

Case Studies on Universal Design

Case 7/Principle Seven

Size and Space for Approach and Use

Steelcase's New Approach to Workplace Design

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Background

Since 1968, Steelcase, Inc., was the world's largest manufacturer of office furniture, with over 900 independent dealers worldwide and manufacturing plants in the US and ten foreign countries. About twice the size of its closest competitor, Herman Miller, Inc. in nearby Zeeland, Michigan, Steelcase's roots reached back to early in the 20th century, when all office furniture was made of wood and offices were heated with wood and lighted with gas lamps. Because fire was a constant danger, sheet-metal designer Peter Wege decided to build steel furniture instead. With the help of \$75,000 from investors, Wege founded the Metal Office Furniture Company in 1912.

Despite its superior fire safety over wood, metal furniture was more expensive, and it wasn't until Wege's company won its first government contract in 1915 that architects began specifying metal furniture. In 1921, Wege hired a consultant to develop a trademark for his company that would promote the durability of his products. The trademark was Steelcase.

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The Metal Office Furniture Company patented the suspension file cabinet in 1934 and created office furniture for the headquarters of Johnson Wax with Frank Lloyd Wright in 1937. The company was able to survive the shortage of steel for civilian use during WWII by producing steel furniture with interchangeable parts for US Navy warships. After the war, this work became the basis for the company's modular office furniture products.

The Metal Office Furniture Company's trademark became its name in 1954, and five years later, Steelcase, Inc., introduced a system of cabinets, frames, and panels to customize work areas to workers' individual needs.

Overseas, Steelcase created Steelcase Japan as a joint marketing and sales venture with Kurogane Kosakusho in 1973 and Steelcase Strafor in France with Strafor Facom in 1974. In 1995, a joint office furniture manufacturing venture in India, Steelcase/Godrej & Boyce, was formed.

Steelcase was able to triple its sales in the 1980s due to growth from several acquisitions begun in 1978. In 1987, the Steelcase Design Partnership was formed from seven companies in special market niches such as designer seating, desktop and computer accessories, textiles and wood office furniture.

With the recession of the early 1990s, purchases of new office furniture slowed, and Steelcase began to diversify into such operations as construction products, consultant services, and products for the health care field. In 1993, Steelcase started two new companies: Turnstone to cater to small businesses and home office workers, and Continuum, Inc., which commissioned work from minority designers.

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In 1995, Marriott, AT&T, and Steelcase developed a collaborative project to enhance office services for traveling business people. Through this project, selected Marriott hotels offered a “Room That Works,” equipped with a large table, mobile writing desk, adjustable office chair, task lighting, power outlets, and PC modem jack.

A Departure from Conventional Office Design

In 1991, Steelcase designers Mark Baloga, Paul Siebert, and Steve Eriksson began conceptual work on a new product that combined features of product design with those of interior and architectural design. The concept, which came to be known as the Personal Harbor® workspace, won a Gold Award in the 1995 Industrial Design Excellence Award (IDEA) competition and was featured in *Business Week's* 1995 Best Product Designs of the Year.

Personal Harbor® was a departure from conventional office design. In developing this new concept, Steelcase did not rely on interviews and other conventional customer research. Instead, Steelcase researchers did exhaustive videotape studies of how workers actually function in a variety of companies. The result was a design based not on how people *say* they work, but how they actually did work, particularly in their interactions with coworkers.

A Mix of Shared and Private Space

The 6' x 8' work station was complete with walls, door, lighting, ventilation, power supply, worksurfaces, and storage systems. Even a partial ceiling was included. The walls and door of the Personal Harbor® reached 78" high and were raised 2 1/2" above the floor to provide for air circulation, even when fully closed.

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To facilitate both collaborative and individual tasks, the Personal Harbor® offered the user freedom in adjusting the privacy of the work space at will. A small clear-glazed window was located on a side wall above the worksurface, and the door incorporated a full-length frosted panel which could be special-ordered in clear glaze.

Although the private space included within Personal Harbor® was small by conventional office design standards, the 48" wide entrance afforded a seamless transition into common areas when needed, complete privacy when desired, or anything in between.



Personal Harbor® and Activity Products from Steelcase

Steelcase designers called the transition into common space the Personal Harbor's® "front porch."

Well-Integrated Accessibility

As might be expected of such a self-contained work space, requirements of a number of codes were incorporated, including the accessibility guidelines of Title III of the Americans with Disabilities Act.

The sliding, curved door incorporated a full-length vertical bar handle on the outside and 16" vertical bars on the inside, at both the inner and outer edges. The bars were approx. 1 1/4" in diameter with 1 1/2" clearance between the bar and the door surface. The force required for opening or closing was less than 5 lb. There was no latch or lock mechanism on the Personal Harbor® door.

Integrated Storage and Worksurfaces

In studying ADA guidelines for accessibility, Steelcase designers noted that reach ranges for wheelchair users were greater to the sides than straight ahead. Therefore, inside the Personal Harbor® was a wide column, nicknamed the “totem,” which protruded no more than 4" into the space and could be oriented to the user’s right or left. Stacked within the totem were shelves, drawers, and space for a telephone, a CD player, control panel for lighting and ventilation, and side-mounted power outlets, all between 15" and 54" above the floor.

Fixed shelves were located behind the curved wall housing the door, and height-adjustable shelves were integrated with the worksurface, also adjustable in 1" increments. The user had a choice of a convex worksurface for greater surface space, or a concave shape for greater maneuvering room. With the concave surface, there was 60" of turning space to allow ample room for wheelchair maneuvers inside, even with the door closed. A mobile auxiliary worksurface could be nested beneath the fixed worksurface or parked behind the user as necessary.

User-adjustable lighting was provided above as well as behind the worksurface, including a motion detector which turned on the lights when the threshold was approached.

A Usable Space for All

The four-year development of the Personal Harbor® design obviously included consideration of the needs of workers with disabilities. However, these considerations were so well-integrated with other design parameters as to be invisible. The result was a work station with universally useful features, yet flexible enough to accommodate specific needs and preferences of individuals. Nothing in the design identified the user as old or young, disabled or able bodied.

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A unique hybrid of product, interior, and architectural design, the Personal Harbor® illustrated the consideration for space, equability, and flexibility characteristic of good examples of Universal Design.

References

Hoover's company profile database. (1996). Austin, TX: the Reference Press, Inc.