

# A Vision of the New Workplace

by Francis Duffy and Jack Tanis

*Office architecture, long taken for granted, is badly in need of radical redesign. The objective of the new office is to attract and retain brilliant staff, to stimulate their creativity, and to multiply organizational productivity. In order to do this, view **life** must be breathed into how we approach office design.*

The boom in building office buildings from 1975 to 1987 has changed to bust. In 1992 office building starts in the United States were less than 10 percent of those in 1987. The U.S. office furniture industry, which grew at twice the gross national product (GNP) growth rate between 1975 and 1987, first went flat and then slipped into real decline in 1992, the first major downturn for almost two decades. A similar tale can be told about the United Kingdom, Australia, parts of Europe and even Japan. Meanwhile, the management consulting sector in the United States has doubled in five years from \$7 billion to \$13.5 billion.

What do these bald statistics tell us? One interpretation is that they simply represent one more victory of the growing importance of knowledge processing over older industries based on the manufacture of things such as office furniture, office buildings and the fabric of cities. The purpose of this article is to argue an alternative point of view: We wish to assert the growing importance to all modern organizations of the physical working environment.

Capital expenditure on the physical environment of the office need not be, as is usually assumed, a waste of resources. Such expenditures should be regarded instead as an essential catalyst for achieving and sustaining success in all industries and especially in those that depend increasingly on generating a continuing stream of fresh ideas from creative people.

## Never Look Back

The physical design of the working environment - the *things* of the office - is saturated by the once magnificent but now

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antiquated ideology of Frederick Taylor. Considering the enormous impact of Taylor on the 20th century, it is surprising how quickly the inventor of *Work Study and Scientific Management* has been forgotten. Taylor's ideas about -now people - or "units of production," as he preferred to regard them - should be organized for maximum efficiency made him the inspiration of such organizational geniuses as Henry Ford, Hitler and Stalin, to name but three of his admirers.

Taylor's ideas changed the face of the workplace 100 years ago and still dominate office design to this day. Compare such leading offices of the turn of the century as Frank Lloyd Wright's Larkin Building of 1904 with those of corporate America of the last few years. The physical similarities are striking, the conservatism colossal. This is hardly surprising given that the process by which office buildings, and especially office interiors, have been procured has hardly changed since the first text books on office administration and office layout were compiled in the first decade of this century.

Struggle hard as architects and designers occasionally do to escape from the influence of Taylor's ideology, they habitually fall back on outmoded stereotypes. The reasons are obvious. First, from 1920 to 1960 there were as few new ideas in organization theory as in office design. Second, as the gap began to widen in the 1960s between the physical office environment and emerging ideas of new ways of working and new kinds of organizational structure, there were never enough intellectual or financial resources in the fractured supply-side-dominated furniture and construction industries to respond to change. Third, as the divorce between business reality and design became more and more complete, an even harsher economic reality - manifested in fee cutting and lower and lower margins on fee bids - has made design innovation next to impossible.

Taylor's ideas of the mechanical, top-down, inhuman, status-rich, invention-poor, alienated workplace live on, manifested in every workstation, ceiling tile and light fitting.

## Office Design and the "New Gurus"

Never has organization theory been so rich and inventive as in the 1990s. Never has innovation in office planning fallen so far behind. Never has the contradiction between managerial aspirations and physical reality been so sharp.

A recent review of "Management's New Gurus" in the Aug. 31, 1992, issue of *Business Week* provides a measure of the extent of current changes in management thinking. Many of the emerging ideas quoted in this useful article are derived from the writings of W. Edwards Deming, Peter F. Drucker and Tom Peters. The "new gurus," writing in a time of accelerating change and intensifying global competition, focus on what organizational structures and work processes will enable companies to become more customer

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focused and thus more internationally competitive.

The new gurus include Michael Hammer, who uses the term *reengineering* to advocate the radical redesign of work; George Stalk Jr., who has coined the term *time-based competition* to explain why companies need to minimize cycle times in every process; David Nadler, who ironically enough uses the term *organizational architecture* to describe a new form of organization evolved around "autonomous work teams" in "high-performance work systems"; and Peter Senge, who talks

She is currently studying how "model companies" can use technology to revolutionize the nature of work.

