

WHITE-COLLAR WORKPLACE: INTERIOR FORM AND  
DEFINITION IN OFFICE BUILDING DESIGN

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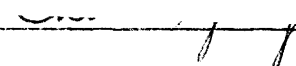


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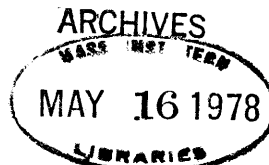
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# ABSTRACT

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WHITE-COLLAR WORKPLACE: INTERIOR FORM AND DEFINITION IN  
OFFICE BUILDING DESIGN  
Michael Florian Slezak

This project examines the role that a greater range of interior form and definition could play in enriching the white-collar work environment. It begins by acknowledging that a new attitude toward work place can only come with a new attitudes toward work. A synopsis of office building design history illustrates why things are as they presently are. The response of the workers to the evolution and current state of office design indicates the failings. A discussion of a new approach to the situation implies the values of a broader approach to the design of the white-collar work place. Finally the design study investigates in an architectural way the possibilities discussed in the text.

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## Acknowledgements

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# DEDICATION

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This thesis is dedicated to my wife, Johna. She endured it and me with patience and love.

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# INTRODUCTION

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For better or worse, work defines life to a very large extent. Writers, however, document an ever-growing alienation of workers from the act of working. Widespread disenchantment implies a crisis in the meaning of work. For too long the issues of economics, societal importance and functionalism have constricted thought on its meaning. "Yet it is clear from recent research that work plays a crucial and perhaps unparalleled psychological role in the formation of self-esteem, identity and a sense of order."<sup>1</sup> Work also serves a number of other social purposes; the workplace has always been a place to meet people, converse and form friendships. Taken in total, work tremendously impacts the development of society.

In view of all this various governmental agencies and business groups, as well as workers' organizations, are developing strategies for revitalizing work processes and alleviating the dehumanizing aspects of work. One of the inevitable results of the old sterile and antipathetic

attitudes about work is the delineation of design criteria and attitudes which then define a dehumanizing physical environment for work. When one removes the human values from the definition of work, only mechanical functions remain to determine the character of the work place. It becomes a place bereft of human worth and pleasure. To this dilemma of an impoverished attitude begetting an impoverished environment, office work and the office building present many complicated problems. White collar work is devoid of pleasures of craft and the tyranny of exhaustive physical labor. The white-collar work place is devoid of the power determinants from which factories derived their form. So it stands as a built manifestation of man's attitude toward himself.

This thesis explores the current efforts to expand the definition of work, particularly as it related to office work. It then examines and criticizes the role which architecture has played in manifesting the old attitude toward work and its possible role in achieving a more

humanizing setting. The study really focuses upon internal form and definition. Finally it explores in the design process some of the possibilities implied in the text.



# WORK

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A clear understanding of workplace requires a clear perception or grasp of the meaning of work. A radical approach to the place for work can only find validity in a radical understanding of the meaning and purpose of work. A search of literature shows that various cultures and societies defined the scope and depth of work differently through time. Early writings indicate that people have grappled with its role as soon as they became conscious of it as a major portion of their life. More recently the development of social sciences marked the advent of a tremendous effort on the part of western society to more fully understand and define work as well as evaluate its effect on people. As stated in the introduction, work has too long been understood only in terms of economics, functionalism and societal importance. The rise in psychology and in the importance of the individual truly heralded a change in this attitude.

Along with sex, Freud classed work as one of society's basic creative forces. "The life of human beings... had a twofold foundation, ie. the compulsion to work created by external necessity, and the power of love,...<sup>2</sup> Since that writing sociologists and psychologists have made work the subject of countless studies and investigations. One very impressive 15-year study found that work satisfaction was the strongest predictor of longevity. Over all happiness was only the second best predictor. Genetic inheritance, a rating of physical functioning by a physician or a measure of the use of tobacco were not as good predictors. Even when all these other variables were statistically controlled work satisfaction maintained the dominant role. This and other studies strongly affirm the workplace as one of the major foci of personal self-evaluation. Many governmental and private studies now look at the destructiveness to an individual's self-esteem which some jobs cause. Other reports attempt to document the alleged decline in the quality and pur-

pose of work. They however report that the problem lies not in a decline but a misfit between the current approaches to work and individual workers' search for the broadened purpose and meaning which work must now serve.

One group heavily studied from the point of view of purpose in work is the white-collar worker. White collar workers form a very substantial part of our society. Approximately 40 percent of the population or somewhere over 34 million people work in offices.

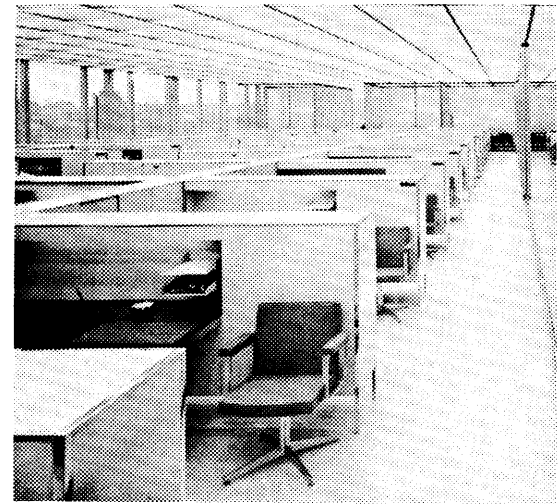
Office work, however, presents a whole new dilemma in the search for the meaning of work, since it is alienated from the processes and products of production. Office work represents man one step removed from the tyranny of physical labor but also, unfortunately, from the values of craft. Rarely do opportunities to work completely, with both the mind and the body, exist. Workers in offices do not have the satisfaction of what blue collar workers call useful work, ie. processing materials into products, transporting things or people or otherwise

satisfying the physicists definition of "work." Those involved with planning for offices often find it hard at first to discover the realities of office operation. No one seems to be sure of what anyone else does or, sometimes, even what they themselves do, though they may feel what they do is important. Perhaps nowhere is the process of work more opaque than in the office. So, very often the important and worthwhile questions go unanswered. What are offices for, what is done in them, how can one live in them?

In the attempt to understand office work many have tried to make parallels to industry and the factory. Unfortunately, one can walk into any number of large offices and see rows of office workers churning out the paper that relates to the organizations' services and products. Offices also share in the heritage of Taylorism, scientific management, a search for the most efficient method of doing what is to be done. This essentially resulted in much production lining of work, thereby removing any opportunity for a worker to see a



*The Historic Office-as-Factory*



*The Modern Office-as-Factory*

project through and feel the satisfaction of its completion. Why must offices take on the worst aspects of factories? Others, not looking to the factory depended upon an intense scrutiny of the office functions to provide a basic definition of what the office is. Control and communication characterize the primary functions of the office. Control is here defined as the making of decisions in a form that will lead to their implementation in services or production processes. Communication provides a data base for action so it is very often just a servant of control. Along with this the conceptualization of office work is based on the principle of optimization. Office life is thought to be good when decisions are made at exactly the right level, at exactly the right time with all the pertinent information. Many believe that besides the perfect staffing, the perfect arrangement of people and things in the office would facilitate such an ideal state. The problem essentially stems from the belief that an optimal arrangement can be

found and imposed upon a group, while neglecting personal investment and involvement in the work and the place. The organization is an abstract thing, though its form is found in titles, ranks, procedures, routines and routings, regulations, habits and customs. But to understand the organization only by its functions really neglects the fuller needs and reality of both the organizations and the individual workers.

The insistent demands for work content are a healthy sign with implications for place as well. Only small or insignificant efforts have been made to create meaningful jobs or stop impoverishing those that currently have meaning for white-collar workers. So far, most of the things done in the name of efficiency in offices simply narrow the work content and debase the human contribution. Douglas McGregor brought a new light to bear in 1960. As a social psychologist at the MIT School of Industrial Management he introduced an analysis of management concepts. He called it Theory X and Theory Y. His

operational approach signalled a significant rise of the behavioral sciences in management.

Theory X and Theory Y clarifies the conflict found in management between the old line, reductive approach and the broader, new developmental concept. In reductivist Theory X management orders and forbids as a means of assuring performance. It implies that people generally avoid responsibility and therefore need to be ordered. Essentially the bosses set the objectives and exercise control. Mistakes call for penalties and independence is discouraged, for at the top lies ultimate knowledge.

Developmental theory Y assumes that people naturally seek responsibility and take satisfaction in it. Workers at all levels need challenge as well as encouragement to achieve top performance. In a healthy organization one finds unique skills and knowledge at all levels. The worker will behave like a manager when he can participate in goal setting. Theory Y managers point out that reductive management suffers from a significant number of

organizational maladies. These include pyramidal management, rigidity, lack of delegation of power, clogged communication channels, a smothering of creativity, and belabored decision making. Work doesn't have to be tedious and dehumanizing but this is often the result when only old management concepts and year to year economic growth measure the effectiveness of office work. Changing systems toward human satisfaction requires a new approach and a longer time scale to justify the expenditure of effort. A few corporations and their leaders already acknowledge the fact that they are not only responsible for minimal OSHA standards but for the larger efficiency of society as well. S. Harman, president of Jervis Corp. expresses this responsibility as a concern for the development of human capital. The need to improve the human developmental aspects of work is clearly spelled out in the following quote from the book Work Learning and the American Future. It states:



"Efforts to improve the quality of working life should be intended to make work organizations places where individuals have opportunities to grow, create and exert some mastery over their environment. These actions may also increase productivity in the bargain, but that cannot be their prime purpose. The willingness to undertake these tasks require a sense of social responsibility on the part of unions as well as employees. Although such a change in attitude is a great deal to expect, in the years since Lordstown brought the issue to national attention, a small number of companies and unions have begun to work seriously on improving working life, continuing their efforts even when the recession offered them an easy way out of their commitment."<sup>3</sup>

Clearly one of the pivotal concepts is that job enrichment, though possibly increasing effectiveness as a result of workers working more intelligently, should really be thought of as a responsibility which employers have to their workers and to society. Upon this premise it is now possible to examine the role which the built environment plays in the life of the office worker. This examination should include a look at its possible role in the development of a richer white collar work experience.

# WHITE-COLLAR WORKPLACE

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We begin basically by acknowledging that a decision maker needs an address, a place. In fact the place is highly associated with an organization both by its visitors and members. Phrases such as "We're waiting to hear from upstairs" or "from 1066" or "from New York" indicates such a role. As decisions become the concern of larger numbers of people they have to be able to locate one another and communicate as fully as may be necessary to exercise their function of control. The office is the scene of innumerable interactions and conversations between organizational members and visitors. The physical setting inevitably affects, in very basic ways, how people live and work in it. It can make it easy to locate people or make it difficult. It can provide needed degrees of privacy or stand impervious to the needs of users. Studies cited later show that proximity leads to easy communication while remoteness reduces it and introduces misunderstanding. There are a number of other well

documented basic aspects of the office environment which affect the users. Enough good quality light, reasonable air temperature and humidity, and proper levels of sound absorption, diffusion and isolation are some of these aspects. There are, however, even more subtle ways in which the office can influence the effectiveness of the organization which it envelopes.

Though more fully discussed later under environmental psychology, the present discussion bears a statement of the notion. It begins with the fact that people who work in offices will do better if the conditions of the work setting help them rather than hinder them. Given the fact of proper light, temperature and sound levels, the characteristics of the physical elements determine a great deal of how people will feel. Hard, slick impervious walls may engender a feeling of isolation and helplessness since people can in no way use them or change them to their needs. The open plan office without any wall definition or just uniform low screening may generate

a mental nudist camp where no one has any privacy. These personal and psychological considerations are probably far more important than is generally realized and are particularly hard to deal with because they are not as amenable to casting in simple standards as are matters of a simple physical nature such as light level or air temperature. These considerations are usually not foremost in the minds of most designers or planners. Even if they are, it is hard for one or even a group to decide the exact place people need to do their job and find satisfaction. Nevertheless an unbelievably small number of people have set the standards for the physical settings in which millions of white collar workers spend their days.

Since most if not all thinking about office forms have been associated with the old reductive expression, most offices express in a physical way the inherent constraints and attitudes of that approach. To better understand why office buildings are the way they are, one

must examine the historical development of architectural  
thought on them.

