

THE WAY WE LIVE NOW:
A NEW APARTMENT HOUSE FOR BROADWAY

by
Eric Paul Mumford
A.B., Harvard University
1980

Submitted to the Department of Architecture in Partial
Fulfillment of the Requirements for the degree of
Master of Architecture
at the
Massachusetts Institute of Technology

June, 1983

C Eric Paul Mumford 1983

The author hereby grants to M.I.T. permission to reproduce
and to distribute copies of this thesis document in whole
or in part.

Signature of Author _____
Department of Architecture
May 13, 1983

Certified by _____
Fernando Domeyko-Perez
Associate Professor of Architecture
Thesis Supervisor

Accepted by _____
Chairman, Departmental Graduate Committee
JAN WAMPLER
MASSACHUSETTS INSTITUTE
OF TECHNOLOGY
Rotch
MAY 26 1983

THE WAY WE LIVE NOW:
A NEW APARTMENT HOUSE FOR BROADWAY

by Eric Mumford

Submitted to the Department of Architecture on May 13, 1983
in partial fulfillment of the requirements for the Degree
of Master of Architecture.

ABSTRACT

This thesis is essentially a design for a large apartment building in New York City containing substantial public facilities, which, it is hoped, might function as a kind of neighborhood center. The design process was devoted chiefly to the overall design of the building, with particular attention paid to the interior public spaces and the exterior massing. I tried to be reasonably realistic in terms of contemporary planning constraints and construction methods in the development of the design, and the project is meant to be taken as a serious proposal for its site. While the project itself is the main point of the thesis, the accompanying text is intended to provide some contextual background: the introduction sets out the main issues I struggled with, the other chapters provide some of the historical, cultural, and physical context of the design, while a concluding section describes the design process.

Thesis Supervisor: Fernando Domeyko-Perez
Title: Associate Professor of Architecture

ACKNOWLEDGEMENTS

Many people helped in various ways during the course of this thesis, but I would especially like to thank:

--Fernando Domeyko, my advisor, for his criticism and encouragement;

--Bill Rawn, a reader, for some key information and useful suggestions;

--Harry Toung, for suggestions, access to Avery Library, his desk, and even his roof;

--David Soles, Roy Strickland, Don Klema, and Marilys Nepomechie, for incisive criticism and moral support;

--Chris Larson and Deborah Epstein for thesis-room camaraderie;

--My parents, for lots of things;

--and Lynn most of all.



Contents

Introduction..... 7

Historical Background..... 11

The Neighborhood..... 21

The Site 37

Project Description..... 45

The Project..... 51

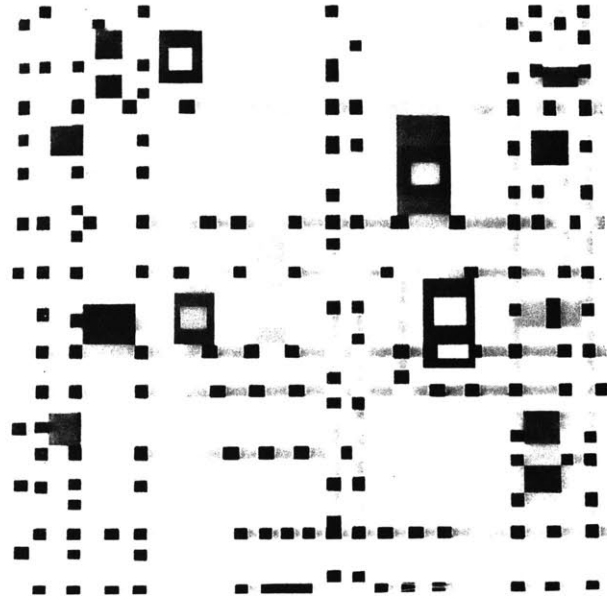
The Design Process..... 79

Conclusion..... 87

A Note on Sources..... 88

Bibliography..... 92

Photo Credits..... 89



Mondrian: Broadway Boogie-Woogie.

Introduction

More than any other kind of symbolic artifact, buildings have the power to declare that some pattern of relationships has been established, has been made to stand, and they are able to project that pattern into the future of an on-going human community.

-- Norris Kelly Smith,
Frank Lloyd Wright: A Study in
Architectural Content

I believe architectural design is mostly an intuitive process; sometimes I find it difficult to describe why I have done certain things, preferring to let the design speak for itself. Nevertheless, some explanation of the issues that underlie the design might be helpful. This thesis grows out of some longstanding concerns of mine: a commitment to urbanity, an interest in housing, a concern for the nineteenth century fabric of the American city; but it also grows from some more recent concerns: an interest

in New York's Upper West Side, a loathing of most recent apartment buildings, and a desire to create an urban public space that is more than an indoor shopping mall. Now that it has become apparent that neither a total rejection nor a total acceptance of modernist design principles is an adequate solution to contemporary concerns about designing in a strong existing urban fabric, most architects would agree that to avoid total imitation, elements of that fabric must be transformed through the agency of a particular formal method. Throughout the design process I have tried to explore how such transformation takes place, why it is necessary, and what it means. I have constantly shifted back and forth from studying the context to making the design, and I hope the results are evident in the final project. But the hard fact remains that one must apply some outside design method to the problem if complete imitation is not the object.

In many academic situations a particular design vocabulary, usually derived from the personal mode of an influential figure, is offered as the medium by which contextual information is to be transformed into a new design. Whether or not the mode is applicable to the situation at hand is usually not considered, and in many cases distinctive elements of the context are overshadowed by the design vocabulary itself, producing designs that have a rather tenuous (or at least arcane) relationship to their surroundings. In this thesis

I have tried to derive a design vocabulary partly from the actual context and partly from those buildings that seemed relevant to the problem at hand. I have tried to avoid falling back on an unconsidered, given vocabulary without falling into the opposite trap of letting the question of vocabulary dominate the entire proceedings. I was aided in this process by the existence in New York of many pre-modern buildings (and a few modern ones) that dealt with many of the same issues I was concerned with, and I also looked to other American and European cities for buildings that offered clues. The results are certainly not definitive, but I have been able to begin to clarify these issues in my own thinking through this process.

Rockefeller Center (Hood, et.al., 1933).
Clear evidence that genuine public space
can be created within the confines of
commercial constraints.

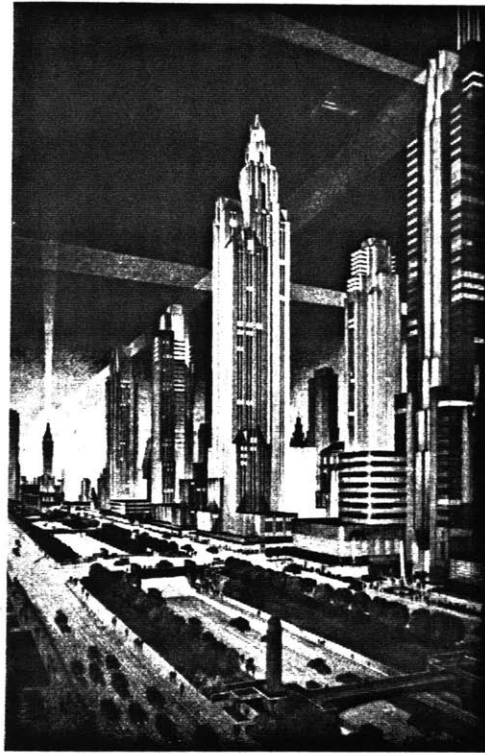


While I wanted to derive a design vocabulary that was appropriate for Morningside Heights, I also wanted to engage the programmatic and constructional issues that are an inescapable part of architecture today. I wanted to design a project that was visionary in a modest way but which was rooted in some realistic constraints. I used

recent apartment houses in New York as a reference for unit sizes and construction systems; factors such as a floor area ratio of 10, a flat-plate construction system with 8'-6" floor to floor dimensions, and the need to minimize public circulation and maximize exterior perimeter on the housing floors all had major effects on the design.

I wanted to do more than a simple apartment building, however; I wanted to use the high density of the building to support the creation of some genuine public space, so that the lower floors could become a gathering of characteristic local facilities that might serve as a kind of neighborhood center. I tried to use my familiarity with the area to help determine how this public space should best be treated, and concluded that a fairly modest space with natural light was the best focus for a set of activities that were chosen for their appropriateness to the neighborhood.

In general this thesis design represents an attempt on my part to grapple with issues which I hope to continue to be involved with in the future, and I hope the results are interesting to others.



Chrystie-Forsyth St. Parkway
proposal, 1929.

Historical Background

In our fixation upon the dwelling unit and the constructional matrix, we have lost the sense of the collective implicit in the apartment house type.

-- Robert A.M. Stern,
"With Rhetoric: The New York
Apartment House."

As others have pointed out, the unique character of New York, especially Manhattan, is dependent upon its high density. The sense of heightened awareness that is characteristic of the city is a direct result of the concentration of so many people, buildings and activities in so small an area. Such intense concentration produces immense problems, but it also has large potential benefits. A basic attitude that underlies this thesis is that, in New York at least, high density can be a positive condition for housing.

In a sense high density multi-family housing is a fairly recent phenomenon; the first multi-family dwellings in New York were converted rowhouses, quickly followed by tenements on the same model in the mid-nineteenth century. At first such a building type occupied the very bottom of the ladder of socially acceptable housing, but as land values increased and rowhouses became increasingly expensive, multi-family dwellings came to seem more respectable. The first apartment building intended for middle class tenants appeared in 1869 (the Stuyvesant Apartments, designed by R.M. Hunt), and by the turn of the century only the wealthy were still building individual rowhouses in Manhattan. From the five stories typical of the earliest apartment buildings, newer buildings grew in size, pretensions and number of conveniences, so that by 1910 large 10-14 story apartment buildings, often containing stores, restaurants and roof gardens were quite common. Public outrage over the excesses of tenement builders had made legislation possible that regulated the facade heights and amount of natural light in all apartment buildings, so that while plan arrangements differ widely, most of these buildings share similar characteristics.

By the 1920s the middle class was beginning to move out to suburban areas and the very wealthy were beginning to consider apartment dwelling socially acceptable. Park Avenue was built up with huge, vaguely Georgian apartment buildings, and Lewis Mumford could write disparagingly of



Central Park West: the
Eldorado is to the left.

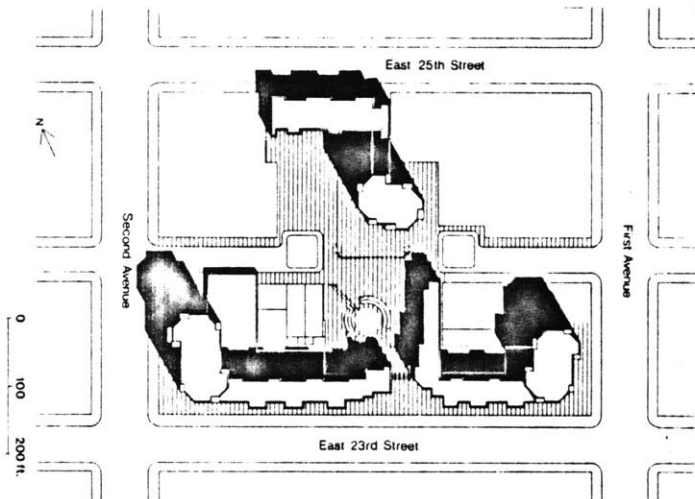
"the plight of the prosperous," living without trees and sunshine. On Central Park West a trendier set moved into the huge twin-towered Art Deco buildings there, buildings that stand with midtown skyscrapers of the same era as dazzling evocations of modernity.

After the cessation of construction during the Depression and war years, new apartment building in the 1940s and '50s took a much different form. Influenced by various modernist doctrines of city planning that favored superblocks over corridor streets and assumed that the existing city was destined to be replaced by a remade modern one, postwar buildings tended to be bland slabs, anti-urban and object-like. With a few exceptions they were also quite cynically designed, taking the modernist urge for austerity as a licence for bare-bones design. The intellectual climate of the period favored lower densities

and increased open space, and if architects saw the Corbusian tower-in-a-park as the ideal model, it was easy to see why the existing urban fabric was mostly ignored.

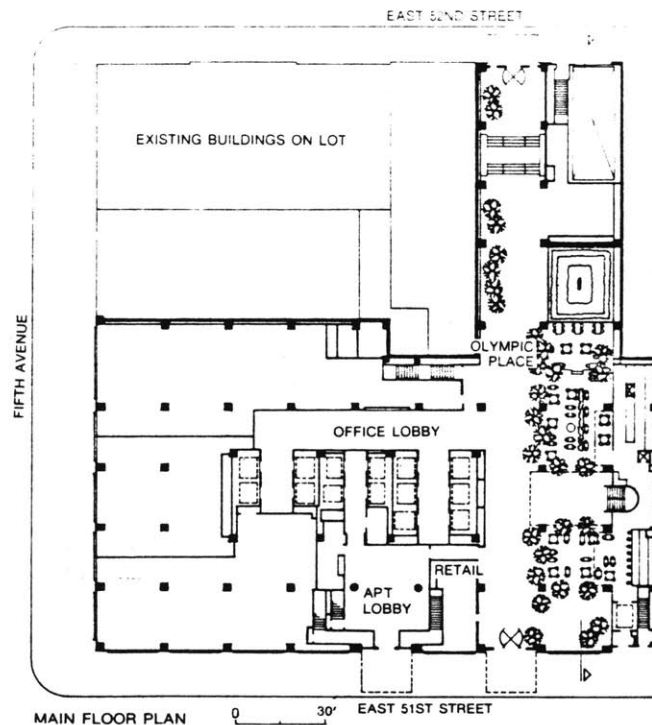
Already by the 1960s the inadequacy of the strict modernist approach was evident, and polemicists like Jane Jacobs argued for the reassertion of the primacy of the street and for the delights of the functionally heterogeneous over the functionally zoned city. It was mostly in public housing that such ideas were tested out; projects like Davis, Brody's Riverbend and East Midtown Plaza, though unquestionably still modernist works, show a real sympathy for the surrounding streets. A growing disenchantment with modern architecture in general, coupled with a renewed interest in urban living, brought about the rediscovery of the richness of many New York neighborhoods; it was hardly surprising, then, that eventually architects would be asked to respond in some way to that richness.

Davis, Brody & Assocs.:
East Midtown Plaza, 1967.
Site Plan.



In the mid-1970s the city grew concerned about the proliferation of dull uses like airline offices and banks in Midtown and developed zoning incentives to increase the amount of housing there, as a way of generating more activity and improving the desirability of the area. The first results of this policy were two "mixed-use" towers, The Galleria (D.K. Specter, 1975) and Olympic Tower (S.O.M., also 1975). Both contain a mixture of luxury

S.O.M.: Olympic Tower, 1975.
Plan showing through-block passage
with cafe and waterfall.



housing, offices, recreation facilities, and "public amenities" in the form of through-block passages with cafes and restaurants. While neither building is completely satisfactory, they both offer interesting precedents for how a contemporary apartment house in Manhattan could be considered.

With the opening of the Columbia condominiums at W. 96th Street in late 1982, new apartment construction finally reached upper Broadway. Intended to provide new housing for those unwilling to pay the enormous prices in effect farther down on the West Side, the Columbia nonetheless is far from cheap, with prices starting at around \$100,000 for the least desirable units. So far it has been a tremendous success, suggesting that others like it may follow. In addition to 303 housing units, the Columbia contains a 15,000 sq. ft. health club, stores along the Broadway frontage, and a roof garden. Architecturally the building is interesting (if not particularly successful): the plan is L-shaped, with a 125 ft. section matching the other buildings on Broadway and a 31-story tower slab facing 96th Street.



Liebman Ellis Melting: the
Columbia Condominium, 1982.

Apartment building returns to Upper Broadway: Rendering of new building by Gruzen & Partners at W. 88th St. and Broadway.

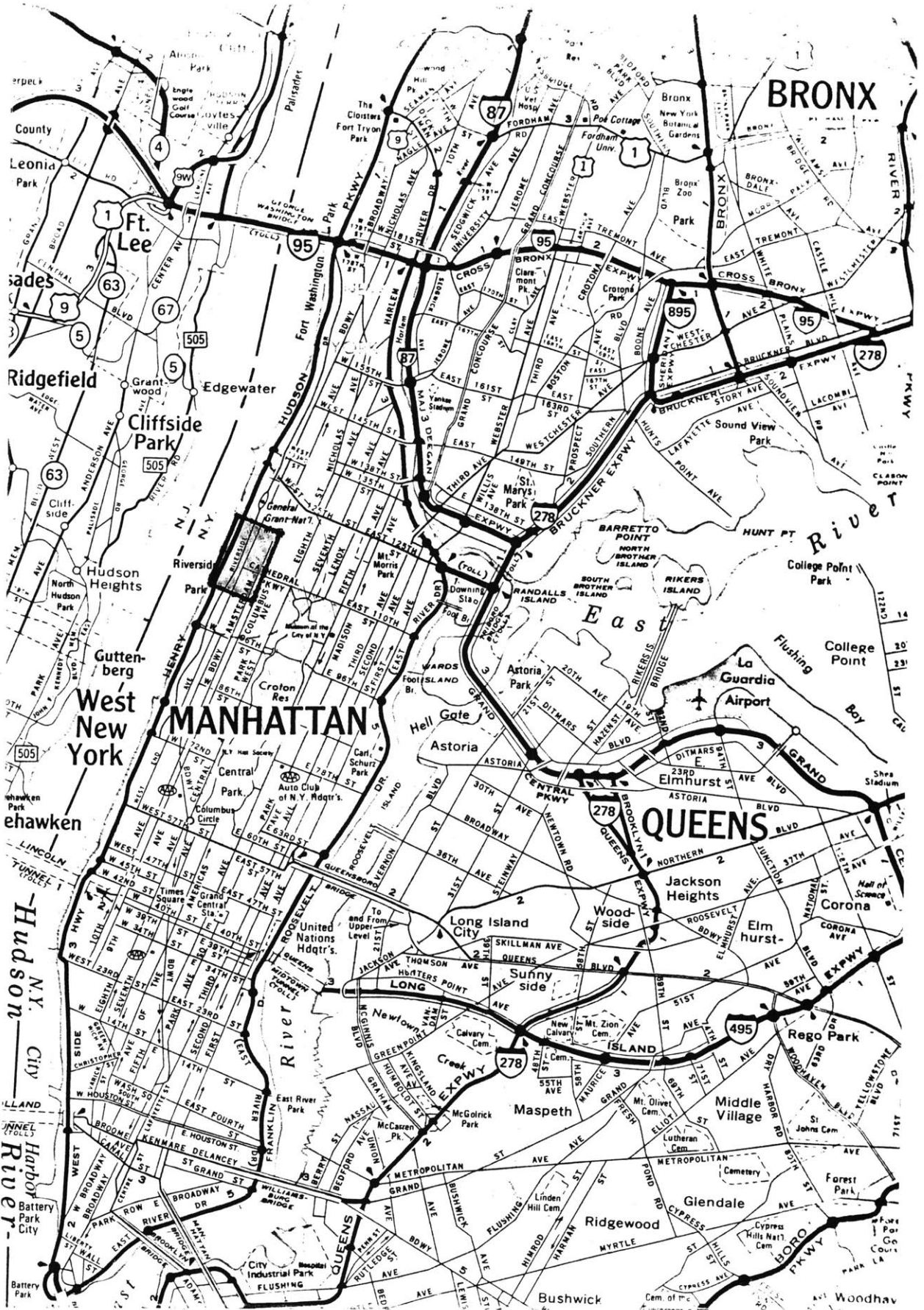


The design presented in this thesis attempts to take the ideas suggested by the Galleria, Olympic Tower and the Columbia a step further. The site I have chosen is fourteen blocks north of the Columbia in a physically similar area. It seems to me that if new apartment development along Upper Broadway is inevitable, then perhaps both the architectural treatment and the kind of public space within it could help to make such a new building a positive rather than a negative presence in the area. I have tried to de-emphasize the purely commercial elements of the public space and emphasize those things that, while potentially profitable, also create the possibility of some genuine public life that extends and intensifies the life of the surrounding streets. Ideally the apartments in the building would be subsidized in some

fashion so as to contain a collection of people as diverse as the neighborhood. In a sense the project is slightly utopian, but at the same time it is meant to be reasonable within the framework of contemporary conditions in New York. If it is not quite the way we live now, it at least suggests how we might live in the future.



