MIXED LAND USE ZONING

WITH SPECIAL REFERENCE TO THE INNER CITIES

OF MONTREAL AND NEW YORK CITY

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ABSTRACT:

This thesis may be of interest to three groups of people: (1) Those with a specific interest in the subject of Mixed Land Use, (2) those with an interest in New York City and Montreal, and (3) those with an interest in the evolution of the zoning laws in North America in general and in New York City in particular, where it all started.

Persons in the first group will find Part I, Part II, Part IV and Part VI to be of the greatest use. Part I provides a definition for Mixed Land Use. Part II traces Mixed Land Use back to Greek agorá, and gives a historical perspective. Parts IV and VI illustrate some successful projects in New York City and Montreal, including the Rockefeller Center and Citicorp in New York, which are multi-use centers rather than mixed-use developments but nevertheless are included for their ingenuity in design and contribution to their immediate environment.

Parts III and V provide a description of the inner cities of Montreal and New York.

The Zoning Ordinance is the principle mechanism available to New York City to control its physical form. Part III provides an analysis of the initial Zoning Ordinance adopted in 1916, the Comprehensive Rezoning Resolution of 1961 which contained innovative improvements such as the Floor Area Bonus and Tower Provisions, culminating in the Special Zoning and Mixed-use Zoning Districts.

A glossary of relevant terminology and a bibliography follows the case studies.

RÉSUMÉ:

La présente thèse peut intéresser trois groupes de personnes: celles qui se préoccupent tout spécialement de l'utilisation multiple du sol, celles qui s'intéressent aux villes de New York et de Montréal, et enfin celles que touche l'évolution des lois sur le zonage en Amérique du Nord et plus particulièrement dans la ville de New York, où elles ont pris naissance.

Les sections I, II, IV et VI seront tout particulièrement utiles aux personnes du premier groupe. La section I définit l'utilisation multiple du sol. La section II la situe depuis l'agora grecque et offre une perspective historique. Les sections IV et VI exposent certains projets sur l'utilisation multiple qui furent couronnés de succès dans les villes de New York et de Montréal, y compris le Rockefeller Center et le Citicorp de New York qui sont des centres à utilisation multiple plutôt que des projets, mais qui ont néanmoins été étudiés pour l'ingéniosité de leur conception et leur apport au milieu.

Les sections III et V décrivent le centre des villes de Montréal et de New York.

Le règlement de zonage constitue, pour la ville de New York, le principal mécanisme de contrôle de sa configuration. La section III analyse le premier règlement de zonage adopté en 1916, la proposition de rezonage complet de 1961 qui apportait des améliorations telles que prime de rapport

plancher-sol et disposition concernant les tours, pour terminer avec les quartiers à zonage spécial et à utilisation multiple du sol.

Un lexique terminologique ainsi qu'une bibliographie suivent ces études.

INTRODUCTION

To a certain extent, land use separation has always been practised in history. Militaristic priorities, social differences and the inherent desire of perpetuating these social differences always resulted in segregational planning attitudes even in the earliest form of urban settlements. Modern land-use separation policies, as we know of and experience in our everyday lives, are a by-product of the Industrial Revolution.

Jane Jacobs is one of the first-generation campaigners who advocated mixed land-use as an alternative to land-use separation. She observed that in the cities, which were either created or readjusted to the tune of industrial progress, the lower-class communities which were spared by the socio-economic trend of land-use separation by sheer neglect, showed a vitality which was lacking in the newly created middle-class environments. While the sociological reasons for the land-use separation, which was eagerly sought after by the newly born middle class, can be summed up as the desire to associate with one's own kind, the economic reasons weighed heavier. The house was more than a place to live. It was an economic investment, and the investor, for whom this was a life-long commitment, was obviously most unwilling to see a different land-use next to his house which might have the potential of reducing the value of the investment. Thus the way was paved for the sterile neighborhoods.

It can be said that the current land-use separation poli-

cies had affected the European cities less while for the North American cities with the addition of suburban sprawl, the outcome has been disastrous. In Europe, economic limitations and scarce energy resources have led to urban planning solutions where mixed land-use has always been a major planning tool. In new developments and redevelopments, availability of local goods and services within a walking distance has inevitably resulted in a mixture of uses; local commercial activity is followed by entertainment and recreational activities. Comparatively, the following statistic illustrates the condition of the suburban communities in North America where land-use separation policies are strictly enforced. Less than 20 percent of all car trips are work-related and over half of all car trips are over a distance of under 5 miles. In other words, impulse shopping, weekly shopping, and for that matter any kind of activities are restricted to a remote area which is accessible only by automobiles. By now there has been enough literature written on the devastating effects of land-use separation on the North American cities, perpetrated by the advance of suburbia, modern large-scale dormitories, which drained the valuable tax-dollars needed for the functioning of the city along with the middle class -a much needed human resource for the vitality of a city- thus leaving the poor behind in the decaying inner cities, who, besides contributing to the city, depended on it for its very existence.

The truth is that even today still single-family detached houses in the suburbia are being built more than any other

type of construction - an anathema to the mixed land-use concept. Meanwhile the cities, which theoretically should be the showcases of American civilization are continuing to decay and the scattered corporate office towers can at best be the showcases of the American engineers.

Mixed land-use manifests itself in urban settlements. It implies a way of life where certain industrial land-uses excepted, the coexistence of a variety of uses, commercial, residential, recreational & cultural, is not only compatible but in fact desirable and sought after. It also implies easy accessibility to these uses for everyone who is willing to benefit from all these services. Horizontal integration of different uses within a precinct, whether it consists of retail shops, schools, workshops, theaters or residences, is one way of achieving it, but vertical integration of commercial, office and residential uses in a single building has become a necessary alternative for the inner cities where land and development costs are prohibitive for residential development alone.

Historically, before the modern land-use separations came into effect, mixed land-use was part of the definition of the "city" per se. That the "city" should take mixed land-use into consideration went without saying. So in a way, a concept had to be reinvented and labeled in order to be able to define what the city should be.

As this study will show, mixed land use was a basic ingredient in Ancient Greek cities where the roots of the western civilization can be traced, as well as in Venice and Florence when they were the

centers of an exciting era of art and civilisation unsurpassed in history. What makes European cities unique is the continuation of an urban tradition where mixed land use is a way of life rather than a zoning tool. It has produced a superior quality of life and a most habitable environment full of vitality. The simple truth is that, like the French on Champs-Elysee, the Americans and Canadians also enjoy sitting onaa side-walk cafe, get into a conversation or just watch passers-by.

As a result of the case studies of this research, New York City and Montreal are the continuation of this European tradition onto the North American continent. These are the two cities where this tradition has been preserved and improved upon. For anyone who is committed to urban life and civilization, they offer the most habitable environments. These cities have always thrived upon mixed-use buildings, and now they are pioneering the revival of mixed land use zoning in North America. While Montreal is richer in examples of mixed-use buildings, New York is catching up with the introduction of special mixed-use zoning districts.

New York City was destined to become the international center of the 'service industry'. As an English writer put it: "it will be the place where brains will meet". The indications are already here and the percentage of professionals living in the inner city is rapidly growing. In urban planning terms, this has wonderful implications; for these are the people who are committed to urban life. The examples are few, but the trend is legible all across the city. The revival of old neighborhoods is patiently being undertaken by those people who refuse

to comply with the short-term comforts of the suburbia.

With all its vices and virtues, New York City is the "capital city of this century" and, like Athens of Hellenic Civilization & Venice of Renaissance, it is the showcase of twentieth-century civilization.

The author must confess that while this study was going on, he painfully got aware of how restricted the role of urban planners and architects was in shaping the urban-scape. Political considerations, coupled with the real estate market, its unpredictable cycl legal technicalities, availability of funds by banks and trusts, private interests as well as federal requirements, local communities &non-profit organizations, all with their respective attendent problems demanded priority. I would like to express my deep admiration for all those anonymous planners of New York City and Montreal to be able to cope with all these giants and produce ingenious solutions for what to be insurmountable problems.

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PART ONE

MIXED LAND USE ZONING AND THE INNER CITY

DEFINITION:

Christopher Alexander, in "A Pattern Language" defines the mechanism responsible for mixed land use in the inner city as follows:

> "Urban services tend to agglomerate. Restaurants, theaters, shops, carnivals, cafes, hotels, night clubs, entertainment, special services tend to cluster. They do so because each one wants to locate in that position where the most people are. As soon as one nucleus has formed in a city, each of the interesting services - especially those which are most interesting and require the largest catch basin - locate themselves in this one nucleus. The one nucleus keeps growing ..... it becomes rich, various, fascinating."

But unchecked growth and urban sprawl can limit the accessibility to the inner city -

> "As the metropolitan area grows, the average distance from an individual house to the center increases; and land values around the center rise so high that houses are driven out from there by shops and offices - until soon no one, or almost no one, is any longer genuinely in touch within this solitary center. The problem is clear. On the one hand, people will only expend so much effort to get goods and services and attend cultural events, even the very best ones.
>
> On the other hand, real variety and choice can only occur where there is concentrated, centralized activity; and when the concentration and centralization become too great, then people are no longer willing to take the time to go to it."

At a lecture delivered at the McGill University, Norbert Schoenauer explained the relationship of the 24-hour use cycle (Fig. 1-A) and its component mixed urban land use and the inner city:

> "The Inner City is characterized by mixed urban land use. It is an agglomeration or mosaic of commercial, office, institutional, transportational, light industrial, recreational, and residential land uses. The magnitude and intensity level of these various land uses determines the character of the Inner City and only a particular range of magnitude and intensity levels bring about balance of optimal land use. Each land use generates daily activities in a particular time span; some of these activities overlap each other, others are complementary; some are of long duration, others have a short time span; some are sporadic, others are intensive. But, the composite picture of super-imposed diurnal and nocturnal activities of each particular land use found in the Inner City covers all hours of the daily cycle."

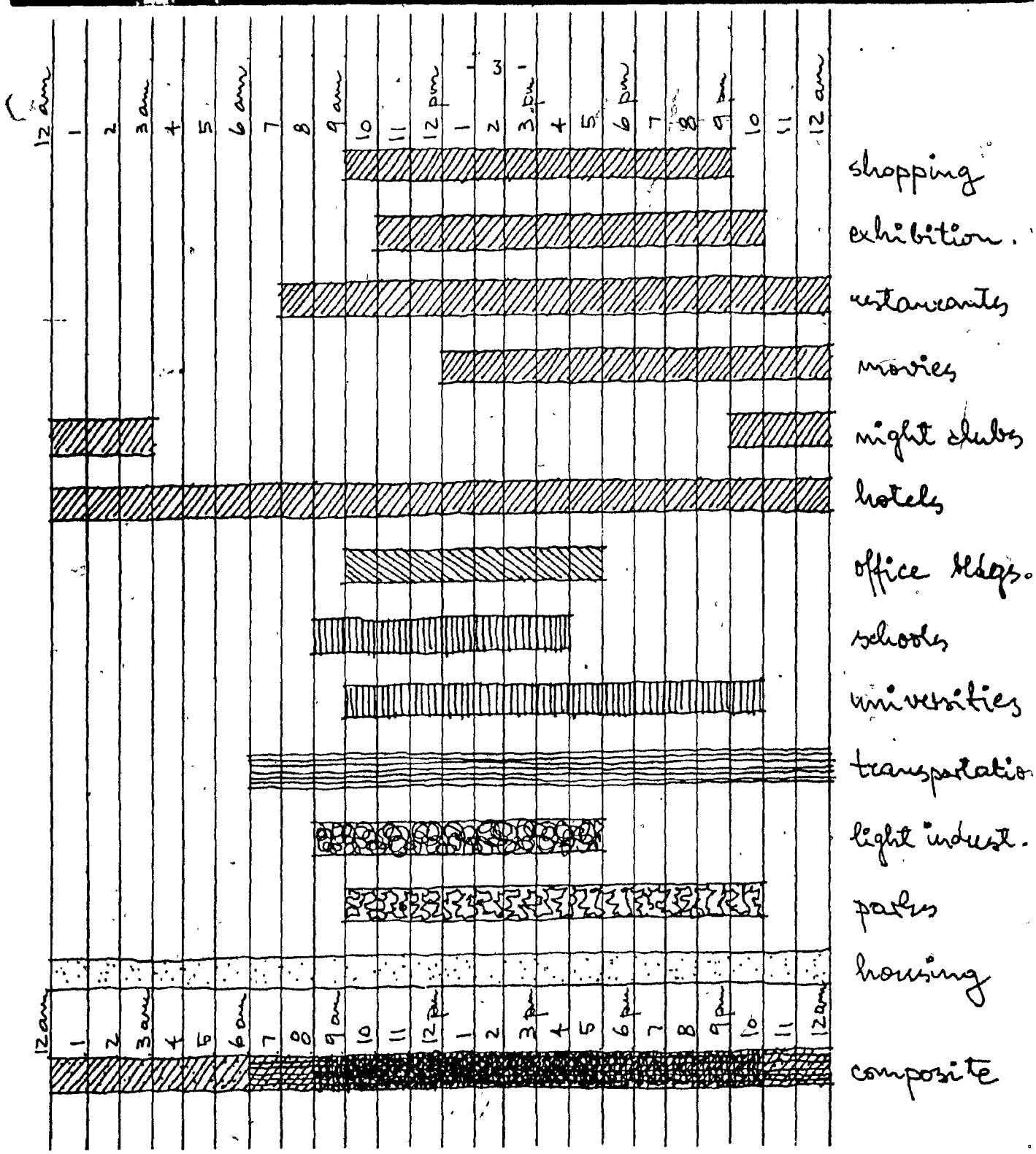


Figure 1-A 24-hour use cycle

Mixed land use development can be defined under the following three categories:

1 - Unitary complex or megastructure: These are typically high-rise, mixed-use buildings. Physically, they are conventional structures built in the form of the typical CBD high-rise tower. Typical examples are the John Hancock Center in Chicago (Fig. 1-1), Olympic Tower in New York, and the Place Bonaventure in Montreal. All unitary mixed use complexes have the common characteristic of the vertical integration of the uses, and consequently having the elevator as the main transportation system. While the unitary complex located within the inner city cuts the amount of traveling drastically, within the development itself, pedestrian movement is also greatly reduced by the vertical integration of the uses.

By combining the residential, commercial and office components under one roof, in the words of Swedish architect Ake Arell "You can live your entire life here and never go outside". But according to statistics less than 15 percent of the resident population of such a complex has been employed there as well.

2 - Conventional Building Grouping: These are multi-building mixed-use projects, assembling a number of separate buildings usually containing a single land use. Physically, it resembles the ordinary parcel-by-parcel development. There are important factors favoring this type of development to the unitary complex which has the obvious advantage of tight, efficient pedestrian movement. One reason for favoring this type is the possibility of phasing the project. This way, with-

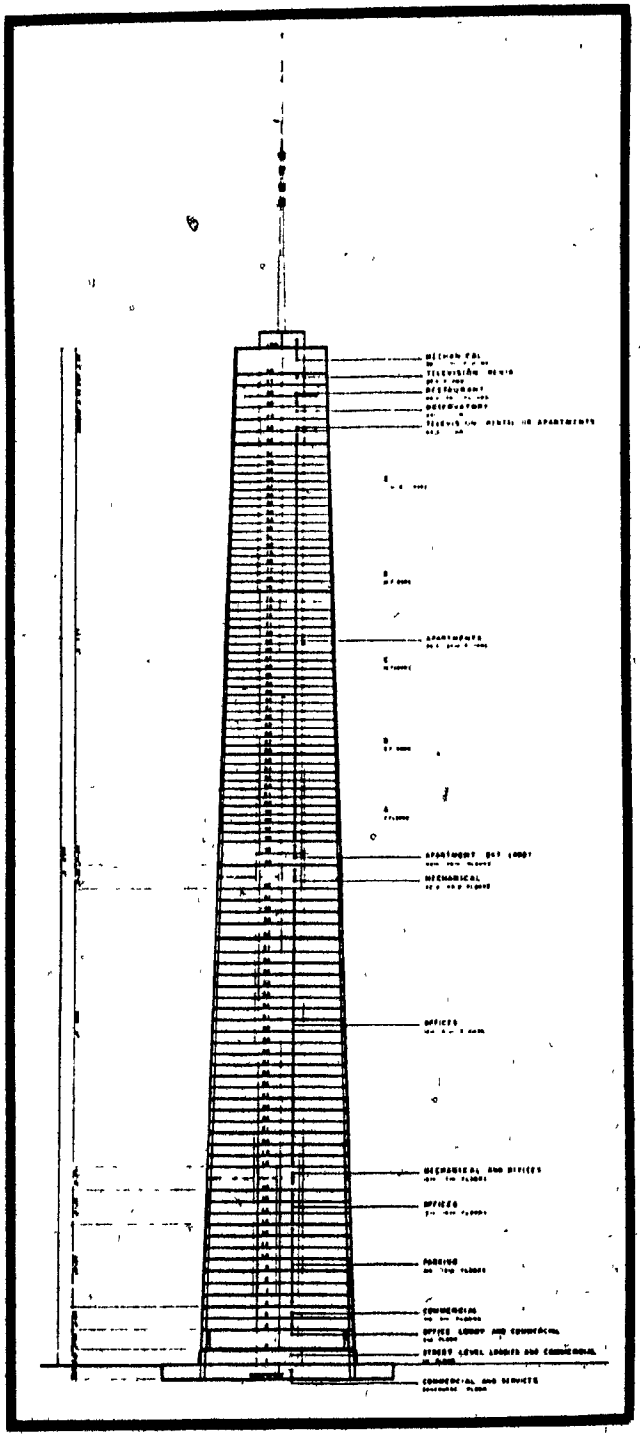


Figure 1-1 : Section through the John Hancock Building, Chicago, showing the vertical integration of land uses in a unitary complex (megastructure). Skidmore, Owings and Merrill, architects.

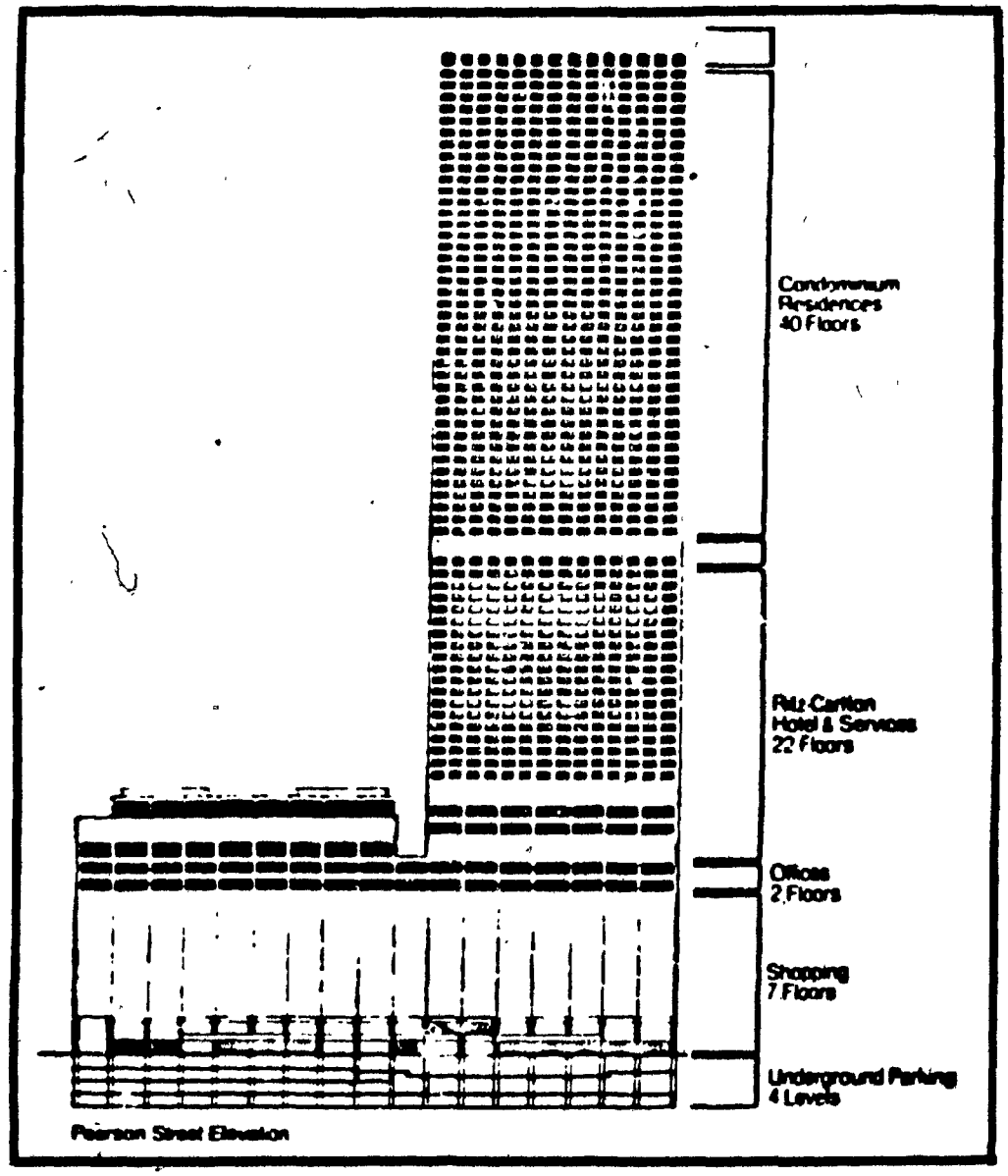


Figure 2-1: Section through Water Tower Place, Chicago. One of the most commercially successful MXD projects in United States. Loebl, Schlossman, Bennett and Dart, architects.

out a long-term, unalterable commitment, the project can be developed in accordance with the changing financial objectives over the years.

A second reason is merely the need of external visibility. Specially, the commercial use, in most cases,relies heavily not only on in-house clientele, but to the passing motorist as well. Examples of this category are Rockefeller Center, and Place des Jardins in Montreal.

3 - Urban-scale development or New Towns: The underlying concept is a development with an optimum size, where dependence on transportation is eliminated for a self-contained community, by providing enough work opportunities internally. The optimum size has varied from 30,000 in British New Towns to half a million in France. While it has been virtually impossible to attain diversity of employment, a new trend has emerged, namely one-industry towns, like university towns where the main industry is education and tourist towns whose main function is recreational.

New Towns are beyond the scope of this study, the two categories, the unitary complex and conventional building grouping while differing in their physical manifestation, are conceptually similar and will be elaborated under the common title of Mixed Used Development Projects (MUDP).

The Urban Land Institute's 1976 publication "Mixed Use Developments: New Ways of Land Use" defines a mixed use development as a relatively large-scale real estate characterised by:

- Three or more major uses (e.g., significant revenue producers such as retail, office, residential, hotel/motel - which in well-planned projects are mutually supporting);

- Significant functional and physical integration of project components (e.g., inter-connection of uses with pedestrian ways);

- Development in conformity with a coherent plan (which frequently stipulates the type and scale of uses, permits densities and related items).

MXD projects have in common a multi-functional character and a compact configuration of project components which result in a highly intensive use of urban land. Among factors determining the success of a MXD project, the size of the project is an important one. There is a minimum size or "critical mass" for MXDs somewhere in the vicinity of 500,000 square feet, inclusive of parking. As mentioned earlier, large size is necessary to provide an adequate mix of uses, project a significant public image and capture a large market area. As a rule of thumb, a minimum floor area ratio of 3.0 is needed.

Otis Duncan in "The Optimum Size of Cities" remarks on the relationship of a minimum population and "the magic of an inner city". He says that: "Cities with more than 50,000 people have a big enough market to sustain 61 different kinds of retail shops and that cities with over 100,000 people can support sophisticated jewellery, fur and fashion stores. He shows that cities of 100,000 can support a university, a museum, a library, a zoo, a symphony orchestra, a daily newspaper, AM and FM radio, but that it takes a population of 250,000 to

500,000 to support a specialized professional school like a medical school, an opera, or all of the T.V. networks." (Christopher Alexander, "A Pattern Language", pg.60).

Advantages:

MXD offers distinct advantages relative to other types of real estate in the following respects:

- Under some circumstances, a successful development requires creation of a large-scale, essentially new physical environment in order to overcome blighting influences of adjacent areas. This has been the case with the $600-million Renaissance Center in Detroit.

- Comparing with the single-purpose "Euclidean" zoning, the application of MXD can result in a diversity of uses, and significantly higher densities and thus higher land values. Planned unit developments (a term used for housing developments) illustrates this case.

- By sharing the infra-structure (e.g. parking), MXD takes full advantage of its scale and the 24-hour use of its functions.

The economics of the operation and ownership of MXD projects differs significantly from single-purpose projects in the following respects:

- Higher rent or price levels, and higher occupancy rates are rules rather than the exception in MXD. This often results from the market synergy - purchases at retail facilities by on-site residents or office workers as well as by the creation of a special place or quality address , permitting price and rent premiums.

- MXD acts as a means for realizing operational efficiencies. A central plant results in lower heating and cooling requirements.

MXD projects, as compared with single-purpose projects, can have a greater and more positive effect on community development by their scale and functional diversity:

- By introducing residential, transient and/or recreational activities to areas that are "dead" during non-working hours (e.g., Embarcadero Center in San Francisco);

- By maintaining and improving their own environment over time (e.g., the continuing "internal regeneration" at Rockefeller Center);

- By blending with established residential neighborhoods (e.g., Westmount Square in Montreal) where other types of high-density developments were unacceptable;

- By having a far greater "catalytic" effect on community development than single-purpose projects (e.g., Charles Center in Baltimore, which has triggered a $1-billion revitalization throughout the metro center);

- By providing a means for organizing metropolitan growth (e.g., the Galleria, which serves as a focal point for a large and rapidly-expanding urban center located in suburban Houston and known as City Post Oak).[1]

One of the early advocates of mixed land use, Jane Jacobs, saw "diversity" as the basic ingredient which made the difference between "stagnation and decay" and "vitality and liveliness" in the inner cities. In "The Death and Life of Great American Cities" she lists four indispensable conditions necessary to

generate diversity in a city's streets:

1 - The district and indeed as many of its internal parts as possible, must serve more than one primary function - preferably more than two. These must ensure the presence of people who go outdoors on different schedules, are in place for different purposes and are able to use many facilities in common.

2 - Most of the blocks must be short, that is, streets and opportunities to turn corners must be frequent.

3 - The district must mingle buildings that vary in age and condition, including a good proportion of old ones so that they vary in the economic yield that they must produce. This mingling must be fairly close-blended.

4 - There must be a sufficiently dense concentration of people for whatever purposes they may be present there. This includes dense concentration of residents.

She sub-divides "diversity" into two parts: Primary uses and Secondary uses. "Primary uses are those which themselves bring people to a specific place because they are anchorages. Offices and factories are primary uses. So are dwellings. Certain places of entertainment, education and recreation are primary uses. To a degree, so are many museums, libraries and galleries, but not all.....

"Any primary use whatever, by itself is relatively ineffectual as a creator of city diversity. If it is combined with another primary use that brings people in and out and puts them on the street at the same time, nothing has been accomplished..... However, when a primary use is combined

effectively with another that puts people on the street at different times, then the effect can be economically stimulating: a fertile environment for secondary diversity.

"Secondary diversity is a name for the enterprises that grow in response to the presence of primary uses, to serve the people the primary uses draw. If this secondary diversity serves single primary uses, no matter what the type of use is, it is innately inefficient. Serving mixed primary uses, it can be innately efficient and if the other three conditions for generating diversity are favorable also, it can be exuberant."

To illustrate her point, Jacobs examines Lower Manhattan: ".....Firm after firm has left for mixed-use midtown Manhattan... Outside of the big offices that form the breath-taking skyline of lower Manhattan is a ring of stagnation, decay, vacancies and vestigial industries. Consider this paradox: Here are plenty of people, and people moreover who want and value city diversity badly enough so it is difficult or sometimes impossible to keep them from scooting away elsewhere to get it. And here, check-by-fowl with the demand, are plenty of convenient and even empty places for diversity to grow in. What can be wrong?

"To see what is wrong, it is only necessary to drop in at any ordinary shop and observe the contrast between the mob scene at lunch and the dullness at other times. It is only necessary to observe the death-like stillness that settles on the district after five-thirty and all day Saturday and Sunday.....

"Lower Manhattan is in really serious trouble and the

routine reasoning and remedies of orthodox planning merely compound the trouble. What could be done to ameliorate effectively the district's extreme time unbalance of users, which is the root of its trouble?

"Residence, no matter how introduced, can not help effectively. The day-time use of the district is so intensive that residents, even at the highest densities possible, would always be ineffectually small in their proportionate numbers and would pre-empt territories of a size utterly disproportionate to the economic contribution they could render here.

"The infusion would obviously have to result in the presence of a maximum numbers of persons at the times when the district needs them most for time balance: mid-afternoons (between two and five o'clock), evenings, Saturdays and Sundays. The only possible concentrations large enough to make any difference would consist of great numbers of visitors at those times, and this in turn has to mean tourists together with any people of the city itself, coming back over and over again in their leisure time.....

"The new uses ought to be in accord with the district's character and certainly not a cross purpose to it. It is the character of Lower Manhattan to be intensive, exciting, dramatic and this is one of its greatest assets.....

".....The waterfront itself is the first wasted asset capable of drawing people at leisure. Part of the district's waterfront should become a great marine museum - the permanent anchorage of specimen and curiosity ships. Other features of the shoreline should be the embarkation points for pleasure

voyages in the harbor..... A new aquarium should be built..... That public library branch which is needed so badly should be built....."Special events based on all these attractions should be concentrated in evenings and weekends; inexpensive theater and opera ought to be added..... As the district livened up during evenings and weekends, we could expect some new residential use to appear spontaneously.....

"Unless a plan for a district which lacks spread of people through time of day gets at the cause of the trouble, the best that can be done is to replace old stagnation with new. It may look cleaner for a while, but that is not much to buy with a lot of money."

Challenges:

- A major challenge in the success of a MXD project is to achieve the scale and density of development sought, while at the same time creating an attractive, functional environment to meet the needs of each component. The case studies at the end of this study will illustrate examples which have been successful in doing so. From the initial concept to the time when it reaches the drawing boards, there are problem areas the successful solution of which will be of vital importance:

- Land Acquisition: Land must be acquired on a scale and at a price as well as on associated purchase terms which reflect development opportunities that result in supportable land values together with a necessary time period required to develop the project.

- Market Potential: The development program must be

formulated on the basis of sound estimates of market potentials in each individual care and the complementary demand creating the effect of multiple uses. The key here is to neither exaggerate nor understate the creation of additional development potentials through the integration of several uses.

- Design Plan: The development program must be well conceived not only in terms of unit and building scale but also in the context of an overall physical design which provides appropriate emphasis to each individual component within the context of an efficiently functional whole. This design plan is primarily the responsibility of the architect, but the developer himself and his economic consultant should work together with the architect-planner to ensure that the resulting plan fulfills its objectives.

- Infrastructure: Within the overall project design plan, the details of an efficiently functioning infrastructure service system must be thoroughly resolved.

- Phasing: The more intricate and physically intimate the integration of the various uses, the more crucial it becomes to define and plan each individual building phase carefully to ensure that upon completion of each phase the project remains functionally viable while accomodating subsequent phases.[2]

Future Role:

There are 88 MXD's in North America, 56 of these were completed between 1966 and 1975. Public authorities are also increasingly interested in providing urban renewal land for MXDs. MXD projects continue to play an increasingly important

role in the revitalization of downtown areas becoming"tools for treating blight and decay". In the words of J. Portman "Indeed, mixed use has proven the only approach under some circumstances, where fragmented,uni-functional developments were not feasible".

The solution to the problems that suburbia has created will be through MXD as well. Planned Unit Developments, providing efficient and economic utilities and infrastructure within a sound environment is the only solution for the survival of the suburban living compatible with human needs and requirements. The regional shopping center has the potential to become a MXD project by the addition of office and entertainment spaces as well as residential accommodation.

R. Witherspoon of Gladstone Associates has made the following recommendations for making the MXD a more attractive and viable alternative:

- The usual approach to land-use regulation (zoning through single-purpose districts) is particularly ill-suited to mixed use development and should be supplemented by mixed-use zoning, even if not precisely mapped.

- The conventional approach to provision of public infrastructure (whereby costs are split between community and developer on an off-site, on-site basis) places mixed-use projects over a multi-block area at a distinct disadvantage, and would need to be thoroughly re-evaluated, and

- The full range of public redevelopment incentives, ranging from traditional tools to more innovative techniques, should be re-assessed and ranked using cost-effectiveness

analyses so as to permit selection of the incentive most effective in attracting private investment at the lowest public sector cost.

Exhibit 3 Mixed Use Development Prototypes, 1975

MXD Prototype	Prototype Characteristics	Specific Examples: Project Name—Metro Area
Small Mixed Use Development		Kalamazoo Center—Kalamazoo
Gross Building Area *	Under 1,000,000 square feet	360,000 square feet ***
Land Area	1 5 to 2 acres	2 acres
Development Span **	2 to 5 years	3 years
Medium Mixed Use Development		Westmount Square—Montreal
Gross Building Area	1,000,000-2,500,000 square feet	1,300 000 square feet
Land Area	3-10 acres	4 5 acres
Development Span	5-10 years	4 years
Large Mixed Use Development		Charles Center—Baltimore
Gross Building Area	2,500,000-5,000,000 square feet	4 675,000 square feet
Land Area	10-50 acres	20 2 acres
Development Span	10-15 years	15 years
Very Large Mixed Use Development		Crystal City—Washington, D.C.
Gross Building Area	5,000,000 square feet or more	9,000,000 square feet
Land Area	50 acres and up	72 acres
Development Span	15-20 years	14 years

* Gross Building Area represents all built space inclusive of common areas, parking, etc

** Development Span represents the period from start of construction to substantial completion

*** Does not include parking, with parking facilities GBA = 675,000 square feet

Source Gladstone Associates

Exhibit 4 Mixed Use Developments Stratified by Location and Construction Date, 1956-1975

Location of Mixed Use Development	Date Construction Was Started 1956-1960	1961-1965	1966-1970	1971-1975	Planned	Total
In CBD	7	1	14	20	8	50
In Central City	1	5	5	12	8	11
In Suburbs		1	1	4	1	7
Total	8	7	20	36	17	88

Source: Gladstone Associates.

Exhibit 5 Mixed Use Developments Stratified by Metro Size and Construction Date, 1956-1975

Metro Size (1970 Population)	Date Construction Was Started 1956-1960	1961-1965	1966-1970	1971-1975	Planned	Total
Small metros (under 500,000)			2	5	4	11
Medium metros (500,000-1,000,000)	2		1	2	2	7
Large metros (1,000,000-3,000,000)	4	4	13	22	8	51
Very large metros (3,000,000 and above)	2	3	4	7	3	19
Total	8	7	20	36	17	88

Source: Gladstone Associates

Exhibit 6 Mixed Use Developments Stratified by Location and Metro Size, 1975

Location of Mixed Use Development	Size of Metro (1970 Population) Small (under 500,000)	Medium (500,000-1,000,000)	Large (1,000,000-3,000,000)	Very Large (3,000,000 and above)	Total
In CBDs	10	6	24	10	50
In Central Cities	1	1	21	8	31
In Suburbs			6	1	7
Total	11	7	51	19	88

Note: Includes 17 planned projects

Source: Gladstone Associates.

PART TWO

MIXED LAND USE IN HISTORY

HELLENIC TOWNS AND THE AGORA

"As you walk along them (streets of Antioch), you find a succession of private houses with a bath establishment, at such distances that the / are handy for each quarter and in each case the entrance is in the colonnade. What does that mean, and what is the bearing of this lengthy description? Well, it seems to me that the pleasantest, yes, and most profitable side of city life is society and human intercourse, and that, by Zeus, is truly a city where these are most found. It is good to talk and better to listen, and best of all to give advice, to sympathize with one's friends' experiences, sharing their joys and sorrows and getting like sympathy from them - these and countless other blessings come of a man's meeting his fellows..... Whereas people in cities lose the habit of intimacy the further they live apart, with us, on the other hand, the habit of friendship is matured by constant intercourse and develops here as much as it diminishes there."[3] observes Libanius in his oration on Antioch around A.D.360. Antioch with other less known towns of Asia Minor and Syria, Palmyra, Phillipopolis, Ephesus to name a few, were rivalling Rome and Athens with their advanced town-planning and social complexity. Antioch had sixteen miles of colonnaded streets with a mixture of private and public buildings. These streets were commercial strips to begin with. The commercial spirit produced its own characteristics such as street-lighting, while in Rome at the height of the Empire the streets were dark and people went out at the risk of their lives. A utilitarian service, combined with a socially functioning integration of residential and commercial use,

made both day and night living in Antioch attractive. As Libanius observes ".....with us night differs from day only in the kind of lighting. Trades go on as before; some ply their handicrafts, while others give themselves to laughter and song." It should be noted that it was only after the late nineteenth century that Piccadilly Circus or Fifth Avenue could live up to Libanius' description.

Tracing the MXD concept back to the Greek cities will lead to the most dominant factor in these cities and their dynamic center, the agora. Even at the beginning when the temple and the agora were closely integrated, there was an effort to separate them from each other (to separate the prayer to Gods from mere exchange of views). In the fifth century, the agora became a market place, a banking center and was separated from the temple precinct, retaining its original function as a communal meeting place. Here the interchange of news and opinions was as important as the interchange of goods. The fourth century Greek poet Eubohs observed that: "You will find everything sold together in the same place in Athens: figs, witnesses to summonses, bunches of grapes, turnips, pears, apples, givers of evidence, roses, medlars, porridge, honeycombs, chick-peas, law suits ..... allotment machines, lamps, water-clocks, laws, indictment."

The early agora had an irregular form. It was sometimes an open square or sometimes the widening of the main street. The buildings surrounded it in an irregular pattern. In the middle were the temporary stands which indicated the market day. The economic functions of the agora began to expand increasingly. Overseas trade, export and wholesale operations substituted the

mere exchange of goods for basic necessities, but still it continued to function as a market, a place of assembly, and a festival place. Growing in importance, it combined many more urban functions such as law, government, commerce, industry, religion, social contacts, etc.

These functions continued to exist in later public spaces in Mediterranean cities such as in plazas, campos, piazzas and the "grand place".

For all its virtues in mixing different uses, it should be noted that agora had one major deficiency. Through custom it did not allow its use by women. It was a man's territory or rather a man's club where men traded, competed and perhaps discussed women.

FORUM

The forum carried out the functions of the agora in the Roman City. The agora, broad unbroken streets of the Miletian planning lined with buildings, theater etc. were part of a long list of constituent elements of a city which the Romans adapted and improved. Unlike the Greek city where the fortification wall was often built the Roman City began with such a wall. The regular checkerboard layout within a rectangular boundary, the arcaded walks, the forum, the theater, the arena, the baths, the public lavatories were all standard equipment in Roman new towns from Antioch and Ephesus in Asia Minor to Chester, England. Every desirable urban qualities which existed in Rome also existed in New Towns. Naples, Bologna, Parma, later on Como, Verona, Florence were such towns.

In the beginning the forum was again a market place. It was

also used for the athletic and gladiatorial contests. Instead of building a temple beside it, Romans acted in a more practical manner and declared the area itself as sacred. Later, from an open square it developed into a complex of shrines and temples, halls of justice and council houses and open spaces in between. From an undefined open space, the forum evolved into a defined enclosed precinct. The nature of transactions changed too and money-changers' bureaux replaced butchers wooden booths. Vitruvius prescribed that the treasury, the prison, and the council house ought to adjoin the forum.

The succeeding Emperors expanded and added to the forum. Romanum of Rome and Julius Caesar founded a new one in the vicinity and there were subcenters in other parts of the city. Here large crowds would gather for shopping, worshipping, gossipping, attending courts and participating in public affairs.

The piazzas and campos of the later Italian towns are the extensions of the Forum and the Agora even though they lack today most of the historic social functions of the Roman period.

Pompeii, where residential and commercial uses were successfully integrated, was a prosperous provincial Roman city located about fifteen miles south of Naples and overlooking the Gulf of Naples. In the year '79, an eruption of Vesuvius covered it with a volcanic ash and a layer of cinder fifteen to twenty feet deep, which preserved the city in tact up to this date. As a result, more is known about the day-to-day details of the lives of Roman citizens of this period.

Pompeii is fairly regular in layout with the streets at right angles to each other. The principal streets are from

twenty to thirty feet wide with raised sidewalks. As in all Roman cities, civic life centered about the Forum, which was surrounded by monumental buildings. At the north end stands the temple of Jove, on the east side is a large market, an official city sanctuary next to that and beyond that a spacious building used as a cloth exchange. Along the south end are three halls which contained the council chamber and city offices, and on the west side are the basilica and a temple of Apollo.

Other than the Forum, five temples, three public baths, two theaters and an amphi-theater have been found. These are the principal buildings which are surrounded by houses. The houses, whatever their size, generally follow the "House of Pansa" plan. There are shops around the House on three sides. The principal streets are lined with shops with wooden shutters which are small and open at the front. At the rear of the shop is a living room, and some have a sleeping room on the second floor. In Pompeii, as in every Roman town, could be found shoemakers, tanners, weavers, blacksmiths, carpenters, millers who were also bakers, launderers and dyers, and small shopkeepers of all kind.

Since this was an age which knew little about machinery, and also there were no factories comparable to those of modern times, small industries were in no way nuisances to their environment. This was an important factor for the mutual coexistence of industrial and residential uses, which are otherwise mostly imcompatible.

THE MEDIEVAL TOWN

In the medieval town the universal church took most of the functions

of the forum. It became the new community center where the crowd could gather. It served as dining hall for a festival and theater for a religious performance. The earliest functions of the forum and the agora as well as the market were all held near the church in an open space adjacent to it since the church was the place where the biggest crowd could gather.

Many of these market places had been set up in irregular and arbitrary ways since these spaces were not initially planned to be used as markets. These were the left over spaces from the buildings surrounding them. Eventually spaces were created for the sale of different goods and the new market places were connected by passages. Piazzetta San Marco in Venice was originally built for use as a meat market.

The decentralization of the essential social functions throughout the town resulted from the growth of the population. Apart from the cathedral, which had a symbolic importance for the self-image of the town, churches multiplied everywhere. Similarly instead of building one large hospital, small hospitals were provided, each catering to the medical needs of two or three thousand people.

The medieval town is a major achievement in town planning, a positive manifestation of the MXD concept as a 'way of life'. The decentralization prevented overcrowding in the center and reduced the amount of needless traffic. It made basic services readily accessible to all people, a rare feature of today's cities. The town kept its size small with familiar population -a virtue the positive effects of which on man's mind, health, creativity and industriousness were well known and appreciated by its inhabitants.

The medieval house had assumed three functions: the workshop, the store and the living quarters for the family.

As scope of business and production grew, a competition for space started between the living and working quarters, which led to the encroachment over the backgardens by workshops, storage shacks etc.

This intimate relationship between residential and industrial functions continued to coexist as a normal, healthy way of life until the latter days of the Middle Ages. If the industry had any undesirable feature like noise then it was moved to the edge of the town or outside the walls. Mass production and operations like milling, glass-making, tanning and iron-making were the first industries where domestic life and work, both in space and function, began to separate. These industries, sometimes surrounded with workshops of related industries, needed a more segregated and isolated workshops.

The medieval house continued its existence as a living quarter and as a shop for manufacturing and selling of goods. These shops gave a character to the medieval town streets which were certainly lacking even in Greek cities where the streets were edged with blank walls. The medieval town street was edged on each side with an arcade which was considered the outer extension of the shops and provided the essential protection needed against weather. It should be noted that these shops were closed with wooden shutters and were not glazed till the seventeenth century; often the stalls and booths of the merchants and craftsmen

were sheltered under an arcade.

The decentralization of the social functions resulted in another unique feature in the medieval town: the small neighborhood unit and the residential precinct (a concept which was re-invented by Clarence Stein and Henry Wright). The medieval town was a congregation of subtowns which were self-sufficient with a certain amount of autonomy, they were the outcome of common needs and purpose. They all had a local market, a church and an adequate local water supply from either a well or a fountain. As the towns grew, these units, instead of dissolving into the mass, retained their characteristics as the constituent elements of larger districts. Another characteristic intrinsic to the medieval city was the development of precincts according to vocation and interest. A typical town was divided into a clerical precinct, a royal precinct, and a merchant's precinct. These being the chief vocations, the peasants, the craftsmen and guilds would form the rest of the precincts of the town. A university town obviously would have a college precinct. It should be noted that the scattering of churches and schools throughout the town also provided a much desired amenity, the open spaces.

The fortification wall in the medieval town deserves special attention. It not only played the vital role in the existence and protection of the city, both physically and physiologically, but also was found helpful for the numerous important social functions it acquired through the years. The fortification wall was the demarcation line between the urban and rural worlds. The main gate was the custom house

and immigration control point. Storehouses, inns and taverns were located nearby.

Since there were generally more than one gate, the economic activity was evenly distributed on the periphery of the town. In this way, without any zoning regulations, a major part of the economic and commercial activity was contained in the immediate surrounding of the wall, thus freeing the town center from unnecessary traffic and congestion.

On the recreational side, the fortification wall performed a special function too. The high walls served as a promenade where people would stroll enjoying the scenic beauty of the countryside. This was a most desirable feature, especially during the summer time when the breeze could not penetrate the city.

The multi-functional city wall, the self-sufficient neighborhood and the vocational precincts, with their houses serving as both living and working places, demonstrated that, in spite of limited means and resources, how the MXD concept contributed to the lively and rich qualities of life were found in the medieval town.

Two major contributing factors which should not go unnoticed was the population distribution and the limits of growth. The average population of the medieval town ranged from a few thousand to forty thousand. In the seventeenth century Nurnberg had a population of about twenty thousand. Of the 150 large German towns, none had more than thirty-five thousand inhabitants. Cities like Milan, Venice, London, Paris, Florence with populations over 100,000 were highly exceptional. The medieval town rarely extended beyond one half a mile from its center.

THE BAROQUE CITY

Between the fifteenth and eighteenth centuries new economic, political, and cultural trends radically altered the form and constitution of the medieval town. The protectionist economy of self-sufficiency gave way to mercantilism. With its limited economic means, the town's monopoly was replaced by the new aggressive trade monopoly. The mercantile industry was incompatible with the protective, autonomous and self-contained setup of the town. The new economic order favored the towns with the least protective regulations. It also brought in its own dynamics : the centralization of political power; national unity; territorial unification; internal peace; freedom of movement; uniformity of currency; reduction of local taxes; and tolls. The desire to avoid the inconsistent inflationary policies of the towns was vitally important for the new economic order. Centralized powers were rapidly established in England and France. London had 250,000 habitants and Paris reached 180,000 in 1594. During the fifteenth and sixteenth centuries, unification in Italy reduced the municipalities to ten political units. With the consolidation of power in the political capital, the towns lost their power, initiative and municipal freedom. The holding of economic power by the royal court, in whichever city this system existed, caused an unprecedented growth of population, area and wealth.

With the land use separation and discriminatory zoning regulations, the Baroque order came into full force with the emergence of the capital cities of newly unified national states. In the eighteenth century the populations of Vienna

and Moscow reached 200.000. Contrary to the medieval policy, power and population were not decentralized. The capital city became the central authority, paralysing the autonomy of other citi which once were free cities, and one by-product of this policy was the disintegration of the medieval town.

