

Workplace Research

Benefits of Wood

The advantages of using a
natural material in the workplace

Knoll

Benefits of Wood

The advantages of using a natural material in the workplace

.....

As one of the most widely used materials in the workplace, wood is not only popular, but provides numerous benefits to the work environment and its occupants. With remarkable longevity and timeless appeal, it is also an economical investment and highly sustainable choice, especially when the wood is certified by the Forest Stewardship Council.

Wood's warmth and ageless appeal translate effortlessly across styles and product categories, making it a wise choice for the workplace.

Wood's popularity is broad: 9 out of 10 people view wood as a material that creates a natural look and feel, a warm and cozy environment, and is visually appealing and nice to touch (Planet Ark, 2015).

As a natural product, wood can play a significant role in improving well-being by providing numerous psychological and physiological benefits to individuals. It is also an eco-friendly and cost-conscious option.

Wood Expresses Rich Materiality and Timeless Aesthetics

As one of the oldest, yet most modern materials, wood showcases craftsmanship that harmonizes across styles, from old-world designs to the clean lines of modernism. Wood is equally at home in a traditional law office or in a tech company's "garage."

Welcoming and inspiring, wood brings organic appeal and rich texture, infusing spaces with the calms of nature. It adds balance to the white of an open space or warmth to the sleek surfaces of a contemporary office environment.

Wood presents a unique and highly versatile aesthetic. Its color and grain varies by species, geographic area, growth conditions and more, so no two pieces of wood are alike. In addition to distinctive colors and patterns, wood's ability to accept stains and finishes adds further opportunity for custom expression.

Moreover, wood's timeless aesthetic—never faddish, always in fashion—outlasts passing design trends.

Wood Boosts Well-being and Creativity

Research has shown that exposure to the natural environment positively impacts human health and well-being, decreasing stress and increasing happiness, self-esteem and cognitive ability (Aries et al., 2010).



Key Takeaways

As a natural product with renewable properties, wood is one of the most sustainable materials in the workplace environment. Among its numerous attributes and benefits:

- + Wood is a biophilic material that allows users to connect with nature and enjoy the many health and well-being benefits that the outdoors provides.
- + When sourced from responsibly managed forests, wood can help reduce a building's carbon footprint and has a smaller impact on the environment compared to man-made materials.
- + Popular across generations, wood's warm, timeless aesthetic adapts to numerous settings, with near-infinite colors, patterns and finishes that complement other furnishings.

Mimics Benefits of Nature

Nature-inspired materials provide many of the physical and mental benefits that spending time outside in nature does: boosting innovation for knowledge workers, helping healthcare patients heal faster and enhancing overall well-being.

Wood use in built environments has clear psycho-physiological benefits, lowering sympathetic nervous system reactivity, which means wood lessens stress caused by the environment. Moreover, wood can also be integrated structurally or visually into a building, creating true biophilic design, which is incorporating natural elements such as wood, water, sunlight or plants into the built environment to improve overall health and well-being.

The well-being benefits that wood provides are particularly welcome in environments where it is difficult to incorporate nature indoors, such as healthcare settings where health and safety guidelines may prevent the presence of plants, and office environments with street views of buildings and hard materials.

“Natural wood grain can de-stress us in the same way looking at nature can.”

SALLY AUGUSTIN, PHD, DESIGN WITH SCIENCE

Enhances Well-being

Colors and textures of wood have been shown to elicit feelings of warmth, comfort and relaxation (Aries et al., 2010). Additionally, wood gives off a natural organic compound that relaxes people. “Natural wood grain can de-stress us in the same way looking at nature can,” according to Sally Augustin, PhD, environmental/design psychologist and a principal at Design With Science.

In healthcare environments, natural materials and views of nature have significant positive effects not only on patients, but also on family members and healthcare employees, such as shorter postoperative hospital stays and recovery times, lower pain perception and positive dispositions. Researchers also found natural materials induced feelings of relaxation in patients at rehabilitation centers and improved comfort levels of employees in offices (Rice et al., 2007).