The Upper West Side and Morningside Heights, with landmarks of interest.





Ornamental cupola on the roof of the Hendrik Hudson, with Riverside Park and the Hudson River beyond.



Broadway looking south from 111th St.

The Neighborhood

Morningside Heights is where cultural institutions do not pretend to pastoral illusions -- urban reality surrounds them at every turn. The mix here is a curious one: no New York neighborhood is as rich in centers of learning and places which the rest of the nation likes to think of as Great Institutions -- such as Riverside Church and Grant's Tomb -- but Morningside Heights also has its share of welfare families, dirt, and crime. Most of the neighborhood looks like the Upper West Side in the blocks below 110th Street; it is heavily built up with apartment houses dating from the first two decades of this century, and Broadway is both its physical and spiritual center. But there is something that makes Broadway in Morningside Heights noticeably different from Broadway in the Eighties or the Nineties. It is poorer here, but it is more alive. The only physical differences are a few more bookstores and a younger clientele in the bars, but there is a sense above 110th Street of a neighborhood that is a little bit more self-assured, a little bit less interested in remaking itself to look like someplace else. There will be no white-brick high-rise apartment houses here, for what residents of this neighborhood fear most of all is the tendency of so much of Manhattan to look like the Upper East Side. Here, residents believe, is where city life remains real. ...Columbia University is surely Morningside Heights controlling presence, but in New York the spirit of the city is as strong as the spirit of the university. The city does not stand at bay, allowing the cultural institution within it to maintain an effete, aloof presence; it rushes in with all its force, and it stamps its personality upon all of the institutions in the area. The result is that Morningside Heights is like neither any other university neighborhood nor any other city neighborhood anywhere.

-- Paul Goldberger in
New York: The City Observed

As one may infer from Goldberger's description, Morningside Heights is not an easy area to characterize. Physically the neighborhood has an air of decayed luxury that is surprisingly comfortable, and Broadway, in Goldberger's words, "is throbbing with the kind of sleazy vitality that is so characteristic of New York." It is

definitely a stable, even vital area, especially now as gentrification creeps slowly up the West Side, but at the same time there is something less than completely proper about Morningside Heights and one hopes that there always will be.



Broadway looking south from 111th St.

Upper Broadway is the lifeline of the area, and besides its vitality the most striking thing about it is its tremendous scale. The boulevard is 150 ft. from facade to facade and the buildings average eight to twelve stories in height. This heroic scale is not particularly oppressive, even though the buildings are undoubtedly a little brutal in the way they rise sheer from the sidewalk. The intermittent cornice line at about 120 ft. up gives the street a unity that makes the vista down Broadway a curiously enlarged and transmogrified Haussmanian vision.



Riverside Drive in Morningside Heights, with the tower of Riverside Church and the George Washington Bridge in the distance.

When a whole cityscape is dominated by such large buildings the effect is quite different from when one or two blockbusters invade a more delicately scaled area. Here it is the one and two story commercial sheds that are out of place; they act like mere ground cover for sites that will soon carry larger buildings (which may in fact be the case).

While at first it is difficult to even distinguish the individual apartment buildings because of the way the constant row of the ground floor stores makes the street edge continuous, they are in fact quite interesting. The New York Times of September 18, 1910 remarked in an article entitled "Upper Manhattan a City of Magnificent Apartments" that:



The Hendrik Hudson, Riverside Dr. and 110th St. (Wm. Rouse, 1907). Only the right hand cupola survives, without its hip roof.

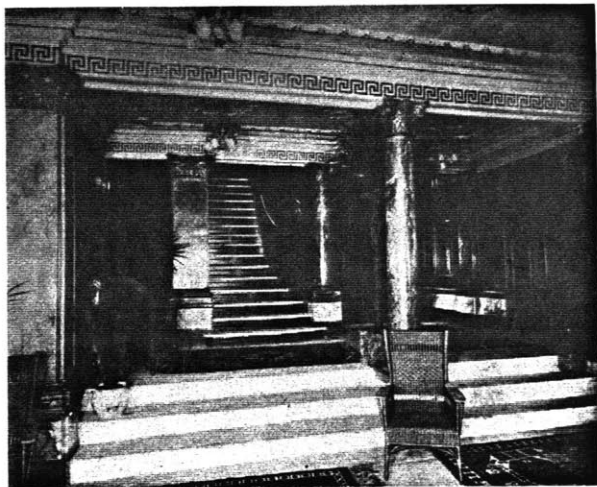
The Hendrik Hudson, one of the largest and handsomest apartment houses in the city, occupies the north side of 110th Street between Broadway and Riverside Drive, and since its completion a short time ago others in keeping with its character have been erected nearby. Here is a section which was notorious a few years ago as New York's "Little Coney Island." Both sides of 110th Street between Amsterdam Avenue and Broadway were lined with old wooden houses, groggeries, and summer beer gardens, all of which aroused the protest of law-abiding and staid citizens. The cheap resorts managed to exist, however, until in the natural course of things builders saw that the land was better suited to towering edifices of stone and brick, and today but scant evidences remain of the former condition.

This passage indicates some key facts about the development of the area: first, that most of the first spurt of apartment construction took place in a rather short period, roughly 1904-11; and second that before the apartment houses there was only the outer fringes of the rapidly growing city here. In a real sense the apartment houses form the basic urban fabric of the area. As the Times put it in 1910, "the West Side is assuredly the apartment house area 'de luxe' of the civilized world."

The Hendrik Hudson is probably the most interesting of these apartment houses. The first section, on Riverside Drive, was built in 1907, followed the next year by its Addition, facing Broadway (now the College Residence Hotel). Other particularly notable buildings from about the same time are the Bonavista, 109th and Riverside (recently purchased by Columbia University for conversion to a dormitory); the mansard-roofed Manhasset, 109th and Broadway; and the Brittonia, on 110th Street. There are many others of varying quality. All of them (except the original Hendrik Hudson) are between ten and fourteen stories tall. They are all of steel frame construction



Cathedral Parkway (W. 110th St.) from the roof of the Hendrik Hudson.



A typical lobby: the El Nido Apartments, 1904.

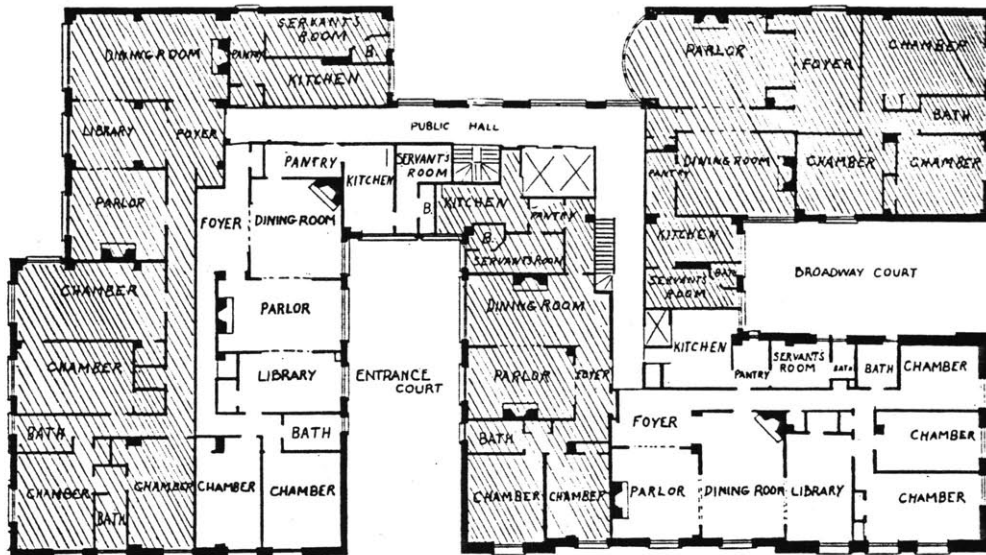


Riverside Drive under construction at 116th St., 1908.

with brick, stone or terra cotta veneer. Their plans show considerable variation, but they all share certain features; a ground floor lobby, often elaborately ornamented with marble and mirrors; light courts which "notch" the buildings so as to get some light and air into the minor rooms; and, originally at least, large rambling apartments with wood floors and rich moldings. The light courts are the only thing that keeps these buildings from being complete boxes; sometimes the courts are absurdly deep (about 18' x 50' at the Hudson), but they never exceed 20' in width and are often narrower.



The Hendrik Hudson Addition: View from Broadway in 1908 (the ornamental balconies and roofs have since been removed).

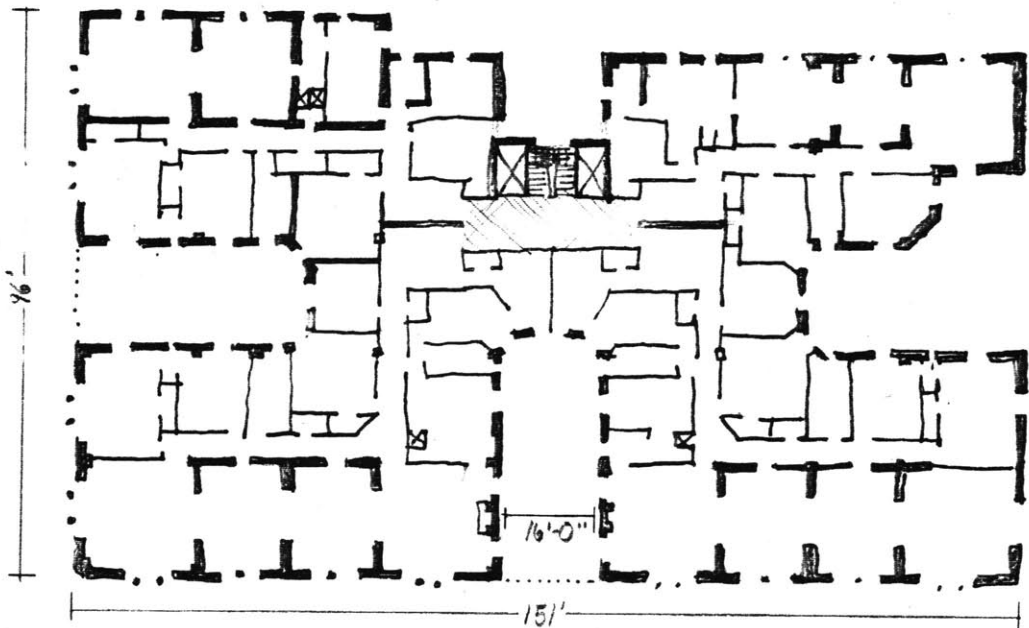


HENDRIK HUDSON ANNEX, 110TH STREET AND BROADWAY— SINGLE APARTMENTS.
Wm. L. Rouse, Architect.

The Hendrik Hudson Addition: Original plan showing the street-opening courts. The large original apartments have since been cut up into single rooms.



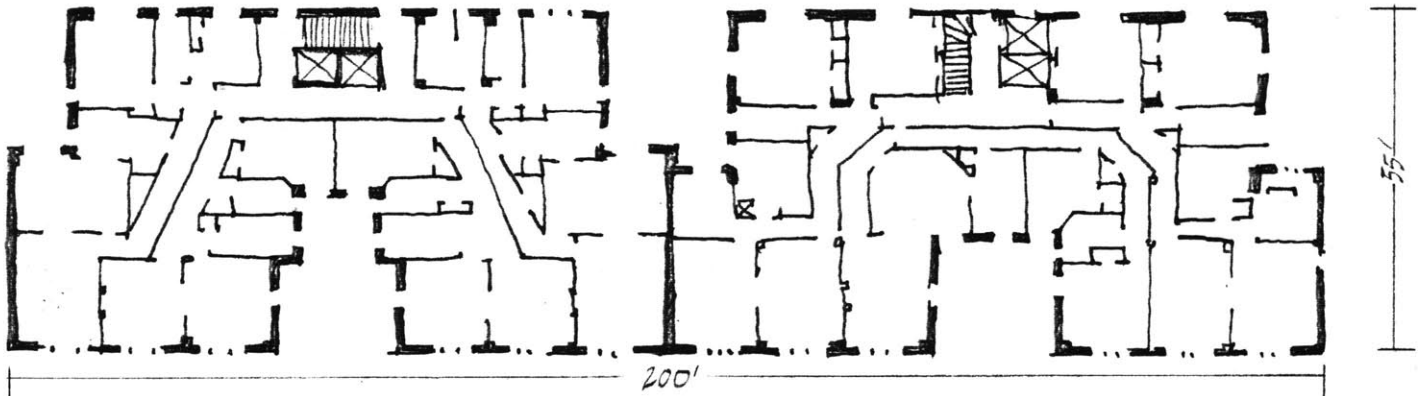
The Bonavista (J. Brower, 1908), 109th and Riverside Dr. The cornice and balconies have since been removed.



The Bonavista (now the Carleton): Original plan showing street-opening courts. Like the Hendrik Hudson, this building has since been subdivided into single rooms.



The Prince Humbert and the Marc Antony (Schwartz and Gross, 1910). These buildings are part of the continuous line of 150 ft. apartment houses on the south side of Cathedral Parkway.



Plan of the Prince Humbert and Marc Antony, showing how the light courts light the inner rooms and allow for a deeper building--55 ft. in this case.

The facades are usually simple in fenestration and elaborate in ornament. A few of the buildings have bay windows, but most rely on richly ornamented cornices and balconies to enliven their facades. These facades are invariably divided in a tripartite manner, with limestone bases, repetitive intermediate stories, and elaborate terminating stories. The actual dimensions of the three sections vary somewhat with each building, but in general the base section is usually 20-25 ft. high, and the intermediate stories usually end at a point about 100 ft. about the sidewalk. The "attic" then usually takes up two or three stories. The simple fenestration of the intermediate stories usually gives way to arched or otherwise more distinctive windows at the attic level. Many of the buildings originally featured heavy cornices at the roof edge, but as a result of a well-known accident a few years ago some of them have been removed. The same fate has befallen some of the ornamental balconies, cupolas, and projecting false roofs.

It would be difficult to insist that these buildings constituted great architecture, but for all of their slightly ridiculous pretensions they make a decent cityscape.

In the 1920s a number of new buildings were built in the area, especially along Riverside Drive. They are ususally larger and plainer than the earlier apartment



The Dreadnaught, 110th St. and Amsterdam Ave. Notable today as the building which contains the V&T Restaurant.



No. 509 Cathedral Parkway--somewhat unusual in having an all-limestone facade.



The Britannia, 1909. An unusual pitched roof apartment house.



The Manhasset, 108th St. and Broadway (Janes and Leo, 1904). The "mansard" treatment of the attic stories is unique in the area.

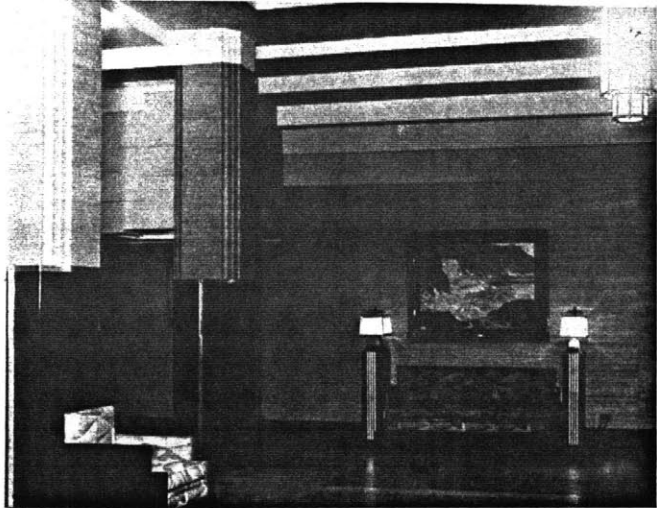
houses but they follow fundamentally the same organizational rules. In general, they are considerably less interesting than the buildings already discussed, with one exception. The Master Apartments at 103rd Street and Riverside Drive was built in 1929 as a combined apartment hotel, art school, museum, restaurant and theater. Architecturally its most interesting feature is its stunning setback tower, a landmark on Riverside Drive. It begins to setback at the 16th floor (just above the height of the neighboring apartment houses), and it terminates in a specially designed water tower and smokestack at the 29th floor. The plan is not especially distinguished although the interiors have some attractive Art Deco details.



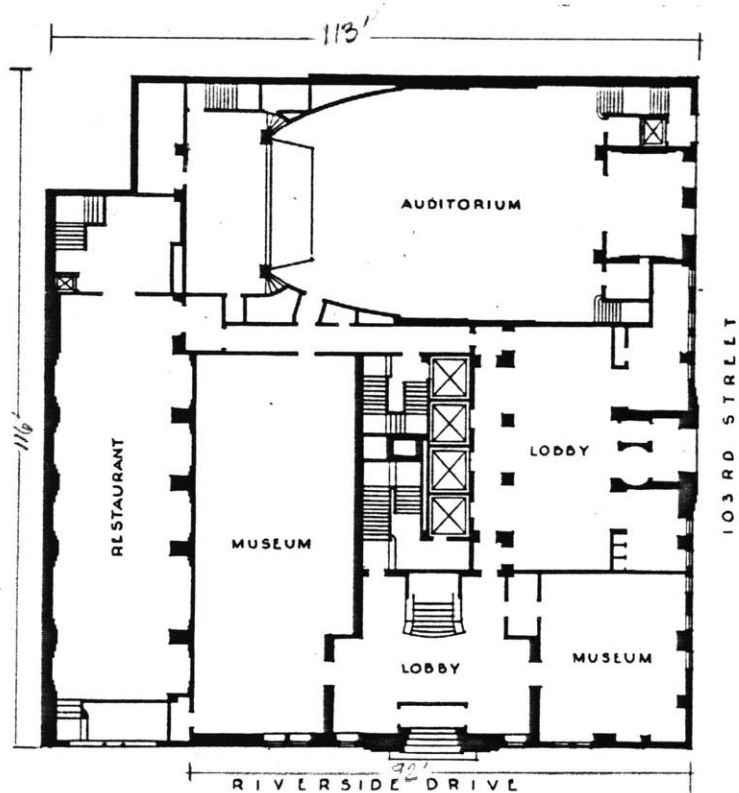
The Master Apartments and Roerich Museum, 103rd St. and Riverside Dr. (Helmle, Corbett & Harrison, 1929): View from the Drive shortly after its completion.



