

43

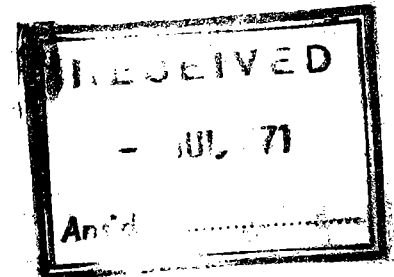


OFFICE OF THE MAYOR
OFFICE OF LOWER MANHATTAN DEVELOPMENT
2 LAFAYETTE STREET, NEW YORK, N. Y. 10007

RICHARD WEINSTEIN, *Director*

May 5, 1971

Mr. George Clarke
Urban Systems
MLC Building
105 Miller Street North
Sydney, Newsouthwales
Australia 2060



Gentlemen:

I have enclosed some material on the Greenwich Street Zoning District which I hope will meet your needs. The main document is a draft which is in the process of revision that we intend as a handbook to guide the private sector in applying the district regulations to their property. The economic paper is based on a rather simple principle. We arrive at a profit to the developer for each incentive foot of space to be granted with the standard incentive of 15% profit assumed and by dividing this number into the cost of the amenity we desire, we arrive at a square foot bonus. The chief innovation of this district was to provide for complex planning goals within the framework of automatic administration. In the past this has only been possible through negotiation which made the private sector impatient and the civic groups suspicious.

I hope the enclosures will be of use to you. If not, please let us know. We are familiar with "looming deadlines" ourselves. What a pity we can't discuss these things at leisure floating around the great barrier reefs or sunning on any one of your legendary beaches. My limited reading of history reminds me that we were once considered the land of opportunity by Europeans, and it must be a consolation to you to feel longing glances now cast in your direction.

With best wishes,

Richard Weinstein

Enclosures

P.S. Mr. Robertson will reply under separate cover.

ANALYSIS
OF
LAND VALUE
AND
RENT REQUIRED
FOR
NEW OFFICE STRUCTURES

November 13, 1970

Alfred Schimmel, A.S.A.

INTRODUCTION

The decision by an experienced developer to proceed with the development of a site with a modern office structure which will produce a net income return on the required capital investment, is the end result of a series of variable assumptions that rest upon the most reliable market data available.

In the determination of the price that can be paid for a plot of land, the decision rests upon the following assumptions:

- 1) The Gross Rental obtainable for each square foot of rentable office space.
- 2) Additional rent that can be obtained from the sale of utility service.
- 3) The offsets to gross income in the form of vacancy and other rent losses.
- 4) The operating expenses and real estate taxes that must be paid to sustain the gross income.

When items 3 and 4 are subtracted from items 1 and 2, an expected net income will be revealed. This net income may be capitalized into property value including land and building. Value in this sense may be defined as the most probable price obtainable in the open market if the property were exposed for sale.

INTRODUCTION (Cont'd.)

The capitalization rate that is used to translate net income into value is generally a composite of two factors. The first takes into consideration the available mortgage financing, both as to ratio of mortgage to appraised value and interest and amortization requirements. The second considers a yield that would attract an investor in acquiring the equity position; that is the cash investment required above the available mortgage. Both the mortgage terms and equity yields are market factors. Available mortgage terms are more readily determinable than equity yields. The latter depend upon comparisons of alternate investment opportunities with due consideration given to comparative risks to the equity position.

Once the property value has been estimated, it is necessary to estimate the most probable construction cost for the building. This amount subtracted from the total property value produces a residual land value as improved. One final adjustment must be made. The residual land value is discounted at an appropriate rate of return for the time between commencement of construction and completion, usually a two year period.

A variation of this type of analysis starts with a given land cost and by using the assumptions as to cost of construction, operating expenses, financing costs, equity returns etc. seeks to determine the minimum rental that must be obtained per square foot of rentable space.

INTRODUCTION (Cont'd.)

It should be borne in mind that the first analysis seeks to arrive at a land value based on a contemplated improvement to the land. The second type of analysis starts with a land value based on probable market price and results from the usual market bargaining process between buyer and seller. If as a result of the second type of analysis it is determined that the required rental is in excess of the going market rental, a decision to postpone or drop the project will probably be made.

In the analysis that follows, the factors are based on a common unit of measure, namely, the cost or value per square foot of net rentable building area. Thus the land value that emerges is expressed in the same terms and if it were desired to convert the land value per square foot of building area into square foot of land alone, then it merely becomes necessary to multiply the derived figure by the permissible F.A.R. in the area. Thus a \$6.75 land value per square foot of building area can be expressed, in a F.A.R. 18 zone as $\$6.75 \times 18$ or \$121.50.

I. ANALYSIS OF RESIDUAL LAND VALUE

ASSUMPTIONS:

- 1: Gross Rent of \$9.50 per square foot - based on current market levels.
- 2: Electricity charges to tenants - based on current market practice.
- 3: Vacancy Allowance - Use 5% to reflect softness in current renting conditions.
- 4: Operating Expenses - Use \$1.75 per square foot based on comparisons with existing buildings and reflecting recent increases in wages, fuel costs etc.
- 5: Real Estate Taxes - Use \$2 per square foot based on a survey of assessed valuations of all office buildings built during 1959-69 in lower Manhattan.
- 6: Building Costs - Use \$42 per square foot based on recent record of actual costs of office buildings with provision for rising costs in the next year or two.
- 7: Mortgage Terms - A mortgage availability up to 75% of appraised value with interest at 10% and annual constant payment for interest and amortization of \$.10608 per dollar of loan.

ANALYSIS OF RESIDUAL LAND VALUE (Cont'd.)

8: Equity Return - A 15% equity return required to attract capital to compensate for the risks involved, the decreased tax shelter under the 1969 Tax Law and the possibility of creating leverage on the borrowed mortgage amount.

9: Capitalization Rate - By combining items 7 and 8 into a "band of investment", the following rate is derived:

MORTGAGE - 75% of Value x .10608 = \$.0795

EQUITY - 25% of Value x .15 = .0375

COMPOSITE = \$.1170

rounded to \$.115

TABLE I

GROSS RENT	\$ 9.50
+ Utility Charge	<u>.50</u>
TOTAL	\$10.00
Less Vacancy Allowance (5%)	<u>.50</u>
EFFECTIVE GROSS INCOME	\$ 9.50

LESS

Operating Expenses \$1.75

Real Estate Taxes 2.00 \$ 3.75

NET INCOME \$ 5.75

Capitalized @ 115% = \$50.00
(\$5.75 ÷ .115)Value per square foot of land
and buildingCost of Building per sq. ft. = 42.00

LAND VALUE AS IMPROVED \$ 8.00

Discounted @ 10% for 2 years = \$8.00 x 8.26446* = \$6.61

VALUE OF LAND PRIOR TO DEVELOPMENT = \$6.61

* Present Value of \$1 due in 2 years @ 10%

TABLE II

Average land prices actually paid in the area bounded by the proposed zoning district came to \$129 per square foot for the period 1967-69. During that period the area was zoned C-6-4 permitting a F.A.R. of (10-12). Most developers however anticipated obtaining an upzoning before the Board of Standards and Appeals on the basis of hardship.

With the rental market turning downward, the hardship case would be strengthened. However assuming no increase in F.A.R. a price of \$129 per square foot of land when divided by 12 produces a land cost of \$10.75 per square foot of building area. The minimum rental necessary to proceed with a development with land costs at \$10.75 per square foot of building area is shown in Table II.

TABLE II

Land Cost	\$10.75 per square foot of building area
Building Cost	<u>42.00</u>
TOTAL	\$53.75
Rent needed to cover:	
75% of Mortgage - \$39.56 x .10608 =	\$ 4.20
25% Equity return - \$13.19 x .15 =	1.98
Operating Cost	1.75
Real Estate Taxes	<u>2.00</u>
TOTAL	\$ 9.93 including electricity charges

TABLE II (Cont'd.)

TOTAL FORWARDED \$ 9.93

Total rent needed with
5% vacancy allowance = $\frac{\$ 9.93}{.95}$ = \$10.45

CONCLUSION

Market price of \$129 or \$10.75 per square foot of building area is not feasible in the face of the current rental market. Either a reduction of the return to equity to approximately 12% or guarantee of full occupancy with a single tenant would enable the developer to rent at \$9.50 plus electricity charges per square foot, the realistic market rate under today's economic condition. A reduction in land cost would also make development feasible.

November 13, 1970

Alfred Schimmel A.S.A.
Alfred Schimmel, A.S.A.

Residual Land Value Formula
for
New Office Buildings
New York City

November 23, 1970

Alfred Schimmel

Supplementing the report dated November 13, 1970 entitled "Analysis of Land Value and Rent Required for New Office Buildings", we may express the procedure outlined in the following formula:

$$\text{Land Value} = \frac{[G+U(V+T+O) - BC]}{R} \times df \text{ wherein}$$

G = Anticipated Gross Rent
U = Utility Charges paid by tenants
V = Vacancy allowance
T = Real Estate Taxes
O = Operating expenses excluding debt service
R = Capitalization Rate
BC = Building Development Cost
df = Discount factor for 2 years at appropriate rate of interest

Quantitative factors were assigned to each of the symbols in the November 13 report. The purpose of this report is to establish an objective method whereby market changes in the factors listed above may be reflected in subsequent land values to form a basis for determining Bonus F.A.R. allowances in the proposed Greenwich Street Development District.

It is contemplated that the factors listed in the formula are meant to apply a prototype building containing between 400,000 and 600,000 gross square feet. While individual developers may build structures of varying gross building area and may make special deals with prospective tenants, it is necessary to use a prototype building which will fairly represent an average development.

Quantitative Changes in the Formula

The following objective market changes should be used as a basis for the annual revision of the formula. Changes may be made as of July 1 of each year except that the first change should be made on July 1, 1972.

Gross Income

Based on questionnaire survey addressed to real estate companies active in leasing space in the lower Manhattan area. The average rental figure for the period January 1 - May 30 in any year should be the base. Questionnaires should be addressed in some cases to new tenants and recognition may be taken of advertised space and asking prices for this space.

Utility Charges

Percentage changes in rates as obtained from the Consolidated Edison Company, multiplied by the base amount in the formula.

Vacancy Allowance

A 5% vacancy allowance is believed to be ample.
[Any further increases in vacancies will probably lead to a cessation of building.]

Real Estate Taxes

The Base Real Estate Tax amount may be multiplied by the percentage increase in the tax rate and by the percentage increase in building construction costs.

Operating Expenses

Since Wages and Benefits, Cleaning Costs, Electricity Charges and Heating Costs account for approximately 76.5% of total operating costs with each component carrying respective weights as follows:

Wages and Benefits	18.7%
Cleaning	40.0%
Electricity	31.3%
Heating	10.0%

It is possible to account for changes by adjusting the percentages in accordance with:

- a) Wages & Benefits - Changes as indicated by the Realty Advisory Board on Labor Relations, Inc. as reported by the Real Estate Board of New York.
- b) Cleaning - Change based on changes in contract cleaning costs as negotiated by the Department of Real Estate of the City of New York.
- c) Electricity - Changes indicated by rate increases obtained by Consolidated Edison Company during the year.
- d) Heating - Changes in basis costs of steam supplied by the N.Y. Steam Corporation.

