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TAKING THE LEAD TO CREATE BUSINESS ENVIRONMENTS THAT SUPPORT SUSTAINABLE HUMAN RESOURCES

Savannah Vezeau, Vikkie McCarthy and David Grimmett
Austin Peay State University

ABSTRACT

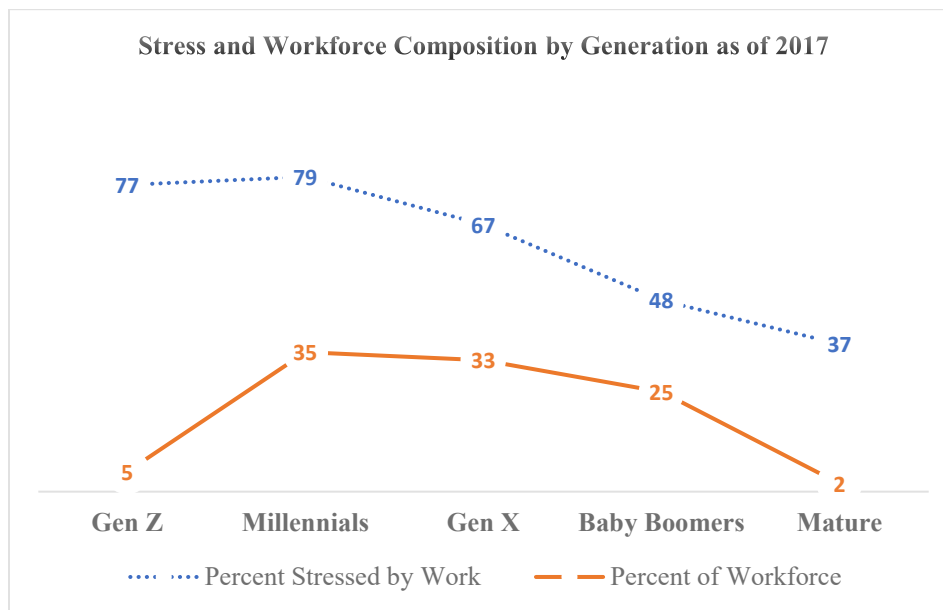
Stress in the workplace can cost organizations money and threaten the sustainability of human capital. Reducing workplace stress can save organizations money by reducing turnover and absenteeism. Green spaces are incorporated in many workplaces as simple means for improving focus and overall productivity. Meditation has shown similar effects, as well as general benefits to an individual's mental and physical health. This research discusses the role of leadership in creating business environments that support sustainability of human resources and offers a viable solution for reducing workplace stress. This research article outlines a process for determining the costs of a workplace biophilic meditation space and it provides a simple formula for calculating return on investment into a biophilic meditation space within the work place. The purpose of this paper is to propose a formula which can be used by businesses to determine the return on investment into creating biophilic meditation spaces within the workplace. The findings of this research indicate that combining benefits of biophilia and meditation by creating biophilic meditation spaces within the workplace can offset the costs of workplace stress. The benefits of this research are twofold. First, this research continues the conversations related to reducing the costs of workplace stress to organizations. Second, it highlights the need for organizations to engage in sustainable human resource practices in order to care for internal stakeholders.

Keywords: biophilic meditation, corporate social responsibility, employee productivity, stress reduction, management, sustainable human resource management

WORKPLACE STRESS

Socially responsible organizations engage in sustainable workplace practices which lead to the retention of human capital (Barrena-Martinez et. al., 2019). Such practices include sustainable human resource development (Forte, 2013). One environmental factor that threatens sustainable human resource development is workplace stress. Workplace stress is a costly problem that affects many businesses and employees. According to the American Psychological Association (2018), 61% of Americans feel stressed about work. Furthermore, 77% of Gen Z and 79% of Millennial workers' stress over their jobs compared to previous generations: 67% of Gen X, 48% of Baby Boomers, and only 37% of workers age 63 and older (American Psychological Association, 2008; 2018). The trend implies workplace stress is an issue that employers will increasingly face as Millennials and Gen Z begin to dominate the workforce. Figure I, below shows the relationship between these generations and their presence in the workplace.