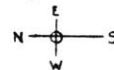
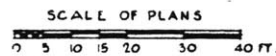
The Master Apartments, recent view.



Lobby at the Master Apts. shortly after its completion in 1929.



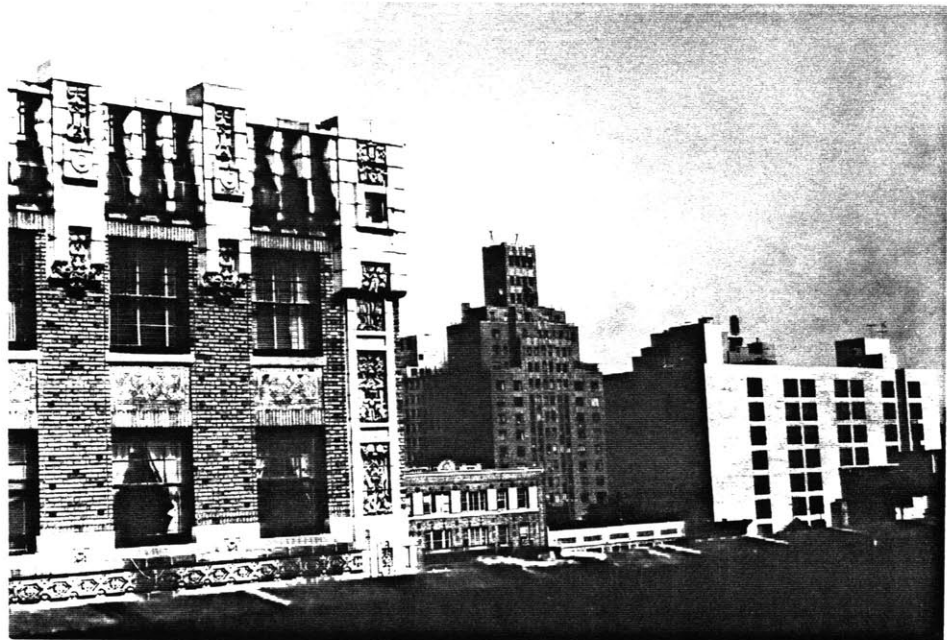
MAIN FLOOR PLAN



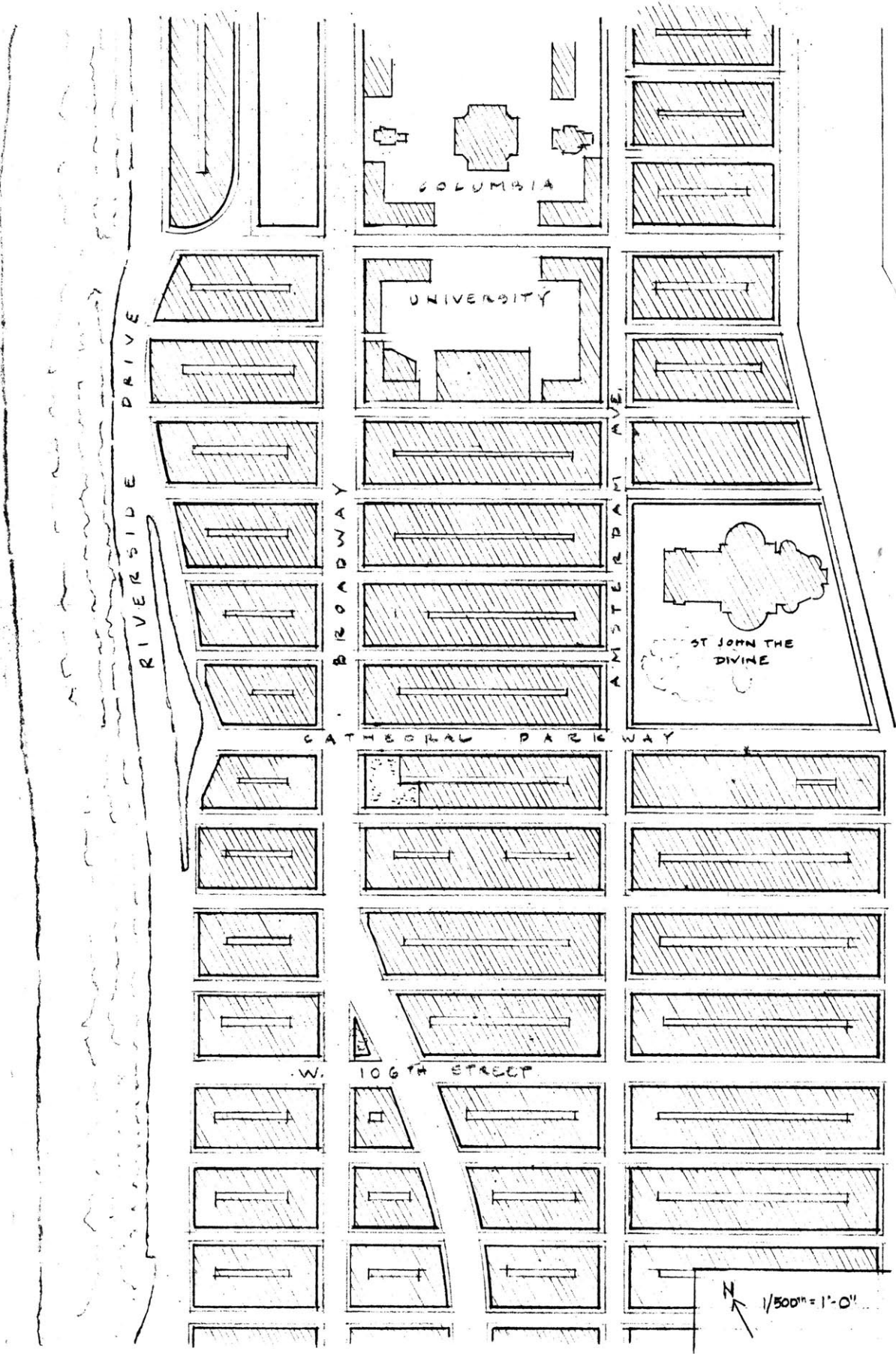
Master Apartments: Ground floor plan.

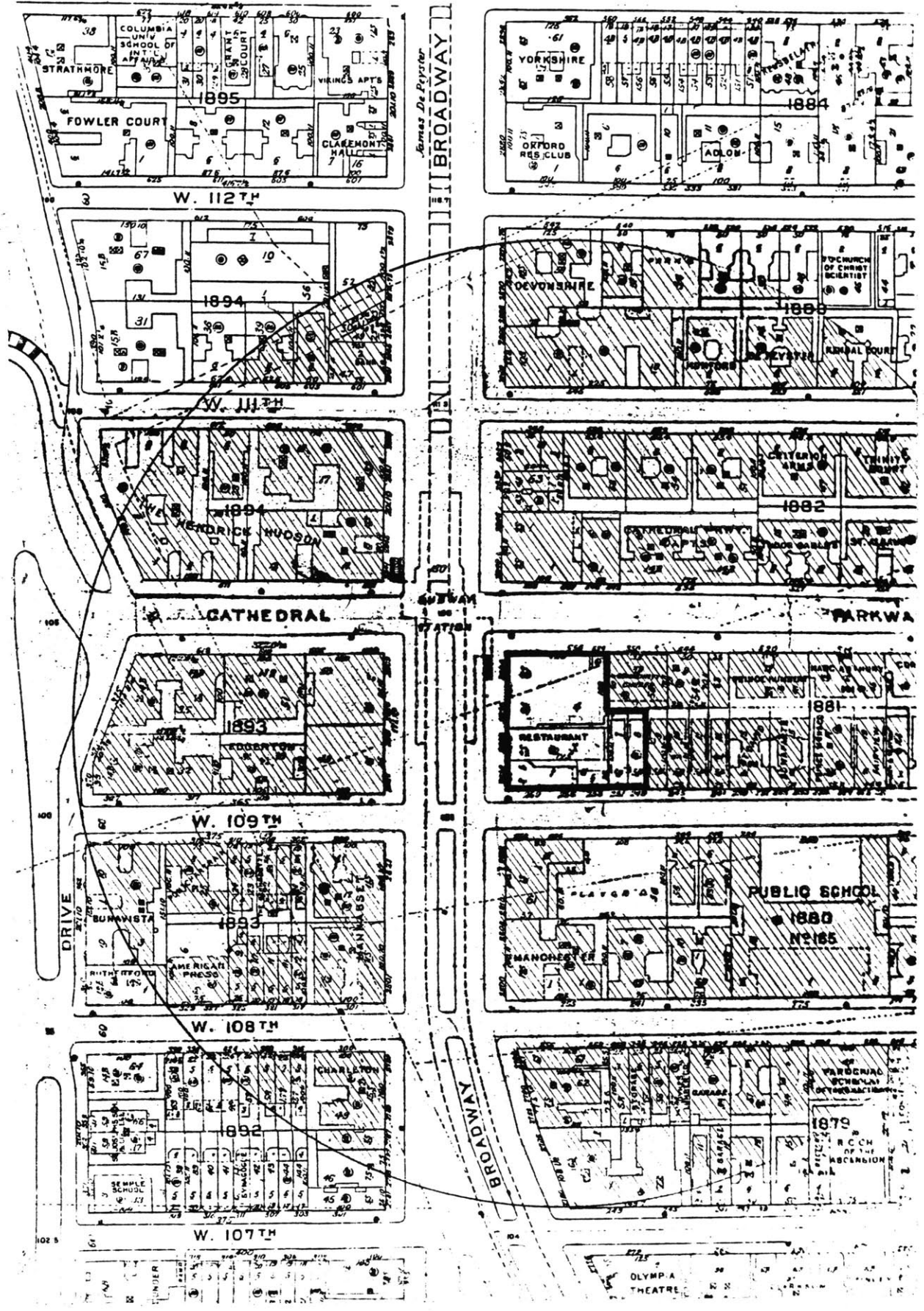
Since 1929 there has been little non-institutional building in Morningside Heights, and certainly none of much interest. The institutional buildings vary in quality: Amsterdam House, an old people's home on 112th Street, is a surprisingly elegant and humane grey brick slab with excellent details.

Overall the area seems quite old, even though none of it is older than 90 years. It sometimes feels almost Venetian in the way it is so dense, so encrusted with ornament, dirt, and associations. The physical fabric is in varying states of repair and decay, and although most of it was obviously built at around the same time, this neighborhood has some of the unexpected quality of a city built over a much greater time span. For me it is an area with an irresistible fascination, and from that fascination this thesis has sprung.



Morningside Heights skyline: looking northeast from a rooftop on 111th St.







The Site

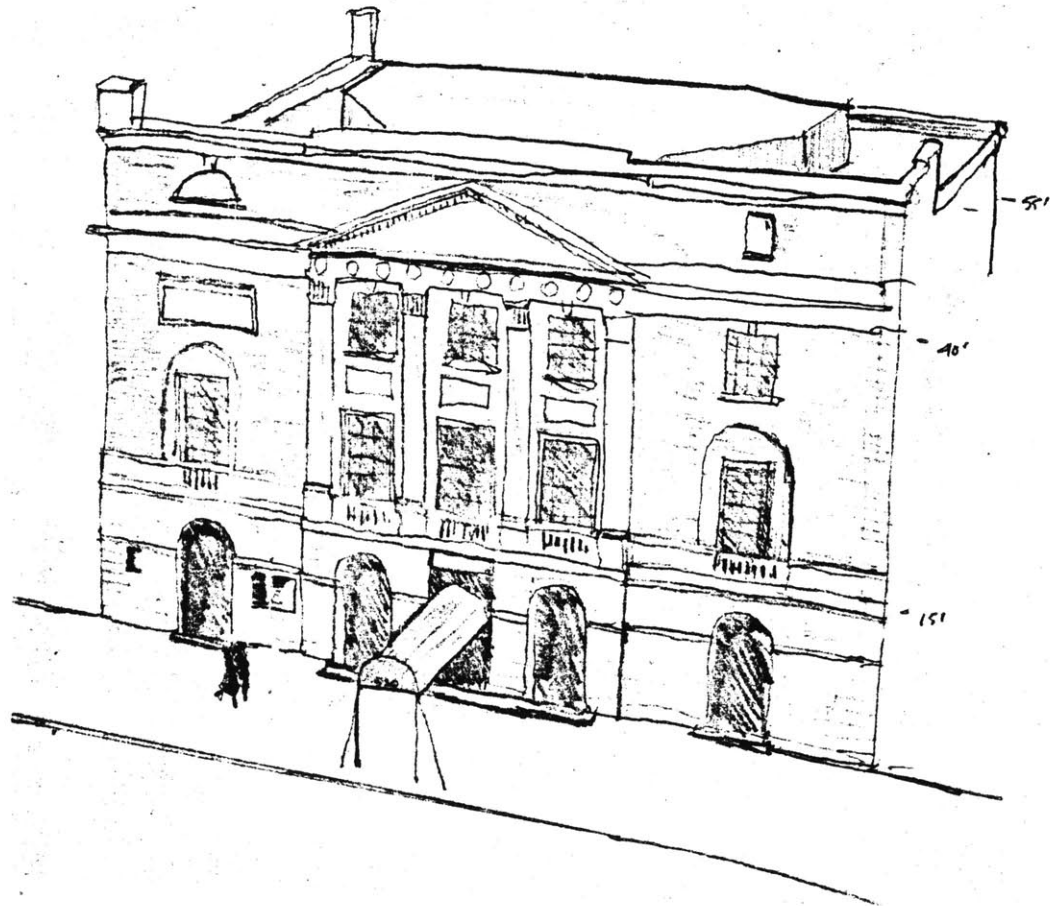
The intersection of Broadway and 110th Street (also known as Cathedral Parkway) is undoubtedly a center of sorts, although exactly what it is the center of is ambiguous. Theoretically 110th Street is the northern boundary of the Upper West Side and the southern boundary of Morningside Heights, and thus this intersection is the official gateway to Morningside Heights. In actuality the differences between the stretch of Broadway to the north of 110th and that to the south are quite subtle. Physically both stretches are identical; sociologically the stretch to the north has more Columbia students and professors and fewer black and Dominican locals, but the change at 110th

Street is more a matter of degree than a sudden shift. Amsterdam Avenue, one block to the east, does change very dramatically at 110th Street, but on Broadway the differences are sometimes imperceptible. This is partly because this intersection functions in some ways as the real heart of the area. The two major grocery stores of the neighborhood are here, as well as a subway stop and an important crosstown bus stop. The intersection is active at all hours, and on Saturday afternoons it is filled with people of every conceivable description.



Looking south along the east side of Broadway; the site is at the left.

The site I have chosen for my design lies at the southeast corner of the intersection and extends the length of the block to 109th Street. To the east along 110th Street the edge of the site is formed by a synagogue, while on 109th Street it is bordered by five story tenements.



Synagogue Ramath Orah, directly adjacent to the site on 110th St.

The site presently contains the Shopwell supermarket, a Chinese restaurant, and some tenements with ground floor stores. As far as I know there are no actual plans to build anything on this site, but in many ways it seems underbuilt.

110th Street is an important crosstown street: it sweeps up dramatically from Riverside Drive past the Hendrik Hudson, crosses Broadway, passes the southern flank of the Cathedral of St. John the Divine, and eventually forms the northern boundary of Central Park. Any building at the intersection of this street and Broadway that was taller than the surroundings would thus be an important



South side of the site on 109th St. at present.

local landmark, and would relate on an urbanistic scale to the tower of the Master Apartments as well as to the taller tower of Riverside Church. It seemed like a logical place for a big building that had a role to play in the public life of the neighborhood.

Sketch of the intersection of Broadway and 110th St., with site on the right.

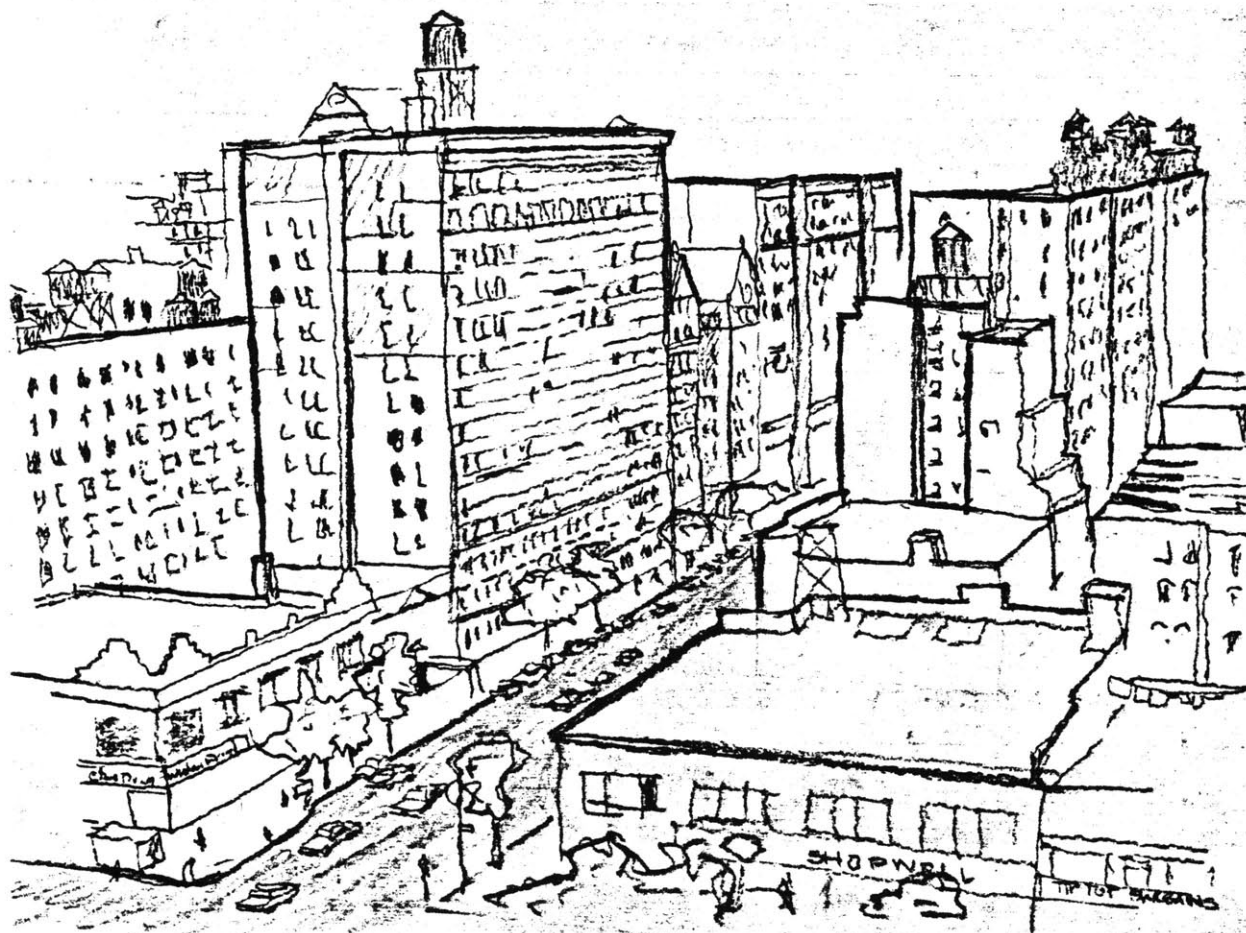
SITE SPECIFICS:

Site location: southeast corner of West 110th Street and Broadway.