To follow Laissez-faire ideology, the individual's priority wa preferred over the community welfare and military as well as industrial concern brought discriminatory land-use separation policies into effect during the Baroque period. This was followed by the 'industrial revolution' era which continued until the present time. This 'revolution' undermined those virtues attained through mixed land use in a cumulative process ongoing from the Hellenic to the medieval town.

VENICE

During the transition to Baroque order, three cities stood above all the others as unique examples where they made the best of two worlds. These cities were Amsterdam, Florence and Venice (Fig. 2.1) where the characteristics of the medieval town were most successfully maintained and improved upon along with innovative zoning concepts.

The central core of Venice is Piazza San Marco (Fig. 2.5). In the beginning it was merely an open space in front of an ancient church. The formation of the piazza was an organic and cumulative process. In the twelfth century, market stalls began to shape the piazza. Development of the piazza continued with the rebuilding of St. Mark in 1176, the erection of old Campanile in 1180, the construction of Ducal Palace in 1300, and the building of old Procurator's Hall and the Library in 1500's.

Earlier, the piazza was functioning as a market place, which was replaced by political and social functions and which later on resulted in the proliferation of restaurants, cafés, shops and hotels.

Following the pattern of the medieval towns, Venice was divided into six wards. Instead of centralizing them around Piazza San Marco, the political and social functions of these wards were decentralized. Each ward or neighborhood had thus its own square with a school, church, fountain and guild hall. The guild hall was an essential part of this order since the neighborhoods were based upon common vocational interests.

The canals surrounding the neighborhoods helped them to define and to preserve their entity. They also served both as highways connecting neighborhoods to each other as well as separating the open/space

While these characteristics were existing in other cities, Venice was the only city where there was a conscious effort of making the best use of functional zoning and MXD.

The first land-use separation went into effect with the removal of the cemetery to an island seven miles away. The continuing land-use separative policies were a deliberate attempt towards the preservation of the mixed-use medieval town's character of the residential neighborhoods. The Arsenal was the first industrial precinct built in the eleventh century, with expanded shipyard and munition works. In 13th century a major industry of glass workshops was established on a separate island called Murano. This zoning policy continued well into the nineteenth century culminating with the declaration

of the Lido island as a recreational precinct.

Venice, with its ingenious application of zoning and MXD policy, deserves an important rank in urban history. It still lends itself as a valuable guide for urban planners.

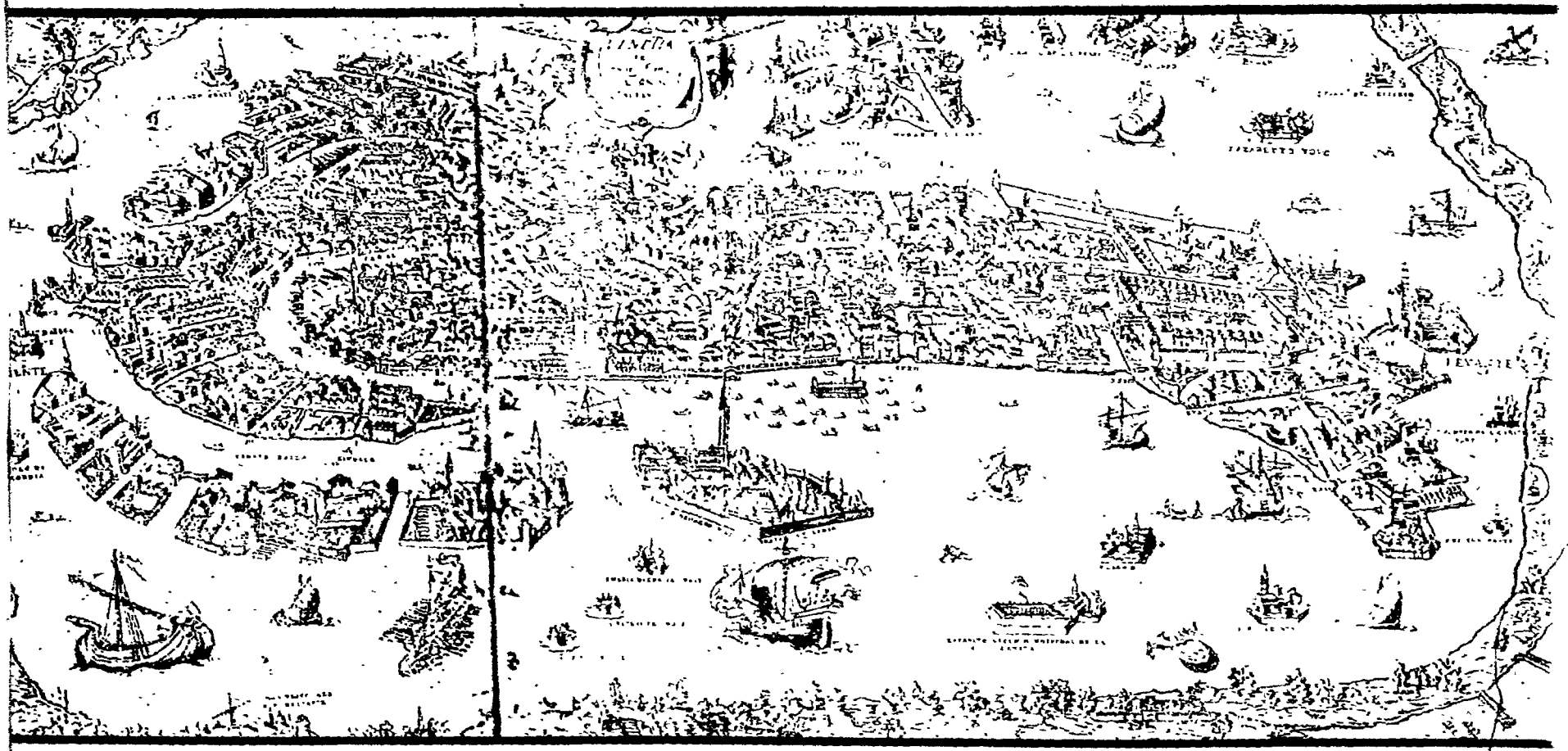


Figure 2-1 : 16th Century Venice.

Figure 2-2: The Piazzetta San Marco before the library was built, Venice.

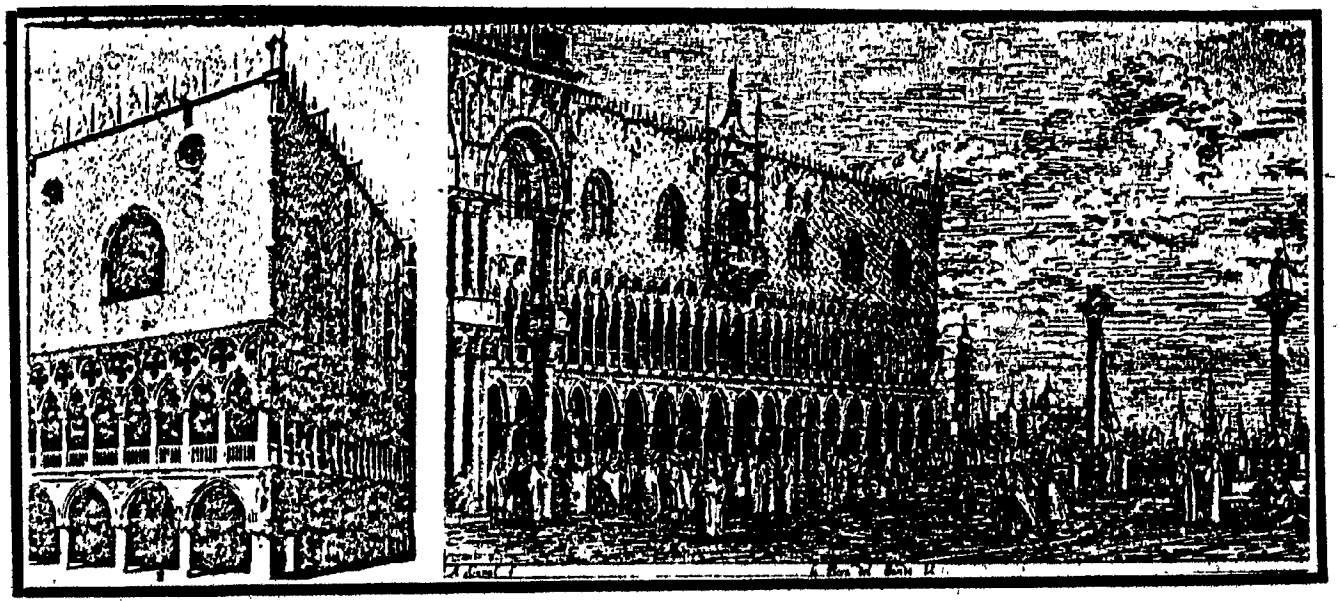


Figure 2-3 and 2-4 : The Doge's Palace, the first civic building on Piazza St. Marco, around which all others were consecutively assembled.

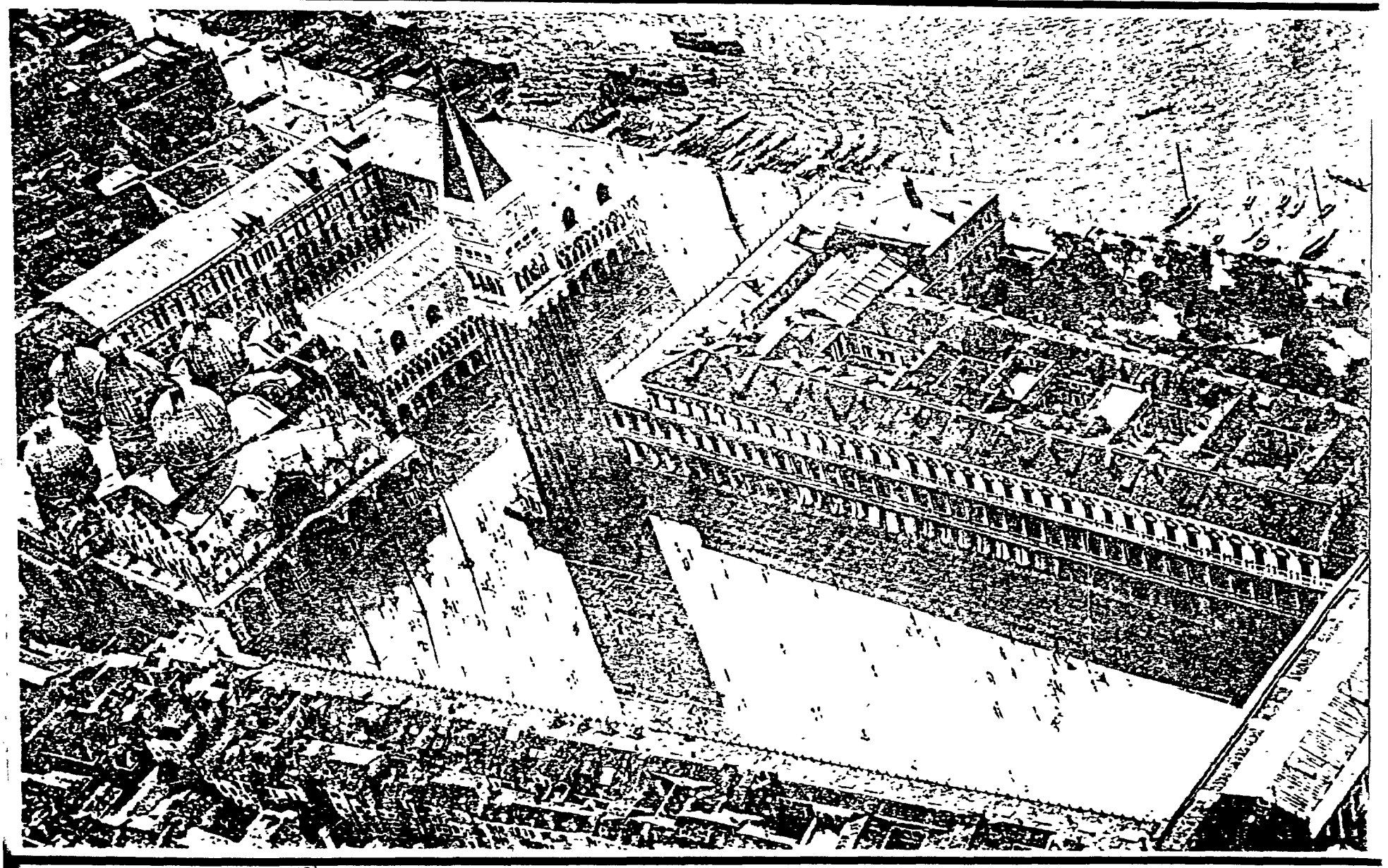


Figure 2-5 : Piazza San Marco, Venice.

PART THREE

DEVELOPMENT OF THE SPECIAL DISTRICT CONCEPT IN NEW YORK CITY

NEW YORK CITY HISTORICAL DEVELOPMENT

New York City has a census population of about 8 millions distributed unevenly among the five boroughs Manhattan, Bronx, Queens, Brooklyn and Staten Island. The city covers an area of 333 square miles.

New York has two primary business centers Midtown and Lower Manhattan. Lower Manhattan was developed from the original plan of the early 17th-century's Dutch settlement New Amsterdam, patterned closely after Amsterdam. Today approximately 500,000 people work within the confines of the original Dutch settlement in Lower Manhattan, which has a ½-sq.mile area. The area hums with business activities and 96 percent of those working in Manhattan commute by some form of public transit.

In north of Lower Manhattan, where the original Dutch settlement's network of narrow streets still remained the streets are laid out on a grid that was adopted in 1811. At that time it was thought that the major movement between the two rivers would be east-west. So 155 streets running river to river were laid out at distances ranging from 650 ft. to 920 ft. Later when the shipping trade failed to move beyond Lower Manhattan and when it became apparent that the major movements were north-south, two more avenues, viz. Madison and Lexington, were spliced into the original grid.

The Midtown business district, which runs roughly from 30th to 60th Streets, developed into one of the major business centers because of its convenience to the two major railroad terminals in Manhattan: Pennsylvania Station and Grand Central Station. One million people work in 1 sq.mile of Midtown. Like Lower Manhattan, Midtown continues to hum with all kinds of business activites.

and 92 percent of the commuters use public transit system.

Unlike other cities of the U.S.A. where major activities are dispersed (like aircraft industry in Los Angeles, autos in Detroit and metal and food processing in Chicago), most of the activities of New York City in which the New York Region plays a major national role - (such as finance, insurance, corporate headquarters, communications, foreign trade, wholesaling, apparel, printing, non-profit organizations, culture and entertainment) - are uses which are complementary to inner city locations.

The CBD of New York City contains 52 percent of the region's jobs in office buildings, 76 percent of its legitimate theatres, 26 percent of its department store floorspace, 25 percent of its manufacturing/wholesaling employment and 14 percent of its college enrollment.

According to New York Regional Plan Association, indications are that the kinds of jobs which thrive in the CBD are among those which are fast growing. The jobs in office buildings are expected to grow to 3.0 million in the CBD by the year 2000. While there are technological advances resulting in increased productivity in office work, this does not appear to be slowing the employment growth in such white collar industries as publishing, television and other communications, government, finance etc.

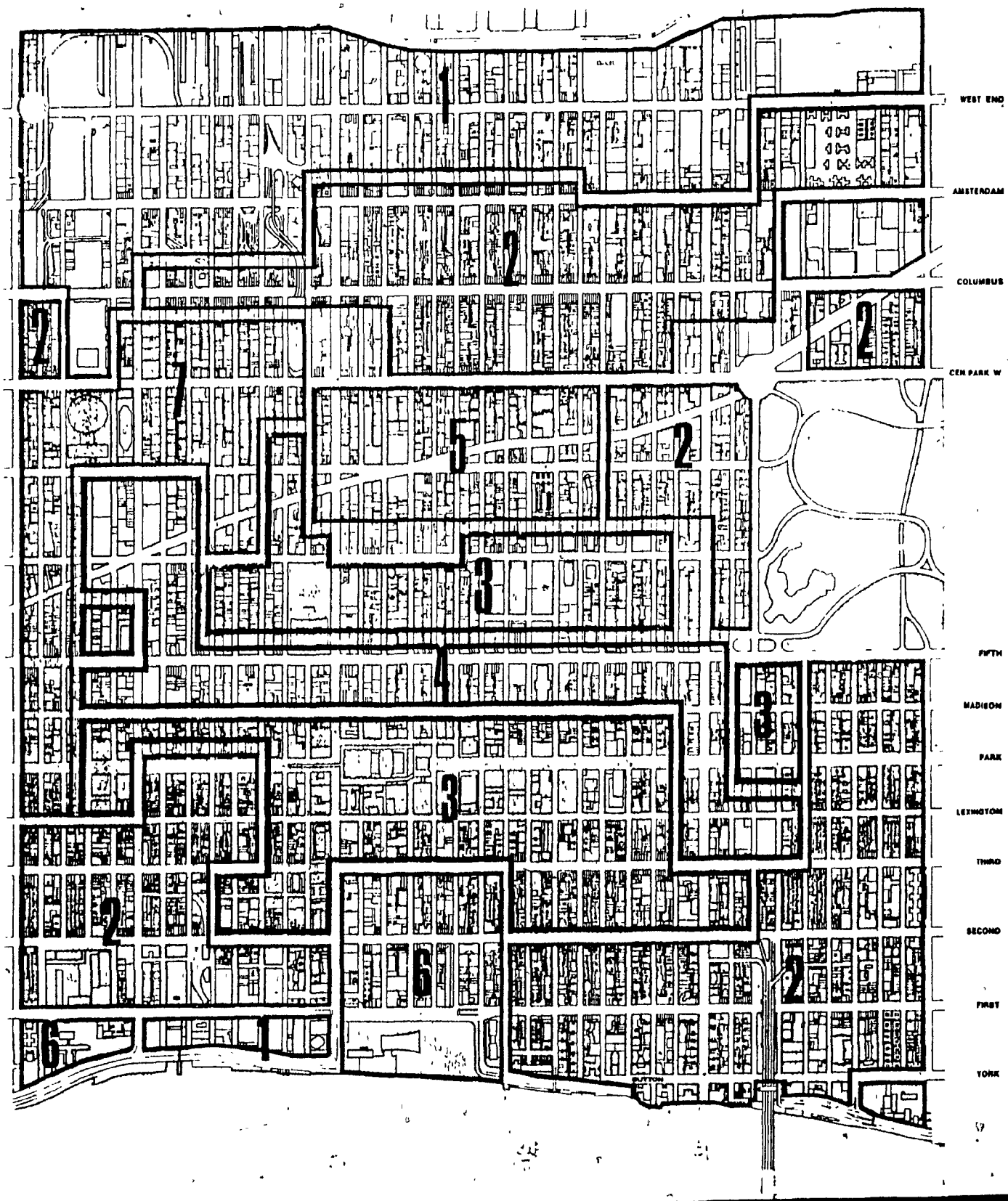


Figure 3-1 : Functional Areas Diagram, Manhattan CBD ;

1. Ware-housing & distribution
2. Residential
3. Offices
4. Regional Shopping
5. Theater entertainment
6. International, public institutions
7. Garment District.

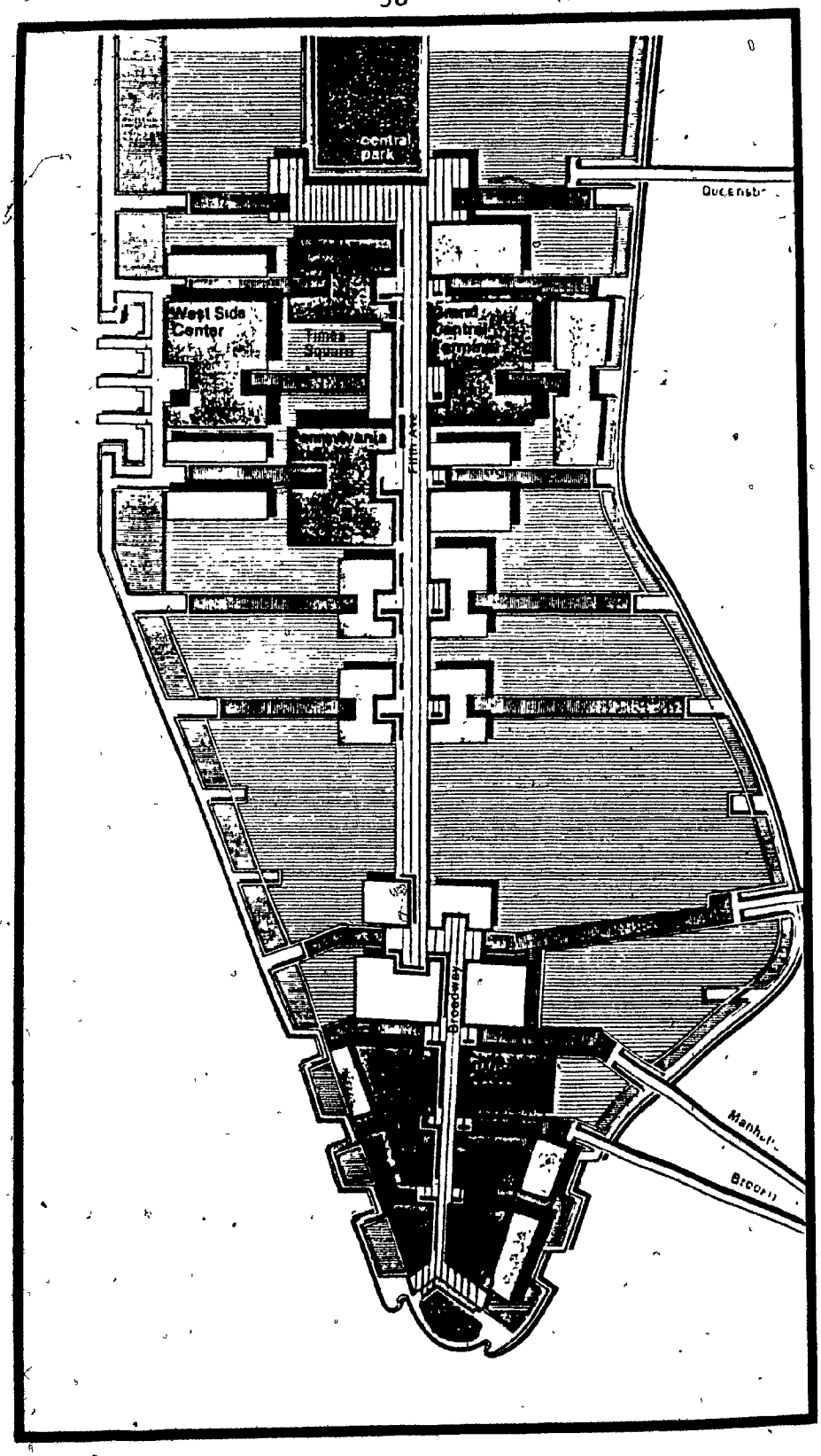


Figure 3-2 : Manhattan CBD, Conceptual Diagram:

- Major office clusters
- Mixed commercial activities (shops, restaurants, hotels, theaters, etc.)
- Secondary office cluster
- Public open space

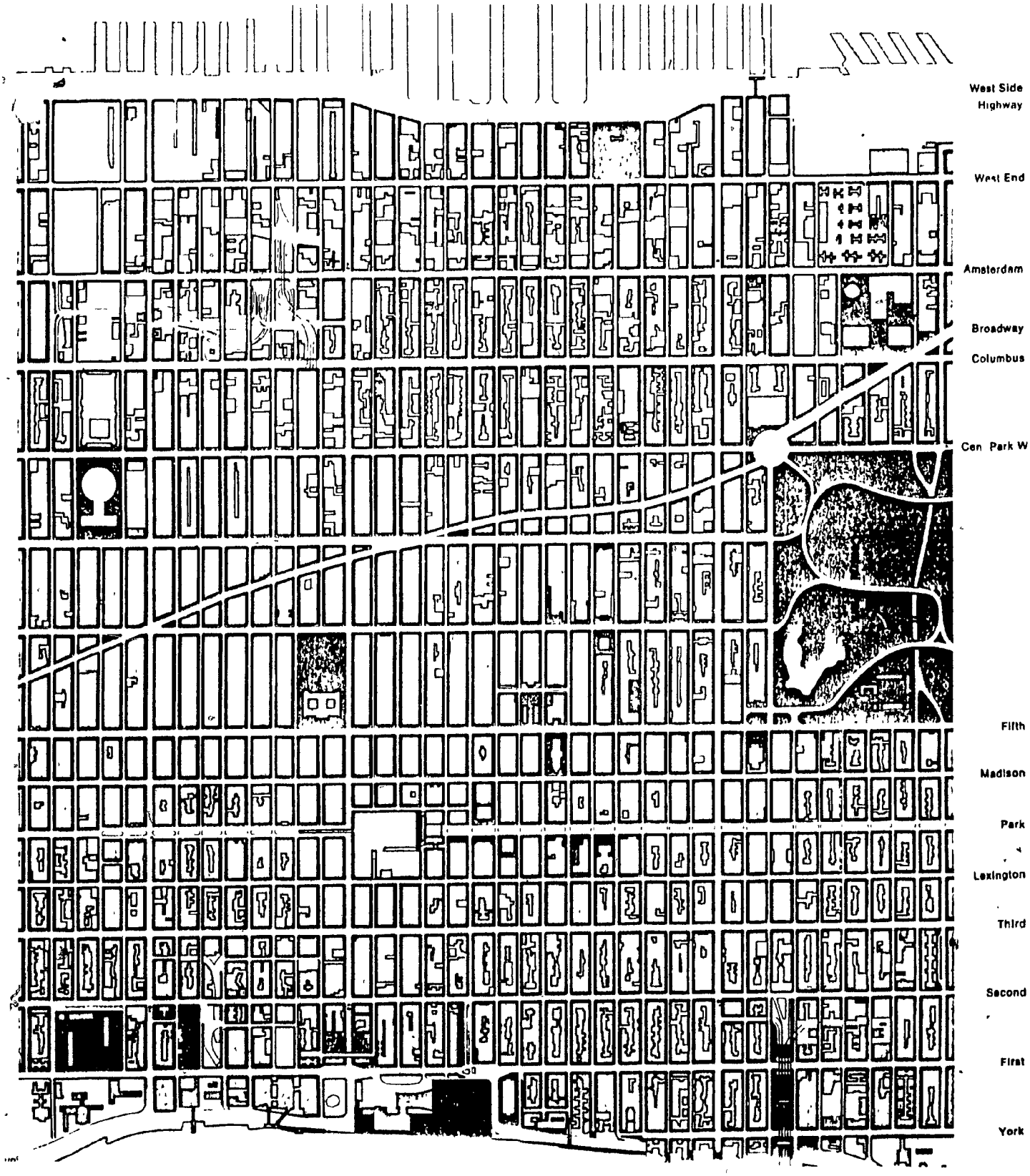


Figure 3-3 : Manhattan, existing grain built form
- Existing buildings
- Pedestrian open space-parks,plazas,widewalks.

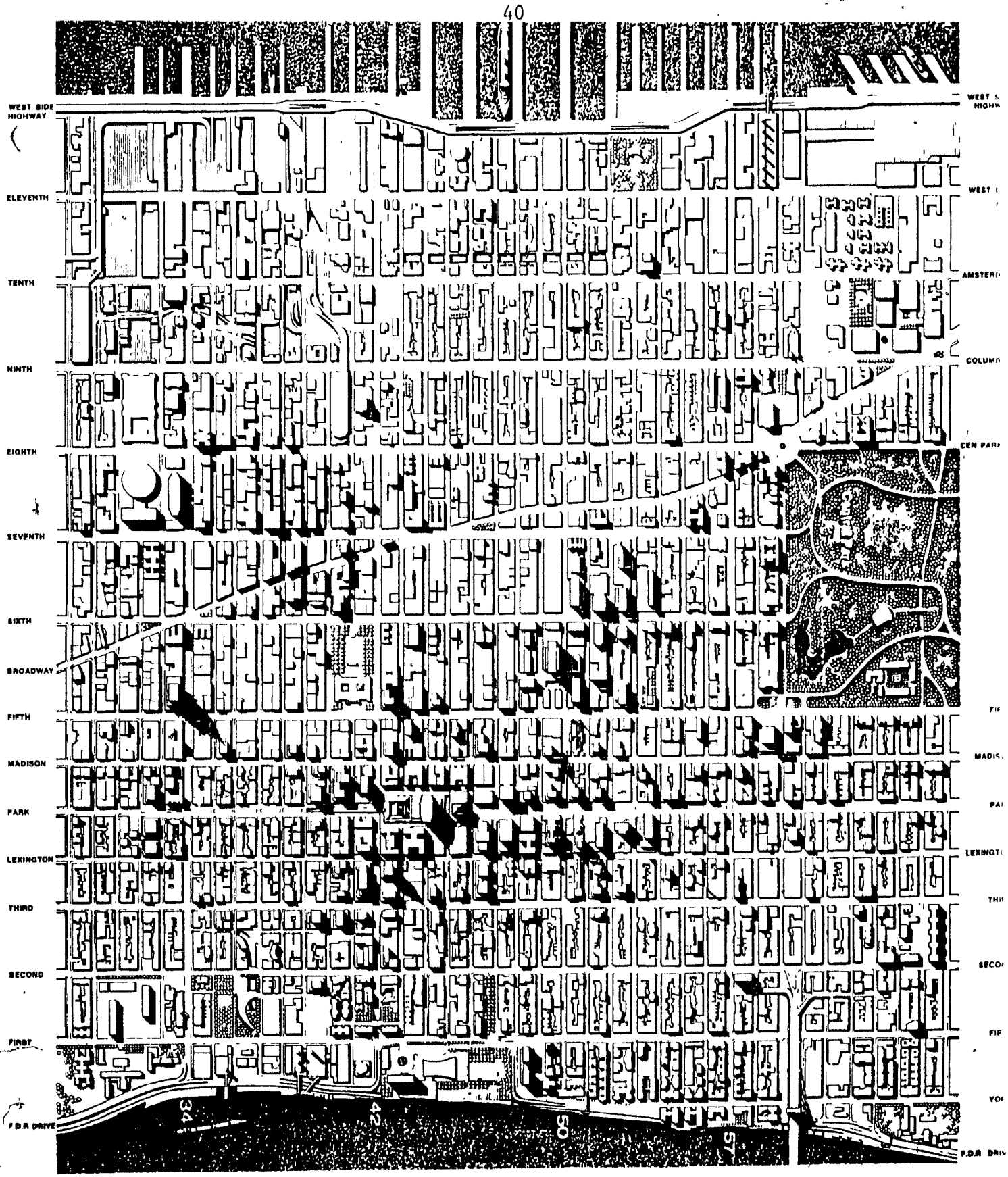


Figure 3-4 : Existing Physical Form : Midtown Manhattan

TRADITIONAL NEW YORK CITY ZONING TECHNIQUES

"..... Of all the large cities we visited, from San Diego to Boston, Seattle to Dallas, New York's zoning ideas are by far the most imaginative..... New York City has, of all of the areas we have observed and worked in, been coming up with some of the most ingenious concepts, and that is a remarkable sign. One sometimes has the feeling, as though the planners were cranking out new, special districts as though every special district would raise municipal bonds one point in Standard and Poors rating.....". These were the words of Richard Babcock, Specialist in Land Use Law, at a conference convened by City Planning Commission of N.Y.C. at N.Y.U. on July 19, 1977.

The 'Special District' concept with other techniques such as incentive zoning, air-rights transfer and restrictive covenant techniques are important improvements over the 1961 Zoning Resolution of N.Y.C. The concept falls under the domain of MXD, and will be dealt with extensively throughout this study.

New York City is 'the city' which has pioneered all the cities in U.S.A. and Canada in zoning policy. A brief study, beginning with the revolutionary "1916 Zoning Resolution" will help to comprehend the evolution which led to "Special Districts" MXD zoning in N.Y.C.

By 1900, New York was the financial center of the country. In 1915 the 42-storey Equitable Building was constructed, casting a seven acre shadow on the surrounding properties. The fashionable retail shopping on Fifth Avenue and hotel district around 34th Street were being invaded by garment factories. The

time had come to control and regulate its growth. The first New York City Zoning Ordinance was adopted. In the regulations developed in the 1916 Ordinance the use area and height districts were mapped individually on three separate maps. First, residential, retail and manufacturing use districts were defined and mapped. The objective of this first attempt at underlying the residential district was to protect residential areas against intrusion by business and manufacturing activities, whereas the primary aim of the retail district was to protect such areas as Fifth Avenue. The resolution underscores the importance of residential use. While residences could be built in every zone, manufacturing uses could only be constructed in manufacturing districts.

Next, the residential districts were subdivided into zones specifying the exact building type permitted from single family detached to multiple dwellings. Finally, height districts controlled the bulk of new structures by limiting their height and requiring setbacks. These height controls, aimed at establishing minimum light and air standards and indirectly controlling density, proved to be equally inflexible as the traditional yard regulations and were also unnecessarily restrictive It led to 'Wedding Cake' method of bulk control which forces upon the structure a physical shape often inefficient, uneconomical or aesthetically not pleasing.

These and other shortcomings were re-evaluated in a major attempt to modernize the 1916 Ordinance by the firm of Harrison, Ballard & Allen

in 1949. Even though never adopted, this effort is of particular interest since many of the recommendations were later refined and incorporated in the Comprehensive Rezoning Resolution enacted in 1961. The H.B.A. proposal had the following objectives:

(1) Provide for a total residential and working density well below those permitted under the 1916 Ordinance.

(2) Anticipate the future land use requirements of the city and identify as well as reserve the best locations for them.

(3) Establish regulations to distribute these densities over areas allocated for them.[4]

To implement these objectives, the city was to be divided into districts, each given a symbol such as RA-1 or CB-2, etc. The first letter indicated the general use, the second letter the particular use group and the number referred to the level of density permitted in the district. The use and density controls applicable in each district were mapped on one set of city-wide maps. The uses permitted within a district were stated in positive terms rather than listing those not permitted as previously done. The Floor Area Ratio (F.A.R.) was developed as a method of controlling density.

The F.A.R. system is of particular importance as a vehicle to achieve more flexibility in zoning. Since a building did not have to conform to a predetermined zoning package, it was hoped that it would be more responsive in its design to the

forces which influenced its particular site. F.A.R. is a method of control which is equally applicable to all structures independent of use. A potential developer could build to suit his needs providing the structure was within the maximum allowable F.A.R.

The inclusion of community facilities along with residential large-scale projects was provided in the following manner : for developments with a gross site area of twenty acres or more (or with five hundred or more proposed dwelling units) the City Planning Commission, by means of a report from the Board of Education, would determine whether sufficient school capacity was available to serve the occupants of the development. If not, a site for a new facility that could be acquired by the City would have to be reserved within the development. The same procedures were used for other residential related services.

In 1961, this 'Comprehensive Rezoning Resolution' was adopted and went into effect. Apart from certain variations and additions, the new resolution retained methods initially developed in the H.B.A. proposal. Thus, at present, each district is designated by one letter plus one or two numbers, R1, C4.7, M1.6, etc. The letter indicates the general use classification, 'R' for residence, 'C' for commercial and 'M' for manufacturing. The number following the 'R' indicates the permitted use, bulk and required parking for the particular district.

The three basic categories are further subdivided into 21 zoning districts, ten residential, eight commercial and three

manufacturing. Development within these districts is regulated by use, bulk and parking regulations.

As was the case with H.B.A. proposal, density was primarily controlled by the bulk regulation specifying the maximum allowable F.A.R. in each district. However, an additional provision was introduced. The objective of this provision was to give developers an incentive to provide at no cost to the city, amenities as integral parts of new projects. Bonuses were applied to R.10 Districts throughout Manhattan, the largest located in Midtown and Downtown

Besides the F.A.R. provisions, the 1961 Resolution controls residential density through a regulation which specifies the lot area per dwelling unit in low-density districts, and lot area per room in high density districts. This regulation indirectly limits the population per acre by controlling the number of dwelling units or rooms permitted in a residential building on a given lot.

To make sure that sufficient open space is provided and adequate light and air standards are maintained, the new Resolution utilizes a number of techniques first introduced in the H.B.A. proposal. They include minimum court dimensions, minimum distances between windows and adjacent walls and specific open space requirements which is called an Open Space Ratio (O.S.R.). The ratio fixes the required open space on a lot, as a percentage of the total floor area of all the buildings on the lot. It is derived by the formula: O.S.R.=Open Space, divided by the Floor Area.

Figure 3-5 : Typical tower development in R-10

There are two residential districts which are applicable to Manhattan alone, namely R.9 and R.10 (which, in some cases, are also applicable to Brooklyn's C.B.D) with the highest F.A.Rs permitted respectively (Fig. 3-5).

The few R-9 districts are mapped along some major avenues and cross town streets south of 96th Street in Manhattan. The F.A.R. ranges from 6.54 to 7.52 - with density ranging from 228 to 248 units per acre. R.10 has the lowest open space requirement where no F.A.R. is required. Parking must be provided for 40 percent of the dwelling units (Fig.3-6,7).

Mapped on major avenues and cross-town streets south of 96th Street in Manhattan as well as in the Manhattan and Brooklyn central business districts, R-10 is the highest density district. The permitted F.A.R. of 10 can be increased to 12 if a large plaza or arcade is provided. The plaza bonus substitutes for an open space requirement. Where a plaza is provided, densities can reach 400 dwelling units per acre. In new developments, parking is required for 40 percent of the units.

In addition to the regulations presented above, the Resolution introduces different alternatives for methods of determining the actual height and setback of a structure, making special provision for off-street parking, building heights around major airports and for large-scale residential and community facility developments, which were originally initiated in the H.B.A. proposal.

The following editorial published in Progressive Architecture immediately after the introduction of the 1961 Resolution

is of great value for its predictions of the potential shortcomings of the New Resolution, those shortcomings which led to the special zoning districts inspired by mixed-use zoning concept.

¶ **Designing by sliderule** is the sad result of a straightjacket imposed on architects by various regulatory agencies. It all began with zoning ordinances, and zoning ordinances began with the spread of the open space ideal advocated and propagated by the pioneers of the modern movement in architecture and city planning. The theory that low density and low land coverage are always desirable, and high density and high land coverage are not, is the theory on which the existing zoning laws are based, and on the zoning laws are based the rules of FHA and similar institutions. An architect confronted with these regulations spends so much time calculating floor area ratios, land coverage percentages, angle of setbacks, distances between buildings, all other distances, ratios, formulas, and what have you, that often he has hardly any time or energy left to design—design in the true meaning of the word. When he is confronted with two, sometimes even three, different sets of rules applying to a single job, the juggling and comparing of all the different figures requires a computing machine, or at least a computer mind.

I do not doubt that all these rules were created by men of good intentions. Unfortunately, the results are often more detrimental to orderly development of cities than beneficial.

In New York City, for instance, the new zoning ordinance introduced recently, was heralded as a great achievement that will finally enable New York to develop as a city of great beauty.

I doubt this. The old zoning laws created the famous New York wedding cake architecture, the new ones, I suspect, will be responsible for other evils. They are liable to create much bad architecture in the name of good architecture.

One architect, now designing a building on Central Park South, is dismayed that he will be responsible for breaking up that famous thoroughfare. At present, this street consists of an orderly, uniform row of buildings that frame the south border of Central Park. They are all approximately the same height and lined along a common building line. The new building—which has to conform to the new laws—could be designed either on the building line but only to the height of six stories and then stepped back, or set back from the building line and then rise to a chosen height to the full height. In either case, the continuity of the street could not be preserved. The latter solution was finally chosen, and soon New York's Central Park South will look as though a tooth was knocked out of its previously handsome physiognomy. Is this what James Felt, the City Planning Commissioner responsible for the new zoning laws, meant when he said on a television interview that the most wonderful aspect of the new laws is that the old street pattern will be destroyed? I personally do no see anything wonderful about this.

The moral of the story is that all laws and rules that attempt to control our environment should be implemented only to *prevent* bad planning and bad design perpetrated by those who are incompetent or by those whose aim is mere exploitation. They should not be imposed in cases where their nonapplication would result in a superior solution.

As Urban Renewal Commissioner William L. Slayton stated in a recent speech: "[illegible] hope for the cities in the 30s and 40s—and indeed zoning has prevented unwise growth in many ways. But the zoning ordinance is a negative control . . . it is a limited, negative, noncreative mechanism for controlling city development." And he added, "Urban renewal permits the city to look positively at the setting of the structures and their relationship and consequently to judge the development in terms of design and function—not in terms of meeting mathematical formulas."

Let us hope that this approach to urban planning will prevail in future urban renewal projects. There is no reason, however, why it should not also be used in all cases where buildings are being built. Unless such a change in attitude takes place, it will not be possible to maintain the historic continuity of cities, nor will creative architects be able to evolve truly new urban patterns. Whenever bureaucracy triumphs over creativity, the world is always poorer for it. ¶

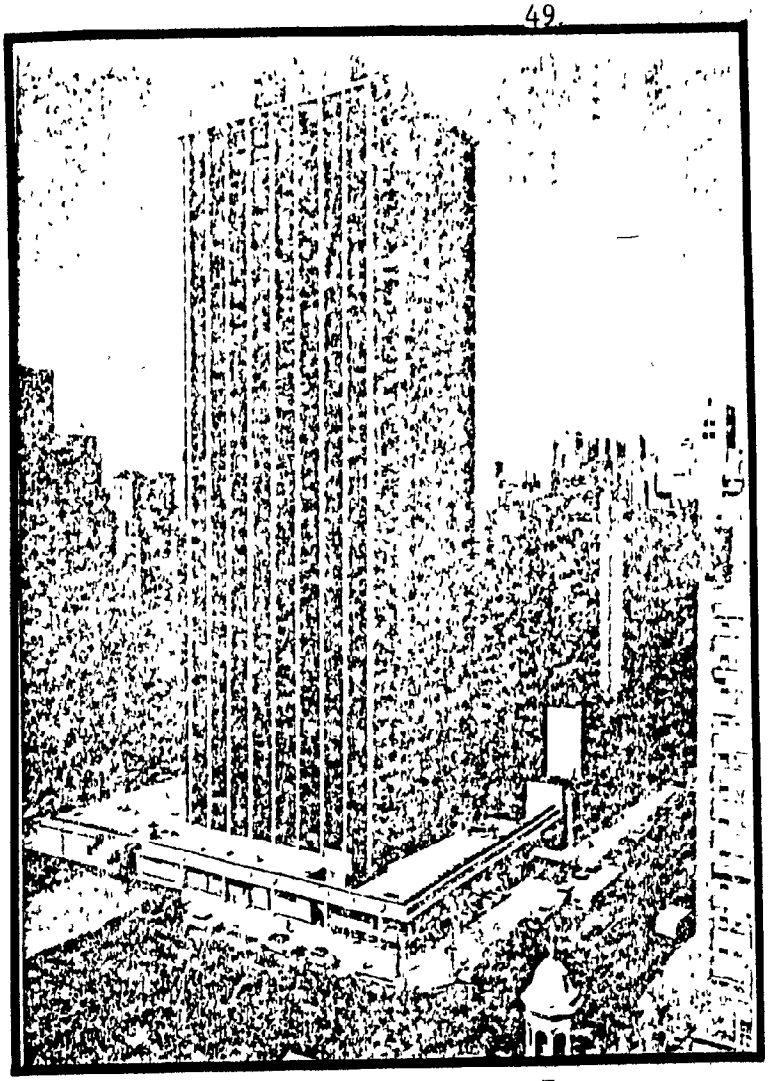
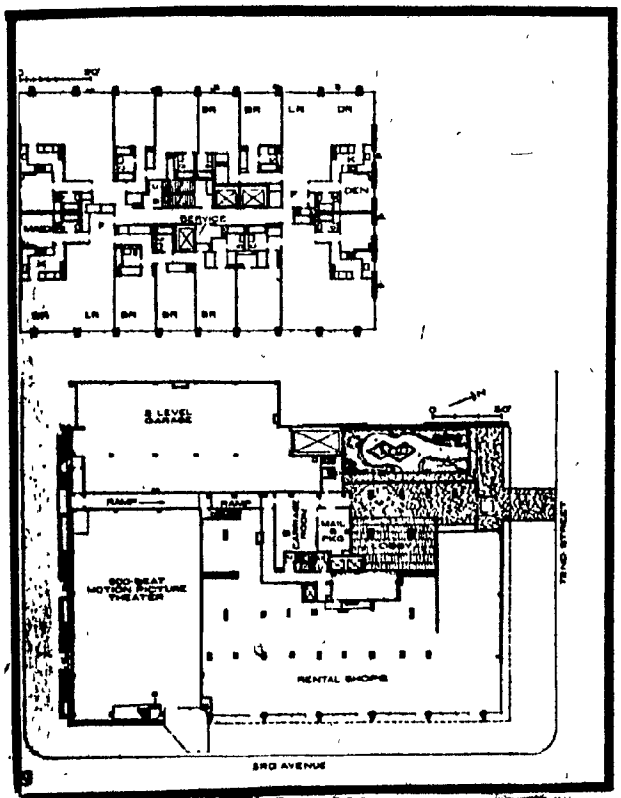


Figure 3-6 and 3-7 : Tower East, an apartment built on New York's Upper East Side under the 1961 Zoning Ordinanc In accordance with the ordinance, the tower is limited to 25 percent of the site area, and in height to 300 ft. Emery Roth & Sons, architec



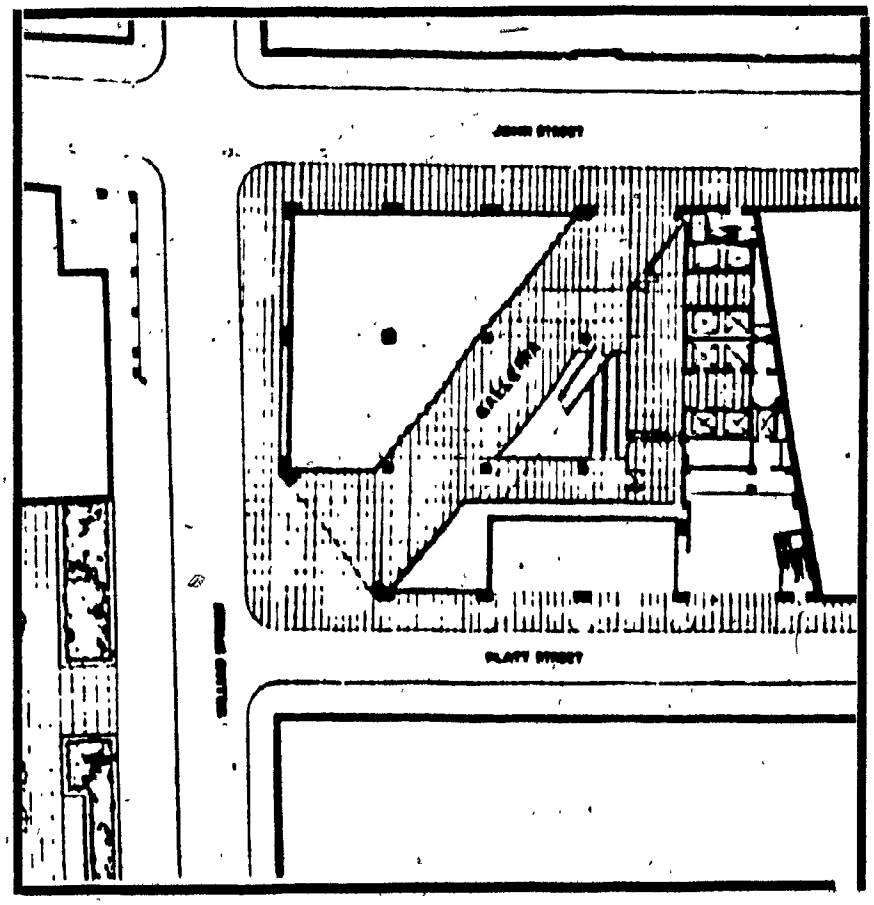


Figure 3-8 : The galleria in the 100 Williams Street building in Lower Manhattan. Built under the 1961 zoning incentive program, it is an outstanding example of urban design amenity: Unlike other buildings built under similar provisions, it encourages people to use its plaza. Davis, Brody and Associates and Emergy Roth architects.

