Is your portfolio green and productive?
You can measure it – really.

In a recent productivity study of 32,000 employees, almost half of them admitted to performing “below par” and not being as fully engaged as they could be. The study found that employee engagement is affected by 1) corporate culture, leadership and the relationship between employees and managers; and 2) the physical work environment. Other field studies show that a workplace environment that features natural light, thermal comfort and good indoor air quality can dramatically improve employee productivity. Some studies claim productivity gains of 20% and more from greening the workplace.

The take-away is that corporate real estate executives (CRE), as stewards of an organization’s work spaces, can be major facilitators in improving employee productivity—which leads to organizational success. The question—particularly among skeptics—is how can a workplace’s green contributions to productivity be measured in a meaningful way, and how do current conditions add to or detract from work output? Unlike energy reductions that translate directly to dollars saved, productive employee output from sustainable measures is harder to quantify.

Even skeptics will generally acknowledge that very likely some gains in productivity can be expected from upgrading a workplace environment. Clearly, productivity suffers when employees are too hot or cold, sleepy from lack of oxygen, distracted and irritated by the noise around them, headachy from glare, exhausted from a tiresome commute, feeling isolated in the workplace and depressed by their drab surroundings. These employees will assuredly be less concentrated on their work than those who enjoy a healthy, comfortable, dynamic and engaging environment.

The real issue is, how much productivity improvement can an organization realistically expect from modifying the workplace environment—and can these changes also be sustainable? JLL has developed a realistic, measured approach to help organizations green their workplaces, focusing on the potential return on investment from improved energy efficiency, space utilization and employee productivity.
Measuring productivity is challenging. Employee productivity has traditionally been defined as unit of input (payroll and other expenses) per unit of output. In a manufacturing facility or a call center, it is easy to measure outputs such as the number of widgets produced or calls answered. However, it is more difficult to determine output for business units that are part of a complex system of interlinked processes. For example, IT, public relations, R&D, customer service, human relations and accounting are all elements of a collective process, each contributing different types of outputs. From a real estate perspective, it is almost impossible to assign input-to-output values to individual office spaces and to compare these values from one office to another in a meaningful way.

The challenge of measuring office productivity

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Using a proxy

Understandably, organizations are reluctant to invest in greening a workplace without having some indication of what the financial benefit might be. Where the input-to-output ratio of an office is difficult to measure, cost can serve as a proxy for calculating potential productivity benefits. For example, it makes sense to focus on achieving greater productivity in a business unit that has high labor costs, such as an operation with thousands of employees, or a corporate office with employees who have large salaries and are expensive to replace.

There is a “3-30-300” rule of thumb that organizations typically spend approximately $3 per square foot per year for utilities, $30 for rent and $300 per for payroll. While these figures are just archetypes, they are useful to provide orders of magnitude between the three areas of expenditure. According to 3-30-300 model, the greatest financial savings of greening a workplace may not be energy but productivity. A 2% energy efficiency improvement would result in savings of $.06 per square foot but a 2% gain in productivity is worth $6.

The best strategy, therefore, is to identify measures that improve employee productivity and will also result in space efficiency, resource conservation or energy efficiency.
To find out how much energy savings and productivity an organization can realistically expect, JLL has developed Green + Productive™ Workplace, an online application that baselines the current state of a portfolio, and identifies the potential energy and productivity gains that could be possible. The assessment addresses:

- **Energy, water, waste and use of resources** including lighting, heating and cooling, plug loads and server rooms, green purchasing, use of paper, recycling programs, commuting, green tenant programs

- **Space use efficiency and layout** that reflect workflows and offer an optimum environment for individual tasks, employee interaction, team building, operations and customer service

- **Productivity features** including acoustic and visual comfort, thermal and indoor air quality, amenities and measures that help impact employees’ health, comfort and work-life balance

From the assessment data, JLL’s Green + Productive Workplace Report application generates a report that includes:

- Separate green and productivity indices
- Scores for energy, water, waste, commuting, workplace environment and governance
- Industry comparisons for benchmarking purposes
Determining potential operational savings and productivity gains

The report also provides estimates of potential energy savings and productivity gains that could be achieved relative to the baseline. The calculations are based on the archetypical 3-30-300 input ratios, and use conservative estimates to increase their likelihood of being achieved—or better yet—surpassed.

The following two examples illustrate how productivity-oriented improvements are calculated based on the assessment of a theoretical “Office X”, a 25,000 square foot facility with 100 employees. The assessment has identified two areas of weakness—acoustic comfort and space layout—and provides a rationale for improving the situation, based on the findings of the Green + Productive assessment.