Example - Assume

Wages & Benefits increase	10%
Cleaning increases	5%
Electricity	No change
Heating increases	5%

then Wages & Benefits	18.7% x 1.10 =	20.57%
Cleaning	40% x 1.05 =	42.00%
Electricity	31.3% x 1.00 =	31.30%
Heating	10% x 1.05 =	10.50%
Total		104.37%

Total increase in the four key items is 4.37%. Since they represent 76.5% of total operating costs, if we divide $\frac{.0437}{.765}$ a total cost increase of 5.71% is indicated.

Capitalization Rate

The rate should be based on the rate for 10 year taxable U.S. Treasury bonds plus 3.5 basis (percentage) points. The Treasury Bond Rate as quoted in the New York Times or Wall Street Journal or other reliable source as of June 15 in any year should be used.

Building Construction Cost

The base cost should be modified by percentage changes as indicated by the changes indicated in the Engineering News Record Building Cost Index published as of the date nearest to July 1 in any year or other equally reliable Cost Index that will reflect changes in New York City building costs such as the Dow Calculator Building Cost Index.

Discount Factor

The discount factor shall be equal to the present value of \$1 due in two years at a rate of interest equal to two basis or percentage points above the prime rate of the Chase Manhattan Bank or Morgan Guaranty Trust Company as of June 15 in any year.

Attached to this report is an example of how a change in the formula may be affected in any one year.

Example of Change in Basic Formula

A) Current Base Formula

Gross Rent per sq. foot =	\$9.50
+ Utility Charges	.50
Gross Potential	<u>10.00</u>
Less Vacancy Allowance 5%	.50
Effective Gross Rent	<u>\$9.50</u>
Less	
R.E. Taxes \$2.00	
Operating Expenses 1.75	<u>3.75</u>
Net Income per sq. foot	<u>\$5.75</u>
Capitalized @ 11.5% =	\$50 per square foot for land and building
Less Construction Costs	<u>\$42</u>
Residual Land Value	\$8 per square foot of building area
Less discount for 2 years @ 10%	<u>x.826</u>
Current Land Value	<u>\$6.61</u> say \$6.75

Change Assumptions

- 1) Gross income - Average Increases to \$10.50
- 2) Utility Charges - No change
- 3) Vacancy Allowance - 5% (as fixed)
- 4) Real Estate Taxes - Tax Rate increases by 5% - Construction Costs by 10%
- 5) Operating Expenses - Increase by 5.71%
- 6) Capitalization Rate - 10 year bond rate @ 6.5% + 3.5% = 10%
- 7) Construction Costs - Increase by 10%
- 8) Discount Rate - Prime Rate 7% + 2% = 9%

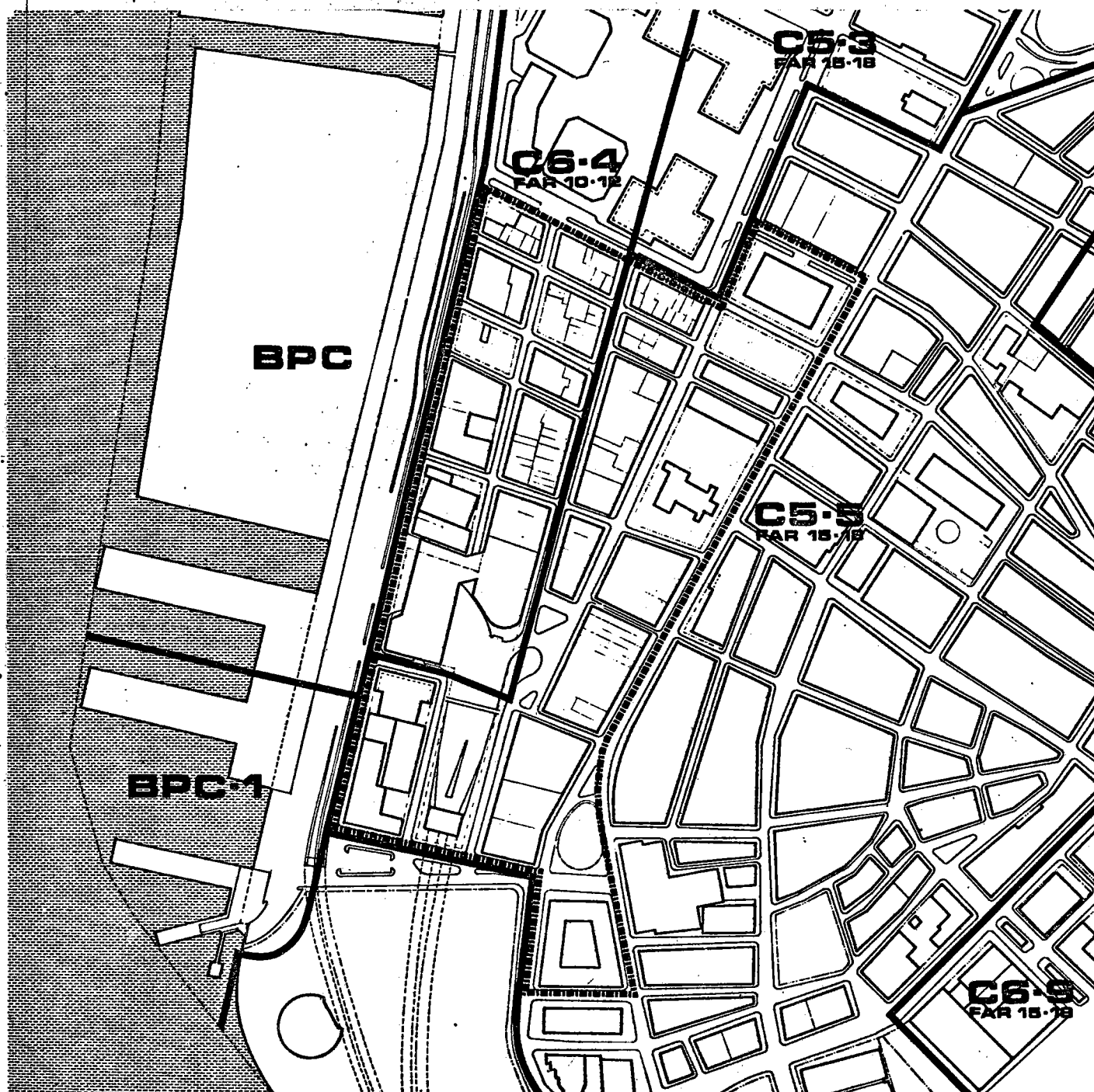
B) New Formula

Gross Rent	<u>\$10.50</u>
+ Utility Charge	.50
Gross Potential	<u>\$11.00</u>
Less Vacancy Allowance 5%	.55
Effective Gross Rent	<u>\$10.45</u>
Less	
R.E. Taxes - \$2.00 x 1.05 x 1.10 = \$2.31	
Operating Expense - \$1.75 x 1.0571 = 1.85	<u>\$4.16</u>
Net Income	\$ 4.16
Capitalized at 10%	\$ 6.29
Less Construction Costs \$42 x 1.10	62.90
Residual Land Value	<u>46.20</u>
Discounted @ 9% for 2 years	<u>\$16.70</u>
Current Land Value	x .842
	<u>\$14.06</u> per square foot of building area

The Greenwich Street Area .....	.....
The Goals of the District .....	.....
Pedestrian Circulation .....	.....
Shopping Opportunities .....	.....
Urban Spaces .....	.....
Subway Access .....	.....
Street Use .....	.....
The Elements of the Plan .....	.....
Fundamental Requirements .....	.....
Elective Pedestrian Circulation Improvements .....	.....
Mandatory Pedestrian Circulation Improvements .....	.....
Lot Improvements .....	.....
How It Works .....	.....
Fundamental Requirements .....	.....
Adjusted Basic Maximum Floor Area Ratio .....	.....
Bonus Floor Area .....	.....
Increased Tower Coverage .....	.....
An Example .....	.....
The Site .....	.....
Adjusted Basic Maximum Floor Area Ratio .....	.....
Lot Improvements .....	.....
Increased Tower Coverage & Bonus Floor Area .....	.....
The Result .....	.....
Section 86-00 .....	.....

DRAFT

THE GREENWICH STREET AREA



The Special Greenwich Street Development District is a twenty four block area of Lower Manhattan in which special zoning requirements and incentives have been established.

The district is bounded on the east by Broadway and the Wall Street financial area, on the north by the World Trade Center, on the south by Battery Park and on the west by the proposed Battery Park City.

The boundaries of the district were drawn to encompass an area in which major development has begun and in which it will continue, at a rate depending largely on the requirement for additional office space, for the next decade or so.

Redevelopment is anticipated in the special district for several reasons. First, the area is adjacent to the Wall Street financial area as well as both the World Trade Center and the proposed Battery Park City office complex. Second, the area is well served by the subway system and within walking distance of both PATH and the Staten Island Ferry. Finally, more than half of the district is either undeveloped or underdeveloped.

Slightly more than half of the sites included within the district are undeveloped or underdeveloped and, therefore, considered likely locations for new buildings. Three projects - 90 Washington Street, 17 Battery Place and U.S. Steel - are already being occupied or nearing completion. Two buildings - 75 West Street and 40 Rector Street - are being remodeled. Site assembly and/or building design are known to be underway for six other sites.

The Special Greenwich Street Development District is intended to encourage this development while coordinating and channeling it so as to provide necessary public amenities and improvements to the pedestrian circulation system.

THE GOALS OF THE DISTRICT

The essential goal of the Special Greenwich Street Development District is the strengthening of the downtown business center. All the other goals - more and better open space, improved pedestrian circulation, increased shopping opportunities, coordinated development, automatic administration - are but the means of achieving the continuing growth and viability of Lower Manhattan and, thereby, the viability of New York City and the well-being of her citizens.