# WORKPLACE HISTORY

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The history of the office building is quite short since they were not really built before the 1880's. It was the rise of the textile industry to a large scale and the rise of the railroads to big business which generated the first concerted efforts to group people and to surround them with the services we recognize as offices. Internally the old office building provided space almost exactly like that in the first type of office--converted dwellings. An office was a room and an office building was simply a large number of rooms. One can look at the various developments that Burnham and Root's Rookery and F. L. Wright's Larkin Building represented but a more concise statement of the thought on office design may help. Perhaps the clearest way to depict the polemic of architectural thought on the office is to contrast L. Sullivan's definition with Mies Van der Rohe's approach. Sullivan's guide to design directs that above the third level there could be "an indefinite number of stories of

offices piled tier upon tier, one tier just like another tier, one office just like all the other offices--an office being similar to a cell in a honeycomb, merely a compartment nothing more."<sup>4</sup> He also states that "only in rare instances does the plan or floor arrangement of the tall office building take on aesthetic value."<sup>5</sup> Quite simply Sullivan's concern is with external form and with the facade. The interior of his office building follows the historic precedent of earlier offices in converted dwellings, simply a large number of small rooms. He also expressed economic maximization as a major design determinant. So one easily sees that the all pervasive fundamental reality which molds the character of office buildings is essentially the nature of the real estate business. Most probably for this reason, so much attention has been lavished on facade details of window and curtain wall modules, since the architect's freedom is so limited in this type of design.

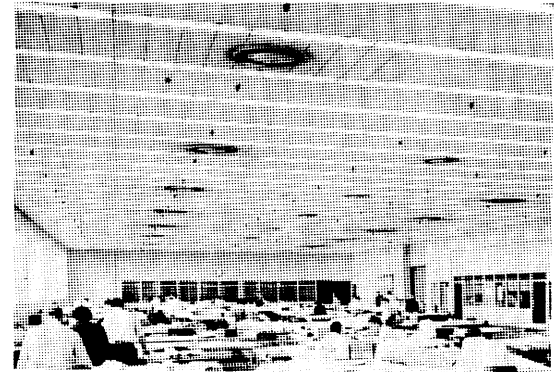
Here then a difficult issue arises. The following quote captures this very essential problem of modern office design.

"Every distinguished architect will agree that the inside of a building is fully as important, if not more important than its external form. If architecture is an art of space, internal space is at the very heart of what architecture is about. Nevertheless the fact of the matter is that the modern office building is rarely of much interest in spatial terms."<sup>5</sup>

A tremendous exertion of effort on the external form and the facade attempts to create some kind of corporate identity for the organization. This has been a concern especially since the late forties and early fifties when architects, designers and businessmen developed a new concern with image and saw the office as a proper field of interest. Mies Vander Rohe has perhaps done more than anyone to generate the current archetypal image of the modern corporation. He, like Sullivan was absorbed with the details of the facade, perhaps even more obsessively so. What is interesting to contrast though is Mies's



notion of universal space with Sullivan's cellular honeycomb of spaces. Mies's large, unencumbered interior open space where one can do anything, amounts to the experience of the inside of a large cube. This concept of space places a high aesthetic and intellectual value on space as a uniform, unbroken aspect of a building interior. The experience of "universal space" thus transcends the users requirements or desires to modify it to provide the necessary range of place definition and privacy. Rooms as such are limiting and harmful to the modern architect's sense of his building's internal reality as an open unit. Minimalization describes the essential and perhaps total experience of this type of office. Less is somehow made out to be satisfactory even if it is not more. The chief rational justification of the universal space is that powerful modern virtue--flexibility. So what falls out of this approach is: 1, the divorce of the interior from the exterior form of the building, 2, the whole notion of the open space plan and



*The inside of a large cube*

3, reduction of the range of definition deemed necessary or suitable to the white-collar workplace.

The first point raises again the disturbing question just mentioned, that is the neglect of internal form considerations. The big and famous office buildings almost without exception are exercises in designing external masses. They would lose none of their architectural quality were they solid masses. The space within is simply a layer of uniform characterless space. The post-war building boom really stimulated a proliferation of this kind of space. This closely ties to a second point, open space planning, whereby obstacles are removed but three dimensional definition necessary for place making are removed too. This system was eventually codified and packaged by the Quickborner Team, originators of the office landscape. They analyzed organizational structure in terms of management and decision making efficiency and developed a systematic approach for reproducing the organization of the firm in its layout of

spaces. As it is executed, however, the open plan very often leads to the regrettable tendency to provide a formula kind of sameness for everyone. In a space where one can supposedly do anything, one can usually do very little since there is no variety or difference of conditions [forms and elements] to which one may design a response. Though some organizations address the problem by providing privacy for some by giving it to higher ups while the other workers get little if any, the fundamental problem is that neither group is permitted to effect their environment. Very often the workers find that their jobs and their work setting has been reduced and differentiated into sets of largely predetermined and mechanistic components and functions. Positivism and functionalism act as powerful filters of man's perception of himself--the built environment in general and his workplace in particular clearly bear witness to the power of these ideologies and the doctrines and dogmas of modern architecture. Even those who criticize the impersonality

of modern architecture, such as Charles Jencks, make statements such as: "Yet there are limited areas where modern architecture can be appropriate and effective... probably in many impersonal building types such as offices; and where the individual may choose it."<sup>6</sup> It is ironic to read his attitude that such architecture is only for those who choose it and in the same statement that it might be "appropriate and effective" to foist it on a potential 34 million people who have no choice. Others such as the Central Beheer insurance company dare to stand out by attempting to build "A Home for 1000". In recent times, however, a very few organizations are beginning to listen to worker's comments on how they feel about the workplace. Very closely allied to this process, they are also turning to environmental psychology as a tool to understand what is being said or what is left unsaid.

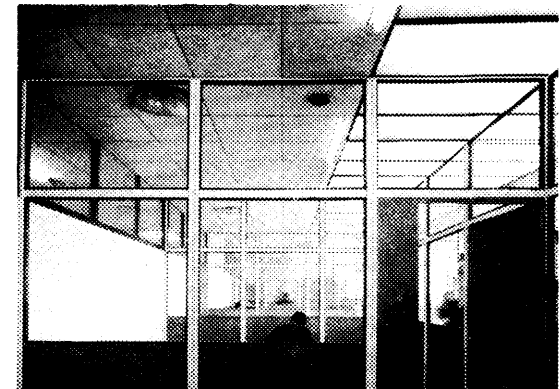
# WORKERS' RESPONSE

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It is informative to consider the worker's responses to their work settings and the mainstream of office architectural precedent. Strikingly enough many distinguished and handsome buildings, many widely published and honored office floors house workers and executives who have innumerable gripes and complaints. It almost seems as though the complaints of the occupants rise in direct proportion to the excellence of the project from the architect's point of view. The general theme underlying most complaints about these supposedly well designed offices pivot on the feelings of the workers that their rights to make their work setting suit themselves have been usurped. The designer stands as a kind of dictator or czar who orders that things must be as he decides. Only approved paintings may be hung and personal effects must be banished. Expensive and unaccompromising new things must replace beloved old furniture. Slickness supplants the patina. Many feel that the designers'

insistence on a unified and forceful visual statement forces them into a kind of uniform without their consent. Articles such as T. George Harris's "Psychology of the New York Work Space" points out the great dissatisfaction people have with the inviolate design statement, and the "...mania for uniformity in space as in furniture, and a horror over how the messy side of human nature clutters up an office landscape that would otherwise be as tidy as a national cemetery."<sup>7</sup> People speak about the changes which the "landscaped" office caused. Hundert and Greenfield (1969) found that noise and bustle had increased in the landscaped office as compared to the conventional design. Privacy decreased and distraction generally increased. They found that interpersonal relationships had perhaps increased slightly though cooperation and team spirit had decreased, but intergroup cooperation remained the same. They concluded that the office is far more complex an entity than the basic assumptions of office landscaping acknowledges. Their findings raised some questions

about the adequacy of this form of layout as practiced. Other interviews with workers in open office landscapes indicate that social contacts of a more intimate nature tend to decrease. As people feel more doubts about the privacy of their conversations, both visually and aurally, they tend to make their conversations less personal, though more frequent. In a one page summary of a re-survey of Kodak employees who were moved to an open plan office landscape it is reported that while most people like the new experience of color, attractiveness and atmosphere people very strongly felt that the landscape was too public. In all, a good number of people report lack of the sense of closure, or when they do have it, the elements used to give closure, i.e. partitions, are almost always barriers with surfaces difficult to use. Most common of all complaints is that workers are unable, both by management practices and by the nature of elements used, to modify the immediate setting to fit their needs. These needs both manifest and latent provide the subject for



*Partitions that are unusable barriers*

many studies by environmental psychology.

Environmental psychology has proved to be a two edged sword. Though one can not deny the achievement of environmental psychology in clarifying the fact that aesthetic functionalism and economic design orientations are no longer adequate for the designers' expressing the needs of man. Some in the field were seduced and pursued the notion of the optimal environment. This was the hope that the right method and enough energy would provide information to design the perfect environment for white-collar work. For instance, after considerable research to discover the best colors, sounds and other qualities to insure optimal productivity in the office, psychologists had to conclude that there were no bests. The issue of the optimal environment disintegrates in the light of such questions as: Optimal from whose point of view? For which people in the office? While some dreamt of optimal environments, other psychologists investigated the basic effects of physical settings on their users.



Three examples illustrate this.

Gullahorn's (1952) study on the interaction pattern of twelve women in an office in a large eastern corporation found that distance was the most important factor in determining interaction and that friendship was the controlling factor when physical proximity did not account for interaction. Peters' (1969) research found that vertical separation has at least as severe an effect as horizontal separation on communication. He states that the factors most significant, in addition to distance, were the location of stairs and elevators. The situation of needing to use fire protected stairs to make the trip also heightened separation. He also claims that elevators do not change this sense of discontinuity as people are as reluctant to use elevators, for short trips, as they are to use fire stairs. Finally, Thomas Allen at the MIT Sloan School has done and continues to do research on the role of the physical setting in the communication of effectiveness of research and development firms.

Such contributions which appear most useful are those which give concrete data on specific things. Another example is Ruys' (1971) survey of and report on the amount of dissatisfaction with windowless offices. Another aid to designers is a "common sense" checklist developed from various research findings such as Izumi's (1965). One contribution is the development of basic frameworks which provide the possibility of self evaluation. One such outline or evaluation framework is Platt's three essential elements for the perception of beauty. These are: 1, a response to stimuli, 2, a pattern or harmony of stimuli and 3, a change in stimuli. The following quote underlines the importance of these three aspects for the work environment.

"Experiment has shown that a homogeneous and unvarying environment produces boredom, restlessness, lack of concentration and reduction in intelligence. This is the psychological basis for deliberately creating varying conditions in buildings. Office blocks in which each floor has the same layout, color, materials and climate are just asking for trouble. The sort of variation that we often demand instinctively on aesthetic grounds,

has a sound physiological and psychological basis. A change in environment stimulates ones built in devices to perceive and respond rapidly to signals, words and events, efficiency is thereby increased. It is worth paying for variety."<sup>8</sup>

The essential message for this thesis from environmental psychology is that provision of variety or a range of elements and forms which allow workers both a chance to choose and some opportunity for modifying the setting according to their needs not only makes for more satisfied but also more efficient workers. Since dissatisfaction so often induces stress and the dissipation of energy, attention to the needs of the workers seems to be a very reasonable approach to take.

# A DIFFERENT APPROACH

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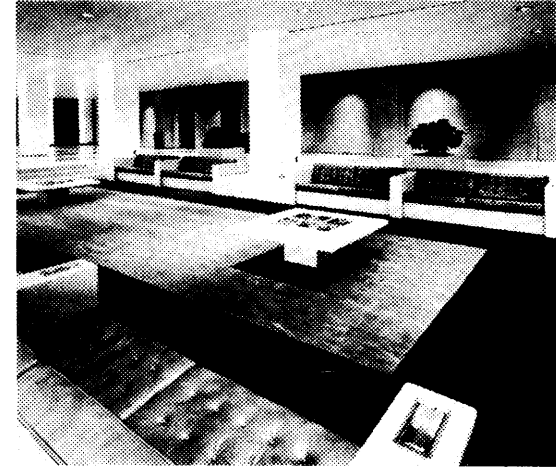
The following briefly develops three levels to address those human needs which should be programmed and designed for in the office building. They offer a broader approach than one usually encounters. Since it is found that design decisions affecting the environments of office buildings are presently made almost entirely on the basis of expectation or personal prejudice, the attitude toward the psychology of the environment just discussed may provide a tool for more objectivity. In this way one may more easily evaluate the needs of the white-collar worker beyond narrowly defined and purely obvious job related considerations.