Acoustic Comfort

**Challenge:** Due to an entirely open office layout, there is noise distraction from conversations, including speaker phones used at workstations. The open-office has no sound masking, and there are no designated quiet areas for tasks that require a high level of concentration. A recent employee survey also shows a high rate of dissatisfaction with the acoustic conditions in the space. The resulting distractions cause stress and irritation, negatively affecting employees’ ability to concentrate.

**Solution:** Some measures that would improve the situation are to:
- Designate a quiet zone in the office where no talking or cell phones are permitted—a place where employees engaged in “heads-down” tasks are able to concentrate
- Partition some small meeting spaces where speaker phones can be used without disturbing others
- Install sound masking

**Anticipated productivity gain:** Some studies indicate that productivity gains of up to 6% can be achieved simply by providing quiet work stations. However, let us assume an ultra-conservative estimate of only 1% improvement in productivity and work quality due to fewer distractions, the ability to concentrate fully on tasks, and having a place for making conference calls without disturbing others. This 1% improvement is equivalent to 24 minutes per week per person in enhanced work performance—a gain worth 40 hours of work time per week for a 100-person office.

**Financial impact:** Assuming $300 per square foot for payroll, Office X spends around $7.5 million per year on salaries. A conservative productivity gain of just 1% would generate an improved quality of work/productivity equivalent to $75,000.

**Payback:** While each office is unique, sound masking costs are estimated at around $1 per square foot. Partitioning five small meeting rooms might cost approximately $18,000. Designating a “quiet zone” in the office carries no cost. A conservative payback estimate would be 1-2 years.

**Improved space layout**

**Challenge:** Office X also lacks sufficient space for team meetings of various sizes. There is too much space for individual work requirements, and insufficient space for collaborative tasks. Despite the open office concept, the layout does not foster social cohesion; barriers between work stations do not permit direct visual contact with neighboring co-workers. Business units are isolated from each other on different floors, and circulation routes offer little opportunity for face-to-face encounters. There are no informal areas to promote informal interactions. A survey indicated that most employees have little opportunity to interact informally other than with their supervisor and immediate peers.

**Solution:** The situation could be improved by:
- Installing more small meeting rooms for collaborative tasks
- Considering portable dividers for more flexibility
- Designing work stations so that direct visual contact is possible with “neighbors” from a seated position
- Integrating circulation routes and lounge and café areas for informal interactions among immediate peers and others in the organization.

The strategy for improving layout can easily be integrated with complementary strategies for improving the acoustic environment.

**Anticipated productivity gain:** Studies indicate that significant productivity gains can be achieved when a space enables casual meeting, leading to friendly familiarity and trust, which in turn contributes to a climate of collaboration. Adding coffee machines, cafés and other informal areas can provide a place to “bump into” colleagues and accommodate social interaction. Assuming a conservative estimate of just 1% improvement in productivity/work quality, the gain would be, as in the case of acoustic comfort, the equivalent of 40 hours a week of work for a 100-person office. Another way to view it would be the equivalent of gaining another full-time employee—without assuming their salary and benefit package.

**Financial impact:** As in the previous example, assuming $300 per square foot for payroll, Office X spends around $7.5 million per year on salaries. A productivity gain of just 1% would generate improved quality of work/productivity equivalent to $75,000.

**Payback:** While the cost of changing the layout range depends on how much construction is involved, a conservative estimate for payback would be 2-4 years.

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The case for being green and productive

The purpose of creating a green + productive workplace is to improve an organization's bottom line by:

- Maximizing use of your space
- Reducing the use of resources including energy
- Providing a comfortable and efficient workplace where employees also feel a sense of connection with one another
- Demonstrating corporate social responsibility. A green + productive workplace is also an indicator to investors of good management practices.

Although there are accepted metrics for sustainability, the science of measuring productivity outputs is still imperfect. JLL's Green + Productive Workplace tool does not presume to completely solve this complex problem. However, it helps organizations establish how green and productive their office portfolios currently are compared to what they could be, flag necessary improvements and then estimate a credible order of magnitude of the possible financial benefits. By using conservative estimates and developing integrated strategies that address sustainability and employee health, comfort and well being, the holistic approach provides a structure for informed and balanced decisions, and serves as a thoughtful approach for investments aimed at achieving a green and productive workplace.

For more information on JLL's Green + Productive sustainability tool, contact:

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About JLL

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