



A MAiSPACE WALLS WHITE PAPER

## **Incorporating Technology, Versatility and Design in Movable Wall Office Systems**

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## **Introduction**

Office planning for today's multitasked workplace environment requires a carefully planned and tailored blend of workspace layouts and floorplans to accommodate personnel employing a wide range of skill sets. Today's new approach to office planning is a direct result of experience gained over the past decade. Throughout this period it has been dramatically demonstrated that one size does not fit all when it comes to fostering workplace productivity and employee morale.

While the experience has been rich, it has come at high cost for many firms who for reasons of economy or attempts at building a "family" feeling through teamwork, believed that open-plan offices would boost productivity and lower costs. Perhaps one of the most extreme examples of this was the "virtual office" created by an advertising agency. Employees had nothing of their own – instead they queued up daily to be issued a phone and computer, then sought out a place to camp for the day. The experiment was not a success.

More common is the open office plan built on modular panel systems and furniture. The systems approach has achieved a high level of development in terms of sophistication, aesthetics and functionality. The most technologically advanced of these systems easily accommodate the tremendous amount of intelligence accessed within and from the workplace. Open-office solutions provide high value when teamwork and interaction are essential to the tasks being performed. They can be reconfigured quickly and inexpensively to facilitate the Moves, Adds and Changes (MACs) characteristic of most open office workplace environments.

## **Evolution in the Workplace**

The popularity of open office designs notwithstanding, clearly there are instances where they do not add value. For example, Michael Brill of BOSTI Associates

says there is an idea that openness feeds interaction, but where that happens is in the hallways and coffee bar – exactly where it should happen.<sup>1</sup>

There is no doubt that open office designs prove their worth in workspaces that require teamwork and collaboration – such as in a call center. But studies by BOSTI show privacy can improve productivity by up to 250% for task-intensive knowledge workers. Because of this and other reasons, leading edge companies are blending open plans with private offices. This trend is expected to accelerate as menial office tasks are automated. Moreover, companies are increasingly aware that skilled knowledge workers are not in unlimited supply. Companies viewing skilled personnel as a valued resource provide the facilities that attract the right people, then support their contribution to the success of the organization.

Movable wall systems are a key element to knowledge worker satisfaction and productivity. They solve the privacy issues necessary for thinking but without imparting a feeling of isolation. They enable employees to add their own touches to the workplace and create a home away from home. Structural elements liberally enhanced with colors, textures, coordinated worksurfaces, cabinetry, shelving and technology support typify the new worker-friendly approach to movable full-wall office systems.

This paper will examine movable floor-to-ceiling wall systems based on a modular design, and provide guidelines to help office managers and planners make educated purchasing decisions. It will discuss first costs and lifetime costs, cable management, construction details, privacy and other concerns impacting the purchasing decision.

### The Evolution of the Wall

Until very recently, office privacy was synonymous with inflexibility. Private offices were largely constructed of plasterboard or sheet rock over metal studding and firmly attached to floor and ceiling structural members.

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<sup>1</sup> The Buffalo Organization for Social and Technologic Innovation



Construction and subsequent remodeling created dust, paint fumes, aggravations, lost productivity, missed opportunities and work disruptions as employees moved to a temporary location. New construction or rebuilds frequently are costly and difficult to manage because they can involve as many as 6 or 7 trades ranging from common labor through painting, plastering, electrical and communications workers. Moreover, as landfills close, disposal costs are increasing for old plasterboard and studding.

Today, wall systems are more than walls. They provide beauty, function and versatility while complimenting the entire work area – including those built on the open office plan. Because they are installed primarily to meet the privacy and productivity needs of task-intensive knowledge workers, they incorporate standards-compliant cable management systems for voice, data, Internet and video requirements as well as for electrical requirements. Work surfaces, computers, printers, storage bins, shelving, AV components and other interior elements can be positioned at will by the occupant. As needs change these offices can easily be reconfigured as conference or special purpose rooms. Or moved completely to another location.

Modern full-wall systems provide privacy without isolation. Optional clear or frosted glass double-glazed panel segments and doors provide ambient lighting and a window to the outside world while minimizing noise transmission.

In summary, while increasing the productivity of task intensive knowledge workers, today's movable full-wall systems provide several other measurable benefits to the bottom line:

- they can be moved or reconfigured overnight at one-third the cost of drywall systems
- modern production techniques substantially lower initial purchase costs

- they may qualify for furniture depreciation schedules, and possibly lower a company's real estate taxes because they are not part of the building structure
- solid construction, coupled with plug-and-play cable management, facilitate Moves, Adds and Changes (MACs) meaning lower lifetime costs.

### **A Closer Look at Movable Wall Systems**

Full-wall systems are installed to meet specific requirements within an organization. Business and office management publications that report on the topic are in general agreement that privacy and eliminating distractions by co-workers lead these requirements. If privacy increases the productivity of task-intensive knowledge workers by up to 250 %, there's ample financial justification for a full-wall system.

Privacy fulfills several needs. Business discussions may be off limits to nearby employees. Similarly, employees may have a legitimate need to conduct personal business on company time, and should be free of the fear of eavesdropping. Tasks may require teamwork at certain stages of a project, and a private "think room" at others.

Movable wall systems must respond to these various requirements. Managers responsible for specifying these systems and crafting requests for proposals (RFPs) from vendors must be able to intelligently evaluate what vendors offer. For example, all vendors should be able to certify their product

- is manufactured in an ISO 9002 certified plant,
- is independently certified to provide a sound transmission coefficient (STC) of 32 or better,
- utilizes non-destructive fasteners throughout to avoid damaging building interiors,
- has modular sections and components that are 100% reusable
- exceeds all ANSI/BIFMA industry standards, and
- passes the Class (A)ASTM E-84 Tunnel Test for Non-Combustible Materials
- includes slotted channels to accommodate hang on furniture components



The following paragraphs summarize points that should be incorporated in the decision process.

