# **LED LIGHTING and Workplace Productivity**

Can better lighting improve your bottom line? The research says "yes." Studies have shown that proper lighting can lead to higher worker productivity and job performance. In what might be the most frequently cited study on the influence of lighting and productivity, Green Building and the Bottom Line, researchers at the Rocky Mountain Institute and the U.S. Department of Energy found a significant bottom line reward in investing in an improved lighting system. The study looked at eight businesses from various industries who were looking to update their lighting systems, comparing pre to post redesign metrics.

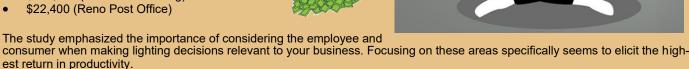
'Bottom-line' metrics were determined using the same data types that the companies were already measuring prior to the study. That same data was compared to data collected for the first year the new lighting was in place. The study found that in each case, there were real-dollar bottom-line benefits for the businesses after the improvements were made. Example productivity increases included improved quality control, higher number of revenue generating actions, and reduced absenteeism. The study also measures the amount of energy savings for each company, which were also significant. Here's a snapshot of those numbers:

### **Workplace Productivity**

- 25% decreased absenteeism (Pennsylvania Power & Light)
- 16% increase in claims processed (West Bend Mutual)
- Improved product quality worth \$25,000 yr. (Hyde Tools)
- 20% improvement in defect rate (Boeing)
- 8.3% performance improvement in visual and cognitive tasks
- Faster reaction times
- Reduced fatigue and increased activity

### **Energy Savings Per Year**

- \$2.6 Million (ING Bank)
- \$500,000 (Lockheed Building)



## **Developing Your Own Preventive Maintenance Program**

A large part of keeping a company running efficiently and profitably is ensuring that all equipment is functioning optimally. To do so, routine <u>preventative maintenance</u> (PM) needs to be conducted. Unfortunately, regular equipment checks often go overlooked in certain areas of a company's operations, mainly because attention is usually directed toward more pressing issues. However, when small tasks go overlooked for long periods of time, problems often follow; production errors, work injuries, and asset damage can all occur if careful tracking and maintenance aren't followed. A breakdown in critical equipment is costly both regarding repairs as well as downtime and delays in a company's productivity.

Here are some steps in creating an effective preventative equipment maintenance plan: The most time-consuming aspect of setting up a preventive maintenance program involves going through a facility and creating an inventory of all relevant equipment. Although a time consuming exercise, it is a critical one, as it ensures that preventive checks are routinely made on key operational equipment. As part of this task, it is important to take note of equipment Make/Model, Serial Numbers, Specifications, Asset Identification Numbers and Fixed Locations. Finally, documenting the current condition of the equipment can help prioritize its importance as part of a preventive maintenance program. The next step is to determine the tasks or jobs required to maintain each piece of equipment as well as the frequency with which these tasks should occur (i.e., weekly, monthly, quarterly, semi-annually, annually). There may be times when preventive maintenance is best suited to be scheduled around run-time hours while for other assets, other meter based triggers are more appropriate. Whichever is the case, it is important to make note of these different scheduling scenarios while also estimating how much time may be needed to perform the PM. Businesses are dynamic and so are its equipment assets. Because of this, it is important always to analyze the results of a preventative maintenance program and adjust or improve it as needed

# IF MY BODY IS EVER FOUND ON A JOGGING TRAIL JUST KNOW THAT I WAS MURDERED SOMEWHERE ELSE AND DUMPED THERE! DID YOU KNOW?

Minnesota has more shoreline than California, Florida, and Hawaii combined. When you think of places that boast plenty of shorelines, your mind probably goes straight to the coastal states. But Minnesota, the "Land of 10,000 Lakes" (or, more precisely, 11,842 lakes), actually has more shoreline than Hawaii, California, and Florida combined.

The world's most expensive hot dog costs \$169. The Tokyo Dog food truck in Seattle, Washington, charges \$169 for their "Juuni Ban," making it the world's most expensive hot dog. The hot dog includes smoked cheese bratwurst, butter Teriyaki grilled onions, Maitake mushrooms, Wagyu beef, foie gras, shaved black truffles, caviar, and Japanese mayonnaise on a brioche bun.

The first time a toilet appeared on TV was in 1957. In the early days of television, there were much stricter rules about what you could and couldn't show onscreen. That's why Leave It to Beaver ran into a problem in 1957 when one script included the show's main characters keeping their pet alligator in a toilet tank. The issue was that they weren't allowed to show a toilet on TV, according to the Standards and Practices department. Ultimately, they reached a compromise: The show could feature the toilet tank as long as the bowl remained out of the shot.

The average cloud weighs an estimated 1.1 million pounds. Clouds may look like giant fluffy puffs of cotton, but they're actually quite hefty. According to the U.S. Geological Survey, the average cloud weighs around 1.1 million pounds (551 tons). Despite their immense weight, "that 'heavy' cloud is floating over your head because the air below it is even heavier—the lesser density of the cloud allows it to float on the more-dense air."

**Yawning is biological air conditioning.** Originally thought to be a social cue, a series of experiments actually suggests a different reason for this bodily function. As Andrew C. Gallup, Ph.D., a postdoctoral research associate at Princeton University, told WebMD, the reason for yawning might be that it cools the brain. The stretching of the jaw to yawn increases blood flow in the neck, face, and head. In conjunction with that, the deep intake of breath forces a downward flow of spinal fluid and blood from the brain. The air breathed into the mouth cools these fluids.

There's a desert in Canada. When you think about Canada, you probably imagine acres of forests and lots of snow. But it turns out there's also a desert in the Great White North. The grasslands and bald hills outside the town of Osoyoos are an extension of the Sonoran Desert that runs as far south as Mexico and creeps north to form Canada's only arid desert." The area in British Columbia is home to 100 rare plants and 300 creatures that can't be found anywhere else in the country, such as painted turtles, scorpions, lizards, and pygmy horned toads.





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# DANGERS OF HUMIDITY

Hot, humid summer days can feel unbearable sometimes. Humidity, or the amount of moisture in the air, can make the temperature feel warmer, as our sweat is slower to evaporate. Not only is the muggy air uncomfortable, but it can cause our bodies to overheat, exhaust easily, and poses a potential danger to our health. In order to understand the effects humidity has on our bodies, we must first take a look at how we regulate our internal temperature. Naturally, when our bodies start to heat up, we release sweat. Sweat is a liquid and as it evaporates it changes from the liquid state to a vapor state. That change of state requires heat which it gets from your body. When you are sweating and air blows over you, you feel cool because to effect that change of state requires drawing heat from your body. This sweat is then evaporated from the skin, which in turn, helps to cool us off.

When the air has a high moisture content, as is the case in humid weather, this sweat cannot evaporate as quickly, leaving our bodies feeling hot and sticky. Excessive sweating can cause a loss of water and chemicals that the body needs in order to function properly, potentially putting our health in jeopardy. High humidity can have an adverse effect on the human body. Because the air feels warmer than the official, recorded temperature, it can contribute to feelings of low energy and lethargy. In addition, hyperthermia, or overheating as a result of your body's inability to effectively let out heat, can negatively impact your health in conditions of high humidity. Some health risks which result from overexposure to humidity (hyperthermia) include: Dehydration, Fatigue, Muscle cramps, Heat exhaustion, Fainting, Heat stroke. To avoid these dangers caused by the effects of humidity, be sure to take frequent breaks and hydrate often when exposed to humid weather. If you feel yourself becoming fatigued, take a moment to cool off.

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