Not only do all these ideas taken together comprise what is little short of a new intellectual industrial revolution, but each one of them, if taken literally in that very physical way in which real architects are trained to think, seems to have its own direct consequences for the redesign of the physical environment of work (see Figure 1), suggesting offices that are very different from those derived from the ideas of Frederick Taylor.

**FIGURE 1:  
The Impact of New Organization Structures on the Workplace**

	New ways of working - more interaction - more collaboration - more individual autonomy	New patterns of space use - more group spaces - more shared spaces - more intermittent space use
Michael Hammer: 'Reengineering'	• •	• •
George Stalk: 'Time-Based Competition'		• •
David Nadler: 'New Organizational Architecture'	• •	•
Peter Senge: 'The Learning Organization'	• • •	•
Charles Handy: 'Discontinuous Change'		•
Edward Lawler: 'High-Performance Involvement'	• •	• •
Prahalad & Hamel: 'Core Competencies'	• •	• •
Gerald Ross: 'New Molecular Organization'	•	• •
Shoshana Zuboff: 'Informating'	• • •	• •

### Physical Space and Organizational Change

The new gurus talk about the redesign of work but very little about office design. What we mean by *design* goes beyond superficial styling. What we mean by design is "the skilled and cost-effective allocation of physical resources to solve immediate as well as long-term accommodation problems—despite uncertainty, inadequate information and shifting goals—for users, clients and society at large in such a way as to embrace both high culture and deep practicality." Such a broad but precise definition is in effect a claim that design corresponds to nothing more closely than the highest levels of strategic management.

Given this orientation, we are prepared to argue that it is not only possible to use design to achieve emerging managerial objectives, but that design has become essential today for corporations using capital investment as a lever to affect organizational change.

about "the learning organization" as director of the Massachusetts Institute of Technology's Systems Thinking and Organizational Learning Program.

Several other "gurus" were also mentioned in the *Business Week* article. Charles Handy, philosopher and futurist, maintains that "discontinuous change" requires totally new approaches to work and organization. John Kotter believes that most U.S. companies are overmanaged and under-led. Kotter says organizations need to combine strong leadership (defined as the ability to create a changing environment) and strong management to cope with complexity.

Edward E. Lawler III dislikes the commonly used new management term *empowerment*, but he is an advocate of what he calls *high-performance involvement*. Lawler advises companies to break themselves down into small units and give employees much more say in what they do so that they can be rewarded for taking responsibility. C.K. Prahalad and Gary Hamel urge firms to focus strategy around what they do best (core competencies) and to build on these to create future competencies. Gerald Ross maintains that the "new molecular organization" will be built around markets, not products or functions.

Shoshana Zuboff, author of *In the Age of the Smart Machine*, speaks of the need not to *automate* but to *informate*, which means using smart machines in interaction with smart people.

For some managers the force of this argument may be obscured by the trend of leasing office space and out-sourcing facilities management - thus distancing core operations from the nuisance of managing what seem to be the trivia of the working environment. Such attitudes we believe to be wrong. Whether long-term assets are leased or purchased, they are inevitably capital commitments.

The broad categories of capital investment in the office include the building shell, scenery or interior architecture (in leased buildings this is often referred to as the tenant improvement allowance for walls, ceilings, lighting and floor covering, etc.), furniture systems and office technology including computers, telephones, copiers and the rest of the apparatus of business. So all-pervasive is the design of the physical working environment that, although most companies realize and accept piecemeal the necessity for these investments few corporate executives and owners really know what their total capital investment is per office worker. This is not to say that these costs are unknown, but that they tend to be viewed as budgeted items to be dealt with separately and technically rather than being given any cohering strategic significance. In other words such investments are often in a real strategic sense seriously under-managed.

Meanwhile, office work is changing as it has never changed before. The term *knowledge worker*, introduced by

Peter Drucker, is generally viewed as capturing more and more of what is done in offices by knowledge workers. Steelcase has defined knowledge work as analyzing, creating, deciding and collaborating. Knowledge workers act on information as their fundamental raw material, work alone and as part of collaborative teams, are multidisciplinary and need privacy that facilitates deep, creative concentration. In short, they need an environment conducive to growth and learning.

### **Physical Space and Productivity**

Office buildings, office interiors and office furniture have been regarded too often as necessary evils. The surge in the sales of office furniture and the building of office buildings from 1975 through 1987 was simply an inevitable but illthought-out response to a real and growing underlying need to provide space for new kinds of office workers.

