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How Neuroscience Is Optimizing the Office

A molecular biologist and an award-winning architecture firm have teamed up to reimagine the workplace.



ILLUSTRATION: CRUSCHIFORM

By John Medina and Ryan Mullenix

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As competition for employees and ideas increases, employers are looking to office design to give them an edge. That's why companies like Amazon, Google and Samsung have asked us to create spaces that directly affect how their employees think and feel. Our research over the past four years has shown how design affects human biology and experience, allowing us to maximize comfort and productivity. This means creating spaces with all five senses in mind and thinking about the impact of everything from diet to color theory. Here's a look at how the office of the future could promote the health of the organization and the individual.

Keep It Down—Unless Brainstorming



Neuroscience tells us: The human voice evokes some of the most potent emotional responses in our auditory experience. Voices in excess of 55 decibels—roughly the sound of a loud phone call—cause measurable stress. Even more disruptive are overheard “halfversations,” in which the

listener is privy to only one side of a dialogue; our brains automatically imagine the other.

How design can help: Sonically diverse environments—private phone booths, outdoor gardens and acoustically buffered spaces for activities like brainstorming and team-building exercises—keep noise away from traditional desk setups. Sounds found in nature, like moving water [1], can be particularly helpful for drowning out disruptions. At Amazon’s Spheres, an office for 800 employees that opened in Seattle this winter, a rushing brook and waterfall permeate the workspace with continuous, calming white noise.

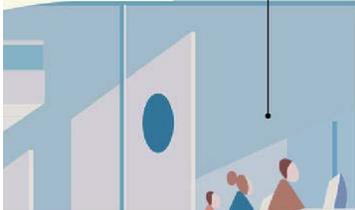
Go Green



Neuroscience tells us: Exposure to plants [2] makes us less emotionally volatile and error prone; even pictures of plants have a calming effect. As a bonus, certain plants give off antiviral, immune-boosting chemicals called phytoncides that promote office health.



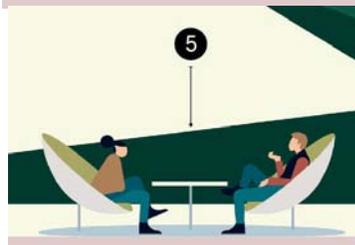
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How design can help: Amazon’s Spheres contains more than 40,000 plants and hundreds of species, but just one plant per square meter can benefit mental and physical health—while creating a more pleasant-smelling work environment.

Seek Visual Relief

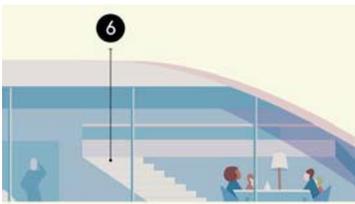
Neuroscience tells us: Humans have an evolutionary need for private spaces that offer a sense of safety, but we also crave vistas for inspiration—a condition known as prospect refuge. Open spaces foster creative thinking, while close confines increase focus. Specific colors have been shown to enhance or hinder these abilities.

How design can help: Enclosed, comfortable booths promote focus [3], while open floor plans [4] with low seating, high ceilings and outdoor views can aid in brainstorming and creative ideation. At Tencent’s headquarters in China, seating along the windows

provides views of the surrounding hillsides, while benches in secluded outdoor garden spaces [5] give employees private, peaceful retreats. Colors should be deployed wisely: blue for stimulation, green for focus, and orange for decision-making.

Get a Move On

Neuroscience tells us: Just 30 minutes of aerobic activity can boost executive function and reduce stress; outdoor exercise increases these effects. At just 1.8 miles an hour—a moderate walk—reaction time and quantitative skills improve.



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How design can help: The layout of each floor should encourage physical activity, with elevators hidden in favor of stairs [6], indoor and outdoor workout spaces where possible, and designs to accommodate walking meetings.

At Samsung's North American headquarters, employees are no more than one floor away from an outdoor terrace, where they can attend yoga classes or walk through campus gardens for meetings.

Eat to Think

Neuroscience tells us: Mediterranean-type diets—rich in fruits, nuts and vegetables—have been shown to boost cognition, particularly executive function, which is responsible for problem-solving and impulse control.



How design can help: Our design for the Bill & Melinda Gates Foundation campus courtyard included blueberry plants [7], which employees can pick and enjoy.

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