Among the specific planning goals which the special district seeks to achieve are the following:

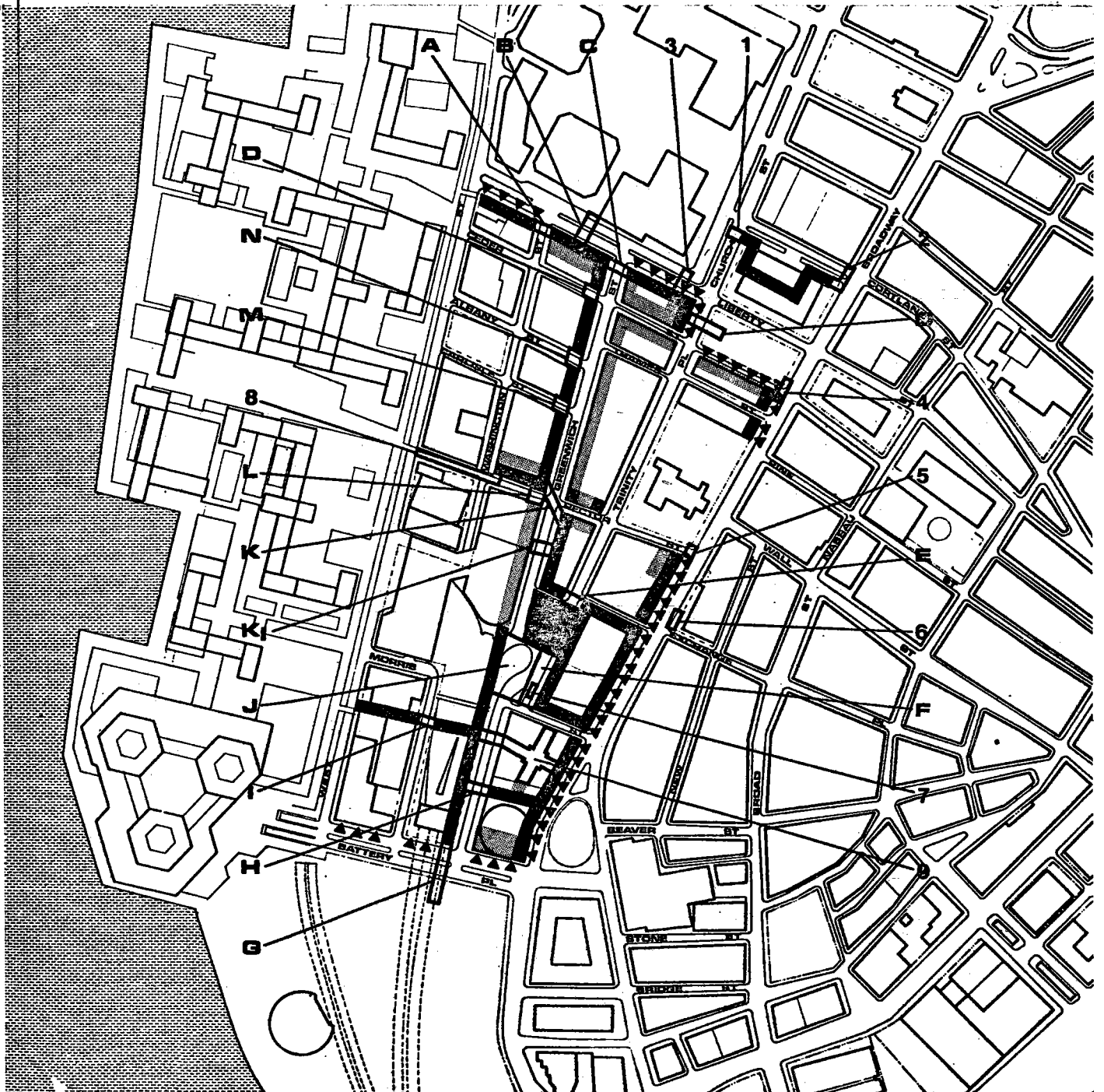
PEDESTRIAN CIRCULATION

It is a basic precept of the Zoning Resolution in general and the special district in particular that above a certain level, which is theoretically related to the existing infrastructure, the size of a new building must be offset by density ameliorating amenities. Plazas and arcades are the usual amenities which a development provides and are intended to increase the size of the sidewalk and provide additional circulation and open space for pedestrians. In the special district these and other amenities are coordinated into a comprehensive, district wide, pedestrian circulation system.

In addition to the need to provide a sufficient amount of circulation and open space within the special district, there are three major considerations which guided the design of this pedestrian circulation system.

First, the system must accommodate movement to and from the mass transit systems. This involves not only generally east-west movement associated with the

several subw stations but also north-south movements generated by PATH and the Staten Island Ferry. This suggests a series of east-west routes, particularly one along Rector Street, as well as a route north from Bowling Green and south from the World Trade Center.



Second, the special district is located between the existing Wall Street- Broad Street core, the World Trade Center and Battery Park City and must, therefore, accommodate both movements between these areas and between them and the special district. The fact that Cedar, Rector and Morris Streets had been proposed

as the major points of pedestrian access between Battery Park City and the area of the special district influenced the location of the east-west elements of the pedestrian circulation system.

Finally, both the extreme congestion of Lower Manhattan, especially in light of the constrained street system, and the mutual advantages of separating vehicular and pedestrian traffic indicate the desirability of developing a multi leveled pedestrian circulation system. Fortunately, the pedestrian system on three sides of the special district - street level along Broadway, the World Trade Center plaza and the pedestrian level proposed in Battery Park City - is fifteen to twenty feet above the street level of most of the special district. This greatly facilitates the development of a network of walkways and open spaces at the second floor level.

SHOPPING OPPORTUNITIES

One of the most serious problems ~~to~~ ^{effecting} ~~have recently become apparent in~~ central business districts is the rapid decline in opportunities for noon time shopping and eating.

There seem to be two major reasons for this disappearance of restaurants and shops. In older buildings the space available for retail uses has gradually been taken over by banks, travel bureaus and corporate showrooms, partly because of their ability to pay higher rents and partly because they are thought to upgrade the building. In new buildings, which tend to be towers set in large plazas, a larger proportion of the ground floor is occupied by lobbys, elevators and loading docks. Of the space which remains, most is usually occupied by a bank or corporate showroom.

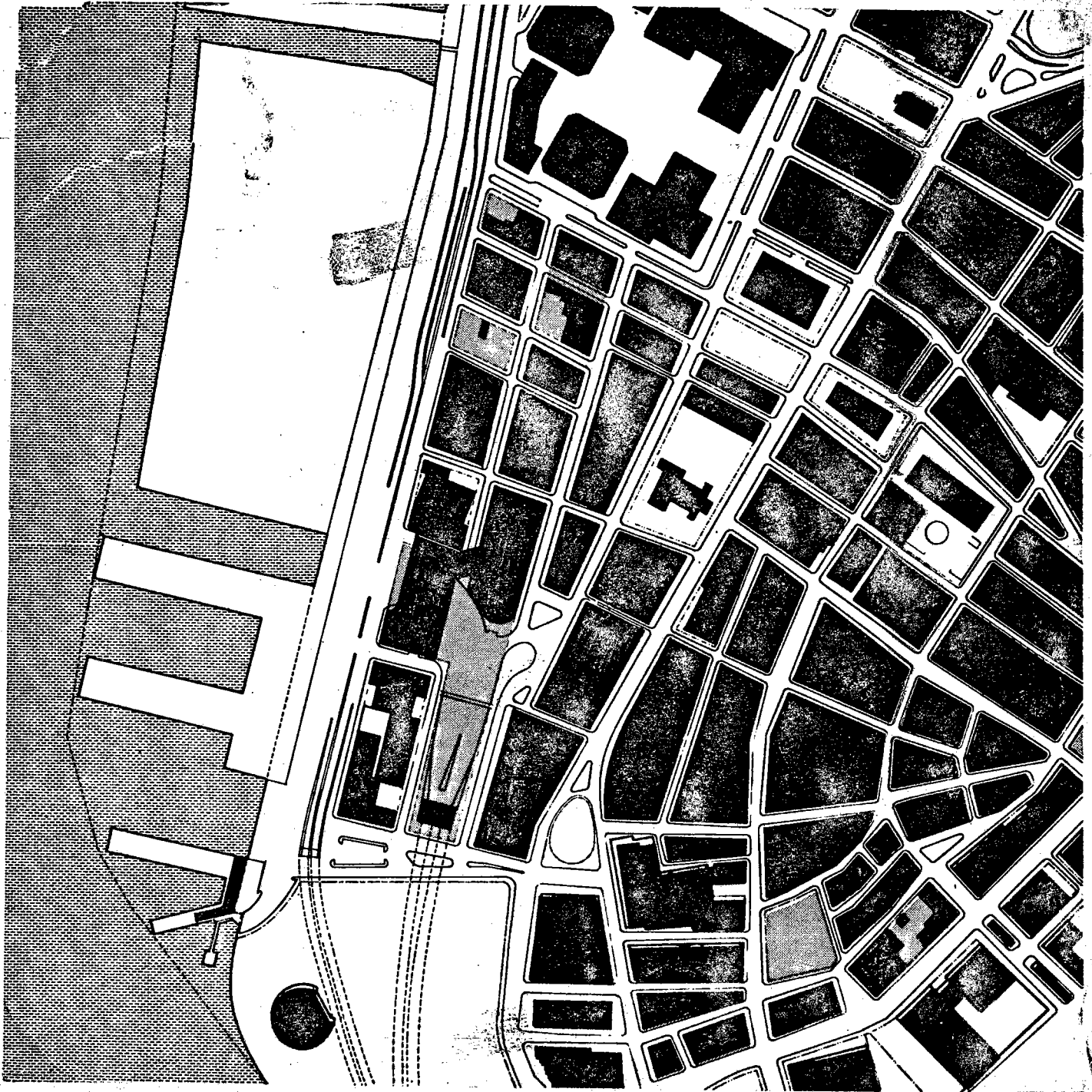
The result is fewer and fewer places at which to shop or eat while the new buildings are increasing the number of people who need these services.

In order to reverse this trend

The special district requires that 2 1/2% of the total floor area of each development must be devoted to uses listed in Use Group G. Use Group G is a careful-

ly selected list of convenience retail and service uses which are necessary to satisfy the needs of people visiting or working in the district. The 2 1/2% requirement is intended to increase these uses at the same time that the working population is being increased.

URBAN SPACES



An important consideration in the planning of any urban area is the maintenance of those spaces - streets, squares and parks - which give the area its memorable character and the shaping of new

public open spaces which will not only serve the needs of the neighborhood but also be in keeping with that character.

Lower Broadway and Battery Park are examples of the kinds of spaces which give Lower Manhattan its unique character. The precipitous facades lining Broadway and providing a dramatic frame for Bowling Green and the Custom House and the continuous wall of buildings forming a backdrop for Battery Park and providing an essential contrast with the expanse of the bay are unique and memorable.

In order to maintain these spaces and in order to gather the plazas to be provided by new buildings into larger and more useful open areas, it is necessary to adjust the zoning envelopes on some sites in the special district so as to require the new building to be located at one edge rather than in the center of its site. In this way the new buildings which are effected will continue to define a successful urban space on one side while contributing to a new open space on the other.

SUBWAY ACCESS

Although the special district is well served by the subway system - there are three lines and seven stations within or at the boundaries of the district - the stations are unfortunately not designed to accommodate large numbers of people. This problem has become acute in the Lex IRT Bowling Green Station. Due to its single narrow central platform, not only do the trains experience difficulty in closing their doors and leaving the station but ^{are in danger of being} people have been forced off the crowded platform onto the tracks. Because the situation is dangerous and because the capacity of the line is reduced by the trains being delayed, the Transit Authority plans to rebuild the station to provide new entrances and a new north bound platform.