Today's increasingly hostile business environment is likely to undo this growth. Not only has the growth in the number

**"The key to the design of the new working environment is productivity - of both workers and, just as significantly, of space."**

of office workers peaked, but those who remain are having to be accommodated more and more economically. Space sharing, space-use intensification and working at home are increasingly attractive to user organizations.

The key to the design of the new working environment is productivity - of both workers and, just as significantly, of space. Advertisements for technology and furniture hint at or even promise improvements in productivity. And yet as early as 1986 a *Fortune* magazine article identified what appeared to be the embarrassing failure of the new electronic office technology to deliver productivity. Such analyses of office productivity may be less than useful in measuring the performance of the new office because they too - like the outmoded physical offices we have been describing - are liable to be based on such simplistic Taylorist indices of performance as key strokes.

The newest kinds of intellectual, integrative, creative work, such as those described by the new gurus, have to be measured in a new way - in terms of value added. *Effectiveness* is what matters rather than efficiency. Value-adding work is more often than not the result of open-ended, collective endeavor. What is needed now are not only better measures of individual performance but far more sophisticated and robust concepts of what is really involved in integrating processes of knowledge work.

The availability everywhere of increasingly powerful information technology is the great generator of change. As users become confident of its reliability, information technology is shaping both new office structures and the expectations of new kinds of office workers. What seemed familiar and solid about office work is today quite literally melting into the air. As Charles Handy argues in *The Age of Unreason*, all conventions are under challenge: "Change isn't what it used to be."

### **Office Design Looks to the Past**

While organizational theorists and their increasingly eager pupils in corporate strategy are searching the horizon for emerging patterns of change, physical office design is stuck in old ways. The reason is obvious: The voice of the user is not heard, and there are few processes available to make that happen. All too often designers and facilities managers are creating and using standards programs that fail to support the emerging work processes.

In addition an increasingly competitive market designers with little time or fee to innovate. The same logic applies with even greater force to explain the deeply conservative behavior of large sections of the office furniture and office construction industries. Innovation is rare. Tough thinking about the underlying nature of change rather than styling should be revolutionizing the nature of office environments.

It is hardly surprising that office users, increasingly stimulated and entranced by the potential for organizational change, have become openly contemptuous of their offices.

### **The Office as a Catalyst of Change**

It hasn't always been this way. Some designers have attempted to design the future - using the very materiality of the office to stimulate organizational change. Precedents include:

*The Responsible Workplace (DEGW/BRE 1991):* *The Responsible Workplace* argues that office buildings and office interiors must be designed to be used in ways that reconcile adding value to the user's work while simultaneously driving down occupancy costs. This book is based on 10 trend papers that investigate the future of information technology, organizational structure, work practices and user expectations. as well as the developing regulatory framework of the European Community. It also includes 20 case studies of how the most innovative European office organizations have accommodated themselves.

*Your Office Is Where You Aye, (Stone & Luchetti, 1985):* In a March 1985 *Harvard Business Review* article, "Your Office is Where You Are," Robert Luchetti and Philip Stone addressed the emerging needs of activity settings to support the work process needs of office workers. Their initial proposals were characterized by enriching the conventional working environment and pointing in a direction that has been subsequently explored in collaborative research and development work with Steelcase. Stone & Luchetti's work was represented in the recent exhibit sponsored by Steelcase called "Breaking Patterns," shown in Chicago and New York in 1992.

*ORBIT 1 & 2 (DEGW and others, 1983 and 1985):* Both studies (ORBIT 1 in the United Kingdom and ORBIT2 in North America) explained the direct and indirect impacts of information technology on office design during the most turbulent period of change when offices everywhere were coming to terms with the escape of the computer from the computer room into the general office. Both ORBIT 1 and especially ORBIT 2 advanced the practice of evaluating office building performance in relation to changing needs of different sectors.

