

COMPARISON OF EUROPEAN LCA-BASED BUILDING ASSESSMENT AND DESIGN TOOLS

Daniel Kellenberger

ME

Environmental Scientist

SCION, Sustainable Consumer Products, Private Bag 3020, Rotorua 3046, New Zealand

P (0)7 343 58 19, F (0)7 345 55 07, E-mail: Daniel.Kellenberger@scionresearch.com

The objective of this study was a comparison and benchmarking of LCA-based building related environmental assessment and design tools, in order to define good practice. The study was embedded in the work made by the members of a European Network (PRESCO). Their overall objective was to define a European Code of Practice for Sustainable Building.

After a short presentation of each tool the first action consisted in an analysis of a simple geometrical volume, with only two materials concrete and steel (the CUBE). The aim of this part was to see how different the results from each of the tools would be if there are only a limited number of parameters. The following action was the assessment of a complete building in three different structures (wooden, concrete and brick). The results of the first two actions showed a variation of around +/-15 to 25% of the mean value for all the materials concrete, steel, and brick and for the assessment of the whole building. The final step was to use in a virtual exercise a number of PRESCO recommendations to the concrete structure house. The impact of each of these recommendations – one by one – was investigated. The influence of each recommendation to the total result is very small. A clear improvement can be achieved when applying several recommendations together. All the different experiences which were made during this work package were used to define a list of recommendation which is useful to improve or de-sign a building environmental assessment and design tool.