

Physical Workspace Considerations



Physical



Cognitive



Social

The movement towards wellness in the workplace

Like bad posture, the traditional model of ergonomics has remained static. Today, we're seeing a shift from traditional ergonomics to a more proactive solution that encourages healthy living... one that focuses on the **physical**, **cognitive** and **social** needs of today's workforce and understands how they're related. It's a movement toward wellness in the workplace.

Workspace Considerations

The lighting, air quality, temperature and acoustics that surround us at work affect us physically and cognitively. These workspace factors can annoy or refresh us, help us focus or distract us from our work. They play a significant role in both our physical and cognitive wellness. Consider the following things when creating your ideal workspace.

Worksurfaces

Considerations when selecting worksurfaces:

- Determine the need for height-adjustability. For some workers, minor changes in seated worksurface height may be appropriate (for example, people who work for short eperiods at their desks, or people who want to fine tune their comfort). Other workers may need greater adjustability that goes from sitting to standing (for example, people who spend much of the day working on a computer). Many ergonomists now recommend adjusting from a sitting to a standing position several times a day.
- Select a size appropriate for tools and tasks. For people who often work at their desk with others, a longer worksurface allows them to sit side-by-side and more easily share documents and computers screens.
- Select a shape for comfort.
- Layering worksurfaces provides additional surface area for spreading out work, piling documents (an organizational method many workers prefer) and helps maximize the efficiency of the workstation's dimension/footprint.

A case for height adjustability

In a 2004 study of the ““Effects of an electronic height-adjustable worksurface on self-assessed musculoskeletal disorders discomfort and productivity among computer workers,”” Intel Corporation, Santa Clara, CA determined the following key findings:

- Workers using height-adjustable workstations gave higher comfort ratings for keyboard, mouse, chair and workstation than those using fixed height workstations.
- 58% of the height-adjustable users reported the table somewhat or definitely helped, versus 20% of the fixed height users.
- 82% of the respondents preferred the height-adjustable to a fixed height worksurface.
- Results indicated that height-adjustable users have improved comfort at the workstation, reduced severity of musculoskeletal discomfort and self-rated productivity improvements.

Seating

Considerations when selecting seating

- Workers who sit for four or more hours a day have increased ergonomic needs and will benefit from a high performance chair.
- People should change postures throughout the day, so look for chairs that encourage natural movement.
- A primary work chair should have the following features at a minimum to ensure the chair can be adjusted to fit the individual user: adjustable seat height, adjustable seat depth, adjustable back tension, and adjustable arms. Additional ergonomic features will increase long term comfort.
- If the chair will be shared, automatic and easy-to-use adjustments help make the transition from one person to another.

A case for high performance seating

In a yearlong field study of over 200 participants, one group was given ergonomic Steelcase Leap chairs and ergonomic training, another group kept their old chairs and received ergonomic training, and a third control group received neither training or new chairs during the course of the study.



The researchers found that study participants who received the Leap chair with ergonomic training showed significantly lower musculoskeletal symptoms. In other words, they were more comfortable. In addition, the study showed that these same participants experienced a substantial increase in productivity, with average productivity gains of up to 18% per employee.

A summary of this study is available in the paper, Leap Chair Productivity and Health Impact Study.

Lighting

Considerations when planning lighting

- Start the lighting plan in the early stages of a project. Early decisions such as ceiling height, window size, and placement of offices are all critical to lighting the space. A professional lighting consultant can help you create a comprehensive lighting plan.
- Indirect ambient lighting combined with personal task lighting is typically the most appropriate solution for computer work. Indirect ambient lighting distributes light upward and reflects off the ceiling, significantly reducing glare. Task lighting supplements indirect lighting by providing direct light for reading paper documents and other work that requires stronger light.
- Individual control over task lighting in each workspace is important so each person can adjust light levels to his or her task and preference.
- With age, the need for more light to comfortably perform tasks increases. A fifty-year old requires approximately twice as much light as a person in their twenties.
- Task lighting should always be placed so that it does not create a glare on the computer screen. Occupancy sensors on task lighting can save energy by turning off lights when no one is there.