*The Office, a Facility Based on Change (Robert Propst, Herman Miller Research, 1968):* During the 1960s Robert L. Propst and his team at Herman Miller Research studied the office and recognized the need for change. Propst's 1968 book, *The Office, a Facility Based on Change*, is a classic statement on the need to design for change. His team developed the first broadly marketed panel furniture system called the *action office*,

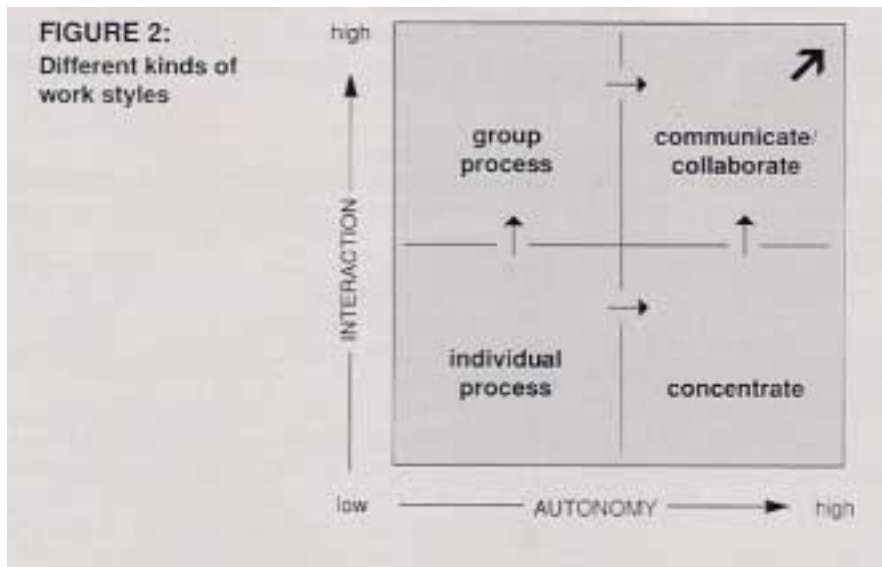
which redefined the products that make up a majority of office interiors in North America. While the theory and research is still valid, the products that stemmed from Propst's initial vivid insight into the needs of the first generation of office worker - systems analysts and programmers who were neither managers nor clerks - have tended to stagnate rather than embrace newer activity-based settings.

*Burolandschaft (Quickborner Team, Hamburg, 1950s):*

Burolandschaft was the first attempt to design a truly cybernetic office on entirely new free-flowing, inter-connective principles with a subservient architecture simply wrapped around it. Early action-office planning was much influenced by the free-form patterns of Burolandschaft.

Ironically, the original concept that having everyone out in the open improves communications and expresses a more egalitarian attitude has been entirely superseded in Northern Europe. Where real user-based social democracy has strongly influenced office design, much more cellular office buildings are being built. While the open-plan systems approach was initially very successful in North America, screen-based or panel furniture systems came to be increasingly arranged in tight and highly predictable rectilinear groupings of six to eight workstations. The original free-form concept of planning that supported work flow has disappeared over time.

What all five precedents of innovative thinking in the office in Europe and North America show is that an enormous amount of energy is needed to change office design. All too quickly and all too easily strategic direction is lost. Old patterns reassert themselves. Old Taylorist ways return.



### Leveraging Organizational Change Through Design

Such regression could be tolerated in the past - in a world of work still relatively insulated from change. Today conservatism can no longer be tolerated: Not only is it wrong, but it has become increasingly dangerous, threatening organizational survival. It is possible, following Tofler and Drucker, to characterize the shift that is taking place in organizational design as being from where we are to what we need to become. That is:

- from departmentally minded to project organized;
- from vertically structured to horizontally networked;
- from authoritarian to collegial;
- from alienated to engaged; and
- from performing simple tasks to solving complex problems

Such shifts represent a world of difference - a new industrial revolution - from routine work to the processing of knowledge. This is what Duncan Sutherland calls a new kind of *officing* - the reintegration in a totally novel way of people, technology and capital. Such new patterns of work have the potential to change the landscape of work. If you seek an image of how organizational innovation can change a landscape, think of what containerization has done to the geography of ports. But more important than the simple phenomenon of physical change is that the new office, used correctly, can accelerate organizations in their pursuit of wealth-generating knowledge.

Listen carefully to what Nadler is saying about devising a new organizational architecture to cope with change; to what Hamel and Prahalad are arguing about how strategic intent highlights the need to define what core competencies really are; to what Senge is saying about the nature of learning organizations, based on fluid team work; and to the way Lawler describes what high-performance involvement really means. The conventional office, derived as it is from Taylorism, is antithetical to these ideas.

