
From Vital Signs to Practice: A Technology Transfer Case Study

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ABSTRACT

This paper describes the translation of an academic methodology for teaching building performance issues into the realm of professional practice. To paint this case study, the paper presents a brief history of the evolution of the Vital Signs Project through the Agents of Change Project and into Tool Days, describes efforts to adapt Vital Signs methods and philosophy to professional practice, and compares participant evaluation results from several Agents of Change and Tool Day workshops. Findings to date indicate that the Vital Signs approach to building evaluation provides successful, engaging training for audiences from a range of disciplines and settings. The success of the technology transfer is validated by the incorporation of Vital Signs methods into the everyday work of the practice in question.

INTRODUCTION

A decade ago the University of California, Berkeley, initiated the Vital Signs Curriculum Materials Project, an experiential approach for teaching architecture students the intricacies and joys of evaluating environmental performance aspects of buildings. Using cutting edge microprocessor-based data loggers and handheld instruments on site, in conjunction with investigation procedures developed by building science faculty from several North American architecture schools, students sought understanding about how (and how well) buildings performed. An integral part of the approach entailed documenting building performance successes and failures through case studies—some quite extensive and detailed, others focusing on a single aspect of performance. The effectiveness of such hands-on learning proved to be a revelation to both students and faculty, inspiring instructors to change their teaching methods. Typically, at most schools building design issues were taught exclusively as theory, with no time allotted for students to experience or ascertain actual conditions of building performance. This theory-centric model has also impacted architects and design professionals who suffer from the hands-off affliction they

were taught in school: they design building systems but rarely experience the on-site and long-term outcomes of their design decisions. Vital Signs aimed to close this gap between theory and practice.

The Vital Signs approach has endured as a viable pedagogic model well beyond the end of the project's funding. Faculty at numerous school of architecture still incorporate "Vital Signs" elements in their courses. It also spawned the U.S. Department of Education FIPSE-funded Agents of Change project, which uses Vital Signs methods to further transform architectural education by training teams of faculty and teaching assistants from schools throughout the United States. Agents of Change, in turn, inspired Tool Day, a series of intensive one-day workshops to train practicing architects and engineers in on-site performance evaluation methodologies. One international engineering firm observed the Vital Signs project with great interest, imagining that Vital Signs methods could be adapted for use in their corporate practice. During a sabbatical year with the firm, one of this paper's authors was assigned to incubate this conceptual transfer through presentations to its offices, research projects involving workplace performance assessment, and firm-sponsored Tool Day workshops in the United Kingdom.

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SUMMARY AND DISCUSSION

We've found the hands-on teaching, learning, and training methods developed through Vital Signs, Agents of Change, and Tool Days to be revolutionary and professionally fulfilling. Through our work with the firm we also have discovered that the methods can be adapted to practice and can be jump-started through direct exposure rather than through the evolutionary process of students being assimilated into practice and spreading the word. We found the protocols, tools, and workshops as effective and compelling for professional audiences as they are for academic audiences, but their adoption requires both time and effort to meet the unique demands of corporate specifications. At the firm in question, a practice both willing and eager to adapt Vital Signs methods to its work, the process of implementation entails several years, is not instantaneous, and involves merely a handful of the 8,000 employees and a small amount of funding. The firm's experience in Vital Signs adaptation has fueled its involvement (via presentation of three papers) in the First International Post-Occupancy Evaluation Conference held at Windsor, UK, in 2004. The firm continues to employ Vital Signs methods in its workplace performance research and building performance investigations as well as presenting Vital Signs-related research at conferences.

Through continued promulgation efforts in Agents of Change, Tool Days, corporate training, and other venues, we hope designers will gain more knowledge about the performance of their buildings and base designs for new buildings on the lessons learned through on-site performance evaluations.

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The Agents of Change Project (2000–present) is funded by the U.S. Department of Education Fund for Improvement of Postsecondary Education (FIPSE) as a one-year pilot project (2000–2001) and a three-year implementation project (2002–2005). The Principal Investigator is Alison Kwok, University of Oregon. See <http://aoc.uoregon.edu> for details.

Tool Days (2001–present) are led by “Principal Instigators” Grondzik, Haglund, and Kwok. In 2003, Ove Arup & Partners Foresight & Innovation Group (Chris Luebke, Director) sponsored Tool Days at Arup's Bristol and Manchester offices. See <http://www.sbse.org/toolday/> for details.