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Too often industrial building sites have become gaps or islands within the urban fabric. With advancements in technology which would allow us to clean up the dirtier side of manufacturing, it seems that industrial sites need not be isolated dark spots within our cities. If industry is to be successfully integrated into urban neighborhoods then its form must reinforce patterns already present in these areas. At all scales one must find continuities of light, access, material and dimension. In order to achieve continuities larger than the site itself it became necessary to identify and then build upon strong patterns already established in the surrounding context.

This thesis attempts to demonstrate that with thoughtful design manufacturing can co-exist with other uses and that it can be a positive feature of the urban landscape. The site chosen as the context of this study is a one block area located in the Fort Point Channel neighborhood of Boston. The program includes office, housing and retail space as well as manufacturing.
My special thanks to Jack Myer for sharing his love of people and architecture with me. His questions have been provocative and inspiring. His support has been constant.

My thanks to the following people who have shared their time and experience with me: Lauren Vachmann at M.I.T., Mary Grace at American Appraisal and Waclaw Zalewski at M.I.T.

My thanks to my family for their constant encouragement.

And finally, my heartfelt thanks to Peter for his thoughtful criticism and unending support.
<table>
<thead>
<tr>
<th>TABLE OF CONTENTS</th>
<th></th>
</tr>
</thead>
</table>
I. INTRODUCTION
The initial motivation for this study stemmed from a site planning studio taught by Jack Myer and Gary Hack. Our task in that studio was to locate several hundred thousand square feet of industrial buildings amidst commercial, residential and office uses. In my search for references I began to find that industrial sites were often islands, forbidden territories, gaps within the urban fabric. One member of the studio described these places as "mean streets". Industrial sites were obstacles, places to navigate around, not through.

Physical isolation of manufacturing from the community at large benefits no one. Not only does it disrupt the landscape,
but often it represents an inefficient use of space, a valuable commodity in all cities. Segregation of industry from other functions also prohibits interaction between blue collar and white collar workers and thereby reinforces a kind of social stratification. Workers in manufacturing are often unable to take advantage of certain amenities that employees in other sectors enjoy. Restaurants, shops, banks and day-care facilities are too far away to reach on a lunch break. Larger industrial plants may provide some of these services on the job site, but only at great expense.

Integration of manufacturing with other uses would hold many benefits for both industry and the community. Employees could take advantage of services typically provided in downtown areas and availability of public transportation could simplify commuting. Cities could benefit from a broader tax base as well as increased job opportunities. Manufacturers could gain access to esta-
1. Necco Plant; Cambridge, Massachusetts.
2. Site model generated in Myer/Hack studio. Retail and industrial uses share space in an important corner of the site that links residential neighborhoods of Cambridgeport with Mass. Ave.
blished transportation networks for easy shipment of goods and in some cases would also benefit from closer proximity to their markets.

Given technological advancements of the last two decades which would enable us to clean up the dirtier side of manufacturing, workplaces need not be isolated dark spots in our cities. This thesis attempts to demonstrate that through thoughtful design manufacturing can coexist with other uses and that it can be a positive feature of the urban landscape. In particular, the site of this study is a city block in the Fort Point Channel neighborhood of Boston.

3. Necco Plant; Cambridge, Massachusetts. A "mean street."
4. The Site: The area of study will be a one block area in Fort Point Channel bordered by Congress St. and No. Atlantic Avenue to the North and South and Pittsburgh and Farnsworth Streets to the East and West.
II. FORT POINT CHANNEL
Several factors were considered in the selection of Fort Point Channel as the context of this study. Fort Point Channel occupies a strategic location within Boston. It is both close to the city's central business district, and directly accessible from the residential neighborhoods of Dorchester and South Boston. This connection was an important one, because it assured the availability of labor to support the industrial development proposed in this design exploration.

Fort Point Channel also offered an established transportation network which would prove essential in moving raw goods as well as finished products to and from the site. To the West,
South Station allowed ready access to rail service, while Interstate 93 provided far reaching connections for trucks. Piers to the North and East made transport by ship a possibility and nearby Logan Airport could readily provide speedy airfreight services. The existing public transportation system, which included train and bus service, would also prove helpful in moving large numbers of people to and from their jobs in the proposed factories.

