned to include comments from the authors of the individual chapters.

CIB TG85 Industry Publication

- Naomi Herron will be working on an industry-focused publication to be launched at the WBC13 (tentatively on May 7th) based on the chapter drafts already delivered by the authors. The publication will be a short *taster* of the final book, including a broad outline of the sort of innovation that the TG85 is tracking, a representative sample of case studies, and the value of R&D as it relates to industry outcomes. No further work is envisaged from individual authors other than potentially answering some clarifying questions and supply of appropriate images. This publication will recognise the authorship of the individual contributing authors of the sections selected for the publication.

KEY DATES

- **22 Feb 2013 –** WBC13 final papers due
- **22 March 2013** – Final TG85 chapter draft due
- **20 April 2013 –** Final edited chapters targeted back to authors
- **5-9 May 2013** – WBC13 in sunny Brisbane!
- **7 May 2013** – WebEx Number 9, followed by dinner and drinks!
- **31 May 2013** – Final chapter manuscripts due (last chance to update or do final minor changes)

NEXT MEETING

- Tuesday, 7th May 2013 at 5 pm Brisbane Time.

Your participation has been terrific; we appreciate the efforts made by everyone in the Task Group that have led to our significant achievements!

CIB WBC13 and TG85 Publication Timelines

Milestones

19 Aug 2012	12 Sept 2012	16 Nov 2012	14 Dec 2012	22 Feb 2013	22 Mar 2013	5-9 May 2013	31 May 2013	2014
TG85 Proposal	Chapter 1st Draft (Outline & available data)		Chapter 2nd Draft		Chapter Final Draft	WebEx 9 Industry Publication	Finetuning	Published Book
WBC13 Abstract Deadlines		WBC13 1st Draft for Peer Review		WBC13 Final Draft		Present Paper		
19 Aug 2012		16 Nov 2012		22 Feb 2013		5-9 May 2013		