The first most basic level to approach these needs is through research and interviews on affective responses to specific items such as windows, noise, and stimulation of various sorts. These provide elementary but concrete data which a design must take into account.

The next level examines the categories of behaviors which the office program must accomodate. These include behaviors relating to the organization, relating to social behavior and that manifested by the individual. At this point one encounters a good number of conflicting goals. The open plan and the cellular office scheme typify the polemic of openness versus privacy. Parallel to that is the question of the social and the non-social. There is a need for the close or intimate scale but also occasionally something larger or grander in nature. There should also be a choice between an active stimulating place and a more quiet, less busy one.

As one easily sees, a large number of needs span the spectrum from one extreme to the other. The object of the program and its resultant design is the provision of a real range of internal form and definition within which the worker can accomodate his needs as far as possible. The architectural solutions to these situations are not necessarily elaborate. The provision of few closed

places to get away from the bustle and distraction of a more open area satisfies a lot of needs. Perhaps the most neglected aspect of all in the design of offices is the provision of places for comfortable social interaction. The setting powerfully acts to inhibit or enhance personal contact by the quality and availability of such gathering places. These places accommodate behaviors which humanize the organization and relieve some of the organizational stress by establishing informal contacts among members of the organization. Most designs relegate this activity to the corridor, elevator lobbies and strangely enough, the rest rooms. Whether there is good fit between the kinds of contacts that the users want or need and the actual support which these kinds of settings provide seems highly dubious. A good setting for informal interaction or accidental contact needs several characteristics. The setting should not be owned by anyone but rather available to use by any member of the organization. It should provide comfortable places to sit or rest.



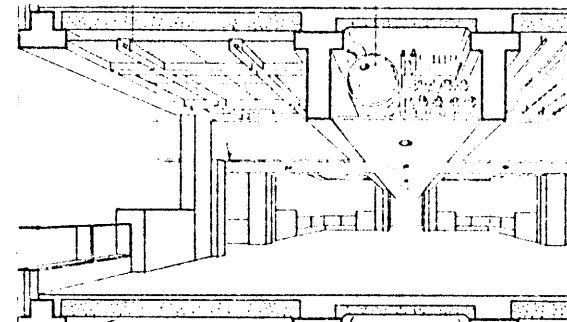
*A public setting which really inhibits interaction*

Finally, one must be able to stop in this place or watch others without blocking the flow of traffic. The attention to such considerations indicates the range of place definition which the workplace should provide. Beyond this level, one moves to a more complicated and sometimes more radical level of specificity or approach to the built environment based upon the first two categories.

One of the more abstract but hard-felt needs at this level of analysis is for symbols and symbolic identification. The extent to which the place provides information about the nature of the people who are connected with it serves an important function for the daily worker as well as the occasional visitor. The built environment speaks a non-verbal language to its users. For instance, an area that is somewhat open to the main circulation but also quite clearly a personal area (with personal items, art work and furniture arrangements) helps others understand what that group is about and the character of it. In regard to the identity of the whole, it is interesting

to explore the notion of taking elements or materials of the building exterior and using them in the interior in association with collective zones (such as gathering places, cafeteria, etc.) to carry in a positive way the corporate identity to where people live and work, inside (see design study). It is also interesting to note that an old house is still often sought out as an office situation by many organizations that could afford standard office space. The elements and forms of the domestic scale convey the message of informality, comfort and individuality that so many seek.

One need closely related to the conflicting goals of grand versus intimate, open versus closed, etc. is that for variety of experience. The sequential experience of the various interior elements and forms helps one adjust, make transitions, feel stimulated and feel at ease because one has cues as to what to do. The employment of the ceiling or some overhead definition as an active definer of 3-D space offers an effective way to generate a



*Hertzberger's Central Beheer circulation zone*



real variety of internal form and give relief from the non-experience of a high, overhead plane. "The more surprising the physical features of a setting are, the more likely we are to respond non-automatically and with an experimental attitude."<sup>9</sup> Obviously the office today is a place for an extraordinary variety of tasks and activities. A perpetuation of sterile uniformity with status as the only definition can in no way address these needs.

Beyond the question of providing a range of places and variety of interior form to accommodate a full spectrum of workers' needs, stand the issues of personalization and modification. These are the degree to which one is able, within the individual's work area, to mark one's place or even more importantly, to modify it in some way if one's situation should require a deviation from the given set up.

The most basic way to mark a place or personalize it is to display personal things such as posters, pictures, plants or other items. These little things make a big

difference in the way people feel about their place and their relation to it. Even more important for the effective functioning of the worker is his personal display of meaningful, relevant or stimulating visuals. This activity frequently conflicts with an organization's effort to maintain a neat, orderly and controlled environment. The importance of these visuals as explainers of work, definers of individuality and relievers of memory cannot be overestimated. The inhibition of neatness must be overcome in favor of highly expressive and informative surroundings which both identify and motivate a person.

In any organization, the most controversial but important aspect of living and working in a workplace is the question of control. This means control over the worker's relation to the social surroundings as mediated by the physical aspects of the setting. This control includes control over contact with others, control over conversations being heard and control over being constantly observed. These controls, in the varying degrees

to which one may exercise them, constitute the quality of privacy. Privacy is really control over the amount of the visual and auditory cues sent and received. If an organization can structure its built environment to provide workers with some degree of privacy, and the opportunity for observability of major movements and interactions it would facilitate both individual and group sense of identity. In these ways, then, the work setting will not only come closer to being right, it will also feel right to the person who uses it since he was able to choose it, personalize it and modify it. In this way one obtains the best of the open and cellular types of work space.

As it is the office of today often deviates a great deal from the ideal. As constrictive attitudes toward office work impoverishes it, so too a shortsighted view of the architectural elements of the office produces deficient physical settings. Only a fresh reassessment of these aspects can break the chain of thoughtless

repetition.

A brief discussion illustrates the attitude toward the possibilities of a broader approach to architecture elements, which, by their attributes (form and material), establish the parameters of use. They, taken as a whole, generate the sequential experience of interior form.

To borrow a criticism from Herman Hertzberger, the common problem of architecture is to make everything too big. Though bigness in itself is not bad, it must be mediated by the human scale. The office, especially the open plan office, is often a large undefined space with only furniture to begin forming a place. Furniture, even when well done as in Henry Millers' Action Office, lacks the ability to define truly three dimensional space or bridge the gap between the human and the architectural large dimensions of today's offices. Most offices leave out the intermediate definition so they end up as a field of desks with no fixed elements or permanent definition to which one can relate.

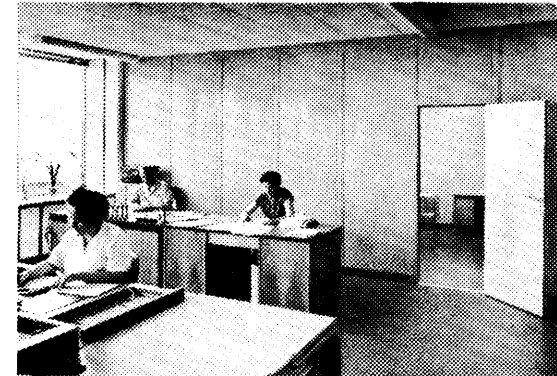


*A Herman Miller Action Office*



*A sea of desks with no three dimensional definition*

Another problematic attitude is that toward the nature of materials. The nature of materials influences the ways that workers can use the elements of their offices. If wall or panel surfaces are hard and slick, i.e. sheetrock, plaster or painted steel, the occupants are inhibited from their use. They tend to feel that they must not mar the walls by using tape or nails to hang up pictures or other graphic items. On the other hand when the work area is defined by elements with materials that can be marked or attached to without damaging them, a manipulable workplace results. Here people can take action to change a place and get feedback as to whether their modifications achieved what they were trying to do. In this way, the worker can adjust to conditions around his workplace that the architect never foresaw. Also the framework and panels are not seen merely as barriers but as real use surfaces that may take on a more varied nature as blackboards, tack boards or depth for shelves are added.



*Inhibiting partitions*

The use of light as a means to variety or as a definer of place is not very common in office design. Natural light either direct or indirect from an interior court or sky light allows one to experience the refreshing rhythm of nature. It is the only connection one may have with nature while inside a space conditioned building. Artificial light is very frequently designed as a high, uniform, "mashed potatoes" source of illumination. The lowering of ambient light to a more reasonable level and the use of local surface lighting would then employ one more element for variety and one more element to help define a place. The means of bringing in artificial light, namely an interior opening or void of some sort, also provides more fixed definition of place by its edges. This void can also provide vertical communication, circulation or visual access, which alleviates some of the psychological discontinuity and communication problems discussed in Peters (1969) study and found in many offices. One easily sees the difference such

elements would make in the daily experience of office interiors.

# SUMMARY

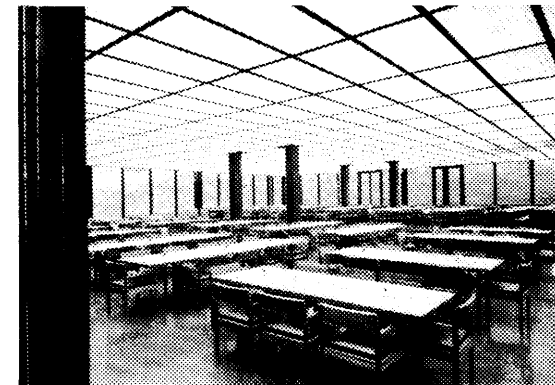
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In summary, the concepts of choice and modification imply a real change from precedent, to a more dynamic interior environment for the office building. They entail a richness and variety of spatial experience that must accompany the efforts of organizations to improve and enrich the content of work. The office should be a setting which elicits or supports the array of human activities which contribute to the fuller development of the individual. This implies a provision, by nature of the elements used, for the individual to participate in the final deployment of the work area within a given framework.

What this means is that in collective areas, i.e. cafeterias, lounges, libraries, the setting should provide several options from which one can choose. An example of this is Hertzberger's cafeteria in Central Beheer. One is not forced to sit at one of the innumerable eight person tables, rather one may sit alone, with



*Hertzberger's cafeteria*



*A more typical cafeteria*



another, or a group as he desires, in various size places. The employee does not craft or modify the place he will eat in each day. However, where the design decisions are more personal, as in a person's work space, there should again be some permanent edges, solids and voids and semi-fixed elements. Within this system, the worker should be able to adjust her place according to need. For example, the worker might choose to have more physical definition (panels, screens, shelves, etc.) between her work space and some particularly distracting area. These are two essential aspects. The first is a design which provides a substantial amount of both fixed, semi-fixed (i.e. a frame work which supports shelves, panels, etc.) definition to which the user may respond or associate (feel a sense of place). The second is provision of the option, by the availability of flexible elements, to select panels of various surfaces and shelves, or overhead surfaces to either close or open up toward a given direction, or just modify the use surface. These notions

take Hertzberger's statement that architecture is not just form but also response to form to its logical conclusion.

Those who sharply criticize any increased cost of the office to achieve such a responsive architecture would do well to consider the following quote from a study of offices.

"We analyze the total system costs over 40 years and find that the first cost of the building is 2 percent of the total, operating costs and maintenance is 6%, while the cost of people (in salaries) is 92 percent. With this understanding of the boundaries of the system, it is obvious that all attempts to reduce first costs of the building, including durability trade-offs, can have only marginal results,..."<sup>10</sup>

This fact coupled with the growing realization by companies of their responsibilities for the provision of a more developmental approach to work presages a new meaning for the work place in the lives of workers. In such a work place the workers will more readily express and sense their individual identity within the organizational whole. When the workers feel good about themselves and the company, all parties gain.

## FOOTNOTES

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1. J. O'Toole (1973) p. 4.
2. S. Freud (1930), p. 68.
3. J. O'Toole (1977), p. 101.
4. E. G. Holt (1966), p. 305.
5. Ibid. p. 305.
6. C. Jencks (1977), p.
7. T. G. Harris (1977), p. 51.
8. J. Pile (1969), p. 18.
9. F. Steele (1973), p. 87.
10. G. T. Moore (1973), p. 214.