Re-examine the nature of the work process under the influence of Hammer's cry for reengineering the work process or of Stalk's insistence on time-based competition. The conventional office speaks of the past. It is certainly not the place to achieve novel, highly charged, highly remunerative processes.

Handy talks not only of new kinds of work but new ways of life. Look at Houston, Dallas, Sydney or Canary Wharf in London and ask whether the slim user evidence on which these cities massively increased their stock of conventional office space in the last decade has generated a vision of the future or simply a hasty - and soon to be regretted - replication of the same old, slightly spruced up products.

We believe that a more productive office future can be achieved - but only if capital expenditure on the material office is seen no longer as a nuisance, nor as something inert, but instead as a generator for organizational change that only needs to be harnessed to:

- redirect organizational change;
- accelerate the process of change;
- ensure the flexibility to accommodate future change;
- break through barriers to change; and
- secure options for the future.

To achieve this, capital expenditure on office buildings, interiors, fitting out, furniture and office technology has to be removed from a cost focus to one that is energized by the need to maximize performance of people and the work process. The interaction of the material office, the office work force and work process must be planned in an integrated, open systems way.

The shift from "who we are now" to "who we need to become" is achieved through appropriate capital investments in order to realize *strategic intent*. Investment in space and technology must be integrated into strategic modeling in order to add value for customers, to generate revenue, and ultimately to derive profit and to create wealth. In this way a *cost-reducing* view of physical space is replaced by whatever is *revenue enhancing*.

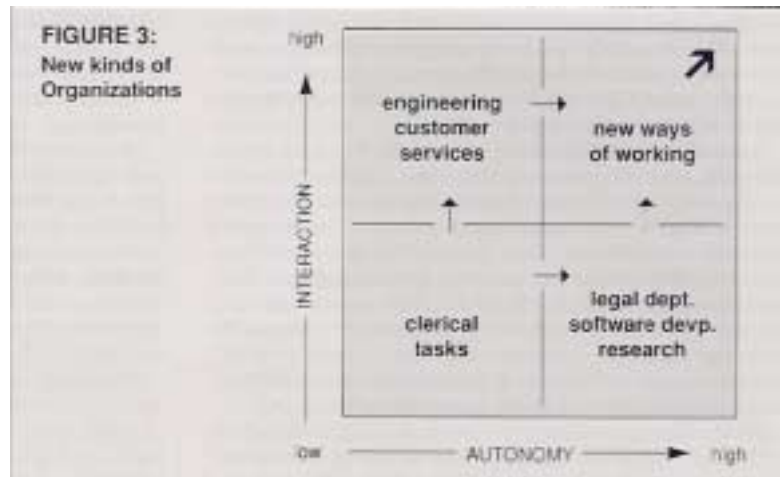
### The New Directionality

The design of the material office and the direction of organizational change are intimately bound together. Organizational design and physical design must be closely correlated to achieve organizational success - not to mention organizational survival. Previous models simply forced capital expenditure into cost-reductive submission. In the new office capital must be used to lever revenue

Capital outlay per knowledge worker is much larger than most businesspeople estimate. However, actual occupancy costs per person per year are relatively small compared to other employee expenses. What matter are the facts. Capital investment per office worker must be calculated; anticipated life cycles must be worked out for each category of space; and average revenue generated per knowledge worker must be related to costs. Benchmarking investment and measuring performance over time will make it possible to plan changes in both the process and tools employed. The office must be viewed more like farming, mining and manufacturing (i.e., relating return on investment to measures of output). Tracking the precise contribution of each category is less relevant than making certain that real productivity improvements are achieved in the production of knowledge, information and service.

The first steps in how this can be done are obvious - think about organizational structure, work processes and physical consequences in a systemic way. Figures 2 and 3 show how different kinds of work styles (i.e., shifting from lower to

Similarly, Figure 4 shows how increasing freedom in the use of time (as well as of space) derived from information technology can be combined with the trend toward increasingly collaborative work modes that follow from more complex and integrative work processes. Again the steps are similar: from the traditional office either to shared individual workstations or to group spaces,



and then subsequently combining the advantages of both group work and space sharing. In this way organizational planners can determine directions for change at the same time as the designers of the physical working environment are stimulated to investigate wider ranges of solutions.