Because the purpose of this study was to explore the ways in which manufacturing could be integrated into a community, it was essential that the site chosen include a wide variety of uses and provide a strong context within which to work. Although only about sixty percent of the buildings in Fort Point Channel are occupied, there is precedent in the neighborhood for commercial and residential uses as well as manufacturing and small
offices. The building stock consists mostly of large warehouses dating back to the turn of the century. They are primarily of heavy timber construction with red or yellow brick exteriors. The facades of these buildings derive great strength and beauty from their simplicity and when combined they form a rich and varied street pattern.

To date, Fort Point Channel remains the largest piece of undeveloped land proximate to Boston's central business district. Limited access has prevented further development of this neighborhood in the past. Recently however, the state approved plans for a new bridge at Northern Avenue, which could accommodate a considerable increase in traffic.

Already, several private developers have proposed major projects in Fort Point Channel. Design is presently underway for the development of Pier One. Anthony Athaneus plans to con-
7. Congress Street.
8. Fort Point Channel.
9. Melcher St., looking east.
10. Melcher Street.
struct four high-rise residential towers as well as a hotel, marina, shops and considerable office space. Proposals for a computer center to be located on Pier Three are also in the preliminary design phase. If built, the computer center would house an enormous convention space and yet another hotel.

11. Northern Avenue Bridge Replacement Study sponsored by the B.R.A. and Massport.
12. Development Plan for Piers One, Two and Three by Helmuth, Obata and Kassabaum P.C., Architects and planners. The study includes four high-rise residential towers plus office space, a marina and a Hyatt Regency Hotel.
The Boston Redevelopment Authority is also involved in planning for the future of Fort Point Channel. In fact, the B.R.A. has already completed segments of their waterfront development scheme. Among other things, the B.R.A. is advocating realignment of the seaport access road and the creation of a park system along the harbor edge. Still other proposals have been submitted for development of land south and east of Fort Point Channel's older neighborhood.

Today Fort Point Channel stands at a crossroads. Major land owners are promoting new commercial development. The city and state are contemplating major infrastructure and land-use improvements, all of which, in time, will help redefine the future role of this area.
III. BUILDING PROGRAM
The premise of this exploration, to integrate manufacturing with other building types, implies that the program must allow for a range of possible uses. In fact, precedent for such mixed use occupancy has already been set in Fort Point Channel. Besides manufacturing, the proposed design will include housing and offices. Space for some additional amenities such as small shops, a restaurant or possibly a day-care center will also be accounted for within the site.

Time and experience have proven that purely speculative industrial developments are both inefficient and uneconomical. Different industries have vastly different needs in terms of square foot-
age, spatial configuration, building services and storage. While some plants require direct connection to rail lines for transport of heavy cargo, others ship goods by truck. Conversely, it may seem desirable to build with a particular manufacturer in mind, but plant designs which are too specific are often too expensive and may become obsolete as a result of rapidly changing technologies. Therefore, it seems wisest to design for a group of related industries. The building then must meet only a limited set of criteria. Rents can therefore be lower and the number of potential tenants greater.

The clothing and printing industries have been selected as the targets of this design exploration. Each of these industries could benefit from location in Fort Point Channel: the clothing industry by proximity to a large unskilled labor force in Dorchester and the printing industry by proximity to a large market in downtown Boston. In actuality, small printing plants and clothing manufacturers may already be found sprinkled about Fort Point Channel and surrounding neighborhoods.

Design requirements for the printing industry and clothing manufacture are as follows:

- Both involve linear processes necessitating long runs of continuous space.
- Both require approximately one loading dock for every 9,000 square feet of rentable space.
- Both require raised loading docks for movement of goods.
- Both require only extraction as a special service.
- Both move cargo internally by forklift and therefore require little if any overhead conveyor equipment.
- Both have similar change rates.

It is also important to note that neither printing nor clothing manu-
facturing are considered high hazard industries. In fact, both involve relatively clean production processes.