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# DESIGN STUDY

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This design study offers the opportunity to explore the design ramifications of the attitude toward office buildings developed in the text. The choice of a corporate headquarters or owner-occupied building program as opposed to a speculative one affords one the chance to design an integrated interior, possibly with more relation to the exterior, and the chance to avoid the strictures of downtown high cost determinants. The scale of the building also facilitates a deeper investigation of the issues raised in the thesis. The choice of an existing building designated for restoration and renovation, though somewhat constricting, forces concentration on the issues of interior form and definition.

## SITE

The Boston Naval Shipyard at Charlestown is the site of the building. The BRA currently slates this 103 acre historic site for mixed-use development. New housing, an

art college, apartments, light industry and a Smithsonian museum as well as the recycling of historic buildings for various commercial uses comprise the general program for this area. In this way the former navy yard will return to active economic use. The site considerations which most impact this projects' building appear on the illustrated site plan.

#### BUILDING

This building (#39) currently earmarked for mixed commercial use, occupies a very large and important site in the shipyard. It will provide an interface between the new main first avenue and the restored area of Second Avenue. The present guidelines call for the reestablishment of an intra-block pedestrian link (see plan) between the new development and the more historic area. The guidelines also require the demolition of existing additions to the building and the restoration of its original facade. Historically the drawings of the building date to 1862 and designate the original use as an "Ordinance

Store." It later came to be the base administration building. A diagram and discription of the structure of this building occurs later in this study.

#### PROGRAM

The program selected for this site is that of ABT Associates, a young and growing think tank firm. This firm is an acknowledged leader in its field. ABT is divided into six research areas for the purpose of working out solutions to social science problems. A typical problem is the investigation of the longterm cost of cancer care for H.E.W. The projects require groups from two to one hundred but usually about five people of various disciplines. These projects involve both working alone or in concert at various times. Another major determinant is the need for the setting to respond to constantly changing spatial requirements as groups form and dissolve. ABT is concerned with the humanizing role of the physical setting as well as the ongoing development of a corporate identity. The administration of this

organization insists that the office not be a sterile environment where workers trade off 8 long hours of the day for money, but that the work and the workplace act as positive elements in the life of the worker.

The prime issues raised by the program are:

1. private work and privacy versus shared work and community
2. the question of hierarchy versus egalitarianism
3. the concern for aesthetics versus the need for economy
4. the need for stability and permanence versus the continually changing spatial needs within the divisions
5. conventionality versus excitement.

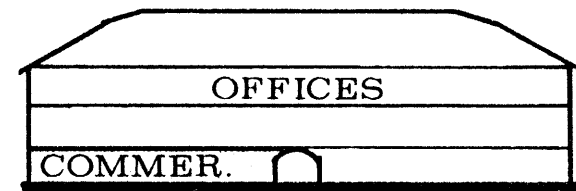
The atmosphere sought is that of a relaxed work environment. The setting should also be somewhat responsive to the whim of the user but not overly posh. Everyone is encouraged to interact for a rich cross-fertilization of ideas. The organization is somewhat paternalistic and

would like to offer its employees as many options as possible.

The employee classifications include senior researcher, junior researcher, managers and support personnel. In addition the building is to accommodate about 50 related personnel, spouses and children (in day care) as well as approximately 50 clients and visitors per day.

The program breaks down as follows:

use	square footage
staff offices .....	33,300
library.....	945
cafeteria .....	2,700
daycare (1:1 outdoor to indoor).....	3,240
graphic studio.....	2,160
typing.....	990
computer center .....	450
central supply and mail room.....	900
print and reproduction.....	1,440
conference rooms.....	3,000



*Program Organization*

mechanical room..... 1,000

lobbies, corridors, toilets and stairs... 19,800

In addition to the office facilities there is 10,800 square feet designated for compatible commercial development. For instance, a restaurant is included which will share storage and cooking facilities with the ABT cafeteria. The plan of the first floor indicates the retail space. The proximity of the retail commercial focus of the site clearly justifies this development. This commercial development also alleviates the intrinsic problems of single use buildings, such as the abandonment of a business district after 5 p.m. The mixture of uses act to enliven each other. Given these aspects of site, building, and program, one needs an approach that is not overwhelmed by the size of the project but that leads to a clear achievement of intentions.



*Solid in an Interior Void*

#### DESIGN APPROACH

The approach to this design comprises three somewhat simultaneous and highly interactive components. A search

for strong images of references, the development of an attitude toward the major architectural elements and the selection of an analogue which helps pull the disparate images and personal notions together constitute the components. These three components provide a "wish" which enlivens the design and prevents the banal approach of simply satisfying the square footage and adjacency requirements of the program.

#### IMAGES AND REFERENCES

One primary way to quickly get at some formal aspects of the design is to search out pertinent images in the work of others. These images may show how a similar formal issue was handled or just strike a cord in free association. A few of these images are illustrated on these pages. The picture of the solid stairway in the bank building dramatically portrays the power of a solid object form in an interior void. One easily sees the landmark quality of it. The "gate" from the dogon village provides a good reference for the inclusion of some



*A gate*

kind of symbolic gate for each of the company's groups. The photograph of the work space among the wooden roof trusses depicts the character of such a workspace and indicates one intention of this design study (see section AA).

#### ATTITUDE TOWARD ARCHITECTURAL ELEMENTS

The development of an attitude toward the architectural elements derives from a number of sources. Some of these sources include: one, as a response to a review of architectural precedent of the office building, two, a fall out from other images and three, personal experience and imagination.

This project explores five elements.

The first element is the void or vertical opening. The void offers the opportunity to generate a better sense of vertical zoning by providing visual and actual communication, which breaks down the discontinuity between floors. It also permits the introduction of natural light into the building interior. It defines another kind of



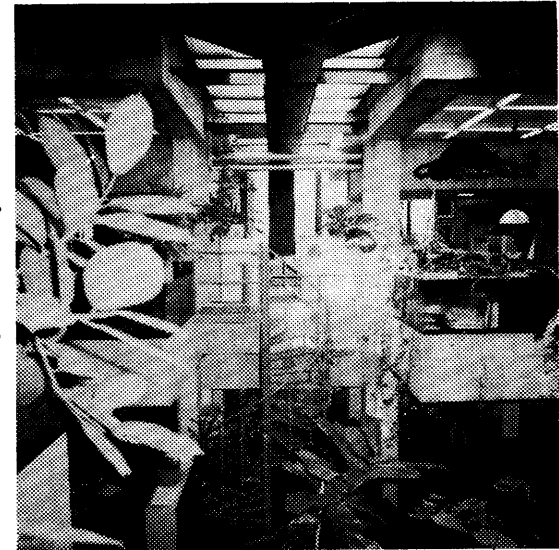
*Work space between roof trusses*



permanent edge with which one may associate.

Voids also serve an acoustic purpose since they, in conjunction with sufficient absorption materials, allow the noise of the office to act as a natural masking noise. Intelligible sounds decay into the general hum of the office, which if kept at about 47db, usually goes unnoticed. Finally the voids in this design permit the perception of the object-like collective form. This object is a more powerful three dimensional form generator than the usual walls.

The second element is the solid, i.e. walls or the "collective object" form just mentioned. The use of material such as unit masonry or stone lends a special quality which is important for providing a sense of permanence as opposed to the more transitory or flexible aspects of the office building. These materials are employed primarily in collective use areas such as the cafeteria, library and part of the conference room walls, which are not changed by individual users. These solids act,

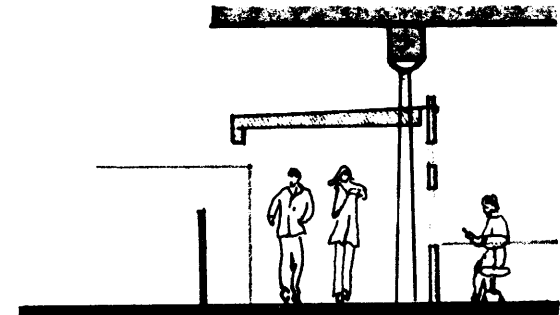


*Informal Vertical Communication  
through a Void*

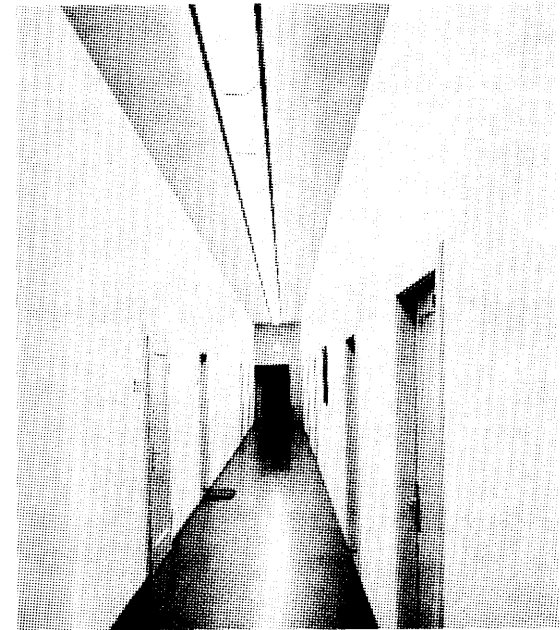
depending on the context, as interior landmarks.

Ceiling heights constitute the third element. The design emphasizes two aspects in particular. One is the employment of an overhead grid on 5' by 5' centers which carries the electrical and telephone service, provides a structural component to which the posts of the framework may lock, provides an intermediate definition between a person and the high (12') permanent ceiling and finally, provides the structure for an individual to support low overhead definition for making a more intimate work space and for providing overhead use such as storage. The second aspect of the ceiling which the design explores is the use of low overhead definition as a strong way to provide a circulation zone without relying solely on walls. In this way the edge of the circulation zone can be more interactive or reciprocal as opposed to hard edge found in the usual corridor seen in the illustration.

The fourth element which the design employs is a framework and panel system. This component in conjunction with the overhead grid seeks to provide a physical



*Overhead definition of  
Circulation*

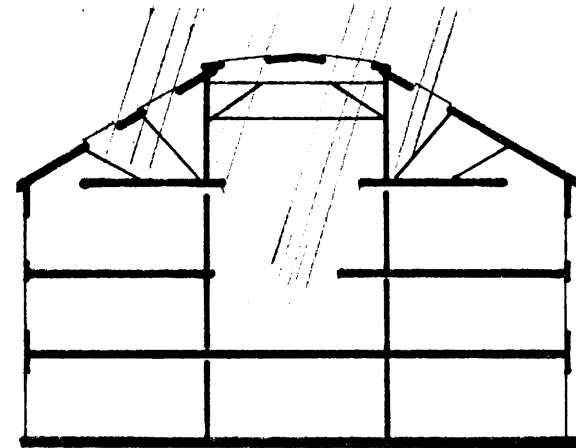


*A more typical corridor*

system which helps break down the scale of the open office and provide a means for attaching a various use surfaces, i.e. black boards, pin up boards, etc. The design shows one layout deploying this framework. It is meant as to reflect a reasonable organization but may if necessary be modified to suit the worker's needs. It is also intended that it work with standard office furniture.

The fifth element for creating a rich environment and a sense of place is quality of light, natural and artificial. Natural light provides a seasonal and daily rhythm. The windows as well as the voids discussed earlier provide this source of natural stimulation. The use of minimal overhead light and local work space lighting help to create a sense of place. The edges of the light help define the edges of the place even though there may be no other physical definition.

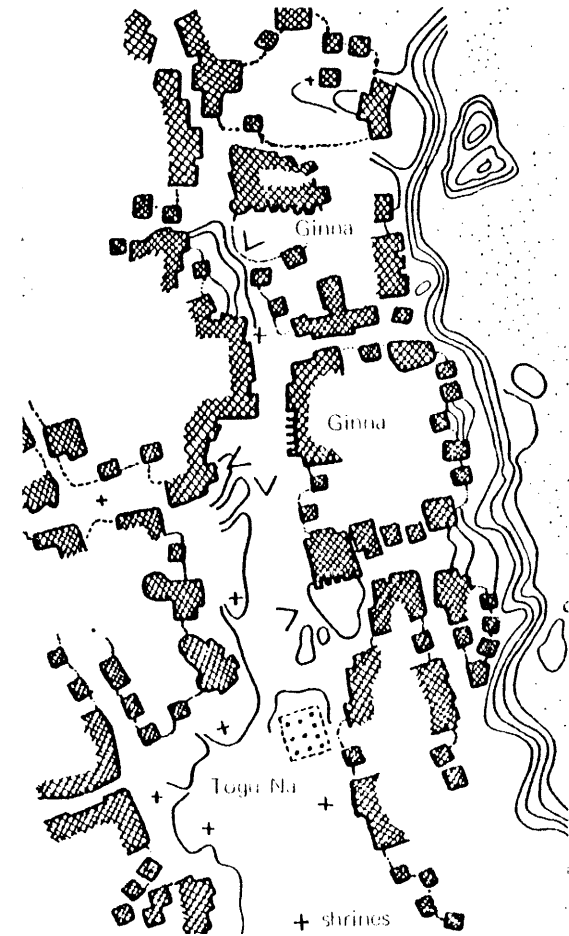
All of these elements contribute to the design of a rich and varied work place but they require an overall image or analogue to pull them together.