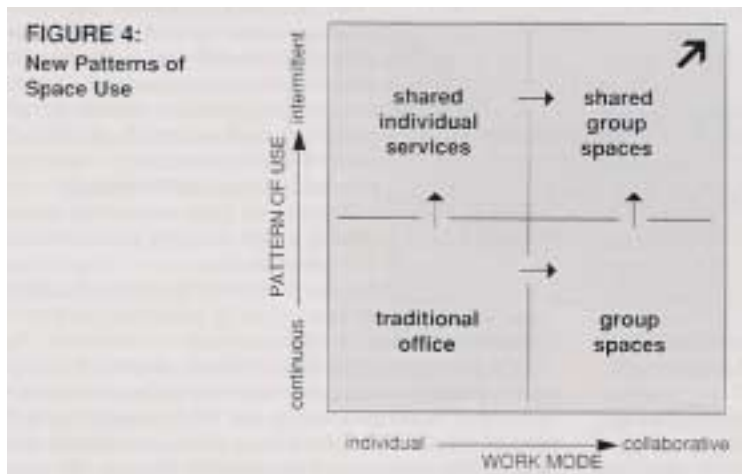
### Energizing Office Design

Why is all this initiative necessary? Why did office design and planning get stuck? We think there are three main reasons. First, everyone involved in the process -architects, designers and suppliers has lost sight of the true customer. For one reason or another each is cut off from the office worker.

The causes are numerous and include the inability to respond appropriately to changing user needs, as well as the inability of the client to measure the value of design and the physical space impact on the organization's effectiveness.

Inadequate models are the second reason why office design atrophied. The Taylorist office was based on the notion of providing an elementary workstation for each elementary office worker. Determining who gets what is simply derived from the hierarchy of the organization chart. As organizations attempt to apply what Drucker and the new gurus are suggesting, this method of determining standards is crushingly ineffective. Increased interaction and greater individual responsibility require settings that support the needs of knowledge workers doing both concentrated and collaborative work.

Thirdly, little or no linkage exists between the strategic view of organization and the design of physical space. Management consultants rarely focus on the importance of physical space



higher levels of office interaction and from lower to higher levels of autonomy for office workers) can be related diagrammatically to other work styles - from the old clerical pattern in the bottom left-hand quadrant of Figure 2 to more group work or to more concentrated individual work - and how both of these more complex forms of work styles are likely eventually to combine in truly communicative and collaborative work processes.

as a means of facilitating behavioral and organizational change. The new gurus talk about vision or strategic intent of companies, but usually architects and suppliers of physical space are not given much opportunity to link the process of designing office space with such strategies. Professional facilities managers are rarely brought into the strategic planning process of their companies. Office space is not linked to the real strategic intent of the organization. Architects, designers and facilities managers can be strategically vital in addressing these issues, but management is not tapping into these resources.

**"The new gurus talk about vision or strategic intent of companies, but usually architects and suppliers of physical space are not given much opportunity to link the process of designing**

To facilitate a more effective process of linking organizational design to the design of physical space, DEGW, an international architectural and research practice, and Steelcase, the worldwide manufacturer of office furniture, are working together to develop new ways of closing these gaps. We want to bring users and suppliers closer together. We want to provide a richer array of models of the new office. We want to energize physical office design with a sense of organizational strategy.

### Conclusion

What we have described is the prologue to solving a major problem of our time. We are in danger of continuing to build offices that are more suitable for the first decades of this century than for the next. We are in danger of fitting out the wrong buildings with the wrong office environments, which are more capable of suffocating initiative than of stimulating invention.

We live in an extraordinary period of technological change and of organizational creativity. Client organizations are anxious in the midst of severe turbulence and vicious international competition to invent better ways of working, more effective forms of organization and more brilliant ways of processing knowledge. Users are coming to expect a world of work in which they have the maximum freedom to use all their talents in the way they think best for their own as well as their employers' continuing benefit.

We have argued that the physical office environment, rather than being an impediment, is one of the chief means by which these aspirations can be achieved. We are examining ways by which business strategists can simultaneously shape the form of their future organizations and the working environment through which that future can be achieved. We think new processes will be instrumental in bringing invention back into the design of the office and office work.

The measure of our success will be those organizations that are enabled to find their way successfully into the next century.

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## ID INDEX

### BUILDINGS, CONSTRUCTION

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"A Vision of the New Workplace," March/April 1993, vol. 162, no. 2, pp. 1-6.

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3 Non-traditional offices

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