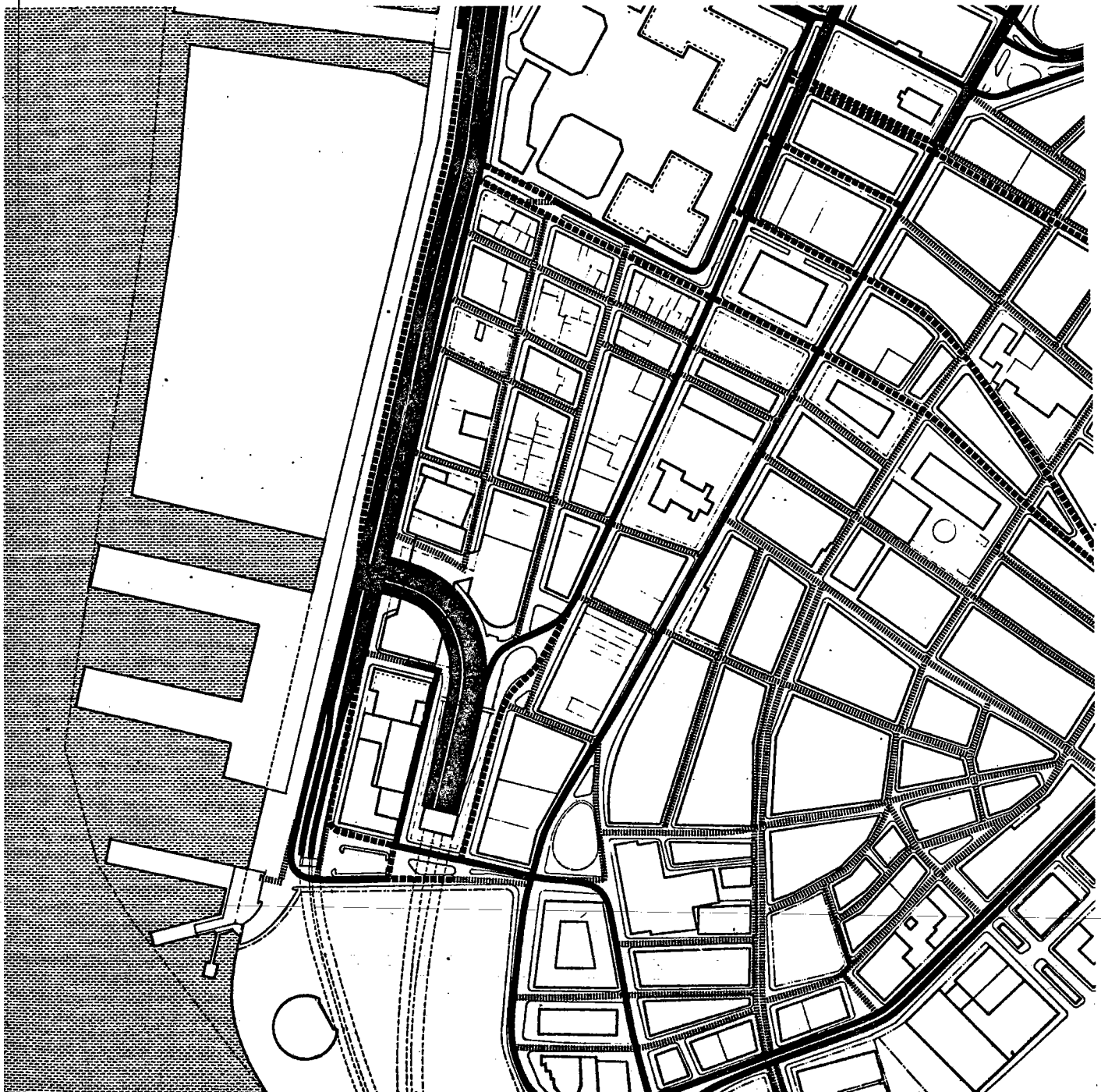
Fortunately, the capacity of the other six stations in the district is limited not by platform size but by inadequate access to the stations. Some stations have too few entrances; in other stations the stairways are too narrow and there are too few turnstiles.



Therefore, the district plan includes several new or improved subway entrances, direct access between developments and adjacent subway stations and the relocation of sidewalk entrances within the development.

STREET USE

The street system of Lower Manhattan was designed for carriages and wagons and three and four story buildings. It is clearly incapable of accommodating all the vehicles and pedestrians generated by forty and sixty story office buildings. If it were not for the mass transit system - the subways, PATH and the Staten Island Ferry - and that most of the buildings in Lower Manhattan are within walking distance of each other the area would have long since ceased to function.



Because the street system is so limited it is necessary to use it very carefully and the requirements of pedestrians and of delivery, service and emergency vehicles must be given priority.

The separation of trucks making deliveries, moving vehicles and pedestrians is mutually beneficial. Streets where trucks park and double park and back into loading berths are inherently blocked to through traffic and unpleasant for pedestrians. To the extent that queing and loading can be concentrated on service streets the remaining streets will more effectively accommodate through traffic and pedestrians.

For these reasons, and based on a careful analysis of the area including the existing traffic and service patterns, developments are not permitted to locate service entrances or access to parking and loading facilities on streets such as Broadway or Greenwich Street, which are intended to accommodate through traffic or large numbers of pedestrians.

THE ELEMENTS OF THE PLAN

The elements of the district plan comprise four administrative categories: (i) Fundamental Requirements, such as the inclusion of retail uses, for which it is neither appropriate or necessary to provide a floor area incentive, (ii) Elective Pedestrian Circulation Improvements, such as a pedestrian tunnel, for which, because of their high cost and public use, it is appropriate and necessary to grant a floor area allowance, (iii) Mandatory Pedestrian Circulation Improvements, such as an open pedestrian bridge, which are required to be included as part of the development of certain lots and for which, because of their public nature, it is appropriate to grant a floor area allowance and (iv) Lot Improvements, such as an elevated plaza, for which it is appropriate to grant a floor area bonus.

All of the elements of the district plan have the virtue of ameliorating the impact which more people will have on this area.

FUNDAMENTAL REQUIREMENTS

Unlike the other three categories, there is no floor area incentive associated with Fundamental Requirements. The reason is that these constraints, while providing a significant public benefit, impose no significant hardship on the developer; where as PCIs and Lot Improvements involve both public use and a significant expense to the developer.

USE GROUP G

The uses permitted in the special district remain those permitted in the underlying C6-4 and C5-5 districts respectively, with the exception that in each development 2 1/2% of the total floor area of the development must be reserved for uses listed in Use Group G.

Only floor space which is directly accessible from the street or part of the new pedestrian circulation system and which is to be actually occupied by uses from Use Group G may be counted toward the 2 1/2% requirement. The only exception is that the City Planning Commission may, by special authorization, allow up to one fifth of the requirement to be satisfied by other facilities such as an open air cafe on a plaza or a roof top restaurant open to the public.

PARKING AND LOADING

In the special district a development is not permitted to have vehicular access, for parking or loading facilities, from specified streets. These proscribed streets are of two types: those which carry large volumes of vehicular traffic and those which will, in keeping with the district plan, become more purely pedestrian streets. The remaining streets are for service or mixed use.

BUILDING TO LOT LINE

The requirement to build to the lot line has very little impact on the developer. In most cases it simply means locating the building tower at the edge rather than in the center of the lot. In return, the traditional character of Lower Manhattan is preserved and open space is gathered into useful amounts in appropriate places.

ELECTIVE PEDESTRIAN CIRCULATION IMPROVEMENTS

Elective Pedestrian Circulation Improvements are elements of the pedestrian circulation system which is set forth in the district plan - as are Mandatory PCIs and most Lot Improvements. The distinguishing characteristic of an Elective PCI is that it is neither conditional to the development of a given lot nor necessarily contiguous with that lot.

Each Elective PCI is described in Appendix C of the district regulations. They include such improvements as pedestrian tunnels and new or improved subway station entrances. Because such amenities are for the use of the public, floor area allowances will be granted in order to encourage developers to undertake the effort and expense of providing specific allowances which may be granted are shown in Appendix C.

MANDATORY PEDESTRIAN CIRCULATION IMPROVEMENTS

86-046

Floor area allowance

For each mandatory pedestrian circulation improvement provided, the development shall be eligible for a floor area allowance at the rate set forth in the following table.

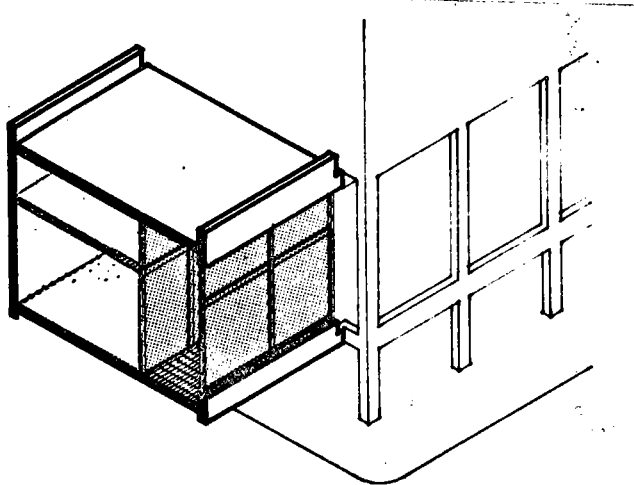
Floor Area Allowance for Mandatory Pedestrian Circulation Improvements

a) for an elevated shopping bridge	700 sq.ft. per linear foot
b) for an enclosed pedestrian bridge	270 sq.ft. per linear foot
c) for an open pedestrian bridge	
(1) single span	90 sq.ft. per linear foot
(2) multiple span	100 sq.ft. per linear foot
(3) with stair or ramp	120 sq.ft. per linear foot
d) for a pedestrian deck	10 sq.ft. per square foot
e) for each tree provided on a pedestrian deck	300 sq.ft. per tree

Mandatory Pedestrian Circulation Improvements also comprise elements of the pedestrian circulation system of the district plan. However, unlike Elective PCIs these elements must be developed in conjunction with the contiguous lot.

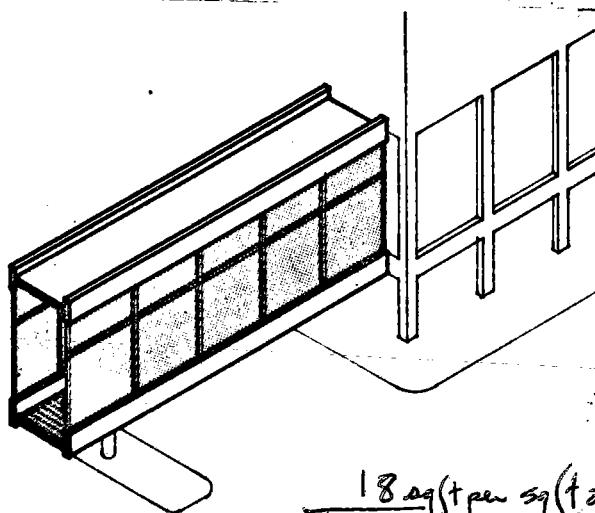
Because Mandatory PCIs are for the use of the public, floor area allowances will be granted to compensate the developer for the expense of their provision. The amount of the allowance depends both on the particular amenity and its size.

