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to the
built environment

Building a Better Workstation: Cost-Effective Open-Plan Environments

Objectives

To examine the effect of office design choices on the workplace environment in open-plan offices, and on occupant satisfaction with that environment.

Background

While it is the single most common type of working environment in North America, the open-plan office leaves much to be desired. There has been little research done to characterize the problems of the workplace environment as a whole and to identify solutions. This is a serious issue because there is a significant link between environmental satisfaction and job satisfaction, and in turn, between job satisfaction and organizational productivity measures. To overcome this deficiency in knowledge, IRC formed a consortium to conduct a comprehensive research project on open-plan office environments.

Statement of Work

The project addressed four key elements that affect the open-plan office environment: workstation design and layout; acoustics; lighting; and ventilation and air quality. The work combined experiments in mock-up office spaces, a large field study, computer simulations, and extensive reviews of relevant work published by others.

Results

1. Good design helps. Appropriate choice of workstation size and panel height, surface materials, building lighting, HVAC, acoustic systems, and building controls are associated with improved occupant satisfaction.
2. The design must be holistic. Because conflicts can arise (for example, high panels are good for privacy but bad for daylight access), a designer should consider all aspects of the environment, and the job requirements of occupants, in order to optimize the design.

Outcomes

- Reports, papers, publications, seminars with results, guidelines and implications for practice
- Software tools to facilitate the application of results
- Web site with design advice

Partners

Public Works and Government Services Canada, Building Technology Transfer Forum, USG Corporation, Ontario Realty Corporation, British Columbia Building Corporation, Steelcase Inc., Natural Resources Canada

Start/Completion Dates

The project began in 1999 and was completed in December 2003.

Project Manager

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For more information, see: http://irc.nrc-cnrc.gc.ca/ie/cope/index_e.html

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A typical grid of open-plan offices