Design criteria for the remaining use groups require little explanation with the possible exception of offices. In view of current use patterns within the neighborhood of Fort Point Channel, it seemed reasonable to design for small offices rather than large corporate headquarters. Moreover, the density of building necessary to accommodate very large offices would be difficult to achieve in Fort Point Channel given existing patterns of development.

The program outlined on the preceding pages predicts a considerable increase of traffic in and about the site. Many residents and workers will commute on public transportation but a need for some new parking space will undoubtedly exist. Although a certain percentage of parking may occur on the streets some allowance must be made in the building program for on-site parking.

An important design criteria applicable to parking areas as well as manufacturing, housing and office space is the need for building security. Members of this new community will presumably take some responsibility for monitoring activity in and around the site. Surveillance by tenants will not be effective however, unless the issue of security is addressed in the actual design work to follow.
IV. SITE ANALYSIS AND DESIGN
As discussed in Chapter Two, completion of the Northern Avenue Bridge will have an astounding impact on the neighborhood of Fort Point Channel. Given that Fort Point Channel is a neighborhood ripe for change, it seemed reasonable to design for the future condition rather than the present. However, the projection upon which the following site analysis is based is not purely hypothetical. It includes only those developments which have been submitted for review by the city council.

Bridges along the wester-most edge of the site connect Fort Point Channel to Boston's downtown area. The east-west axis has therefore become the direction of public access in this portion of the
city. Commercial activity is concentrated along Summer and Congress Streets, the two major east-west routes running through Fort Point Channel. Consequently, pedestrian and vehicular traffic is heaviest in these areas.

Even to the unfamiliar visitor, navigation within Fort Point Channel is quite simple. In looking at plans of this area, one may have expected the harbor to serve as a critical reference point. However, while one is made aware of the harbor by its peculiar sounds and smells, the water is rarely visible from any street. In fact, it is the form of the place which makes Fort Point Channel understandable.

Primary access ways, such as Congress and Summer Streets, are typically "through streets" which lead to destinations beyond the limits of Fort Point Channel. They are straighter and wider than less public ways. Most importantly, there are no breaks in their built edge. Buildings which line Congress and Summer Streets are always of roughly the same height, forming a continuous roof-scape that is reinforced by the unbroken line of their base stories.

The side streets of Fort Point Channel
are built at a scale similar to Congress and Summer Streets. The construction materials are also virtually the same and yet these side streets possess a quality quite different from that of more public ways. They are both quieter and more intimate. This intimacy may be attributed to the narrow street width, but it is also created in part by recurring breaks in the built edge of these streets. Through these gaps one may see deep into the heart of the block. Without them the sheer size of the buildings would seem overwhelming.

Beyond the easy distinction between public and semi-public ways, there is a recognizable system of dimensions operating in the urban fabric which contributes to one's understanding of Fort Point Channel. The largest and most recognizable size organizing Fort Point Channel is the city block (+ 800'). Also obvious is the smaller (45' - 60') length of the individual building. Between these two dimensions there lies yet
18. **Summer St.** is a primary access route connecting Fort Point Channel to Boston's central business district. Its form is more continuous than that of a less traveled way.

19. and 20. **Side streets** in Fort Point Channel may be recognized by their "toothless" quality. They are typically narrower and less continuous than primary access routes.

It is inevitable that completion of the North Atlantic Avenue bridge will spur high density growth along this primary access road. To date, however, any design work concerning the southern side of North Atlantic Avenue has not been made available to the public. It was therefore necessary to make some prediction about the future of this corner of the site.

In contrast to the heavy masonry construction of the old neighborhood, architects have proposed extensive use of steel and glass in their preliminary designs for Pier One. North Atlantic
Avenue will therefore become the critical meeting place of old and new. It seems that this transition could be handled most gracefully if there was some overlap or interlocking of these two very different worlds, at the site scale as well as the building scale. This notion of interlocking systems has some important implications for the design work to follow.