Improves Cognitive Performance

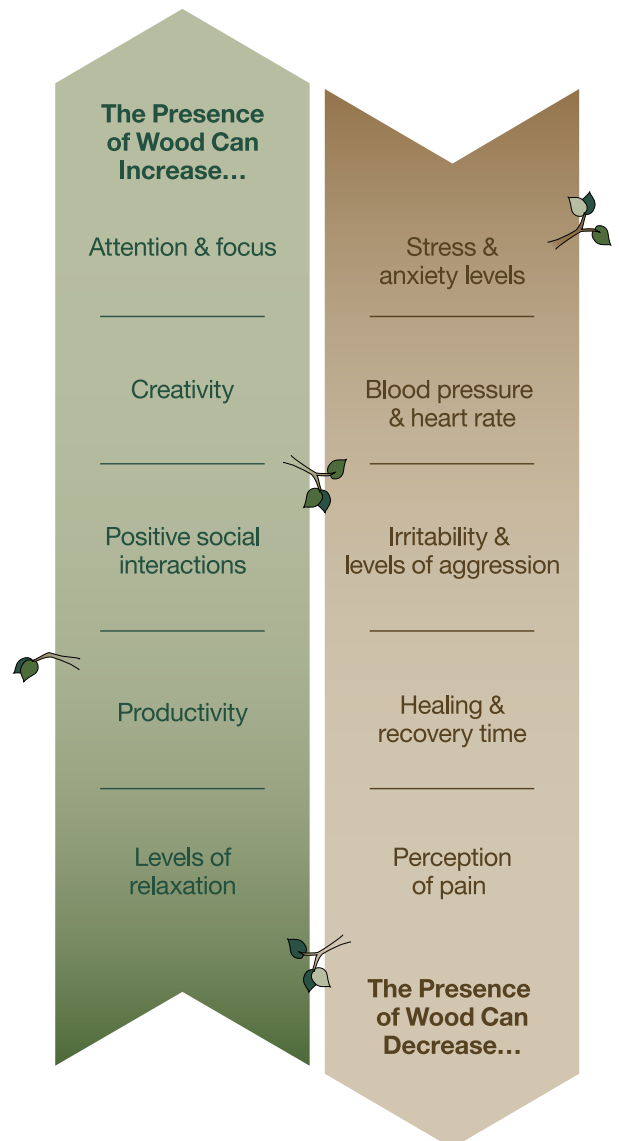
Wood can improve cognitive performance, including better mental engagement, alertness, concentration, physiological and psychological responsiveness.

According to a study conducted by architectural firm HOK, simple visual changes in texture can keep workers alert. Thus a wood surface, with both visual and tactile sensory stimulation, helps boost attention better than monolithic and monochromatic design schemes.



Wood adds warmth to the office environment, along with a touch of nature that can be viewed by all neighborhood users.

Nature-inspired Materials Provide Well-being Benefits



Source: Planet Ark, 2018

Wood's Durability Benefits the Bottom Line

Wood's material composition make it a sound investment choice. This is due in part to wood's fundamental durability, but also to superior finishing processes. In fact, when the highest grades of wood are finished according the most stringent standards, wood veneer's durability actually rivals that of laminate.

However, unlike laminate and other man-made materials that need frequent replacement, wood can be revitalized, and minor imperfections from daily wear and tear can be corrected. Thus, while wood may require a greater initial investment than alternative materials, its longer life may make it a better value.

Wood is an Eco-Friendly Choice

The use of responsibly sourced wood—the only naturally grown, renewable major building material—in interior office settings has positive implications for the environment. When compared to building materials like steel or plastic, the lifecycle of wood has a lower overall impact on the environment than its counterparts and as a result costs significantly less to produce.

Wood is a Renewable Resource

Products bearing the FSC® mark ensure timber comes from sustainable sources that protect environmental, social and economic values. Unlike man-made materials, responsibly sourced wood is renewable and regenerates forests. As forest management and replanting programs continue to grow, these benefits are continually multiplied.

Wood is the only building material that helps tackle climate change.

Wood is Biodegradable

One of the biggest challenges of many building materials is that when they are discarded, they take an impossibly long time to decompose. When exposed to natural climate conditions, wood will break down much quicker than metals or plastics.