Site area: 26375 sq. ft.

Site dimensions: 125' (119th Street frontage)
x 171' (Broadway frontage)
x 175' (109th Street frontage)

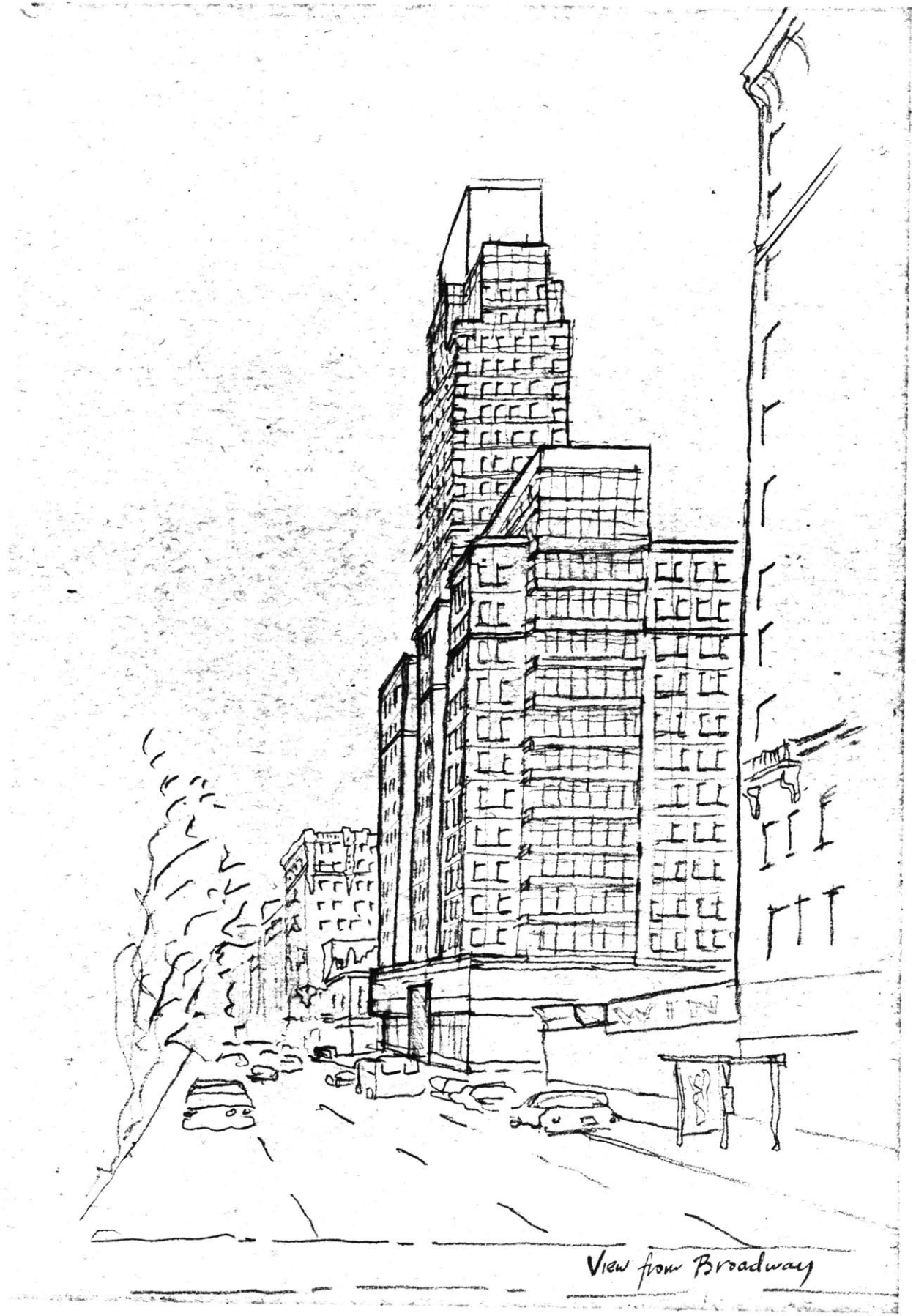
Zoning: The site is currently zoned R-8, which only allows for an FAR of 6. Because the project was developed on the assumption that new apartments may be coming to Upper Broadway, I



made the assumption that the zoning would be changed to R-10 infill, like the Columbia condominiums. R-10 infill allows for an FAR of 10, which is what my project is designed for. I also assumed that the same provisions that require the Columbia to set back at the Broadway cornice line would also apply to my project.



Broadway looking north from 106th St.



View from Broadway

The Project

The project consists of a thirty story tower (300 ft.), an intermediate slab section (154 ft.) and a twelve story U-shaped section along Broadway (120 Ft.). On the lower three stories the inside of the "U" is a glassed-in court surrounded by various public facilities. The four story cinema and health club section faces into this court on the east side of the site. An existing synagogue is directly adjacent to this part of the project. The housing floors are reached through elevator lobbies that open off the ground floor public space. These lobbies would be either locked at all times or manned by doormen so that security problems between the publicly accessible parts of the complex and the housing floors would be minimized. For these security reasons only the lower three floors of the building are accessible to the general public, but tenants in the building would have access to a roof garden at the seventeenth floor and a lounge at the thirtieth floor.

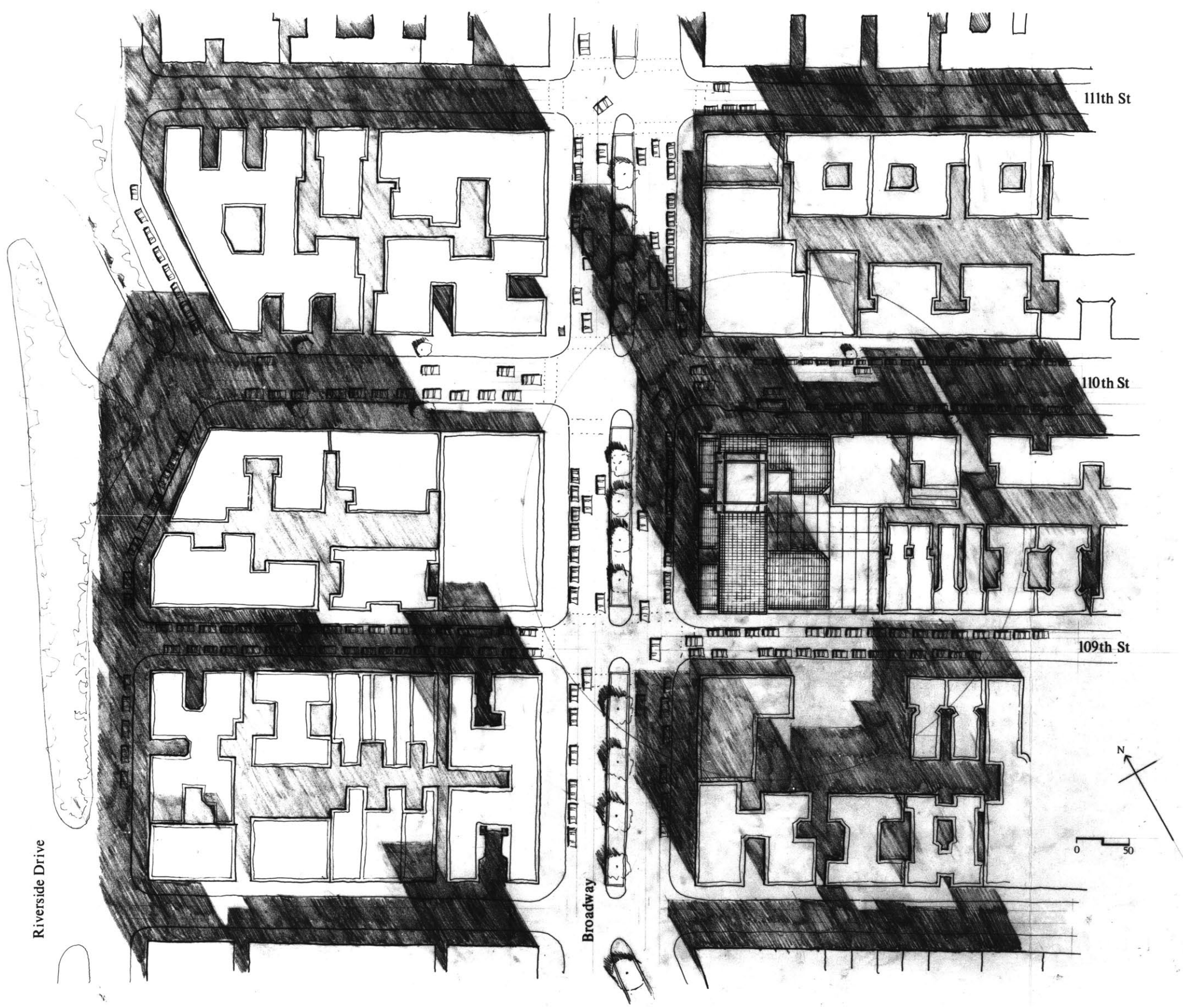
The various heights of the building relate to the surroundings: the tower matches the height of the Master Apartments on Riverside Drive and would serve as an urban-scale landmark for the area; the intermediate slab matches the height of the large apartment buildings along 110th

Street; and the lower section follows the typical cornice height of Broadway. The interior glass court is meant to be an extension of the street, but a distinction between the more atmospheric functions inside the atrium and the more utilitarian activities that face the street is maintained. The atrium is entered primarily from Broadway, with minor access from the side streets; this side access could be used as a through-block pedestrian passage as well.

The lower typical floors have two separate cores, so arranged that natural light is admitted to the elevator waiting areas without sacrificing outside perimeter. In the slab section the units are most open to the view; on these floors the units are slightly higher than the immediate surroundings but still low enough not to be disturbingly exposed to the elements. The tower units have corner windows for long views but more controlled fenestration elsewhere.

The housing floors use a standard apartment-house construction system, flat-plate concrete with scattered columns adjusted to match the floor plans of the units (no spans greater than 15 ft.). The floor to floor height is 8'-6", also standard in new apartment construction.

On the public floors the construction system is a more regular concrete bay system 17'-0" on center. Large beams at the fourth floor transfer any loads from above that would not be supported on the lower floor columns. The



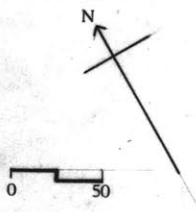
Riverside Drive

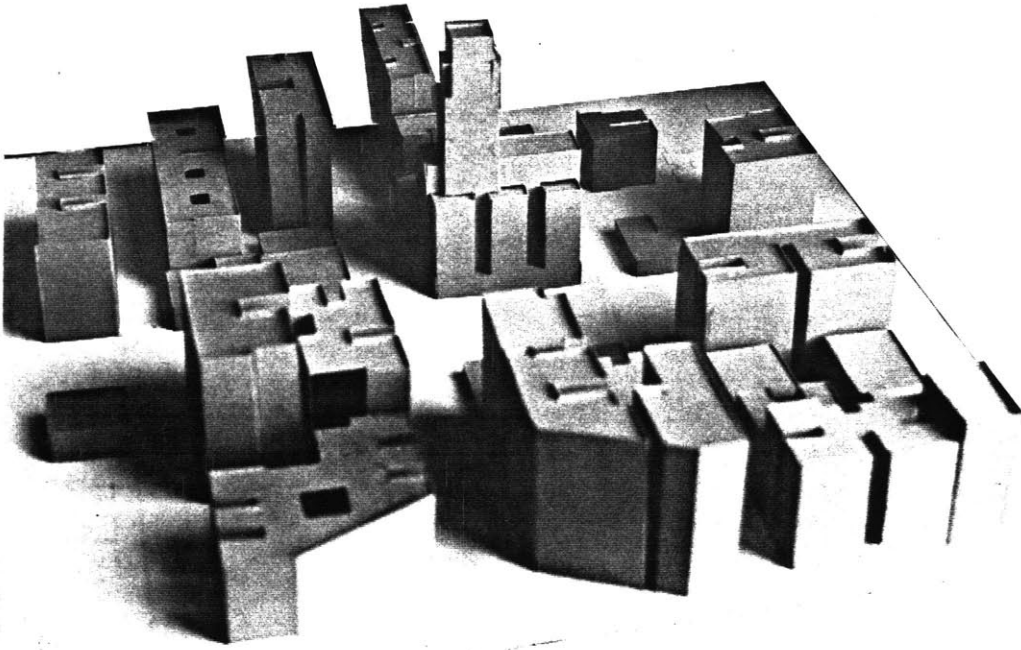
Broadway

109th St

110th St

111th St





glass atrium roof is supported on steel beams that frame into cantilevered slabs of the concrete structural system. The swimming pool support is integrated with the rest of the lower floor structure.

The building is clad with a ceramic terra cotta tile system with prefabricated metal bay window units at selected points. In certain places on the side elevations and on the intermediate slab section the cladding is a lightweight glass and metal panel curtain wall. Most of the windows are natural stain wood with terra cotta sills. In the public areas the floors are covered with quarry tile, and the concrete columns are painted with a smooth finish. Light fixtures, moldings, doors, and handrails are polished metal. Plants and trees would be as plentiful as the budget would allow.

Program

Public Facilities

Ground Floor --

Atrium.....	2800	sq. ft.	} oriented to atrium
Cafe.....	3000	"	
Bookstore.....	3000	"	
Cinema:			
lobby.....	1700	"	
seating.....	4200	"	
Restaurant.....	3450	sq. ft.	} oriented to street
Grocery.....	3550	"	
Newstand.....	250	"	
Florist.....	250	"	
3 market stalls, each.....	90	"	

Second and Third Floors --

Exhibition space.....	3500	sq. ft.	} oriented to atrium
Old People's Club.....	3500	"	
Health Club.....	8000	"	
Community office space...	8000	sq. ft.	
Administrative office....	2000	sq. ft.	

TOTAL PUBLIC SPACE.....49300 sq. ft.

Housing:

196 housing units:

24 three-br. units, each 2000 sq. ft.

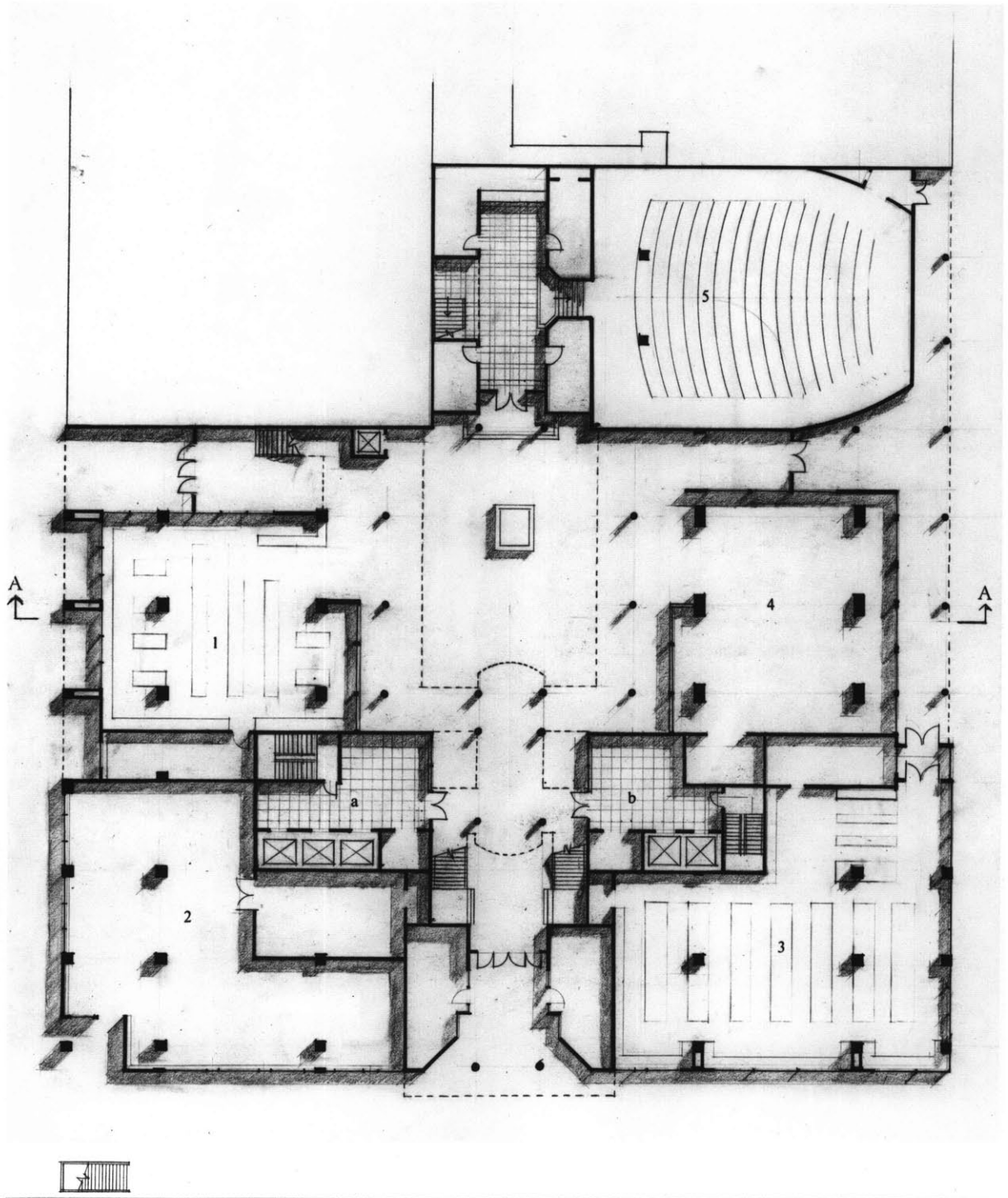
82 two-br. units, ea. 1000-13500 "

68 one-br. units, ea. 700-1000 "

22 studio units, ea. 500-600 "

TOTAL HOUSING.....232500 sq. ft.