*Internal Voids for Natural Lighting*

## ANALOGUE

The main organizing principle of all the various parts is the "neighborhood" analogue. The six company departments are treated as neighborhoods or tribal clans. In this way physical organization is generated which leads to strong positive subgroup identification within the whole. The organization of these clans is based on the representation of the Dogon village. The illustration depicts a major public distribution with a major collective area; off of that distribution are the various clans' semi-private open spaces surrounded by structures. In the design there is a reception area which leads up to the main circulation on the second level. Like the village diagram the main collective uses are on this circulation. Off this circulation one finds the semi-private open areas which serve as a focus for each "clan". In this area there is usually a solid such as a conference room or quiet room, informal vertical circulation such as a spiral staircase and other services. Here too, one



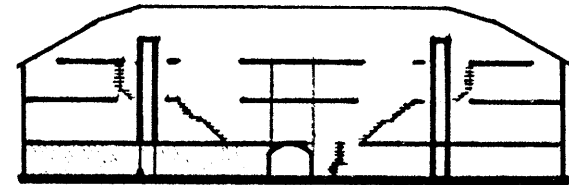
*Dogon Village Diagram*

finds at the "gate" to the area the graphics and other elements by which a group explains itself.

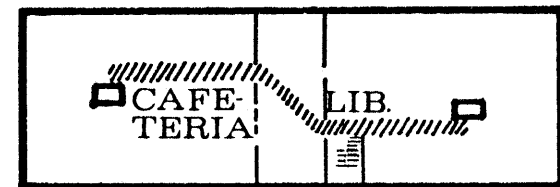
Thus these three elements of images, attitudes and the analogue determine the essential nature of the interior form and definition.

Employing this approach, I examined the existing structure and its context. Upon this I made the primary decisions of solids and voids which generate the interior form and organization. They provide the permanent edge definition of reasonably sized areas. All this in turn provides the context for the secondary decisions of less permanent and more flexible types of definition. These include the overhead grid, the framework and panel system as well as the other furniture. More local in nature this level of decision making provides the opportunity for a more rich yet responsive setting for office work.

The truly humane and supportive white-collar work place must address all these levels of design decision making. Only when it provides for the individual as well

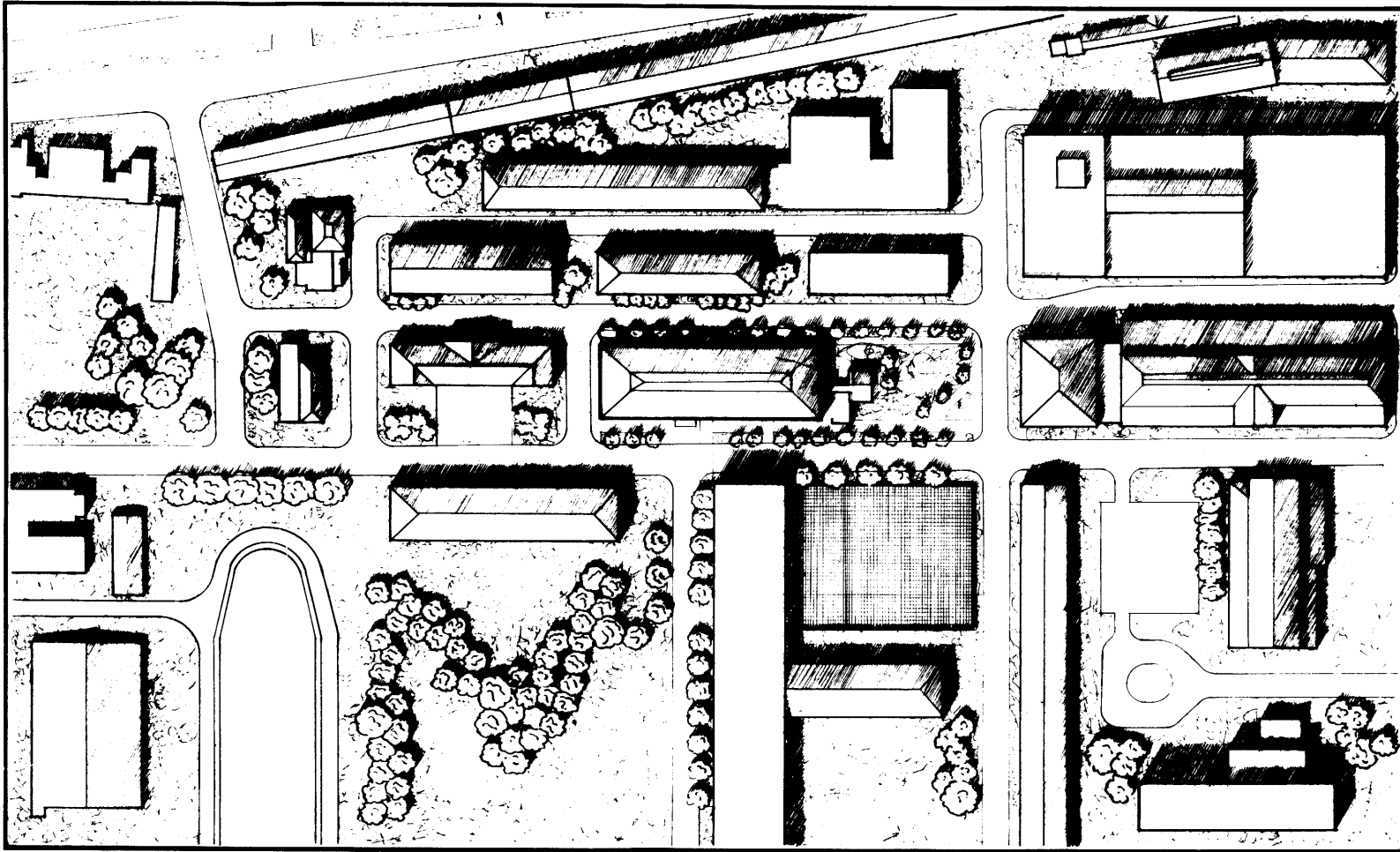


*Diagram of Major Vertical Distribution*



*Diagram of Major Horizontal Circulation on Second Level*

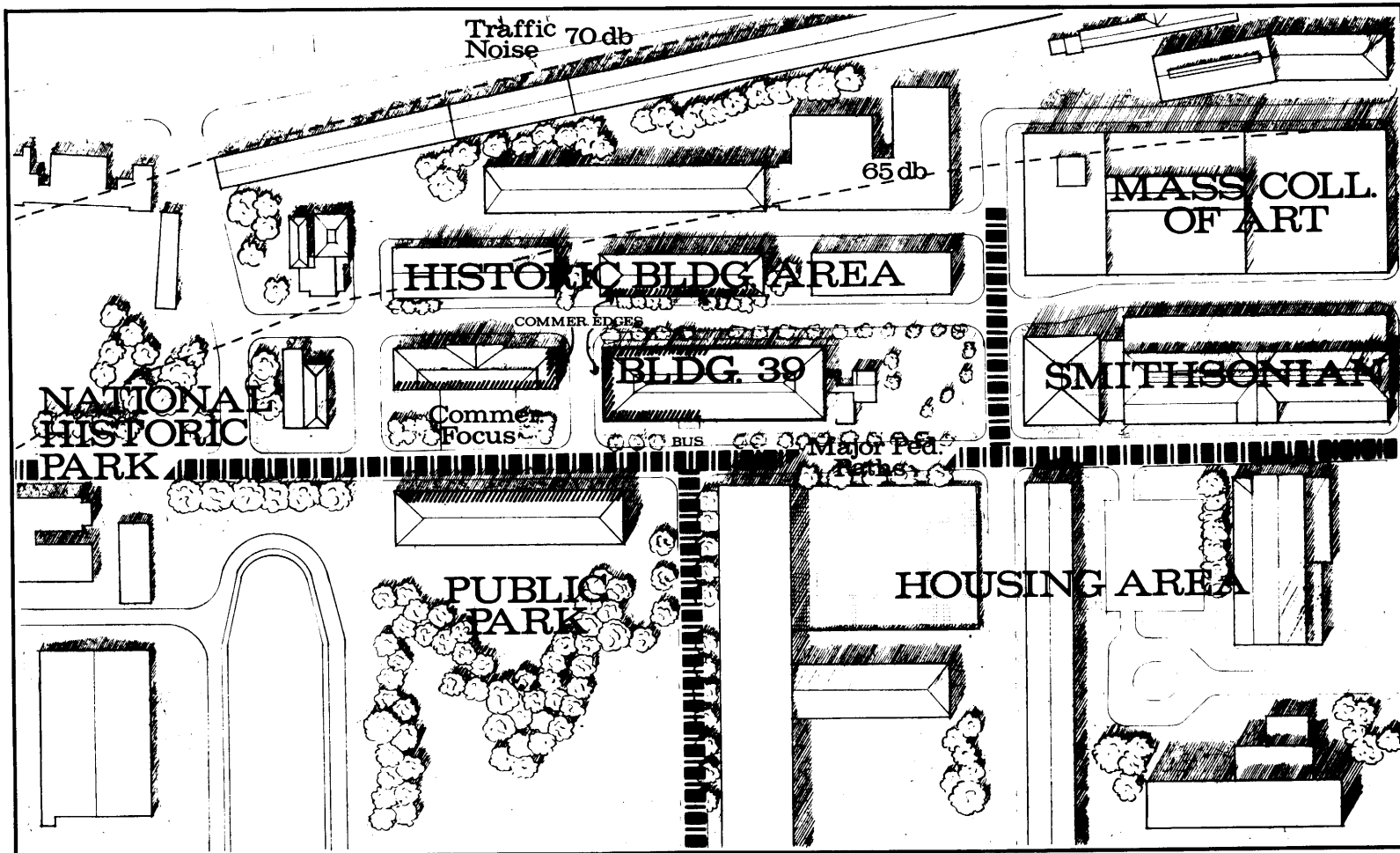
as collective needs of the organization's members will the office setting address the anonymity and dehumanization which generally besets the office building type.