SPECIAL ZONING DISTRICTS

The numerous amendments and mapping changes approved since the adoption of the 1961 Resolution indicated the need for further improvement despite the advances achieved. One of the weaknesses of the Resolution is that pre-established regulations mapped in standardized districts have limited flexibility when responding to the continually changing forces which affected the urban development traditional zoning districts to be compatible with the diverse characteristics found within subareas of the city. For example, sections of Greenwich Village and the South Bronx are mapped the same, with little attention to the physical, economic or political pressures existing in the individual areas.

A second weakness concerns the F.A.R. bonus provisions. Since the bonus is given 'as of right' and thus not subject to administrative discretion, the Commission can do little to influence the design and location of the required plazas and arcades. When one considers the wind-swept plazas along Sixth Avenue and the sunken plaza of the General Motors Building (Fig. 3-9 and 3-10), it becomes obvious that the full extent of the public benefit has not been achieved from the bonuses granted in each case. For example, even though the G.M. Building was allowed a plaza bonus, the developers could not be forced to provide a needed connection to the subway via the plaza or a relocation of the plaza to Madison Avenue, even though both would have been feasible and desirable urban design elements.

Figure 3-9: General Motors Building at 59th and Fifth Avenue. The sunken plaza across the Grand Army Plaza is the last place where New York needed another open space/

Figure 3-10: The Uris Building at 50t and Broadway have two theaters and a pedestria through-block connection but it also has two use- less sunken plazas fronting on Broadway.

The issue is further complicated since the tower provisions, which are used to ensure sufficient light and air, are coupled with the bonus provisions. Consequently, instead of the "Wedding Cake" as a standard building form, there has been a prolification of 40 percent towers rising out of wind-swept plazas which usually designed the adjoining development.

In 1965 a measure, which provided for the establishment and regulation of land marks, landmark sites and historic districts, was enacted into law. As a control, the significant feature of the law was the fact that it was not only linked to individual buildings on sites but established the concept of a specialized district.

In 1966 the Urban Design Group was created within the City Planning Commission. It became a dominant force behind the efforts to revise the 1961 Resolution by the creation of special districts. Having its foundation in the Landmark Preservation Law, the special district concept was introduced because it provided a mechanism through which zoning regulations could be tailored to the specific locational characteristics of an area.

The important element of the special district is its link to the zoning bonus provision. As described previously, the bonus concept was introduced to New York City in the 1961 Resolution. The bonus was made available to a developer 'as of right' but, in the case of a special district, the bonus be granted to a developer only by special permit, after he satisfied specific criteria which applied in each district.

The criteria are aimed at ensuring that new development will be designed in a manner which is sensitive to the characteristics and needs of a district.

The major first generation special zoning districts are:

- The Special Theater District: Approved in 1967. Its purpose is to ensure the maintenance of the characteristics of Times Square in future construction around the area with the incorporation of shops, restaurants and other entertainment activities.
- Special Transportation Districts: In 1968, they were proposed but not approved for area around Grand Central, Pennsylvania and Jamaica Stations. The objective was to regulate the intensity of new development around these major transportation facilities.
- Special Lincoln Square Center: Approved in 1969, it covered the area around Lincoln Center along Broadway from Columbus Circle to 66th Street. It differs from others in a number of ways. The most important one is that the Commission had a preconceived urban design plan which it wanted to implement in the area. The specific regulations controlling the area were written with this design in mind. It made use of the following provision which was initially intended for historic districts in the General City Law:

"To provide for places, buildings, structures, works of art, and other objects having a special character or special

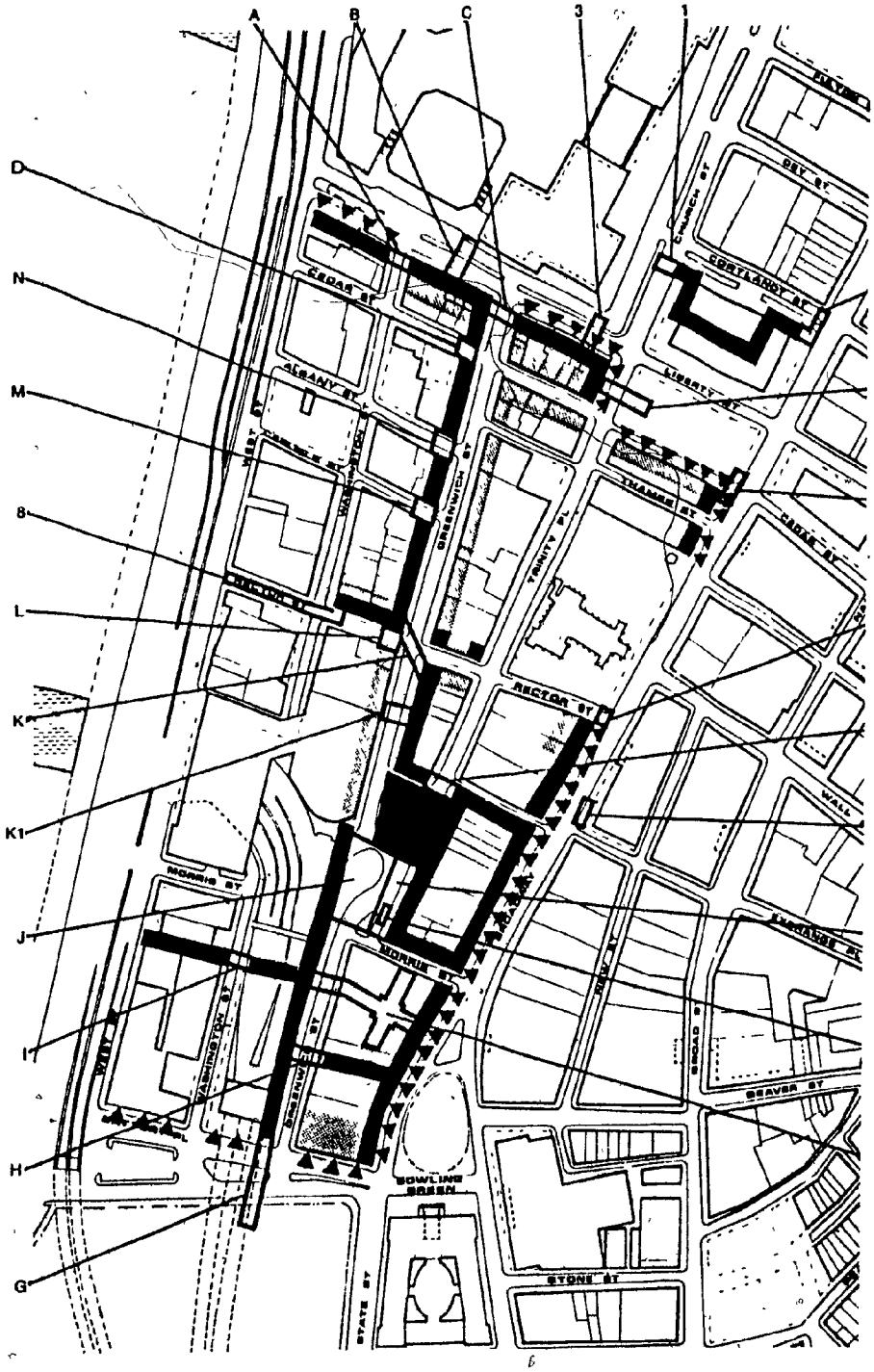


Figure 3-11 : Special Greenwich Street Development District: The district legislation reinforces shopping streets, determines open spaces, primary pedestrian connections and maintains the overall character of Lower Manhattan

historical or aesthetic interest or value, enhancement, perpetuation of use which may include appropriate and reasonable control of the use or appearance of neighboring private property within public view, or both.....".

- Special Greenwich Street Development District:(Fig.3-11) Approved in 1971, the district was created to control the expansion of commercial development in the area of Lower Manhattan adjacent to Battery Park City and the World Trade Center. The district attempts to implement an integrated plan for improved pedestrian and vehicular circulation as well as encourages the development of a variety of retail and service establishments which meet the area's present and projected working population.
- Special Manhattan Landing Development District: It has been created to control a 90 acre area in Lower Manhattan along the East River Waterfront. A significant portion of this area consists of lands presently under water.

The special districts described above started a new trend in urban design controls. In the words of Ada Louise Huxtable "They give the City the ability to legislate precise planning results".

MIXED-USE ZONING DISTRICTS

In 1973, Mixed-use Zoning districts were created to encourage mixed-use developments in selected commercial areas.

The conventional mixed-use buildings were generally a combination of ground-level retail shop and either apartments or offices above. As opposed to the horizontal planning of MXD, a vertical dimension was achieved by placing the office and residential uses in the same building.

According to Kenneth Halpern, Director of the Office of Midtown Planning and Development in N.Y.C. "The 1961 Resolution did not in fact prohibit mixed-use buildings; it just emphatically discouraged them, on the theory that a mixture of office and residential uses would add to the intensity of use in any given area.... Contrary to what planners believed in 1961, mixed-use can actually result in a decrease in intensity of use. Because an apartment allocates more square feet per person than an office, a mixture of these two uses can in fact result in an on-site population up to one-third less than that in an all-office building. Also the activities of each use are mutually independent and occur at different times of the day, so the intensity is less at any given time. The resultant benefit is around-the-clock activity with less intensity, and a more efficient utilization of space, time and the existing city infrastructure".[5]

The main provisions of the new mixed-use zoning are:

- To be eligible for a mixed-use building, a zoning lot must be at least 20,000 sq.ft. in size. This provision seeks to ensure that there will be enough space at the ground level for two lobbies - one residential, the other commercial - as well as retail activity.

- Each building must provide -without bonus- 5000 sq.ft. of recreational space for the exclusive use of residential tenants and their guests without admission or membership fee. Areas open to the sky must be landscaped, with the remainder of the space devoted to sitting or recreational facilities.

- Each mixed-use building is required to provide a covered pedestrian space, a galleria, a through-block arcade, a plaza-connected open area, or any additional amenity or combination of amenities that generate a bonus equivalent to 2.5 F.A.R. Fulfillment of this requirement along with the requirement for tenant recreational space will produce more open space than is provided either by an all-residential structure or by an all-office structure.

- All setback areas occurring in the commercial portion of the building, including its roof, must be landscaped if they are more than 20 ft. deep.

- Because automobile ownership in the central city is extremely low, the residential-zone requirement that there be parking spaces for 40 percent of the apartments has been waived.[6]

The Galleria is the first building in New York built under these new mixed-use provisions. It will be studied in detail later in a Case Study on the subject.

FIFTH AVENUE SPECIAL DISTRICT

Before Fifth Avenue became a prestigious address for banks, airline offices and corporate showrooms which are threatening the very existence of the street, it was a prestigious address for a rich variety of uses such as residential, retail shops, department stores and hotels. It became the ceremonial street

of New York and the United States as well. It evolved to be the international shopping street. It was an excellent manifestation of the mixed-land use concept both horizontally and vertically.

The first blow came with the construction of the GM Building at 59th Street. GM Building is the product of a major weakness in the 1961 Resolution, concerning the F.A.R. bonus provisions. Since the bonus is given 'as of right' and thus not subject to the Commission's design approval, there was not much that could be done to correct some of the design deficiencies. Located across the street from the Grand Army Plaza in front of the Plaza Hotel and diagonally situated from the Central Park, it is the last place where New York needed another plaza.

With new construction, the ground-floor uses began to change also. The new buildings with their higher costs and rents began to displace the traditional retail shops which gave way to banks and corporate showrooms and lobbies for the office buildings. These new uses with their useless, unattractive, empty spaces raised a major threat to the very existence of the delicate texture of the street. In other words, they exploited and eventually threatened to destroy the reason which attracted them into that area in the first place.

As a typical example of what should not be done, the GM building raises also other issues. Buildings along the Fifth Avenue form an urban wall which is visually a magnificent urban feature and at the same time they provide a continuous shopping row. GM Building, with its sunken plaza and setback,

puts an end to the continuity where people have no choice but to watch the latest GM products at the corporate showroom. Another shortcoming is that even though GM was allowed a plaza bonus, the developers could not be forced to provide a needed connection to the subway via the plaza or more important than that, relocate the plaza to a side street.

Conceptually, Fifth Avenue is not limited to the Avenue alone. Actually what adds to its attraction are the side streets. Since the invasion of the airline offices and banks on the Fifth Avenue the boutiques and shops which could not compete had to move to the side streets. Today, 22 percent of the avenue frontage is occupied by banks, lobbies, corporation showrooms and airline ticket offices.

In 1973, as a rescue operation, the Fifth Avenue Special (Fig. 3-12) legislation was introduced and approved. Its main provisions are:

- All buildings in the district, which extends from 38th Street to 57th Street, have to build up to the lot line on the avenue.

- Buildings on the east side of Fifth Avenue may build straight up in the plane of the street wall if it is so desired; but if a setback is preferred, that can not occur before the 3-storey height. Buildings on the west side of the avenue must be built to the lot line to the height of 85 ft. and at that point they must set back a minimum of 50 ft. This last requirement will provide tower separation between the east and west walls letting more light onto the street in the afternoon which is the

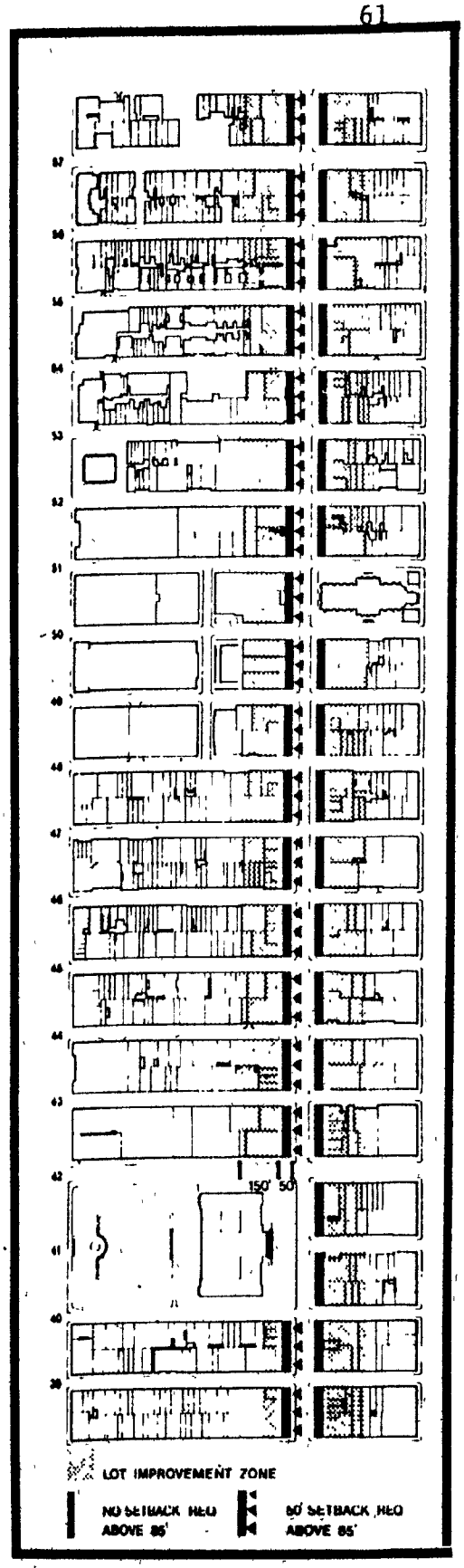


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Figure 3-12 : Fifth Avenue Special District urban design framework.

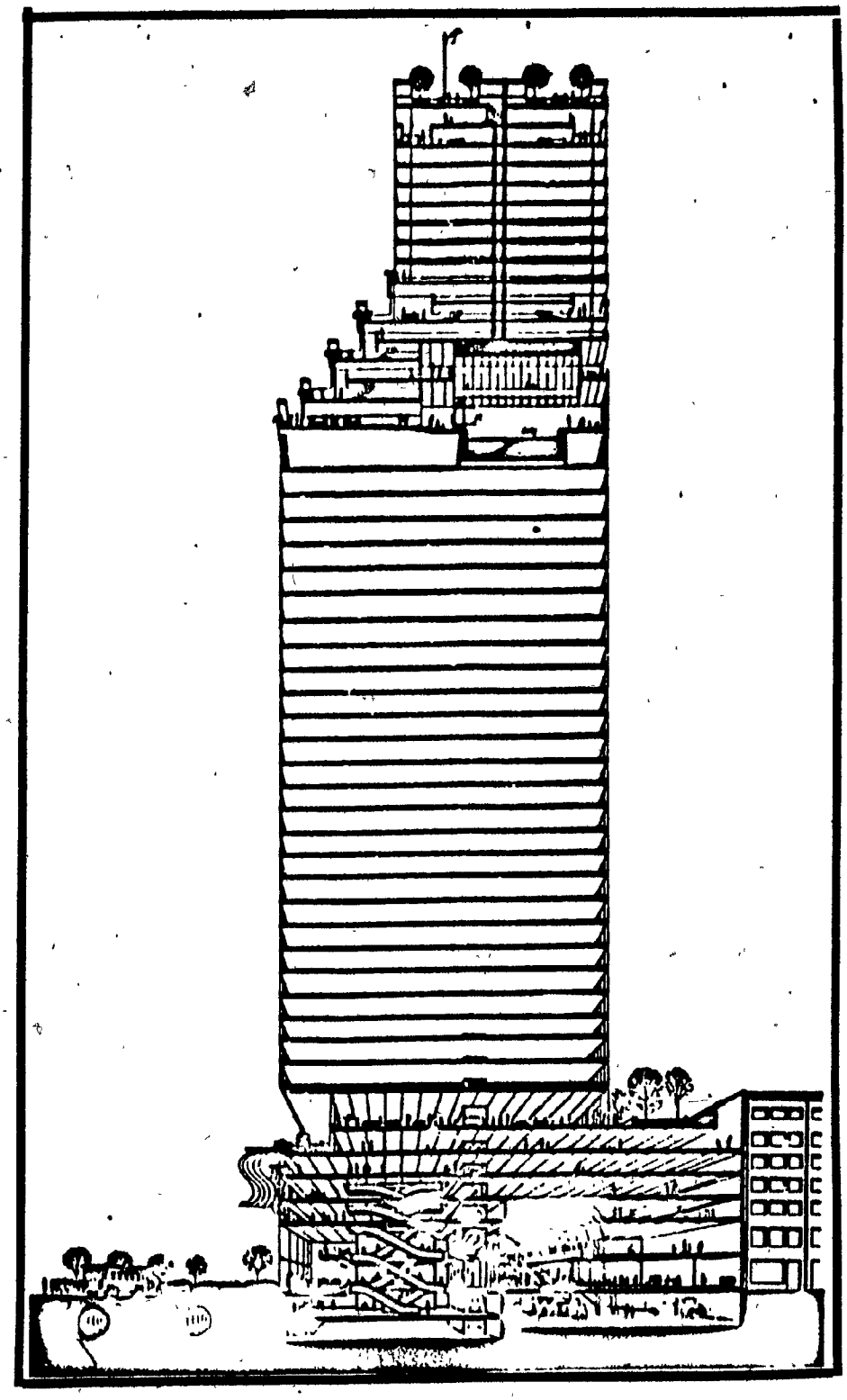

Figure 3-13 : Prototypical Fifth Avenua mixed-use building.

time of peak usage. It also picks up the height of the existing setbacks on the Rockefeller Center buildings. A modest bonus is available if these setbacks are landscaped, and also accessible to the public.

- One point of the allowable floor area bulk, roughly equivalent to two floors of a new building, must be devoted to retail uses selected from a special use group written around the most characteristic types of shopping on a shopping street. The list, which limits banks and airline ticket office to occupay not more than 15 percent of ground-fllor space, excludes corporation showrooms.

- Building lobbies can not be located on Fifth Avenue; rather they must be located on the side streets at least 50 ft. behind the Avenue.

- The plaza bonus can be used, but any plaza has to be located at least 50 ft. behind the Avenue. An extra incentive is offered if the developed urban space is a galleria - a through-block connection between two side streets which is covered, has natural light and is flanked by retail shops. The entry to the building can also be on the front of this space.

- A special incentive is given to a development that provides retail space in addition to the minimum requirement. The incentive provides an increase in bulk of up to 20 percent, and the tower portion of the building can be up to 15 percent "fatter" than the normal zoning limit permits. However, the bulk so gained can only be devoted to residential or hotel use.[7]

"The bonus provisions help answer a criticism of special districts with zoning incentives:"according to Jonathan Barnett "that the amenities and more complex land uses obtained are valuable, but that the City can't afford to keep purchasing them at the expense of increased density.

Residential and office uses are to a large extent complementary, in that they cause their peak loads on the City's service infra-structure at different times of the day. Twenty-four hour use, created by placing offices and apartments in the same district, makes that portion of the City safer and more efficient than an office building area that is deserted at night, or an in-town residential neighborhood that empties out during the day. The same police and fire stations can serve both, as can the same shops and restaurants, and the streets remain active at all hours, which is a good defense against crime.

The Fifth Avenue district not only helps preserve the integrity of a major shopping street, but it is introducing a wider variety of uses into the area; and the new shopping arcades create new kinds of frontage, encouraging a wider variety of stores. A down-town composed solely of office buildings and parking lots is not desirable either to the citizen or the real-estate developer; and, in New York as in many other places, the very zoning regulations that were meant to safeguard the public interest were helping to change the business district into an area that lacked the variety and liveliness which is one of the city's major advantages.

It is hoped that architects will respond creatively to regulations like the Fifth Avenue district by designing buildings that combine uses and spaces in new ways, and that are

not like the office and apartment stereotypes that have become all too common in our cities. The law now encourages them to do this."

(Jonathan Barnett "Urban Design as Public Policy",pg.56)

Olympic Tower, located at 51st and Fifth Avenue is the first building to be built under the district guidelines.

SPECIAL THEATRE DISTRICT

The first special zoning district in New York City was approved in 1967. The Theatre District applies to the area around Times Square. Physically, Times Square is the open space created by the intersection of Broadway and Seventh Avenue. It is also the name given to an area which runs along 42nd Street from Sixth to Eighth Avenues, continuing along Broadway and Seventh Avenue from 42nd to 53rd Street. Times Square takes its name after 'The New York Times' which is located nearby.

While the area has lost much of its previous charm by the replacement of some new and highly-profitable but less desirable uses such as adult movie-houses and peep-shows, Broadway Theater is still there and very much alive. After years of struggling for survival, the Broadway Theater had two consecutive years of profit and it is on its way to capturing its old grandeur. Recently two theater-houses which were being used as adult move-houses have been reconverted for theater productions. This might not seem very important but it is an indication that there is a trend toward more positive uses in the area.

The principal purposes of the special theater district (Fig. 3-18) are:

1- To preserve, protect and promote the character of the special theater district area as the location of the world's foremost concentration of legitimate theaters.

2- To develop and strengthen a much needed circulation network in order to avoid congestion arising from the movements

Figure 3-14 : The W.T. Grant building, is the first building to include a new theater in exchange for a bonus of additional office space. Kahn and Jacobs, architects.

of large numbers of people.

3- To help ensure a secure basis for the useful cluster of shops, restaurants and related amusement activities which have been attracted to the area based upon its past and present character.

To accomplish the above, the City Planning Commission is permitted within the boundaries of the special district to increase the maximum allowable F.A.R. up to 20 percent over that already permitted 'as of right' for any new building containing a legitimate theater or theaters. The F.A.R. increase is based on the following:

1- If the legitimate theater or theaters are of a size and type which the Commission deems appropriate under the circumstances prevailing at the time of the application, so as to achieve balanced facilities responsive to the needs of the district.

2- If there are facilities to support legitimate operations such as studios for rehearsal or storage space.

3- If open spaces, arcades, sub-surface concourse or subway connections are provided to ease congestion in the area and ensure free movement of pedestrians or vehicles.

4- If restaurant facilities or other amenities useful to the Special Theater District are provided.

5- If distribution of the bulk of the total development permits adequate access of light and air to surrounding streets and properties.[8]

While the recent reconversion of adult movie houses to legitimate theaters is the result of a pick-up in the building

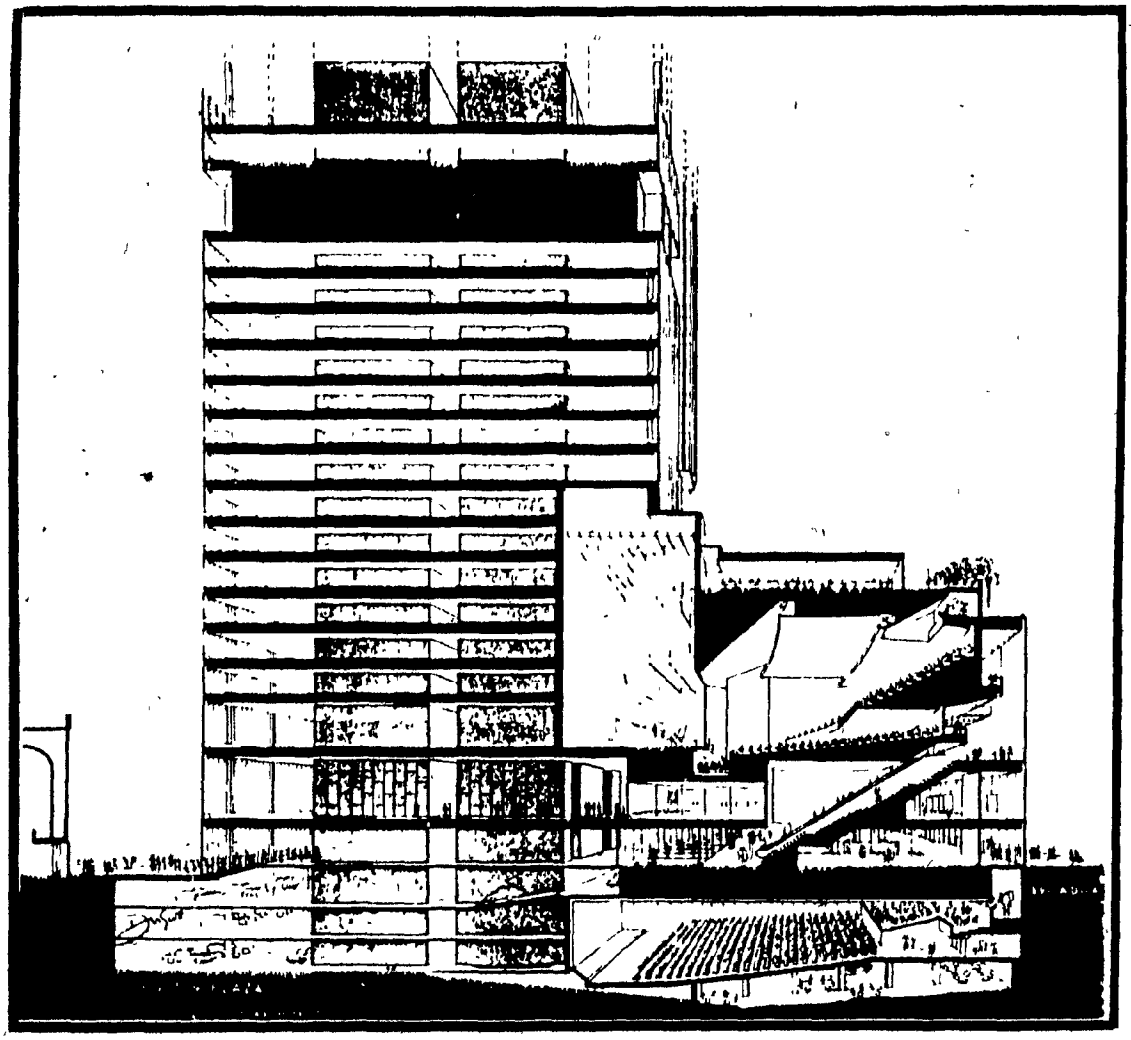

Figure 3-15 : Section through the lower floors of W.T.Grant building. The ground floor Broadway frontage has retail shops, banks and office lobby are on the second floor.

market, there have been three new constructions where four theaters have been incorporated into the buildings since the passage of the Theater District legislation in 1967. These are the Minskoff Theater (1650 seats), (Fig.3-18) Uris Theater (1850 seats), the Circle in the Square Theater (600 seats) and the American Place Theater (600 seats). This again is a significant milestone in the history of the Broadway Theater, since the number of theaters between the 1920's and the mid-1960's had decreased from about 80 to 33.

As an entertainment center, Times Square is also the home for approximately twenty movie theaters which show first run films at prices considered suitable for low and moderate-income groups.

It is also projected that in New York City tourism industry will rank in the first place next to the service industry by the year 2000. Times Square is one of the most important centers of this fast-growing industry. The recently opened small retail stores selling touristic memorabilia are an indication of this trend.

A building was able to achieve 20 percent more floor area than that allowed in the Resolution for providing plazas and/or arcades. With the introduction of the Special Theater district provisions, the total maximum bonus represented an increase of a forty-four percent floor area. Thus, while the Commission had, it could could not take away anything from the developer that he already / grant him an extra 24 percent if he satisfied the criteria.

The most successful application has been the W.T.Grant

Building and the Minskoff Theater which will be studied as a separate case. Of the 13 buildings erected in the special district only 3 elected to build a theater and thus were subjected to design review by the City Planning Commission. The other ten buildings that were built under the provisions of the existing zoning resolution, opted for 20 percent more F.A.R. by providing essentially useless plaza spaces and detracting from the vital characteristics of the Times Square.

A hotel proposal by John Portman for Times Square (Fig. 3-16) contains two huge interior spaces and a theater. But, on the exterior treatment with its fort-like walls rising from the ground, it neglects to the neighborhood characteristics of the Times Square. The Planning Commission insisted that the hotel must have small retail stores with large signs on its ground level instead of a theater.

The problem for implementing the provision of the Special Theater district is that this is the only special zoning district without specific urban design controls. Recently, a series of urban design controls have been incorporated into the existing Theater District as amendments. The major provisions

- All buildings along Broadway, Seventh Avenue and 42nd Street must build to their respective building lot lines. This provision takes away the developer's option to use the plaza bonus in front of his building.

- In lieu of a plaza, new developments on the west side of Broadway may choose to continue Shubert Alley, as the new hotel

by John Portman proposes to do.

- There must be at least one level of retail use integrated into the pedestrian circulation system. The uses must be part of a special use group that excludes banks, loan offices, and corporate showrooms. Without this provision, the large plazas which the city plans to build might quickly be surrounded by banks.

- Any development fronting a subway must make an appropriate and visible connection within its property and remove the entrance onto the sidewalk.

The purpose of those amendments which have not yet been approved is to ensure that new buildings will recognize, as well as enhance the essential and unique qualities of Times Square by incorporating shops, restaurants and theaters into their design.

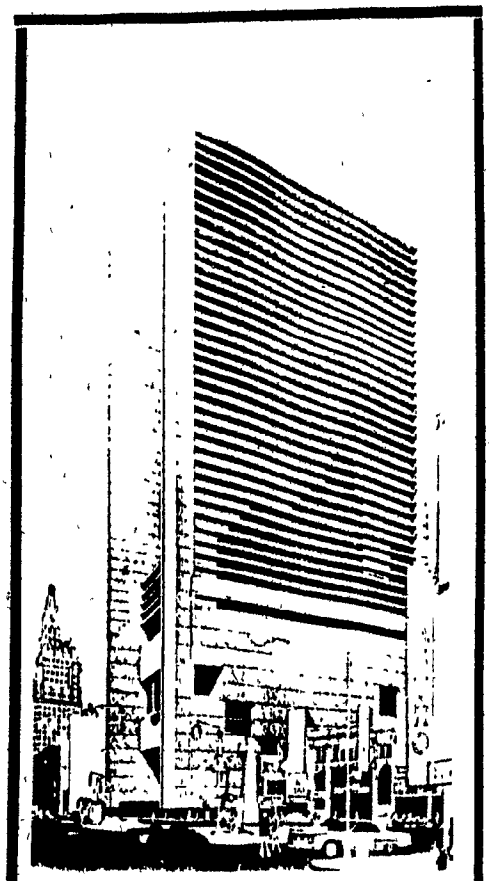

Figure 3-16 : John Portman's design proposal for a hotel in Times Square.

Figure 3-17 : A new office building at 43rd and Broadway, which does not comply with Special Theater District regulations. This buildin was not subject to design review of the Planning Commission since it was built under the existing provisions of the zoning resolution, consequently the building does not

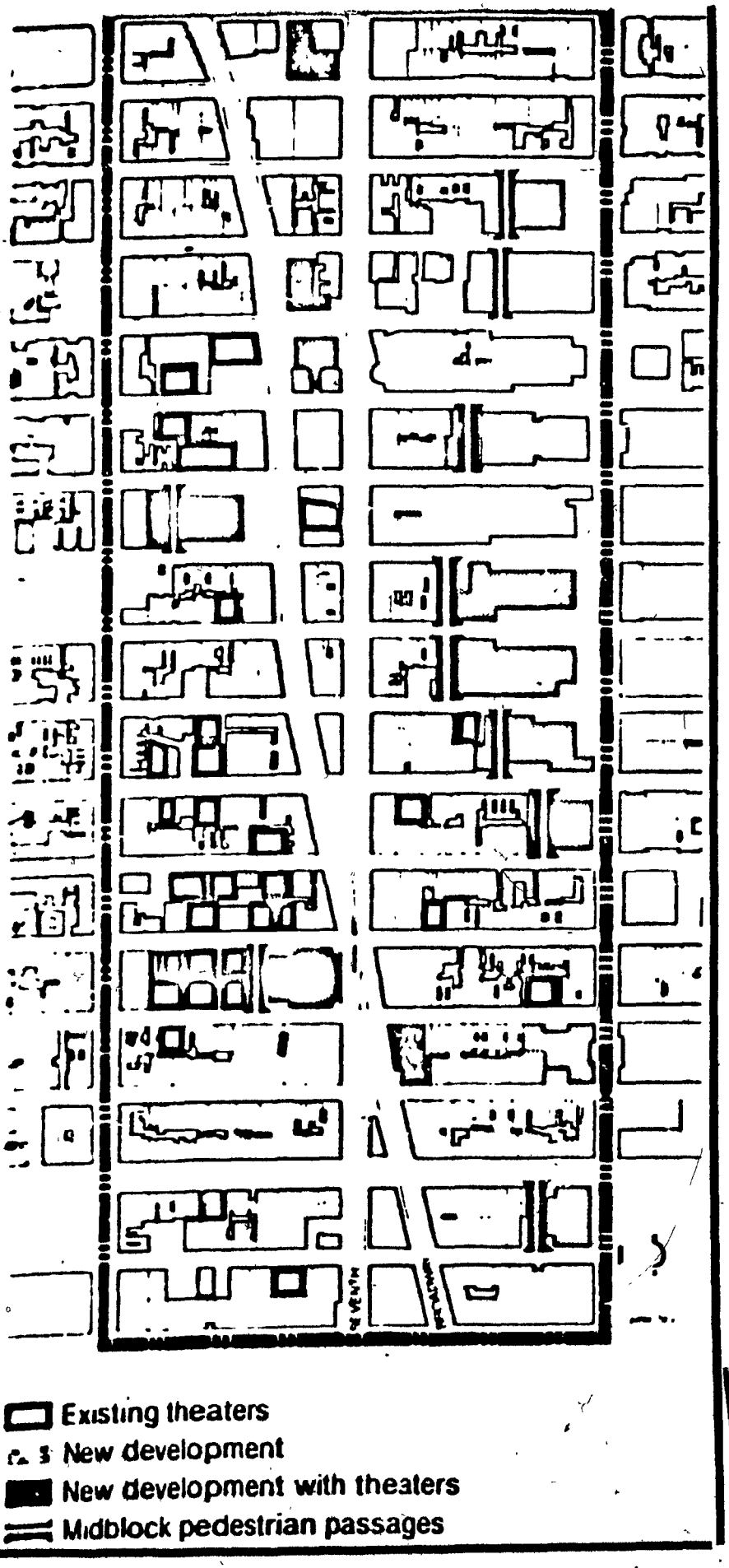

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Figure 3-18: A new plan for Times Square, the plan will encourage the construction of new theaters and the retention

'A NEW ZONING FOR NEW YORK CITY'

CONFERENCE PROCEEDINGS

The conference which was held in N.Y.U. in 1977, followed by the Workshop Sessions is important in the sense that it is a recent major attempt at identifying the current problems facing the 1961 Resolution and possibly laying ground for a new zoning for New York City. The following excerpts taken from these meetings are directly related to mixed land use and special districts bringing the subject up to date.

In his opening speech, the Chairman of the City Planning Commission, Victor Marrero, pointed at some of the questions facing zoning today. "..... do we need a city-wide Zoning Resolution? If the answer is yes, shall we keep the one we have after making some adjustments? Or will further study point to a complete overhaul, resulting in new Resolution? ... Should we rely on the codified "as-of-right" development system, or on the special permit approach under which each proposal would be subject to discretionary review, and would be judged on its own merits? ...Can new ways be devised to strengthen and preserve neighborhoods and natural features? Are there approaches which are better than special districts? ...Can zoning encourage mixed-use of buildings and land?"

Richard Ravitch pointed out to the political and economic realities which should have priority in zoning decisions:...."As you examine zoning in the forthcoming months, I urge you to recognize that the single biggest priority for this city is the effort to regenerate its private economy. We have lost 600,000

jobs, over $7 billion of payroll since 1969. There is no Zoning Resolution, there is no level of participation by community boards, there is nothing within our competence as planners, architects, builders or providers of capital that can turn our city around, unless fundamental economic conditions are improved. Therefore, I would urge that additional flexibility, administrative discretion be granted to the City Planning Commission on any proposed facility that would influence the creation of new jobs in this city... Just as we have recognized that illegal conversions are now something we have legislated into public and political acceptability, we have to recognize that there may be prospective commercial uses for older property in areas that have traditionally objected to the influx of commercial activity..."

His economic assessment of the function of zoning and further suggestion of commercial usage for older properties can be related to the importance of mixed land use in the inner cities where the poor have been precluded from accessibility and availability of basic jobs because of existing land-use regulations which keep jobs out of their community. It is important to mention that of the 600,000 jobs lost, most are blue-collar jobs directly affecting the central-city poor who do not have the means of converting to white-collar jobs available at nearby offices.

One of the topics of discussion during the workshop sessions was the residential conversion of the physically sound, centrally located older office, hotel and industrial building

which have high vacancy rates because of the changes in the City's economy.

According to the moderator the two major issues raised by recycling of non-residential to residential use are:

1. For the industrial and commercial occupants of the city's business areas what effects do residential neighborhoods have on business? Do conversions displace industrial and commercial firms?

2. For new residents, what sort of neighborhood quality is available? What changes are desirable? Is the housing being created by conversions "safe and sound"?

The director of research of Real Estate Board of New York, Edward Potter claimed that the demand for older commercial and industrial buildings is no longer adequate to fill them. He added: "The position of Real Estate Board of New York is that residential conversions of these buildings should be allowed 'as-of-right' in buildings up to 7500 square feet of lot coverage. Vertical mixes of residential and non-residential uses should be allowed in conversions".

A businessman and the President of the Chambers-Canal Civic Association, Mr. Rosenfield also endorsed mixed-land use concept, saying, "Industry's problems are primarily created by the high cost of doing business in the City. Business taxes and energy costs are presently so high that New York has become an uncompetitive location.

The concept of mixed-use areas is a good one. I was involved in the development of a Mixed-Use Zoning District for the downtown loft area and I feel that the district has been successful. The City should recognize that buildings, when no longer viable for business purposes, should be considered for some other

use. Mixed-use is a very valuable theme in the life of the City".

The discussion which followed the panelists' opening statements focussed on the need to resolve two conflicting public policies: On one hand, the desire to create a desirable new form of housing and, on the other hand, the desire to preserve and expand the industrial job base. The mixed-use concept had been proposed by a few of the panelists as a way of resolving this conflict. It was agreed that presently the mixed-use concept is inconsistent with zoning policy, and mixed-use itself raised a number of questions:

Audience: If a residential and industrial area is created, can it remain mixed or will it eventually become predominantly residential?

Berley: "Loft living" and industrial rents are similar, but since residential operating expenses are higher, owners prefer industrial tenants.

Rosenfield: Businesses are leaving New York for a variety of reasons. Board policy changes will be required to keep businesses and jobs in the City, and to keep a mixed character in industrial areas.

Potter: The City has been negligent by not changing the laws to make conversions legal and by not enforcing the existing laws.

Audience: The housing quality and safety issues raised by mixed-uses can be addressed; conversions in mixed-use areas can provide an exciting source of middle class housing.

Audience: Businesses are politically under-represented in

mixed-use areas.

Rosenfield: The mixed-use concept is a difficult one, but can and should be made to work.

At the technical analysis session of the workshop, the moderator raised the question: "To what extent does zoning accommodate or restrain market demand, particularly in relationship to the development of housing?" To which S. Lindenbaum, a lawyer, replied: "Developers are concerned about keeping the middle class in New York. We have to provide a variety of housing at reasonable prices. Recycled buildings constitute an important housing and tax resource for New York. However, as traditionally highly assessed commercial buildings are recycled to lower assessed residential uses, the tax base must be supplemented with new development. It means that some older - perhaps historic - buildings may have to be lost on side streets but it must be remembered that a new office building produces a lot of real estate taxes. "In spite of the fact that manufacturing and residential uses can be compatible, according to Mr. Lindenbaum but the present zoning conflicts emerge especially in manfacturing zones where residential conversions are taking place."

It can be said that, one of the most encouraging outcomes of the conference and the workshop sessions was the almost unanimous endorsement of the mixed-land use concept by a wide range of interest groups, including real estate, developers, lawyers, community leaders and the public.

It has become evident that the mixed-land use concept will be one of the major factors in shaping a new zoning ordinance for the City. New York City has in this country been a leader in zoning policy in the United States and Canada. At a time

of relative economic prosperity and favorable climate for new development, Mixed Land use policy will also be an important cornerstone in the "Renaissance" of New York City.

PART FOUR

MIXED-USE DEVELOPMENT CASE STUDIES IN NEW YORK CITY

CASE STUDY I

Name of Project: The Galleria

Location: 117 E. 57th Street, Midtown Manhattan, New York City. An 8-storey mass fronting on 57th Street, and a 57-storey tower fronting on 58th Street.

Planning Team: Architects: David Kenneth Specter, AIA., with Gerald L. Jonas, project design associate and penthouse project designer; John Davison Allen, duplex apartment design associate.

The office of Philip Birnbaum, architect for apartment residences.

The office of Irwin G. Cantor, structural engineers.

HRH Construction, construction administration

Description: The Galleria is a 57-storey, mixed-use building consisting of:

- 90-ft. high atrium topped with a skylight,
- A public concourse lined with shops and a sidewalk cafe.
- Offices up to seventh floor.
- A private club from 8th to 10th floor with a health club, swimming pool, sun deck, restaurant and lounge spaces.
- Private offices from 11 to 15th floor.
- 250 apartments on the above floors topped by a four-storey penthouse.

The Galleria is strategically located in a transitional zone between areas which are either all housing or all office. It is the first building built under the new mixed-

use building provisions. The Atrium, one of the successful areas of the building was realized, by allowing the developer up to 14 sq.ft. of additional floor space for one sq. ft. of covered pedestrian space. This amenity brought its provisions as well, the area had to be 30 feet high, 30 feet wide and 3000 sq.ft. in area with retail space included. While a 30 ft. height was sufficient, the architect came up with a 90 ft. high atrium and topping it with a skylight. At 57th Street entrance, public and private movements are combined under one entrance. Then a flight of steps goes up at the right to the private door where residential tenants pass a concierge's desk and then a bridge to their tower elevators. The downward flight leads to a public concourse lined with shops, culminating in the skylit atrium. The public can pass right through the building to the 58th Street exit, or enter the shops or sit at the sidewalk cafe. The legislation requires the building to be open to the public from 7 a.m. to midnight. While the F.A.A. on 57th Street is 18, down from 21.6 for Fifth Avenue Special District, the city loosened up on lot area requirements governing the density. Density is measured in the number of rooms in relation to the lot area. This relation in turn determines the number of square foot per room. The City established the minimum room sizes at the Galleria at an average of 300 sq.ft. per room, the same as R-10 zoning, the highest density housing allowed in the City. The developers however raised the average to 350 sq. ft. per room because of the affluent market they hoped to

attract. So while the floor area ratio was not increased, residential space was made more attractive for developers as an option.

Background to Planning: Quote from "Progressive Architecture" December 1975:

> "..... The boom of office construction in downtown cores in the 50's and 60's led to the escalation in land values there, until only office buildings could afford their central locations. Downtown now operates on a nine-to-five shift: while living, recreational, cultural and retail facilities have increasingly gravitated elsewhere. Zoning regulations separating land uses have played their part in this standardization of the environment... Thus one of the singular searches in the past decade has concentrated on introducing (or re-introducing) additional uses into the high priced central business district. Combination uses in single structures is one way to make that mix profitable.... New York City's Galleria and Olympic Tower result from separate zoning measures formulated by New York's Office of Midtown Planning and Development, and Office of Lower Manhattan Development during the Lindsay Administration...."

Comments: Quote from "Interiors" November 1975: "Thanks to Jacquelin Robertson, then head of OMPD and to Walter McQuade, then a member of the City Planning Commission, the Galleria's architect, David Kenneth Specter and its developer were able: 1) to propose acceptable zoning concepts for mixed use buildings-concepts which were eventually

accepted by community planning boards and the City Planning Commission, and 2) later to translate the formulas into the building."

"..... Still one must face it: the Galleria is not quite as mixed-use as its commercial-residential designation implies. Because only nine floors are actually being rented for office space, the Galleria better resembles a luxury hotel: retail shops, residential space, private club with separate dining and swimming, all tucked into the 55-storey high structure."

"..... Nor is its covered pedestrian space likely to be quite as people-on-the-street oriented as the legislation originally intended. Strollers passing from 57th through the atrium to 58th Street must descend 12 steps (six feet) then go up again before coming out at grade. Furthermore, the passageway jogs enough so that the route is hardly direct...."

"..... still, the Galleria's parti, with the eight-storey high entrance wing, makes certain important urban gestures to 57th Street. It acknowledges and reinforces the low scale of the buildings to the east....."