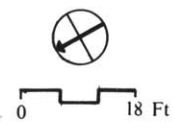
PROJECT TOTAL: 281800 sq. ft.

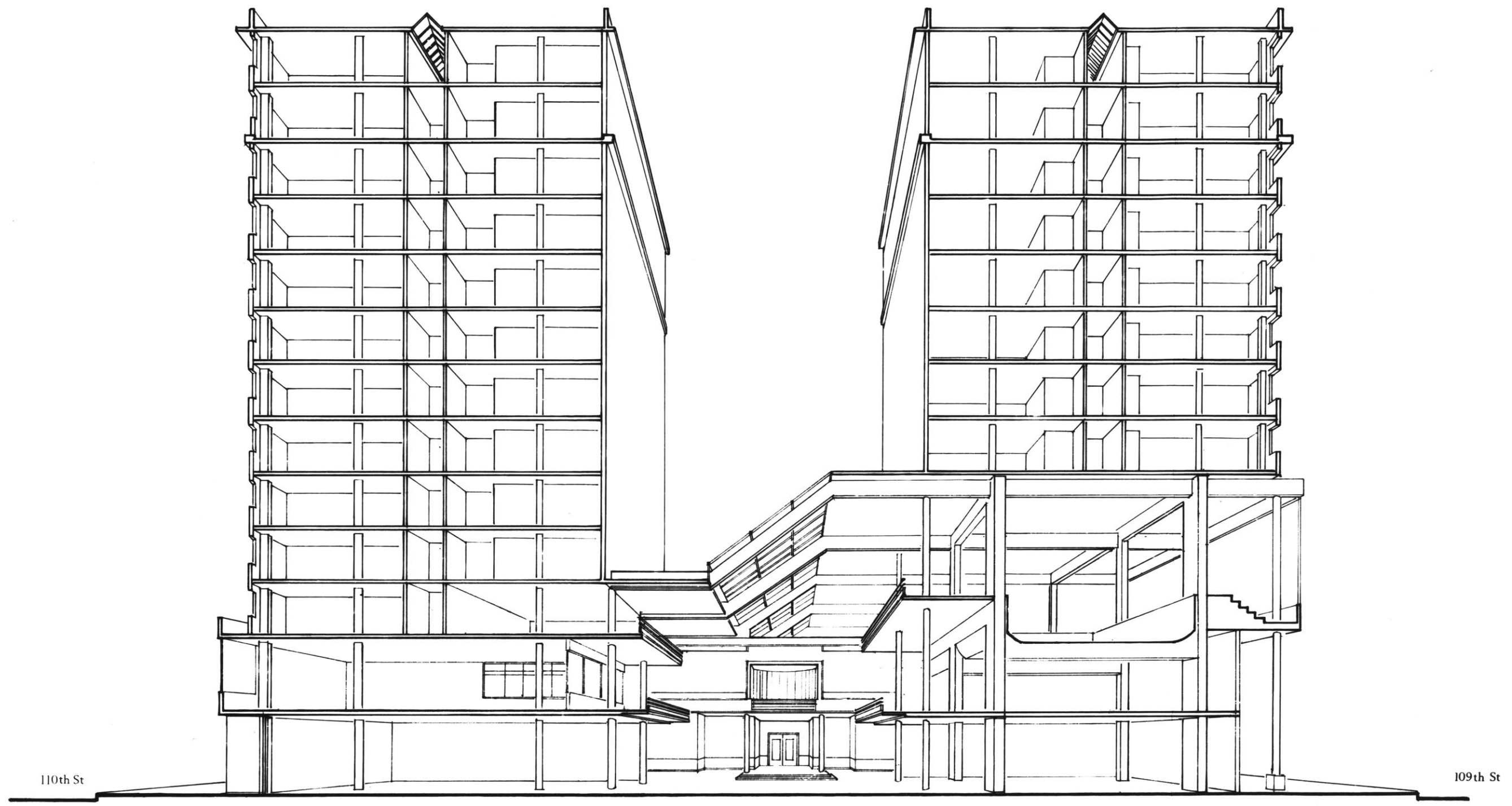


Broadway

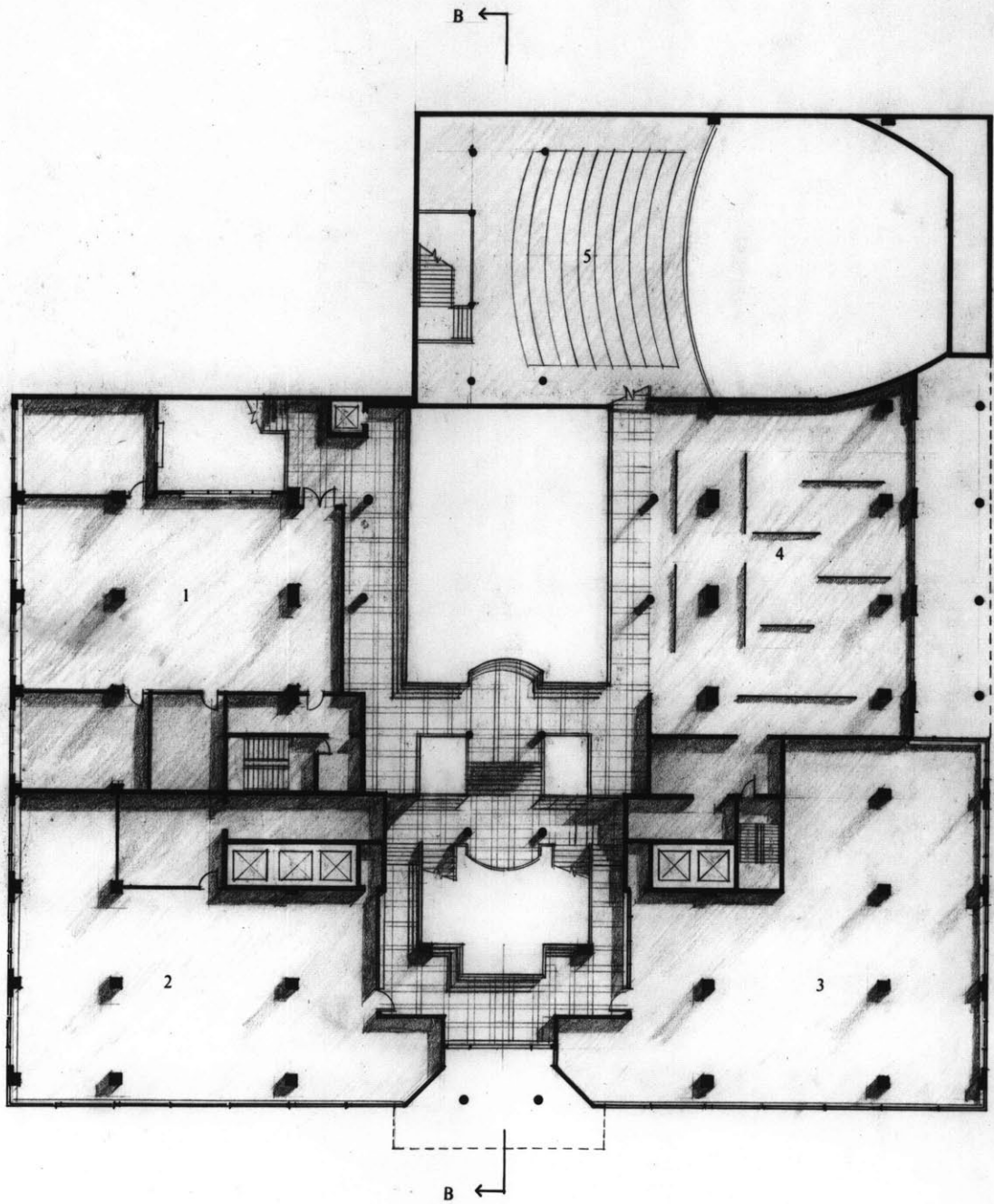
- 1-Bookstore
- 2-Restaurant
- 3-Grocery
- 4-Cafe
- 5-Cinema
- a&b-Lobbies