Figure I: Stress and Workforce Composition of the United States by Generation



The creation of biophilic meditation spaces in the workplace is one sustainability trend aimed at reducing workplace stress (Greene, 2018). Several corporations have been on board and leading this trend. The “mindfulness” program at General Mills was founded in 2005 to help employees gain clarity, promoting creativity and connectedness (Gelles, 2012). Executives in Target, Google, Apple, and Goldman Sachs are also known to have initiated meditation advocacy within their corporations (Gelles, 2012). Businesses like these believe biophilia and meditation reduce the costs of workplace stress and ultimately increase employee commitment and engagement. These companies are globally growth-oriented and provide excellent examples of organizations addressing corporate social responsibility in the form of employee health and satisfaction.

The latest published survey by the American Psychological Association (2018) further determined that people who live in cities had a higher level of self-reported stress than those in both suburban and rural communities. This finding maintains the idea that interaction with nature may have stress-reduction effects. A survey of British workers in urban-fringe sites found high levels of stress serve as predictors of the use of biophilic spaces (Colley et. al., 2017). Higher self-ratings determined the employees’ stress levels, and those who were more stressed utilized workplace greenspaces more often than low-stress employees. Stress was calculated using the Short Version Warwick-Edinburgh Mental Wellbeing Scale which asks participants to rank a series of statements to address well-being in terms of general happiness as well as relationship functioning.

The purpose of this paper is to propose a formula which can be used by businesses to determine the return on investment into creating biophilic meditation spaces within the workplace. The paper is structured as follows: First, a review of the literature will synthesize the research related to workplace stress, biophilia, and meditation. Second, a case design will be used to propose a formula for quantifying the return for businesses investing in biophilic mediation spaces.

Finally, a set of recommendations for further research in this area will be proposed in order to continue the conversation related to reducing workplace stress through biophilia and mediation.

Reducing Workplace Stress

Biophilic meditation maximizes the synergistic benefits of having clarity in both the mind and body. Biophilia is an increasingly popular hypothesis that inadvertently offers an explanation to the mental health deterioration of today's workforce. Man-made buildings and offices are the primary setting for the modern worker, and this prevents people from indulging in their innate desire to be around natural processes. Additionally, over-stimulation of the mind causes many workers to complete daily tasks in an almost robotic manner (Lampe & Engleman-Lampe, 2012). Mindfulness achieved through meditation promotes reality-oriented thoughts and intuitive innovation. Biophilic meditation addresses the needs of restoration and natural inclusiveness in a single space, effectively reducing stress from biophilic deprivation and over-exertion of the mind. The benefits of the proposed super haven are supported in literature, and the space can easily be introduced into existing businesses to obtain these benefits.

Stress is defined as the response of a person when pushed beyond perceived limits to meet his or her physical, mental, or emotional demands (Brock & Buckley, 2012). Stress is a beneficial motivator in appropriate amounts—it heightens alertness for challenges, encourages competition, and keeps employees on task. However, too much stress can limit employee efficiency, amplify mental illnesses, and it could even cause or worsen physical ailments. This kind of negative stress is at the focus of many businesses because of its detrimental effects on employee functioning and behaviors, (Bruggen, 2015). Employees struggling to cope with stress are more likely to participate in turnover, absenteeism, and negative coping mechanisms which collectively contribute to a significant amount of lost profit in the United States.