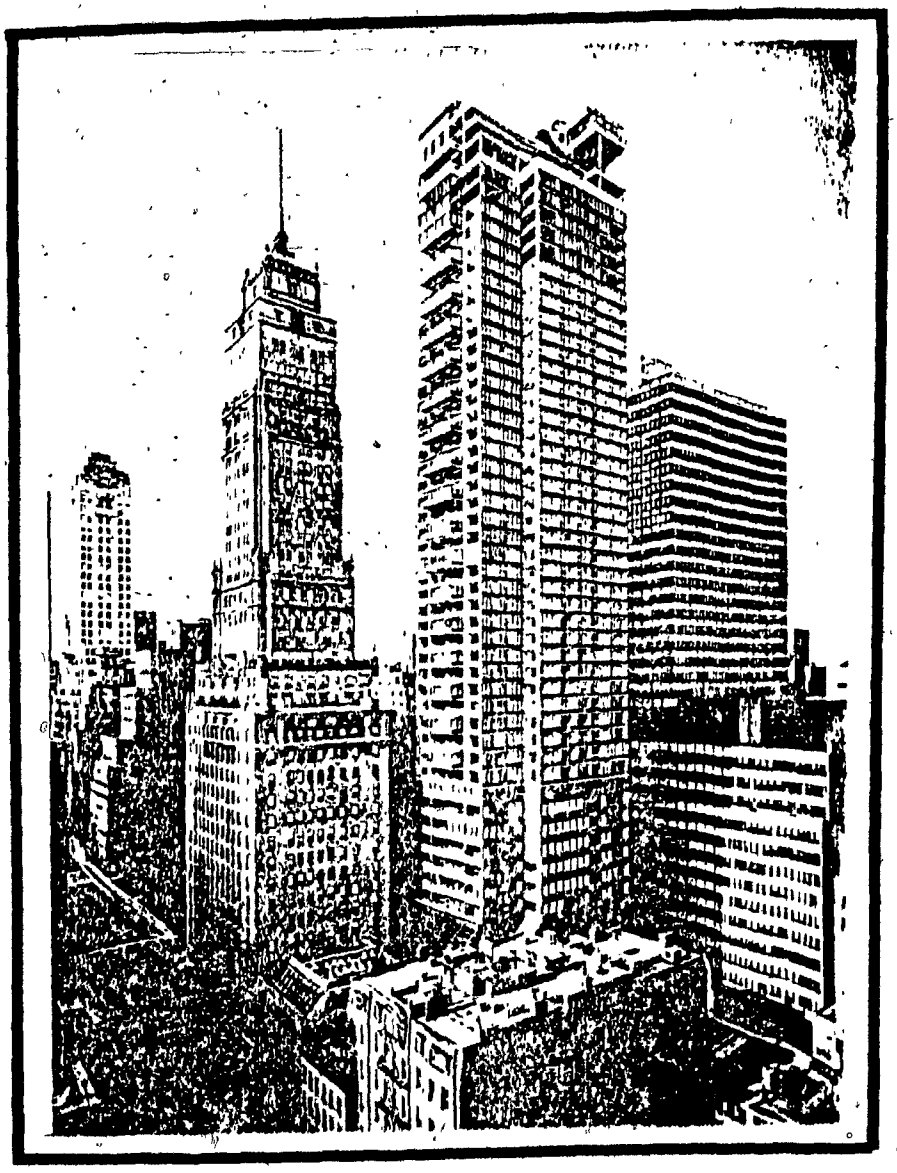

Figure 4-1: The 57-storey Galleria. The first building in New York built under the mixed-use zoning provisions.

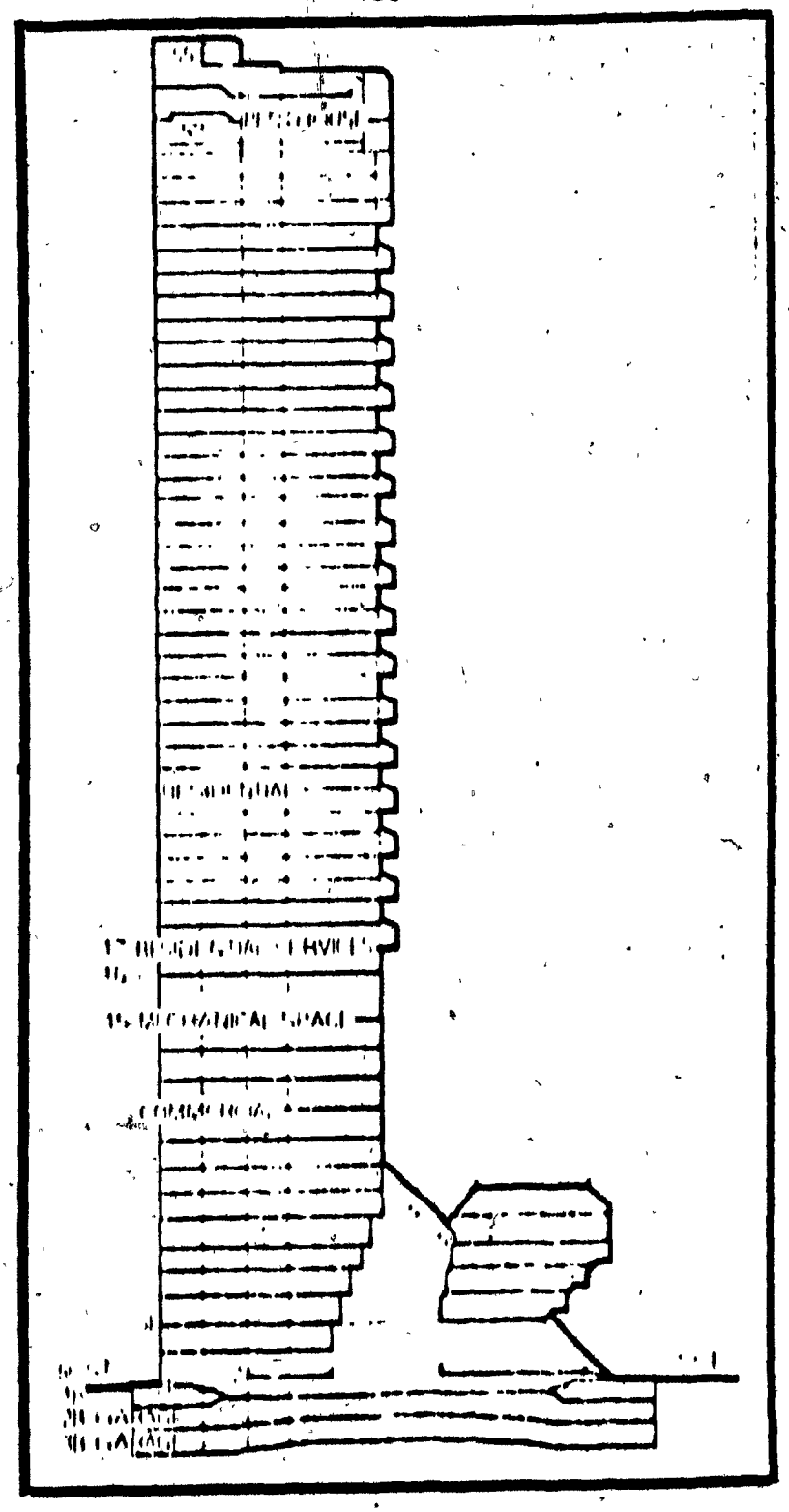

Figure 4-2: Section through the Galleria, showing the consecutive retail, office and residential floors.

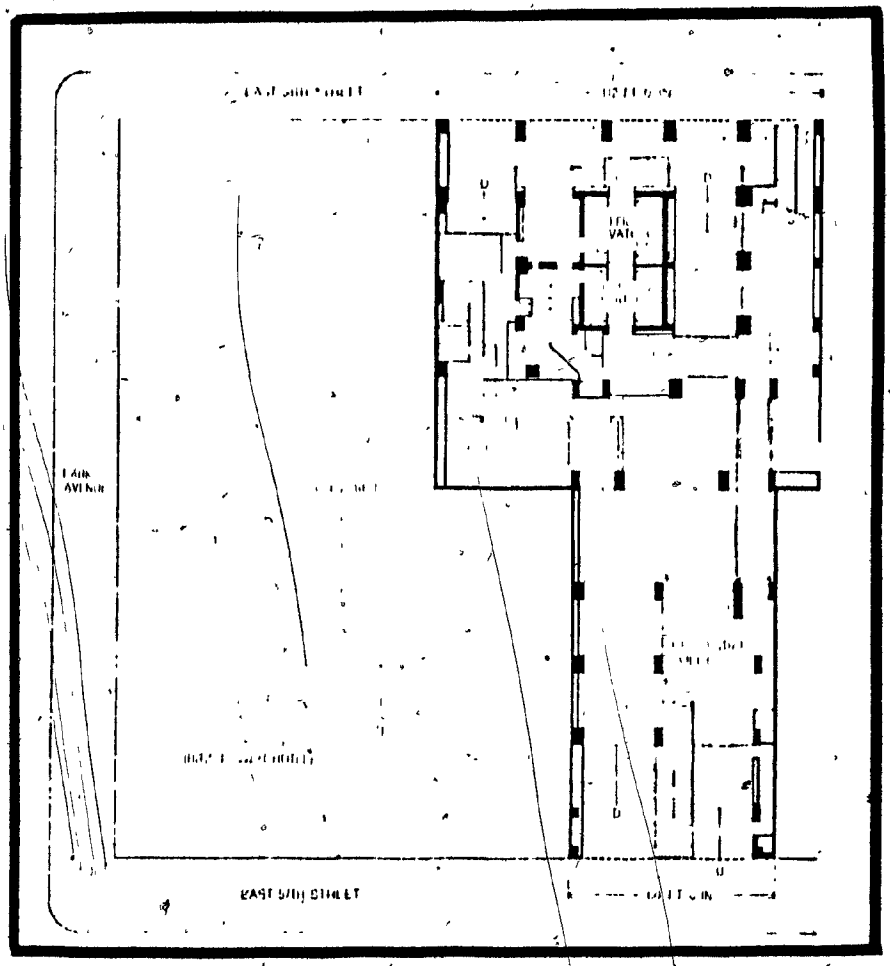

Figure 4-3: Floor plan - street level and apartment lobby.

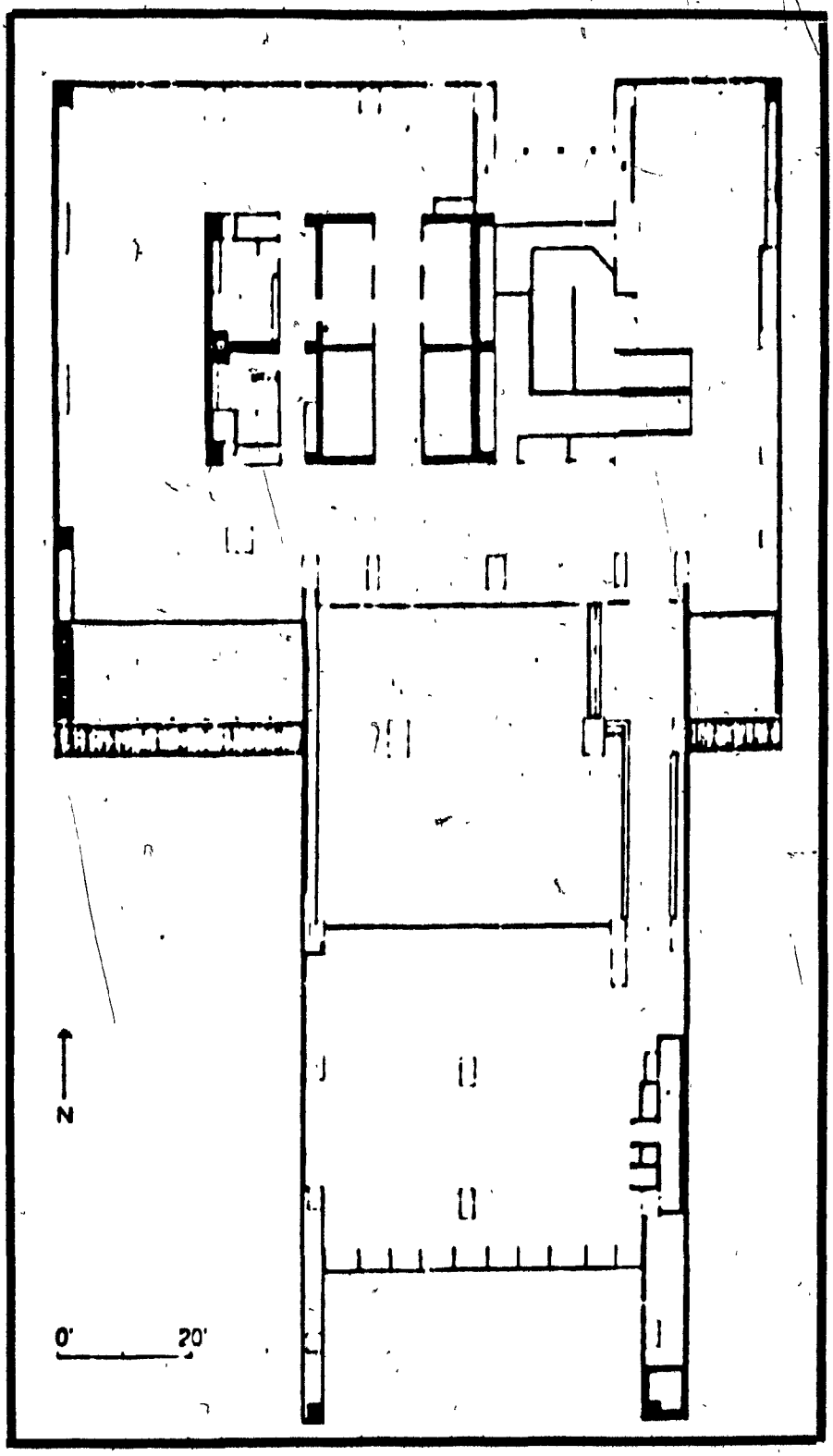

Figure 4-4 : Atrium office floor (4th floor)

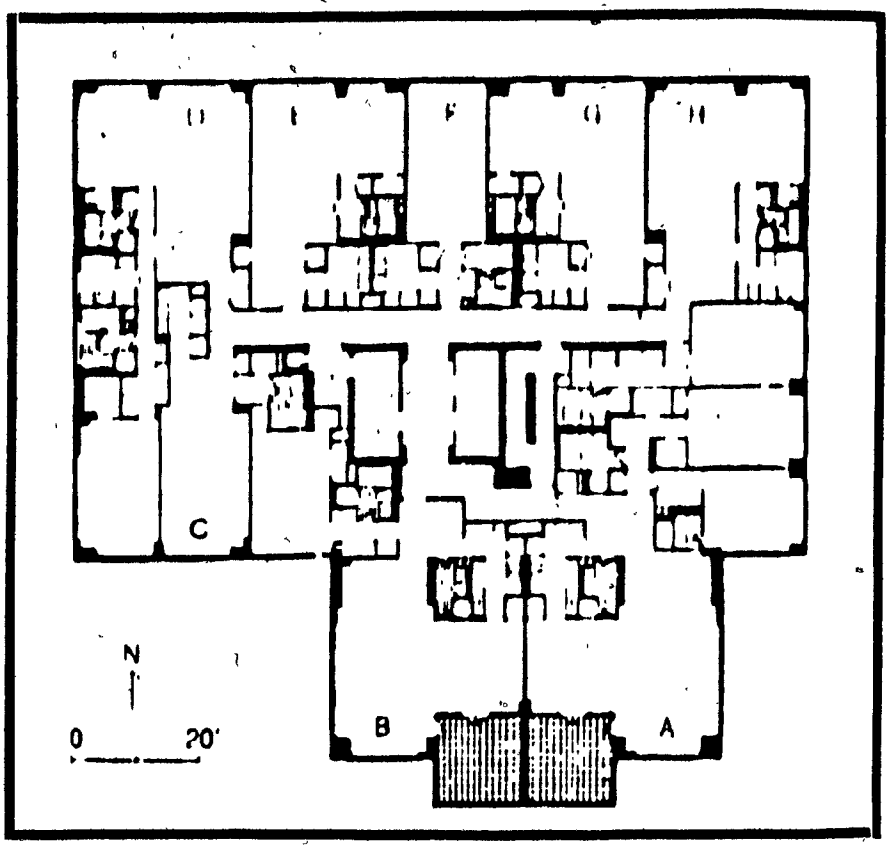

Figure 4-5 : Apartment floor plan (floors 19 - 47 alternate)

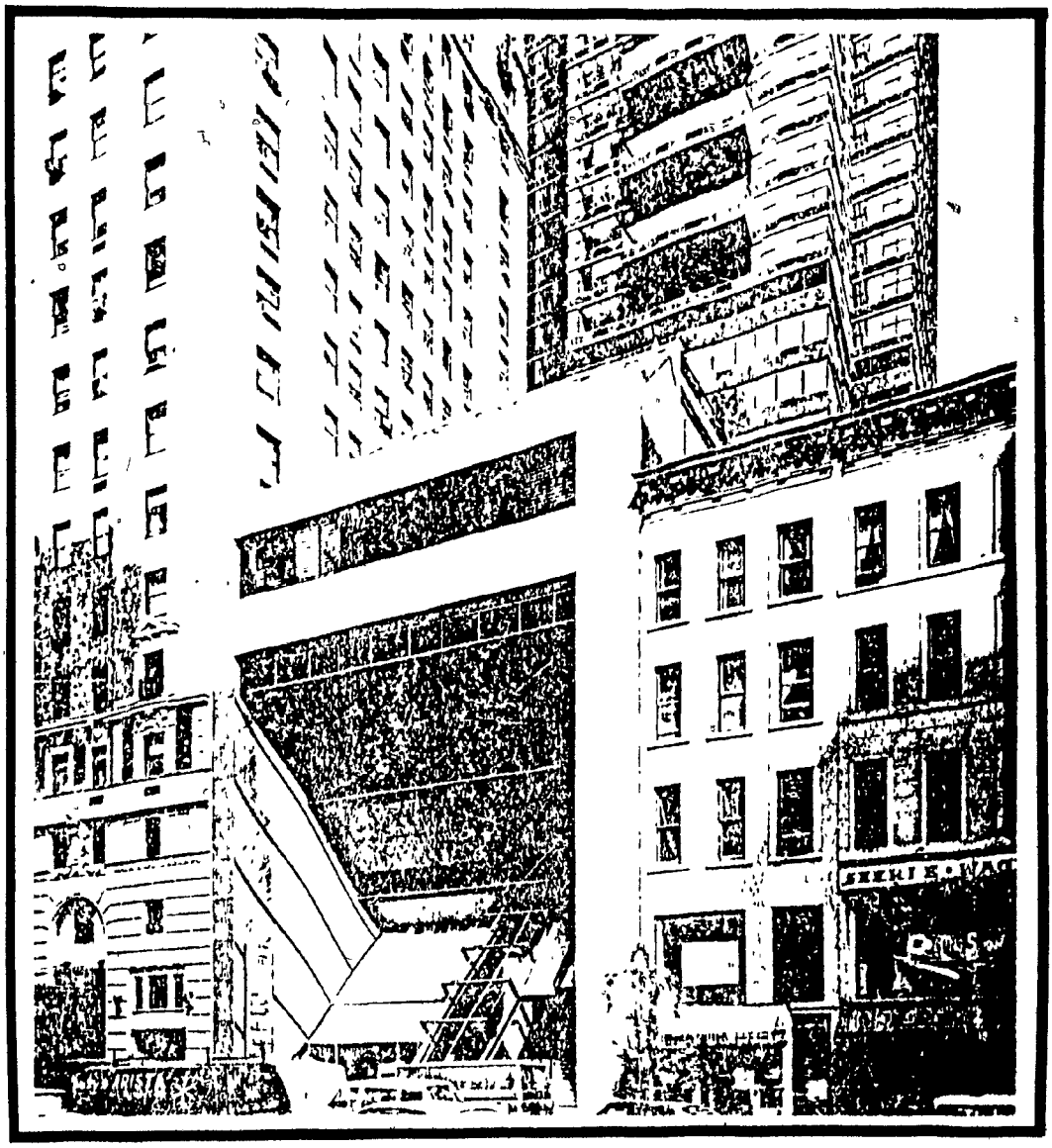

Figure 4-6 : The main entrance to the Galleria.

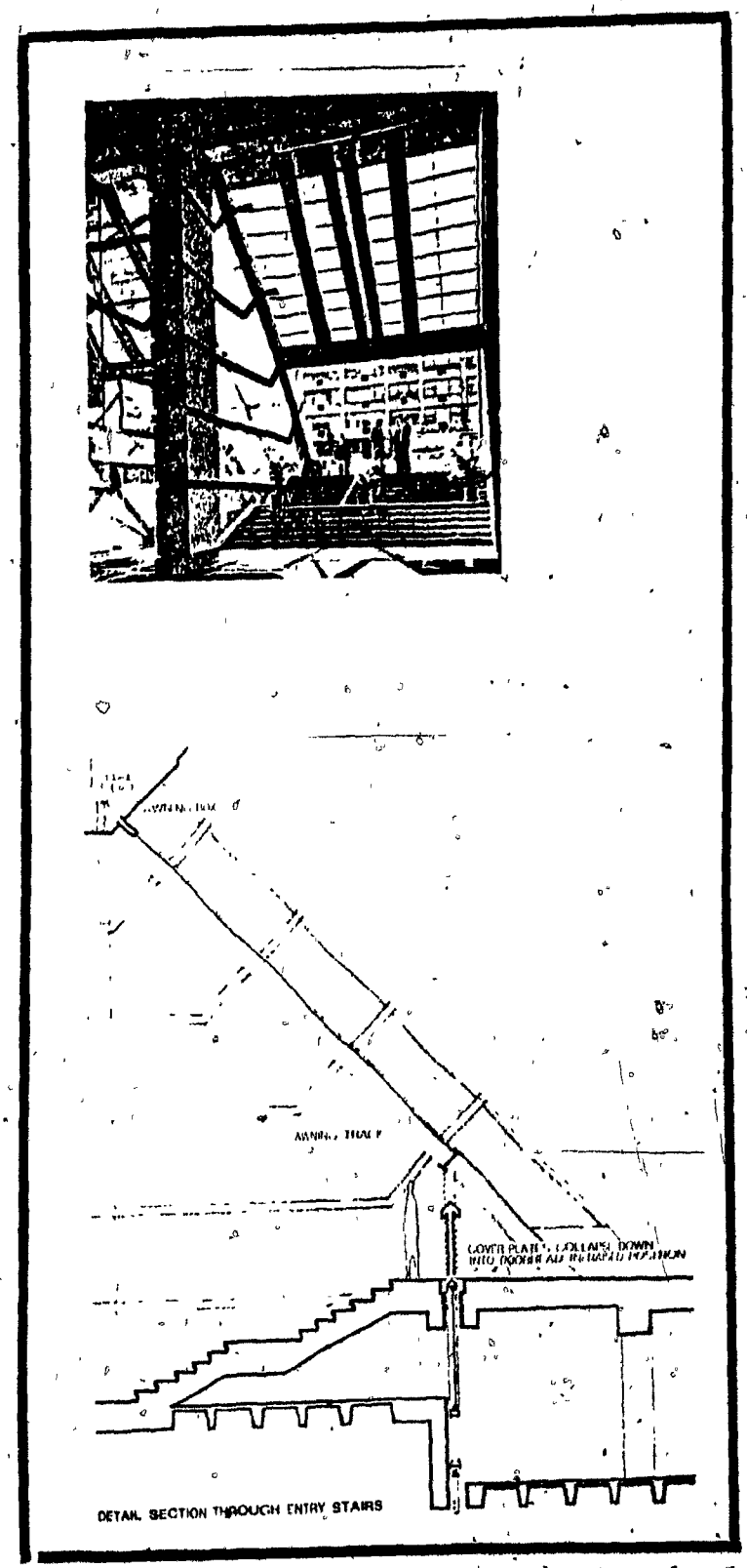

Figure 4-7 and 4-8 : A glass prism divides the main entrance into two sections. The steps to the right lead up the residential lobby, to the left, down to the public space.

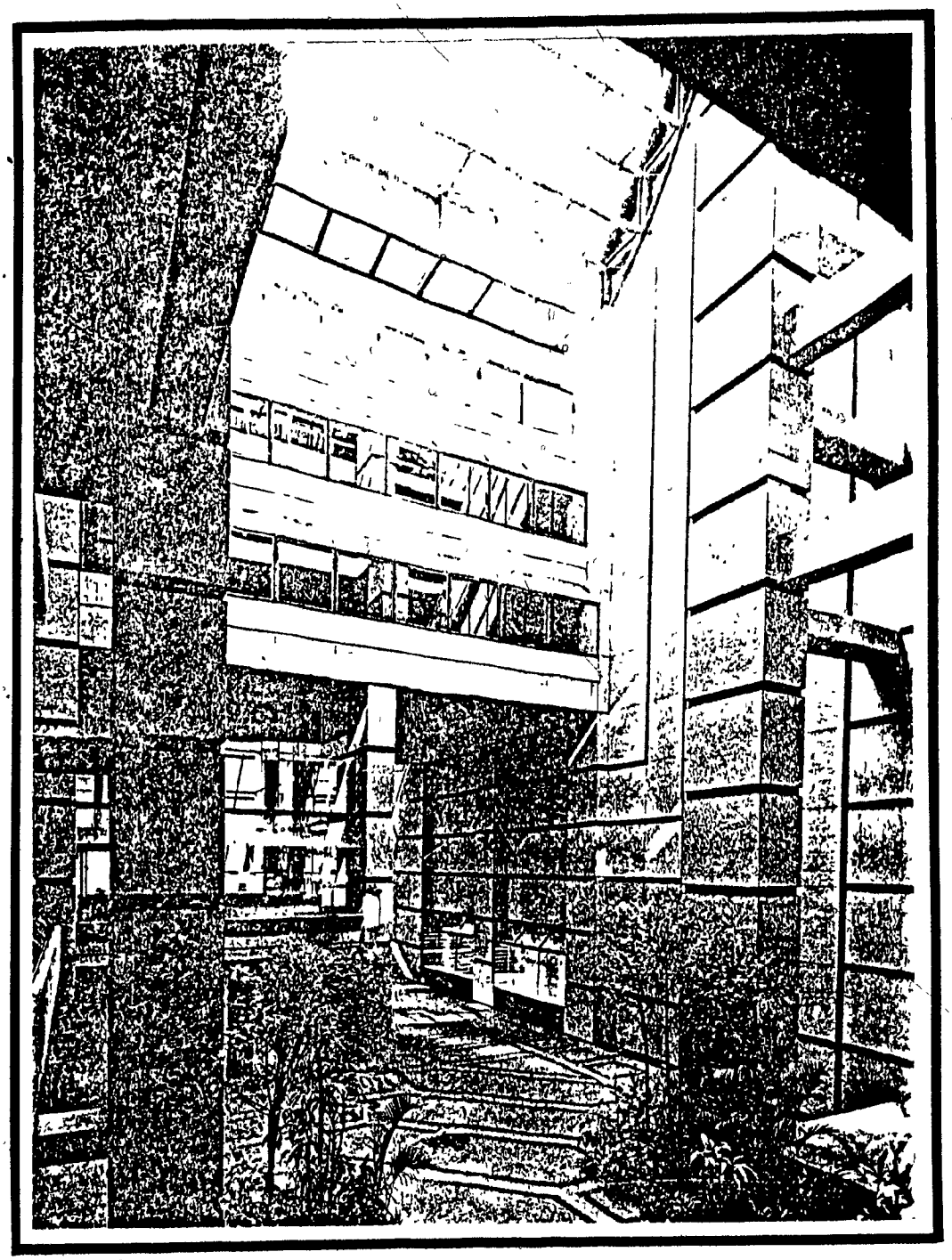

Figure 4-9 : The offices overlook on either side of the atrium, the Galleria.

CASE STUDY II

Name of Project: Olympic Tower

Location: At 51st Street and Fifth Avenue, Midtown, Manhattan, New York City.

Site: Approximately 25,600 sq.ft. lot, plus 14,800 sq.ft. land to which client owns development rights.

Planning Team: Architect: Skidmore, Owings & Merrill, New York, Whitson Overcash partner-in-charge.

Interior Designers: SOM

Structural Engineers: Office of James Ruderman

Zoning and code consultants: Max Siegel Associates

General Contractor: Tishman Realty & Construction.

Description: A 791,745 sq.ft. building including:

- a 8766 sq.ft. mall with retail space and restaurants on 3 floors.
- 480,000 sq.ft. of office space on 19 floors,
- 253 condominiums on 27 floors.

The Olympic Tower is the first mixed retail, residential and office building in the Fifth Avenue Special District. In contrast to the Galleria, there is no common space where all the three uses mix. The apartment lobby is separate from the office lobby which opens onto the covered pedestrian space - a retail/restaurant mall. The mall however is more accessible to the public than the Galleria. Here small shops which normally would not be able to afford the price of Fifth Avenue frontage, and a cafe are located. The mall is lined up closely to a recently completed

through-block arcade across the street to the north, thus providing a continuous pedestrian connection from Paley Park to St.Patrick's Cathedral.

Within the special district controls allowance Olmypic Tower is built up to the street line as other stores do along the east side of Fifth Avenue (a setback on the west side of the street is required after an 5-ft. height). Another bonus allowable in this district concerned lot coverage. For each 18 F.A.R. reserved for residential use, lot coverage can be increased by one percent. But the increase cannot go beyond 10 percent nor maximum coverage of 50 percent of the lot. (Under the 1961 Zoning Resolution towers could cover only 40 percent of the site; plazas took up the rest). In the case of Olympic Tower, the developer needed the extra tower coverage to apply on the commercial floors for enlarged rentable space. By adding the winglike slab, they increased the office tower coverage to 4 percent of the lot, or 20,000 sq.ft. per floor. The residential portion covers 37.3 percent of the lot, allowing 16,000 sq.ft. per floor.

Background to Planning: At a time when older stores were abandoning Fifth Avenue, and the towers and plazas generated by the 1961 Resolution were beginning to invade, the initial plan for Olympic Tower with a plaza designed by Morris Lapidus got adverse publicity. The Olympic Tower as built was planned within the Fifth Avenue Special District provisions. The typical SOM type black opaque-skin hardly gives a clue to the differentiation of the uses on

the building.

Quote from "Progressive Architecture" December 1975:

"..... The projects (Olympic Tower, the Galleria, Water Tower Place in Chicago) all share basic similarities of course, such as the combination of office space, retail and residential uses, albeit in different doses. But all three strike a closer chord in their choice of location and the market for which they are geared: prime locations; a frankly rich clientele. The reasons take little guesswork. In a shaky economic environment, developers want to be certain of some kind of guarantee of a profitable return...."

Comments: Quotes from "Progressive Architecture":

"..... Its sleek, impassive, opaque skin and taut rectangular form now are associated too closely with a corporate office building. Not only is one not aware of the varying kinds of acitivities going on in the building from the exterior package but there is scarcely a clue to their differentiation where offices stop and residential begins (except for mechanical space)."

"..... Still there is something a mite over assertive about the way the flat slab, 677 ft. high, hits that pavement at about 60 miles per hour. Since one is not immediately aware of the covered through-block connection that runs from 51st to 52nd Street, the Fifth Avenue approach seems barren of scale, character articulation, or any of those goodies that mark its landmark neighbors down the street."

"..... But the Galleria, Olympic Tower, and Water Tower Place do not begin to address the need for a typological model of a mixed-use structure: a single building that reflects and communicates the nature of its diverse urban activities. Without these two aspects of expression being considered, along with the necessary physical ties to the immediate surroundings, the building becomes only a sum of separate parts - not a living totality fully integrated with city life...."

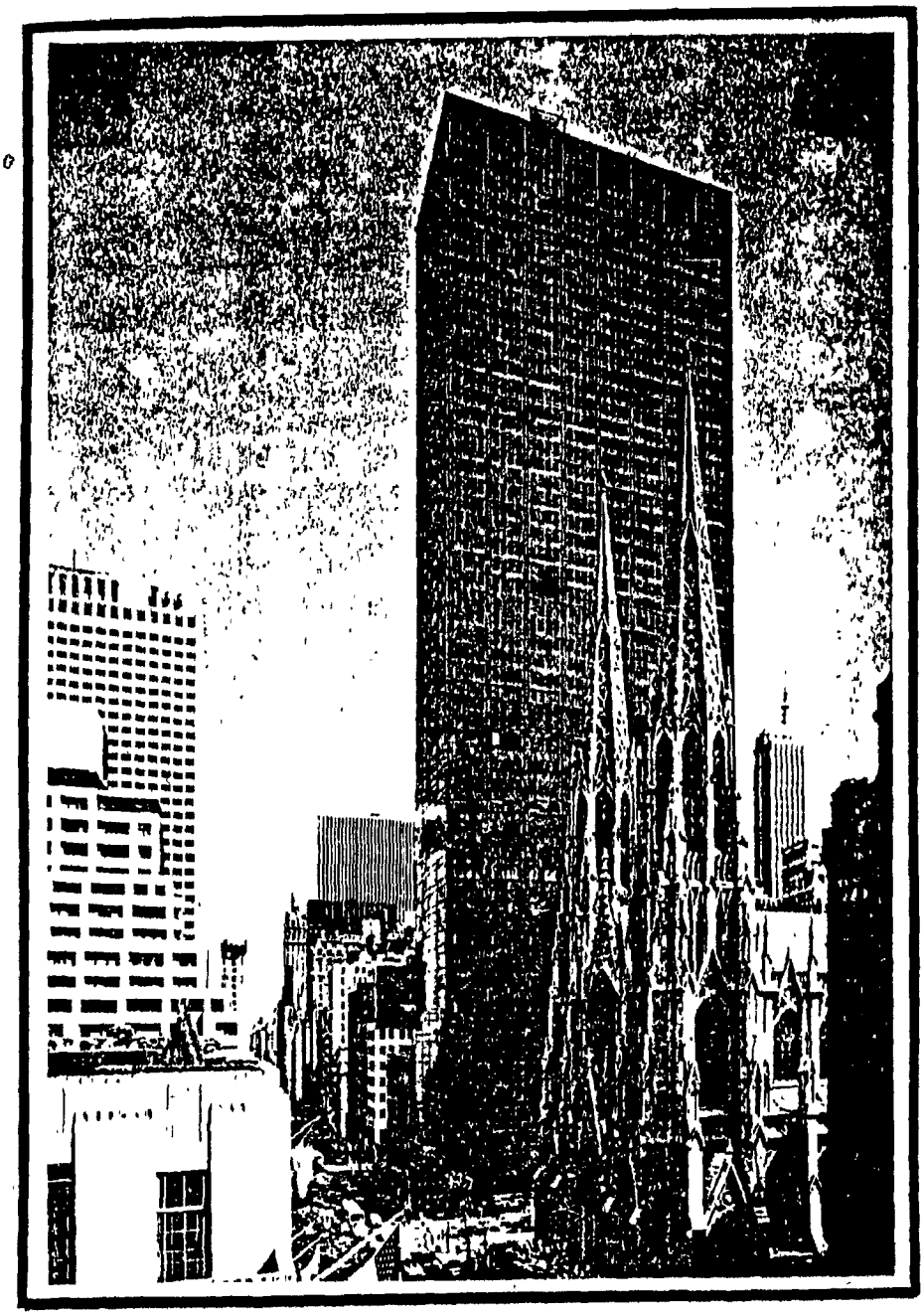

Figure 4-10 : The Olympic Tower, South elevation facing St.Patrick's Cathedral.

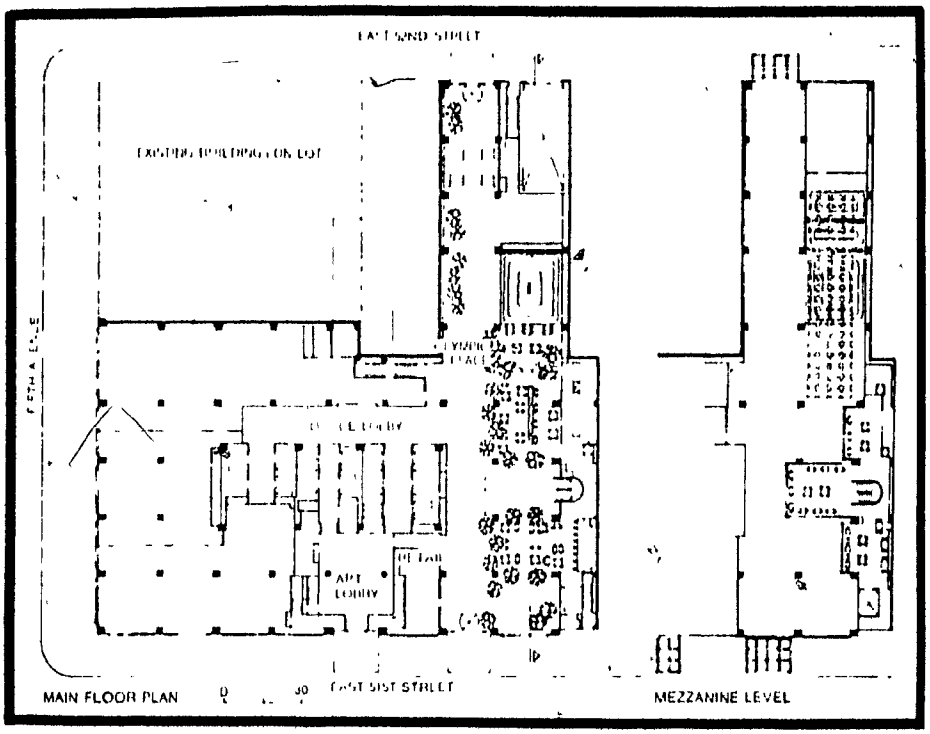

Figure 4-12 : Section through the two-level covered pedestrian space, featuring a water fall.

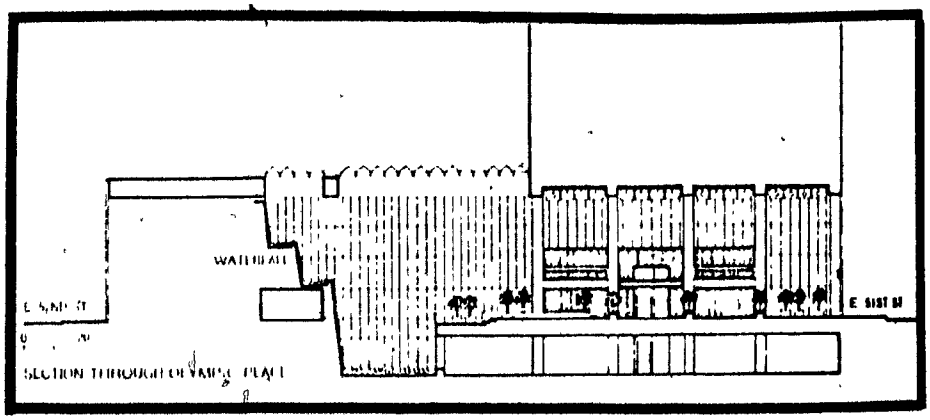

Figure 4-11 : Olympic Tower, first floor plan showing adjacent but separate office and apartment lobbies.

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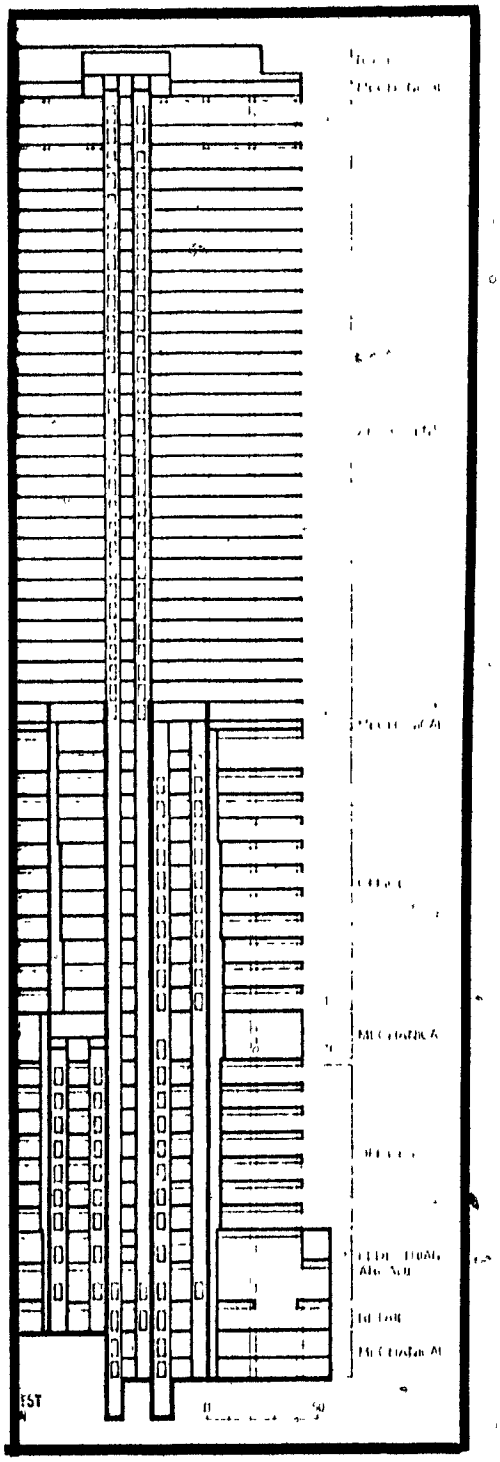

Figure 4-13 : Section through Olympic Tower.

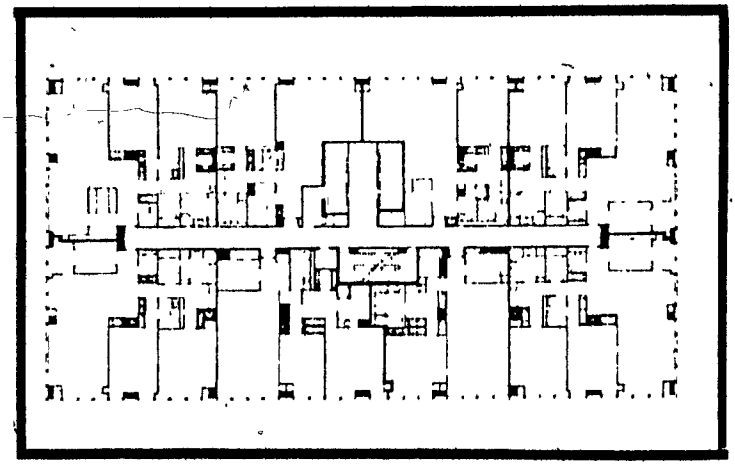

Figure 4-14 : Olympic Tower, typical apartment floor.

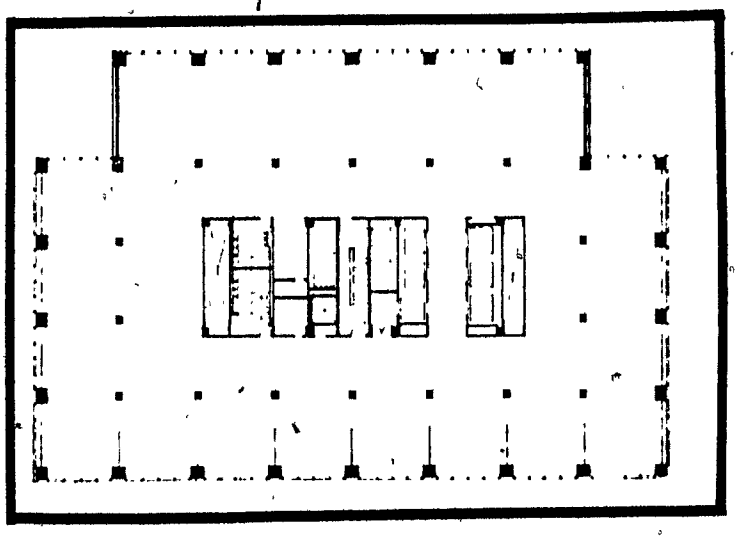

Figure 4-15 : Olympic Tower, typical office plan.

Figure 4-16 : Olympic Tower, view down street from Cartier's.

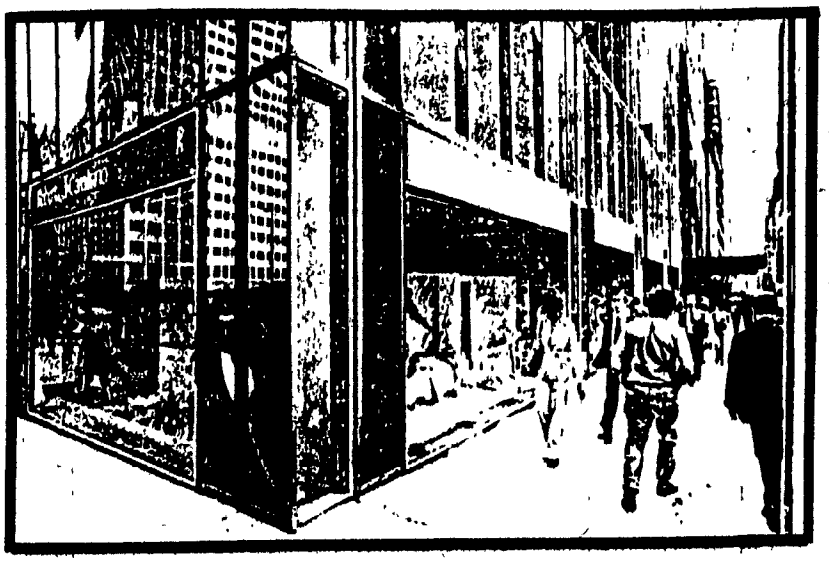

Figure 4-17 : Olympic Tower entrance lobby and mall is on 51st Street.

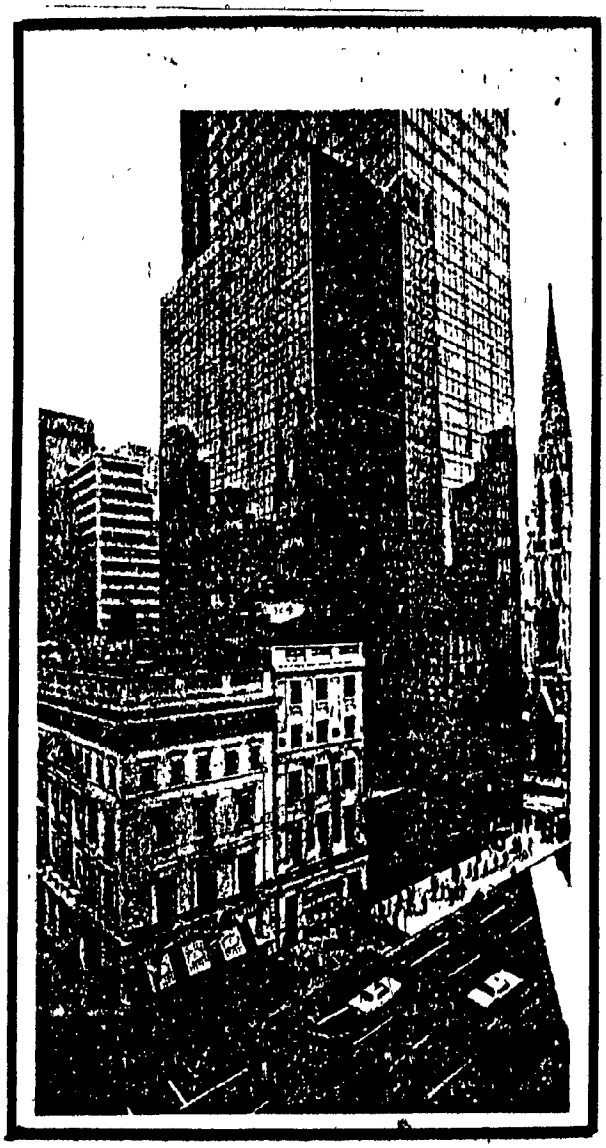

Figure 4-18 : Olympic Tower north elevation showing the wing added for extra office space beneath the 22nd floor.

CASE STUDY III

Name of Project: Pahlavi Foundation Building

Location: On Fifth Avenue at 52nd Street.