ELEVATED SHOPPING BRIDGE



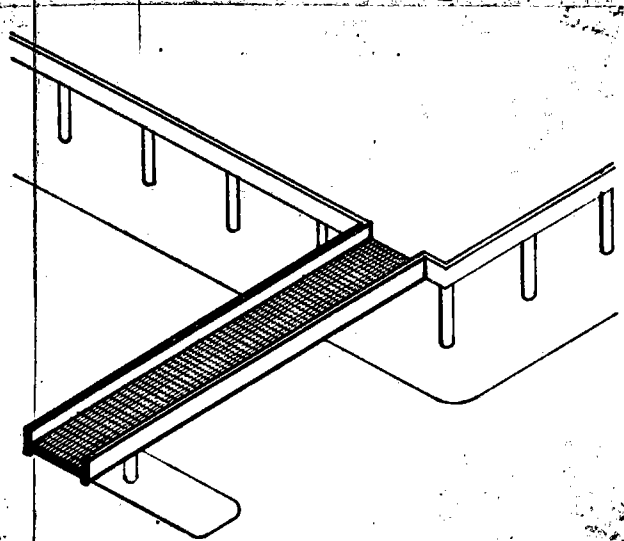
An elevated shopping bridge serves to link two sections of elevated shopping way. It enables pedestrians to move above the street between two developments without a major gap in retail frontage. The overall width of the bridge is between 40 and 50 feet of which the front portion, through which the pedestrians move from one development to the next, is enclosed, with a minimum width of 15 feet and a minimum floor to ceiling height of 30 feet, and is heated and air conditioned. The bonus which a development receives for providing an elevated shopping bridge depends simply on the length of the bridge.

ENCLOSED PEDESTRIAN BRIDGE



An enclosed pedestrian bridge also spans a street and allows pedestrians to move freely between the upper levels of two developments. However, the enclosed pedestrian bridge is intended to connect enclosed areas such as elevated shopping ways, through block arcades and covered pedestrian spaces and is, therefore, itself enclosed, with a minimum width of 15 feet and a minimum floor to ceiling height of 30 feet, and both heated and air conditioned. The bonus which a development receives for providing an enclosed pedestrian bridge depends simply on the length of the bridge.

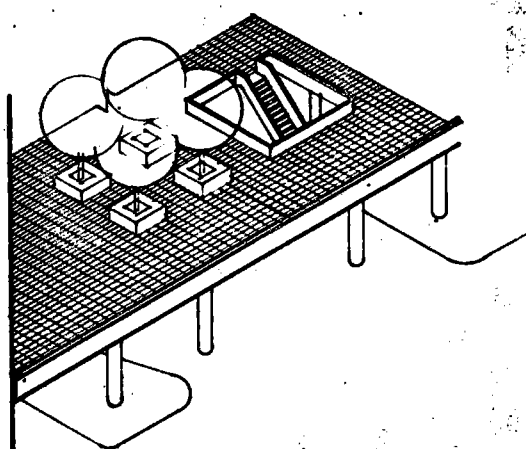
$$\begin{array}{r}
 18 \text{ sq ft per sq ft of bridge.} \\
 15 \overline{) 270} \\
 \underline{15} \\
 120 \\
 \underline{120} \\
 0
 \end{array}$$



6 to 8 sq. ft. per sq. ft.

OPEN PEDESTRIAN BRIDGE

An open pedestrian bridge spans a street between two zoning lots and allows pedestrians to move freely between, for example, elevated plazas without returning to street level or having to wait for a traffic light. This bridge has a minimum width of 15 feet and must provide as nearly level a connection as possible between the two sections of the elevated pedestrian circulation system. The bonus which a development receives for providing an open pedestrian bridge depends on its length, the necessity for intermediate supports, and whether or not a stair or ramp is required at one end.



100 sq. ft. per sq. ft.

PEDESTRIAN DECK

A pedestrian deck is similar to an elevated plaza except that it is built above the street rather than above the developer's lot. The deck must have direct pedestrian access from all adjacent elevated pedestrian circulation systems and, when required, access to street level. It must also have trees, benches, an outdoor cafe and other amenities such as fountains and sculptures. The bonus which a development receives for providing a pedestrian deck depends on the size of the deck.

LOT IMPROVEMENTS

86-058

Floor area bonus

For each portion of a lot improvement provided, the development shall be eligible for bonus floor area at the rate set forth in the following table. The linear footage of an improvement is measured along the lot line of a zoning lot.

Bonus Floor Area for Provision of Lot Improvements

a) for a shopping way [*]	400 sq. ft. per linear foot
b) for a shopping arcade	103 sq. ft. per linear foot
c) for an elevated shopping way	300 sq. ft. per linear foot
d) for a loggia	100 sq. ft. per linear foot
e) for a pedestrian connection	the bonus rate specified in the Zoning Resolution for the amenity provided
f) for required escalators	20,000 sq. ft. per pair of 32 inch wide escalators if single run provided; 30,000 sq. ft. bonus if double run with intermediate landing provided
h) for each tree provided on an elevated plaza	300 sq. ft. per tree

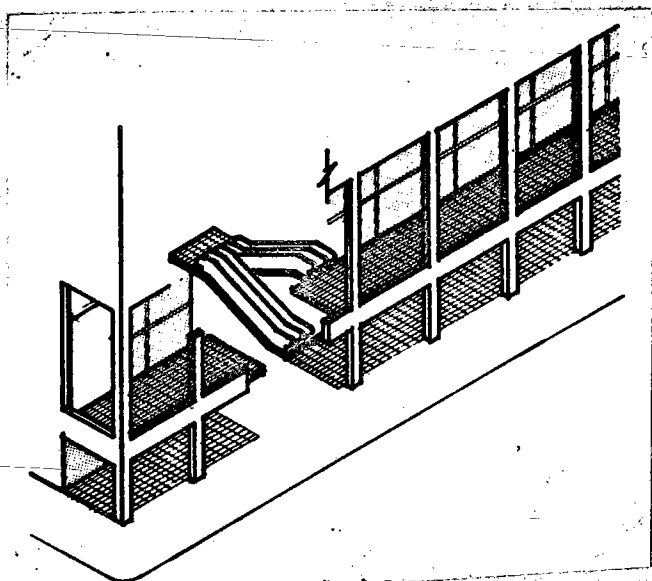
* A lot improvement which qualifies as a shopping way shall receive the bonus floor area therefor in lieu of separate bonuses for the shopping arcade and elevated shopping way comprising such shopping way.

Lot Improvements are of three types: (i) mandatory, which must be provided as part of the development, (ii) preferred, for which special permit hearings which might otherwise be required are waived, and (iii) discretionary, which are plazas and arcades which any developer may provide.

Those Lot Improvements, such as the shopping way, which are specific to this special district and those, such as the elevated plaza, which have been further defined for the purposes of the district are described below.

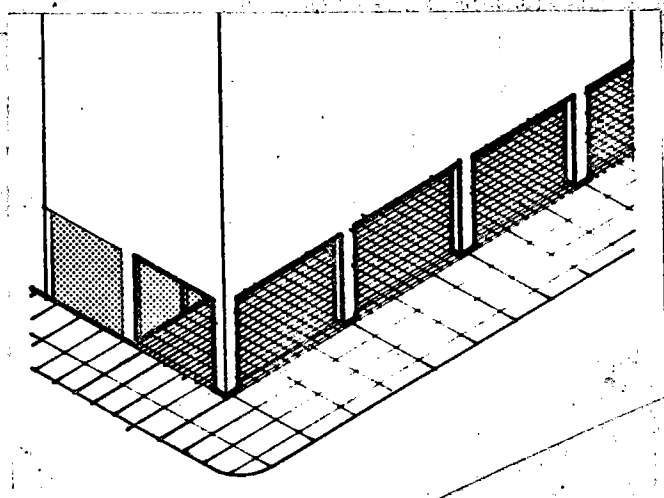
SHOPPING WAY

A shopping way consists of two major elements - a shopping arcade and an



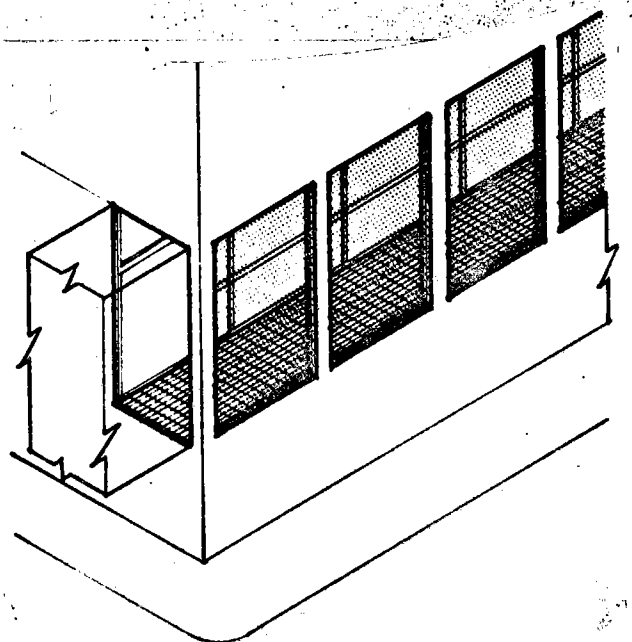
elevated shopping way - and vertical pedestrian connections between them. Each development must provide access between the shopping arcade and the elevated shopping way near each end of the shopping way. Furthermore, the development must provide at least one pair of 32 inch wide escalators for each 150 linear feet of shopping way. This is relaxed to 200 linear feet when other escalators in the building are readily accessible. The required escalators and stairs must be clearly visible and completely accessible from the sidewalk without any restriction or obstruction other than air doors and night gates. The development does not receive a duplicate bonus for the shopping arcade and elevated shopping way. The only additional bonus associated with the shopping way is that for the required escalators.

