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Differentiating Sustainable Design Methods: What Activities or Mind-sets are Universal, What are Unique?

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A wide array of sustainable design methods exists, with varying degrees of definition and formality. To find the right tool for the job, it is valuable to understand the differences between methods. Interviews with sixteen sustainable design professionals identified some of the most frequently-used methods for sustainable design. Participants included designers, engineers, and executives from small and large companies, start-ups and established companies, product manufacturers and design consultancies. All companies were in the consumer products industry, though they ranged from consumer electronics to furniture to apparel. These participants identified five green design methods, plus various design guides (checklists or certification standards) that were considered as a group. The methods were The Natural Step, Biomimicry, Whole System Mapping, TU Delft's "D4S", and life-cycle assessment (LCA). Design guides / certifications mentioned by participants included Cradle to Cradle, LEED, Okala, Factor Ten Engineering, the Lunar Field Guide to Sustainability, and Design with Intent. The design methods and guides were then analyzed based on their published best practices. This analysis deconstructed the methods into component activities and mind-sets, to determine which were universal (or at least common to most) versus which were unique. This work expands on similar work from other researchers by expanding the number of methods studied and by receiving feedback from sustainable designers on some perceived costs and benefits of the methods. No activities were 100% universal, but all methods except biomimicry contained a sustainability evaluation step, and all methods except LCA contained a solution ideation step. No mind-sets were 100% universal, though systems thinking was explicit in three design methods and two design guides, and lists of design principles were explicit in three methods and all design guides. Other commonalities existed less universally (such as measuring success) but highlighted valuable moments in the design process. Each design method and guide also had one or more unique activity or mind-set differentiating it from others. For example, LCA's quantitative sustainability assessment, biomimicry's research into biology, Whole System Mapping's brainstorm-facilitating visualization, etc. The full list of these commonalities and differentiations may help designers choose the best design method for their application.