Architects: John Carl Warnecke & Associates.

Description: Built under the Fifth Avenue Special District zoning laws, the office tower is 36-storey high. The main entrance, leading into a three-storey high public mall lined with shops will be on the 52nd Street side. A 40-ft. setback on the seventh floor maintains the cornice line set by Rockefeller Center.

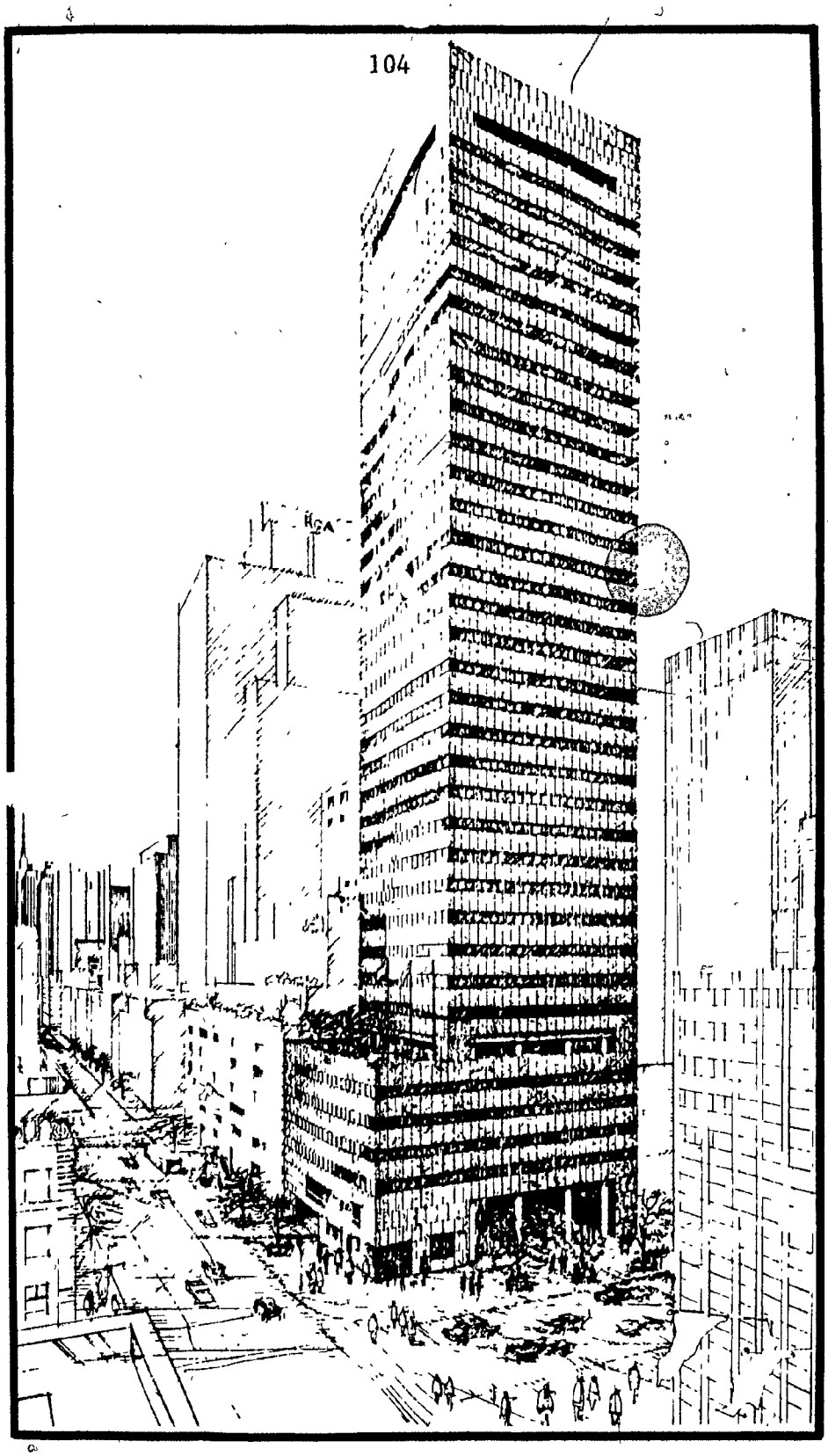

Figure 4-19 : Pahlavi building (650 Fifth Avenue)

CASE STUDY IV

Name of Project: Citicorp Center

Location: Between Lexington Avenue, 3rd Avenue and 54th Street, Midtown, Manhattan, New York City.

Planning Team: Architects: Hugh Stubbins and Associates, Inc.

Principal Architect: Hugh Stubbins

Associated Architects: Emery Roth and Sons

Landscape Architects: Sasaki Associates

Structural Consultants: Le Messorier Associates/SCI

Mechanical/Electrical: Joseph R. Loring & Associates

Construction Manager: HRH Construction

Description: -A 59-storey office tower

-A skylit galleria

-A church

-A sunken plaza with direct access to the subway system.

Citicorp Center is the result of the successful cooperation of the Mayor's Office of Midtown Planning, Architect Hugh Stubbins, the Citicorp management and the pastor of the church rebuilt on site. For the right to build at a floor area ratio of 18, a public space is provided. The galleria is surrounding with various retail shops, but mostly with restaurants and delicatessen stores. People can either bring their own food to the tables at the central skylit area or patronize the food shops adjacent to the court.

Some time ago, a church - Saint Peter's - was located at the corner of Lexington Avenue and 54th Street built in 1862. The old

church was sold to Citibank with the agreement that the Congregation could build a new structure on the same site. The new church is highly visible, and it is almost always alive with concerts, jazz festivals, and religious services.

Background to Planning: Quote from Hugh Stubbins' letter to the Vice President of Citibank: "The new, slick, slab buildings that march up the avenues of New York and other U.S. cities are symbolic expressions of the Machine. They are anonymous, cool and inhumane. We must use the resources of big business, reinforced by moral and social ideas, to develop a new generation of office buildings planned for the community and expressive of the humanity of the individuals who use them. By revitalizing urban development with an emphasis on people, we could produce a more enjoyable place in which to live and work. Such a building might even be a source or inspiration for other cities.

With the church as catalyst and the bank as supporter, we can design a new kind of place which all kinds of people will want to enter and become part of. While the church must have its own identity, I like to think how it could be enhanced and magnified if we combine it with a new kind of office building. I think furthermore that we should be able to see into the church from the outside, to see what is going on, be attracted and become part of it. There is a spirit stirring at Saint Peter's Church that could become a bright light in Manhattan."

Comment: Quote from the "Architectural Record" June 1978:

"The street environment of Citicorp Center is a triumph of urban design - the first project influenced and helped to fruition by the Mayor's Office of Midtown Planning that demonstrates convincingly what the Planning Commission's Urban Design Group has been trying to accomplish since its founding by former Mayor John V. Lindsay in 1967."

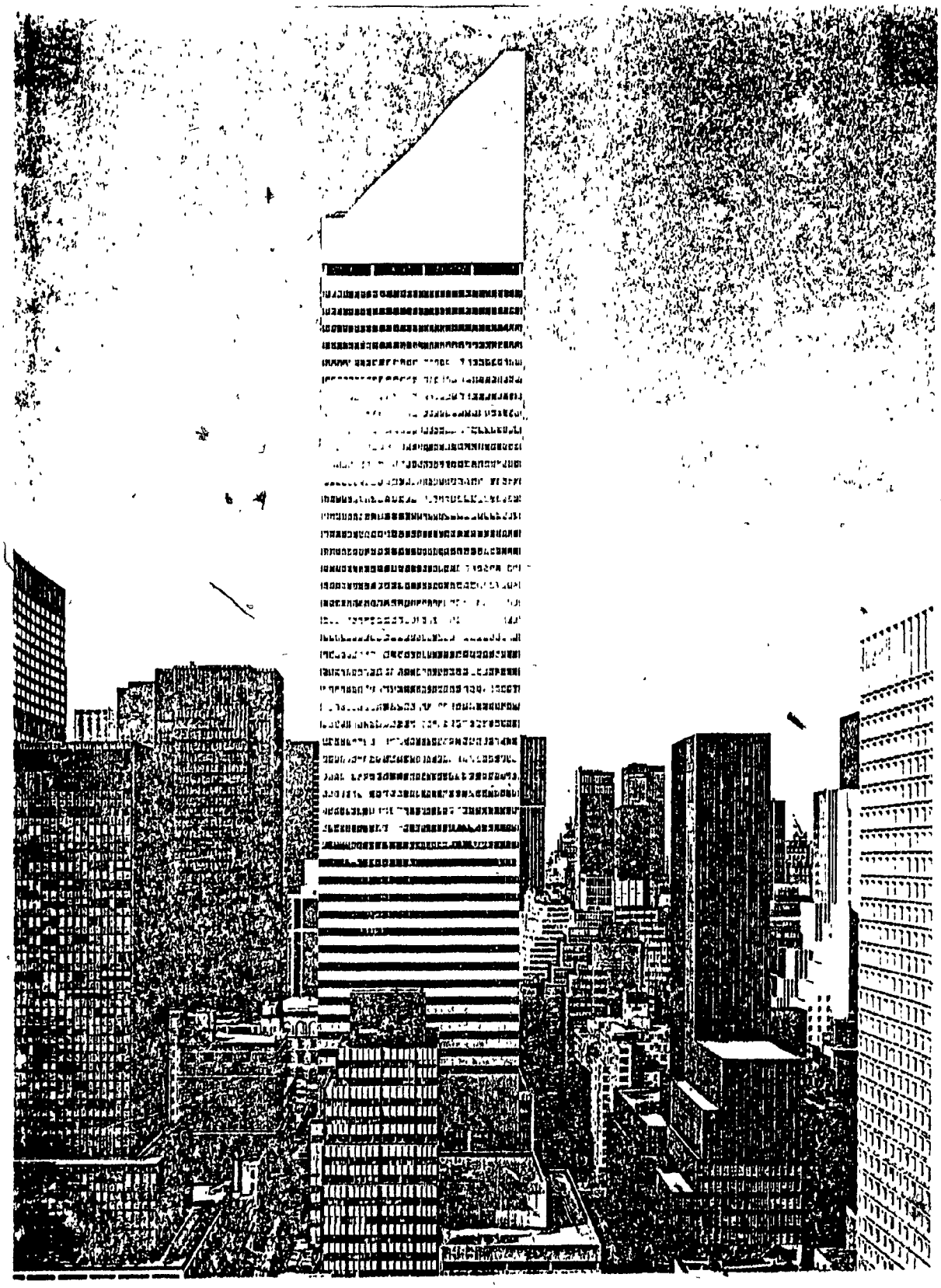

Figure 4-20 : Citicorp Center

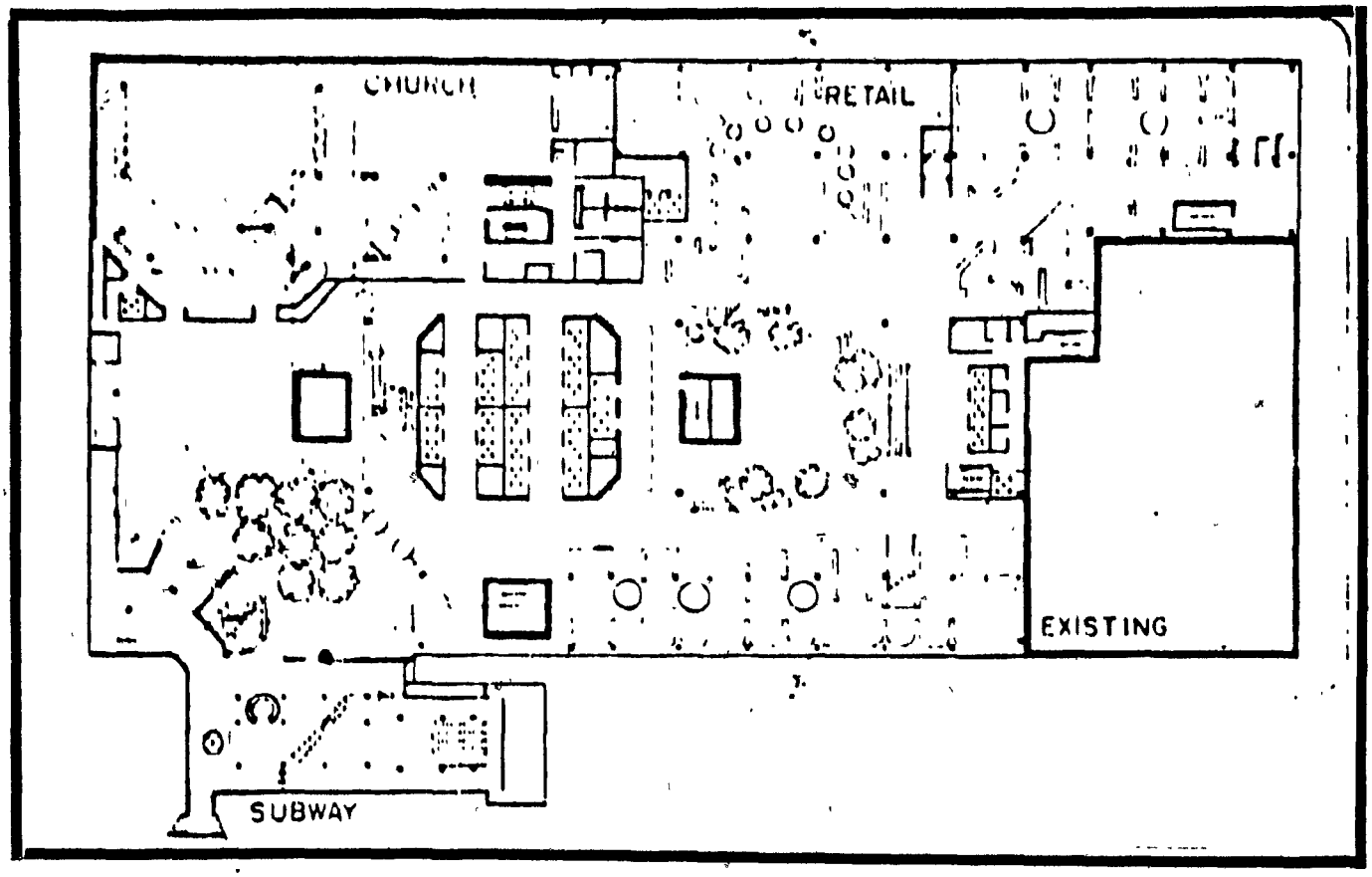

Figure 4-21 : Citicorp Center, concourse level.

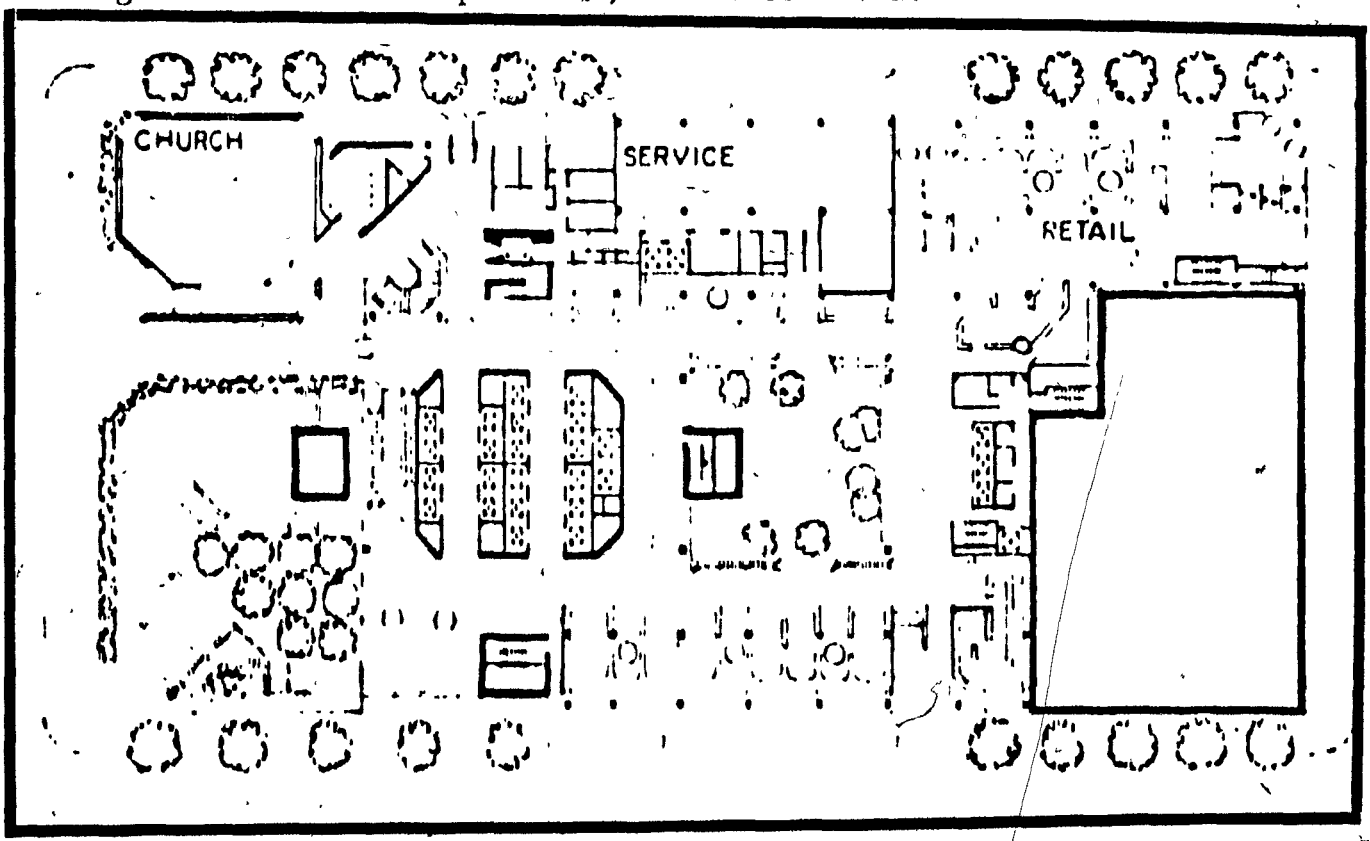

Figure 4-22 : Citicorp Center, street level.

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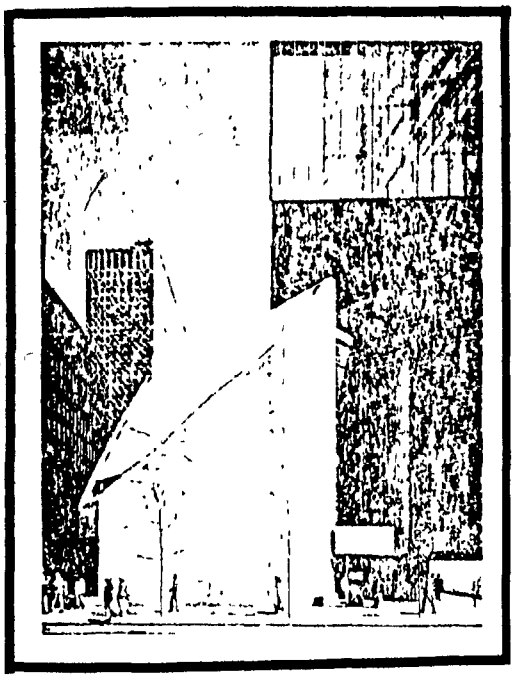
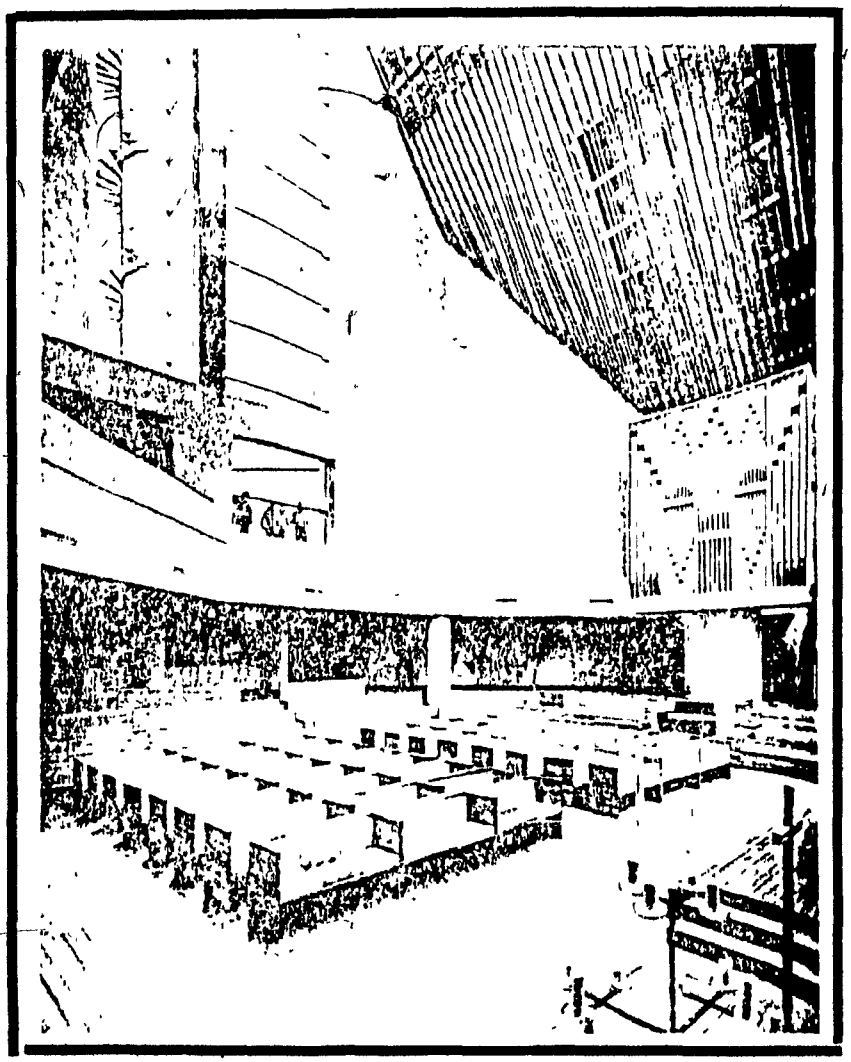


Figure 4-23 and 4-24:
Citicorp Center, Saint Peter's Church at the corner of Lexington Avenue and 54th Street. The lantern of the church is at the upper plaza level, the sanctuary floor is at the level of the lower plaza.



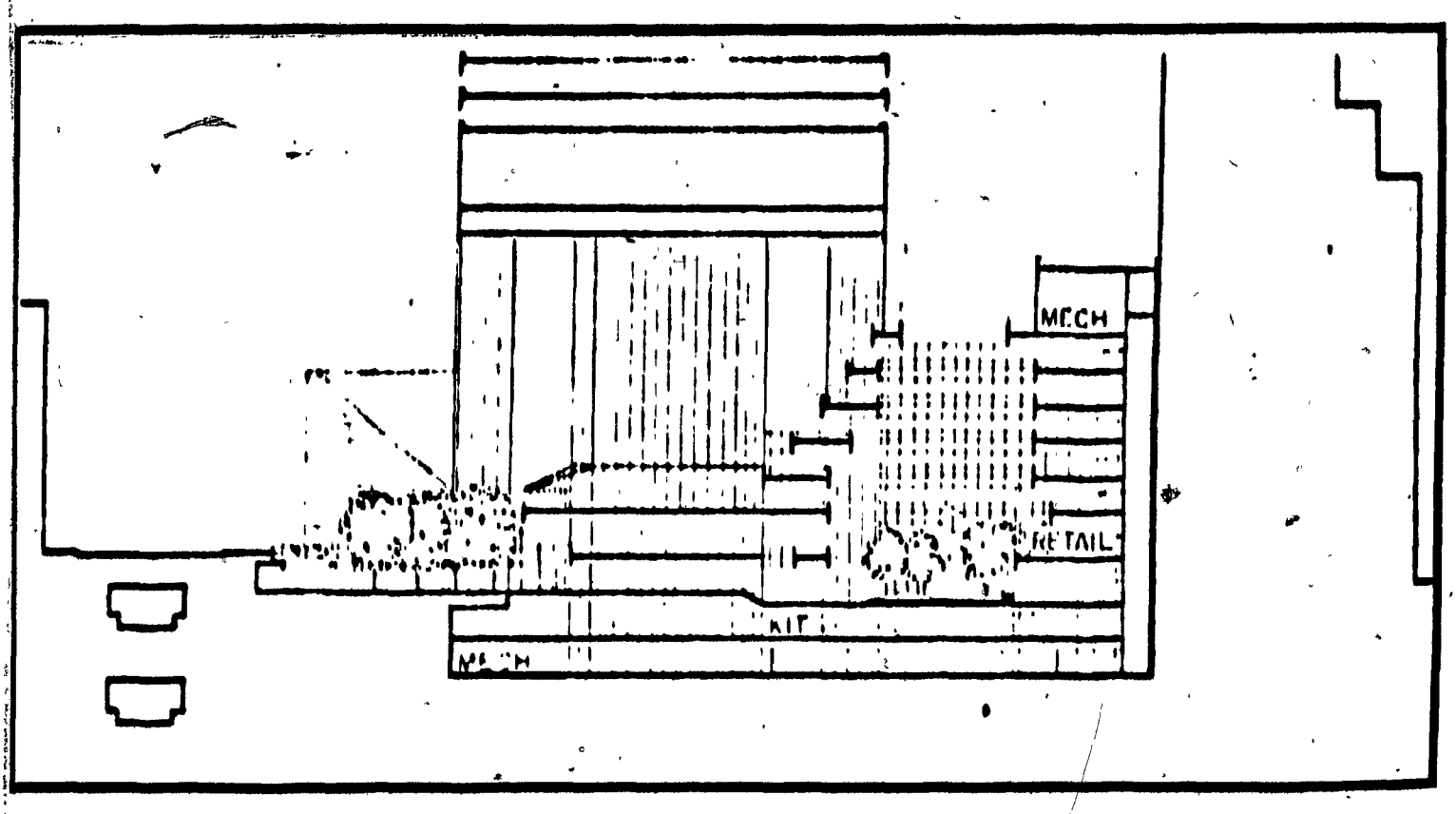


Figure 4-25 : Citicorp Center atrium and retail floors, running from Lexington to Third Avenue.

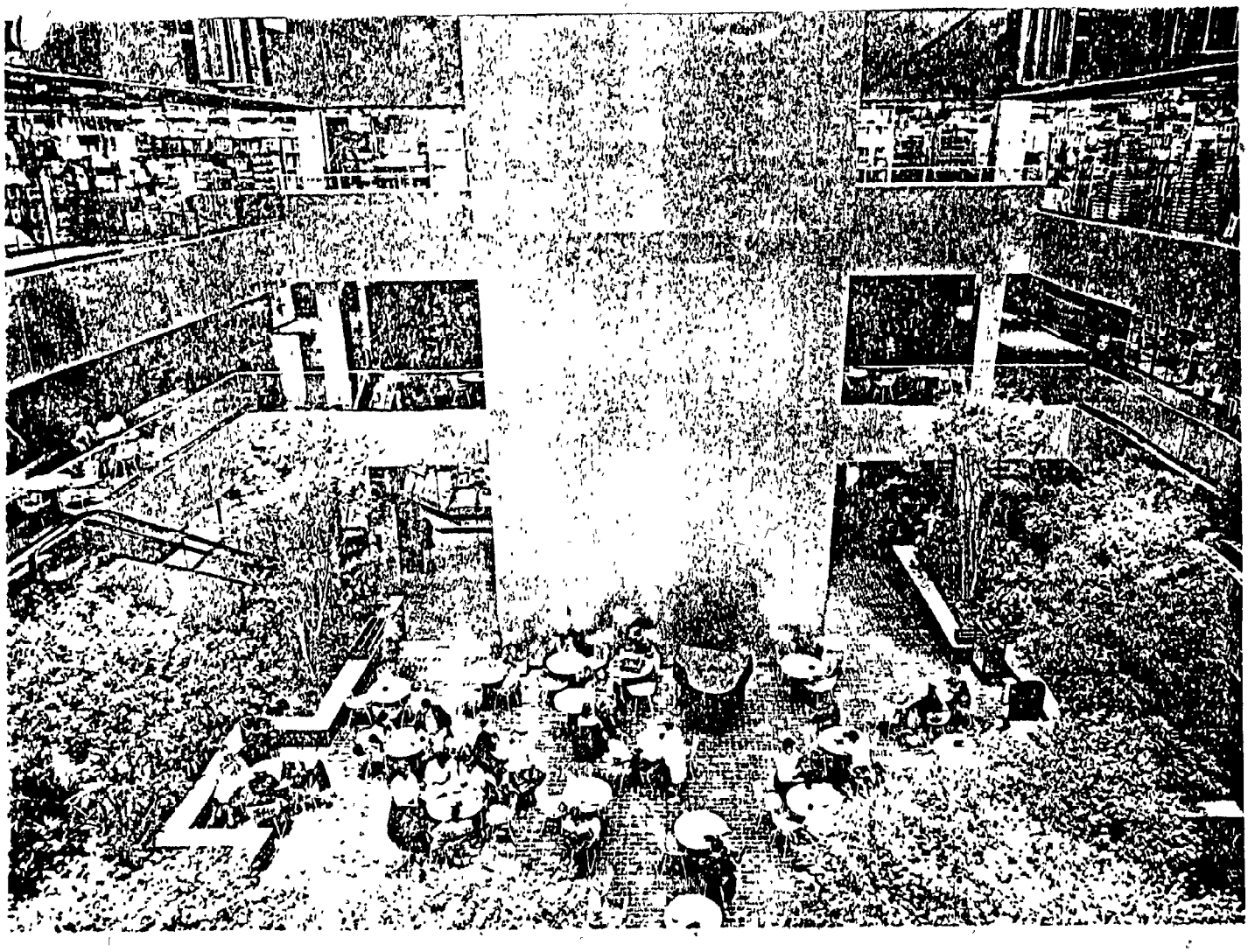


Figure 4-26 : Citicorp Center atrium

CASE STUDY V

Name of Project: Rockefeller Center

Location: The original Rockefeller Center which was completed by 1939, included 14 buildings and covered 12 acres of land surrounded by Fifth Avenue, West 51 Street, Sixth Avenue and West 48th Street. With the addition of new buildings in the 60's and 70's the center extended to the west side of the Sixth Avenue, covering approximately 22 acres.

Planning Team: The Architects of the original Rockefeller Center (1931-40):

Reinhard & Hofmeister;

Corbett, Harrison and MacMurray;

Hood and Fouilhoux

The Architects of Warner Communications Building (1947):

Carsor & Lundin

The Architects of Simon & Schuster Building (1954), Time & Life Building (1959), Exxon, McGraw Hill (1972), Celanese (1973) buildings:

Harrison & Abramovitz & Harris.

Description: The Rockefeller Center consists of:

- 10 office buildings ranging from 6-storey (International Building North) to 70-storey (RCA Building) with 15,000,000 sq. ft. total rentable area.
- 35 restaurants
- The Concourse: A two-mile underground walkaway lined with 200 shops it interconnects the offices, the subway, the shops and restaurants and Radio City Music Hall.

- Rockefeller Plaza: A private street running north and south, bisecting the development from 48th to 51st Streets between Fifth Avenue and the Avenue of the Americas.
- Radio City Music Hall: An entertainment center featuring a variety of attractions. It has a seating capacity of 6,000 , the stage measures 144 feet wide and 67 feet deep. The interior of the theater is recently declared as a New York City landmark.
- The New York Experience Theater: Located in the McGraw-Hill Building, a multi-sensory theater with 45 projectors, 16 screens tells the story of New York City.
- Sunken Plaza: It covers an area approximately 60 feet x 130 feet. During the summer season it serves as an outdoor restaurant, from October until May it is transformed into the Rockefeller Center Ice Skating Pond. Also,many band concerts are held. It acts as a magnet attracting people while it also serves as an effective traffic sorter for the offices and lobbies, shops and restaurants which surround its periphery. Flags of all nations are flown on the esplanade surrounding the plaza.

Background to Planning: The original Rockefeller Center erected between 1931 to 1940 is a significant breakthrough in urban planning in a number of ways:

- The multi-use sunken plaza.
- The horizontal integration of the office towers by an underground Concourse lined with shops.
- The skillful planning of the skyscrapers in relation to each other.
- The extensive landscaping at both street and roof-top

levels.

- The off-street delivery system. An intricate underground freight delivery system, with some 10 trucking ramps and loading docks.

An important ingredient of MXD, namely residential use, is missing in Rockefeller Center. Nevertheless the recently passed special zoning districts, many large-scale MXD developments found their inspiration in the above-mentioned pioneering concepts. The variety of uses on the ground level, their successful integration, the Radio City Music Hall will justify the inclusion of Rockefeller Center as a MXD development in this study.

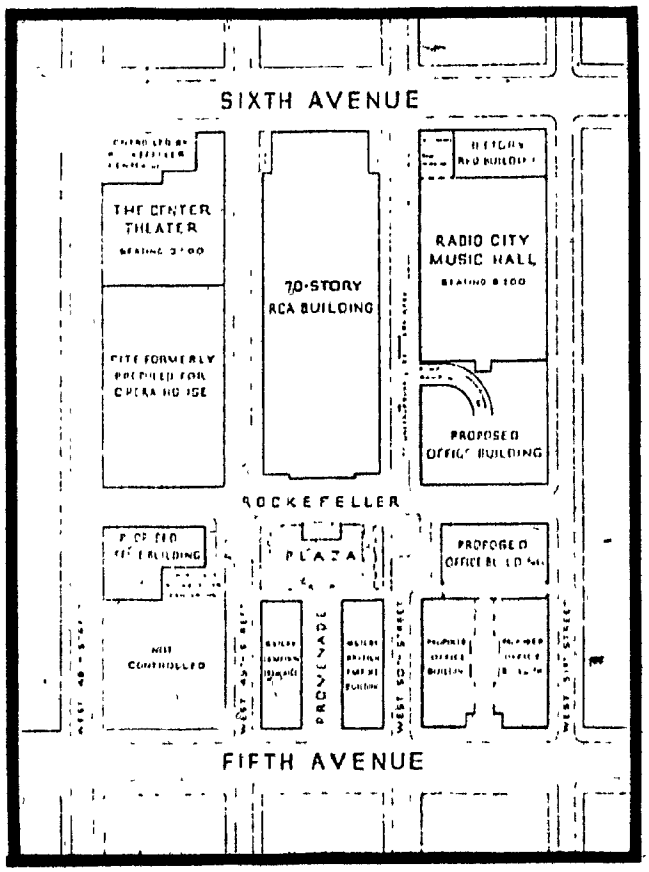


Figure 4-27 : Original Rockefeller Center, 1940

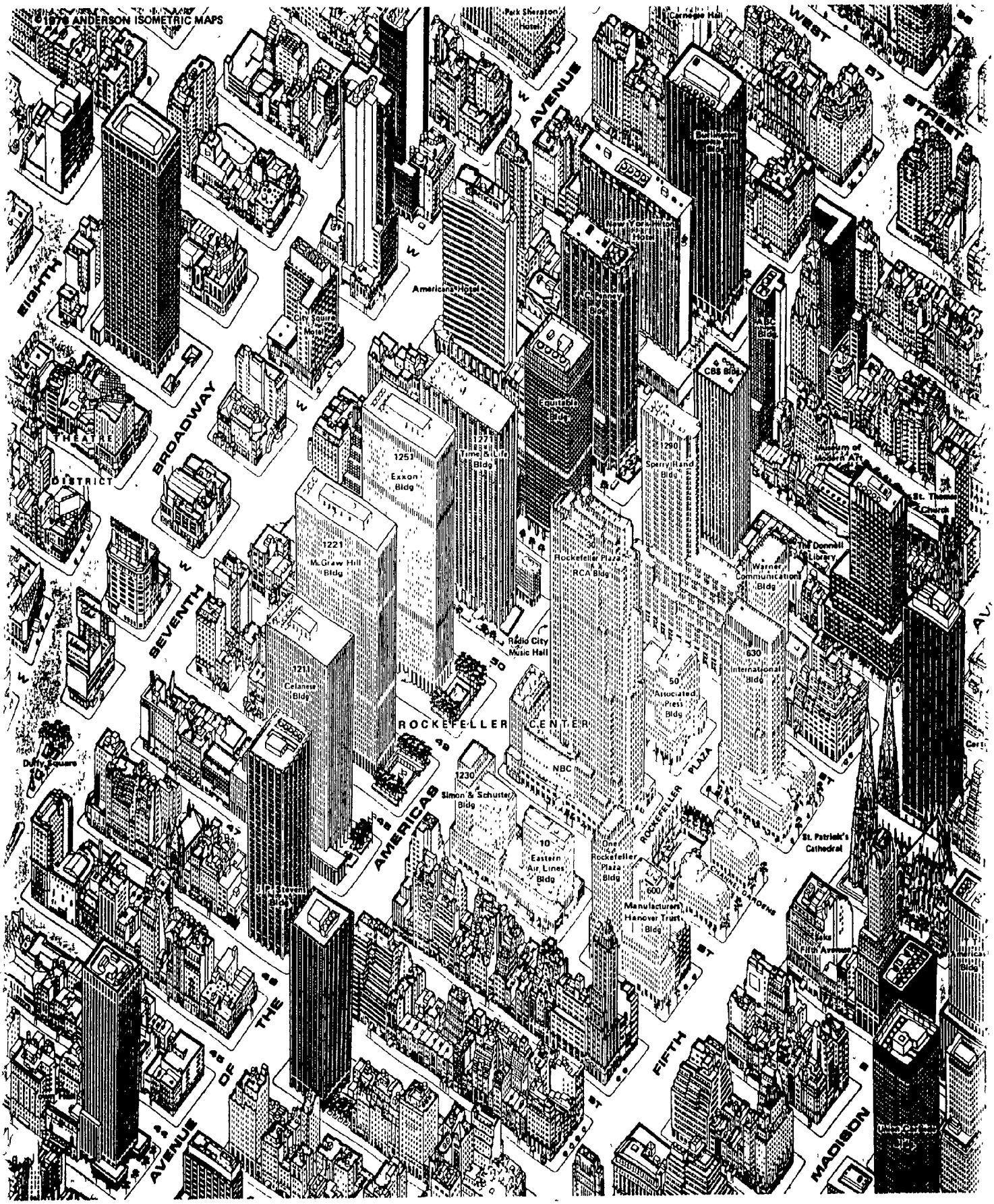


Figure 4-28 : Rockefeller Center, 1979

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1 Celanese Building, 1211 Avenue of the Americas
2 McGraw Hill Building, 1221 Avenue of the Americas
3 Observation Roof atop Rockefeller Center
4 National Weather Service Radar Antenna
5 Exxon Building, 1251 Avenue of the Americas
6 Time & Life Building, 1271 Avenue of the Americas
7 Simon & Schuster Building, 1230 Avenue of the Americas
8 "The New York Experience Theater" McGraw Hill Building, 1221 Avenue of the Americas
9 RCA Building 30 Rockefeller Plaza
10 RCA Building West 1250 Avenue of the Americas
11 AMAX Building 1270 Avenue of the Americas
12 Radio City Music Hall, 1260 Avenue of the Americas
13 One Rockefeller Plaza
14 Ten Rockefeller Plaza
15 Rockefeller Center Parking Garage
16 NBC Studios, RCA Building
17 Guild Theatre, 33 West 50th Street
18 International Building, 630 Fifth Avenue
19 The Associated Press Building, 50 Rockefeller Plaza
20 Warner Communications Building, 75 Rockefeller Plaza– 15 West 51st Street
21 Manufacturers Hanover Trust Company Building, 600 Fifth Avenue
22 Rockefeller Center Guided Tour Lounge, RCA Building
23 Lower Plaza and Prometheus Fountain
24 La Maison Française, 610 Fifth Avenue
25 Promenade
26 British Building, 620 Fifth Avenue
27 Palazzo d Italia, 626 Fifth Avenue
28 International Building North 636 Fifth Avenue

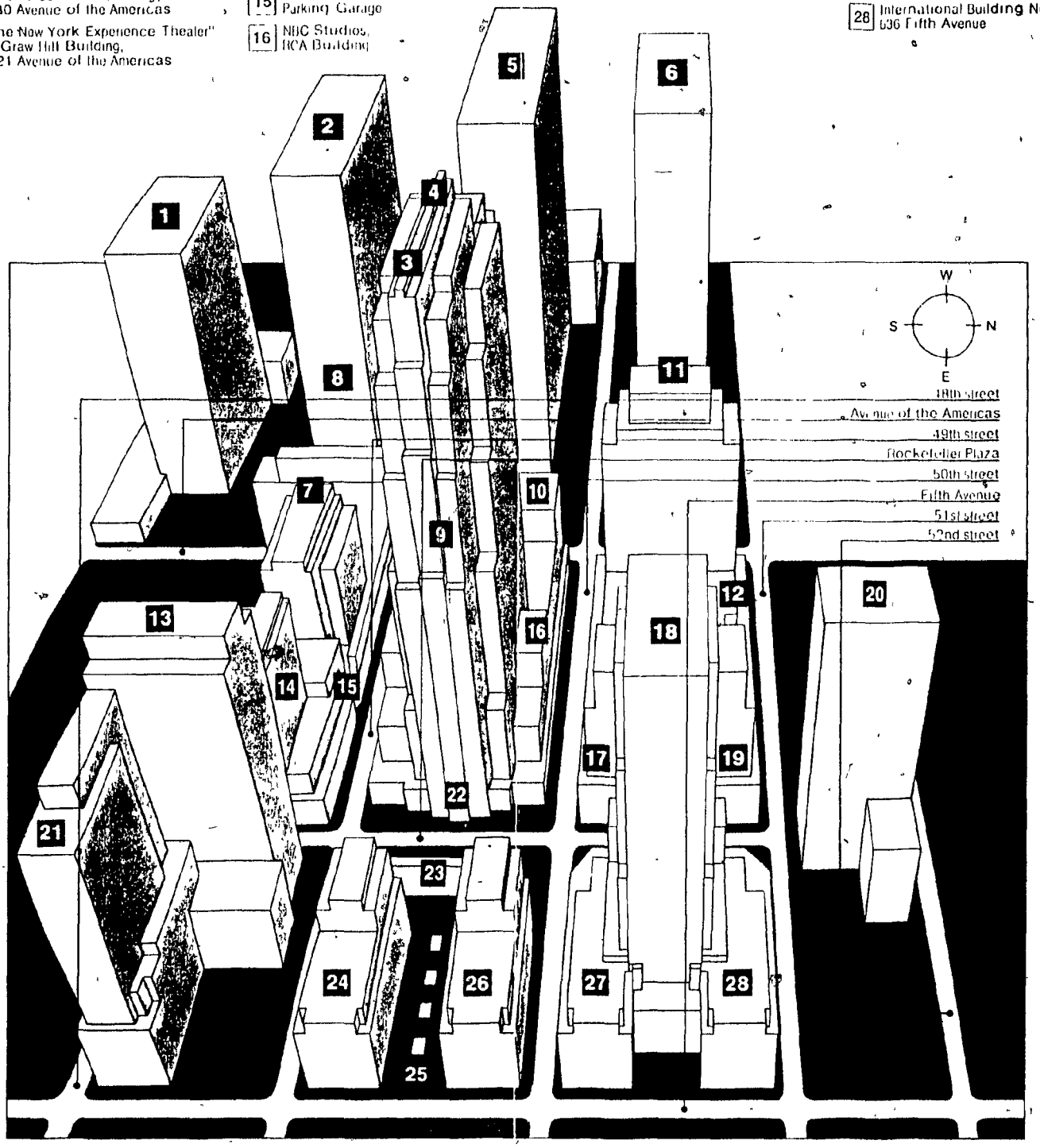

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Figure 4-29 : Rockefeller Center, buildings.

