

## Supply Chain School Horizon Group Meeting

**Date:** Thursday 14<sup>h</sup> December 2017; 10am- 1pm

**Venue:** Hendon Campus, Middlesex University

**Attendees:** Laura Spence (*Royal Holloway, University of London – Chair*), David Rich (*Tarmac*), Martin Crow (*Hanson*), Anthony Lavers (*Taylor Wimpey*), Cathy Berry, (*Action Sustainability (AS)-Horizon Group Manager*), Erica Russell (*University of Surrey*), Tony Parry (*University of Nottingham*), Sophia Cox (*UK Green Building Council - UKGBC*), Maeve O’Loughlin (*Middlesex University*), Alice Owen (*University of Leeds*), Mohammad Rickaby (*University of Loughborough and Action Sustainability*), Friederike Holz (*Middlesex University*),

**Apologies:** Shaun McCarthy (*Action Sustainability*) Kieran Brocklebank (*United Utilities*), Vicky Hutchinson and Lucy Barton (*ISG*), Alison Bettany (*EMCOR UK*), Wyn Pritchard (*Neath Port Talbot College*), Paul Wyton and Ray Nolan (*Sheffield Hallam University*), Simon Tranter (*Willmott Dixon*), Mark Gaterell (*University of Portsmouth*), Stephanie Van De Pette (*Skanska*), Diego Vasquez-Brust (*University of Portsmouth*), Sophie Sharpe (*Costain*), Alexander Trautrimis (*University of Nottingham*), James Douglas (*Lendlease*), Donna Hunt (*Aggregate Industries*), Gareth Rondel (*Kier*)

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### Minutes of the Meeting/ Workshop

#### 1. Introductions

- Laura Spence welcomed everyone to the meeting

#### 2. Actions from previous meeting

- All actions from the previous meeting were completed.

#### 3. Brief School update

- Cathy Berry provided a brief update on School matters. Significant progress and additions have been made within the School including a) the FIR programme which has been successful in securing another 5 years of funding from CITB and has now employed a full time project manager. b) Two pilot category initiatives (plant and labour) have kicked off in November with significant support and ambition from supporting partners. Cathy noted that these groups were open to partners and academic members of the Horizon Group c) The BIM department on the school web-site has been launched and has been well received. This includes the BIM maturity matrix, which is now live and we request that all Partners actively adopt this. d) Measurement SIG; this group has now joined forces with Constructing Excellence to ensure alignment and a fully collaborative approach e) Board approval of an additional £20k seed funding for Horizon Group research that contributes to the School’s vision of a more sustainable built environment. The meeting slides will be circulated with these minutes for further information.

#### 4. SoSafe Project Update

- Maeve O’Loughlin presented the preliminary findings from her research into resilience engineering and the extent to which adaptive safety theory is adopted and operationalized in the construction industry. This study assesses the range of normal work completed and how it is controlled versus the expected work approach as prescribed by the documented rules and procedures. This new adaptive theory recognizes that performance is variable and recognizes

the need to adapt to demands of the specific job/unique circumstances and respond to the actual work done. Maeve provided an overview of her preliminary results which scored the 'journey' towards this 'new view' approach using 12 criteria, providing a % score for each criteria (the final 2 criteria had not yet been assessed). The group queried the scoring methodology to ensure understanding and briefly discussed the potential differences in views between company management and company operatives.

- Maeve's next step is to complete a full analysis and provide a report of her final results, findings and conclusions. Cathy Berry pointed out that the School's interest in this research lies in potential findings that could demonstrate improved social sustainability outcomes i.e. an improved understanding regarding how to treat your workforce to get better health and wellbeing outcomes. David Rich also noted that organizational culture plays a large role in how workers respond to work done, communication and reporting of issues and ultimately the delivery of safer working conditions. The group acknowledged that performance would vary between large organizations and smaller SMEs in the upstream tiers of the supply chain. Martin Crow queried the interview approach and shared his experience relating to the difficulties of pulling out the 'real' issues and the need to carefully consider how the findings are presented. Please see slides circulated with these minutes for more information. **Action: Maeve to submit her report early Q1 2018.**