Employee Turnover

The term “employee turnover” relates to the number of employees who leave the organization. Businesses strive to limit turnover to minimize the resources allocated for recruiting, hiring, and training of new workers. Dysfunctional voluntary turnover is the focus of businesses because this means high-performing employees are quitting their jobs, leaving lower performance individuals to pick up the slack of vacated positions (Wallace & Gaylor, 2012). This could increase employee stress by adding workloads to remaining individuals. Furthermore, these instances encourage urgency of hiring managers, which could lead to more of the lower performing or less skilled hires. This ultimately diminishes the productivity of a business by increasing costs and distractions while reducing manpower and employee satisfaction. Employees will likely leave an organization when possible, if that organization overloads workers without assistance for stress reduction. Often, higher workloads or higher levels of difficulty in work will increase individual stress and lower the quality of work output (Bruggen, 2015). Because not all businesses can afford to hire new individuals as workloads increase, it is imperative for employers to reduce stress in other ways, minimizing the negative effects that decrease overall productivity.

Reduced Profitability

In addition to turnover, stressed employees are more likely to contribute to absenteeism. In the United States, absenteeism accounts for 550 million lost work days annually, with an estimated 54% of those absences related to stress (Brock & Buckley, 2012). When employees miss days, the work they do not complete is either given to peers or added to another day's workload. Either situation adds to the stress of employees, who likely continue the cycle of absenteeism to escape

workplace stress. Additionally, stressed adults are more likely to utilize unhealthy coping mechanisms such as isolation, alcohol consumption, smoking, or over-eating. These bad habits can lead to increased visits to healthcare providers or cause diseases, which increases expenses for employers who offer healthcare benefits. Because most medical offices operate on the same schedule of other businesses, healthcare visits may also contribute to absenteeism or tardiness. Overall, stress-related ailments cost U.S. industries an estimated \$68 billion annually in healthcare expenses, reducing profit by 10% (American Psychological Association, 2010; Azagba & Sharaf, 2011). The cost of stress is evident in American business, and it is in the best interest of corporations to facilitate the use of healthy coping mechanisms to limit employees' detrimental stress.

Manipulating Biophilia

Biophilia has been the topic of scientific research since the 1970's and focuses on understanding the human experience in relation to other living organisms. Biophilia has been defined as human desire to interact or be closely associated with environmental landscapes, sounds, and animals in nature, (Clowney, 2013). Among the first to use the term was the German-American sociologist and philosopher, Erich Fromm, who had a fascination with comprehending human nature and our driving forces. He believed humans felt "the passionate love of life and all that is alive," and valued the human relationship with the world as an important motivational factor in our decision-making (Clowney, 2013; Kellert). Many scientists have conducted studies reinforcing the biophilia hypothesis since Fromm, but Stephen Kellert's evolutionary explanation gives the phenomenon a logical and scientific context. For more than 99 percent of our species history, we evolved in adaptive response to mainly natural forces and stimuli (Kellert, 2016). Most of what we view as normal today from large-scale agriculture to mass production to modern medicine to electronic media only emerged during the past 5,000 years and less. Our senses, our emotions, and even our intellect developed in interactive relation to mainly natural not human-created or artificial forces (Kellert, 2016). According to the tenants of biophilia, it is evolutionarily unsuitable for humans to experience man-made settings more than the natural world. Developed countries' citizens spend nearly 90% of their time indoors, and the buildings that surround most American workers today are not biophilically stimulating (Kellert, 2016). This lack of natural interaction may be a source of disconnect and mental instability.

With the hypothesis of biophilia in mind, it is logical to expect problems in urban corporate workers from a lack of interaction with natural processes. Urban settings offer the least biophilic indulgence, and 80% of people in the industrialized world live in cities (Kellert, 2016). Additionally, the modernization of suburban and rural communities may amplify issues associated with suppressing biophilia. The scientists behind this hypothesis do not specify whether biophilic benefits are maximized more from plants versus animals, but plants are easier and more humane than animals to incorporate into industrial spaces. Therefore, businesses may benefit from plants and greenspaces as preventative and coping mechanisms in the reduction of stress and other hindrances to mental and physical health.