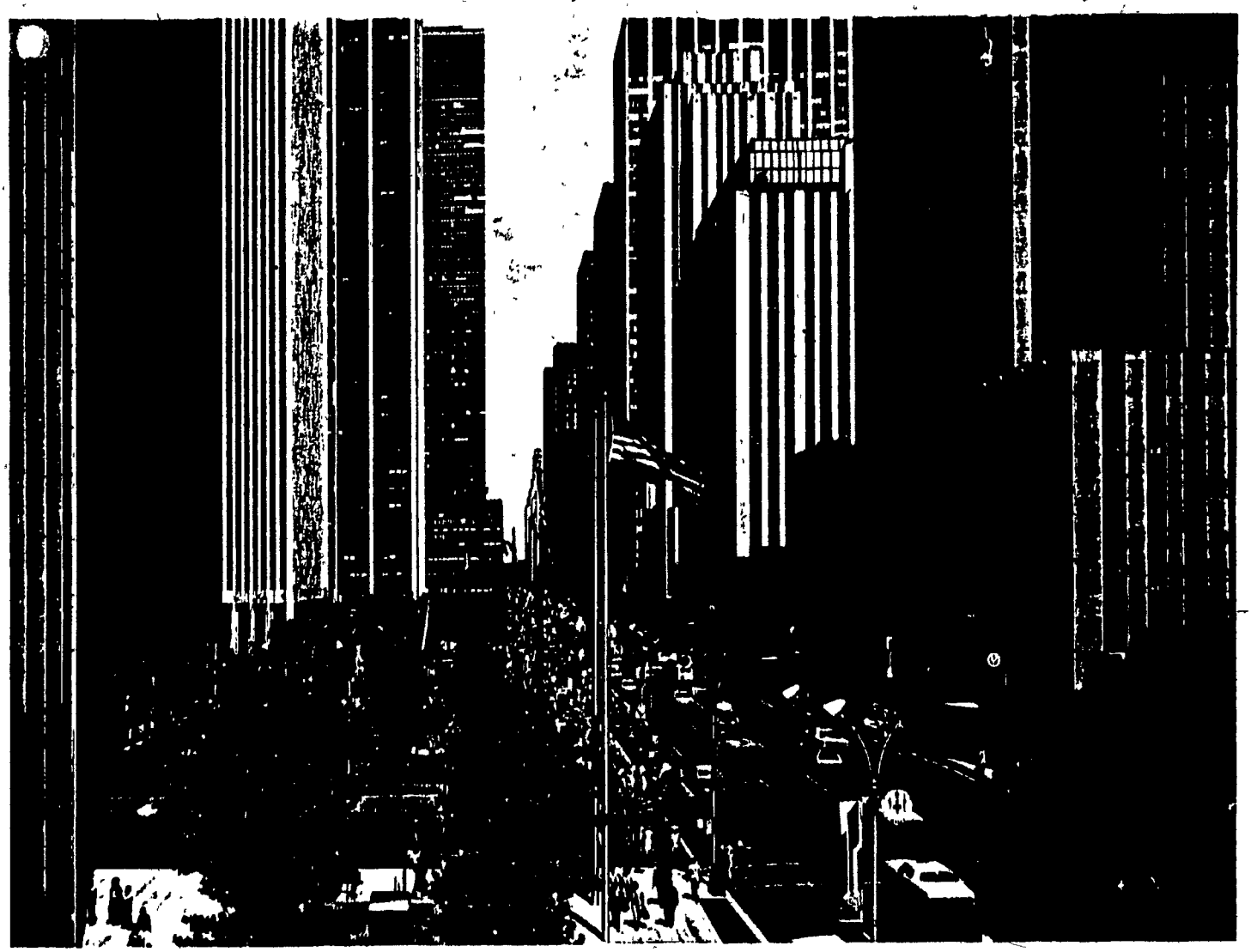

Figure 4-30 : Rockefeller Center at Avenue of the Americas

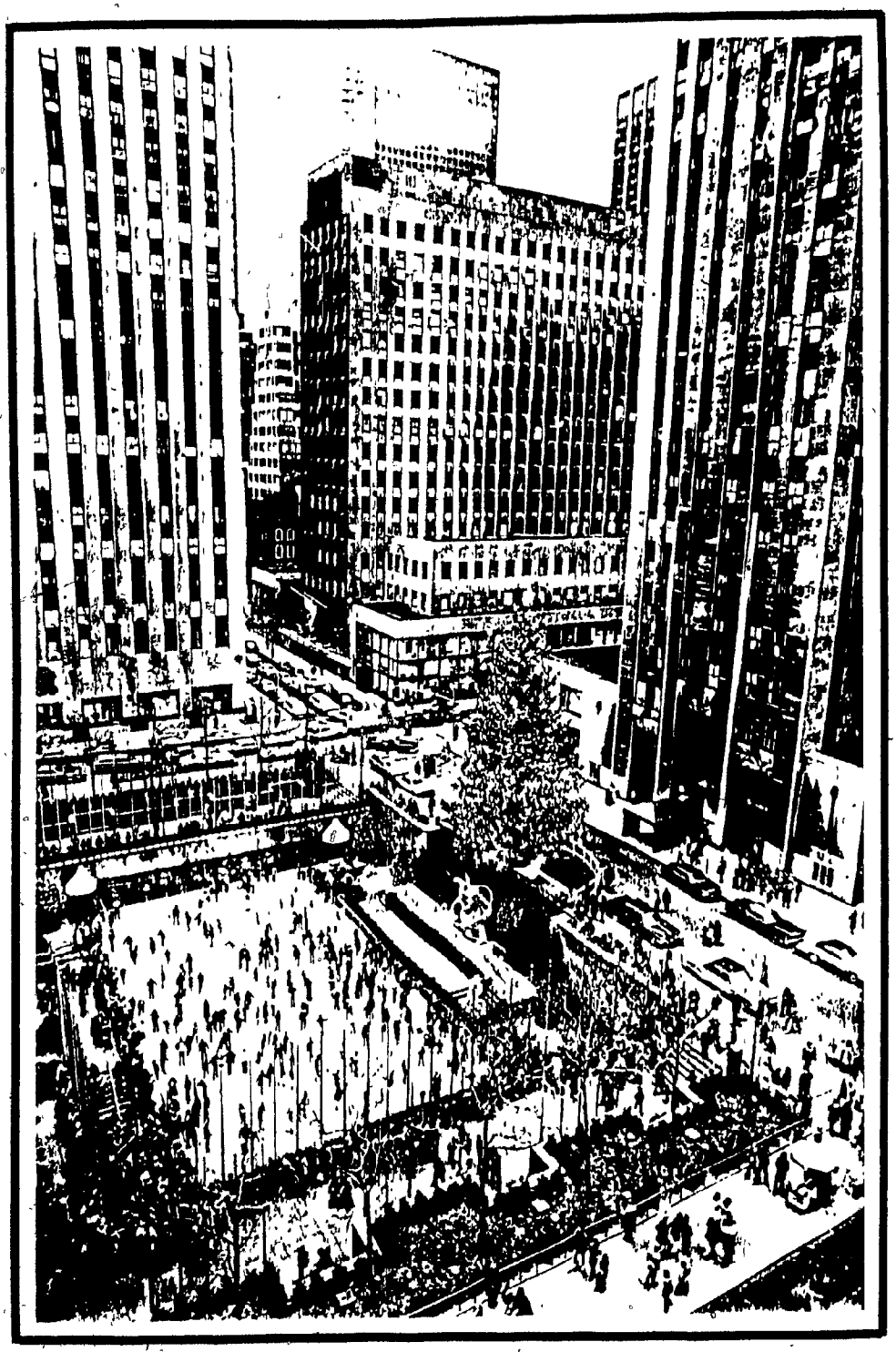

Figure 4-31 : Rockefeller Center Ice Skating pond and the plaza.

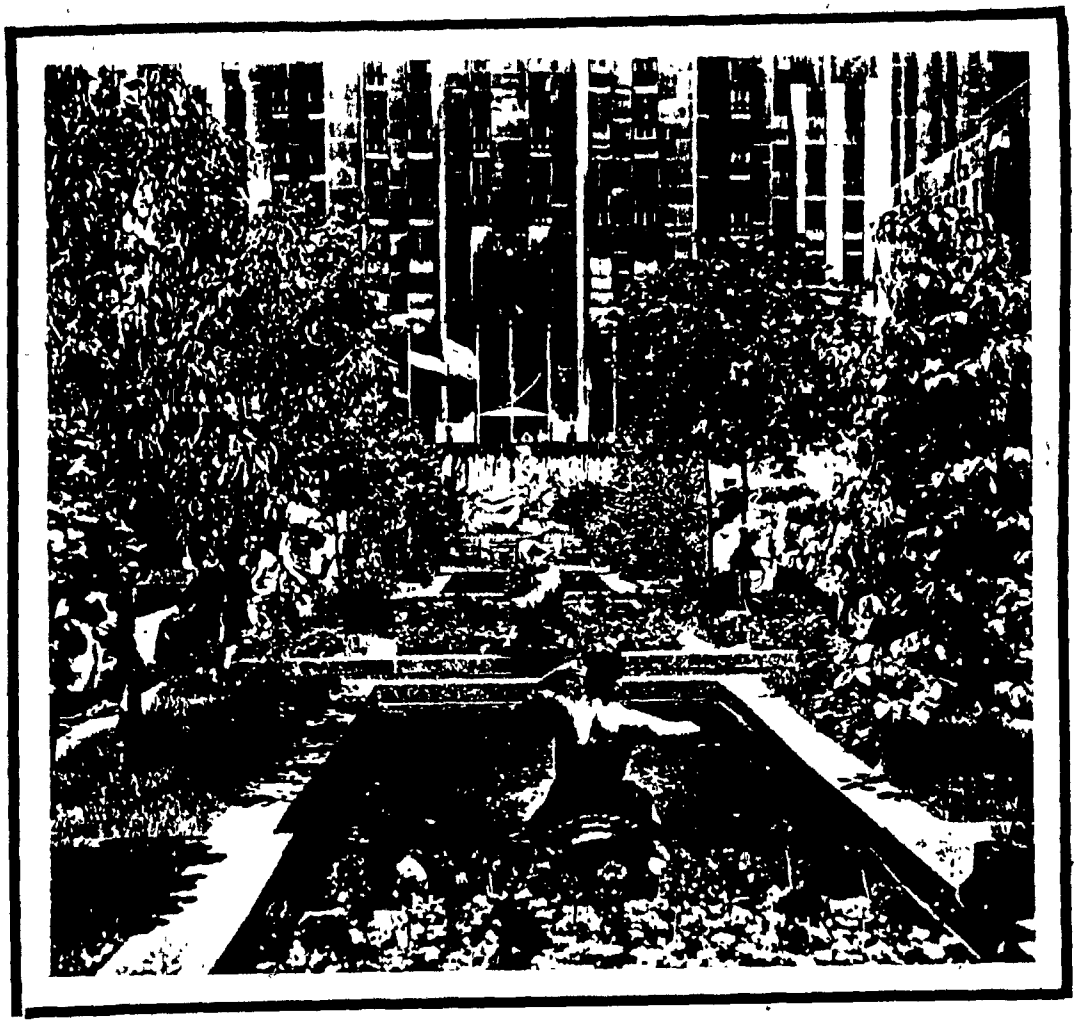

Figure 4-32 : The Rockefeller Center promenade.

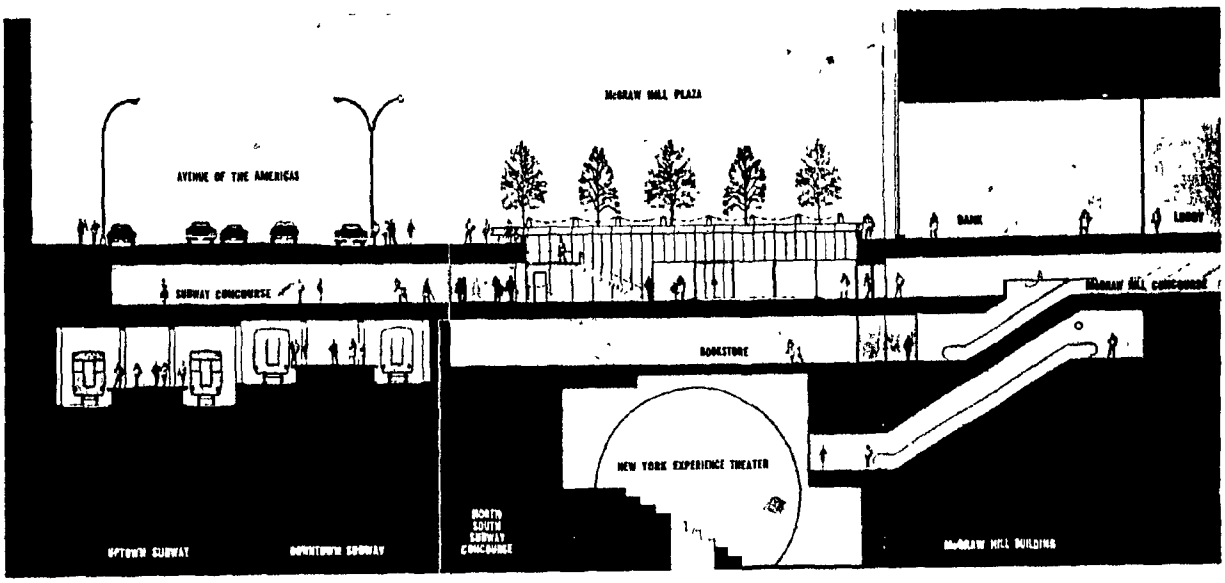

Figure 4-33 : Rockefeller Center section at underground concourse showing the New York experience theater.

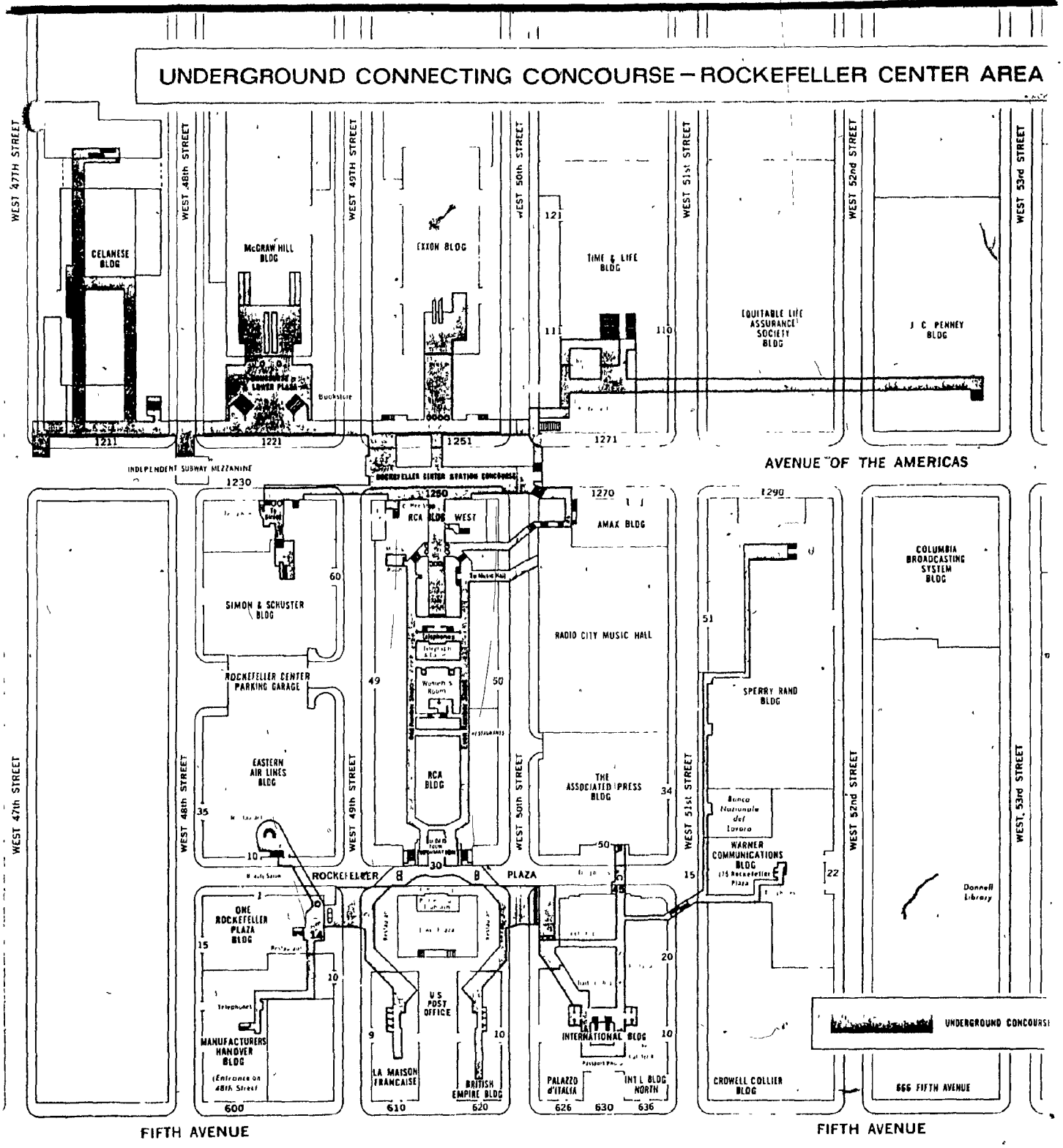

Figure 4-34 : Rockefeller Center underground concourse.

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PART FIVE

MONTREAL

THE INNER CITY OF MONTREAL, HISTORICAL DEVELOPMENT

In August 1964, Technical Bulletin No.3 of the City of Montreal Planning Department defined the limits of downtown Montreal as the area between Guy Street, Pine Avenue, St.Denis Street and the river, covering approximately 536 ha. (1,325 acres)(Fig.5-1). This definition is still keeping its validity for the inner city, whereas the spectacular development in the following decade transformed the area between Guy Street, Sherbrooke Street, St.Lawrence Boulevard and Notre Dame Street to be the central business district.

Within the limits of the inner city several distinct zones and land uses can be distinguished: A financial district on St. James Street, this is the area where the Stock Exchange is located along with banks, trusts and brokers. A government district on Notre Dame Street, a commercial district centered on St. Catherine Street, an office district on Dorchester Boulevard, a wholesaling zone on St.Paul Street and a high-density apartment district north of Sherbrooke Street.

Dorchester Boulevard (formerly Dorchester Street) was widened in the 1950's as part of the urban renewal program to serve as a major artery on an east-west axis. The initial aim was to ease the traffic flow, but its strategic location between St. James Street (financial district) and St.Catherine Street (commercial district), its proximity to major transportation terminals resulted in a prestigious office district. The most important office development was the building of Place Ville Marie(Fig.5-4) which was begun in 1959 and which initiated

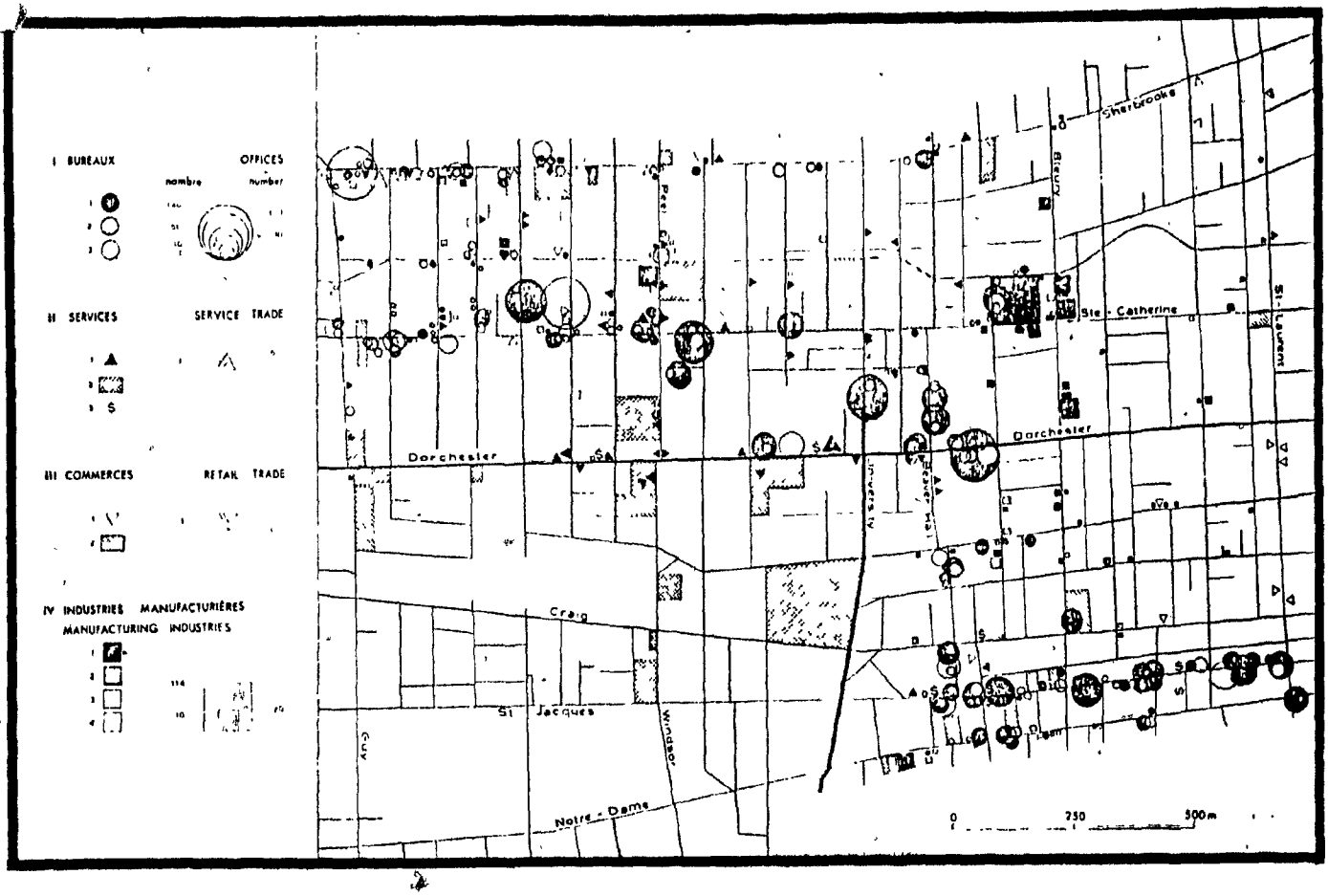

Figure 5-1: Functional diagram of Montreal CBD.

a shift of business from St.James to Dorchester Boulevard. Many corporations transferred their head offices to the rapidly built office towers.

If the Rockefeller Center is the grandfather of all mixed-use developments in New York City, then the same can be said for Place Ville Marie and Montreal. For the multi-use Place Ville Marie acted as a model for most of the major schemes and paved way to the extension of the underground pedestrian system(Fig.5-5).

Next to the services industry, commercial function ranks second in the inner city, comprising 20% of the labour force. St.Catherine Street is the main commercial artery. There are approximately 275 shops and 5 department stores. It should be noted that the successful application of the mixed-use concept has created shopping promenades in major developments throughout the inner city competing with St.Catherine Street. Place Bonaventure has 75 shops, PVM 70 and Place Victoria some 30 shops. Most types of commercial activity existing on St.Catherine Street are represented in these establishments as well.

St. James Street which is the financial district is losing its former grandeur and importance,not only because of the Dorchester Boulevard but because of Toronto's emergence as the new financial center of Canada as well. It extends from Place d'Armes in the east to Victoria Square in the west. Victoria Square is the center of the English-Canadian financial community, whereas that of the French-Canadian financial community is housed on Place d'Arms.

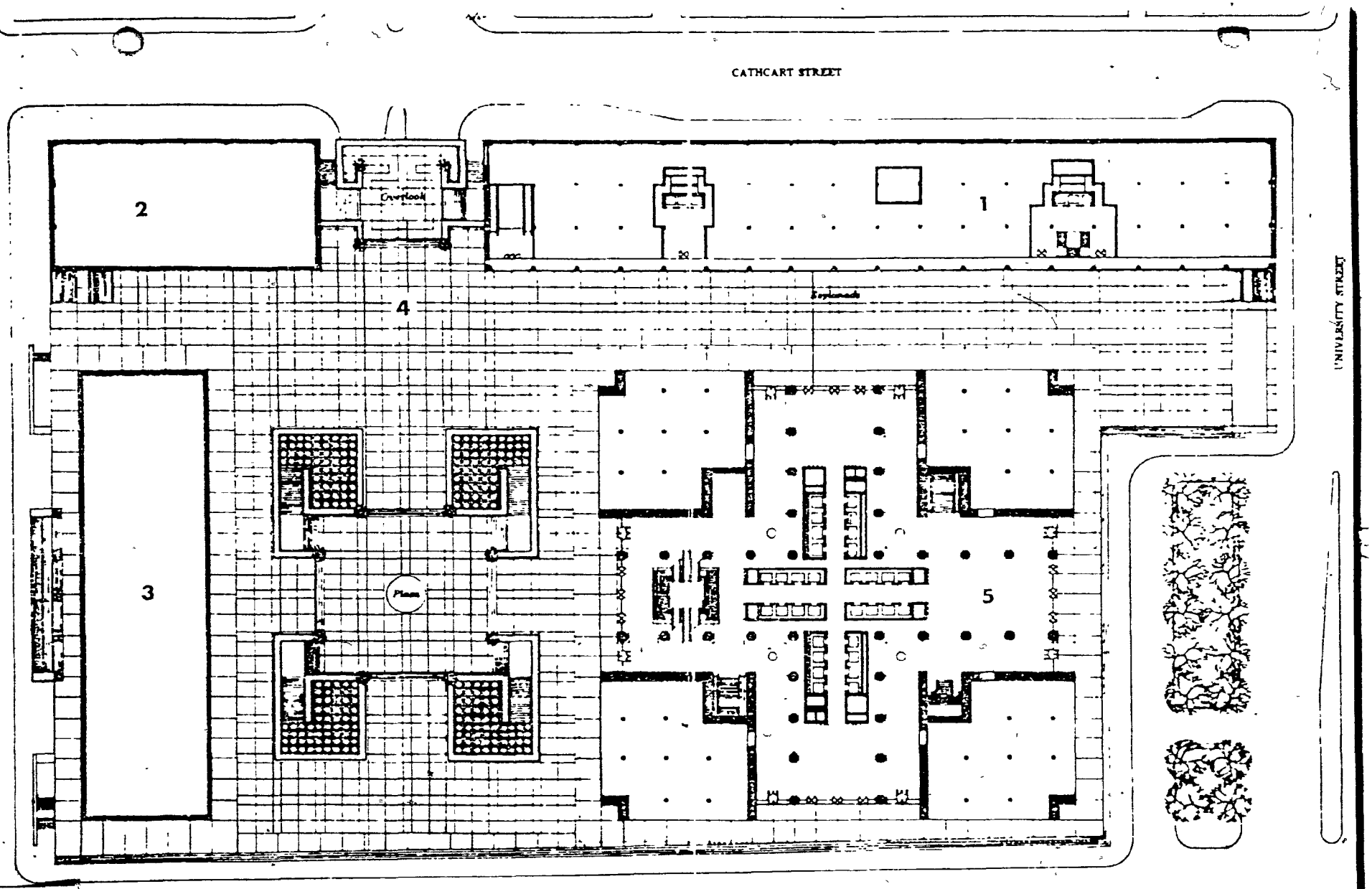

Figure 5-2 : PVM, Ground floor plan.

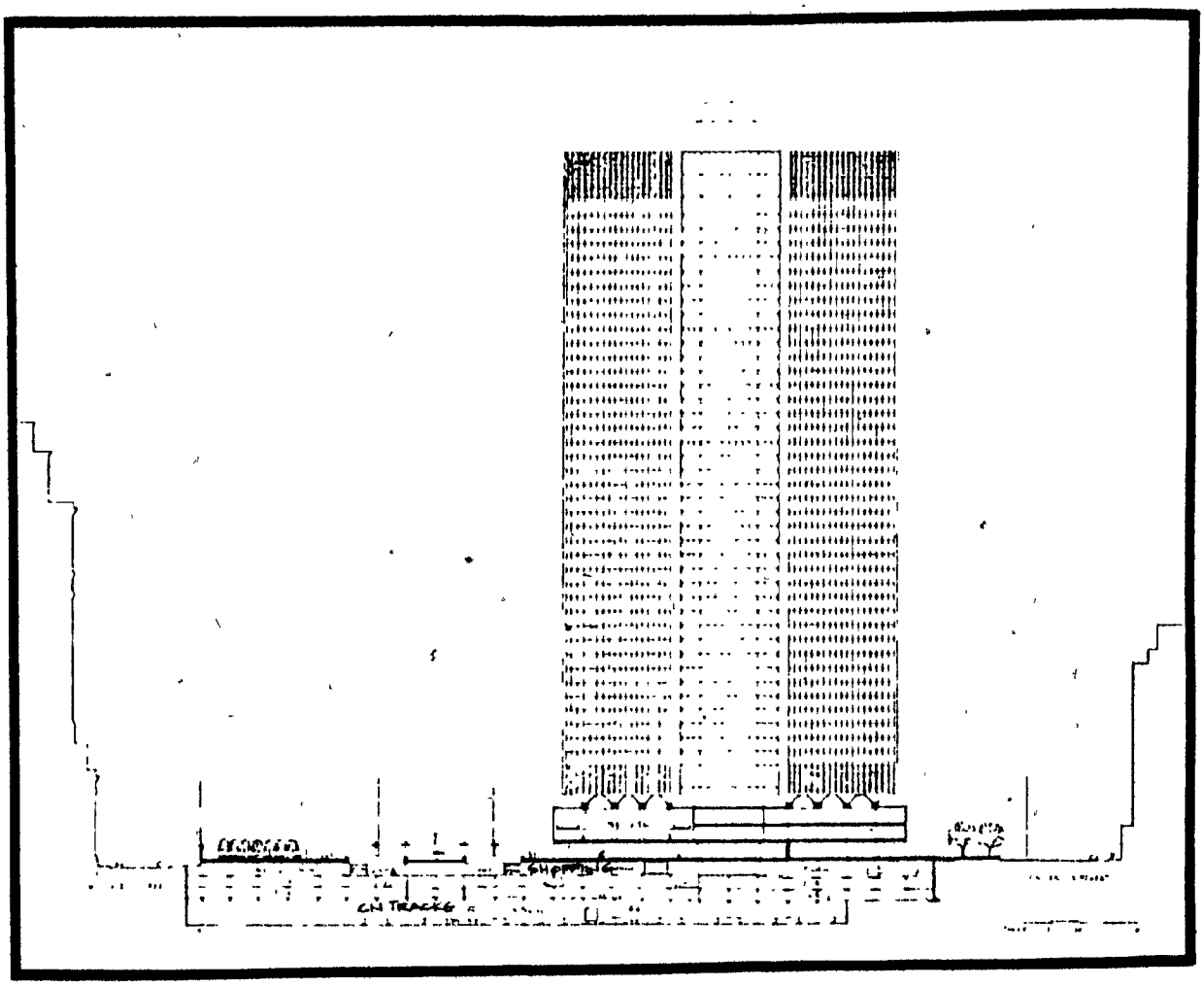

Figure 5-3 : PVM, East West Section looking north from Dorchester Boulevard.

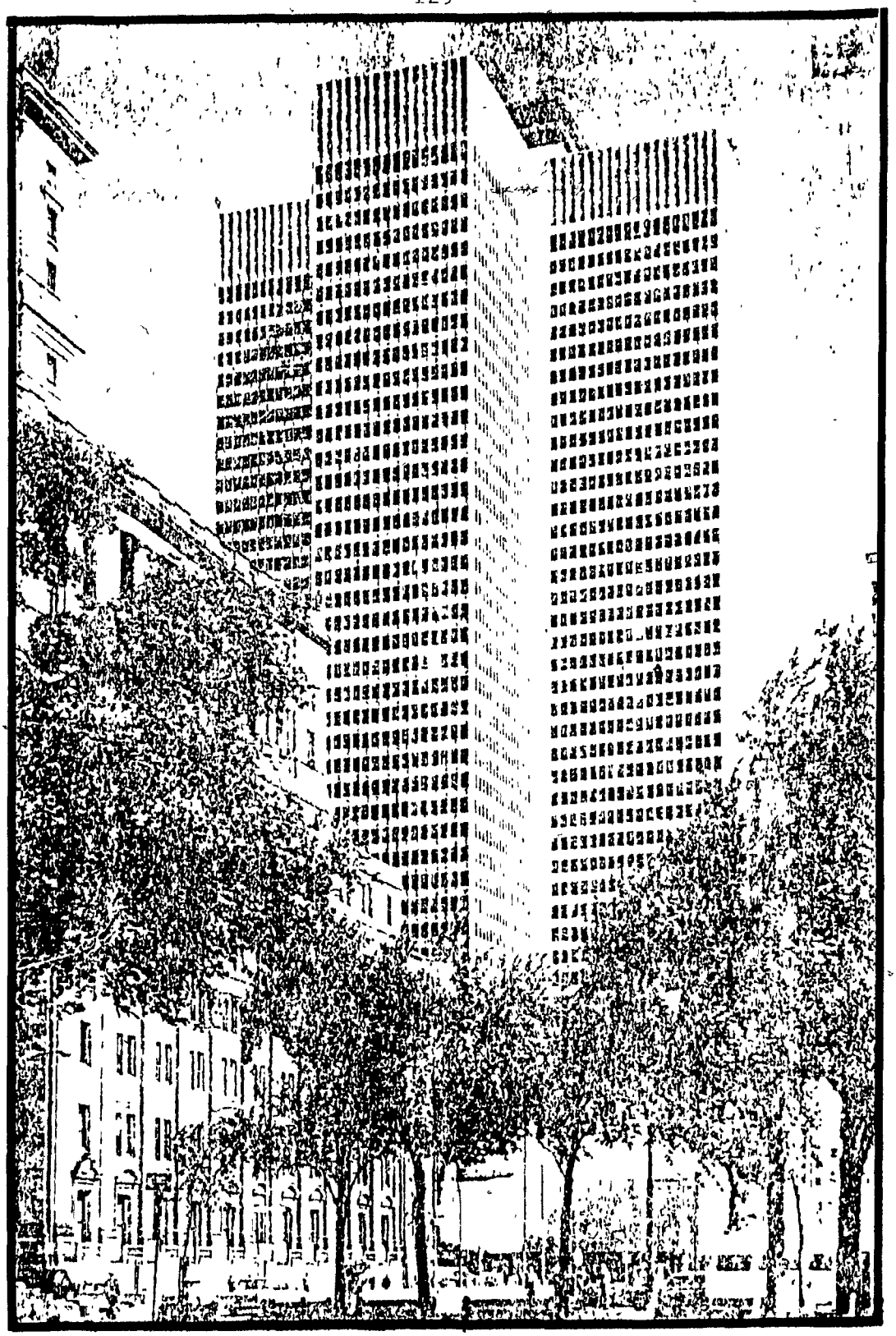

Figure 5-4 : Place Ville Marie, Montreal, I.M.Pei, architect.

Almost all governmental functions are concentrated on Notre Dame Street, among which are the City Hall and the new Court House.

Even though it has lost its economic advantages, St.Paul Street still functions as the center of the wholesaling activity of the inner city.

Major developments have been undertaken on the eastern edge of the inner city, mainly through the active participation of the provincial government, with the intention of redeveloping an area which is populated by French Canadians. One of these projects is Place Des Jardins which occupies the entire block south of Place des Arts, Montreal's home for the performing Arts. Place des Jardins includes three office towers, a hotel tower, and a two-level shopping mall. Another major development which has also contributed significantly to the mixed use character of the city is the La Cite project which occupies a twenty-five acre site consisting of six blocks enclosed by Pine Avenue and Hutchinson Street. It includes an office tower, three apartment buildings, and an underground shopping mall connecting all the buildings within the complex.

Alexis Nihon Plaza, one of the earliest examples of mixed land use applications in Montreal and Westmount Square, a Miesian set of office and apartment towers with a shopping arcade on the ground level which is connected to the Alexis Nihon Plaza, are located at the west edge of the inner city.

Certainly, one of the most successful applications of MXD, Place Bonaventure has been a trend-setter all throughout the world. Its primary purpose is to act as a wholesale trade

center. More than 1,000,000 square feet is allocated for this purpose. A large exhibition hall handles commercial exhibits and shows. There are 85 boutiques and shops along with 7 restaurants and a movie theatre. A 400-room hotel at the top completes this extraordinarily successful complex. Place Bonaventure will be studied in detail.

The most distinctive feature of the inner city Montreal is without doubt its network of underground passage ways, linking the railway stations, the metro, the parking garages, the large commercial buildings and hotels. There were many factors in the evolution of this system besides a rigorous climate. Most important of all, the presence of skillful and imaginative architects who fully exploited the site advantages. These passages, with attractive lighting and design, and strategic location are not dull corridors, but rather pleasant environments.

The city center of Montreal is continuing its evolution. The trend is the concentration of management, finance, commerce, recreation and last but not least residence in high-rise buildings. The circulation is moving to underground, both for pedestrian and mass transit. Horizontally, the expansion is more extensive toward the eastern edge, which is favored politically since the francophone majority is gaining more economic and political influence. Nevertheless, one should bear in mind that this metropolis of Quebec is a city of Canadian and international dimensions. It is increasingly becoming cosmopolitan, attracting more and more international capital along with the increasing number of immigrants.

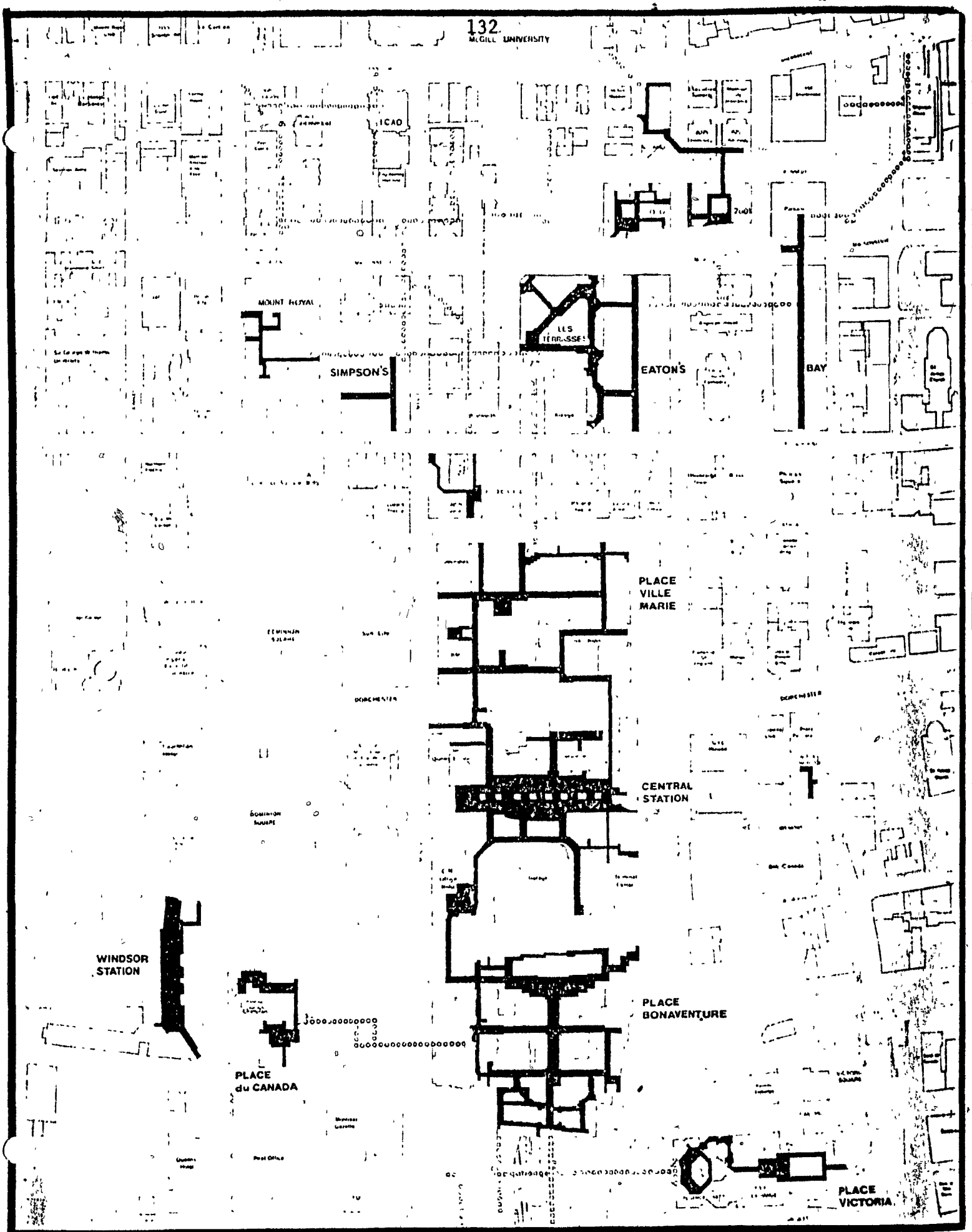

Figure 5-5: Underground Pedestrian System, Montreal.

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PART SIX

MIXED-USE DEVELOPMENT CASE STUDIES IN MONTREAL

CASE STUDY VI

Name of Project: Place Bonaventure

Location: Situated in the center of Montreal, immediately south of Place Ville Marie and the CNR block which contains the Queen Elizabeth hotel and the CNR headquarters building.

Planning Team: Architects: Affleck Desbarats Dimakopoulos Lebenshold & Sise.

Partner-in-charge: R.T.Affleck

Project designer: Eva Vecsei

Project architects: D.Lazosky and H.K.Stenman

Interior Design: H. de Koring

Landscape Architects: Sasaki, Dawson, DeMay Associates

Structural consultants: R.R.Nicolet & Assoc., Valois, Lamarre, Valois & Assoc.

Mechanical and electrical consultants: Jas. P.Keith & Assoc.

Contractor: Concordia Estates Ltd.

Planning Approach: R.T.Affleck defines their design goals:

"An attempt was made in the design of Place Bonaventure to development an architecture based on patterns of human behavior rather than on the tenets of normal composition... The general notion can be expressed in a variety of ways: an architecture oriented to total experience, involving all the senses and involving movement as a primary activity.....

..... At place Bonaventure the architecture of the internal streets and places became a major field for the direct

application of these ideas, as did the creation of the special 'fun-environment' for the Hotel. In retrospect, I would say that the environmental barrier (facade) was possibly the most difficult element to cope with - maybe because of the weight of historical baggage that we still carry with us in this area of expression."

Project Description: Place Bonaventure is a seventeen-storey Mixed-Use Development consisting of:

- Retail shopping center (two levels)
- Cinema
- "Better Living Center" (permanent exhibition of building materials)
- Exhibition Hall for short-term exhibitions such as "Boat Show"
- "Merchandise Mart" (permanent wholesale rooms)
- Office space and international "mart"
- 400-room hotel
- A garage for approximately 1,000 cars
- Approximately 50,000 square feet of public open space.

The shopping concourse covers approximately 150,000 sq. ft.; it contains major stores, boutiques and the 700-seat cinema, on the lower level it is connected to the subway system. Place Bonaventure is extremely well served by public transportation (commuter trains, subway and railroad) and is also linked to the existing underground pedestrian system of core area. The Convention and Exhibition Hall, covering approximately 250,000 square feet is above the retail shopping levels. This is designed to

accommodate large, short duration shows. The five levels above comprise the "Merchandise Mart", a series of Canadian wholesaler's showrooms covering one million square feet. Above this, there is office accommodaion of approximately 100,000 square feet. The international trade center, supplying exhibit and office space for the principal trading nations of the world, is located on the same level.

The hotel with 400 rooms is situated on the roof of the building. The hotel rooms are situated around and overlooking a garden which is laid out in the manner of a Japanese landscape. The restaurant and recreation facilities are situated in the center of the garden.

There is also a street level landscaped plaza over the parking area in the west of the building which constitutes a significant public space with Place Bonaventure.

Comments: Quote from "Architectural Record" December 1967:

".....Legibility is a problem at Place Bonaventure. Since all the elements which make up the complex are enclosed within a simple environmental barrier, rather than expressed as isolated forms, different functions and spaces are difficult to recognize....."

Quote from "The Canadian Architect" May 1968:

".....The downtown core of Montreal is a better than average urban mix, and Place Bonaventure, within downtown Montreal, has been programmed with a far richer mix on content. The pedestrian circulation, the metro station and street system intimately tie this complex to the rest

of downtown....."

".....Hotel Bonaventure is a new kind of visual urban experience for us. An otherwise conventional black roof measuring six acres has been converted into an animated roof architecture....."

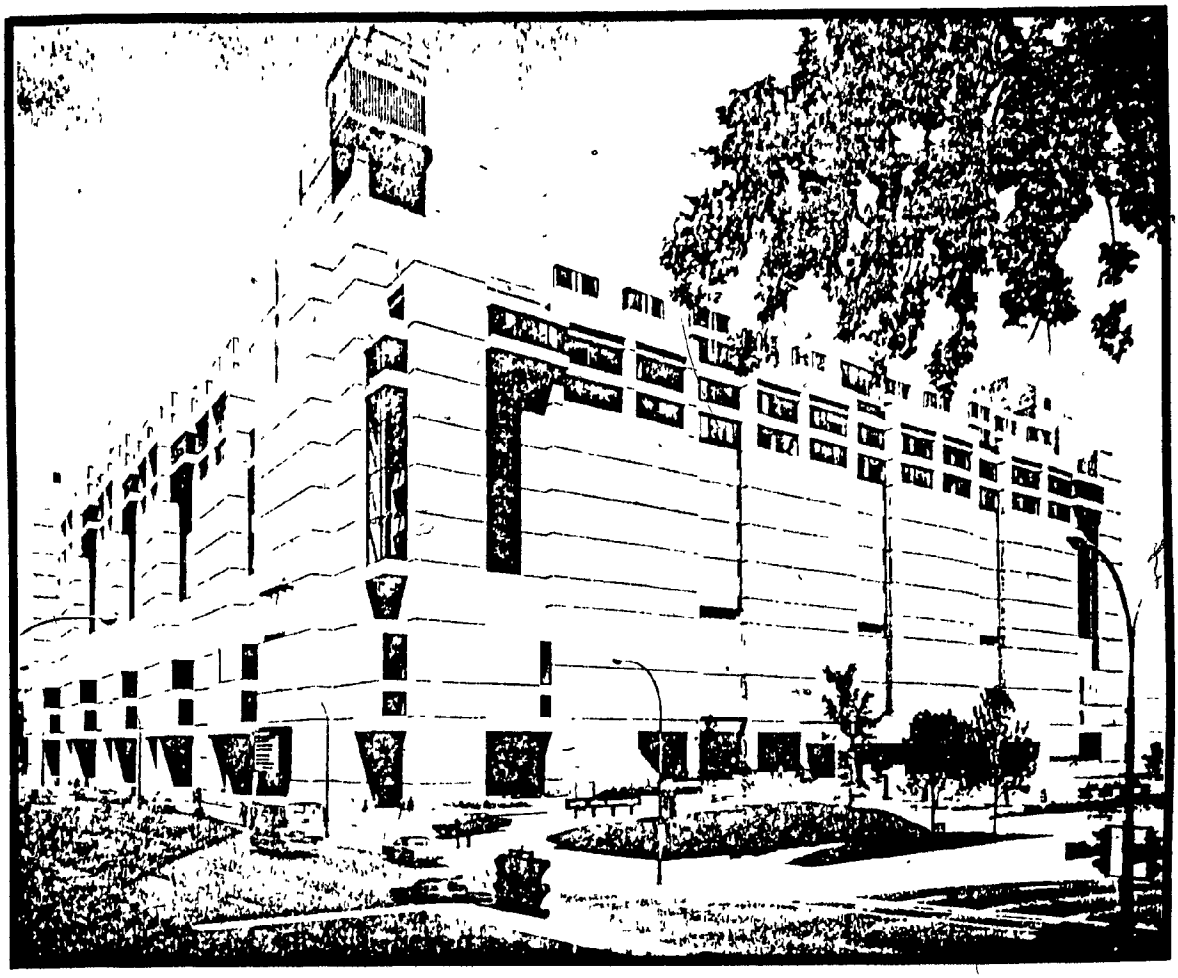

Figure 6-1 : Place Bonaventure, Montreal, exterior view. Affect Desbarats Dimakopoulos Lebensold & Sise, architects.

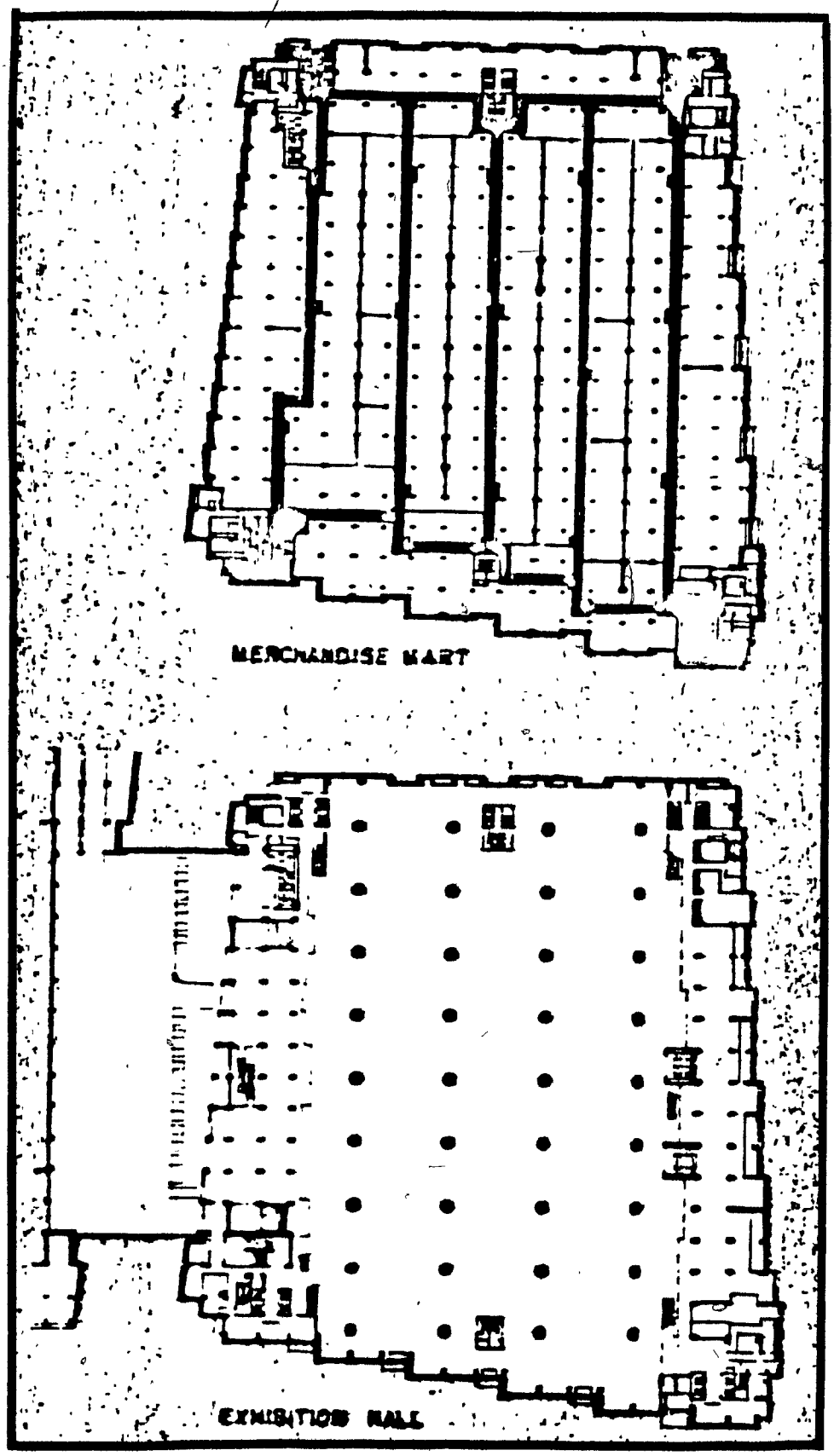

Figure 6-2,3 : Place Bonaventure, floor plans of Merchandise mart and exhibition hall.