Of major concern in the initial site study was the increased truck traffic that would follow the introduction of manufacturing into Fort Point Channel. Because of noise and congestion caused by loading and unloading freight, it was clearly desirable to separate that function, to some degree, from automobile and pedestrian traffic. For this reason, it was decided to connect abandoned alleys running through the interior of each block and thereby provide truck access that was largely independent of other transportation networks.
The overlap of new and old at the urban scale was considered as part of the site selection process and this same issue needed to be addressed once again at the site scale. Existing masonry warehouses to remain on the site were selected on the basis of their architectural merit. Because the chosen buildings stood isolated on opposite corners of the site, they alone did not form an understandable continuity. It was therefore necessary to create special zones within the site. By designing a pastiche in specific zones it was possible to achieve larger continuities of "the old", whereas in other zones the design was free to deviate from patterns set by existing building stock.

As early as the preliminary site design stage, it was necessary to consider how the new scheme might reflect patterns of dimensions operating within the existing city fabric. Since one goal of this project was to establish strong continuities between old and new, it seemed that public access within the block should not merely stop at the edge of the new project. Rather it should extend beyond the project limits to create continuities at the block dimension. The trucking access system also represents a unifying force at the block scale.

Similar to patterns already operating in Fort Point Channel, breaks in the built portion of the scheme could be used to distinguish a building group dimension. These gaps would then allow light to reach the raised pedestrian access.

23. Trucking Pattern. In the proposed design vacant alleys have been reclaimed to accommodate the movement of trucks through Fort Point Channel. The loading and unloading of freight will no longer interfere with the movement of pedestrians or automobiles.
system. Having established a dimensional system at the block and building group scale, the next phase of exploration was to include study of dimensional relationships at the building scale.

24. Preliminary Site Study. This scheme represents an early attempt to understand three fundamental issues: Continuity of access for pedestrians as well as trucks, interlocking of new and old building systems, and continuity of dimension at the block and building group scales.
V. BASIC PATTERNS
Before it was possible to understand how manufacturing might interact with areas of commercial, office or housing development, it seemed important to explore the independent needs of each use-group involved in the project. An understanding of these needs was achieved through the design of basic patterns for each group, including studies in plan, section and elevation. Through the use of these patterns, it was possible to explore issues of light, access, structure and dimension as well as spatial organization.

The pattern method was important not only in understanding the specific needs of each use-group, but in understanding the overall site organization.
25. The Structural System. To achieve large spans while economizing on dollars and labor, a system of pre-cast double tees was chosen for manufacturing. Additional supports have been added between the tees to facilitate two way distribution of loads. Column and beam assemblies will be poured in place to increase the rigidity of the system against lateral loads.

26. Basic manufacturing pattern.

as well. It seemed essential to establish an ordering system, a set of rules, before one could discuss variations within that system. One had to establish the norm before a special case could have any meaning. The patterns set up a coherent system of organization upon which to build. Once established, the patterns were readily deployed about the site, giving a quick overview of the entire problem, patterns were then adapted in response to local site conditions.

Given a constricted site and a rigorous program one of the initial objectives in designing for manufacturing was to minimize the square footage devoted to trucking and thereby maximize rentable space. In order to accommodate large pieces of equipment as well as the movement of forklifts within the space, large spans were desirable.

The printing and clothing industries
utilize both batch and assembly line production as part of their manufacturing processes. Although batch production may be accommodated in a variety of spaces, assembly lines clearly require a space which is linearly organized. The choice of a 24' x 40' bay reflected this need as it allowed for greater flexibility along one axis than along the other.

The 15' x 40' bay was later introduced to accommodate entry conditions and optional stairs within the manufacturing space.

Also of importance in designing the basic pattern for manufacturing was the need to accommodate change. It would be necessary first to vary the mix of assembly and batch processes with ad-
27. Basic Parking Pattern. While many individuals may prefer to commute by public transportation, it was still necessary to provide some on-site parking. Swing schedules of residents and workers ensure that the garage will operate at full capacity both day and night. A closed circuit T.V. system may be necessary to assist attendants in monitoring activity within the garage.

Advancements in technology and second to increase or decrease the overall size of operations of individual manufacturers. Industrial space was therefore developed in 5,000 square foot increments, each with access to loading docks, two means of egress and storage. These smaller units could then be aggregated to accommodate production processes requiring larger areas of
continuous space.

