IV: WHO MAKES WORKPLACES — AND WHY?

"I made sure everyone knew about all of the planning meetings, but hardly anybody came. But boy, once the plans were drawn up, then we got the comments. One of my principals had been at the planning meetings but didn’t ever say anything. But he took the plans back to his school and got a lot of complaints over it, and came back to the next meeting all charged up, ready to fight us on every point. He was just trying to look out for his staff, he said, but I think he was just embarrassed that he hadn’t looked out for them earlier. We lost a lot of time -- and money -- when we thought we’d resolved everything earlier." -- an architect explaining his experience with a school district client.

Historically, every society has created its own style of workplaces. During the last century, enormous changes in the design and implementation of workplaces have occurred. Manufacturing environments have radically changed: from the village-like factories of the early 19th century to the assembly-line plants pioneered by Ford’s River Rouge plant, and again to the contemporary models of integrated manufacturing, research, and administration. Office environments have moved from the labyrinths of private offices to hierarchical arrangements based on organizational status; these were later replaced by the open office systems. And workplace change is hardly ended; we are now seeing the newest rounds of team-line settings for multiple forms of worker interaction, the electronic office, and the emerging "virtual work space" environments of the home and car.

All of these workplaces, regardless of their form, are the result of some creation process; a number of groups and clients who bring knowledge, labor and investment to the planning and design of an environment. Certainly, all of the parties involved want to create
workplaces which are helpful, dependable, satisfying and ethical, but often those goals are missed. We must step back, in the face of all of the potential failures of environmental quality which formed that imposing list in the last section, and ask a most basic question: how are these workplaces created?

The process of creating environments is a process of problem solving. It has the same typical components of other problem solving processes — defining goals, finding solutions, implementing those solutions, and evaluating the results. The physical sciences, social sciences, and the arts all offer paradigms of problem solving procedures, many of which are applied to various aspects of the creation of the built environment, from structural and mechanical engineering to programming and space planning to the facade relationships of windows and solid surfaces.

The problem of creating workplaces is defined by different types of groups or individuals, each of which has a unique role in the creation of workplace environments. In contemporary society, there are four basic groups of people and that have emerged as key actors in the creation of workplaces — the occupants of the workplace; the building management and service industry; the building development and delivery industry; and regulators. We need to examine how each of these groups has an effect on the creation and modification of the workplace; which aspects of the workplace are under their control; and what their goals are for the creation process.

We must begin by acknowledging that even though these four groups are quite different, they share several characteristics which are important to understand. First, each of these groups has subgroups. The occupants of a workplace include teams, committees, persons of different rank and so forth. Facility managers are often large organizations, sometimes with hundreds or even thousands of employees and a complex internal organizational structure. The building industry includes engineers, architects, contractors, developers, and all of their sub-specialties and constituent groups. Finally, regulators include entire divisions of local, state, and federal governments, with individual roles as diverse as legislators and field inspectors.

Each of these groups are trying to create, modify, or constrain physical environments. Each group participates in problem-solving processes — formal or informal — which determine specific properties of the physical workplace environment. These properties range from the structural integrity of columns to the color harmony between surfaces, from the ability of materials to withstand earthquakes, wind, and fire to the aesthetic composition of windows and doorways. The four groups have different means at their disposal and
often different end goals, but they are all involved in decisions which ultimately shape the final form of the workplace.

*Each of these groups makes decisions in a dynamic context.* The costs of materials and services changes frequently. Organizations regularly develop new strategies and tactics. And the technology of creating environments also advances rapidly. Yet these four groups must continue to make decisions which determine the physical properties of the workplace.

Keeping these common characteristics in mind, we can examine the specific goals and processes of each of the creation participants to see the ways in which they affect the physical workplace setting.

*How do occupants create workplace environments?*

The *goals* of workplace occupants usually involve increasing their ability to perform their jobs, or making their activities more comfortable or enjoyable. Workplace occupants continually try to improve the environmental conditions in which they work. Today, occupants demand more in terms of basic comfort. They are increasingly aware of health risks and make their concerns known. Occupants prefer to control the configuration and design of their workstations, the allocation of space within them and the boundaries around them.

The goals of any one occupant, or set of occupants, may or may not be supportive of other occupants. They may also conflict with, or be supportive of, the goals of the larger organization or the societal context. Nevertheless, in some cases work environments can be improved by placing more control in the hands of the occupants. This often means that workers must become more involved in the management decisions that govern their environments by participating in the procedures for making environmental decisions — building committees, lease arrangements, equipment purchasing, and similar activities.

Of all the *processes* for creating environments, those used by occupants are the most widely divergent. Some individuals will make fairly few changes, and others will strive to maximize their impact on the work environment. These decision-making procedures are no more or less complicated than any other work-related task; the significant issue is the degree to which such decisions are allowed or proscribed by the larger organizations and social context.
How does the building management and service industry create workplace environments?

Increasingly, workplaces are not created from scratch, but are the result of the modification of existing workplaces. It is estimated that over 90% of all workplaces are located in facilities which previously housed another workplace. This modification process is performed primarily by facility managers, who work either as independent professional organizations or as a part of the larger organization which owns or operates the workplace.

The goals of facility managers typically involve providing satisfactory service to the facility occupants within the constraints of limited financial resources. This overarching goal has been redefined over the last decades. Facility management used to be considered primarily a custodial function, with the primary goals defined in terms of maintenance and repair of the physical plant. More recently, facility management has been viewed as a question of managing major capital assets and real estate, and the goals have expanded to include protecting or enhancing capital investments.

