In Chapter One, the concepts of cultural landscapes, sequent occupancy and frameworks were introduced. In the ensuing three chapters, the case study endeavored to use these three concepts to observe a small portion of New York City through time. This final chapter will try to draw these observations together, link them to relevant work performed previously, and to provide some generalizable conclusions useful in the practice of urban design.

Before linking the physical and legal frameworks together, each will be reviewed independently and in the conclusion an attempt will be made to relate them.

THE PHYSICAL FRAMEWORK

The urban physical environment in this case study has been conceptualized as being comprised of five different scales: Streets, Blocks, Lots, Buildings, and Smaller Than Buildings. As Chapter Three indicated, change tends to occur within these different scales at different rates. For example, the largest scales used in the case study, Streets and Blocks, have been shown to be quite durable, retaining their essential configuration for over 200 years. However, during this same period of time a dramatic series of transformations occurred at the scales of Lots and Buildings. Then, after the Lots and Buildings settled into a long period of stability in the 20th century, another series of transformations occurred at the Smaller Than Building scale.

Two observations can be made immediately from this example. The first is that some of the scales often change in conjunction with one of the other scales, while some scales appear to be somewhat independent of change in others. For example, change in Lots and Buildings has often occurred simultaneously, while a change in Lots has not coincided with a change in the Blocks. The Block in this case is a “support” for the variable “infill” of the Lots and Buildings. The scales of the Block and the Street have also been demonstrated to be united in a zero-sum relationship in which change in one would result in change in the other. Accordingly, this observation suggests that a better array for the conceptualization of frameworks might be three scales with the largest two having two subdivisions, e.g., (Streets & Blocks), (Lots & Buildings) and (Smaller Than Buildings). However, for continuity, the five scales will still be used in this chapter.
apparent. Among the seemingly more important characteristics of this grid is its interconnected mesh of streets - which provides a unified network overlaying all three early estates - and the numerous orthogonal blocks that are defined by these streets. Another characteristic of grids in general that may have contributed to their success over-time is their historic and continuing use in a variety of different cultures. (Rapoport, personal communication 1995) This would suggest that an element of familiarity, in conjunction with the aforementioned characteristics, has apparently contributed to the success of the case study's grid in accommodating two centuries of sequent occupancy and technological change.

Regarding the Lower East Side's support of the process of sequent occupancy, interconnectedness appears to play an important role in accommodating both expanding and contracting communities and to often accommodating several different communities at one time. As was shown in Chapter Two, both the Italian and Chinese communities began south of Canal Street and grew, one after the other, to encompass very large portions of the grid north of Canal. (see Figure 2-6 - Chinatown's Expansion, on pgs 26-27) The Chinese community has also expanded eastward across the Bowery, into a portion of the grid previously occupied by an Eastern European Jewish community. At the same time, a Hispanic community has been moving into the same area from the north. The implication here is that while Canal Street and the Bowery have often been identified as boundaries within the grid and between communities, they are not insurmountable. As N.J. Habraken (27. 1988) noted

"... physical differences in the built environment are not necessarily obeyed by the subsequent social divisions that become neighborhoods. Nor can we expect that within the limits of one architecturally distinct district only one social entity may find its place."

So while the case study did not delve deeply into the District level it seems to be apparent that much of the change at the smaller scales was facilitated by the qualities of interconnectedness of the grid at this scale. This quality readily accommodated the process of sequent occupancy and has kept many areas in the Lower East Side bustling and is helping to revitalize others.

Additional areas of research needed on the District scale include:

How do communities move into adjacent areas? By progressively advancing up a street? By scattering about until the “tipping point” is reached? Both? Is there a difference in how retail (local community services) moves versus residential?

How do the boundaries work? What makes them noticeable? How do they work with the responses to the previous question?

How have less interconnected, but still adjacent, areas worked comparatively? Does less interconnection inhibit sequent occupancy? If so, how much interconnection, or lack thereof, is involved?
Streets

M.R.G. Conzen (26. 1960) noted, "(t)he street is . . . the most refractory element of the town plan . . . " and the case study would appear to support this observation. Streets (synonymous with the public right-of-way here) in the United States require extraordinary effort to modify after an area has been settled and Clarence Stein (40. 1957) even discussed a fruitless attempt to "demap" several streets in Queens, NY that at that point only existed on the City's official map. Accordingly, the implication with regard to Streets is that they need to be adaptable. The means of achieving adaptability appears to be the establishment of streets of a generous width during the initial platting to ensure that the public right-of-way can accommodate unforeseen future uses. The most obvious question that then arises is: how wide should the right-of-way be?