## 5 Review and summary of research priorities

- Cathy provided a brief recap of the research priorities scoring summary as a result of member preferences, the emerging themes and the areas of interest noted within each theme. Potential funding routes were also presented. Erica Russell suggested that further engagement from within the School or other industry bodies would benefit the group as the scope and themes remain very broad. Cathy noted that she has been asked to present the themes and approach on behalf of the Group at the next School Board meeting in February and Construction Leadership Group meeting in April which may provide an opportunity to gain further input on specific areas of interest. Sophia Cox agreed to share the UK Green Building Council (UKGBC) findings relating to data gaps and industry pain points as a result of; the membership consultation, 360 degree feedback from Gold leaf members and findings from the 'State of Sustainability within the Built Environment' report. **Action: Sophia Cox to share UKGBC findings relating to data gaps and industry pain points. Action: Cathy to discuss further engagement needs with Laura and Shaun McCarthy**
- The group noted that Masters students could be engaged to help understand and provide a holistic overview of current industry practice in each priority theme area and Maeve identified that PhD students could share relevant work with the Group and there may be opportunities to dovetail School requirements into future PhD research.
- It was noted that short lead times around funding applications make responding more challenging. Alice Owen suggested compiling a series of 'ready' projects along the lines of the research themes so that the Group can respond quickly to funding calls. Laura Spence pointed out that this also means that we need to be aware of likely upcoming calls from funding bodies/Government. Tony Parry noted that typically applications need to be led by industry especially SME's and that School partners may need to be the lead bidder as the Supply Chain School is not an SME. Erica Russell identified the need to engage members and partners across the School that goes beyond membership of the Horizon Group. **Action: Cathy and Laura to consider how we can effectively access, co-ordinate and communicate information relating to up and coming funding opportunities and what proactive support is needed from Group members to facilitate this**

**6. Innovation Theme Presentation- Innovation in the construction supply chain: Insights and ideas from domestic retrofit- Dr Alice Owen**

- Alice presented an overview of her research on how innovation happens within supply chains related to domestic renovation to improve energy performance. The slides are attached with these minutes for more information. Although this research is pitched quite narrowly at the very fragmented housing retrofit sector (estimated to be worth approximately £10bn in UK - Installer Power 2015) some interesting insights emerged; these were:
- Technology for more energy efficient domestic retrofit is available but the biggest challenge lies with the people in the industry and influencing them to change behaviour to mainstream innovative solutions, i.e. Product development happens and low carbon solutions exist but market deployment is a key challenge and such solutions are not provided as standard but have to be specifically requested.
- Customers are not powerful in this very 'localized' domestic sector and the builders hold the power and control, typically relying on 'ossified knowledge' learnt from their bosses during their apprenticeship (Customers may be willing to pay more but the builder is risk averse and relies on practiced approaches and products and therefore the power of the customer is overstated and you effectively get what the system is willing and able to provide to you).
- Formal training is patchy and builders have embedded practices and habits that block innovation. However they are solution orientated towards everyday build problems arising on site but it's not unlocked to deliver more sustainable solutions.
- Due to the fragmented, small scale nature of the sector it is not possible to bring new knowledge/skills through training, CPD or procurement practices (meaning you are not able to centralize or control it to build momentum) but change needs to focus on individuals and the way relationships work across the sector.
- Networks are key to information sharing and the research focused on how networks function- inter-trade, intra-trade, SC's and customer social networks. It demonstrated that in the supply chain network the local Builders merchant plays a substantial role in what products/materials the builder will use. This is a result of what it is typically stocked and not necessarily what the architect demanded. This research recognizes that the customer/social network is vital as local builders ideally want to build their reputation meaning they don't even have to competitively tender for new work. This means that tendering is not a way of driving innovation in this sector.
- There are very limited feedback loops so learning and performance insight is not captured and acted upon.
- The discussion evaluated the extent to which these findings apply to the wider sector, the similarities and differences, particularly how in the wider sector decisions in one area have knock on impacts/limit opportunities elsewhere. The [Bonfield Review](#) was highlighted which proposes a quality mark for all energy efficiency and renewable energy measures for all companies operating in this sector. However the insights gained from discussions with local small-scale builders suggest that they see it as another set of processes and do not perceive that it would apply to them.
- It was recognized that knowledge gaps exist across the SC about understanding what is sustainable at customer/client and contractor level and the resource limitations of the many SMEs. There is a need to identify blockages and how innovation flows across the sector. A key conclusion was that this research suggests the need to engage with Builders Merchant is key and more insight is needed to understand what would motivate/incentivize them to change. There may be value in really 'unpicking' their role and identifying what sectors they could really help facilitate change. This may be an area we explore further as we now have Travis Perkins in the School and discussions are underway with Saint-Gobain who own Jewson.

- Alice highlighted two other potential areas for more research which were;
  - Further evaluation of the co-evolutionary framework concept on a new build or project to assess co-evolving systems and how they affect each other.
  - A comparison/evaluation between what you can do/achieve as a networked enterprise versus a real enterprise.