1. Cable Management:

Cable management capability must be a top priority when looking at movable full wall systems. This relates to the voice and data cabling that supports the workforce and provides interconnection to the office Local Area Network (LAN), intra-company networks (intranets or Wide Area Networks (WANs), customers and suppliers (extranets) and other external resources such as the Internet. Voice and data cable management systems should accommodate copper, fiber and coaxial options. Cable management also relates to electrical power systems.

Power systems should not share channel space with voice and data systems. Base raceways for electrical and data systems should be supplemented with optional belt line power and data consolidation points along with other internal vertical and horizontal raceway options. The power distribution system should provide a minimum of 4 circuits at the base or belt line. The design should support “plug-and- play” MACs by trained office technology personnel.

Horizontal voice, data and video cabling system serving the office must conform to TIA/EIA 568-A and 569-A<sup>2</sup> standards. More recently, the TIA has introduced new guidelines in response to the growth of open offices. Called TSB (Technical Services Bulletin) TSB-75<sup>3</sup>, it specifically addresses cable management for office layouts characterized by frequent MACs, and it relates as well to movable full-wall systems.

Most manufacturers are only now beginning to address cable management. The pioneer was MAiSPACE, Inc. of Mount Olive, NJ in collaboration with The Siemon Company, Watertown, CT, introduced

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<sup>2</sup> Telecommunications Industry Association/Electronic Industries Association

<sup>3</sup> “Additional Horizontal Cabling Practices for Open Office Designs.”

MAiSPACE as the first modular system in compliance with TSB-75. It uses a simple “plug and play” design that permits employees equipped with a minimum of training to handle in a few hours the MACs that formerly would require trained outside technicians working several days to accomplish. The cost of change can drop to \$50 per cable vs. \$500 in conventional systems<sup>4</sup>.

## 2. Sound Management

Investments are made in full-wall systems to support privacy and eliminate distractions from neighboring workspaces. Superior sound management requires superior construction processes to keep unwanted noise from interfering with the thinking processes. Product specifications should provide a sound transmission coefficient (STC) rating of 39, an ideal target for wall systems.

Sound management is supported as well by acoustical laminated glass panels and doorframes with a full seal perimeter interface.

## 3. Structural Considerations

Movable wall systems should be fully attached to ceilings using non-destructive fasteners. This provides strength, sound management and helps support hang-on components.

Raceways at the floor level should accommodate standards-compliant power, voice and data cabling along with consolidation points supporting belt line power and data porting via vertical panel raceways. Unitized floor tracks with integral screw levelers should be equipped with a carpet gripper that penetrates the carpet to stabilize the wall, thereby eliminating the need for destructive floor fasteners. The base configuration should support a plus or minus 1” floor variation. Standard ceiling tracks should allow for a plus or minus 3/4” ceiling variation and be furnished with light and sound seals and quick connectors.

Wall panels must be a minimum of 2-5/16” thick with 20-gauge rustproof steel skins for abuse resistance, have insulated cores that provides a 39 STC

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<sup>4</sup> For a more complete discussion of cabling in office systems, see MAiSPACE White Paper “An Introduction to High Performance Office Cabling Systems”

(sound transmission class) rating, and have reinforced horizontals for superior panel flatness. Panel widths are based on a standard furniture module of 24", 30", 36", 42" and 48". They should accommodate standard ceiling heights from 8'0" to 14'0" in half-inch increments. Vendors should offer a wide range of options in panel colors, textures and fabrics. Hang-on components from any manufacturer should be supported by the system's furniture slotting design. To support the concept of modularity, panels must be individually removable from any point within a run.

### 3. Other Considerations

Forward-thinking manufacturers now offer fully integrated designs across the entire officescape. An integrated system allows full-wall systems to be directly connected to modular open office panel systems using common structural components. These systems support the seamless integration of voice, data and power cabling systems between varying office designs as well as the use of hang-on components in either setting.

Compatible colors, textures and finishes between general office and executive areas provide mutually supportive settings along with a harmonious visual appeal. Achieving a desirable unified look now is surprisingly affordable, as it does not require purchasing top-of-the-line open-office panel systems to aesthetically fit with the executive areas.

In terms of office layout, systems should support 90-degree and straight connections plus 120-degree configurations. Vendors should provide a wide variety of components that permit non-destructive integration of the wall components into the base building.

Doors should be laminate or veneer and be available in a wide range of colors and finishes. They should fit snugly into 18-gauge steel doorframes with a full seal perimeter interface for complete sound protection. Double-glazed wall panels should be offered in a wide variety of glass options.

## **Conclusion**

Movable full-height wall systems add measurable value when task-intensive knowledge work is being performed. Thanks to modern manufacturing techniques and supply chain strategies, manufacturers are able to offer superior quality full-wall systems at an affordable price. In addition to providing an attractive, private workplace that helps retained valued personnel, these systems incorporate standards-compliant voice, data and electrical power systems, and are quickly and easily reconfigured to accommodate new office requirements. They also can be fully integrated into open office designs through common structural components, compatible colors, textures and designs and shared cabling systems.

These features, coupled with attractive tax advantages that do not apply to structural (plasterboard) walls greatly reduce the lifetime cost of a full wall system and support a harmonious visual appeal across the entire officescape.