Benefits of Biophilia

With the body of research on biophilia exponentially increasing since its introduction in the 1970's, its benefits are becoming more apparent and relevant to challenges in modern business. Biophilia creates a sense of ease in individuals, which reduces stress and increases empathy among peers, leaders, and family members. This finding suggests the benefits of biophilia may be

observed in numerous settings including the home and workplace. In addition to the reduction of stress, contact with nature has also been shown to improve learning, morale, work performance, and individual work output—these are obvious advantages for a business organization (Kellert, 2016). Other surprising health benefits include increased immunity, lower blood pressure, and pain relief (Kellert, 2016). Any organization that offers healthcare assistance would benefit from healthier employees, thus biophilic meditation spaces at work could potentially improve profitability by reducing more than just stress-related medical expenses. This could further reduce turnover and absenteeism by improving mental and physical well-being of employees in both work performance and personal life.

Biophilic Design

Most research on biophilic design addresses the broader implications and describes biophilic urbanism. This focuses on the addition of greenspaces in cities without specifically dictating natural features in office buildings. Its advocates strive to have more parks and gardens installed within the urban cityscape (Littke, 2016). These spaces would serve communities by promoting outdoor activity, especially in children. This is an invaluable resource given the instances of obesity are plaguing many first world countries including the United States. By addressing the problem in children, future generations in the workforce may show improved physical health. While less effective over the long-term, adults also show improved health when offered greenspaces to partake in outdoor activities (Littke, 2016). These ideas are often met with skepticism, but the increasing number of benefits of biophilia observed in research today help support the argument for radical change in city planning and structure. This process could be facilitated with corporate recognition and integration in the form of green and biophilic spaces in the workplace.

Biophilic design in offices is another application of the principles of biophilia. Most companies incorporate biophilia into office design by offering window views and housing indoor plants. More extreme interpretations include indoor or rooftop gardens, sky-ceilings, and water features (Jones, 2015). The most successful, global businesses today are focusing more on flexible leadership and creativity from employees (Baron et. al., 2018). These organizations are realizing the office setting must change in accordance with ideological changes. As indicated previously, stress is a major factor limiting the success of individuals and the growth of businesses. Global organizations are incorporating biophilic design into offices and buildings as ways to alleviate stress in the workplace and facilitate healthy social relationships. Biophilic design serves as a form of corporate social responsibility because it promotes the general well-being of its workforce and environmental sustainability.

Meditation

Meditation is an ancient practice that involves relaxation of the body to inwardly understand the relationship of an individual's mind to the rest of the world (Lauche et. al., 2014). Many traditional styles of meditation have specific rules and objectives aligning with the Hindu and Buddhist religions. The traditional Buddhist style of Zazen meditation focuses on breathing and promoting connectedness to one's surroundings. This form is ideal in the workplace, as it can be practiced without much training or skill. Meditation can be practiced anywhere, but it often is supplemented with incense, silence, and comfortable seated or reclined positions. This promotes a state of mindfulness, which is a non-judgmental state of awareness of one's surroundings (Jacob

et. al., 2009). Mindfulness encourages better understanding of others as well as one's self in a team setting, which is an increasingly popular method for problem solving in businesses.

Today, the term meditation often refers to generalized breathing and relaxation exercises to promote mindful thinking. Prestigious American schools like Harvard, New York University, and University of California at Berkeley have introduced mindfulness programs for their graduate students (Hyland, et. al., 2015). Most mindfulness training is utilized in high-stress professions including those in medicine, education, STEM, military, and finance (Allen et al., 2015). The shift in meditation from a religious practice to one of secular nature in Western cultures indicates the benefits are more than spiritual. As early as 1982, scientists found that the state of relaxation from meditation can decrease salivary bacteria, thus limiting tooth decay (Morse et al., 1982). Furthermore, some modern medical professionals use meditation to help with chronic pain and mental diseases in patients (Allen et al., 2015).