A case for a comprehensive lighting plan

Lighting affects workers' physical and cognitive well-being. The quality and nature of lighting influences directional orientation, spatial comprehension, mood, attitudes, and concentration. If lighting solutions don't adequately meet the needs of workers they will generally compensate by straining their eyes, bending their necks, or sitting in uncomfortable positions - the results of which may include eye strain, headaches and sore muscles.

- Workers surveyed by the Kensington Technology Group (1998) listed eyestrain as a leading cause of physical stress in their workplace.
- According to a 1997 study sponsored by the American Society of Interior Designers (ASID), 68% of all office workers were concerned about their lighting. Office workers consistently rated poor lighting as the first or second concern that needed to be addressed.
- In a 2000 Steelcase Workplace Index study, 86% of workers had improved energy and mood in a properly lighted environment.
- A 2002 lab study by Light Right Consortium in Albany, New York found that people who are more satisfied with their lighting are happier and more satisfied with their environment.
- A well designed lighting plan can help reduce energy costs, improve mood, and improve people's physical and mental comfort.

Computer Support

Considerations when selecting computer support tools

- People who use a laptop as their primary computer will have difficulty keeping an ergonomic posture. On most laptops, the screen and keyboard are attached, so either the screen is too close or the keyboard is too far away. This can be solved by connecting to an external keyboard, mouse and monitor.
- If the laptop has a large, high quality monitor, simply raise the monitor a few inches off the desk so the screen is just below eye-level. It's still recommended to use an external keyboard and mouse.
- Look for monitor arms and keyboard supports that are easy to adjust (no cranks, knobs, etc.). This encourages people to adjust their tools more often to avoid static postures.



- Keyboards and keyboard supports come in different sizes. A broad shouldered person may prefer a wider keyboard while a smaller person may prefer a narrower keyboard.
- A footrest may be appropriate for smaller people whose feet cannot rest comfortably on the floor when seated.
- While it may seem like a small thing, organizing computer cables with wire management products can make a space feel more organized and can help avoid tangles and trips.

A case for flat panel monitors and monitor arms

- Studies show that the use of flat panel monitors with adjustable monitor arms results in space savings, energy savings, and improved comfort.
- Flat panel monitors use an average of 60% less energy than CRT monitors (CRTs are the big monitors that were prevalent in the 80s and 90s).
- Because CRTs need significant depth, workspace designers often accommodated them with a deep worksurface in the corner of the workstation. This meant people often sat facing a wall or panel, with their backs to people as they entered the space. A flat panel monitor requires 10 - 20% less space, so designers and workers have much greater flexibility for where to place the monitor, and can make better use of desk space. Workers no longer need to sit facing the corner.
- Monitor arms are designed to help address common monitor issues: glare on the screen, viewing distance (too close or too far), angle of screen, etc. It also makes it easier to reposition the monitor when sharing the screen with another person.
- For people who use multiple monitors at a time, a dual monitor arm helps position both screens for improved posture.

Space Division

Considerations when planning space division

- Space division influences nearly everything in your workspace - traffic flow, privacy, interaction between coworkers, noise levels, lighting, mood, and so much more. A design professional can help you determine your goals and design your space.
- Consider how to use space division to define different “zones” within the office. Ways of signaling zones can range from physical dividers to visual cues.
- Determine the height, size and materials of space division products based on the needs of people using the space.
- Many products and materials have acoustical ratings, which provide information on how the material will influence noise levels.
- Clear or translucent materials (like glass for example) can provide physical divisions while allowing light to pass through, increasing overall light levels.

A case for moveable walls

Modular, moveable walls are an option to traditional drywall. They offer flexibility to change and move as workers' needs change. And they offer options that can improve light levels and noise levels within the office.

- Moveable walls can improve noise control compared to drywall. For example, the Pathways Privacy Wall has an acoustical rating of 43 STC, exceeding conventional drywall.
- Various levels of privacy can be achieved through the use of materials. For example, solid walls provide ultimate visual privacy, while clear glass walls let people see in and out.
- Full-height glass walls allow light to filter through the space. Glass panels along the top of the wall allow light to enter while maintaining privacy. And a range of glass selections – clear, frosted, or textured – provide options for light and privacy levels.
- Optional acoustical glass helps maintain a higher level of acoustical privacy, especially for spaces where confidential information is a concern.

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