Additionally, nothing goes to waste in wood manufacturing. Bark, sawdust, saps, gum, roots and other byproducts and derivatives are burned for energy, used to make paper products, converted to mulch, and used in numerous other products from tea to cosmetics to caranuba wax. At Knoll, wood scrap is recycled for animal bedding and greenhouse fuel.

Trees Help Fight Climate Change

Wood is the only building material that helps tackle climate change. Not only do trees release oxygen, they reduce new carbon emissions by absorbing carbon dioxide from the atmosphere. Wood products then store the carbon that the growing trees have removed from the air and use it to produce sugars and fiber for growth. Estimates are that for every ton of



Live-edge trim brings an added touch of nature and authenticity to a custom Datesweiser wood table.



Rockwell Sawhorse Tables and Hospitality Carts are among the many Knoll Office products that bear the FSC® mark that assures wood was sustainably sourced from forests that protect environmental, social and economic values.

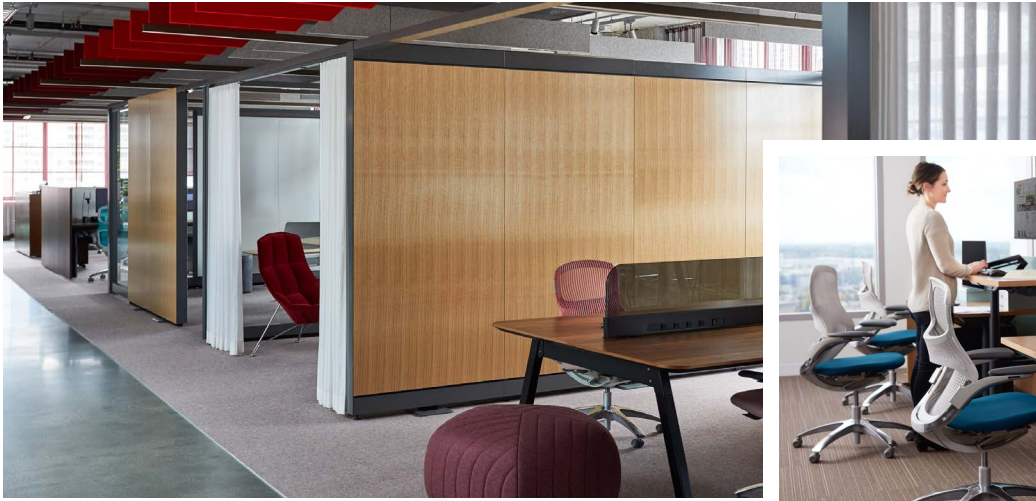


Forest Stewardship Council

The Forest Stewardship Council® (FSC) is the international standard setting organization for defining and measuring a well-managed forest and providing traceability through a chain of custody certification. Knoll FSC certification (FSC® C028824) ensures that Knoll products bearing the FSC mark are manufactured with wood from forests that protect environmental, social and economic values. FSC principles represent the industry's most rigorous standards of forest stewardship.

Knoll's FSC Certified Standard Program covers all general office plan open systems, casegoods and tables, with the exception of certain products from the KnollStudio Collection.

carbon consumed through the use of wood products, greenhouse gas carbon is reduced on average by 2.1 tons. Regenerating forests once again begins the cycle of carbon absorption.



Top: Wood can help delineate space in the office environment when used on workstation panels and gallery screens and on architectural solutions such as on Knoll's Rockwell Creative Wall. Right: Wood's appeal across multiple generations makes it an ideal choice for desks and workstations.

Wood Manufacturing Requires Less Energy

The production and processing of wood uses much less energy than most other building materials. Additionally, most of the energy used comes from renewable biomass, giving wood products a significantly lower carbon footprint. Wastewater production and environmental impact are also significantly lower in wood manufacturing processes, particularly when compared to steel.

Wood Improves Air Quality

A Denmark study revealed that the indoor environment can influence worker productivity by up to 10%, with tasks requiring concentration, memory and original thought particularly susceptible to poor indoor air quality (Wargocki & Wyon, 2013). Additionally, a study by Harvard and Syracuse Universities found that when ventilation is improved and levels of carbon dioxide and emissions are reduced, employees improved cognitive performance by 61%. Doubling the ventilation improved cognitive performance more than 100% (Allen et al., 2017).