Today there is demand for industrial space within Fort Point Channel. Yet tomorrow the needs of the neighborhood may change. One way to accommodate this possible change in use patterns was to design not solely for manufacturing, but for other uses as well. Like manufacturing, retail establishments require large amounts of uninterrupted space and easy access to shipping platforms. The only significant difference in program is that a commercial development needs high visibility and accessibility from the street. For this reason, the basic manufacturing pattern included a movable section of flooring at the street edge.

Because the program focused on small rather than large office development, it was possible to design a basic pattern adaptable to either office or housing depending on current market demands. These use-groups required similar dimensions, similar egress patterns and similar access to light. The only significant difference to be accounted for was the need for additional plumbing in housing.

Similar to manufacturing, the basic pattern for office and housing required units several sizes which could expand and contract as the needs of tenants changed over time. The size of the smallest unit was largely determined by two specifications of the State Building Code: the need for two means of egress and the maximum dead end corridor length of twenty feet. To maximize flexibility, the design allowed for aggregation of units both horizontally and vertically.

Also in accordance with the State Building Code, fire protected stairs were included in the basic pattern for office and housing. While a desire to simplify structural systems dictated that these firestairs be supported directly by
Diagrammatic Section: Housing/Office. To allow flexibility vertically as well as horizontally the housing/office patterns were developed in three-dimensional zones. Tenants were then free to build either mezzanine levels or full floors.

Final Basic Housing Pattern.

Preliminary Basic Housing Pattern. This scheme failed to recognize the single building dimension in the breaks between building groups. This dimension was critical if there was to be any continuity established between existing light zones and open spaces in the new development.

substantial column and beam assemblies, the lighter weight steel framing of the office/housing complex was free to deviate from the concrete structural grid of the manufacturing areas below. In addition to serving a utilitarian function, the repetition of the twelve foot stair dimension recalled the sixty foot building dimension found elsewhere in the fabric of Fort Point Channel.

The overall form of the basic section was, to a large extent, dictated by the needs of industry. Manufacturing clearly required location at ground level to simplify the transfer of cargo from trucks into the work place. The combination of a narrow site and the need for large expanses of continuous floor space within the industrial sector virtually eliminated all possibility of including offices or housing on grade. This segregation of industry and office space minimized noise problems as well as interference by outsiders with work going on in the production areas.
31. The River Reference

Preliminary Section. This drawing fails to recognize an important connection between the raised pedestrian access and the loading docks below. If such a relationship is to be established the emphasis of the building section must be vertical rather than horizontal. Secondly, the symmetrical form of the awning implies containment and thereby negates any efforts to create continuity between the manufacturing and other uses.

Although it became difficult to integrate manufacturing with other uses physically, it was still possible to relate various uses visually. The reference for the basic section was not a building, but rather a landscape where one could walk along a path above a river, enjoying its beauty without fear of its swift water. As the river lends life to a deep canyon so the movement of cargo and trucks became this project's heartbeat. Rather than burying corridors deep within the building, primary access to offices was at the edge of the project where it could easily be associated with light, air and sound as well as provide a view of the activity below.

If the path to offices was to be strengthened by a view of shipping activities, then the angle between the pedestrian access and trucking became critical. If the angle were too shallow, the emphasis of the building would be outward rather than downward.
Even the form of the awning served to strength or weaken the connection between path and river. While a symmetrical awning set definite bounds of movement and vision, an assymetrical form implied a far greater territory which included the river below.

Although the basic section unites manufacturing with other uses visually this project sought to allow interaction of workers with non-workers and to make certain amenities more accessible to those who work in industry. Because it would be difficult to physically integrate manufacturing and other uses within the site it became necessary to step back and consider an area much larger than the boundaries previously described as the limits of this project.