MAIN-FLOOR-PLAN



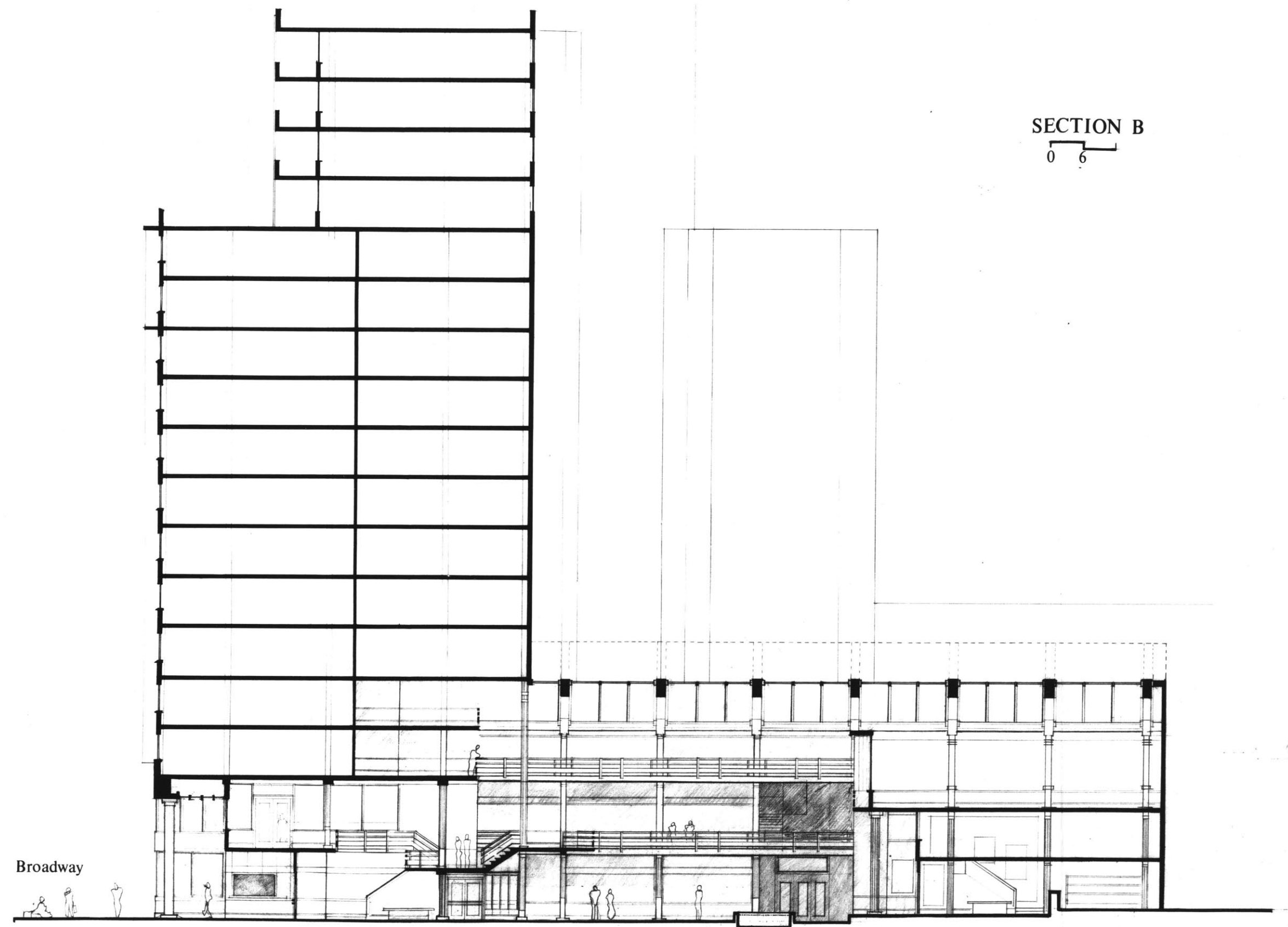


SECTION A
0 6 18 Ft



- 1-Elderly Center
- 2-Office
- 3-Office
- 4-Exhibition
- 5-Cinema

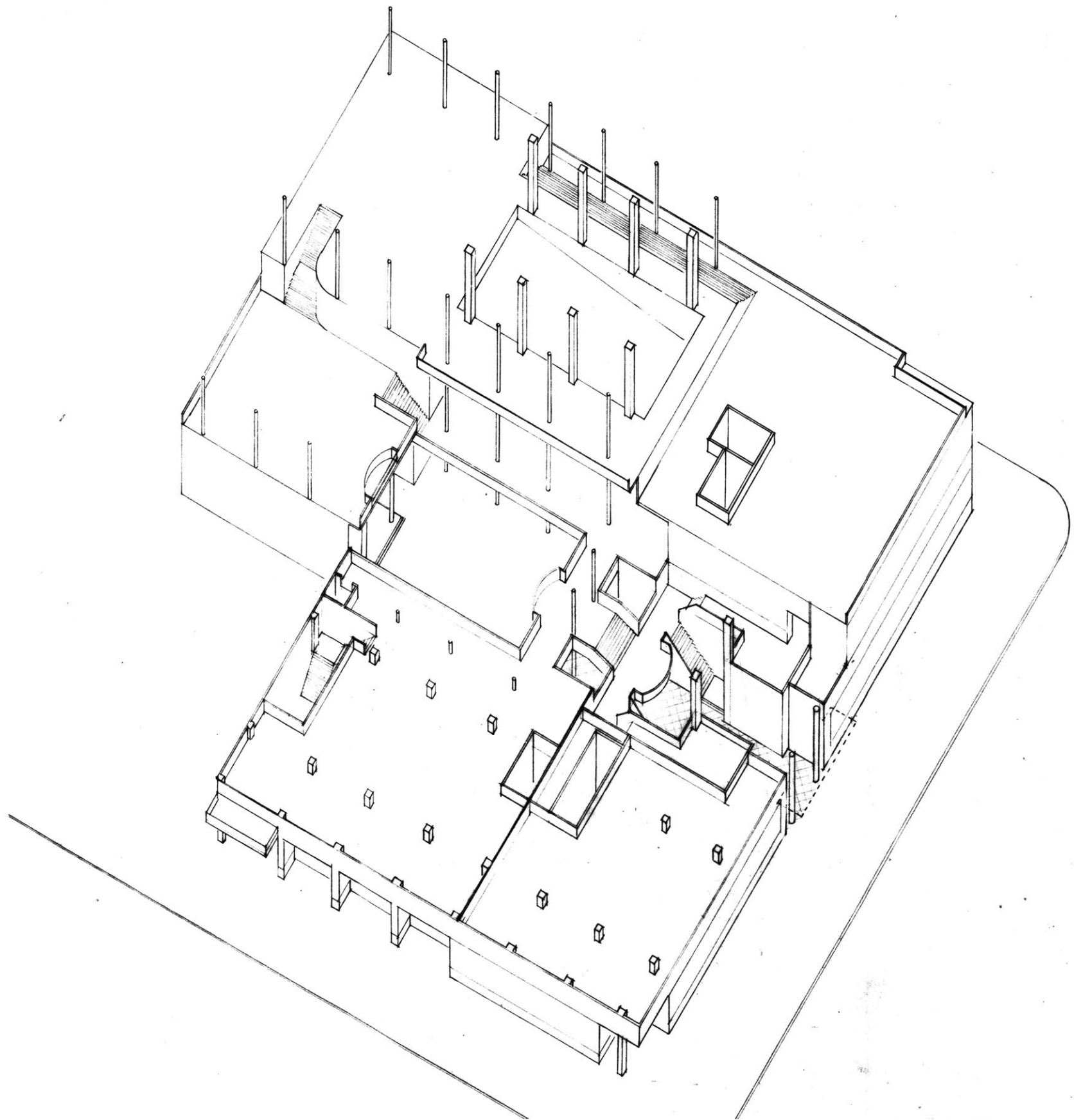
SECOND FLOOR 
FLOOR  0 18 Ft

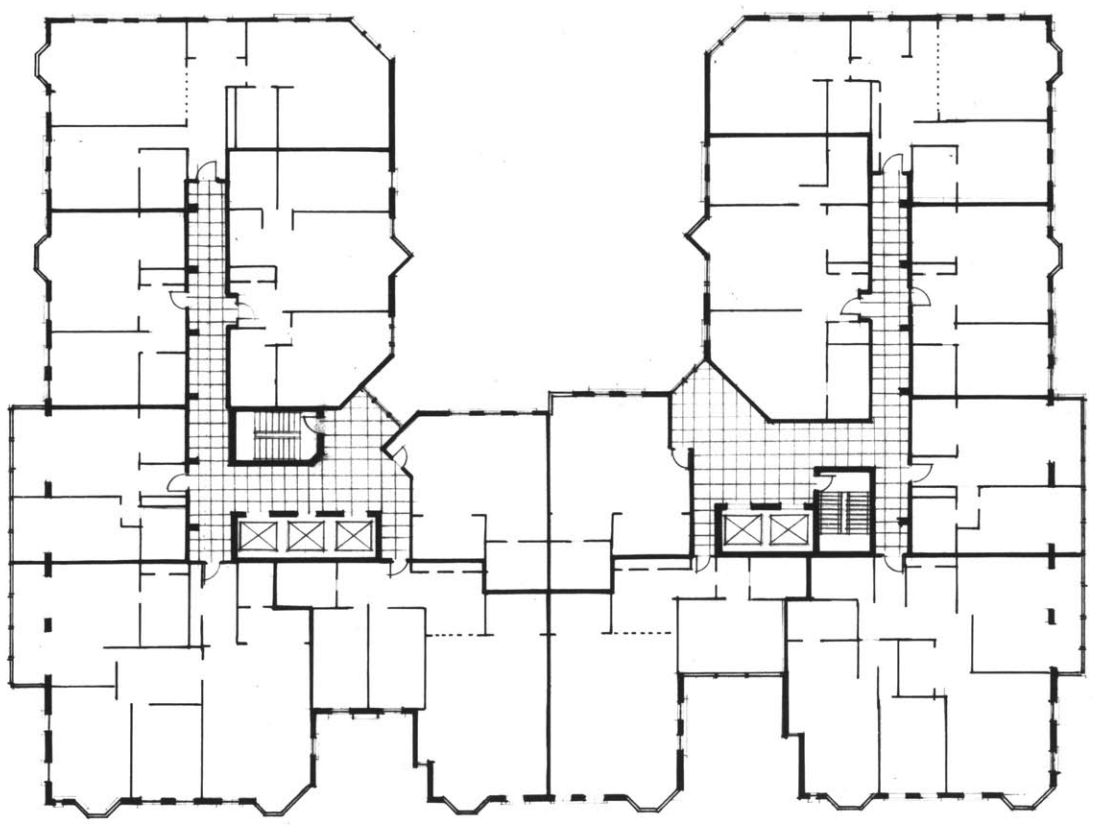


SECTION B

0 6

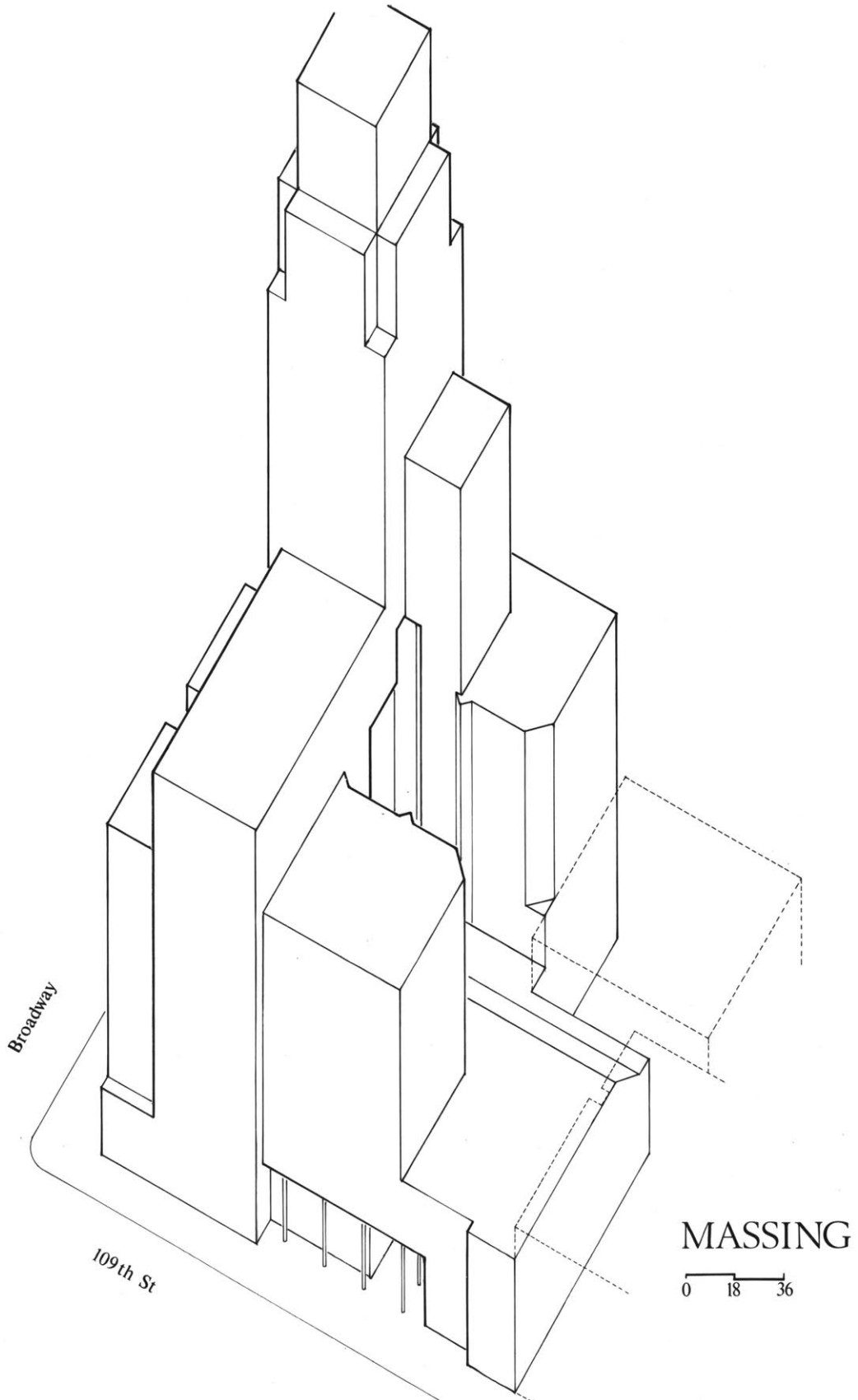
Broadway

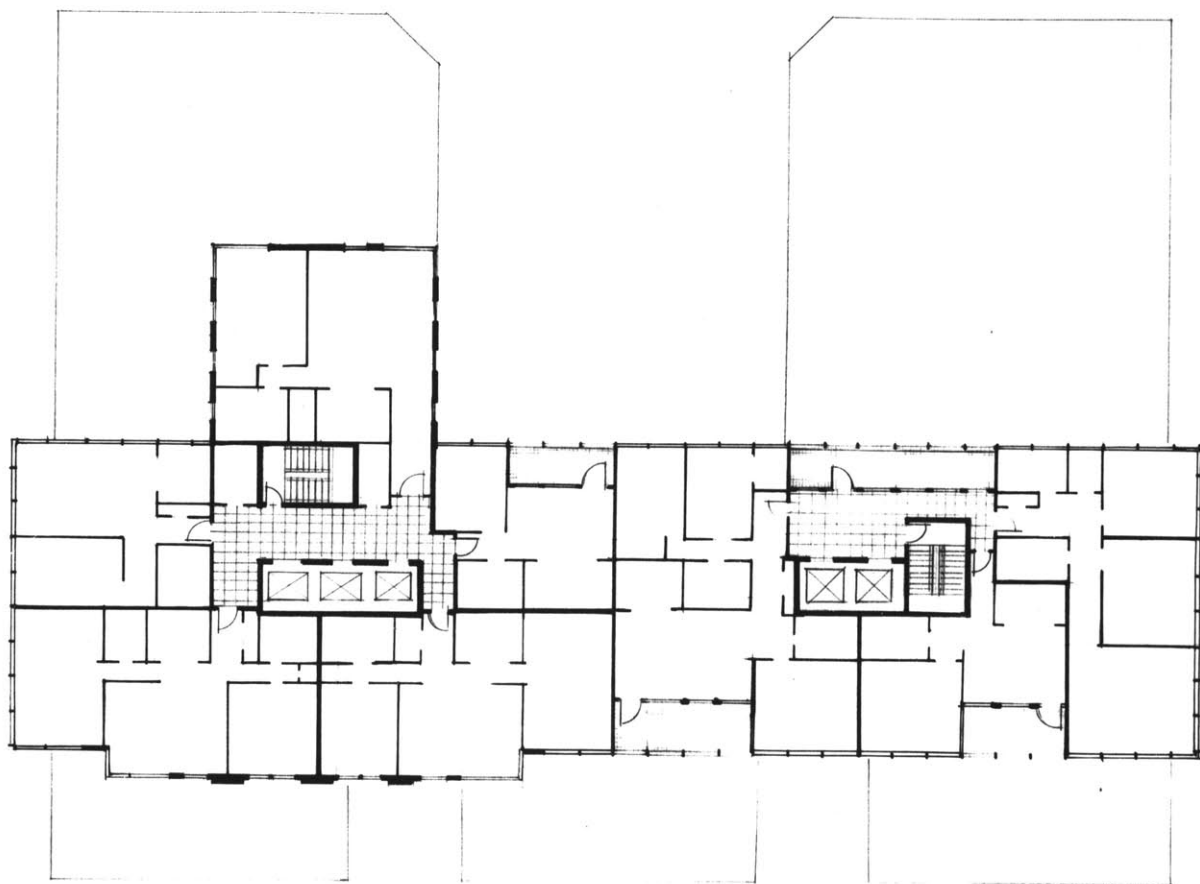




TYPICAL FLOOR
FLOORS 5-12

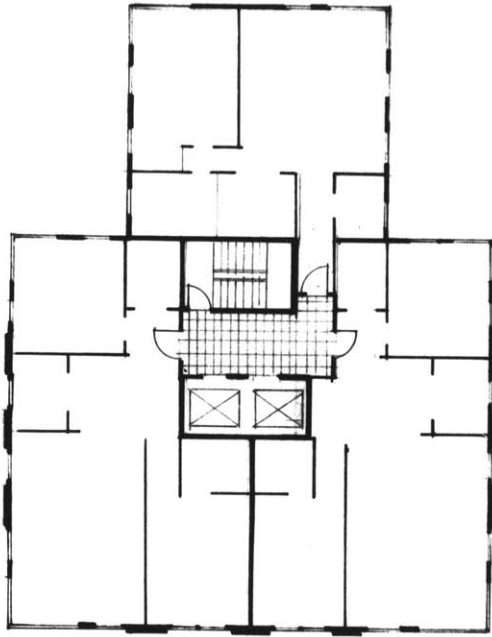




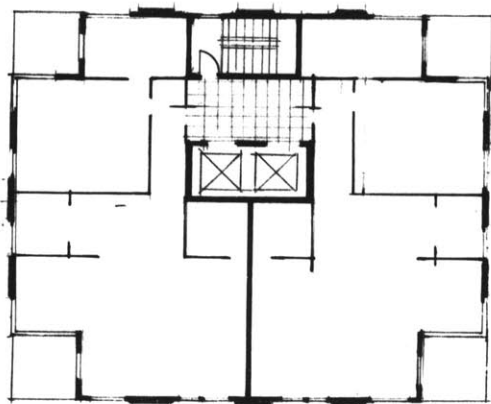


**TYPICAL FLOOR
FLOORS 13-16**

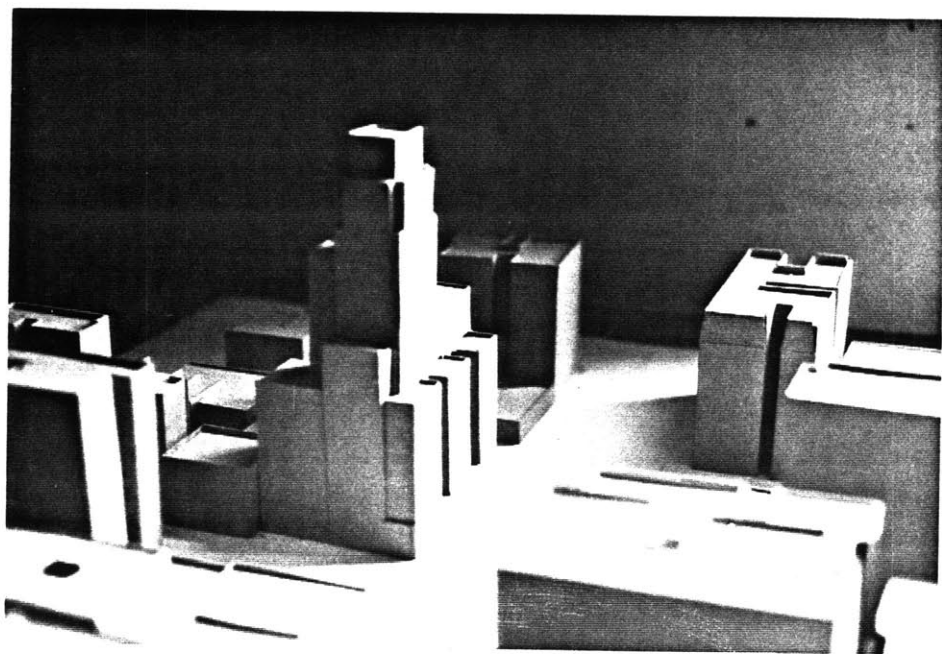
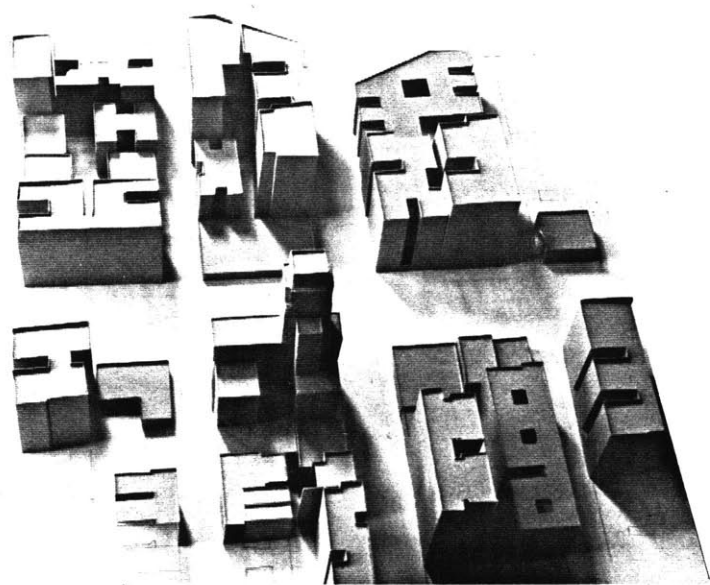


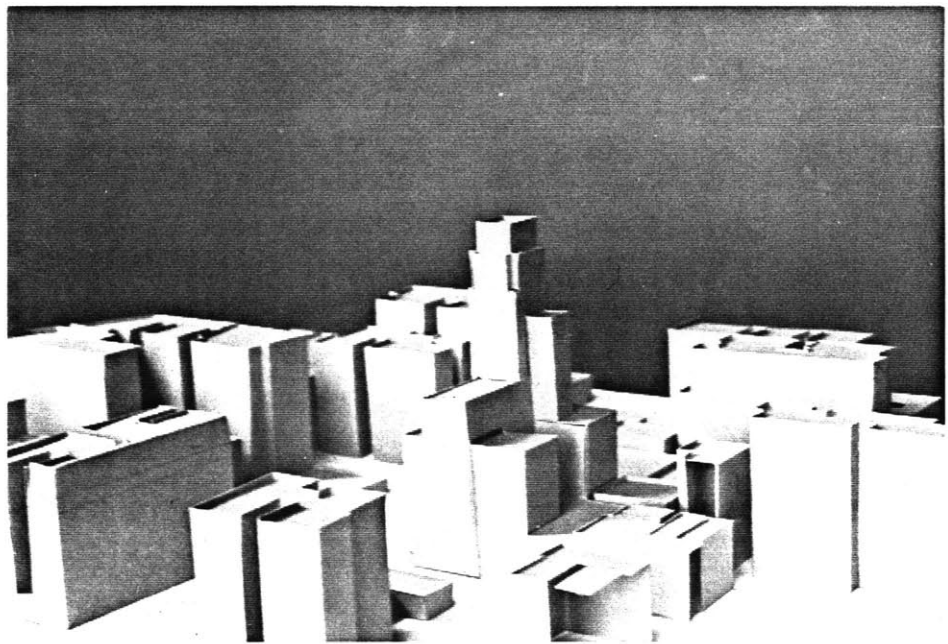
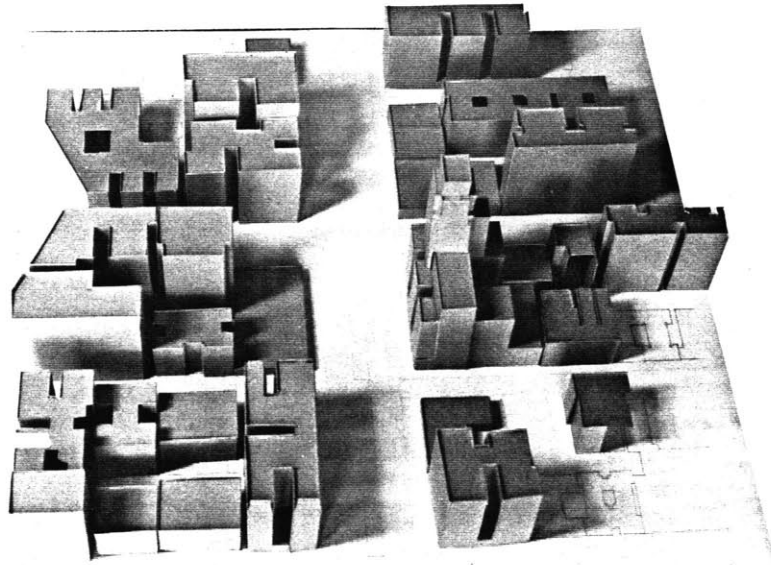