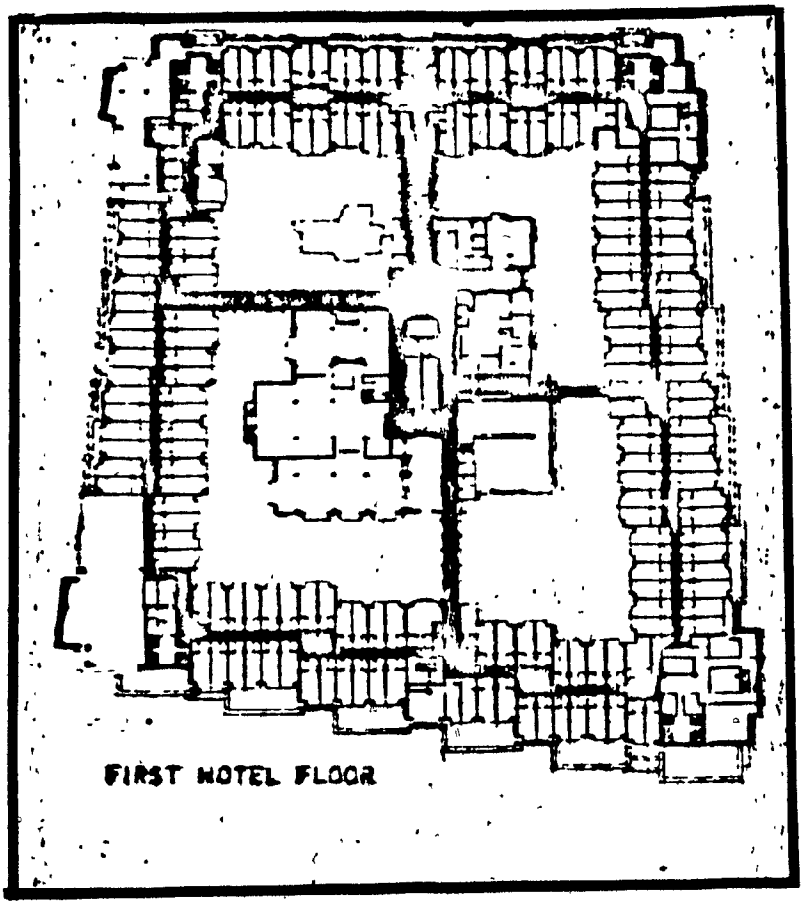

Figure 6-4 : Roof-top hotel floor plan.

Figure 6-5 : Roof-top hotel rooms overlooking the winter garden.

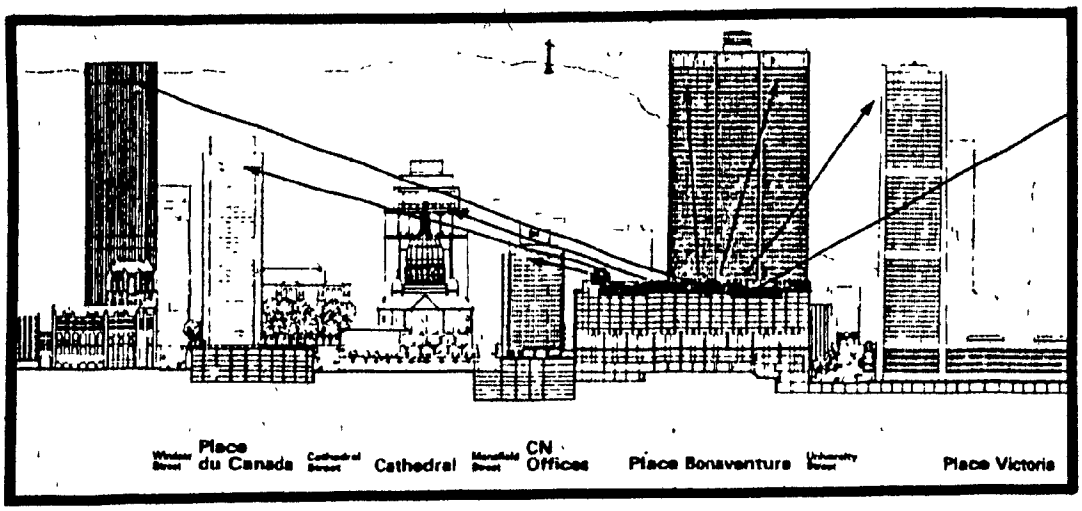

Figure 6-6 : Section through downtown Montreal showing the visual interaction between taller structures and the roof scape of Place Bonaventure.

CASE STUDY VII

Name of Project: Le Complex Des Jardins.

Location: Le Complex Des Jardins, covering 8 acres, is situated on the eastern edge of downtown Montreal. The block extends from St.Catherne Street to Dorchester Boulevard.

Planning Team: Architects: La Societe La Haye-Ouellet
Associate Architects: Longpre, Marchand, Goudreau (basilary structure), Blouin, Blouin, Guite, Roy (office towers), Ouellet and Reeves (hotel).
Structural Engineers: La Societe C.L.T.

Description: - A 1,300,000 sq.ft. shopping concourse on three floors covering the total surface of the complex. It includes shops, cinemas, restaurants, banks, assembly halls and open cafes.

- Three office towers:
  North Tower: 27 floors; 505,000 square feet.
  East Tower: 32 floors; 620,000 square feet.
  South Tower: 40 floors; 807,000 square feet.
- A hotel tower with 616 rooms; it also includes meeting halls, restaurants etc.
- The central covered plaza is surrounded by a variety of uses, including 135 retail shops, 3 banks, four cinemas, restaurants plus day nursery for children and a first aid clinic. The plaza has an underground connection to the Metro system.

Background to Planning: Quote from "Le Complexe Des Jardins Public Relations Department":

"The hub of all activities within the Complexe is "La Place". An acre of open, landscaped plaza, protected from climatic conditions, it will surge with activity - people, cultural events, exhibitions, and the commercial influence which surrounds it.

Historically, the great cities of the world have always featured a "town square"; a meeting place where people gather to shop, trade, view public events, or just socialize. This is, "La Place"; climate controlled to ensure that everyone can participate in its activities the year around."

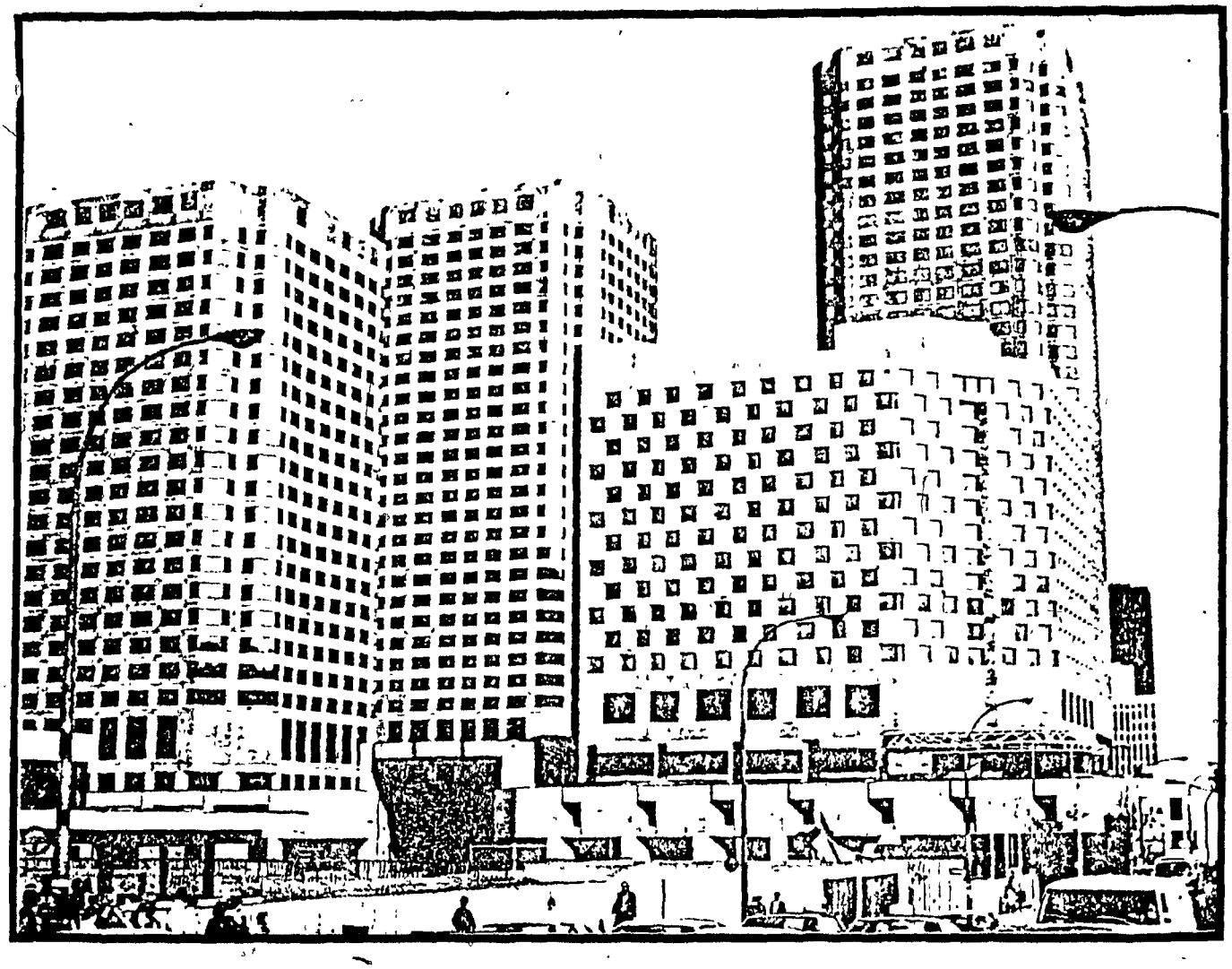

Figure 6-7 : Le Complex Des Jardins, Montreal, exterior view.

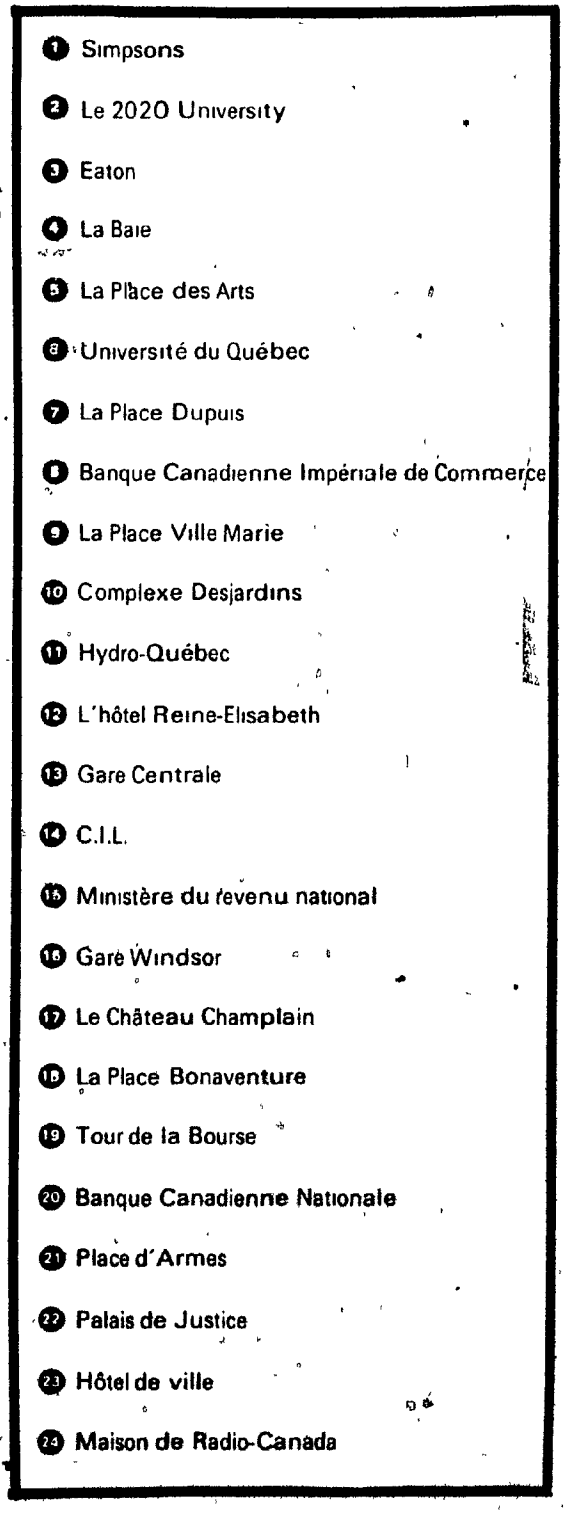

Figure 6-8 : Le Complex Des Jardins in relation to other major developments in Montreal CBD.


Côte des Neiges
Guy
de la Montagne
Université
Bleury
Boulevard Saint-Laurent
Saint-Denis
Berri
Métro
vers la station Longueuil

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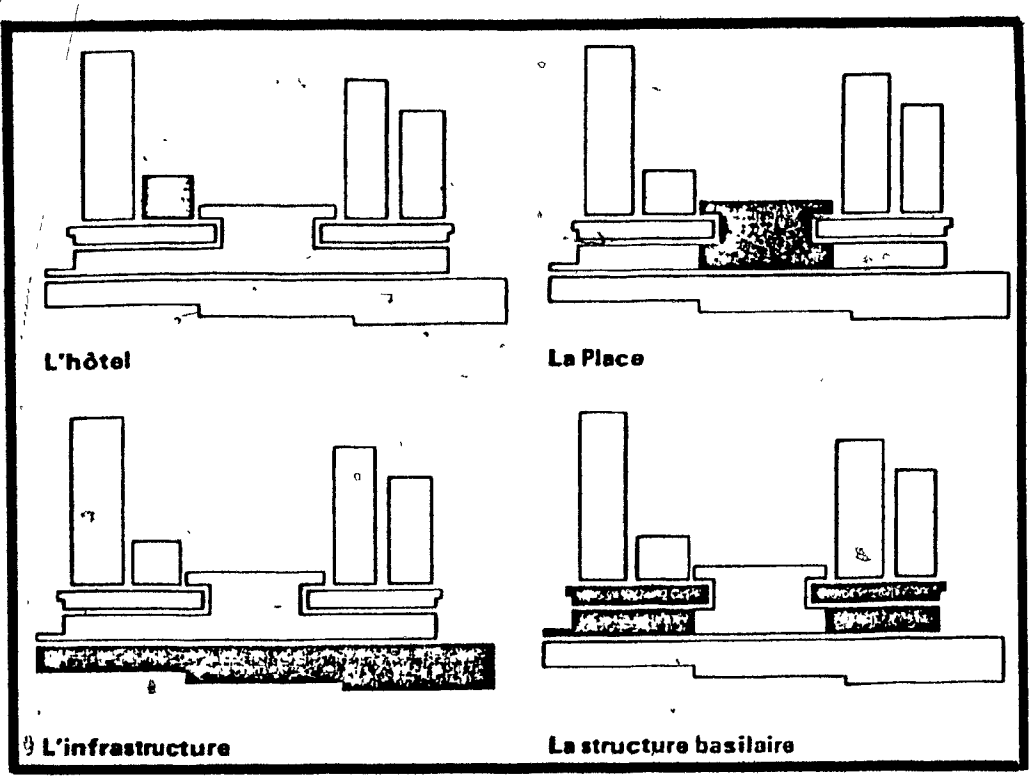
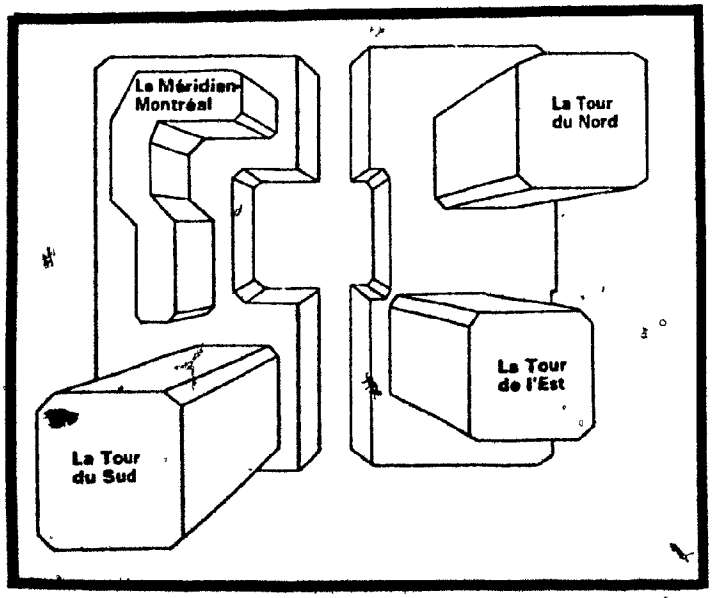
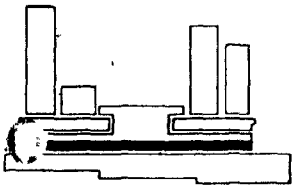


Figure 6-9,10 : Major components of Les Complex Des Jardins.





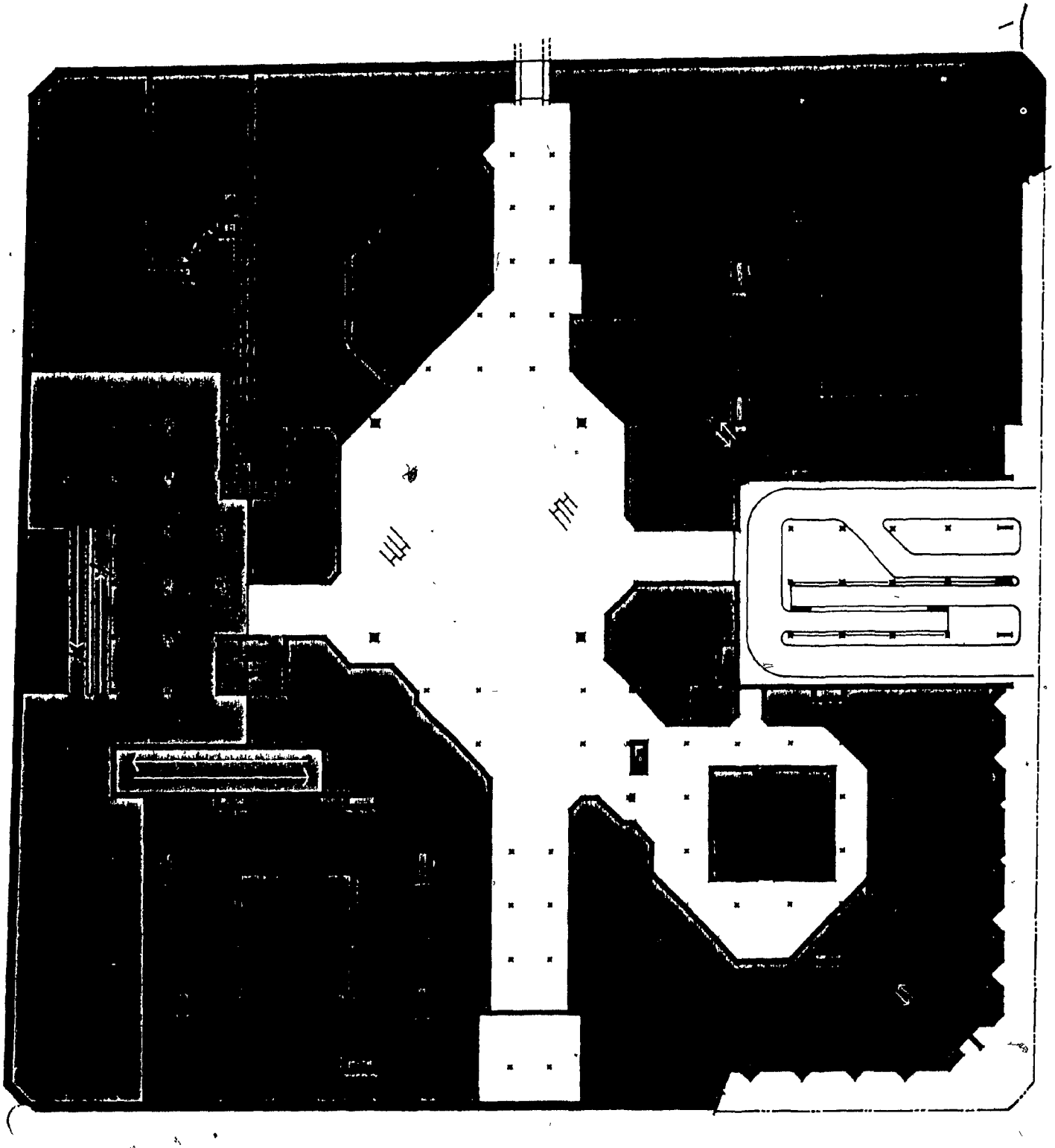


Figure 6-11 : "La Place", the interior plaza at entrance level.

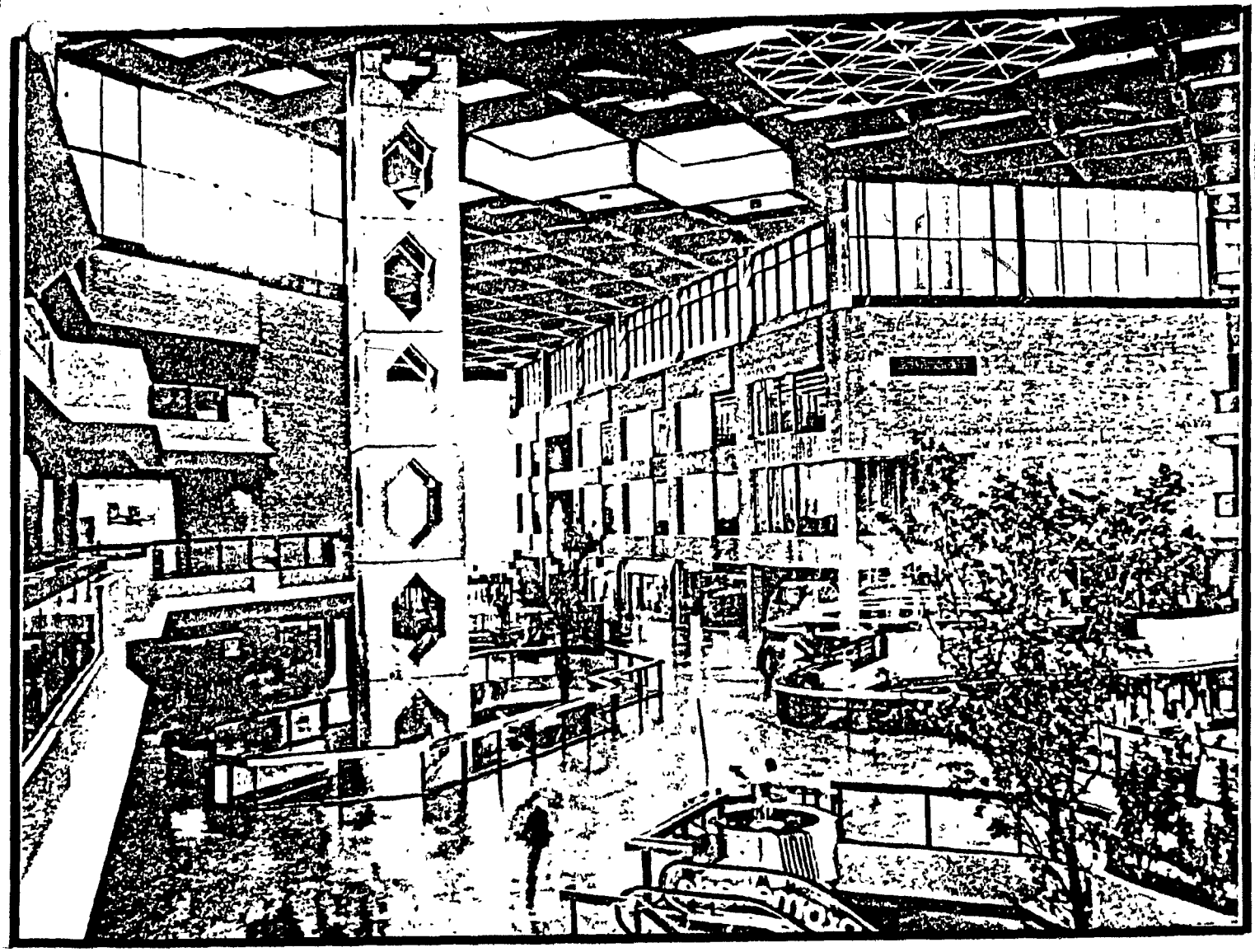


Figure 6-12 : View from the interior of the plaza

CASE STUDY VIII

Name of Project: La Cite

Location: A six-acre site covering four city blocks on Park Avenue, Montreal.

Planning Team: Architects: Eva Vecsei in association with Dobuch, Stewart, Longre, Marchand, Goudreau; Ralph Hein (project architect), John Schreiber, Ron Williams (landscape architects).

General Contractor: Concordia Construction Properties Limited.

Description: A large-scale MXD downtown development consisting of:

- 220,000 square feet of retail space
- Three residential towers
- A 26-storey office tower with 100,000 sq.ft. of office space.
- A 400-room roof top hotel
- Recreation facilities: a health club, gym, swimming pools (indoor and outdoor), squash courts, etc.

The project was originally programmed for a floor area ratio of 12 which was then reduced to 6. This resulted in transferring of 1 million square feet to below the street level.

The four city blocks are interconnected by an underground infrastructure which includes a two-level, 220,000 square feet retail area. Each block contains a vertical circulation core leading down to the lower retail area.

The hotel is the entertainment center for the approxi-

mately 3,000 residents and 10,000 office workers and commercial employees who live or work in La Cite. It shares the parking and trucking facilities of the complex and ties into the health club.

A priority was to orient the buildings to maximize sun-lit open space. Also, since the streets on the perimeter of the site are lined with townhouses, to establish a residential scale at the edge, the residential towers step down gradually to meet the scale of the houses.

Background to Planning: According to architect Vecsei "the fundamental issues in the design of urban housing are not high-rise versus low-rise or high-density versus low-density. Both can work. Whichever approach is called for, the architectural problem is first to find a way to organize the enclosed space required by the program in a manner which allows the remaining open space on the site to be a real amenity for the users of the project and for the general public. The second problem is to find the right architectural vocabulary to define these space."

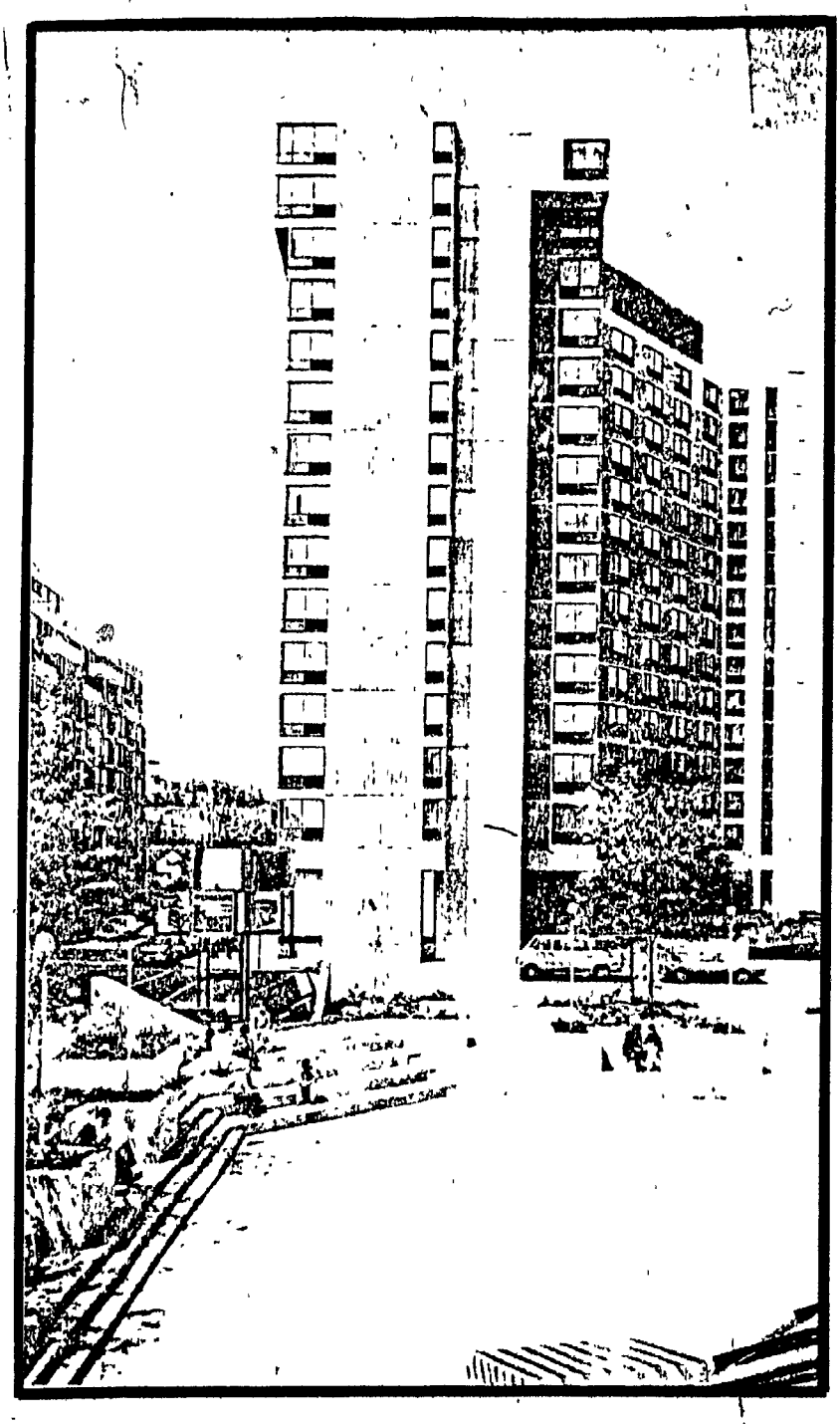


Figure 6-13 : La Cite. exterior view of the hotel.

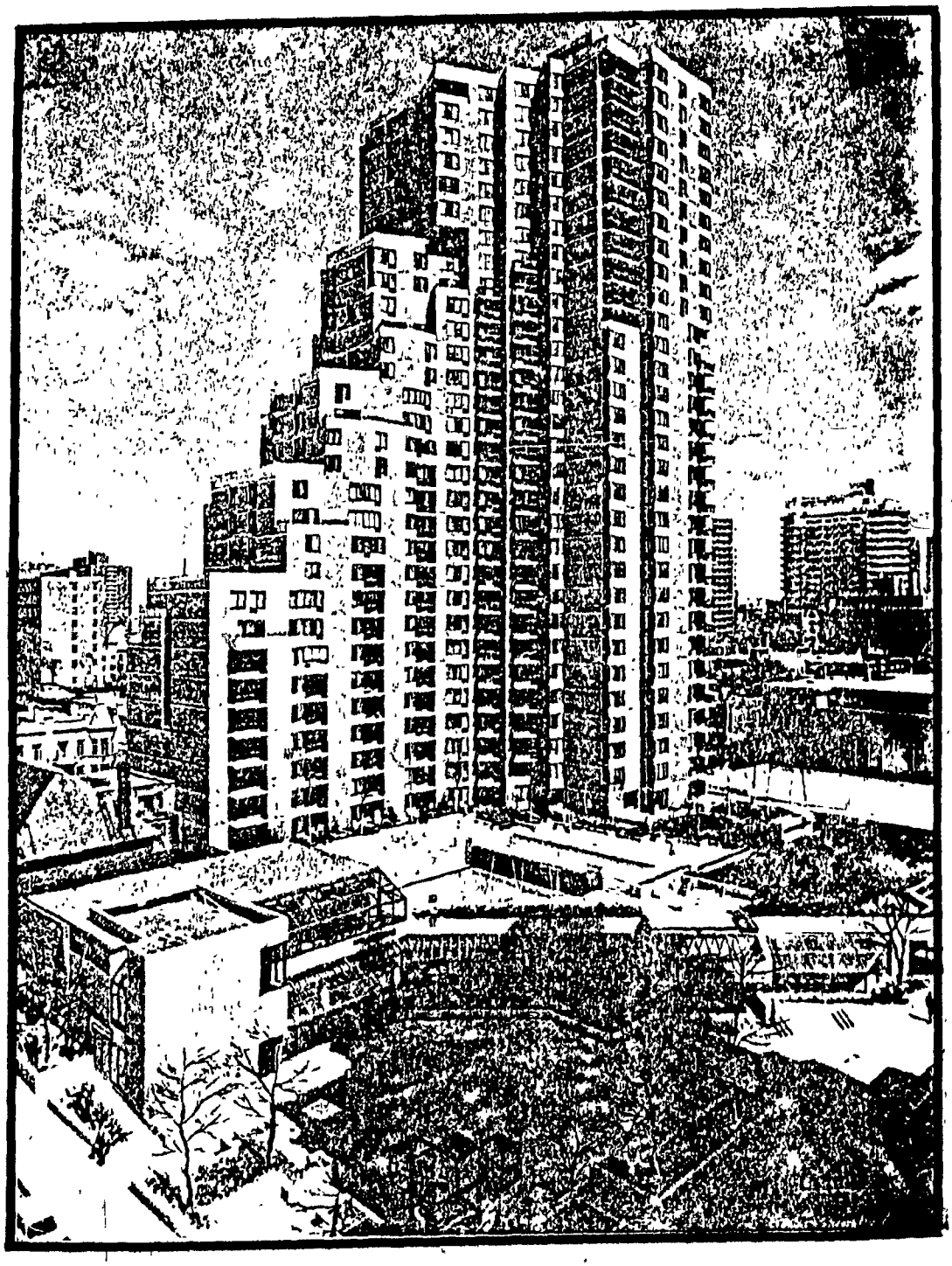


Figure 6-14 : La Cite, exterior view of the apartments.

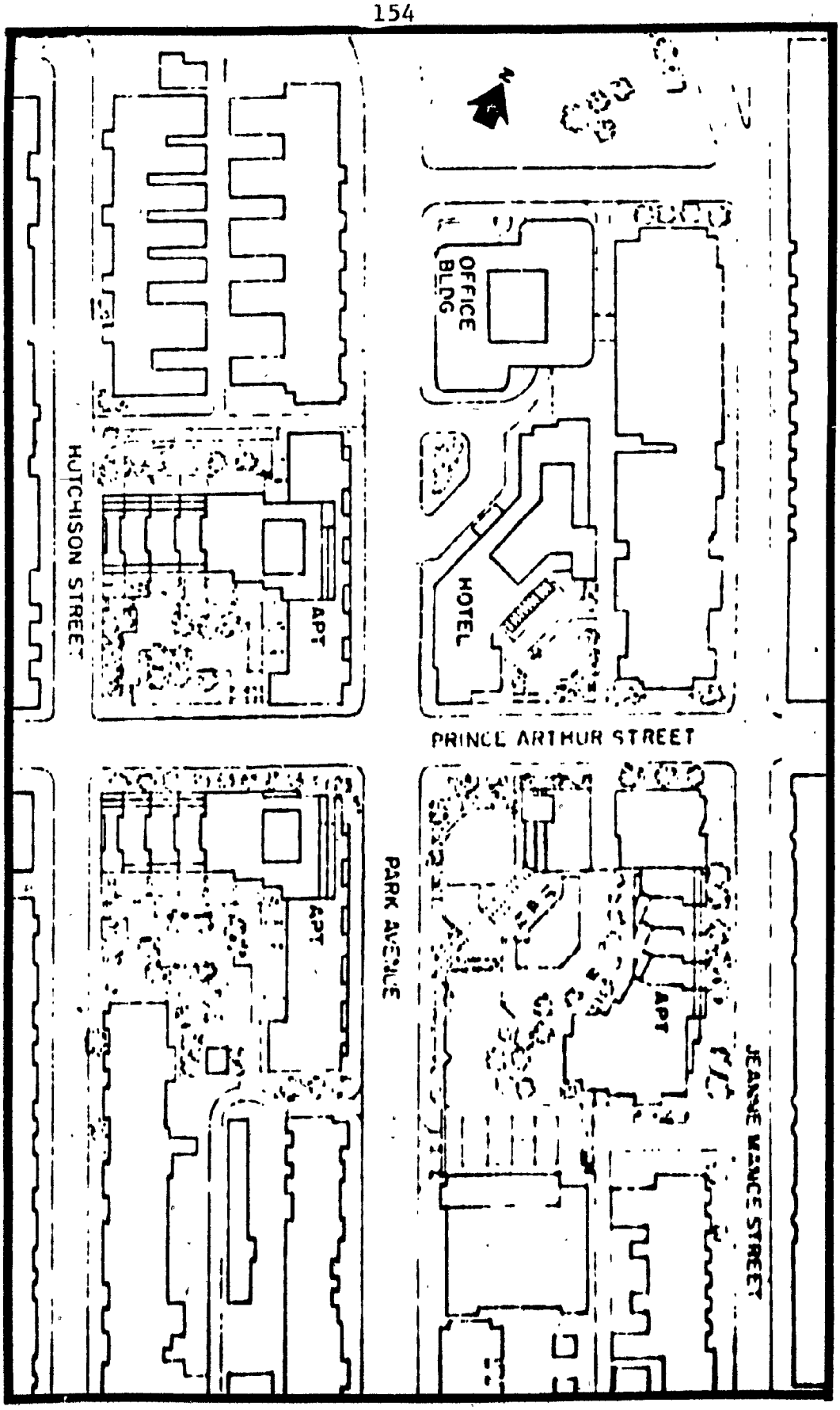


Figure 6-15 : La Cite, site plan.

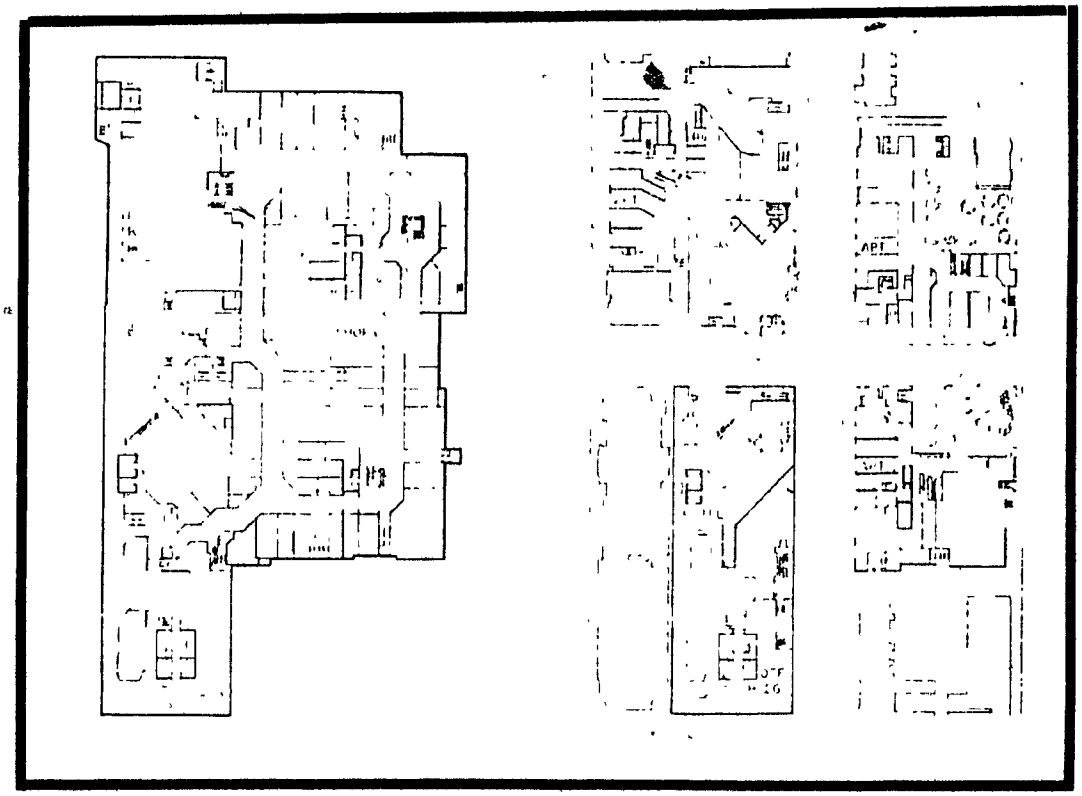


Figure 6-16 : Promenade level. Figure 6-17 : Plaza level.

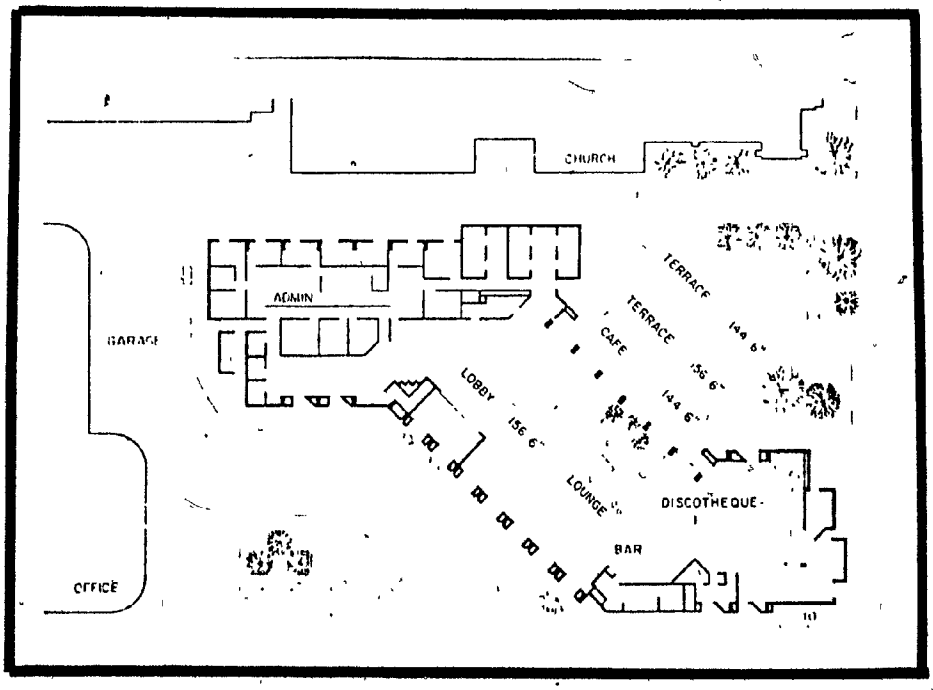


Figure 6-18 : Hotel entrance level.

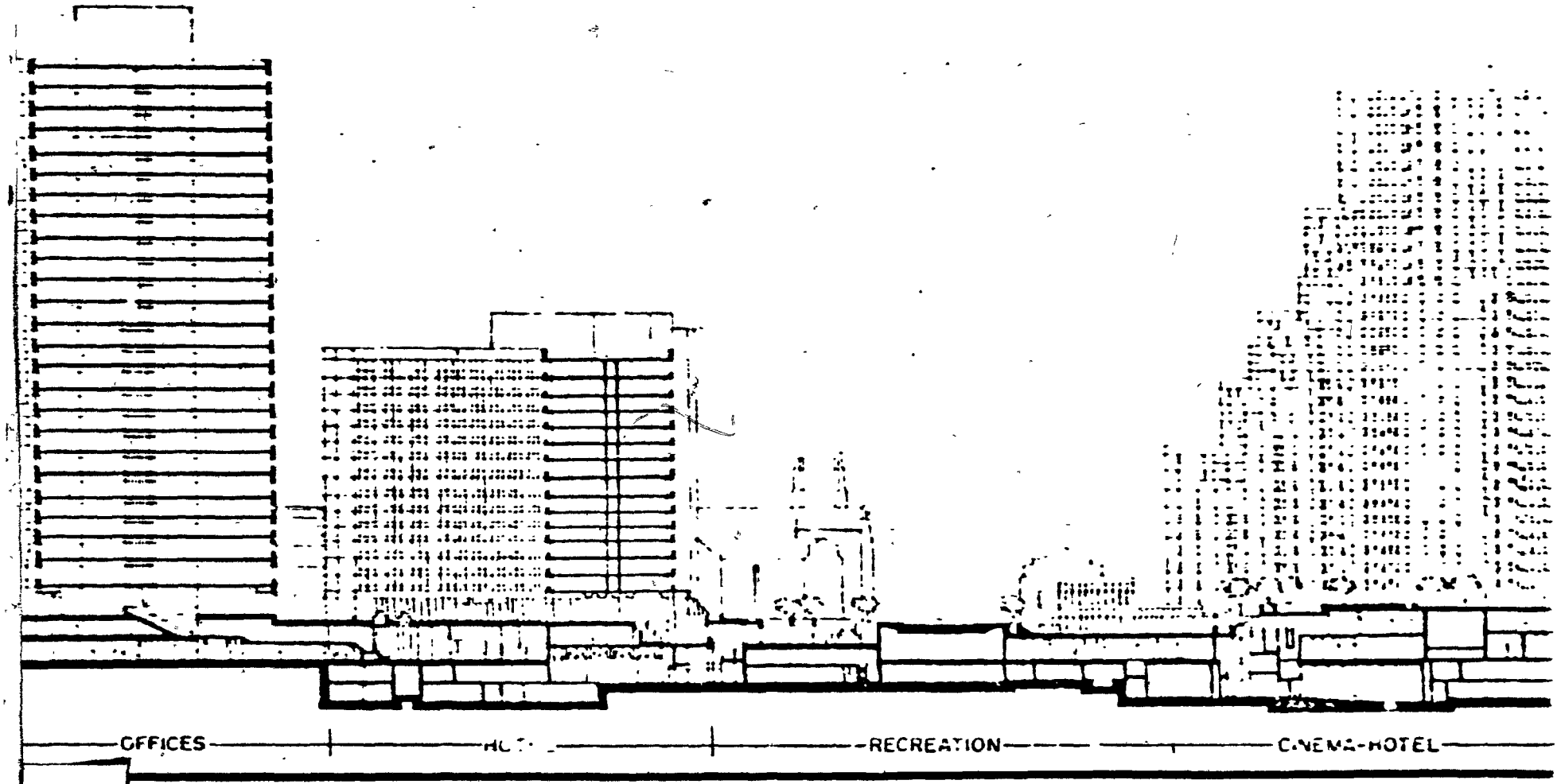


Figure 6-19 ; La Cite, section.

