

Annette Aumann: Re-materialization ... after the Roundtable

.../ time

One of the most important challenges posed to the global system is climate change, the materials consumed in the construction industry being a key factor. The equation presented by me before the Roundtable, ‘quantity x material / time’, can be used here to illustrate this point and reconsider the greenhouse gas emissions involved in the construction of a building. It was intended to prompt the inclusion of time as a key factor in these considerations. Significant resources have been devoted in Switzerland to collecting and providing data on material and to developing planning tools (see for example ‘ecoinvent’¹ and ‘Ökobilanzdaten’²). I perceive from my own practical experience that the time factor has significant potential and at the same time raises many unanswered questions. Responsibility lies in part with planners and ranges from the scale of an individual component (e.g., has the useful life of the construction been selected in accordance with its use?) to the resulting building (e.g., can I use the building for various purposes)? Crucially, however, responsibility lies with other partners, for example, if buildings are demolished only a few years after they are completed. That is why investors, real estate managers and policy-makers alike have to be included in the discussion.

harm / benefits

The equation ‘quantity x material / time’ prompted further discussion at the Roundtable: recognition that there was a need to model a more comprehensive view of sustainability in connection with materialization. The positive impacts (benefits or aspirations) and their maximization needs to be highlighted and placed in relation to the negative impacts (harm). The group considered it useful to engage in metrics of harm and benefits and adopt an inverse approach as compared to the one commonly employed at present. In the process, quality was to be made more quantifiable in order to enable comparability and thus increase significance, and negative impacts were to be assessed in a more qualitative manner so that a greater effect and initiative may be achieved (knowing why).

I highly valued the discussions, and the courage exhibited in engaging in an open, in-depth and somewhat experimental form of exchange enabled me to take away valuable insights which I can implement. A huge potential can be tapped in the continuation of this Roundtable of experts from various disciplines and parts of the world. Establishing the level of discussion and goals of a future event is key and by no means a trivial task. An exchange in the run-up to the event could be useful in this context. I would also like to express my sincere thanks to the organization for making the event possible.

¹ <http://www.ecoinvent.org>

² <http://www.eco-bau.ch/index.cfm?Nav=20&js=1>



Re-materialization - Store of mineral building materials of Zurich:

100 million tones (260 tonnes per inhabitant). This corresponds to a cube with 380 m edges (about as high as the city's hill in the background of the picture).

This stock is composed of: housing (37.8%), service and other buildings (34.7%) and infrastructural facilities (27.5%). In terms of materials: masonry 25.9%, concrete 31.6%, gravel / sand 26.7%, other mineral building materials 15.8%.

Source: Ressourcenstrategie "Bauwerk Stadt Zürich", Materialflüsse und Energiebedarf bis 2050, Stadt Zürich 2009

https://www.stadt-zuerich.ch/hbd/de/index/hochbau/nachhaltiges_bauen/lsp4_tf3/baustoffeinsatz.html