The benefits of meditation have been increasingly presented in business literature and research in recent years, with only 52 published articles about mindfulness published in 2003 and 549 in 2013 (Hyland et. al., 2015). This indicates a growing interest in the field, and researchers warn this trend will continue despite often being labeled a fad. The term workplace spirituality specifically relates the outcomes of mindfulness to the work environment. It is described as an organizational framework to enhance the employee community and to promote happiness and satisfaction (Daniel, 2015). Mindfulness promotes intentional awareness of being, unity, and responsiveness; this contrasts to the "conditioned" mindset of most people which is an "auto-pilot" state of doing with more emotional reactivity than equanimity (Lampe & Engleman-Lampe, 2012). Studies of workplace spirituality as an emerging business value provide evidence about the benefits that improved employee moods can facilitate in the workplace (Jacob et. al., 2009). When employees feel more mental clarity, they are more likely to innovate and engage in healthy communication with peers. The incorporation of workplace meditation is perceived as beneficial among employees, given any additional training takes minimal time from work duties (Hyland et. al., 2015). Though mindfulness is achieved gradually, businesses with online and abbreviated meditation training programs have noted individual employee benefits such as improved sleep and reduced stress levels (Klatt et. al., 2009).

The objective of this research is to determine a method for calculating the return on investment into workplace biophilic meditation spaces. To this end, we present a case designing a biophilic meditation room and the cost of building such a room. This case is scalable but aimed at smaller organizations for the purpose of an example from which to calculate costs for determining a return. The prices for materials are presented in USD currency but can be applied to any currency in any country. The return on investment will vary according to locality.

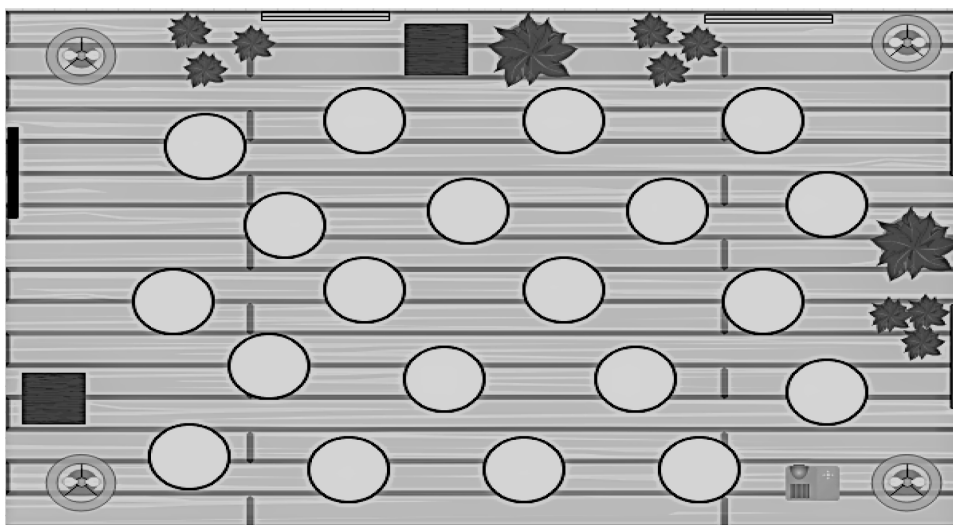
A Biophilic Meditation Room

Biophilic meditation is the combination of relaxation techniques of the body and of the mind (Cl. Meditation relaxes the body with breathing and promotes self-contemplation to give the mind clarity. Biophilic indulgence gives the mind more connectedness with natural rhythms of life and has shown to improve human physiology. The combination of the two concepts provides a healthy coping technique for stressed workers without much expense from employers. Businesses must consider the space available, specific items and resources required, and methods to ensure the room will be used by employees. These factors are discussed below, including some resource alternatives and additional considerations associated with creating the synergistic haven.

Minimal space is required for a functional biophilic meditation room. It should have a capacity of 15 to 20 people depending on the number of employees who will have access to the room. For example, a Buddhist meditation room was added to the United States Air Force Academy Chapel in 2007 with only 300 square feet of meditation space and a capacity of 20 people for its typical 4,500 enrollments (Emery, 2007). In businesses with fewer than 2,000 employees, a space equipped for 20 people or 1% of its employment would suffice in serving the entire work force. However, larger corporations may require more or larger spaces proportional to its employment. In a corporate campus, each building should have a room for restorative biophilic meditation, or the corporation should have a larger room in a central location. A designated space for biophilic meditation is ideal because multifunctional spaces may diminish the quality of relaxation.