SHOPPING ARCADE

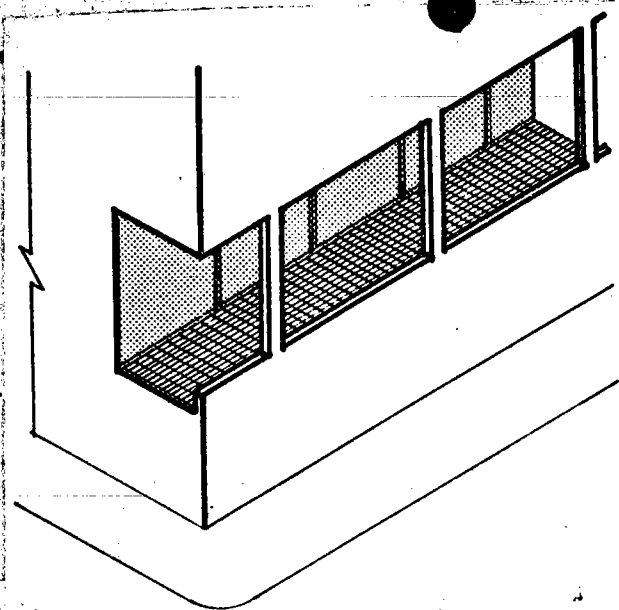


A shopping arcade is an arcade of which at least half of the rear boundary is composed of Use Group G frontage. The arcade provides protection from the weather, an active retail edge to the street and a considerably wider sidewalk. A shopping arcade has both a minimum height and a minimum width of 15 feet. It must extend the entire length of the development and be open to and at the same level as the sidewalk throughout that length. The bonus which a development receives for providing a shopping arcade depends on the length of the arcade.

ELEVATED SHOPPING WAY



An elevated shopping way provides a third sidewalk, located within the development and approximately 22 feet above the street. It is an enclosed space, heated in the winter and air conditioned in the summer, which has a minimum width of 15 feet and a minimum floor to ceiling height of 30 feet. The front wall is entirely windows, allowing daylight to enter and providing visual continuity with the street, and at least half of the rear wall is Use Group G frontage, providing the pedestrian an attractive series of shopping opportunities. The bonus received by the development depends on the length of the elevated shopping way.



LOGGIA

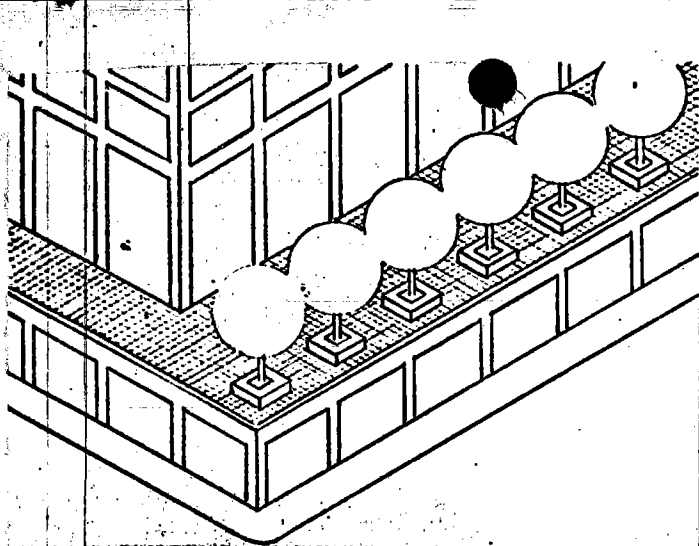
A loggia is similar to an arcade except that it is located above the level of the sidewalk. It is a covered space within, but along the edge of, a development. It has a minimum width of 15 feet and a minimum floor to ceiling height of 20 feet. Throughout its length it is open, with the exception of building columns and a railing, to the street. It is an element of the pedestrian connection between the areas at either end. The bonus received by the development depends on the length of the loggia.

COVERED PEDESTRIAN SPACE

The covered pedestrian space is ~~also~~ a special permit provision of the Zoning Resolution which has been adopted for use in the special district. A covered pedestrian space is capable of effecting pedestrian connections at and between several levels. It is a preferred way of providing, within a zoning lot, access to a subway station. A covered pedestrian space is a public amenity on the order of the plaza except that it has the advantage of being protected from the weather. In the special district a covered pedestrian space must be an integral part of the pedestrian circulation system, it may be bounded only by Use Group G frontage and it may contain such features as benches fountains, planting and cafes. The bonus received by the development depends on the size of the covered pedestrian space and whether the space is enclosed, with heating and air conditioning, or open. Any bonus for required escalators, which may be located in the space, is additional.

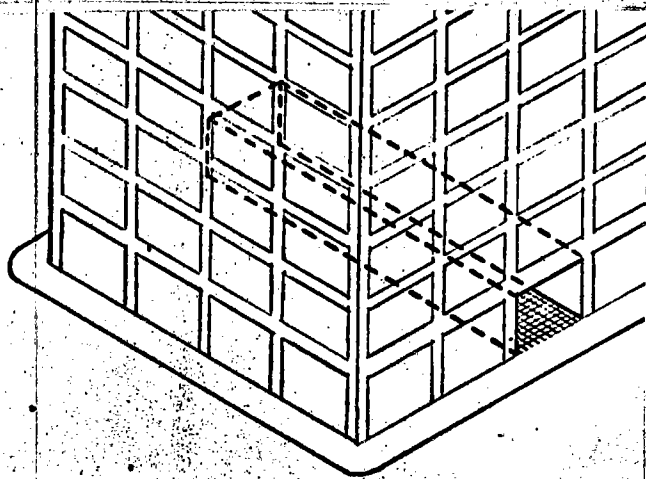
ELEVATED PLAZA

An elevated plaza is similar to a plaza except that instead of being an addition to the street level pedestrian circulation system it is an element in the elevated pedestrian circulation system. The elevated plaza was already in the Zoning Resolution and by special permit of the City Planning Commission, can be granted the same bonus as a plaza. In the special dis-



trict an elevated plaza is required to be at the same level as and directly accessible from other elements of the elevated pedestrian circulation system. It is also required to be generously planted with trees and, by special authorization of the City Planning Commission, may have such amenities as open air cafes, which are not normally permitted on plazas. The bonus which a development receives for providing an elevated plaza depends on the size of the plaza.

THROUGH BLOCK ARCADE



The through block arcade is a third special permit provision of the Zoning Resolution which has been adopted for use in the special district. The through block arcade may be used to effect a pedestrian connection between portions of the pedestrian circulation system. The only uses permitted along its boundaries are those included in Use Group G. The bonus received by the development depends on the floor area of the through block arcade.

PEDESTRIAN CONNECTION

In order to make the district plan as adaptable as possible a generic requirement termed the pedestrian connection is used to describe various links in the pedestrian circulation system. The developer may choose any appropriate Lot Improvement to accomplish the pedestrian connection and will receive the bonus floor area earned by that Lot Improvement. In the case of a pedestrian connection between two clearly separate levels where escalators are necessary, the development would also become eligible for the floor area bonus for required escalators.

HOW IT WORKS

In addition to the description of the elements of the district plan, the special district regulations define the procedures and conditions which encourage and control development in the district. These provisions are structured into four basic operations: (i) the satisfaction of the Fundamental Requirements, (ii) the upward adjustment of the basic maximum FAR in the C6-4 portion of the district, (iii) the addition of bonus floor area to the basic or adjusted basic maximum FAR and (iv) the use of bonus floor area to increase the permitted tower coverage.

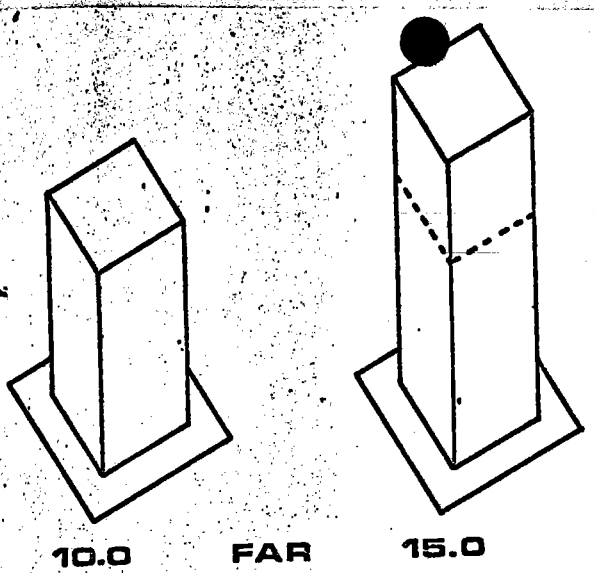
FUNDAMENTAL REQUIREMENTS

These requirements - the reservation of 2 1/2% of the floor area for Use Group G, the restriction of access to parking and loading facilities from certain streets and the positioning of some buildings on their sites so as to define the edge of certain urban spaces - are of considerable benefit to the public and of relatively little cost or inconvenience to the developer. These requirements will, in fact, eventually benefit the developer by improving the character and organization of the neighborhood and making it more attractive to tenants and visitors.

These requirements are an extension of the use, access, and building envelope constraints set forth in the Zoning Resolution. They serve to modify those requirements so as to satisfy the specific needs of this area.

ADJUSTED BASIC MAXIMUM FLOOR AREA RATIO

A development in that portion of the special district zoned C6-4 (which allows a basic maximum FAR of 10.0) may use floor area allowances granted for the provision of Mandatory and Elective



PCIs and for contributions to the District Fund to adjust the basic maximum FAR upward to as much as 15.0. When the developer takes full advantage of these provisions and establishes an adjusted basic maximum FAR of 15.0, the development becomes eligible for the higher bonus rate which is allowed in the C5-5 district for some amenities and becomes capable of achieving a total FAR of 18.0. These privileges are in return for providing additions to the pedestrian circulation infrastructure to accommodate the resulting increase in employee density.

A development in the C5-5 portion of the special district (which allows a basic maximum FAR of 15.0) may use floor area allowances as bonus floor area.

MANDATORY PCI

Many of the zoning lots in the special district have Mandatory PCIs which are conditional to the development of the lot. Each Mandatory PCI has its location indicated in Appendix A and its description included in Appendix B in the discussions of the effected blocks.

ELECTIVE PCI

Elective PCIs are listed in Appendix C. A developer who desires to provide one or more Elective PCIs must first select the highest ranked improvement and may then select any other improvements.

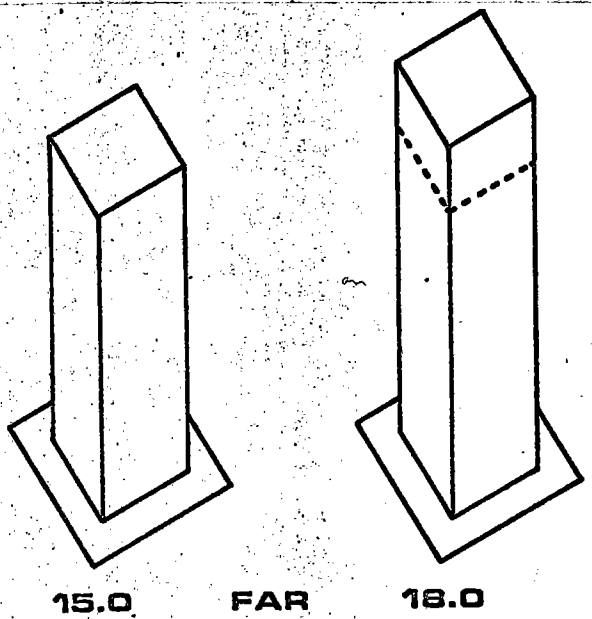
In this way the developer of a lot in the C6-4 portion of the special district will usually be able to achieve an aggregate floor area allowance close to that required for an adjusted basic maximum FAR of 15.0. If the aggregate is in excess of the amount needed, the excess may be used as bonus floor area; if the aggregate is less than the amount needed, the difference may be covered by a contribution to the district fund.