**WHITE-COLLAR  
WORKPLACE**  
MICHAEL F. SLEZAK  
M.ARCH. THESIS M.I.T. 1978

SITE PLAN

**SCALE:**  
50 150  
N 66



# WHITE-COLLAR WORKPLACE

MICHAEL F. SLEZAK  
M. ARCH. THESIS M.I.T. 1978

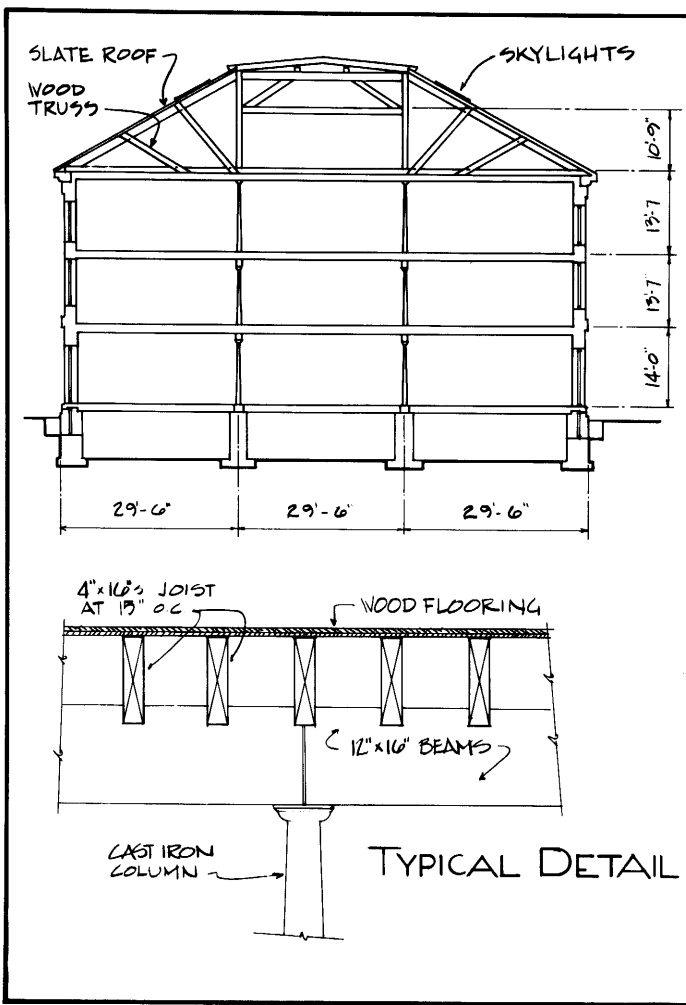
## SITE ANALYSIS

SCALE:



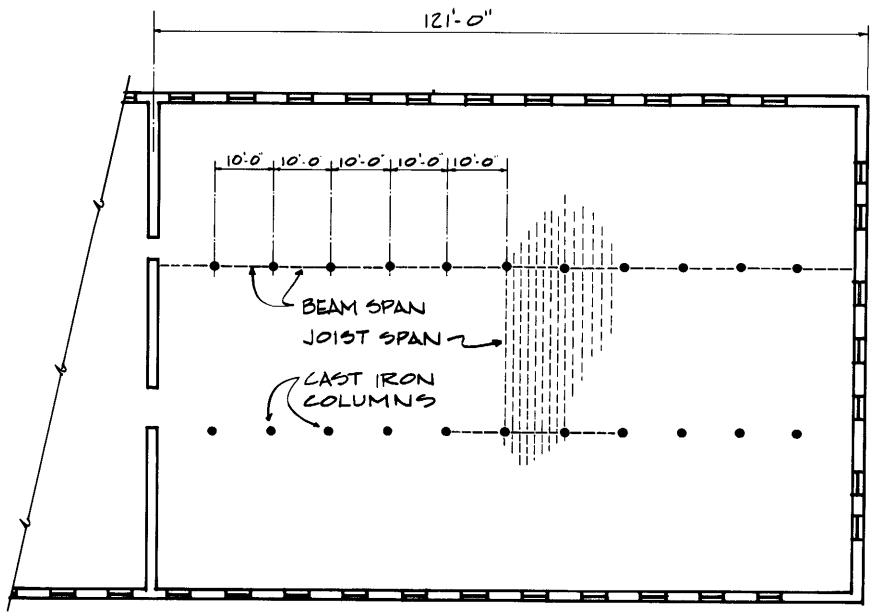
N 1 67





## EXISTING STRUCTURE

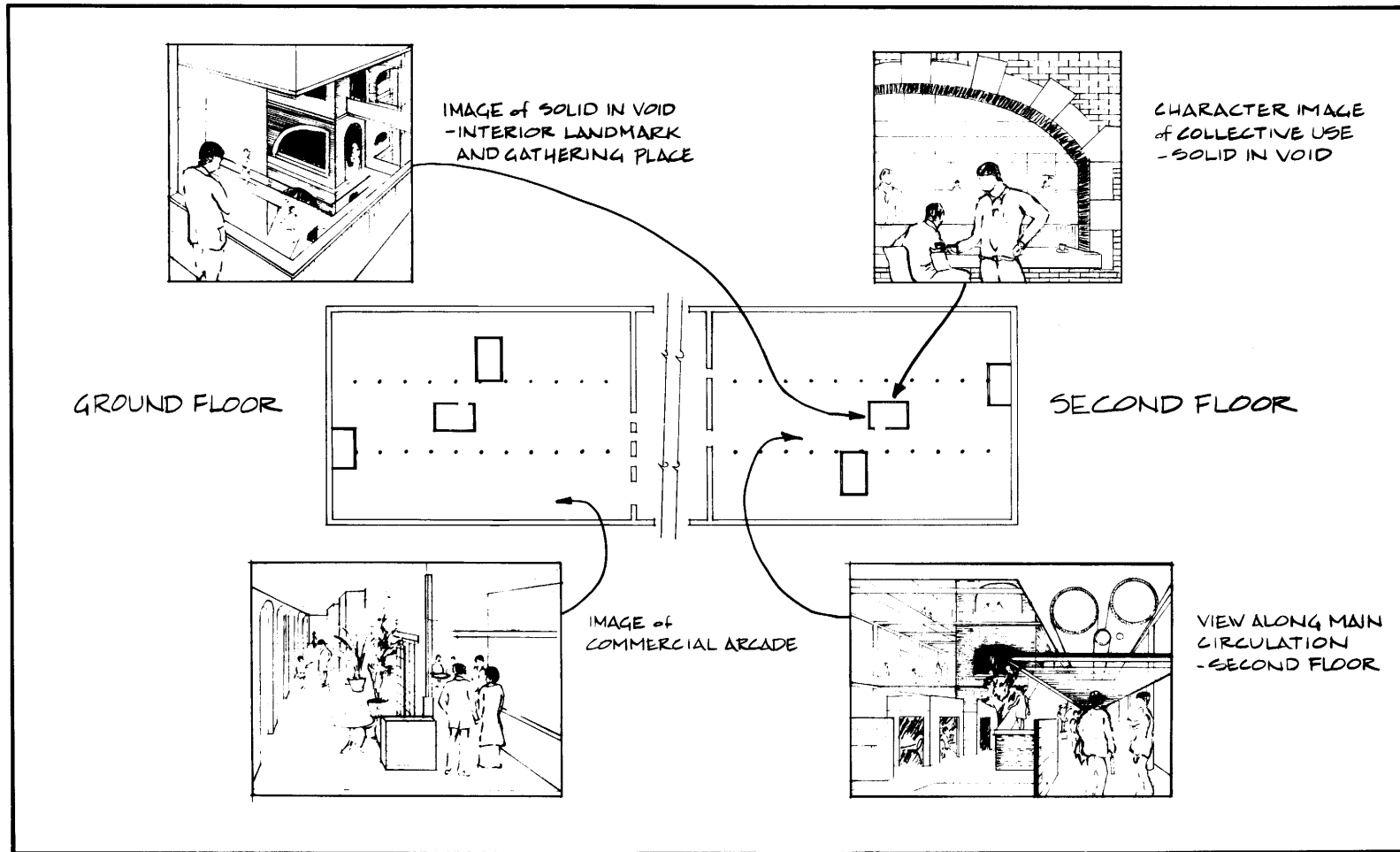
THE BASIC EXISTING STRUCTURE HAS 2'-0" THICK, MASONRY BEARING WALLS AND TWO INTERIOR BEARING WALLS WHICH FORM A CENTRAL PASSAGE THROUGH THE BUILDING. THE BUILDING IS SYMMETRICAL WITH WOOD JOIST BEARING ON WOOD BEAMS SPANNING CAST IRON COLUMNS SPACED AS SHOWN ON THE DIAGRAM. A 20'-0" DEEP WOOD TRUSS SUPPORTS THE SLATE ROOF.



**WHITE-COLLAR  
WORKPLACE**  
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M.Arch. THESIS M.I.T. 1978

EXISTING STRUCTURE

SCALE:  
N 68



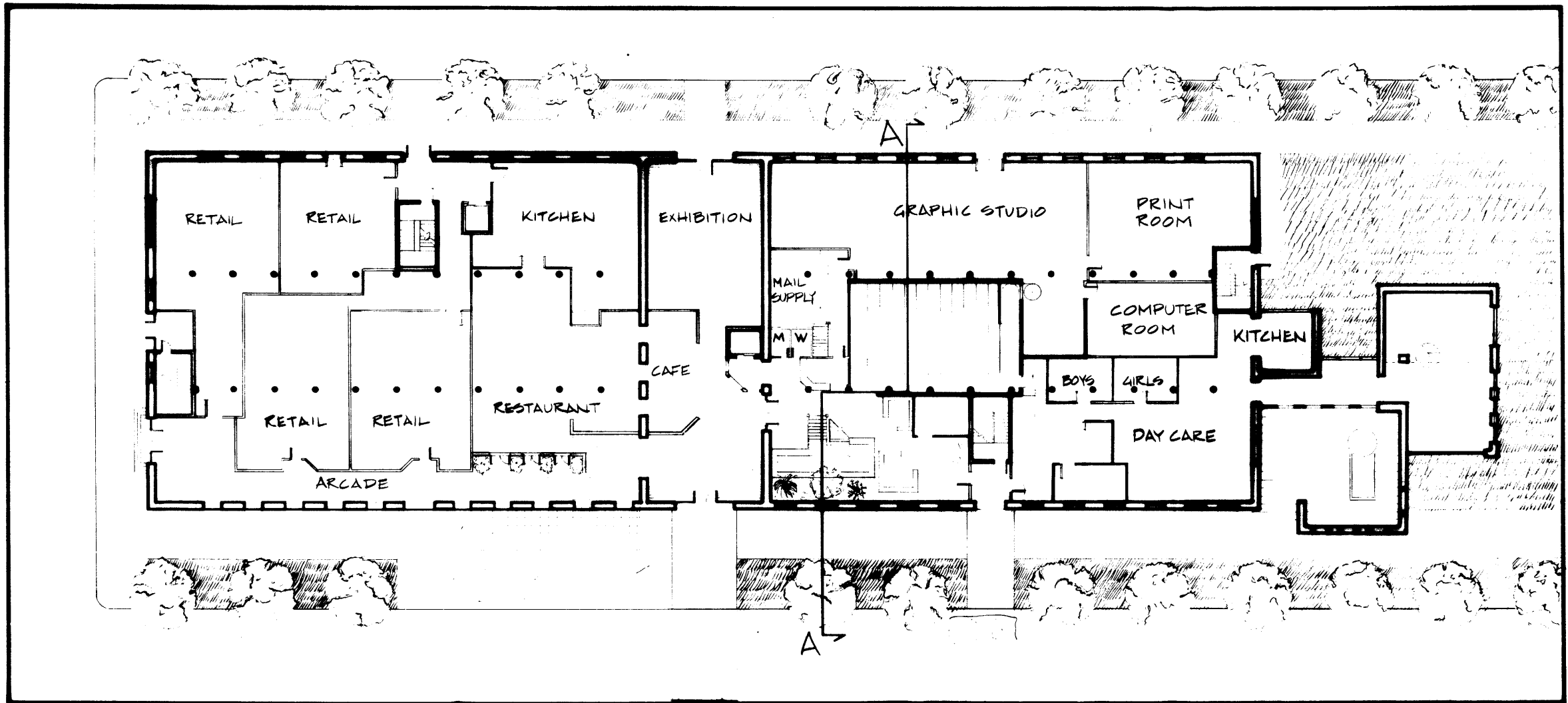
# WHITE-COLLAR WORKPLACE

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## IMAGES

SCALE:

N 69

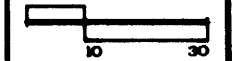


**WHITE-COLLAR  
WORKPLACE**

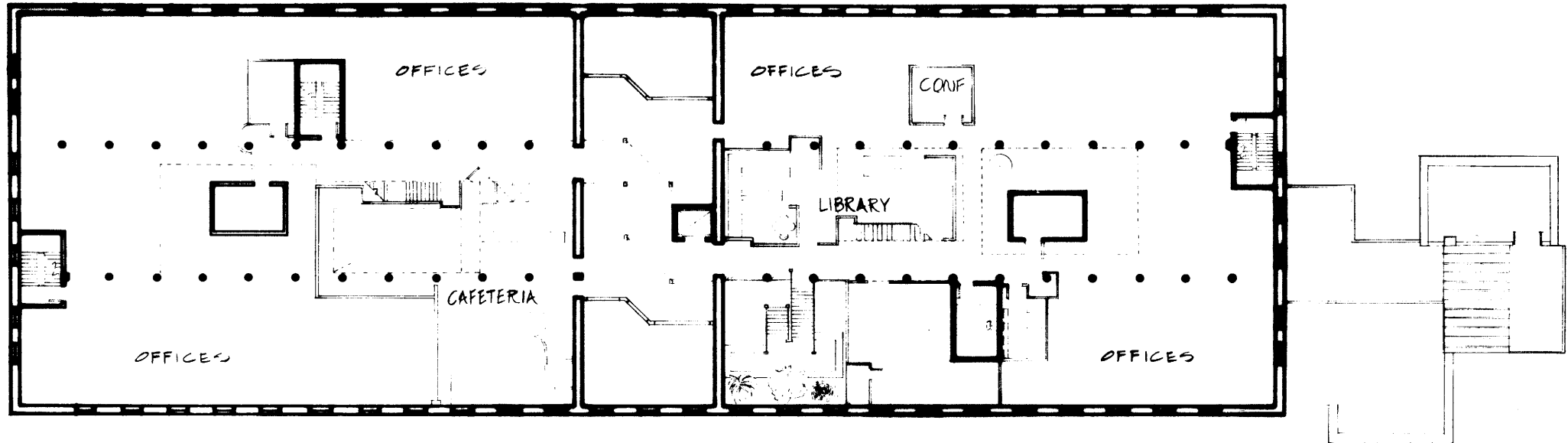
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PLAN-LEVEL ONE