Today, facility management is beginning to emerge as a decision making process intertwined with the ongoing activities of the host organization. Consequently, the goals of facility management are intended to correspond more directly with the missions of their organizations in both the private and public sectors. Facility managers go far beyond custodial services — they control large volumes of equipment purchases, address questions of safety and security, solve problems of environmental health, install new communications networks, and are now beginning to participate in the formulation of strategies for reshaping the environments for which they are responsible. They are also no longer expected to be passive servants of the host organization, but to be active and forward-looking consultants, bringing new information and technologies to their clients and suggesting courses of action.

The decision making process whereby facility managers impact the physical environment relates to the type of goals they are intended to achieve. Basic custodial and service decisions are made as part of the annual cycle of budgeting in large organizations. Work programs and operating costs are evaluated as part of these annual organizational cycles. When facility management goals include capital investment and/or broader organizational missions, the decision making process also changes (or should change) to include the techniques and procedures found in longer-term strategic planning.

With regard to workplace environments, the goals of the facility managers are not always congruent with those of all of the occupants, the other organizational units or the
broader societal context. Saving resources in one part of a facility often means diminishing someone else's ability to work, or reducing their comfort or enjoyment. Distributing resources to further one organizational mission may require taking resources away from another goal.

*How does the building development and delivery industry create workplace environments?*

There is a highly decentralized and complex web of developers, designers (architects, engineers and planners, construction contractors, process managers and suppliers -- each with several specializations -- involved in the creation of office buildings and factories. In addition, many clients also employ their own representatives and project managers. There are several layers of general contractors and subcontractors. There are union and non-union employees within each.

Throughout the building industry, basic business *goals* dominate the decision-making process. This usually means making an annual profit, avoiding risks that threaten the organization's survival, and looking forward to longer-term business growth. While these seem like private-sector goals, there are similar counterparts in the public-sector components of the building industry; increasing revenues, holding down costs, maintaining the organization's efficiency and planning for future activity.

The goals of the various actors in the building industry are typically formalized in contracts that elaborate the decision-making *process* and responsibilities among the various parties. Two sets of such contracts -- those of the architects and the contractors -- stand out as primary determinants of the decision-making process. The contracts used by architects lay out a specific sequence and scope of activities: programming, schematic design, design development, construction documents and specifications, and construction observation. The contracts governing construction, often prepared by architects and/or construction managers, typically organize the decision making process into the sixteen categories established by the Construction Specifications Institute — general requirements, sitework, concrete, masonry, metals, woods and plastics, thermal/moisture protection, doors and windows, finishes, specialties, equipment, furnishings, special construction, conveying system, mechanical systems, and electrical systems.

As each component of the building industry defines problems of the workplace environment, they follow different paths to establish their proposed solutions, employ different techniques in implementation, and use different values and measurements when evaluating their success. It is often presumed that the items which are specified in the
building industry process have already been designed and/or selected in accordance with the environmental goals of the client, occupant, and/or facility managers during the design process. In fact, these decisions are often made with other goals in mind. Amory Lovins has identified at least 25 separate groups who participate in the creation of a modern American building. Each group has their own goals, their own specialized language, their own processes, and their own criteria for success. It is hardly a surprise when conflicts occur.

_How do regulators create workplace environments?_

Workplace occupants, managers, and the building industry all operate within the constant constraints of regulations, often made explicit though public legislation. The _goals_ of those who regulate the workplace environment typically focus on human health and welfare in broad terms, and are intended to strike a balance among individual, organizational, and broad social concerns. There are codes and policies from the federal level on down through state and local government which regulate the creation of the work environment.

There are also regulations from non-governmental authorities in the form of union rules, organizational policies, professional codes of conduct and contractual practices. These all add to the number and complexity of constraints that delimit the creation of work environments. Contracts, responsibilities and liability assignments are modified each year to meet new legislation and court decisions regulating the building industry. Elaborate bureaucracies emerge around public sector projects. Plans are reviewed by many public agencies. Manufacturers must also respond to numerous and ever-changing codes and requirements.

The decision making _process_ of establishing regulations governing the physical environments is both the policy making process of government and the contractual process established by the legal system. Both procedures are exceedingly complex and, once again, are do not necessarily provide environmental constraints that encourage a close match to the specific environmental goals of the clients, constituents, and/or customers served by such constraints. Almost by definition, the goals of regulators conflicts with the anticipated behavior of at least some of the occupants, facility managers, and members of the building industry. If all of these groups were behaving in ways that already enhance and protect the general health and welfare of themselves and of the other parties, there would be no need to establish any regulation. It is precisely _because_ there are conflicting goals that regulation has become a prominent building creation component. This does not imply that
all regulations are appropriate — regulations can be as inappropriate as any decision by workplace occupants, managers, or builders of workplaces.

To summarize, the workplace is created and modified by a large number of participants whose effects can be divided into four general processes: occupancy, facility management, building development and construction, and regulation. Each of these groups have goals which they establish and attempt to satisfy, and each of them have a specific set of processes which they use in order to pursue their goals. These goals and processes may or may not be internally compatible, and may or may not coincide with the goals and processes of the other participants.

These sorts of inconsistent goals -- whether between subsets of creators or between creators and users -- can be found at the core of the problems in many unsuccessful workplaces. But can we be more specific? Are there some particular failures in the building creation process which result in different kinds of workplace problems? This is the subject of our final question: how does the process of creating workplaces fail, and how must it be changed?