



Perceived Indoor Air Quality & Work Performance

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How to maximize profitability is a key element of any business.

In many cases the focus is on reducing costs in the staffing, operations and in the management of the major corporate assets. For owners and operators of buildings this focus is further concentrated on minimizing the costs of operating and maintaining the building asset.

Important to building health is Indoor Environment Quality (IEQ) the measurement of the key parameters affecting the comfort and well-being of occupants, which includes indoor air quality (IAQ), lighting, acoustics, interior design and occupant satisfaction. A building's IEQ has significant potential to impact workers and therefore present a serious business case in today's climate.

The effects of IEQ on the health, wellbeing and productivity of building occupants has been the source of much research, with a study from the US Green Building Council estimating that 'green buildings' report \$180 billion in increased worker productivity annually.

There is increasing strong evidence that IEQ substantially influences the health and productivity of occupants. An individual's performance is affected by the working environment, personal motivation and ability to perform a job. The working environment includes:

- Indoor environment or climate with temperature, ventilation, noise and lighting as typical examples;
- Facility services such as cafeteria and mail service;
- Infrastructure such as workstation layout and landscaping.

The importance of IEQ on productivity and wellbeing was highlighted at *HB2012 International Healthy Buildings Conference* in Brisbane in 2012 where CETEC was the Platinum Sponsor and conducted the world's first international IEQ/Productivity master class.

The green building revolution has, to a large degree, facilitated a more prominent and positive role for IEQ in workplaces. Rather than only correcting faulty buildings with significant issues that lead to sickness and absenteeism, the focus has been shifted to workplaces that excel in terms of IEQ, and how performance and productivity improves as a result.

Internationally 80% of the typical annual operational cost of an office building is related to staff wages, accommodation and facilities. Thus, incremental changes in occupant productivity due to IEQ can have an enormous cost impact.

The Chartered Institution of Building Services Engineers (CIBSE) has shown that staff costs are 100 to 200 times the cost of energy. Energy costs can be offset by a 0.5 to 1% reduction in staff costs. Staff costs are 20 to 44 times the HVAC running cost of a facility and so a productivity increase of 2% to 5% can again offset this cost.

Internationally a broad range of organizations are now realizing the importance of improving the Indoor Environment for their own buildings and occupants. This includes Shree Ram Urban Infrastructure Ltd (SRUIL) who obtained a Five Palm rating for the base building design of The Palais Royale in Mumbai. The Five Palm rating was awarded due to the highest level of performance in: Healthy Building for Occupant



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(IEQ parameters) as well as a Sustainable Building for the Environment (energy, water and waste performance). Further to the 5 Palm rating, SRUIL have been actively working towards ongoing outstanding IEQ performance, and providing healthier and better living spaces to subsequently increase occupant satisfaction.

The improvement of IEQ can be driven nationally through rating schemes (LEED, Palm Rating), or through individual companies ensuring that they provide optimal conditions for employees and therefore maximize productivity.

The need to assess and monitor IEQ within India is two fold:

- The need to build working environments that will optimise, worker health, comfort and productivity for national industries.
- The need to build towards international best practice to attract and retain international IT and other high worth occupants for international business.

With over 25 years' experience in Facility Ecology, and having been heavily involved in the creation of NABERS as well as its own Palm Rating, CETEC is well placed to assist companies quantitate their IEQ, and take measures to measure or improve their