At Knoll, wood products are processed in accordance with Intertek's Clean Air Certification sustainability standards.

Wood Resonates with Multiple Generations in the Workplace

Wood's broad appeal makes it a wise choice for the workplace, an increasingly important tool for attracting and retaining talent across generations.

In one study, the presence of wood products within a corporate environment considerably influenced first impressions, with study subjects significantly more likely to want to work for organizations that featured wooden furnishings. Offices with wooden interiors also conveyed feelings of innovation, energy and comfort, while offices without wood expressed feelings of being impersonal and uncomfortable (Riddoutt, et al., 2002).

Wood's natural and sustainable characteristics also speak to values across generational lines. Its ability to resonate emotionally and


psychologically with multiple generations differentiates it from man-made materials. As Baby Boomers delay retirement, and Generation Z enters the workforce, four, sometimes five, generations now co-exist in the workplace. Thus, it behooves an organization to use designs and materials that are broad enough in appeal to resonate with the different ages within a singular work environment.

Wood's inherently dignified aura conveys a message of achievement and upward mobility. This subtle message speaks to the values of Baby Boomers, who view work as synonymous with a sense of self-worth. By contrast, while Generation X appreciates hierarchy and values achievement, it is highly motivated by job security. Wood furniture's perception as a more costly material speaks to this value, sending a message of "we're investing in you."

Quality wood furnishings also express that an individual's job matters, a message that speaks to the core values of Millennials. To this generation, all job satisfaction is driven by meaningful work that supports a larger purpose.

For the environmentally conscious digital natives of Generation Z, a combination of high tech and high touch is desired. Eco-friendly wood furnishings can express empathy and a concern for the planet. Raised during the recession of 2008, Gen Zers crave stability, as well as the human element. Wood's timelessness, strength and durability would likely resonate as well.

Conclusion

Wood is a medium with far-reaching benefits and appeal beyond its aesthetics, materiality and inherent dignity. Financially, wood endures and lends itself to repair, thereby reducing the need to replace furniture frequently. It brings a touch of nature into the workplace, improving employee health and well-being as well as supporting innovation, productivity and creativity. As a natural product that regenerates the environment with an eco-friendly production process, it provides substantial sustainability benefits. Wood's ability to "do it all" is both modern and timeless. 

.....

References and Further Reading

- Aries, M.B.C., Veitch, J.A. & Newsham, G.R. (2010). Windows, view and office characteristics predict physical and psychological discomfort. *Journal of Environmental Psychology*, 30, 533-541.
- Augustin, S., Shapiro, E., & Calamia, M. (2018, December). The effects of feng shui on workplace design. *Work Design*.
- Augustin, S. & Fell, D. (2015, February). Wood as a restorative material in healthcare environments. *fpinnovations*.
- The Benefits of Wood. (2018). *Planet Ark*.
- Cooper, C. & Browning B. (2015). The global impact of biophilic design in the workplace. *Human Spaces*. 1-28.
- Fell, D. (2010). *Wood in the human environment: Restorative properties of wood in the built indoor environment* (Doctoral dissertation).
- Green Building Fact Sheets. *The American Wood Council*.
- Nature Inspired Design. (2015). *Planet Ark*.
- Rice, J., Kozak, R., Meitner, M.J. & Cohen, D.H. (2007). Appearance wood products and psychological well-being. *Wood and Fiber Science*, 38, 644-659.
- Wargocki, P. & Wyon, D. (2013, March). Effects of indoor environment on performance. *ASHRAE Journal*, 46-50.
- Wood Excellence Handbook. (2019). *Knoll*.
- Wood Housing, Health, Humanity. (2015, March). *Planet Ark*.

.....

Through research, Knoll explores the connection between workspace design and human behavior, health and performance, and the quality of the user experience. We share and apply what we learn to inform product development and help our customers shape their work environments.

To learn more about this topic or other research resources Knoll can provide, visit www.knoll.com/research.

Across our constellation, Knoll adheres to the highest sustainability standards in wood sourcing and production. To learn more about Knoll's commitment to sustainable design, visit [Knoll's Wood Story](#).

To learn more about creating environments that support well-being, read the white paper, [What's Good for People: Moving from Wellness to Well-Being](#).