A biophilic meditation room would require specific components to give employees the ultimate stress relief haven. A conceptual floorplan of the ideal biophilic meditation room is portrayed in *Figure 1*. Natural light is a valuable resource to suffice biophilia, so a room with windows is preferred. However, these windows should have wooden shades to be utilized on dark or gloomy days. On those occasions, shaded lamps with ambient lighting should supplement the light in the room. Greens and tan colors on the walls enhance the natural essence of a room. Images of plants could be displayed, or succulent plants may be utilized for easy maintenance. If more maintenance is realistic within the budget, small trees and plants can be used, but these would require sunlight throughout the year. Rock and wooden elements also add biophilic value to a space. An estimated cost of supplies for a biophilic meditation room in the US for 20 people is included in *Table 1*. The supplies included are the basics necessary to give a 200-300 square foot room the relaxing benefits of biophilic meditation, and the estimation assumes an existing room of that size is available for use. A space of this size should serve all employees, given usage will overlap and individuals could visit as needed. Prices listed are based on an online search of advertised prices by the supplier as of February 2019. These prices are presented in USD as is the total cost of this workspace. A business in the US would spend less than 1500 USD on the creation of biophilic meditation space to effectively reduce the stress of employees and improve individual productivity.

**FIGURE II: Conceptual Floorplan of a Biophilic Meditation Room
Generated with Gliffy Diagram**



Note some materials included in the estimation can be replaced with existing business technology. For instance, if the office has a sound system and computer in the room, videos of natural noises could be accessed via YouTube or an App to replace the sound machine. Additionally, approved local collections could supplement expenses on rock or plant features. Art pieces depicting natural scenes can be found from various suppliers at various prices, but no more than 100 USD should be necessary to acquire images of nature. The suggested expenses listed in *Table 1* do not account for additional maintenance, which should be minimal. Succulents are ideal living plants to incorporate due to their minimal water requirements, but ample sunlight would be necessary. Any non-succulent plants would require more water as a resource to sustain life. Water features would be beneficial additions to the space, but those were not included because they require more maintenance and can be substituted by running water noises of a sound machine. If funding and maintenance is available, small water features are a recommended option to enhance the quality of the biophilic meditation room.

TABLE I: Cost of Biophilic Meditation Room

Estimated Cost of Biophilic Meditation Room Supplies and Equipment as of February, 2019			
Product	Supplier	Quantity	Total Price (USD)
Sound machine	Amazon	1	\$25
Bag of river rocks	Walmart	2 @ \$12.50.	\$25
Gallon of interior paint	Walmart	2	\$70
Accent side table	IKEA	2	\$80
Shaded floor lamp	Walmart	4	\$90
Set of 20 succulents	Plants for Pets	2	\$95
Artificial potted tree	IKEA	2	\$100
Art or images of nature	Various	5	\$100
Wooden woven shades	Justblinds.com	4	\$140
Bamboo rug	Rugstudio.com	1	\$370

Meditation cushions	Yoga Direct	20	\$400
Total Estimated Cost			\$1,495

Regardless of specific demographics, high-stress employees look to utilize nature as a remedy for stress (Colley et. al, (2017). Biophilic meditation spaces can serve as a haven for stressed employees. This is especially important because younger generations who are increasingly represented in the workforce are more likely to suffer from and admit to workplace stress.

Quantifying the Benefits

The equation below gives a hypothesized value for the benefit of a biophilic meditation room for one year based on the estimated costs of creating the space in a US based business with ≥ 2000 employees. For a business to analyze the benefit it would gain from this room, monetary values of the business's yearly profit and number of employees must be input.