The project, in fact, included not just the area bordered by Pittsburgh and Farnsworth Streets, but rather a much larger portion of Fort Point Channel.
33. and 34. These warehouses are examples of buildings organized in the three-part system which read as completed forms quite distinct from the ground on which they sit.
The interactions of workers would not occur within the limits of new development, but in the streets of Fort Point Channel instead. These streets provided a strong context within which to design. If the proposed scheme was to support and not detract from the neighborhood, it seemed that the basic elevation pattern should reflect other patterns already established along the existing street edge. For this reason, the strongest reference for the basic elevation patterns came from buildings already present in Fort Point Channel.

The basic elevation pattern was sympathetic to surrounding buildings not only in terms of materials, but also by virtue of its dimensions. Although the primary structural system of the proposed design was based on a twenty-four foot module, the masonry closure system remained structurally independent and therefore was free to repeat the smaller sixteen foot bay dimension found elsewhere in the area. Window sizes also
35. and 36. These warehouses are examples of buildings organized in the two-part system. Treatment of the sky zone help is quite different from a three-part system. It is important to note that although the ground level of the warehouse above is clearly the realm of large openings, the smaller dimensions of the mid-zone still appear there. One therefore perceives this building as a unified whole rather than as two distinct territories.
37. Pittsburgh Street Elevation. The "toothless" quality of this block is typical of side streets in Fort Point Channel.
38. Farnsworth Street Elevation. The break in the built edge of this street is important in establishing the building group dimension. The gap itself recalls the dimension of a single building.
reflected dimensions found in nearby warehouses.

Typically, the facades of existing warehouses were organized in either two or three-part systems. In both systems the bulk of the building rose above a clearly articulated base of twenty to twenty-four feet in height. The mid-portion of the warehouses were often comprised of regularly spaced openings of equal dimensions with little or no other ornament. Pilasters were occasionally used to indicate characteristic sixteen foot bays.

Base sections of the existing warehouses were typically denoted by a masonry string course. Although one may have expected to find larger openings such as doors and loading platforms below the string course, it is important to note that the system of openings used in the mid-portion of the building generally recurred somewhere in the base section. For this reason,
one perceived each facade as a unified whole rather than as two separate pieces.

The distinction between the two and three-part organizations of these structures lay in the treatment of the uppermost portion of the facade or "sky-zone". In the two-part system, the middle zone merely continued to the top

40. Basic Elevation Pattern-Study #1: This preliminary study clearly establishes a base and sky-zone. There is virtually no overlap of the two systems however, and consequently one perceives this building in two parts rather than as a whole. Openings along the base level are grossly out of scale with neighboring warehouses. The cornice seems to negate the light quality of the fenestration it abruptly terminates.
of the building while in the three-part system buildings were capped by a prominent wood or masonry cornice. In some cases, this cornice rose a full half-story above the uppermost floor.

Buildings organized in two-parts seemed to be more successful than those following the three-part system, perhaps because they were more clearly associated with the ground. Embellishment at the cornice accentuated the height of some buildings as well as emphasized the completion of a form quite distinct from the ground. In some ways those topped by heavy ornament read as "facade", while those buildings without cornices were perceived as three dimensional forms. Warehouses organized in the two-part system could be likened to huge rocks or boulders which were not distinct from but rather a part of the urban landscape.

As in the existing warehouses, the base zone of the proposed elevation pattern was clearly delineated. A slight change in the color of the masonry and a partial string course helped distinguish the base from the mid-section. Also, glazing was set back from the plane of the masonry creating deep shadow across the base level while windows in the mid-section of the elevation were set almost flush with the wall and had relatively soft shadows.

The uppermost zone of the basic elevation pattern was associated with the sky. Therefore, the area of glazing at the top of the building was significantly greater than at the base level. The "sky-zone" was not capped with a cornice but rather folded back to accept light.

Certain dimensions were associated with specific zones in the basic elevation pattern. For example, the twelve foot opening occurs most frequently in the base level. As in the older warehouses however, a system of
dimensions related to one zone generally recurred in a second zone. Because of this recall or repetition of familiar sizes one perceives the elevation as a unified whole rather than as distinct zones.

Having established the most basic patterns of organization, the next phase of design involved deploying these
patterns across the site and exploring the many variations that might be used in response to local site conditions. As it was important to strengthen the city's existing patterns at the building scale it was also essential to support the rich fabric of Fort Point Channel at the site scale.