## **7. Industry Perspectives- Insights from Lendlease and Aggregate Industries about barriers to innovation and mainstreaming innovation.**

- Unfortunately James Douglas and Donna Hunt were unable to attend due to rail disruption. The slides are circulated with these minutes. Note that the last two slides in the Aggregate Industries deck are particularly informative.
- Martin Crow provided an overview of innovation within Hanson, which is mainly concerned with reducing carbon impacts related to its products, driven by a range of issues including cost, customer pressure and stakeholder pressures. A sector roadmap is in place to reach 80% carbon reduction, however further innovative solutions are needed to make up a 20% shortfall. Carbon capture and storage is considered the single biggest innovation to address this 20% gap.
- Lower temperature asphalt was highlighted as an innovative material which has a limited number of receptive and informed clients e.g. Highways agency and local authorities. Government procurement was recognised as a key factor driving innovation in this sector.
- David Rich noted the need to help customers/people think about what they use and how they can use it in a more innovative way e.g. titanium dioxide in cement and concrete can be used to absorb pollutants from the air. It is useful to think through both the attributes and the benefits of what the customer is buying e.g. a loft extension not only provides more living space it also provides energy efficiency.
- Anthony Lavers also mentioned the importance of behaviours, particularly the use of 'nudge theory' in policy-making. This looks at how people make choices and then tests small changes in the way those choices are presented, to nudge people into making better decisions. Nudge is not considered so effective in modifying operational behaviours however.
- Alice noted that policy makers aren't really engaged in domestic energy retrofit possibly because the problem is too big but her research did highlight some further research opportunities which may be of value to the Supply Chain School:
  - 'Un-picking' the role of builders merchants/wholesalers to gain more understanding about what products/sectors they could positively influence and how they could deliver better sustainability outcomes.
  - Further evaluation of the co-evolutionary framework concept on a new build or project to assess co-evolving systems and how they affect each other.
  - A comparison/evaluation between what you can do/achieve as a networked enterprise versus a real enterprise.

## **7. AOB**

- Sophia Cox provided an overview of UKGBC. This consists of 430 diverse member organisations and is active across 4 areas; networks, education and learning, policy and

advocacy, research and innovation. The approach to research activity and funding is not clear cut and is evolving. UKGB has undertaken an exercise to establish industry 'pain points' by consultation with its membership and its 360 degree feedback of 'Gold leaf' members. The ['State of Sustainability in the UK Built Environment'](#) has also provided some insights into research gaps or areas where research needs updating. **Action: Sophia Cox to share UKGBC findings relating to data gaps and industry pain points.**

- UKGBC has recently set up an academic forum to improve engagement with Universities and to help identify how they can contribute to the evolving research agenda. Sophia will sit on both groups and ensure that we work together effectively and do not duplicate activity.
- Erica Russell requested that we develop a short summary of key meeting insights and outputs so the useful discussions are not lost and that our activity is widely shared across the School. **Action: Cathy Berry to pull together a short summary for circulation to the other School Groups**
- Cathy suggested that the next meeting topic focus in the circular economy (CE). Tony Parry's CE metrics project will be completed and Jacqui Glass has introduced us to her colleagues at Loughborough uni who are keen to share their current research in the construction sector. **Action: Cathy Berry to organize next session focusing on Circular Economy**
- Tony Parry indicated that the CE metrics project is progressing with case studies being written up and requested suggestions from the Group for key publications to reach out to. Edie, Ends, Construction News (subscription required), IEMA and the School and UKGBC newsletters were suggested.
- Maeve O'Loughlin asked the group if any members of the team would consider providing a short workplace internship for Masters level students studying Sustainability and Environmental Management. This is 150 hours of work that could be in blocks of 2 weeks or one day per week for a set duration. **Action: All members to contact Maeve for more information if they may be in a position to help.**

#### 7. Actions:

- Maeve to submit her research report findings early Q1 2018.
- Cathy and Laura to consider how we can effectively access, co-ordinate and communicate information relating to forthcoming funding opportunities and what proactive support is needed from Group members to facilitate this
- Cathy to discuss further engagement regarding research themes with Laura and Shaun McCarthy
- Sophia Cox to share UKGBC findings relating to data gaps and industry pain points
- Cathy to pull together a short summary for circulation to the other School Groups
- Cathy to organize next meeting which will focus on CE in construction
- All members to contact Maeve for more information on Masters students internship (150 hours of work) if they may be in a position to help

**9. Next meeting**

- **Date:** Monday 19<sup>th</sup> March 2018- 10.30-13.30
- **Venue:** London or other southern based- venue TBD. **Please contact Cathy Berry if you are willing and able to host.**