SCALE:



N 7 10

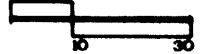


**WHITE-COLLAR  
WORKPLACE**

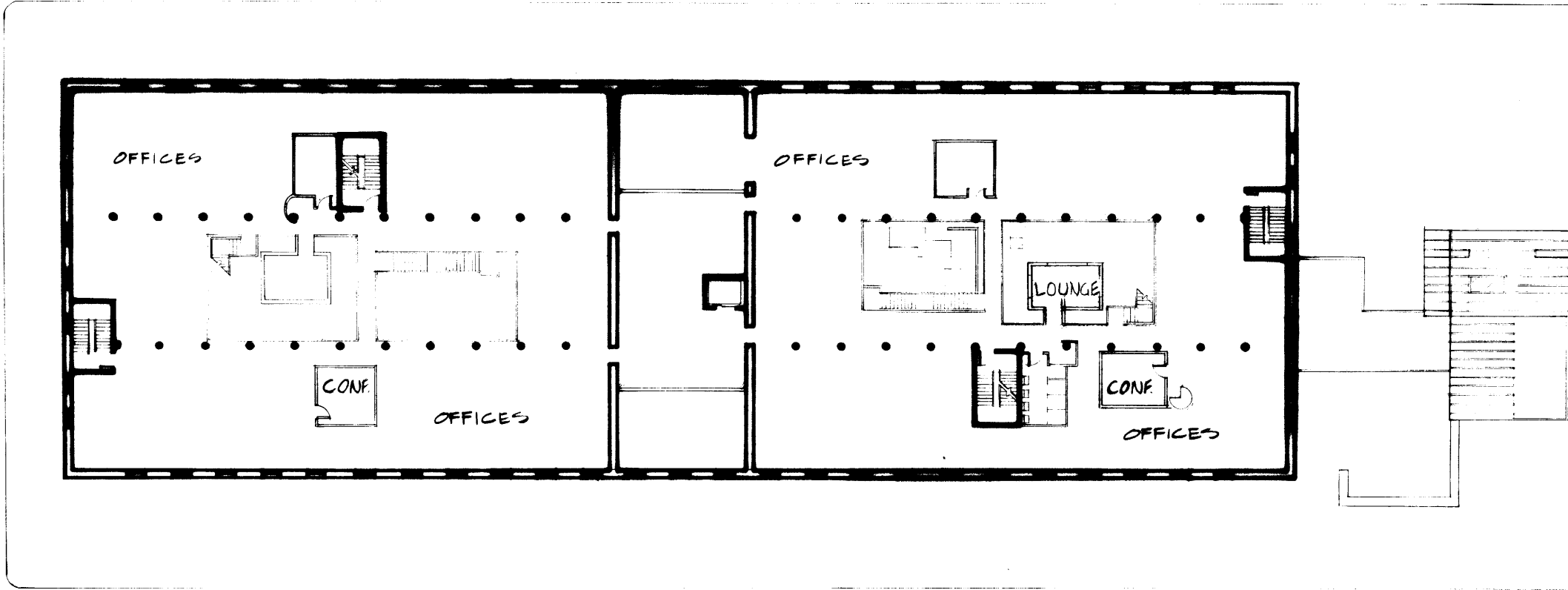
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PLAN-LEVEL TWO

**SCALE:**



**N** 7 | 71

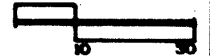


**WHITE-COLLAR  
WORKPLACE**

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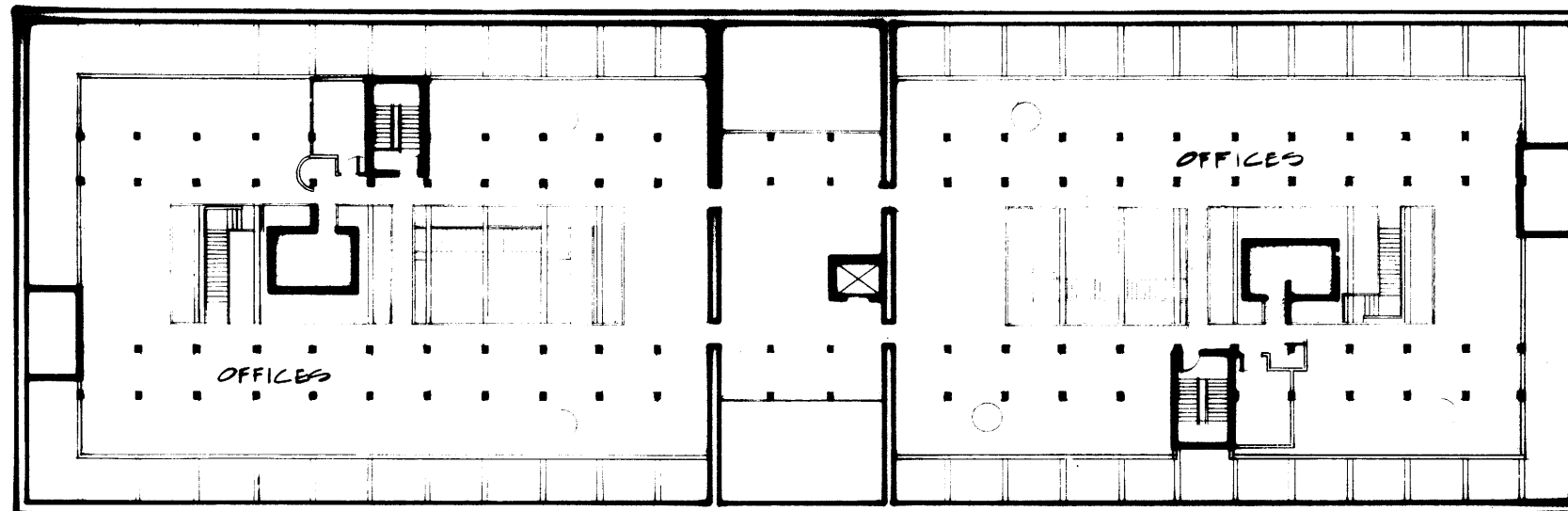
PLAN - LEVEL THREE

**SCALE:**



**N** ↗

72



**WHITE-COLLAR  
WORKPLACE**

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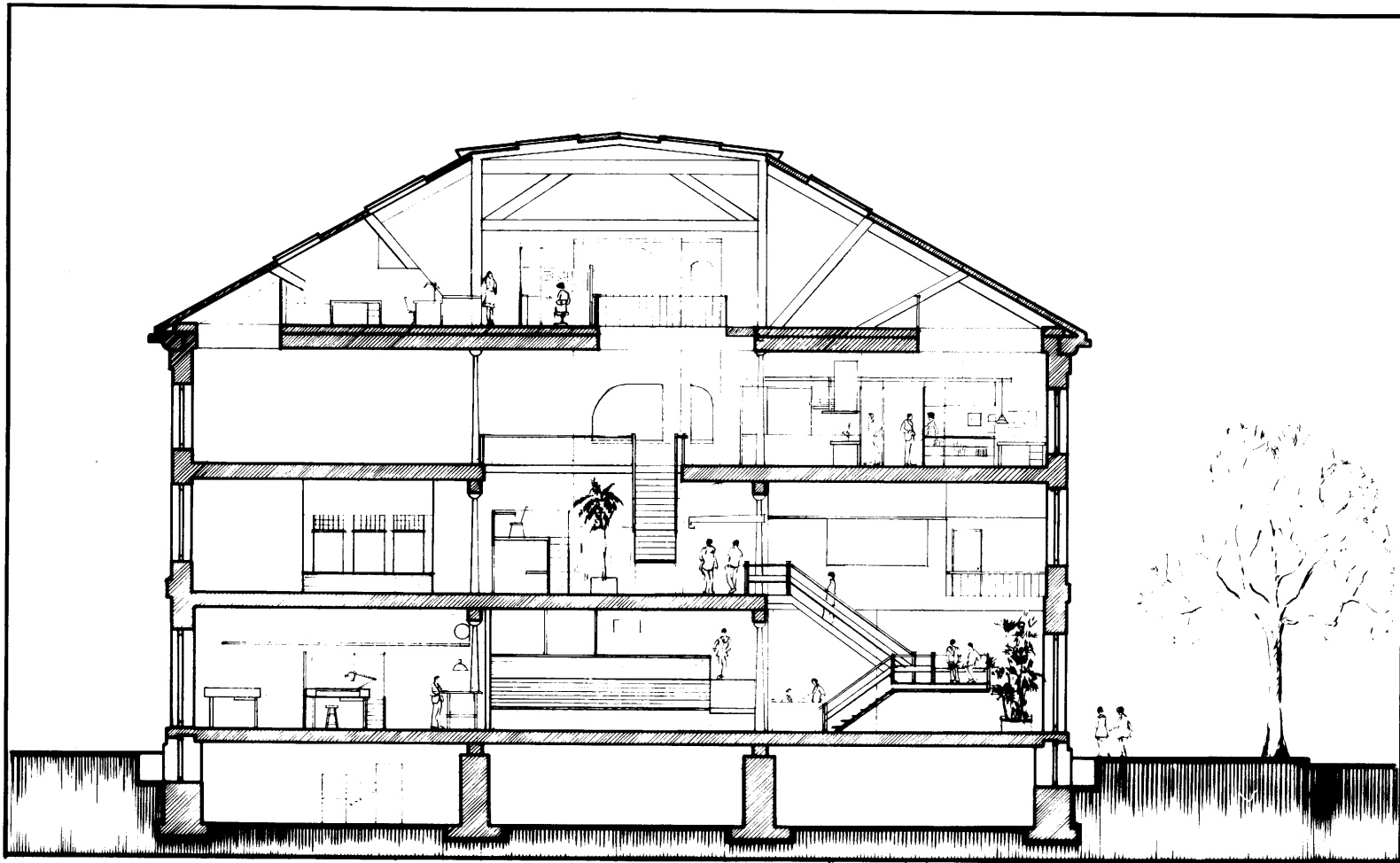
PLAN-LEVEL FOUR

**SCALE:**



**N** ↗

73

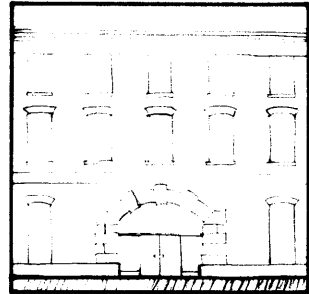


**WHITE-COLLAR  
WORKPLACE**

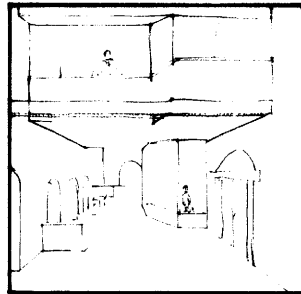
MICHAEL F. SLEZAK  
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SECTION "A-A"

