

Creating a healthy, productive workspace

May 2007 edition of BDC e-Profits

According to the National Research Council of Canada, entrepreneurs who improve their working environments for employees by just 1% will see a significant increase of productivity. Whether it's air quality, thermal comfort or even the layout of your office, your work environment is an important factor in decreasing absenteeism, ensuring that employees remain in good health and have a general sense of well-being.

Generally speaking, buildings that are green-friendly may improve employee comfort and also save you costs in the long term. Here are some basic things to consider:

The role of your contractor

First and foremost, your contractor should help you ensure that your building meets specific codes related to issues such as heating and air circulation. Ideally, your contractor should be aware of the latest construction methods and materials that help improve your workplace environment. You can also check your contractor's portfolio to see if they have developed some expertise in this field.

Keep in mind that although your contractor may be meeting basic legal specifications, this doesn't necessarily mean that your work environment is an ideal one. You can also consider measuring your building's environmental performance through well-known standards such as LEED. The Leadership in Energy and Environmental Design Green Building Rating System can help you determine green design strategies, as well as measure and monitor your progress.

Air quality

In Canada, the importance of air quality is directly related to extreme weather systems and time spent indoors. Poor air quality can result in a phenomenon known as sick building syndrome; employees can get headaches, fatigue, shortness of breath, sinus congestion, coughing, sneezing, dizziness and nausea, as well as irritations of the skin, eyes, nose or throat, all of which have an impact on productivity.

Many of these pollutants are not visible and can be inhaled. Some of the key pollutants are: biological contaminants which are excessive concentrations of bacteria, viruses, fungi, dust mite allergens, and pollen. The presence of moisture and dirt can cause molds and other biological contaminants to thrive. High humidity levels can also spread unhealthy biological pollutants chemical pollutants can include emissions from products used in the building such as office equipment, furniture, wall and floor coverings and cleaning products particle pollutants are solid substances that are light enough to be suspended in the air; these substances could be drawn into the building through outside activities such as sanding, printing, copying or machine operation

Making improvements to air quality

One of the first steps to improving your air quality is assessing your building materials, such as insulation, floor and wall coverings. The dust that emanates from these materials can have long-term negative effects on employees.

Another step is to evaluate the efficiency of your heating system or look at alternatives. For example, you could combine conventional, forced-air heating systems with radiant floor heating which may improve comfort for building occupants.

Your employees can all contribute to improving air quality. Be sure that they

- avoid blocking air vents with furniture or equipment
- water and maintain office plants properly
- report water leaks immediately
- dispose of garbage properly
- store food properly
- keep you aware of any changes in air quality

Thermal comfort

The level of thermal comfort in your work environment, defined as whether people feel hot or cold, can affect overall morale. Ideally, you want a level of reasonable comfort that satisfies the majority of employees in the work place.

3 principal factors determine the level of thermal comfort:

- ambient temperature
- relative humidity
- air circulation

Ambient temperatures: excessively high thermal levels tend to make employees feel tired, while very low temperatures will leave employees feeling agitated and lower their ability to concentrate. Even slight variations can have a significant impact on comfort and productivity. The following thresholds can be used as benchmarks:

- 24 C (75 F): people are hot; they become drowsy and lethargic
- 22 C (72 F): the perfect, year-round indoor temperature for workers who primarily do their jobs sitting down
- 21 C (70 F): the ideal temperature for knowledge-based, professional work
- 18 C (64 F): sedentary employees begin to shiver, while physically active personnel feel fine.

Humidity and air circulation also play an important role. When the humidity is too high, it tends to make office air heavy and may lead to the growth of bacteria and mold. Conversely, an excessively low degree of humidity will make employees uncomfortable since it dries out mucous membranes; this can lead to chapped skin and cause electrostatic shocks.

Thermal guidelines

Given these factors, the Canadian Standards Association (CSA) standard CAN/CSA-Z412-M89, Guideline on Office Ergonomics, recommends that the temperature be maintained between 21 and 23 degrees Celsius (between 69 and 73 degrees Fahrenheit) and that relative humidity be kept at 50%, while every possible effort be made to reduce the rate of air circulation.

The standard includes a series of measures for improving the physical well-being of workers. By taking these factors into consideration when designing the building and selecting the ventilation system and windows, you will be better equipped to maintain thermal comfort and avoid sick building syndrome.

Office/plant design and layout

The design and operation of your indoor environment, such as acoustics, lighting and design, can also have a major impact on your work environment and ultimately affect employee productivity.

Office environment: be sure that your acoustical environment is pleasant and doesn't cause unnecessary stress. This may involve installing sound absorbing panels or arranging your office layout so that employees who need to concentrate are subjected to less noise.

Workstation layouts should minimize postural demands and monitors should be correctly placed at eye level to avoid neck injuries. As well, you should provide ample, non-glare lighting for employees in front of computers. Be sure that spaces such as conference rooms or rest areas feature comfortable lighting.

Manufacturing environment: the layout of your plant can have a major impact on your employee's ability to move easily and perform basic tasks. BDC Consulting can provide you sound advice on designing your building space to maximize fluidity of movement and improve productivity. Lean manufacturing practices encourage entrepreneurs to design indoor spaces and production lines with ease of movement in mind.