DISTRICT FUND

The Greenwich Street Development District Fund functions as a variable sized Elective PCI. Moneys contributed to the district fund will be used to improve the seven subway stations in and adjacent to the special district.

When the floor area allowances for Mandatory and Elective PCIs total less than that necessary to produce the desired adjusted basic maximum FAR and there is no Elective PCI which would bring the total closer to but not more than the desired amount, the developer may contribute to the district fund. If the contribution were made prior to 1 July 1971 the development would be granted a floor area allowance of one square foot per \$6.75 of contribution. Each year thereafter the rate will be adjusted by the City Planning Commission based on changes in the assessed value of the land in Lower Manhattan.

BONUS FLOOR AREA



There are four sources from which bonus floor area may be generated for a development: (i) excess floor area allowances, (ii) Mandatory Lot Improvements, (iii) Preferred Lot Improvements and (iv) Discretionary Lot Improvements. This bonus floor area may be used to increase the total floor area of a development to as much as 20% above the basic or adjusted basic maximum FAR. The 20% limitation is the same as that provided in the Zoning Resolution for discretionary amenities.

Bonus floor area from some sources may only be used to increase the floor area of the development; however, from other sources it may be used either to increase the total floor area or increase the tower coverage.

EXCESS FLOOR AREA ALLOWANCE

Any development within the special district may use as bonus floor area that portion of any floor area allowances which is in excess of that required to adjust the basic maximum FAR to 15.0. In this way a development in the C5-5 portion of the district (which starts with a basic maximum FAR of 15.0) may be bonused for providing a PCI.

If the bonus floor area was generated by an Elective PCI it may only be used to increase the floor area of the development; if generated by a Mandatory PCI it may be used either to increase the floor area or the tower coverage.

MANDATORY LOT IMPROVEMENTS

A development which provides any Mandatory Lot Improvements may use the bonus floor area to increase either the total floor area or the tower coverage of the development.

PREFERRED LOT IMPROVEMENTS

Preferred Lot Improvements are optional because they are neither essential elements of the district plan nor, given certain site configurations, always feasible. If the developer chooses to provide a Preferred Lot Improvement such as a covered pedestrian space or an elevated plaza, special permit hearings are not required.

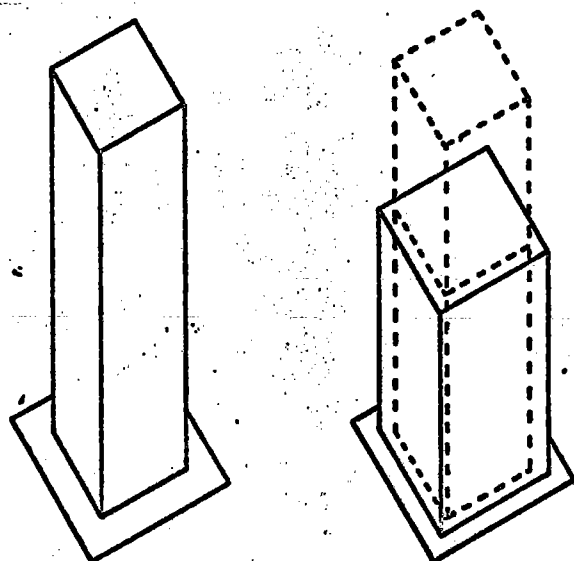
Except where the Preferred Lot Improvement is used to satisfy the requirements of a mandatory pedestrian connection, the bonus floor area may be used only to increase the total floor area of the development.

DISCRETIONARY LOT IMPROVEMENTS

A development may also earn bonus floor area by providing Discretionary Lot Improvements. Unlike Preferred Lot Improvements, amenities such as covered pedestrian spaces and elevated plazas remain subject to special permit hearings.

Bonus floor area generated by Discretionary Lot Improvements may be used only to increase the total floor area of the development.

INCREASED TOWER COVERAGE



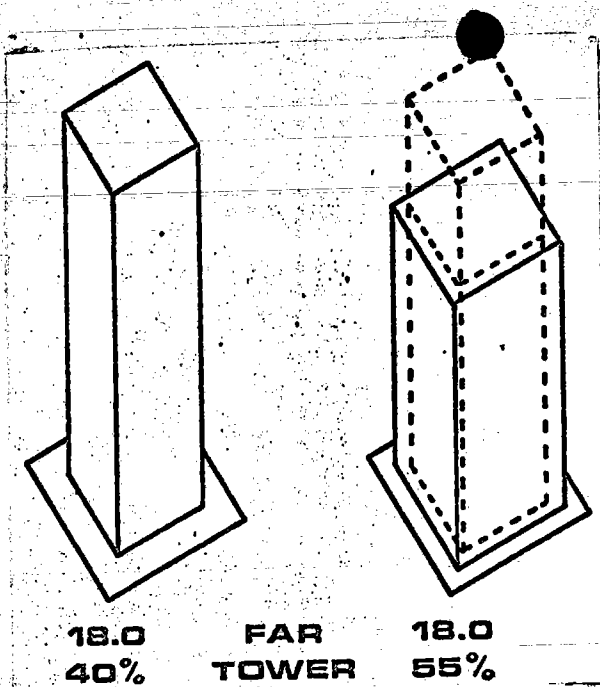
18.0
40%

FAR
TOWER

15.0
55%

That portion of the bonus floor area which is both attributable to Mandatory PCIs or Mandatory Lot Improvements and is in excess of the 20% that may be added to the basic or adjusted basic FAR, may be used to increase the tower coverage of the development to a maximum of 55%.

This provision is an extension of a concept already established in the Zoning Resolution. Section 33-455 allows a development to have a tower coverage greater than 40% in return for a reduction in FAR. For each 0.2 points of allowable FAR which are not built the tower coverage may be increased by one



percentage point to a maximum tower coverage of 55%.

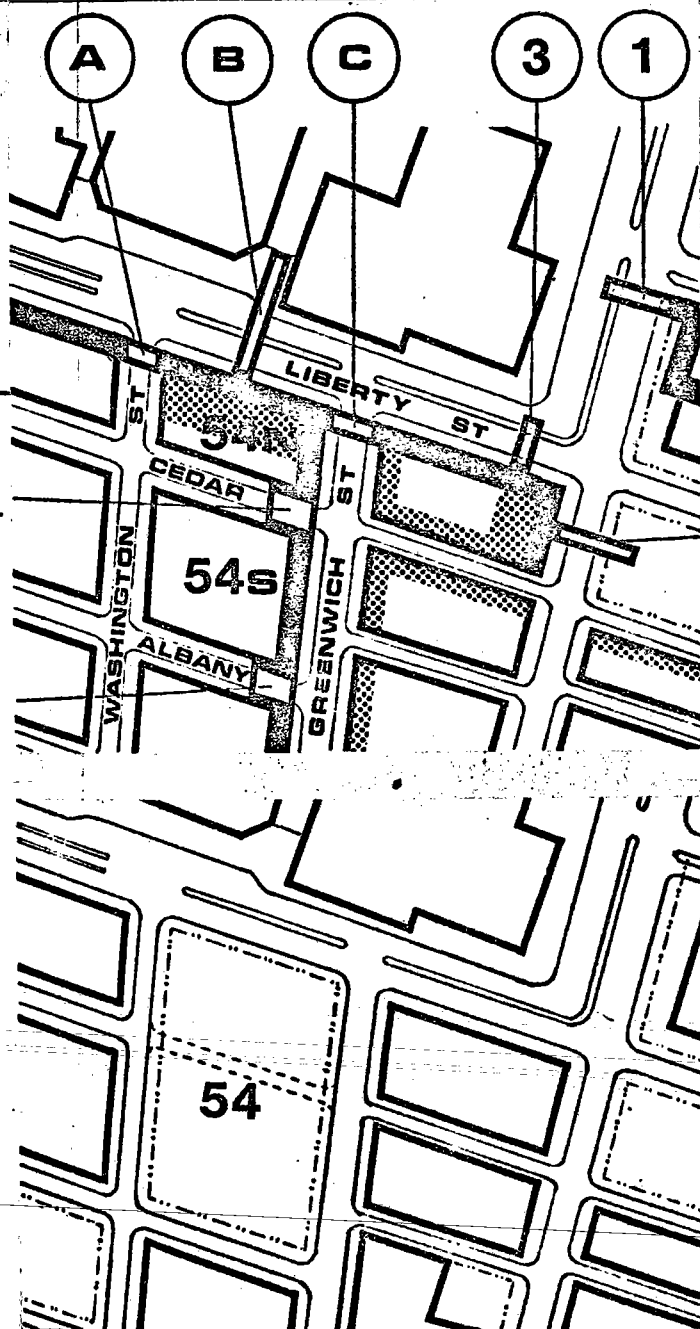
In the special district, the same rate of conversion and the same limit on tower coverage are used; however, the maximum FAR of the development is not reduced and only bonus floor area generated by mandatory elements of the district plan may be used.

The increased tower coverage is of considerable economic advantage to the developer and can, therefore, be used, in the same way as an increase in total floor area, to compensate the developer for the provision of a public amenity. The increased tower coverage is not only in keeping with the general character of Lower Manhattan but has the significant advantage of not increasing the density of the working population.

AN EXAMPLE

An actual site in the Special Greenwich Street Development District has been chosen to demonstrate the effect of the district on a project.

THE SITE



The site consists of two complete blocks - block 54N and block 54S - located between Greenwich and Washington Streets just south of the World Trade Center. This is one of the key sites in the district plan.

One of the east-west branches of the elevated pedestrian circulation system passes through the northern block, and the north-south spine of the system passes through both blocks. A pedestrian bridge from the World Trade Center plaza is a required part of the development of the northern block and a large elevated plaza is proposed to receive the bridge and serve as a northern anchor of the elevated shopping way.

Almost one third of the double level Shopping Way along Greenwich Street is included in the two blocks, and the resulting concentration of shops from Use Group G will reinforce the pedestrian and retail character of the street.

The developer assembled block 54N and 54S and consolidated them by successfully petitioning the city to close and sell the portion of Cedar Street between Greenwich and Washington Streets. The resulting block 54 has a lot area of 65,882 sq. ft.

As a result of the street closing, in order to maintain pedestrian access to the blocks to the west, the developer agreed to provide a through block arcade approximately along the alignment of the closed street.

