Building Investment Decision Support (BIDS) Cost-Benefit Tool to Promote High Performance Components, Flexible Infrastructures and Systems Integration for Sustainable Commercial Buildings and Productive Organizations

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The investment in higher performance building solutions and technologies is limited by first cost decision-making. The development of a life cycle tool comparing the cost-benefits of building technologies is central to the commercialisation of higher performance building solutions. Examples of the environmentally-driven life cycle justifications include energy efficiency, waste management, indoor environmental quality, and renewability.

A new building investment decision support tool – BIDS™ - has been developed by the NSF/IUCRC Center for Building Performance at Carnegie Mellon University, with the support of the Advanced Building Systems Integration Consortium. The cost-benefit decision support tool presents the results of field case studies, laboratory studies, simulation, and other research, clearly demonstrating the relationship of quality building investments for – privacy and interaction, ergonomics, lighting control, thermal control, network flexibility, and access to the natural environment – to ten cost benefit factors (see below). The four-year status of this multi-media decision support tool will be presented with illustrations from the 100 case studies that demonstrate the substantial environmental cost-benefits of a range of advanced and innovative building systems.

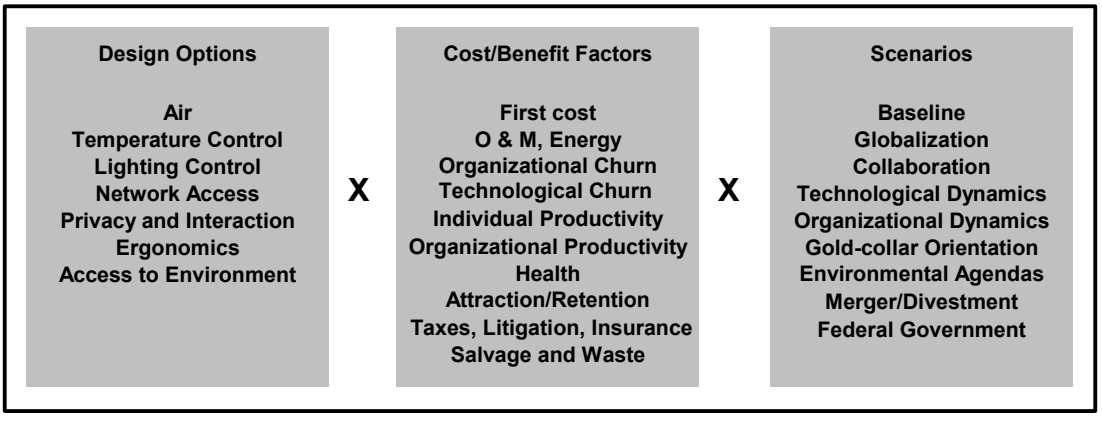

Figure 1 The three dimensions of the Intelligent Workplace BIDS™/ EVA® Matrix

Keywords: high performance building technologies, life cycle, environmental cost-benefit analysis, decision support.