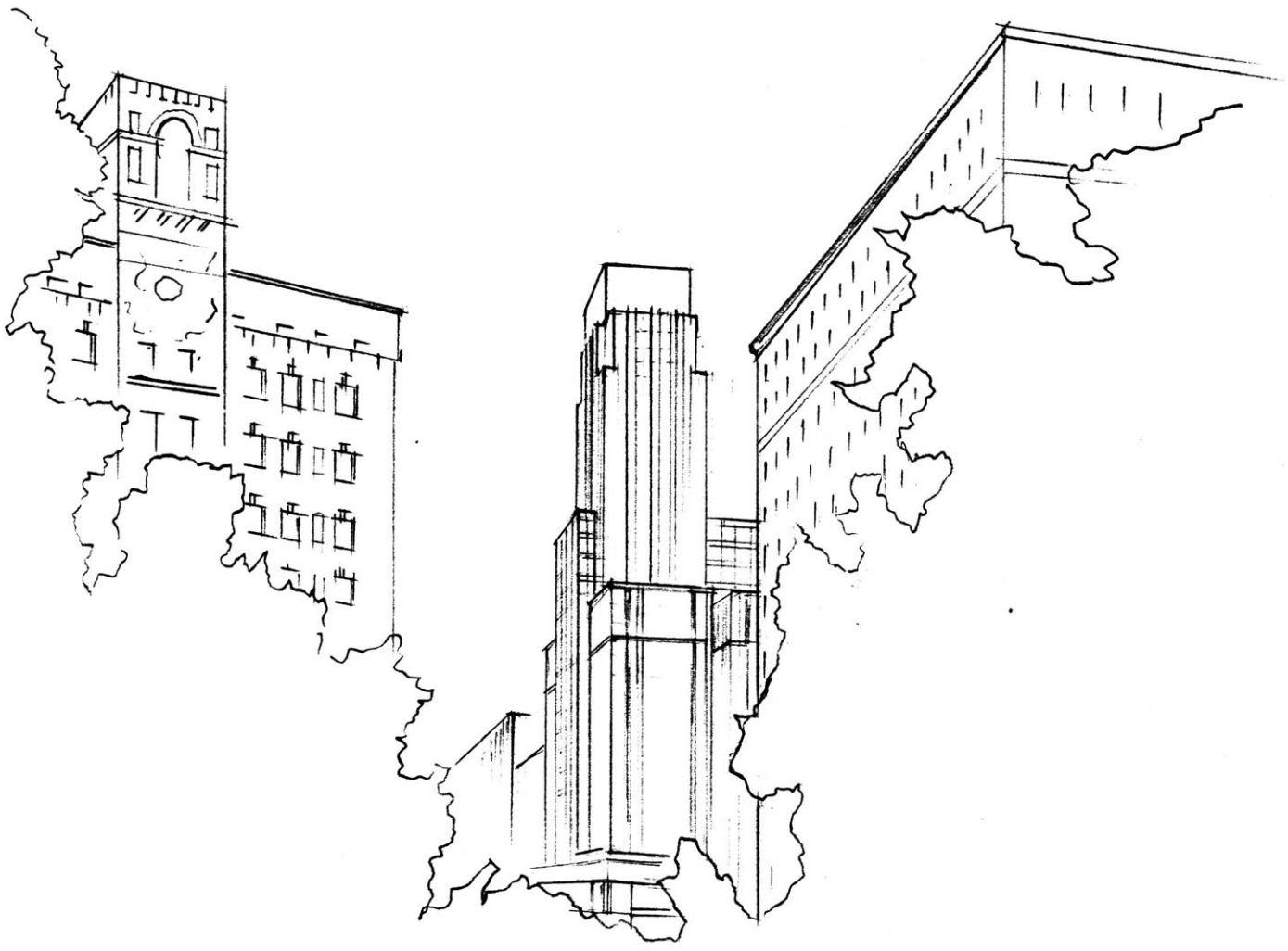
FLOORS 17-26



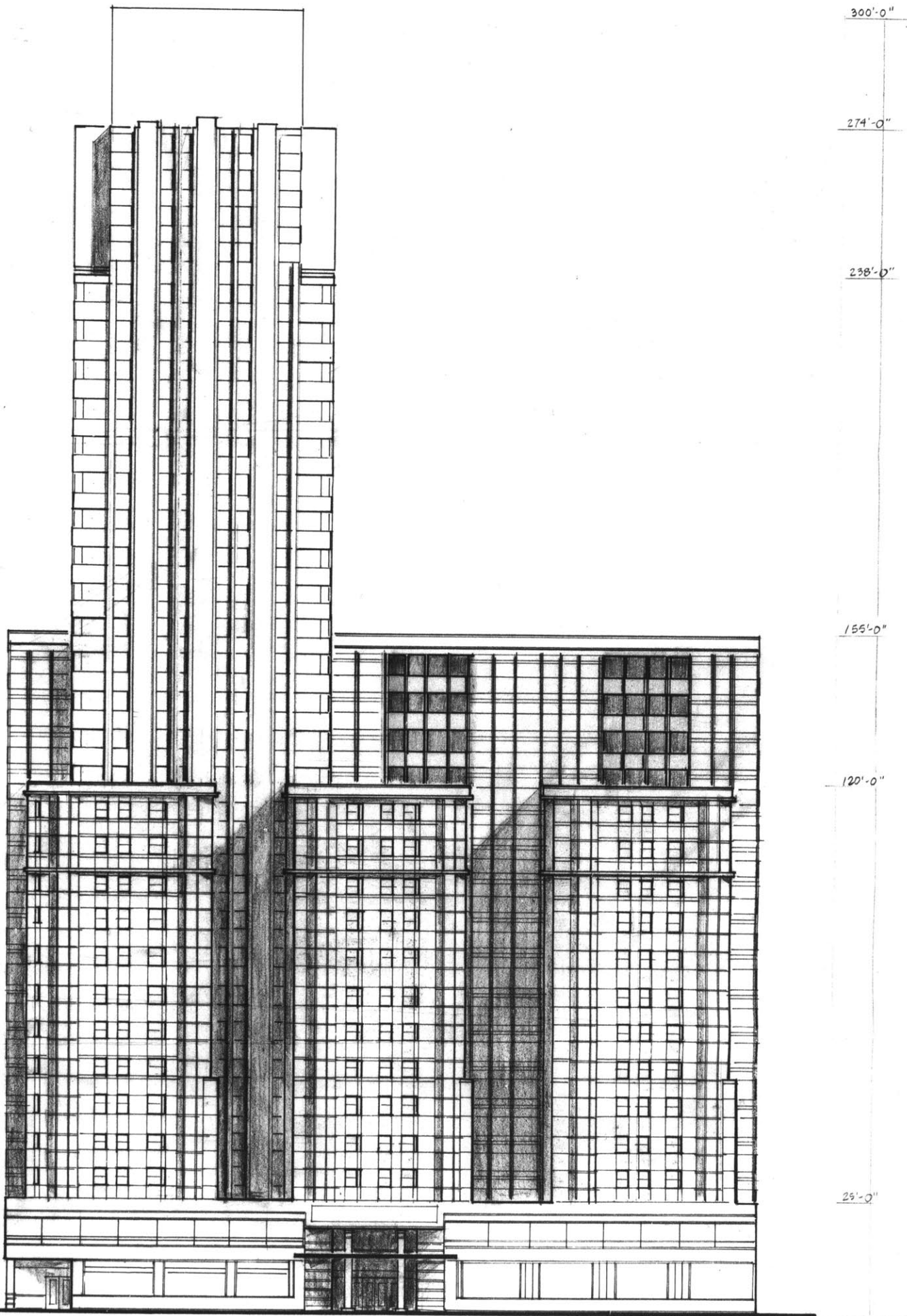
FLOORS 27-30



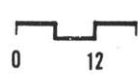


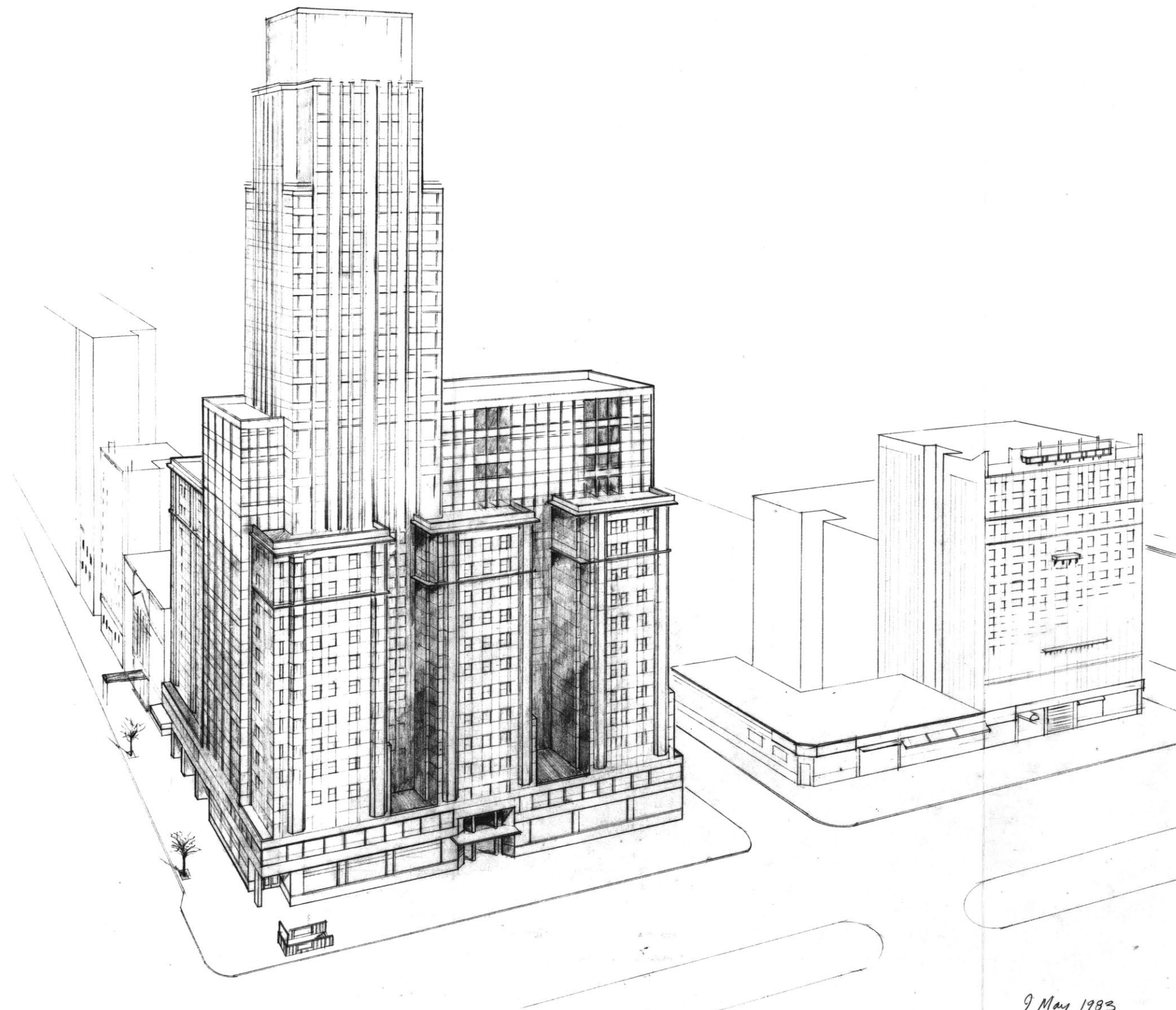


View from Riverside Dr.



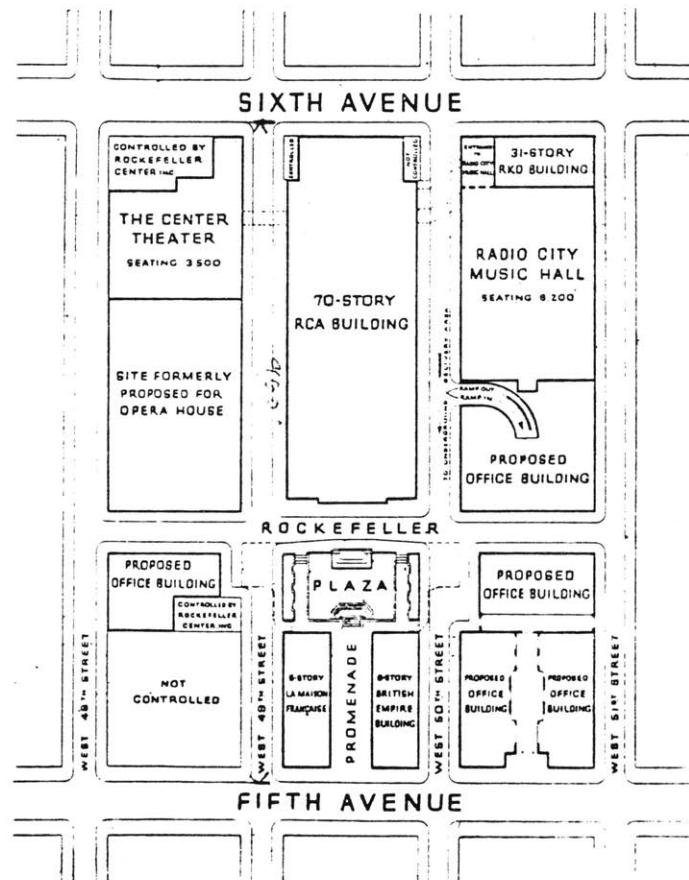
BROADWAY ELEVATION





9 May 1983

Rockefeller Center: Site plan. Places are created by working with, rather than against the grid; the different heights of the complex relate to the need to respond to the smaller scale of Fifth Ave. still building to the maximum allowable density. The RCA building becomes a landmark at the scale of the entire city.



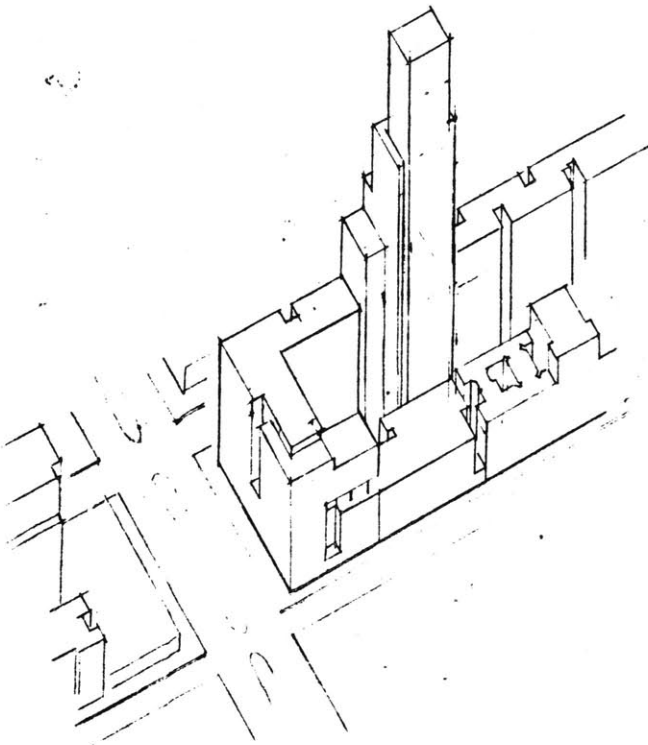
The Design Process

The chief thing which made Richardson's buildings alike among themselves and unlike the work of almost all his contemporaries was his power to conceive a building as a whole, and to preserve the integrity of his conception no matter how various might be the features or how profuse the decoration he employed. Each of his best buildings is an organism, an entity, a coherent vital whole.

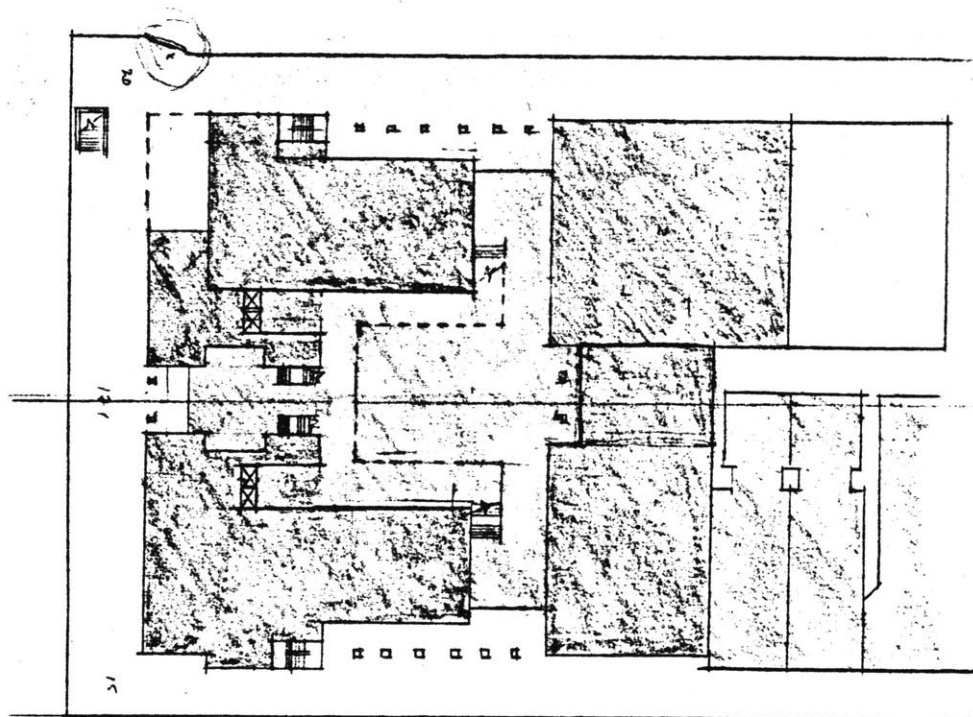
-- M. Van Rensselaer,
H.H. Richardson and His Works

Someone once said about teaching art: "the only part that matters is the part you can't talk about." Something similar could be said about describing a design process. Rather than boring the reader and myself to distraction by giving a blow-by-blow account of how the design got into its present state, I will limit myself to a few highlights.

Once I had begun to get some understanding of the context and a clearer grasp of what kind of building I wanted, I started making little diagrams of how the ground floor circulation might work. At the same time I traced views of the site from slides and used them as background for possible massings of the overall building. My earliest efforts were much more jagged and assymetrical than the present design; conversations with my advisor and my friends gradually convinced me that the building must be fairly simple volumetrically if my intent was to build in sympathy with the context. The notion of using street opening courts was initially suggested by my advisor and I enthusiastically picked up on it. I looked at many Art Deco towers and gained a better understanding of how they

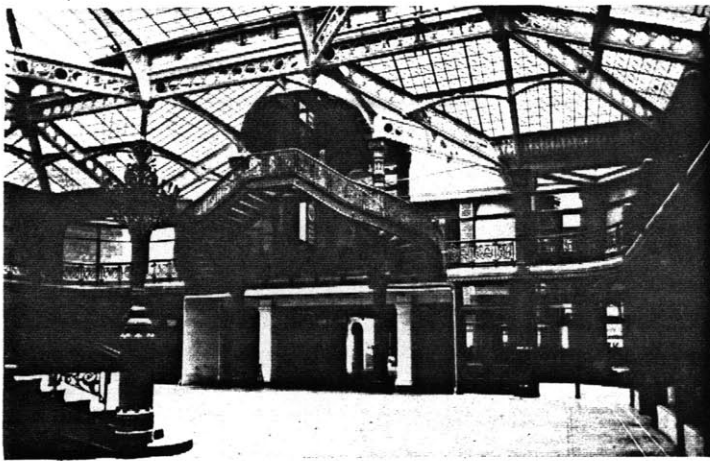


First massing attempt, Nov. '82.



Plan-diagram at 1/40th scale,
Feb. '83.

were massed. Originally I had intended the interior public space to be more of an arcade, like the one in Cleveland, but I came to realize that duplicating the circulation pattern of the streets outside was not an urbanistically reasonable idea in this mostly residential neighborhood. I discovered that the Palm Court at the Plaza Hotel originally had a glass roof, which suggested the idea of a U-shaped building with a glassed-in court in the center. I had always admired such a court at the Rookery Building in Chicago, and I realized that the concept was an excellent solution for an urban building. Aalto's Academic Bookstore in Helsinki employs a similar concept.



The Rookery, Chicago (Burnham & Root): the glass court solves the light court problem.

Boyer Building, Mexico City, 1900.

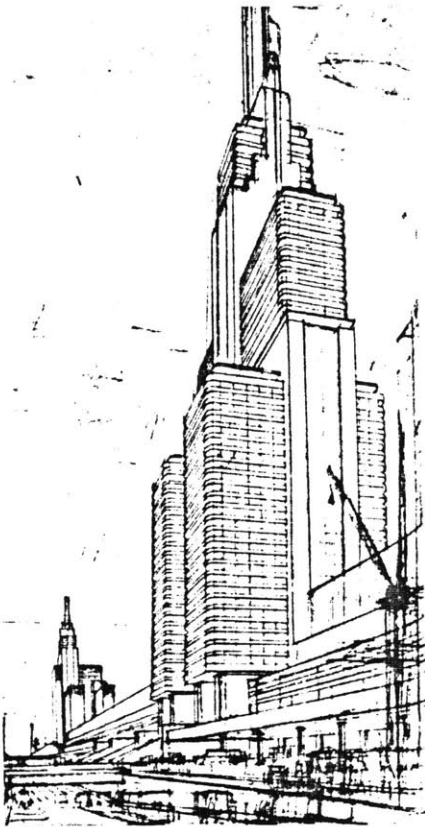


Palm Court at the Plaza Hotel in its original (1908) state.