The Neo-Traditional planning firm of Duany Plater-Zyberk has proposed the creation of streets as narrow as 28-feet in the new village of Windsor, Fl. (40. Krieger & Lennertz 1991) Another source states that many modern subdivision codes call for right-of-way widths of 70 to 80-feet for local streets. (40. Bookout 1992) A study similar to this one, (27. Moudon 1986a) has indicated that in San Francisco, many streets laid out in the 19th century are 68-feet 9-inches wide and have successfully "... met later needs for on-street parking or have allowed for wide sidewalks and street plantings." The latter reference differs from the former two in that it is expressed in terms of accommodating unforeseen conditions while the former are apparently responding to precisely projected uses. It is the unforeseen that adaptability addresses and this will be the focus of looking at street width here.

Over 200 years, Mott and Mulberry Streets' 50-foot right-of-way has accommodated great technological and social change having been platted in an era when most residents probably traveled exclusively as pedestrians. In the 1930's, before the tremendous growth in the use of the automobile, Mott Street housed a pushcart market located along the curb and "stoop" stands in front of the stores, a traffic lane in the center of the street and areas for loading and unloading manufactured goods. Anecdotal evidence also indicates that in the summer, people would sit in front of the buildings to socialize, and to escape the heat inside.

On both Mott and Mulberry in the 1990's, on a summer day semi-fixed features occupy much of the sidewalks and pedestrian traffic winds through produce and grocery stands and their patrons on Mott, or tables of diners on Mulberry. Men pushing wheeled racks bound for the blocks' garment factories, and others pushing hand-trucks full of produce, negotiate the tables, boxes and stands along with the pedestrians, or they venture out into the thoroughfare to avoid the crowds. The parking strip on Mott, formerly occupied by pushcarts, is dominated by parked cars and trucks, and traffic slowly moves through the center of the thoroughfare.

Virtually every square foot of the right-of-way has been
put to use. However, this does not indicate that more space is necessarily needed. More comparative work between similar settings on different streets needs to be performed to reach such a conclusion. In one example of comparative research, Liu (41. 1994) found though that a Taiwanese market on a wide, 20th century street essentially recreated the layout found on an older and narrower, traditional market street. As well, the intensity of use of Mulberry Street varies considerably over the year. In the winter, when there are few semi-fixed objects placed upon the sidewalks by the restaurants, the sidewalks are frequented only by an occasional pedestrian, or people loading delivery trucks.

To provide some comparison to the case study blocks, Stockton Street, a shopping street similar to Mott Street in San Francisco’s Chinatown, is 68-feet 9-inches wide. It accommodates two lanes of traffic, parking on both sides of the street and has sidewalks that vary in width from similar to those on Mott and Mulberry to considerably more generous. In some places, when the market stalls are open, the sidewalk is just as crowded as on Mott. In these situations, a second “aisle” of produce is often being displayed or stored near the curb, or in the parking strip (see Figures 3-32 & 3-33 on pgs. 67-68). In other places there appears to be ample “breathing room” left on the sidewalk.

This breathing room can be seen by comparing similar produce stands on Mott Street, Stockton Street, Grant Avenue, and in Oakland, CA. Figure 3-18 (pg. 56) shows a midday view down the sidewalk of Mott and Figure 5-1 shows a similar view down Stockton Street. In both photos, there is parking at the curb, room for people to linger in the outer sidewalk zone and produce displays in the inner sidewalk zone. Stockton Street also accommodates more traffic, a “trackless trolley” line (the pole in the foreground is a support for the catenary) and the sidewalk also has enough room for a group of people to cluster in the middle/inner sidewalk zones and still maintain a passable walkway (even with a large mail-drop box in the outer sidewalk zone where the men are standing). Mott is much more constrained in comparison.

On the 46-foot wide Grant Avenue, the produce stand and the sidewalk (Figure 5-2) appear to be even more of a “tight fit.” If it were desirable to widen the sidewalk to provide a more spacious area for the display of goods as in Calgary’s Chinatown (41. Maas, personal communication 1994), the space could only come at the expense of a parking strip. At the time of the photo, much of the space has been taken up by produce being unloaded from a truck. In Oakland’s booming “Asiatown” a very generous sidewalk (Figure 5-3) accommodates truck unloading, newspaper racks, parking meters, even small trees in the outer sidewalk as well as a relatively wide (measured from the building wall outward) produce dis-
play at the inner sidewalk zone, without limiting the walkway considerably.

If Anne Vernez Moudon (27. 1986a) is correct in stating that it is desirable to "... reach a congested state as late as possible in the ... evolution of a city." The implication might be that a 50-foot right-of-way can accommodate different cultural landscapes, but is approaching "congestion" and is effectively the minimum for an adaptable urban Street, but that closer to 70-feet would be more desirable. The 70-foot wide street could comfortably accommodate current usage and still possess some degree of adaptability to address new or different circumstances, where the 50-foot street appears to be approaching "pushing the limits."