42. Detailing at the cornice of the Pfarrkirche in Düsseldorf-Garath (architect Gootfried Boehm) establishes a strong connection between building and landscape.

43. Basic Elevation Pattern-Study #3: Although the overlap between the mid-zone and base zone is quite clear, the mid-zone fails to recognize the strong horizontal direction expressed by neighboring warehouses. Instead it reads as a system of vertically organized panels.
VI. PATTERN VARIATIONS
As discussed in the site analysis, there seem to be three important dimensions which frequently occur within the fabric of Fort Point Channel: the block dimension of approximately 800', the warehouse group or access dimension of 250'-300' and the single building dimension of 45' to 65'. While the block dimension was discussed in the site analysis, the access dimension of two hundred feet has yet to be addressed. It was essential that the access dimension be reflected somewhere in the design, for it provided the intermediate ordering system between the block and the individual building.

In the north-west corner of the site, a reversal of the light zone from the
44. Site Study #1 Continuity of the street is lost in this study. There are too many breaks in the built edge.

45. Site Study #2 Both building group dimensions and "gap" dimensions recall sizes found in the fabric of Fort Port Channel.

The 300' dimension was not only important in terms of the context, but in terms of security as well. Each 300 foot segment of public access became an identifiable neighborhood within the block. Residents within these neighborhoods would presumably recognize one another and might therefore be more inclined to protect each others interest. Furthermore, because a neighborhood has only two major entrances it may easily be locked at night without disturbing the traffic patterns of an adjacent zone.

A second variation occurs in the basic section pattern along the Pittsburgh
street edge. The site analysis predicted that Pittsburgh Street might, in time, become a much busier street than Farnsworth as it is the only direct con-

46. Site Section South
47. Site Section North
48. Diagram of Dimensional System
nection between Dorchester and the Northern Avenue waterfront. It seemed likely that this street could therefore support additional commercial activity. To accommodate this possibility, the section variation includes two levels of manufacturing, one of which could easily be converted to retail space if necessary.

The direction of public access in this design clearly follows the N-S axis as determined by the streets of Fort Point Channel. Although the raised pedestrian access should support and not be an alternative to the street, it seemed desirable to offer some secondary connections between raised access on the east and west sides of the site. Therefore, the fifteen foot dimensions originally designated as vertical access are occasionally used to create secondary horizontal access in the east-west direction. Elevations along the Farnsworth Street edge also show variations within the fifteen foot dimension. Although this dimension typically was used as access into manufacturing areas, it could also support vertical access to levels above.

As in the site design, it became important to observe the established pattern of dimensions operating within Fort Point Channel when considering the Farnsworth Street elevation. The basic elevation pattern accounted for the building dimension, but the block dimension had yet to be recognized. As the elevation pattern was deployed, it became clear that variations in the masonry base not only reflected the inner workings of the building, but also created a new landscape which spanned the entire block.

A third variation in the basic elevation pattern occurs along the raised access. Here, it was not economical to support the larger amount of masonry used in the basic elevation
pattern. Although many of the other principles which structured the basic elevation pattern still applied, a lightweight panel system replaced the masonry closure.

Discussion in this chapter focused primarily on variations at the site scale. In fact, variations in basic building patterns occur at all scales. In the final drawings one may find examples of pattern variations at smaller scales.

49. and 50. Farnsworth St. Elevation Studies #1 & #2 The base zone of these studies creates a new landscape which is continuous across the block. While Study #1 is complete without the neighboring warehouse, Study #2 includes the adjacent building and thereby builds a continuity that is greater than the actual site.
VII. CONCLUSIONS
If industry is to be successfully integrated into our cities, then its form must reinforce patterns already present in the urban fabric. At all scales there must be continuity of access, light, materials and dimension. The drawings on the following pages demonstrate that with thoughtful design manufacturing can coexist with other uses. Moreover, manufacturing can be a positive feature of the urban landscape.
The Site Plan
SECTION:
Block Interior
pedestrian access
Elevation:
Block Interior....
TRUCK ACCESS
pedestrian access
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