



## FISSAC Living Lab meeting #2, 2017-02-01

### Summary

The discussion question of FISSAC Living Lab meeting #2 in Sweden was:

*“Logbook of the Future - what kind of information should it entail and how should it be used so that it would function as a helpful tool for increasing circular material flow in the construction sector?”*

The discussion topic was proposed by the Swedish Construction Industries during Living Lab meeting #1 and welcomed by the other Living lab participants.

### Participants of the Living Lab meeting #2

In total 20 persons: **Ylva Wilder**, Master Student specialised in circular material flows in construction sector; **Peter Selberg**, R&D Strategist Johanneberg Science Park and Riksbyggen; **Lisa Elfström**, Vice President and Marketing Director at SundaHus (company providing tools for conscious material choices in construction; also participant in the Horizon2020-financed project BAMB); **Wolfram Oettel**, researcher at Swedish Cement and Concrete Research Institute; **Pernilla Johansson**, researcher at Technical Research Institute of Sweden; **Johan Felix**, consultant at Chalmers Industriteknik; **Carina Loh Lindholm**, Project Manager at IVL Swedish Environmental Research Institute, work particularly with Basta, an on-line guidance to sustainable building and construction materials); **Kadri Koppel**, sustainability consultant from Hifab; **Monica Brandström**, Garveriet AB, a local development initiative focusing on circular economy and sustainable development; **Jonas Brandström**, Garveriet AB; **Linnea Lindkvist**, sustainability consultant from Hifab; **Anders Nyqvist**, architect focusing on sustainable construction; **Evdoxia Kouraki**, Johanneberg Science Park and HSB Living Lab, a research and demonstration arena including homes for students; **Elsa Fahlén**, NCC, construction and property development company; **Ulf Gustafsson**, Head of Sales at SUEZ Recycling AB; **Björn Cederlind**, SUEZ Recycling AB; **Malin Sävinger**, sustainability consultant from Hifab; **Julia Jonasson**, researcher at Technical Research Institute of Sweden; **Marianne Hedlund**, Swedish Construction Federation; **Stina Rydberg**, sustainability consultant Hifab.

### Presentations of the day

- Presentation by Stina Rydberg (Hifab) about FISSAC and circular material flow in the construction value chain (see attached ppt).
- Presentation by Lisa Elfström (SundaHus/BAMB project) on Material passports as a way of creating circular material flow (see attached ppt).
- Presentation by Elsa Fahlén (NCC) about a feasibility study that they are starting now, Design for Deconstruction (see attached ppt).
- Presentation “Logbook for dummies” by Malin Sävinger (Hifab), the workshop leader (see attached ppt).

### Workshop task

The participants were divided into three groups in line with different phases of the construction value chain: (1) engineering & construction; (2) material production (3) demolishing/recycling. The task was



to imagine oneself to the given role and discuss input-output of information: What type of information would one desire to get from the “future logbook” and what kind of information would one register itself in order to give good input to others actors in the value chain. All in order to fulfil the scenario of FISSAC ★★ ★.

**FISSAC ★★ ★**

is a future scenario proposed for the workshop according to which:

1. 25% of recycled materials are use during the building of a new house
2. 50% of materials will be possible to recycle at the end of its life-span
3. In case of renovation and refurbishing 70% of materials need to be recyclable

### Summary of the discussions

After having heard the presentation of BAMB project (buildings as material banks) (Lisa Elfström’s presentation) the participants seemed to agree that the material passports that are being developed should be included as one part of the future logbook for more comprehensive information on the content of the used materials.

A general interest of standardizing information about material content and characteristics was expressed. The former was followed by a discussion on the question of independent evaluation and the type of organization needed for carrying out the evaluation of the (recycled) materials on quality, characters, content etc.

One of the proposed ideas was to create or enjoin an existing public actor to take on the task of guaranteeing the independent evaluation.

#### “The program of the building”

One wider idea proposed by a Living Lab participant was to begin every building project and logbook by putting together a “program of the building” that will become a *shared knowledge* by all the actors involved in realizing a construction project. In order to realize such a vision, all the actors (or as many as possible) involved in a lifespan of a building need to be gathered in an early phase of the process and agree on the “idea” of the building. What is the building about? Who will live there? Who will use it? What are the goals to be met during the building phase? Goals during the user phase? How can the building be efficiently renovated; remodeled and demoted? “The program of the building” would also include different information on systems & infrastructure as: ventilation, plumbing as well as environmental technologies and materials used, social consequences analysis and life-cycle analysis. “The program of the building” would also function as an information and education tool to all the parties involved: from the project owner to building manager and all the way to the building site workers.

“The program of the building” is a way of raising the understanding of why a particular way of building, a technique or choice of materials is implemented.

It is recognized that the more all actors in different roles working with the realization of a building project understand the functions, choices and use of the building, the better quality will be delivered during the construction & production of the project by all the actors in the value chain. That also means higher volumes of recyclable materials to foster circular material flow.

### **Reversal of knowledge**

The logbook could also be a tool that mediates information on materials and methods that is discovered during renovation, demolishing and demoting of a building. It is only by registering and inserting this information back to the cycle will we know and learn, what really happened to a material/ building element and how a chosen building method actually worked.

One can learn a lot when one renovates for example a bathroom: what do the walls and floors look like behind the waterproofed layer? Is the chosen type of isolation the best one to be used? Precisely in this phase of the construction chain a lot of knowledge is created that rarely finds its way back to the decision making phase (beginning of the building process).

More such feedback and sharing of knowledge would lead to better choices of materials as well as a better management of the building process as experiences and lessons learned would be woven into creating the new. Such a reversal of knowledge could then become a key data input for “the program of the building” both when building new and when renovating.

### **Next Living Lab meetings**

The last discussion point of the day was to find an interesting focus topic for the coming Living Lab meetings. One that was very warmly welcomed by all the participants was to follow a material through the entire construction value chain – all the way from extracting from nature to demolishing of the building and recycling of the material.

A recycling entrepreneur present at the meeting proposed choosing gypsum/plaster boards – calcium sulfate dihydrate (used for drywalls, wall panels, plaster boards etc) as it is a widely used building material/element with a high recycling potential. Today, however, the recycling rate of plasterboards is unnecessarily low.

As the participants present at the #2 Living Lab meeting considered this proposal interesting, it was decided by the organizers (SP/RISE and Hifab) to continue the Living Lab process with these suggestions in mind and plan the “material journey” for next meetings through videos, study visits and discussion groups.