ADJUSTED BASIC MAXIMUM FLOOR AREA RATIO

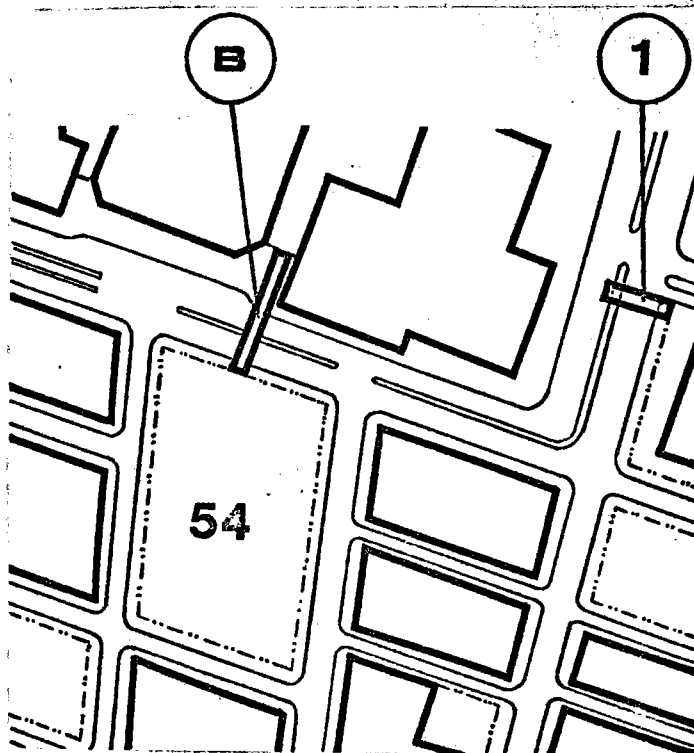
Block 54 is located in the C6-4 portion of the special district; therefore, the developer had to decide whether to build starting with a basic maximum FAR of 10.0 or an adjusted basic maximum FAR of as much as 15.0. In this case the developer needs as much floor area as possible, and so, he took the following three steps to adjust his basic FAR upward to the maximum of 15.0.

First, from the block descriptions in Appendix B, it was apparent that the development would have to include PCI:B. This mandatory pedestrian circulation improvement is a multiple span open pedestrian bridge approximately 160 ft long between block 54 and the World Trade Center. Since the bonus rate is 100 sq. ft. per linear foot, the bridge produces a floor area allowance of 16,500 sq. ft.

Second, in as much as none of the other mandatory PCIs were applicable, the developer selected the first item from Appendix C, the ranked list of elective pedestrian circulation improvements. PIC:1 is a pedestrian tunnel under Church Street between block 62 and the World Trade Center and produces a floor area allowance of 303,500 sq. ft.

Third, because the development was now within 9,410 sq. ft. of an adjusted basic maximum FAR of 15.0 and because there was no elective PCI that small, the developer chose to contribute to the Greenwich Street Development District Fund. At \$6.75 per sq. ft. the remaining 9,410 sq. ft. required a contribution of \$63,517.50.

By increasing the basic FAR from 10.0 to 15.0 the developer achieves two advantages in addition to the increase in floor area. First, the bonus rates allowed for plazas and arcades become those permitted in a C5-5 district rather than a C6-4 district. Second, the 20% limit on bonus floor area is calculated on a base FAR of 15.0 rather than 10.0.



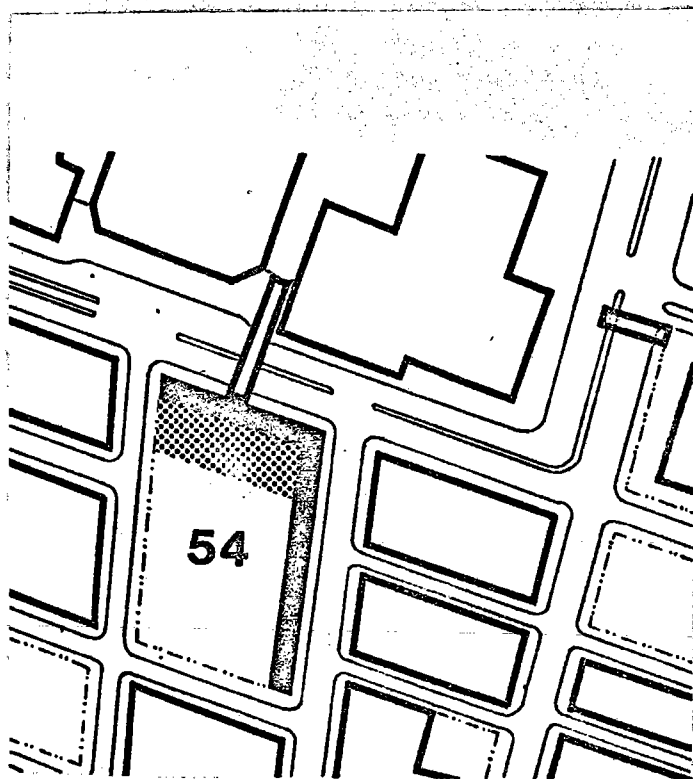
LOT IMPROVEMENTS

There are three types of lot improvements for which the developer may receive a bonus: (i) mandatory lot improvements, such as the shopping way, must be provided by the developer and the bonus may be used either to increase the floor area or the tower coverage of the building, (ii) preferred lot improvements, such as a mapped elevated plaza may be built by the developer without special permit hearings and the bonus may be used to increase the floor area of the building, and (iii) discretionary improvements, such as an arcade, may be built by the developer if he so chooses and the bonus may be used to increase the floor area of the building.

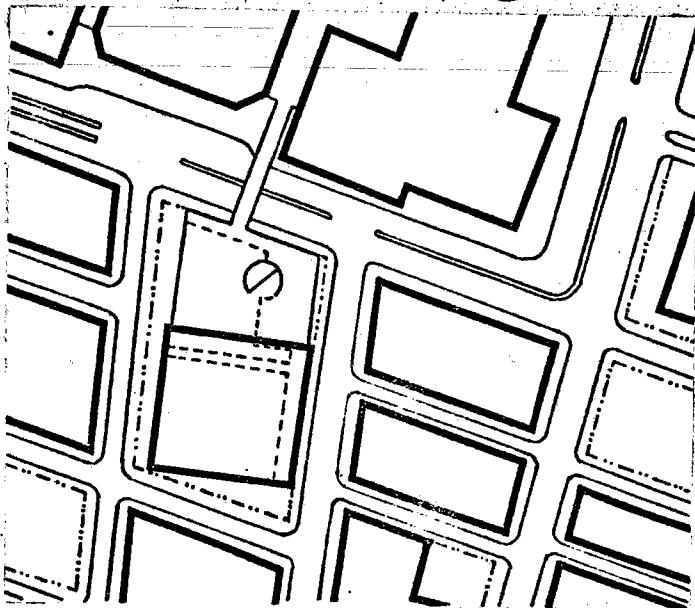
In this case the developer needs the maximum possible FAR of 18.0 and tower coverage of approximately 53%, and so, he took the following steps in order to earn the necessary bonuses.

First, in accordance with the block descriptions in Appendix B, he provided the required mandatory lot improvements. These are a shopping arcade approximately 100 feet long, a shopping way approximately 185 feet long and a pedestrian connection. The shopping arcade produces a floor area bonus of 10,000 sq. ft. The shopping arcade produces a floor area bonus of 74,000 sq. ft. The building has escalators to a second floor lobby such that only one pair of escalators are required for the shopping way. The required escalators are designed as a double run with an intermediate landing and produce a bonus of 30,000 sq. ft.

Second, the developer decided to satisfy the requirements of the mandatory pedestrian connection by building the elevated plaza described in Appendix B as a preferred lot improvement. The elevated plaza is to have an area of approximately 20,000 sq. ft. and will, therefore, produce a floor area bonus of 200,000 sq. ft. In addition the required trees on the plaza produce another 4,800 sq. ft. of bonus.



INCREASED TOWER COVERAGE & BONUS FLOOR AREA



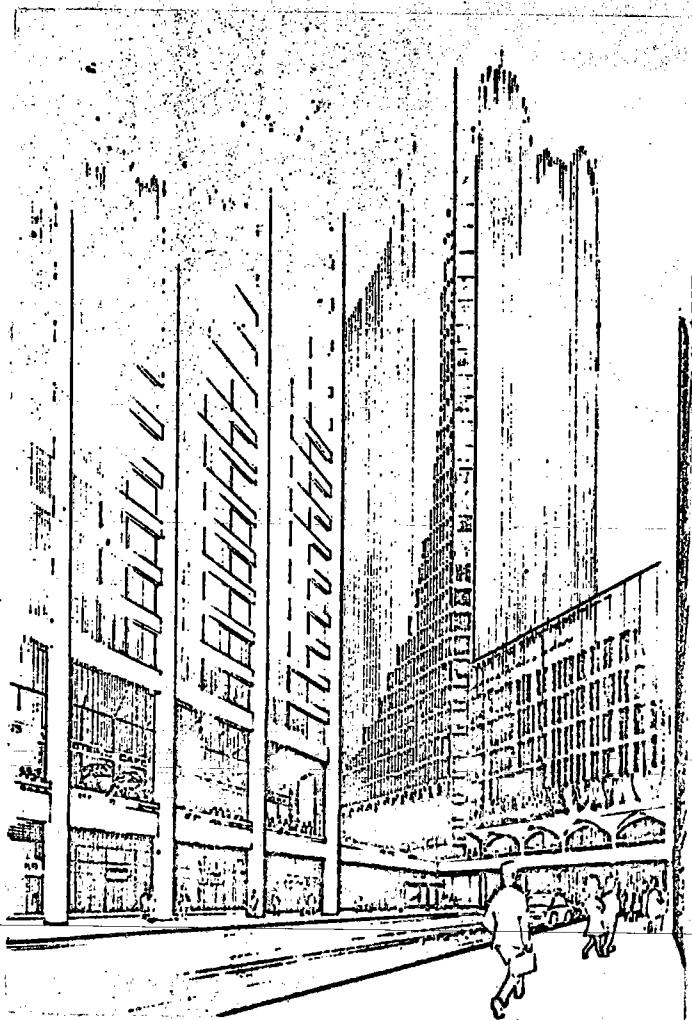
THE RESULT

This far the developer has earned approximately 318,000 sq. ft. of bonus floor area which may be used either to increase the floor area or tower coverage of the building. 171,293 sq. ft. (FAR 2.4) are used to increase the tower coverage from 40% to 53%. The remaining bonus floor area increases the FAR from 15.0 to 17.4.

In order to increase the final F.A.R. of the building to the maximum of 18.0 the developer chose to provide two discretionary lot improvements, an arcade along Liberty Street and a plaza on Washington Street.

The building which results from the operation of the district is responsive to the needs of the area. It includes a reasonable share of shopping located along the major pedestrian areas: it provides generous amounts of attractive open space carefully integrated with the planned pedestrian circulation system; and it provides several of the essential links of the pedestrian circulation system.

By requiring and encouraging the developer to respond to the district goals, the Special Greenwich Street Development District makes it possible to produce a better building and a better neighborhood.



SECTION 86-00