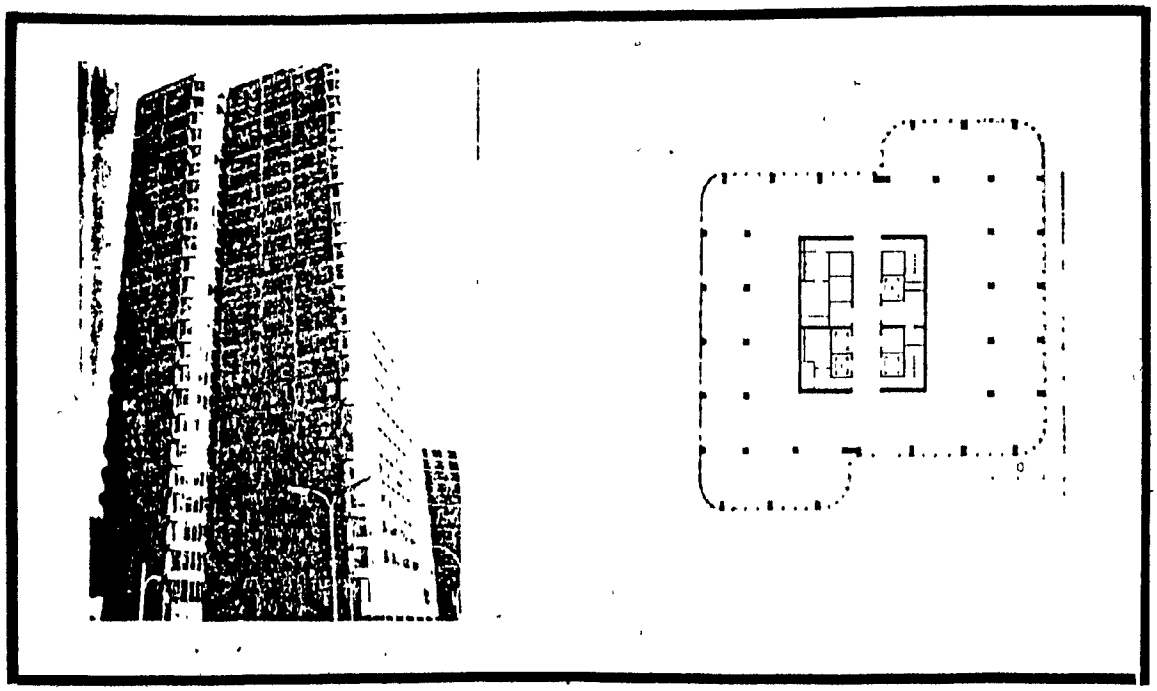


Figure 6-20,21 : The 26-storey office tower. Architect Vecsei wanted the building to be "slick and dark, highly polished and technical looking, in contrast to the hotel and apartment buildings ....."

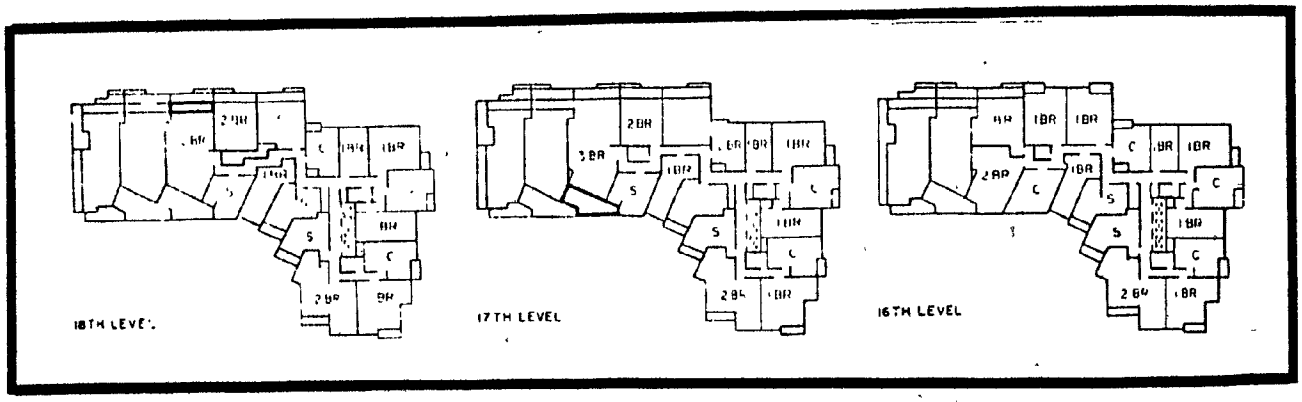


Figure 6-22 : Typical apartment floors, where the architect has paid a lot of attention to the roofs and terraces and concealed the "ugly stacks". "These are buildings which you can look down on from your apartment".

CASE STUDY IX

Name of Project: Westmount Square, Montreal

Location: The complex covers two blocks (155,076 sq.ft.) in the city of Westmount, on the western edge of downtown Montreal, extending from St.Catherine St. to Maisonneuve Boulevard.

Planning Team: Architects: The office of Mies Van der Rohe.

Description: A MXD development consisting of:

- Two 21-storey apartment buildings
- One 22-storey office building
- A shopping concourse with access to the Montreal subway system by a tunnel connector
- A cinema and restaurants.

Background to Planning: Westmount Square is a medium sized Mixed Use Development incorporated into a residential neighborhood. The high-density office development became justifiable in a residential area by being blended with residential use.

Comments: Quote from Urban Land, October 1973:

"Westmount Square in Montreal exemplifies a project which established a new prestige address in a location which would probably not have supported such a lage-scale single use development of only office or retail space. The combination of office, residential, and retail provided an essential key to the financial feasibility of the project."

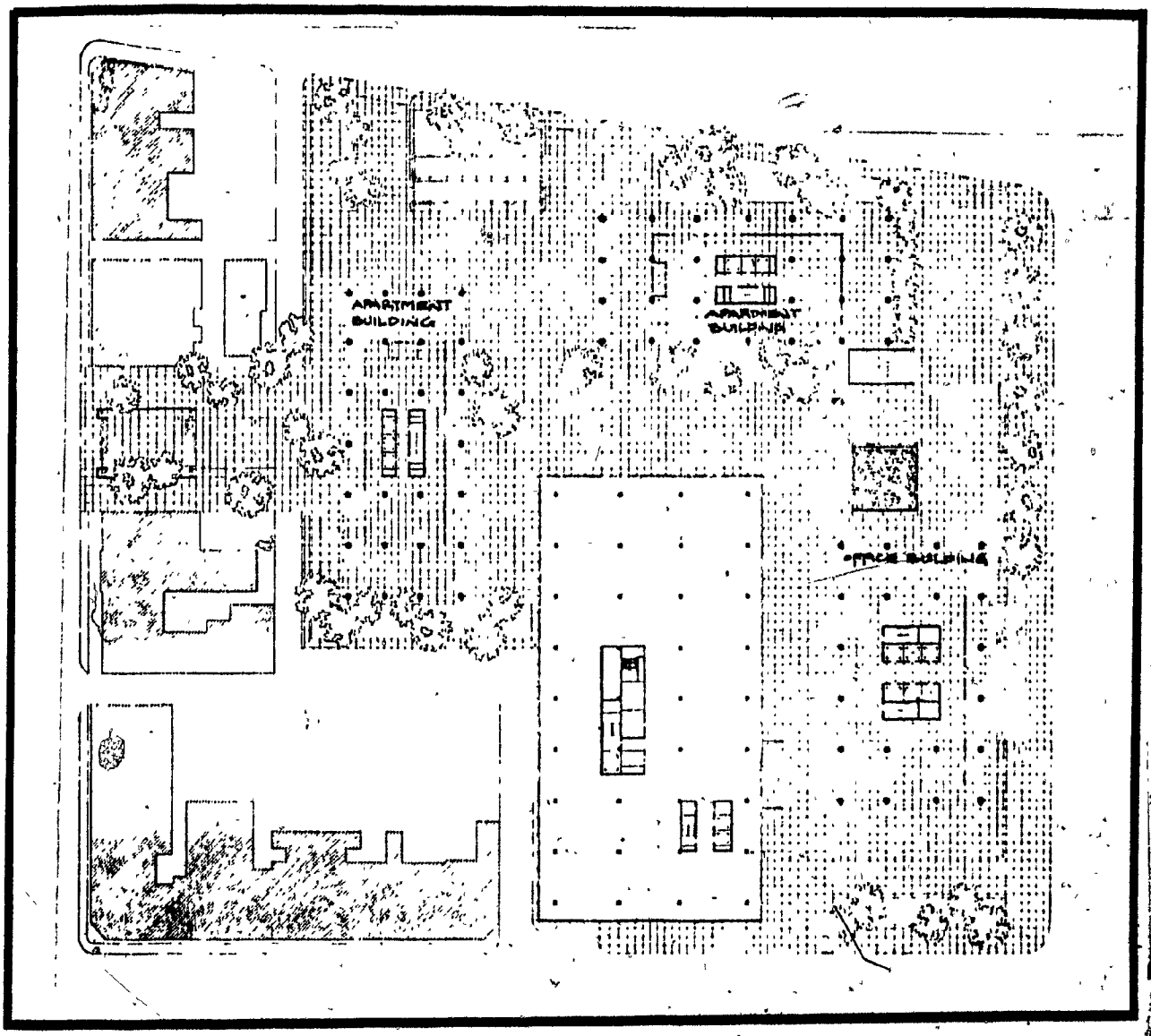


Figure 6-23 : Westmount Square, site plan.

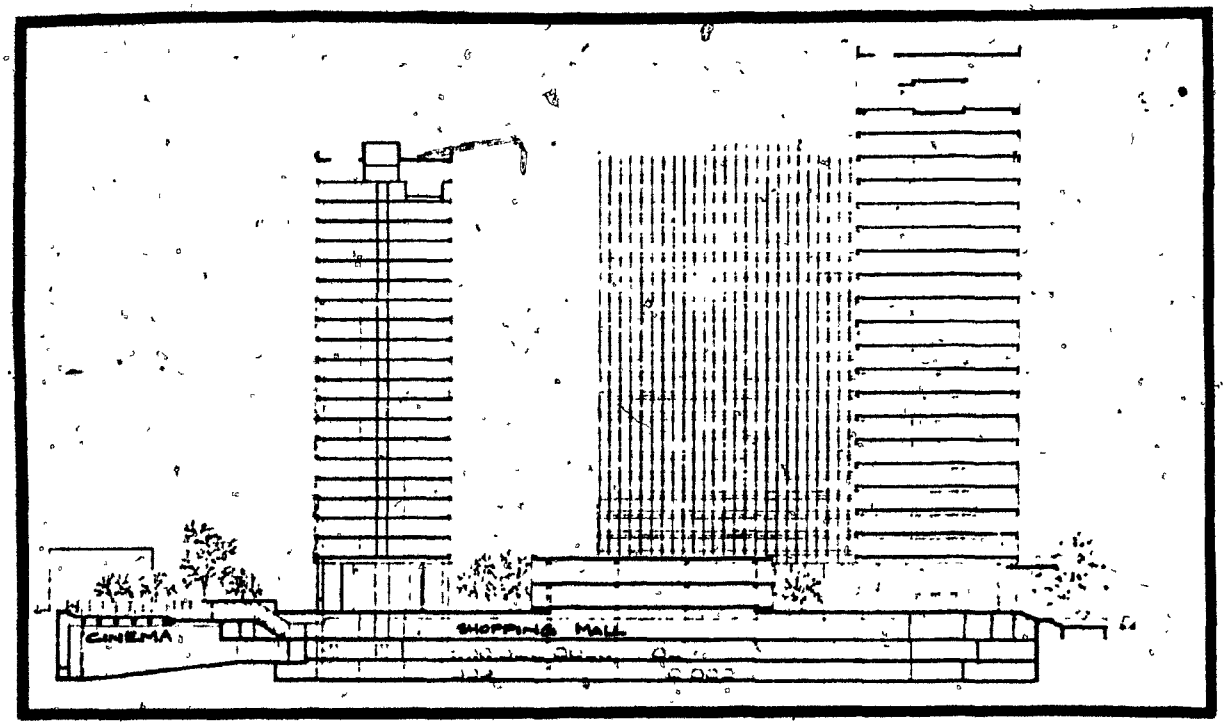
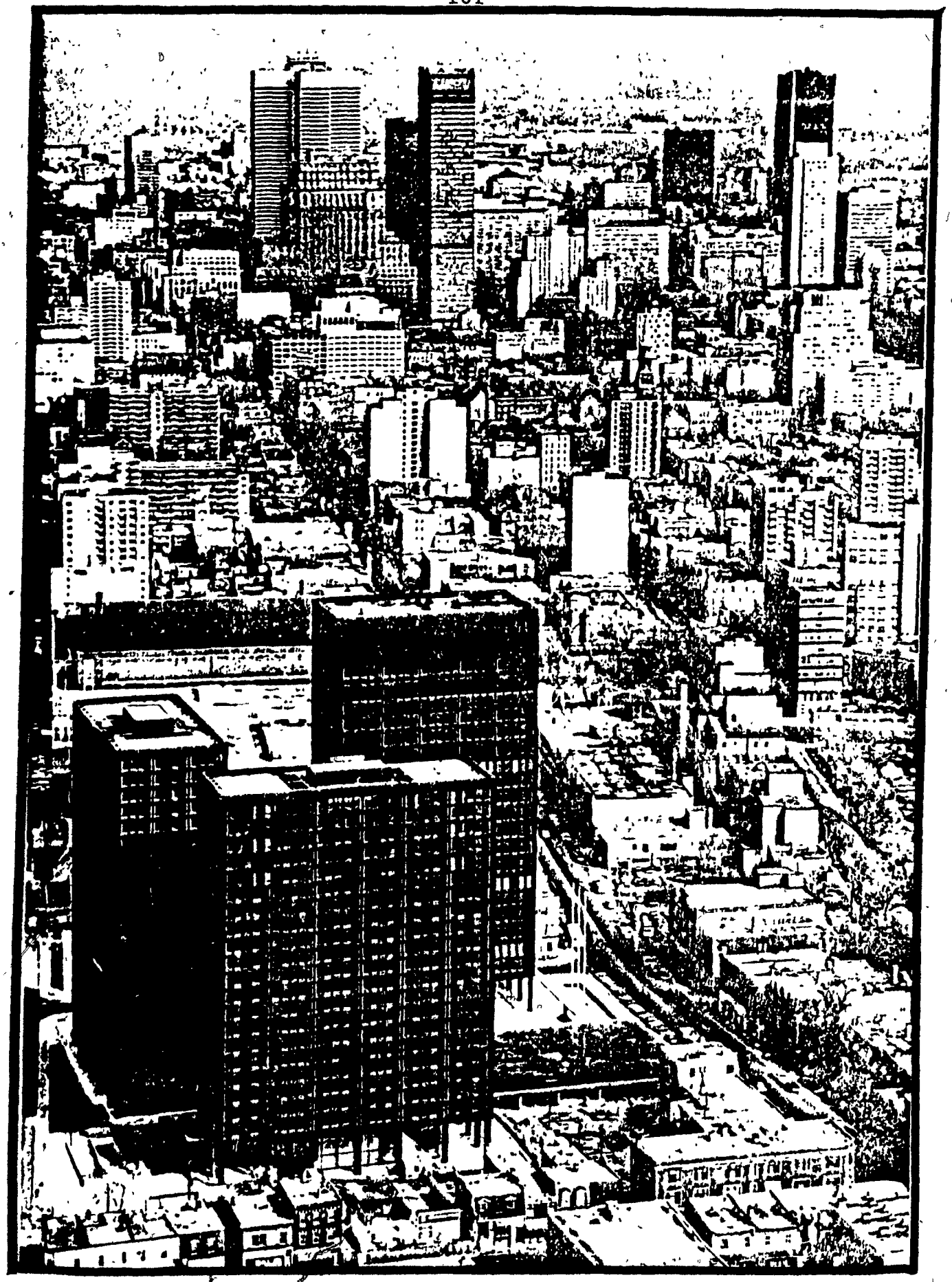


Figure 6-24 : Westmount Square, east west section looking north.



Westmount Square

CASE STUDY X

Name of Project: Les Terrasses

Location: In the core of Montreal's downtown shopping street, it is accessible from St. Catherine Street, Maisonneuve Boulevard and McGill College Avenue.

Planning Team: Architects: Webb, Zerafa, Menkos, Housden
Structural engineers: G.Horvath and Associates
General Contractor: Louis Donolo Inc.

Description: - 165,000 sq.ft. of multi-level retail mall
- 10-storey office tower.

The retail mall is situated above a 540-car parking garage, and below a loading dock, mechanical and storage level which separates it from roof terrace and the office tower.

Quote from "The Canadian Architect" October 1976:

"The multi-level retail mall can be visualized as a split-level double mall system in the form of a continuous triangular spiral which rises up from level one to level four. Within the spiral is a central core which is joined to the outer mall at the same level and connected by stairs to higher and lower points on the spiral.....

Escalators are provided at the nodes of the triangle. These nodes have been developed into major court spaces. The side of the triangle parallel to Eaton's has been extended north and south to provide a pedestrian connection between Maisonneuve Boulevard and St.Catherine Street.

This pedestrian street is to remain open throughout the hours of Metro operation."

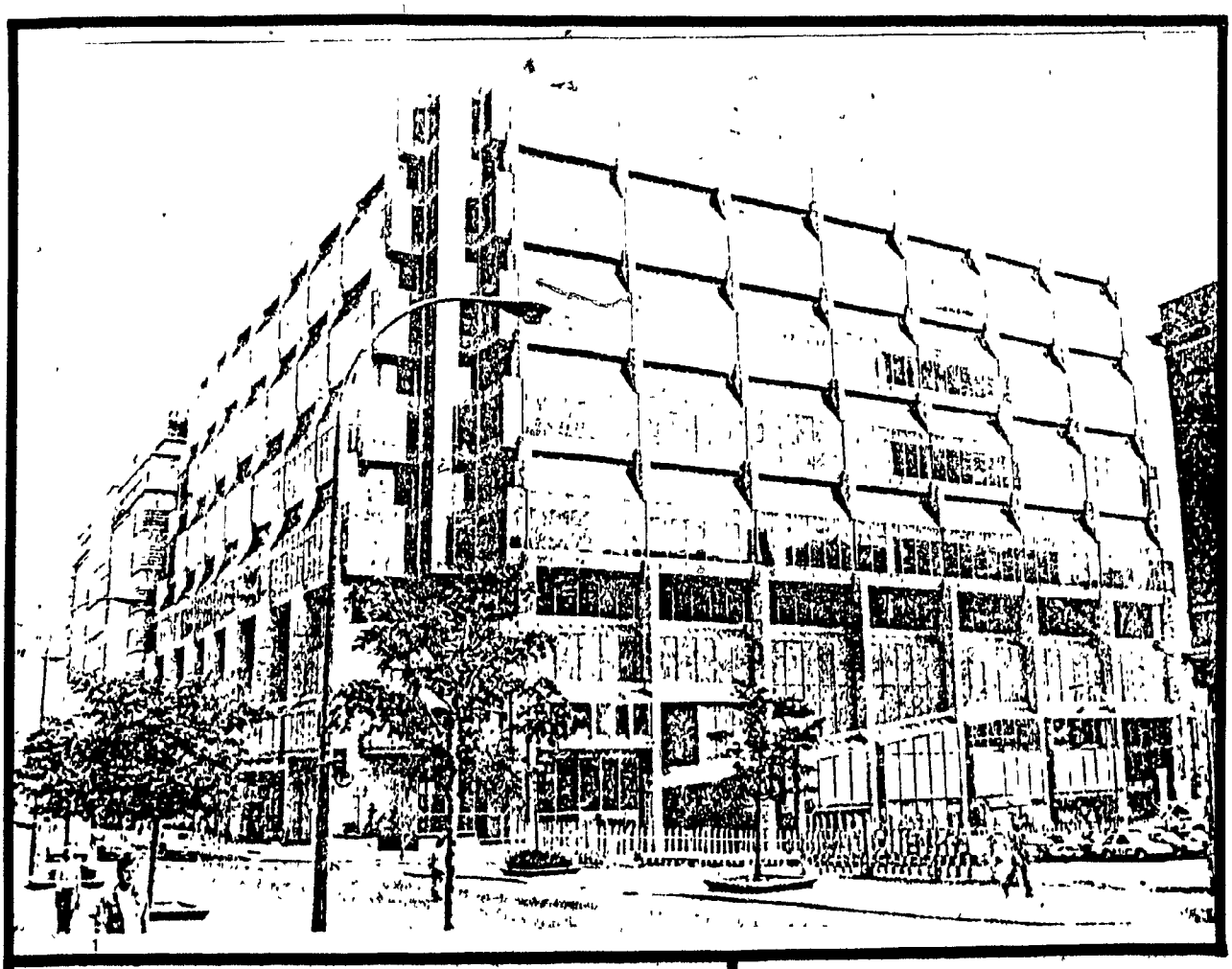
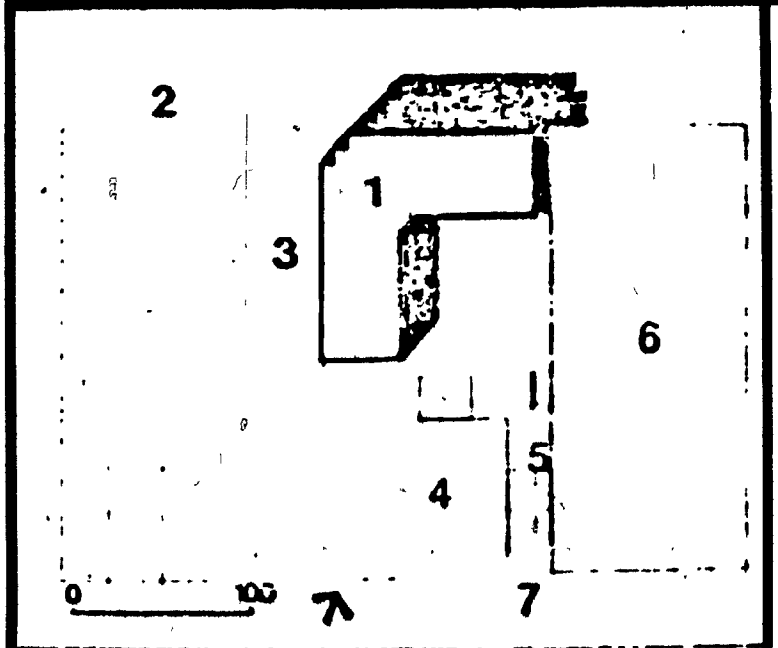


Figure 6-25: Les Terrasses exterior view.



1 Les Terrasses. 2 Maisonneuve Boulevard. 3 McGill College Avenue. 4 S S. Kresge. 5 retail mall. 6 T. Eaton Company. 7 St. Catherine Street.

---Figure 6-26: Les Terrasses site plan.

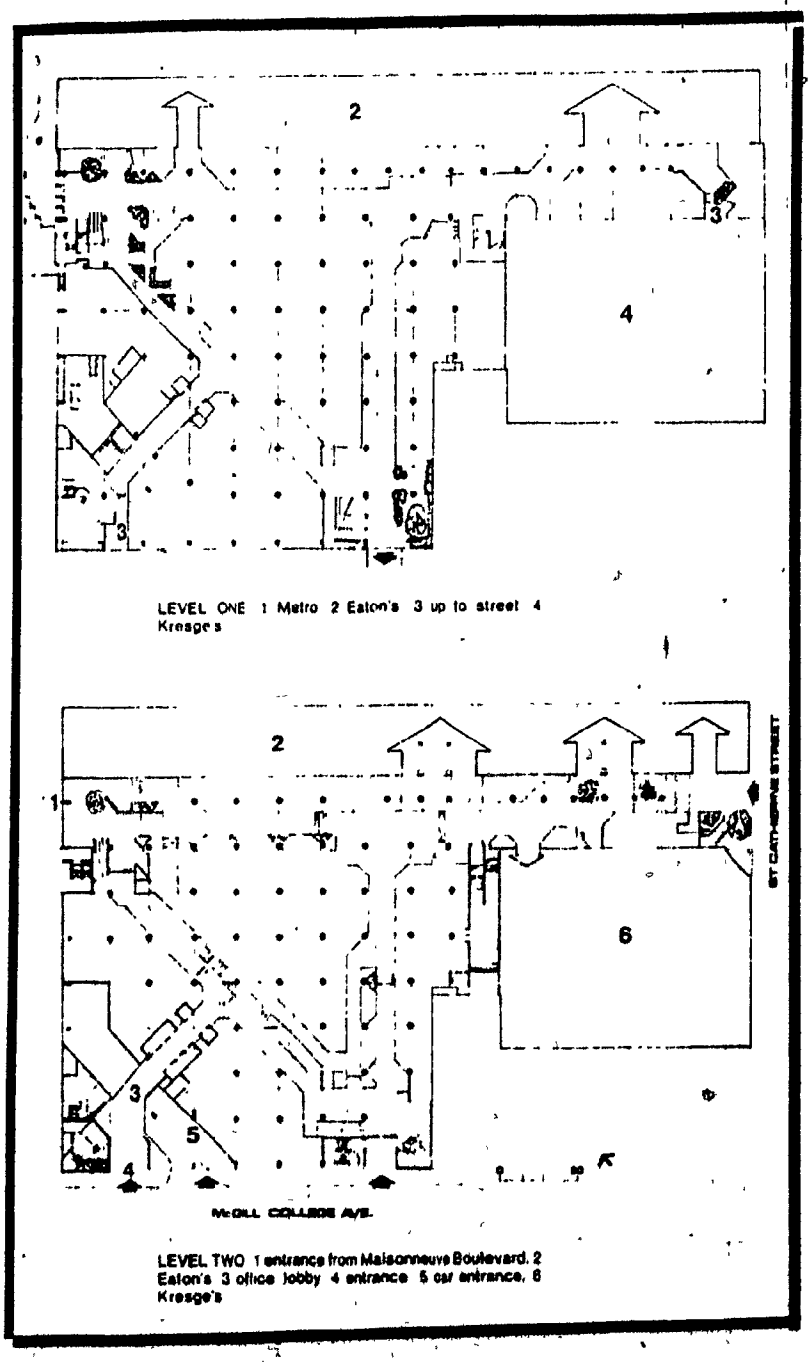
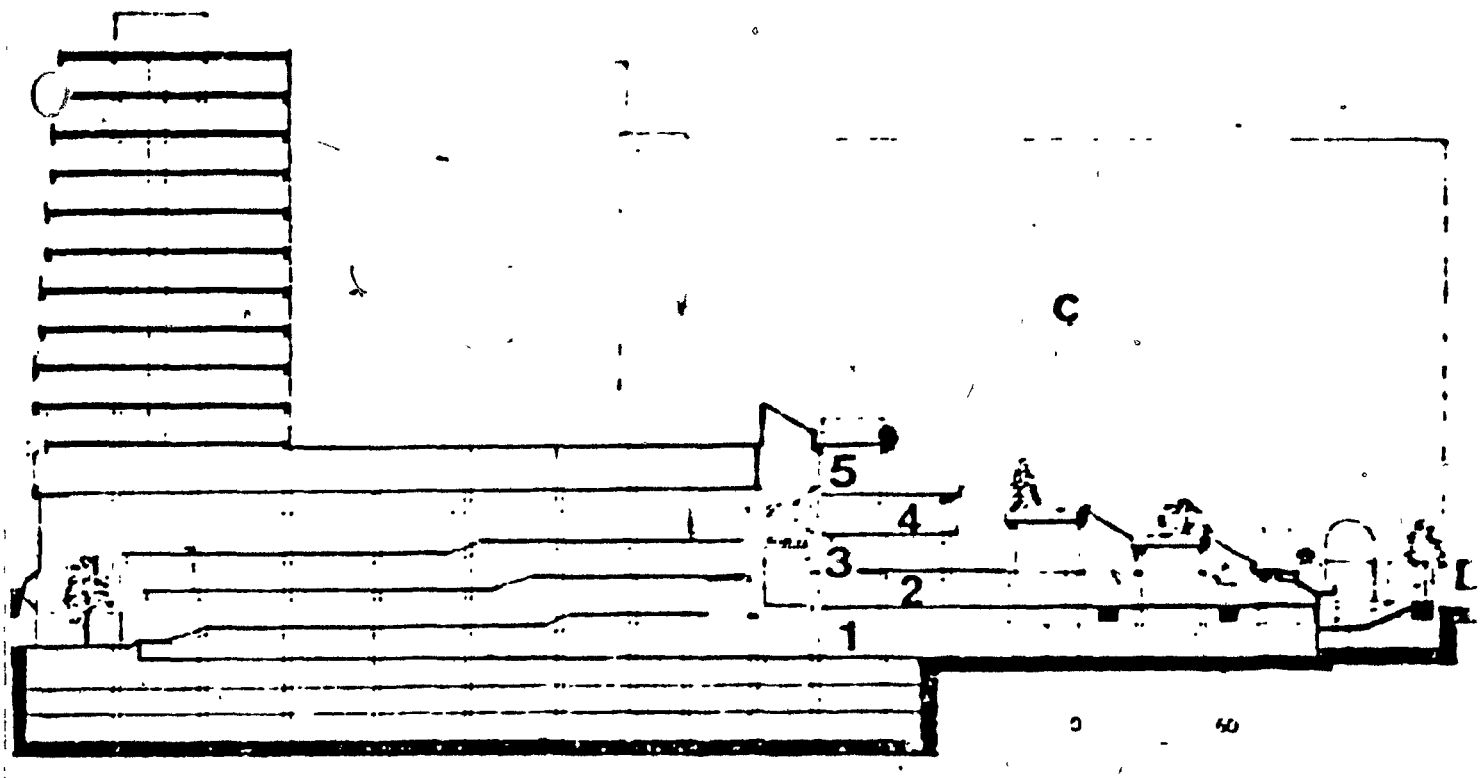


Figure 6-27 : Les Terrasses, shopping concourse floor plans.



A Maisonneuve Boulevard B Metro C Eatons D St Catherine Street 1 level one 2 level two 3 level three 4 level four 5 level five

Figure 6-28 : Les Terrasses, section.

PART SEVEN

PROPOSED MIXED-USE DEVELOPMENT PROJECTS IN NEW YORK CITY

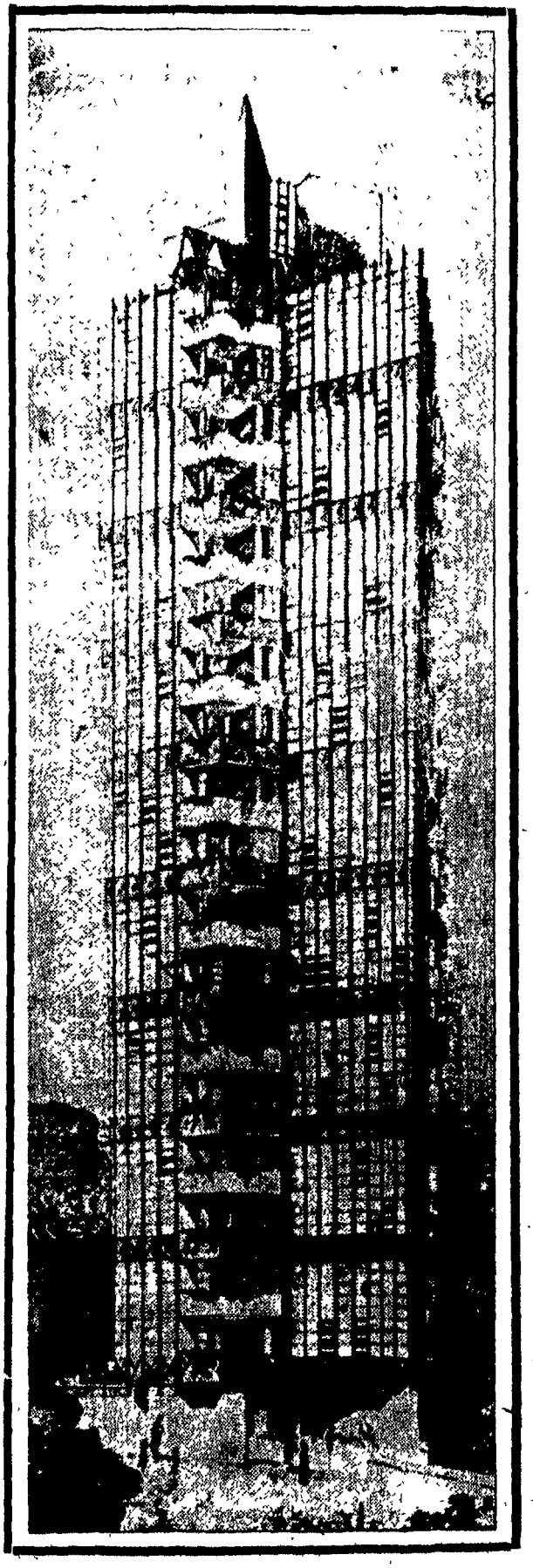


Figure 7-1: Frank Lloyd Wright's proposed MXD project. This 1929 plan for a combined apartment an office tower for St. Marks-in-the-Bouwerie in New York was never built, yet it pre-figured such current MXD projects as the Olympic Tower and the Galleria.

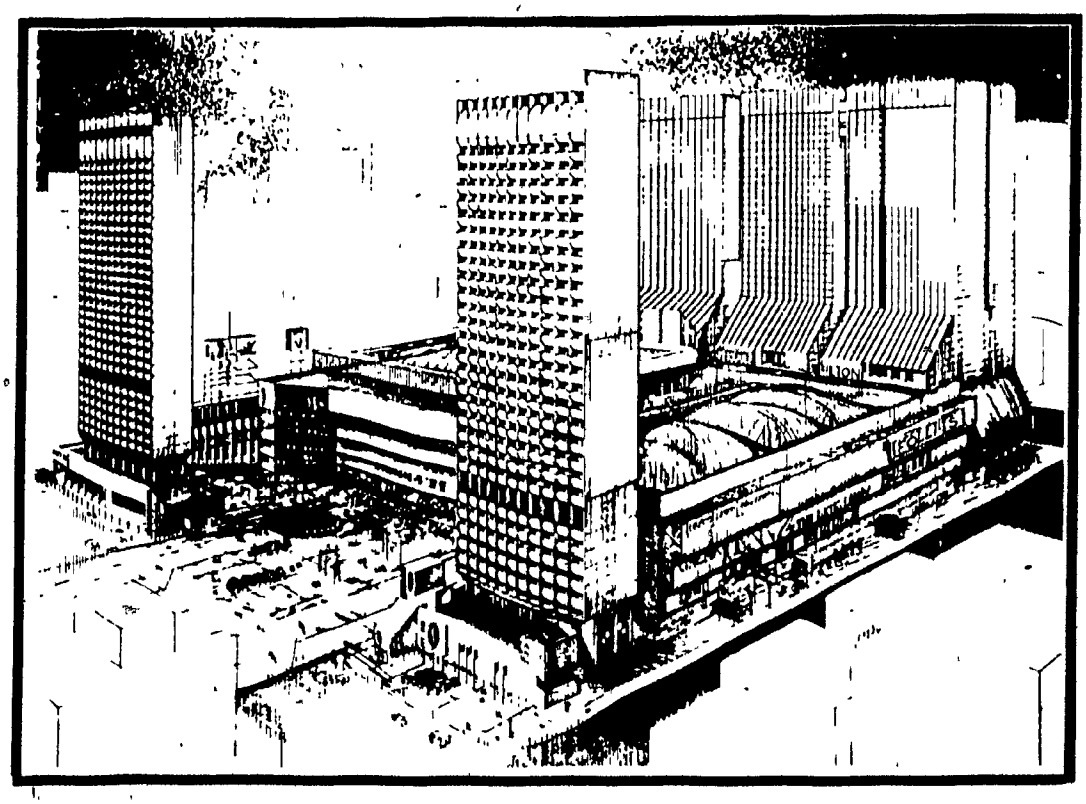


Figure 7-2 : Proposed Merchants Convention City, New York City. A large convention-office-hotel-entertainment-retail complex which was to be built next to Rockefeller Center. Architects Katz, Waisman, Weber, Strauss.

Figure 7-3 : Projected hotel and office tower building, with an ingenious 45-degree turn in the structure of the upper hotel floors over that of the lower office and retail commercial floors, New York City. Archtects Webb, Zerafa, Menkes, Housden.

PROPOSED 60-STOREY MIXED-USE TOWER FOR BONWIT TELLER SITE

Location: Existing Bonwit building at Fifth Avenue and 56th Street, Midtown Manhattan, New York City.

Architects: Poor, Swenke, Hayden & Connell.

Description: On the ground level there will be a 100-ft long corridor leading to the atrium, which will have five floors of retail space connected by escalators and elevators. On the fourth floor there will be a block through open-air public terrace, 13 floors of offices, (including several with landscaped terraces overlooking Fifth Avenue), 40 floors of condominium apartments and two mechanical floors.

The building will be built under the provisions of Fifth Avenue Special District. It will utilize the provision which will allow it to be much larger than it could be if it were not for the addition of a covered pedestrian arcade, provision of excess retail space and terrace landscaping.

The developer has assembled a " lot" of more than 35,000 sq.ft. (about 25,000 square feet from buildings now occupied by Bonwit Teller and 10,625 sq.ft. from the development of air rights over the adjacent Tiffany & Company). With the addition of arcade, extra retail space and other amenities the F.A.R. will rise to 21.6 from 15 under the Special District provisions.

Comments: According to Hal Negbaur, Chairman of Manhattan Community Board 5, "the bulk" created by another tall building should be a matter of deep concern. He suggested a six-month "moratorium" on bonuses in the area from 59th Street to Grand Central between Fifth and Lexington Avenues until city officials could study the impact of the density created by several new buildings.

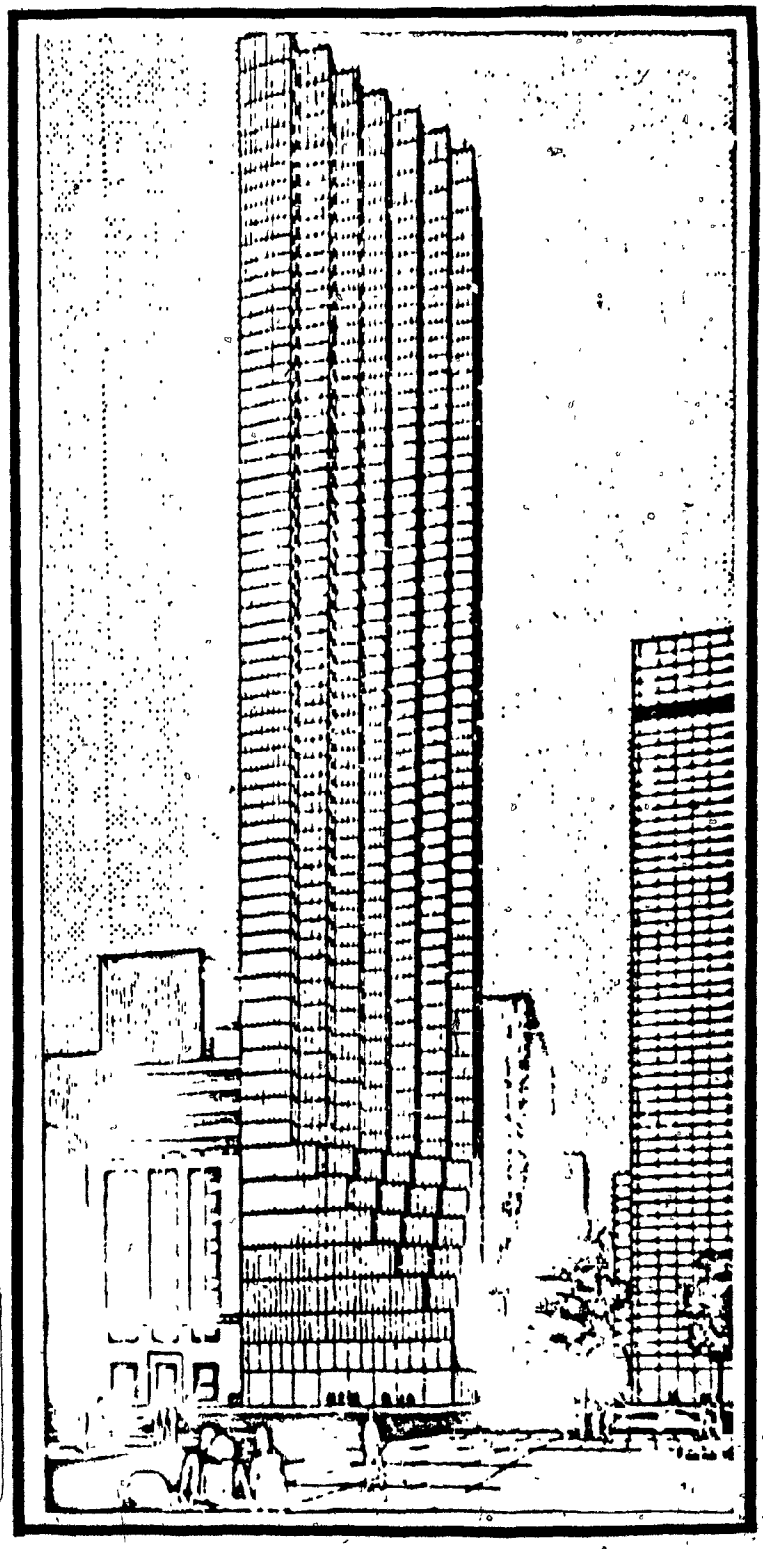


Figure 7-4 : Proposed 60-storey MXD tower to be erected on Bonwit Teller site, New York City.

RADIO CITY MUSIC HALL

The Music Hall building is situated in the middle of the block on 50th Street to the east of Avenue of the Americas and to the west of Rockefeller Plaza.

The construction of a mixed-use tower "piggy back" over Radio City Music Hall is recommended in a study prepared for the New York State Urban Development by Landauer Associates, a real estate consulting company. Analyzing the development of the Music Hall's air rights on the site and their possible transfer to four alternate sites, the study concluded that the non-contiguous sites were not feasible now "because of legal restrictions".

According to Rockefeller Center Inc., the use of air rights is necessary to defray the cost of running the 6,000-seat theater, the largest in the world.

An earlier engineering and architectural study indicated that a mixed-use tower could be erected atop the building without penetrating the famous Art Deco theater. The preliminary plans called for an addition of 31-storey to the roof of the Music Hall building between the Amax and the Associated Press buildings for about 19 floors of office space and 12 floors for hotel rooms.

The design developed by the firm Davis Brody & Associates called for the Guild Theater on 50th Street to be replaced by an entrance to an expanded lobby in the Associated Press building.

In the new plan, the existing roof, which was originally meant to

include gardens and connecting skywalks to other buildings in the Rockefeller Center, would contain in the new plan retail and restaurant facilities and a lobby for the office portion of the new tower.

GLOSSARY:

(G-1)

Accessory Use: An accessory use is a use which is clearly incidental to and customarily found in connection with the principal use. Such accessory use must be conducted on the same zoning lot as the principal use to which is is related, unless modified by the district regulations.

Arcade: An arcade is a continuous covered area which opens onto a street or a plaza. It is unobstructed to a height of not less than 12 feet, and is accessible to the public at all times.

Block: A block is a tract of land bounded by streets or by a combination of streets, public parks, railroad rights-of-way, pierhead lines and airport boundaries.

Bulk: Bulk is the term used to describe the size (including height and floor area) of buildings.

Combined use(or shared use): Mostly used to denote the combination of facilities for more than one activity in one project.

Commercial building: Any building occupied only by commercial uses.

Court: A court is any open area other than a yard or portion thereof, which is unobstructed from its lowest level to the sky and which is bounded by either building walls or building walls and one or more lot lines.

Development: A development includes: a) the construction of a

new building or other structure on a zoning lot; b) the relocation of an existing building to another lot, or c) the use of a tract of land for a new use.

Dwelling unit: A dwelling unit consists of one or more rooms in a residential building or residential portion of a building.

Extension: An extension is an increase in the amount of existing floor area used for an existing use.

Floor Area: The floor area of a building is the sum of the gross area of each floor of the building excluding cellar space, floor space in balconies, elevator or stair bulkheads and floor space used for accessory parking which is located less than 23 feet above curb level.

Floor Area Ratio: (F.A.R.) is the total floor area on a zoning lot divided by the area of that zoning lot. Each zoning district classification contains an F.A.R. control which, when multiplied by the lot area of the zoning lot, produces the maximum floor area allowable on such lot.

Height Factor: The height factor of a building is equal to the total floor area of the building divided by its lot coverage.

Large-scale residential development: A development used predominantly for residential uses on a tract of land which is single ownership and which is of a certain minimum size (at least 3 acres with a total of 500 dwelling units or at least 1.5 acres with a total of three principal residential buildings).

Lot area: The lot area is the area of a tract of land (zoning lot) in single ownership located within a block.

Mixed Use: An unspecified mixture of land uses within one building.

Multi- or multiple use: A facility that serves a variety of purposes.

Multi-use Center: A concentration of complementary land uses that is physically integrated by means of pedestrian systems.

Open Space: Open space is that part of a zoning lot, including courts or yards, which is open and unobstructed from its lowest level to the sky, except for specifically enumerated obstructions and is accessible to and usable by all persons occupying dwelling units on the zoning lot.

Plaza: A plaza is an open area accessible to the public at all times. It shall not at any point be more than five feet above nor more than 12 feet below the curb level of the nearest adjoining street. It must be unobstructed from its lowest level to the sky except for certain permitted obstructions such as arbors, fountains and flag poles.

Railroad or Transit air space: Railroad or transit air space is space directly over a railroad or transit right-of-way yard. After special review and under appropriate conditions and safeguards development may be permitted in such space.

Sky Exposure plane: A sky exposure plane is an imaginary inclined

plane.

a) Beginning above the street line (or, where so indicated, above the front yard line) at a height set forth in the district regulations and

b) Rising over a zoning lot at a ratio (of vertical distance to horizontal distance) set forth in the district regulations.

Street: Any road, street, highway, expressway, boulevard, parkway, avenue alley or other public way, which is intended for public use and provides a principal means of approach for vehicles or pedestrians. Street refers to the entire public right-of-way.

Through block arcade: is a continuous area within a building connecting one street with another street or plaza or arcade adjacent to the street.

Use: A use is any activity, occupation, business or operation carried on, or intended to be carried on, in a building or on a tract of land.

Zoning lot: A zoning lot is a contiguous tract of land located within a block which, at the time of filing for building permit, is designated as a tract to be used, developed or built upon under single ownership. A contiguous tract of land may include one or more lots of record.

FOOTNOTES:

1. Witherspoon, R., Community development, mixed use development in Urban Land, Feb '76, P.7

2. Wilburn, M., Perspective on mixed use development in Urban Land, Oct '73, P.7

3. Mumford, L., The City in History, P.212

4. Harrison, Ballard & Allen, Rezoning, P.XV

5. Halpern, K., Downtown USA, P.37

6. Halpern, K., Downtown USA, P.39

7. Halpern, K., Downtown USA, P.37

8. Halpern, K., Downtown USA, P.43

9. City Planning Commission, A New Zoning For N.Y.C., P.3

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