Formula 1: Return on Investment for Biophilic Meditation Space

$$BM = \left(-1500 \frac{N}{2000} \right) + 1.04(P)^*$$

**BM: Benefit of a biophilic meditation space,
N: Number of individuals employed, P: Yearly profit*

Businesses can extrapolate this benefit by simply adding 4% of their yearly profit for that number of years. The 1.04(P) value was estimated given stress-related ailments reduce 10% profit annually in the United States. A biophilic meditation space in the workplace would not likely address all the stressors workers encounter because outside factors like family, politics, and money are also major sources of stress (American Psychological Association, 2018). Therefore, the equation above gives a conservative estimate of 4% increased profit, approximating 40% of the stress-related profit lost could be restored by offering effective stress relief in the workspace. This equation does not translate to a 4% increase in profit each year, but it means that the benefit of the space should sustain a 4% higher profit each year compared to the profit from the year before any biophilic restorative space was offered. Note this equation does not account for expected yearly growth, which should be considered by businesses individually. The increased clarity of employees should improve workplace relationships, promote innovation, and attract more motivated employees—this opens opportunity for more profit gain each year from general growth and increased productivity in addition to the profit gained from employee stress reduction.

SUMMARY AND FUTURE RESEARCH

In today's fast-paced culture, many workers face problems with mental health and seek coping mechanisms to reduce stress. Businesses can incorporate biophilic meditation spaces in offices to improve employee productivity and address corporate social responsibility. A biophilic meditation space is a low-cost, effective tool that employers can offer to reduce workplace stress. This space addresses the increasing need of employees to have restorative spaces within the

workplace. Given that workplace stress is an increasingly prominent factor plaguing Americans, the addition of this super haven demonstrates corporate investment in the long-term health of its workforce. Furthermore, the tenants of biophilia promote ecological sustainability, which addresses a social issue that holds immense value to many groups, including potential customers.

Issues concerning this synergistic haven include a lack of monetary resources and a lack of buy-in from employees. While the evidence is clear on the benefits of biophilic meditation, many deem its virtues faddish. This could affect the willingness of management to invest in the space, but that factor could be minimized by further analysis of research and review of data within this paper. The other issue of employee buy-in should be mitigated by management. This space may need to be “sold” to employees who have negative associations with meditation or environmental conservation. As mentioned before, younger generations are more likely to admit they are stressed about work, so a company’s unique demographics may help determine how much selling is necessary. The benefits of this space could be maximized with mindfulness training, which was mentioned in this paper. It was not a focus of this research, but training could improve the outcomes of the room and potentially increase the percentage of profit regained by stress reduction.

Hypothetically, stress reduction in the workplace would stimulate further benefits outside the office and ultimately decrease associated healthcare expenses and limit liability for stress-related compensation lawsuits. Furthermore, businesses that value employees’ well-being tend to attract a better and highly motivated workforce and loyal customers (Forte, 2013). A restorative space has the potential to increase profits more than the 10% lost to stress-related healthcare expenses—increased motivation in employees opens the opportunity for growth through innovation and customer loyalty. The term civic environmentalism describes the process unifying leaders and common citizens, promoting public empowerment to solve ecological problems (Young, 2016). The idea behind this movement is that all people rely on the environment, so all should work to improve it. Inclusion of a biophilic meditation room enhances interactions among workers and nature, which promotes a greater appreciation for the environment. This phenomenon demonstrates a higher purpose behind the biophilia hypothesis, proposing it could also serve as a tool to promote ecological sustainability in businesses and individuals. A biophilic meditation room then serves as a demonstration of corporate social responsibility by encouraging productivity, mental health, and environmental sustainability in employees. The improvements to employee health and corporate social responsibility outweigh estimated costs for the addition of a biophilic meditation space. Furthermore, corporate investment in employee well-being promotes more favorable perceptions of management. The benefits of this super haven are evident in scientific literature, but further research of an actual biophilic meditation room is needed to provide more substantial insight. In practice, incorporating the room may take more than one fiscal year to produce results and could vary across industries.

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