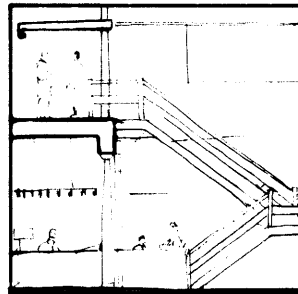
SCALE:  
5' 15'  
N 74



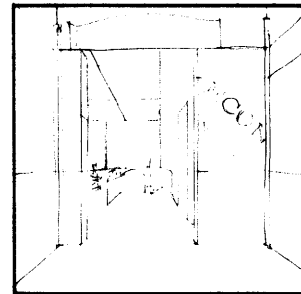
MAIN ENTRY



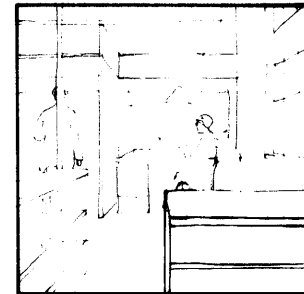
PUBLIC PASSAGE



RECEPTION & STAIR  
TO MAIN CIRCULATION

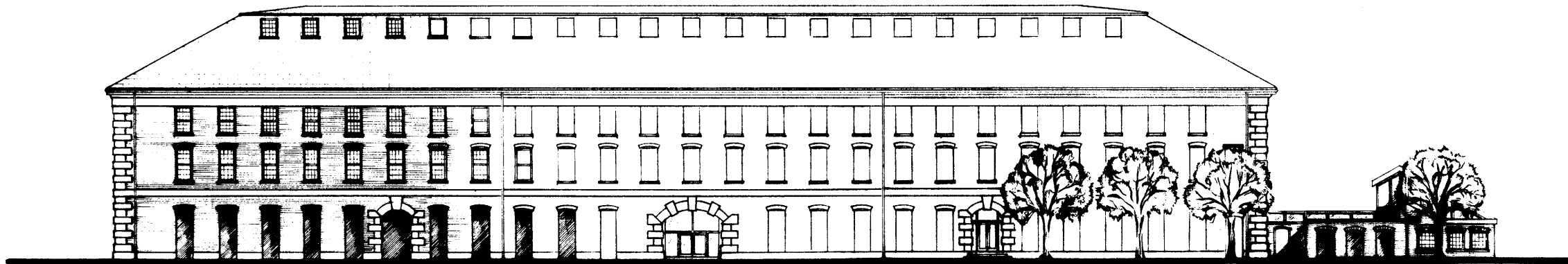


GATE +  
"NEIGHBORHOOD CENTER"



A WORKSPACE

ENTRY SEQUENCE



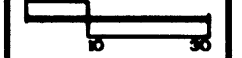
SOUTH

**WHITE-COLLAR  
WORKPLACE**

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ELEVATION - SOUTH  
ENTRY SEQUENCE

**SCALE:**



**N**

75

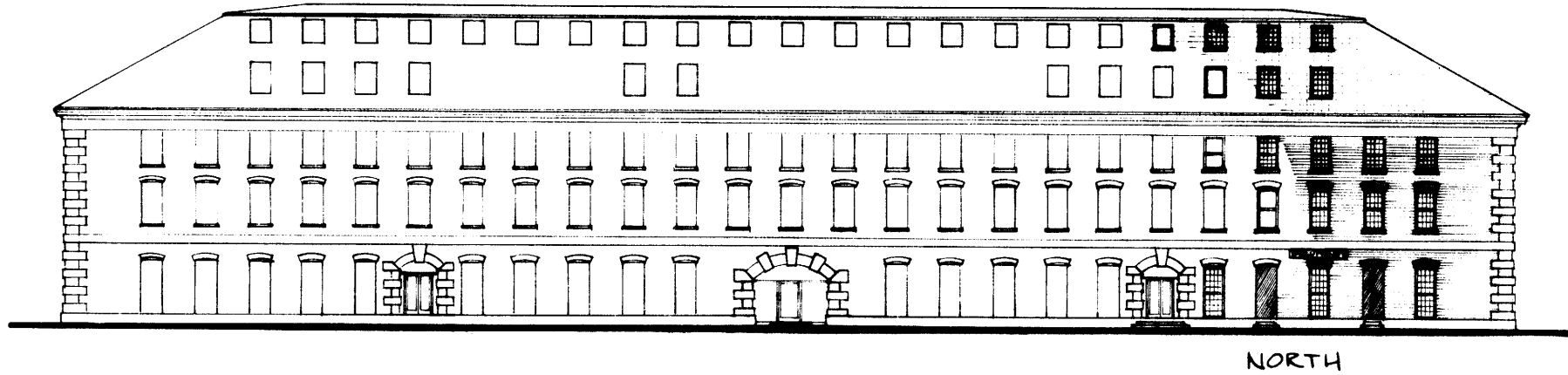




EAST



WEST



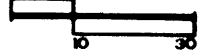
NORTH

# WHITE-COLLAR WORKPLACE

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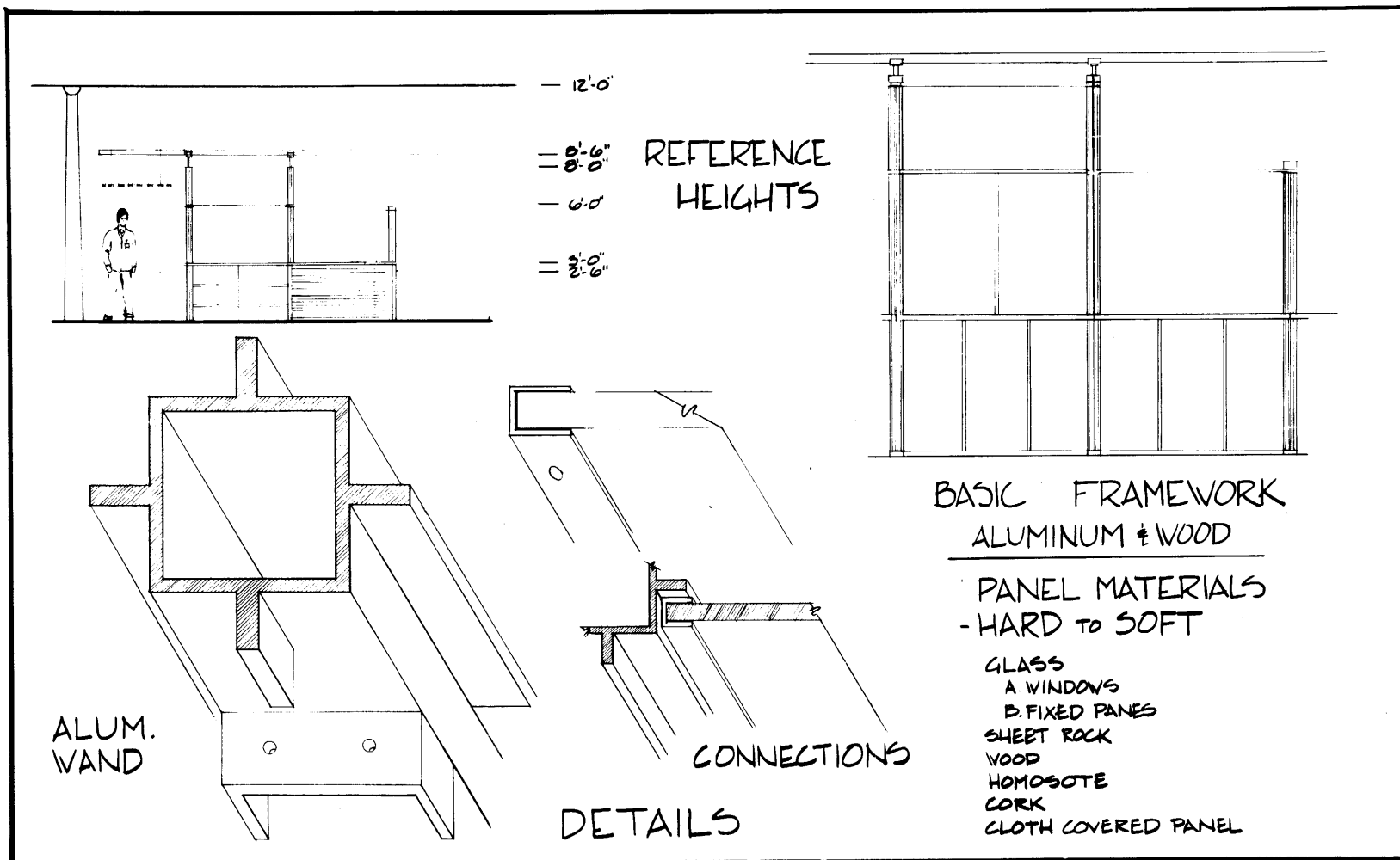
ELEVATIONS- EAST, WEST, NORTH

SCALE:



N

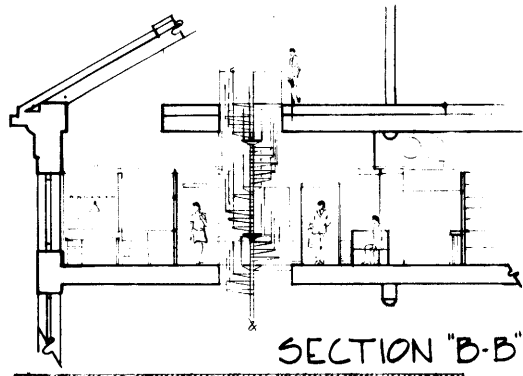
76



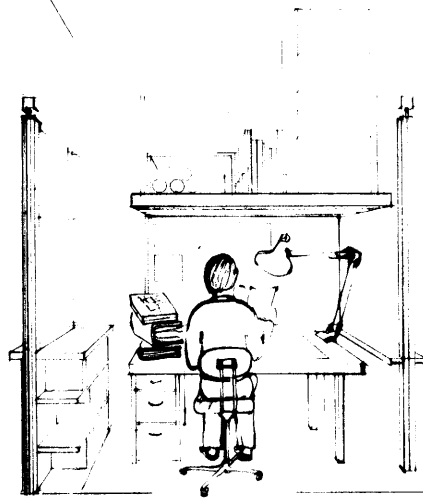
**WHITE-COLLAR  
WORKPLACE**  
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FRAMEWORK ELEMENTS

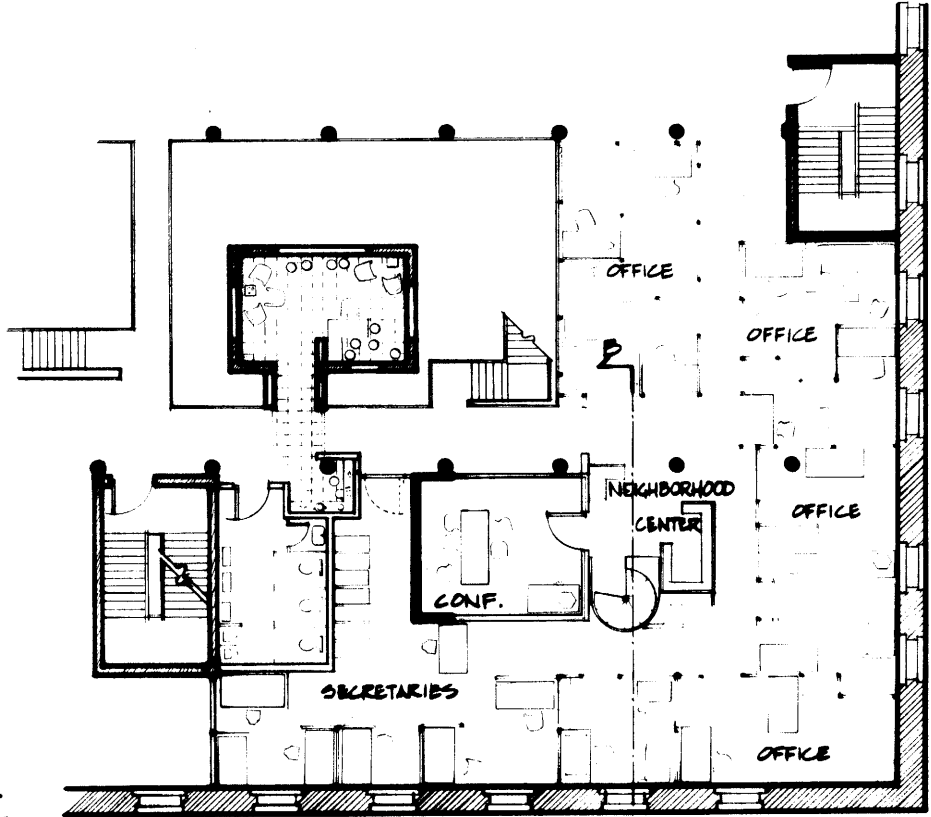
SCALE:  
N 77



SECTION "B-B"




WORKSPACE  
IMAGE



PLAN  
LEVEL THREE

**WHITE-COLLAR  
WORKPLACE**  
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"NEIGHBORHOOD" STUDY

SCALE:  
  
 N 78