

## 2008 Behavior, Energy and Climate Change Conference Roundtable Abstract

### 14. What are Effective Ways of Integrating Building Design, Technology & Behavior to Maximize Energy Savings?

Moderator: Beth Savan, University of Toronto Sustainability Office

**Abstract:** Design, Technology and Behaviour Interactions to Promote Energy Conservation. Dr. Beth Savan, Director, and Stuart Chan, Coordinator, University of Toronto Sustainability Office, Toronto Ontario Canada

Traditional approaches to energy and resource conservation in buildings have generally approached building and system retrofits, low carbon and efficient design, and behaviour change initiatives independently. All too often these innovative technological and design efforts are subverted by user behaviours which result in a failure to optimize the system or technology, or—in the worst cases—the removal of the system and a retreat back to conventional means.

Examples of such failures abound at the University of Toronto, encouraging the Sustainability Office to undertake early initiatives which seek to integrate technological and behaviour changes. Human factors studies on health care and aviation have a great deal to teach us, and preliminary collaboration with industrial engineers immersed in that field shows promise. Design cannot always, however, override user behaviour, and so it is imperative to engage with users to understand the barriers to optimal use and how these barriers can be overcome.

This roundtable session seeks to answer the following question: How can design, technology and behaviour be best integrated to ensure minimal carbon emissions, and how can retrofits and technological upgrades of old buildings be implemented with a fully engaged user community? Many examples of failures and the few successes from the University of Toronto will be introduced, and others will be sought from the roundtable participants in an effort to better understand the problem that we face. The discussion will also facilitate sharing of any existing protocols for integration of these disciplines in effective energy and resource conservation initiatives.

**Bio:** Beth Savan is the inaugural Sustainability Director at the University of Toronto, where she has been responsible for establishing the Sustainability Office and managing its staff, for engaging over one hundred students a year in sustainability activities on campus, and for overseeing energy and resource conservation programs. For seven years, Beth directed the Environmental Studies Programme at Innis College, University of Toronto. She also serves as Research Director for the Centre for Environment, where she holds a faculty appointment. Beth obtained her Ph.D. in insect ecology from the Imperial College of Science and Technology at the University of London (England), and has received numerous large research grants, most recently to work on energy conservation on campus, on community sustainability locally, on climate change internationally, and on barriers and factors facilitating Community Based Research in Canada. Beth has been very active as a government advisor, on Environmental Non-Governmental Organization boards and on foundation grants committees. Recently, she chaired the Environmental Assessment Review Panel for the Ontario Minister of the Environment and co-chaired the City of Toronto's Sustainability Round Table. She currently serves on the Board of Directors of the Toronto Atmospheric Fund. She also has broad experience in the popular media, where she has worked in TV, radio and print. In addition to a large number of scholarly publications, Beth has produced several award-winning radio series and has published two popular books, one for adults and one for children.

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