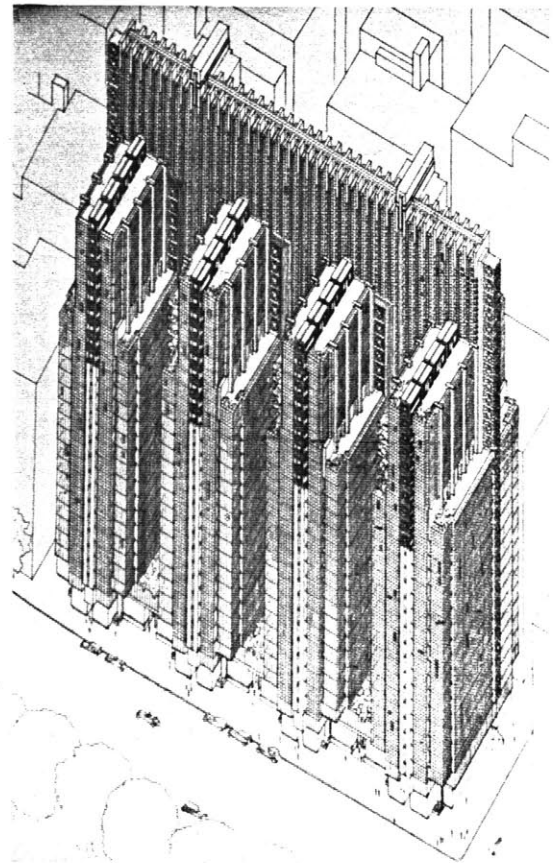
Cleveland Arcade (Eiserman and Smith, 1890)

The problem then became relating the U-shaped building to the tower; some Hugh Ferriss drawings and Wright's 1924 project for an office building suggested the solution. Once I had an overall sense of what the building's massing was going to be like, I began to get more definitive about the floor plans. The U-shaped typical floor was shaped by some tight constraints about positioning the cores off the exterior perimeter; the inside corners thus were about the only places for them. I still wanted to get at least a little natural light into the elevator waiting areas (and even a little natural light in Manhattan means a lot), so the angled inside corners found at the Dakota (and in many



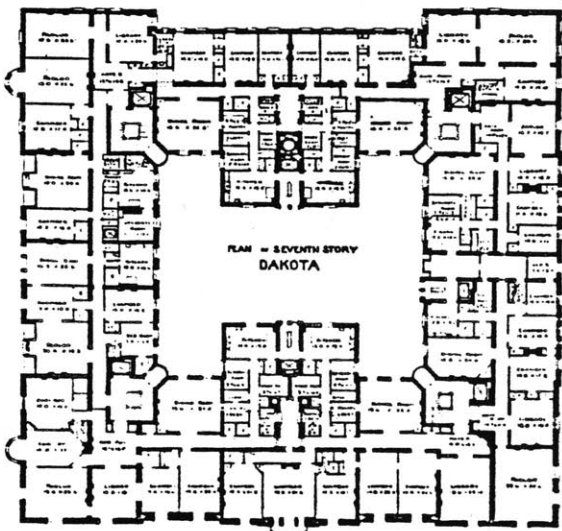
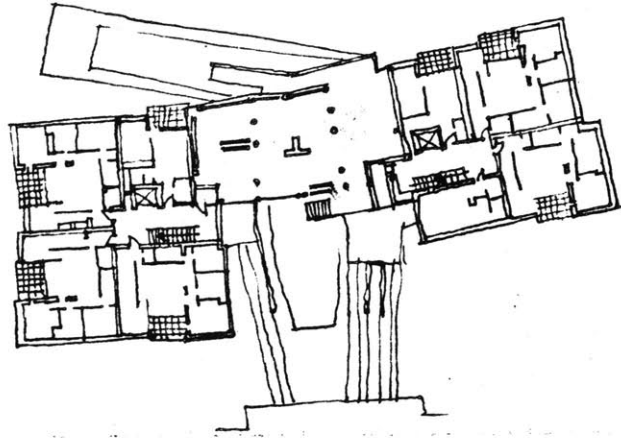
Sketch for a series of towers,
Hugh Ferriss, 1929.

Frank Lloyd Wright: Project
for Nat'l Life Insurance
Building, 1924.



later buildings) made that possible. The tower floors were easier, since I felt the small number of very desirable units on each floor made it less important to light the elevator areas. Aalto's Hansaviertel Apartments in Berlin and Gaudi's Casa Mila in Barcelona were useful in indicating how the typical floors might be made more interesting in subtle ways.

Alvar Aalto: Hansaviertel Apartments,
Berlin, 1954. Plan.

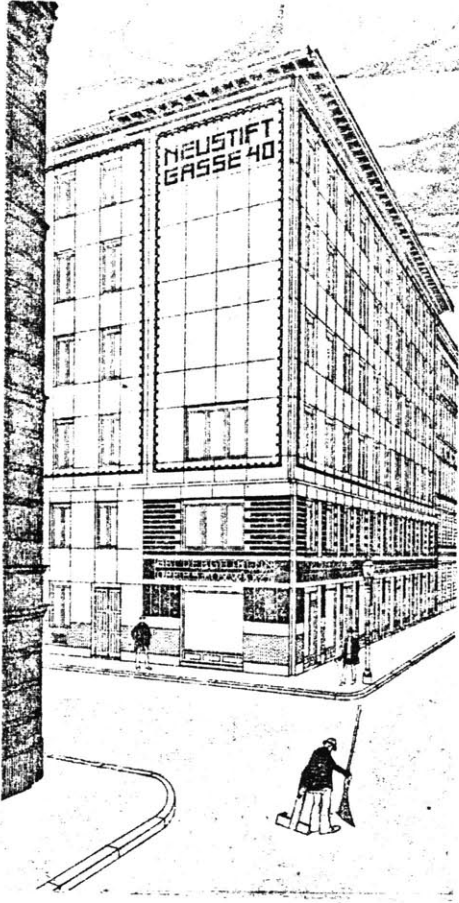


The Dakota (H. Hardenburgh, 1884):
Plan of typical floor.

The design of the public atrium was governed by a desire to keep that space rather simple, for both aesthetic and security reasons. The position of the health club and the cinema fixed the space at one end, while the necessary elevator lobbies at the other side made the rest of the plan pretty straightforward. I wanted the street edges of the building to respond to the position of the sun and to areas of potential activity, so there is a colonnade on the 109th Street side (which might help give some interest to a dreary street of tenements), and market stalls on 110th Street, next to a major bus stop and near the activity of the intersection. The high value of Broadway commercial frontage and simple treatment on surrounding blocks argued against any extravagant gestures there.

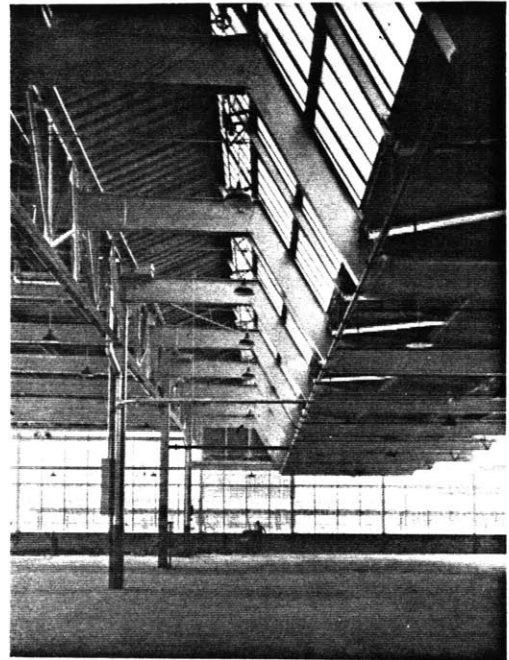
The elevations were initially very simple, but I came to realize that features such as bay windows would help give the building a more human scale. I decided to use terra cotta panels instead of face brick because I prefer the smoother texture of the terra cotta. I was very impressed by an Otto Wagner apartment house in Vienna which proved that sometimes less really is more.

The last major decision involved the design of the atrium roof: I wanted a form that would allow the apartments on the floors just above the atrium a straight view out for some distance, but a flat skylight was unsatisfactory. Albert Kahn's Chrysler Half-Ton Truck plant provided the perfect solution.



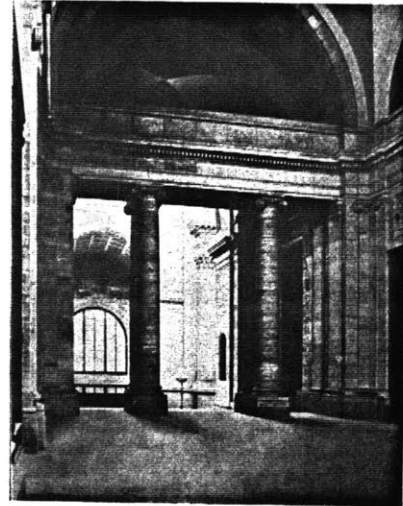
Otto Wagner: Apartment House
in Vienna, 1908-9.

Albert Kahn: Chrysler 1/2 Ton
Truck Plant (Detroit, 1937).
View of light monitor.



I had originally hoped to do more details for the building, but a lack of time and the fact that the building was not in fact going to be built worked against a serious effort to do so.

McKim, Mead, and White: Penn Station (demolished). Waiting room vestibule.



Conclusion

Overall the process of making this thesis has been valuable and satisfying, but some aspects of it did not work out exactly as planned. I had hoped that by the end of the process I would feel I had a more definitive design method than when I began, but in some ways I am still uncertain about how a design project is best approached. There seem to be many valid routes to a good design, and I find it utterly incomprehensible that so many architects can claim that their method is the only one. I remain certain that an architecture that fails to deal with both the need to make places and at the same time the need to provide compelling objects in the cityscape is not an architecture worth having. The fact that so often it is a matter of choosing between an object building without place qualities or a structured set of places without any

compelling urbanistic presence -- between the Hancock Tower and the Central Beheer, for example -- is for me one more depressing evidence of the low state of architecture at the present. It is even more unfortunate that when urban places are attempted they usually seem to be little different from indoor shopping malls. The idea that an urban place could exist that had other reasons for existence besides shopping seems not to have occurred to many people actually involved in building, and the idea that perhaps some compromises with the realities of modern capitalism might have to be made to secure such places seems not to have occurred to many people in academia. The continuing disjunction between image and reality and between doing and thinking in our society remains for me a source of acute annoyance; this thesis was undertaken with the idea of trying to bridge those gaps, but in reality it remains in the realm of thinking. But as an exercise it has been invaluable, and this past semester has been my most satisfying at M.I.T.

John Mead Howells' Panhellenic
Hotel, 1927: the first Art Deco
tower for residential uses.



A Note on Sources

For the historical part of this thesis I have relied heavily on Alpern's Apartments for the Affluent and Robert Stern's "With Rhetoric: The New York Apartment House," as well as the architectural magazines from the first decade of this century. The soon-to-be published work of James Sanders and Roy Strickland on housing in New York has also been very helpful.

Detail of terra cotta ornament at
the Hendrik Hudson Annex.

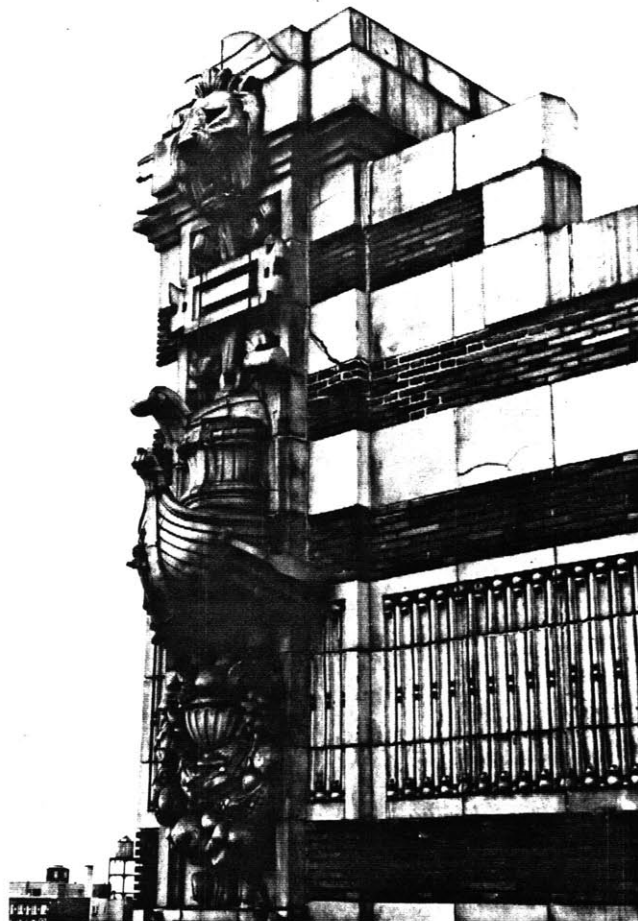


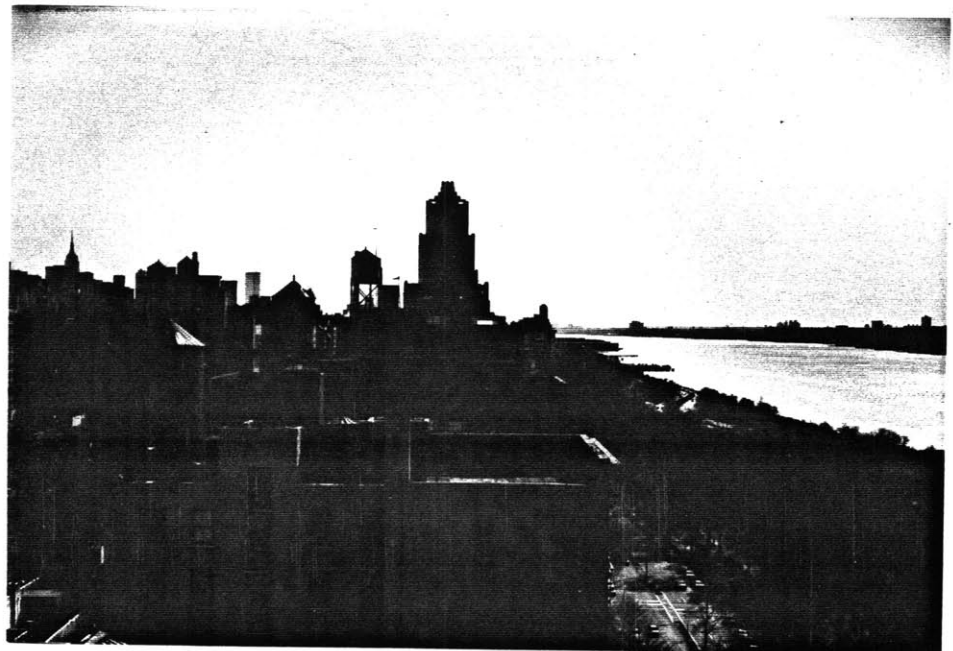
Photo Credits

Uncredited photos were taken by the author.

<u>Subject</u>	<u>Page</u>	<u>Source</u>
North view from Empire State Bldg., c. 1940	5	Set of touristic views
Mondrian: Broadway Boogie-Woogie	7	Elgar, <u>Mondrian</u> (London, 1968)
Rockefeller Center Perspective	9	Balfour, <u>Rockefeller Center</u>
Chrystie-Forsyth Parkway	11	Regional Plan of NY, v. 2, p. 399
Central Park West	13	Robinson, <u>Skyscraper Style</u>
East Midtown Plaza site	14	<u>Architecture Plus</u> , Nov. 1973
Olympic Tower, plan	15	<u>Progressive Architecture</u> , Dec. 1975

Columbia Condominium	16	Columbia promotional brochure
Gruzen Apt. House on Broadway	17	<u>New York</u> , May 10, 1982
Aerial view of West Side	18	Knotts Hotels map, 1937
Hendrik Hudson	24	<u>Alpern, Apartments for the Affluent</u>
El Nido Apts., Lobby	26	<u>Architect's & Builder's Magazine</u> , Nov. 1900
Riverside Drive, 1908	26	<u>Architectural Record</u> , Mar. 1908
Hendrik Hudson Addition	27	<u>Architect's & Builder's Magazine</u> , Mar. 1909
The Bonavista	28	<u>Architect's & Builder's Magazine</u> , Feb. 1908
Prince Humbert	29	<u>Apartments for the Affluent</u>
Dreadnaught	31	<u>Architect's & Builder's Magazine</u> , Mar. 1909
509 Cathedral Parkway	31	<u>Apartments for the Affluent</u>
Brittania	31	<u>American Architect</u> , 1909
Manhasset	31	<u>Apartments for the Affluent</u>
Master Apts.	32,33	<u>Architectural Record</u> , Dec. 1929
Master Apts.	33	<u>Skyscraper Style</u>
Area map	36	Sanborn Map Company
Rockefeller Center, site plan	74	<u>L'Architecture D'Aujourd'hui</u> , 1933
The Rookery	77	<u>100 Jahre Architektur in Chicago</u> , Staatliches Museum, Munich
Boker Building	77	<u>Architect's & Builders's Magazine</u> , Dec. 1900

Palm Court, Plaza Hotel	77	<u>Architectural Record</u> , Nov. 1907
Cleveland Arcade	77	Johannesen, <u>Cleveland Architecture</u>
Ferriss sketch	78	Lerch, <u>Architectural Visions</u>
Wright project	78	Wright, <u>An American Architecture</u>
Aalto Apts.	79	Sherwood, <u>Modern Housing Prototypes</u>
Dakota plan	79	<u>Apartments for the Affluent</u>
Wagner Apts.	81	Wagner, <u>Otto Wagner</u>
Albert Kahn roof	81	<u>Designing for Industry</u>
Penn. Station vestibule	82	<u>Architectural Record</u> , c. 1900
Pan Hellenic Hotel	84	<u>Skyscraper Style</u>
Midtown Skyline, c. 1940	87	Set of touristic views





Mid-Manhattan Skyline

Bibliography

I. Historical References

Alpern, Andrew, Apartments for the Affluent.

Articles on apartment houses in:

Architect's & Builder's Magazine,

Feb. 1908

Mar. 1909

American Architect,

April 1916

Architectural Record

1908

Goldberger, Paul, The City Observed: New York.

Lockwood, Charles, Manhattan Moves Uptown.

"Mixed-Use Buildings" in Progressive Architecture,
Dec., 1975.

Real Estate Record and Guide, A History of Real
Estate, Building and Architecture in New York,
1874-1899.

"The Roerich Museum and Master Apartment
Building," in Architectural Record, Dec. 1929.

Stern, Robert A.M., "With Rhetoric: The New York
Apartment House," in Via IV.

Wiseman, Carter, "A Classy Comeback for Apartment
Houses," in New York, May 10, 1982.

II. Local Design References

Balfour, Alan, Rockefeller Center: Architecture as Theater.

Kilham, Walter, Raymond M. Hood.

Leich, S.F., ed., Architectural Visions: The Drawings of Hugh Ferriss.

Robinson, C. and Bletter, R.H., Skyscraper Style: Art Deco New York.

III. Technical References

New York City Zoning Ordinance

New York City Building Code

Macasai, John, Housing

Paul, S.J., Apartments: Their Design and Development.

IV. General Theory

Norberg-Schultz, Christan, Meaning in Western Architecture.

Norberg-Schultz, Christan, Genus Loci.

Rowe, Colin and Koetter, F., Collage City.

Scruton, Roger, The Aesthetics of Architecture.

Scully, Vincent, American Architecture and Urbanism.