This is not to suggest that rights-of-way should be made tremendously wide though. As portions of both Grant Avenue and Mulberry Street are very popular tourist attractions, narrow streets may present some particularly attractive attributes to pedestrians as Amos Rapoport (40. 1990) and William H. Whyte (40. 1988) have suggested. Jan Gehl (39. 1987) has also implied that rights-of-way can be too large with regard to people's perception of the environment, by stating that many spaces designed since the 1930's have often been "... too large, too wide and too straight." Gehl also noted a study performed in San Francisco that found that pedestrian-oriented activity decreases with increased vehicular traffic (which could be controlled by narrowing the thoroughfare only.)

Additional areas of research needed include:

More comparative and historical work on street width with regard to adaptability.

Work endeavoring to integrate the perceptual qualities of street width with the concept of frameworks.

**Blocks**

Since they occupy a zero-sum relationship with the Streets in a grid, the Blocks in the case study have been demonstrated to have also survived essentially intact from their initial platting. Their dimensions of approximately 200 by 400 feet provides the District's grid with a relatively fine-grain in comparison to the 200 by 800-foot blocks of the 1811 Commissioners' Plan. Fine grain blocks of this general size have been praised by both Whyte (40. 1988) and by the Neo-traditional planning firm of Duany-Plater Zyberk for their accommodation of pedestrian activity and Whyte particularly extolls the greater number of corners introduced into a grid by smaller blocks. While Whyte's concern with corners is based upon their use as informal locations of social interaction, the fine grain of the grid brought about by the small blocks is also possibly linked to the successful accommodation of the changing con-

![Image](image-url)
text. The fine-grain grid appears to foster movement in an east-west direction as well as north-south.

In considering movement around the blocks though, the optimal dimensions of a block within a grid is, at this time, somewhat uncertain. While the 200 by 400-foot blocks of the study area work apparently quite well with heavy pedestrian traffic, it is not apparent that a grid comprised of blocks with long-sides of even 800-feet does not work as well. The Commissioners’ Plan grid, it has been suggested, was laid out with the expectation that east-west traffic between the Hudson and East Rivers would predominate (38. City Planning Commission 1985) but the great majority of contemporary vehicular traffic through the City moves north-south along the short side of the blocks. Accordingly, the first 100-feet of each Commissioners Plan block is generally occupied by street-related commercial development and is oriented toward the north-south Avenues while the east-west blocks are occupied by less intensive, often residential, uses.

It then appears possible that the success of a block is more a result of its accommodation of its “infill” than a property of the block’s role in defining the grain of a grid. The 200 by 400-foot blocks in the study area permitted the reorientation of a considerable portion of the blocks’ infill to address the increasing importance of the east-west streets. However, only the ends of the blocks, the first 100 feet or so from the corner, appear to be useful in these reorientations. This suggests that, on a 200 by 400-foot block, the middle 200 feet of the long side is limited to one possible frontage (with the exception of a through-block lot and lot consolidations that occupy much of the block). Carrying this observation over to a 200 by 800-foot block, it becomes apparent that a considerably higher percentage of this block’s area can have only one possible frontage. This might indicate that the larger block is closer to biasing the grid in favor of one axis over the other.

Dimensions for the short side of a block, other than 200-feet, have also been used throughout history and Kostof (26. 1991) and Moudon (27. 1986a) discuss several variations with very generous proportions. These large blocks, Kostof argues, have a greater likelihood of being subdivided by alleys and streets. For example, the blocks south of San Francisco’s Market Street were initially platted at 550 by 825-feet and as time passed, the typical block had alleyways or streets cut into it to effectively create two or more blocks from the one. Other than the south of Market Street area, much of San Francisco was platted with blocks measuring 275 by 412-feet. In the Alamo Square area, an alleyway was occasionally inserted into a block, but this was the exception. (27. Moudon 1986a) In San Francisco’s Chinatown and North Beach areas however, many short alleyways and streets have been introduced into the blocks. In these latter instances, the alleys and streets frequently run parallel to the short side of the block in contrast to those
typically found in blocks on the East Side of Milwaukee.

On the more conservative end of the spectrum, William Lennertz (40. Krieger & Lennertz 1991) states that Duany Plater-Zyberk generally use a block no larger than 230 by 600-feet. In their plans, the width in excess of 200-feet on the short side of the block is often allocated to an alleyway.

Questions for further research:

Is there an optimal size for a Block? Does this vary according to culture?

Have larger blocks undergone infill reconfiguration like the case study blocks?

How has the introduction of an alleyway worked with lot reconfiguration? Has it constrained reconfiguration/consolidation?

Lots

The lots are the first large scale feature to have shown considerable change in the case study. The 64 east-west oriented, approximately 25 by 100-foot lots on the two face blocks underwent reorientation in many cases to address a changing urban context, and many lots were consolidated with others to accommodate larger buildings. The configuration of the lots followed a trajectory of change (see Figure 3-2 – Lots Configuration through Time, on pg. 34) marked by initial simplicity, which became increasingly complex and idiosyncratic via lot reconfiguration, and then became coarser-grained and more simple via lot consolidation.

The reorientation of lots has apparently played an important role in the success of the District scale’s accommodation of change. As Chapter Two portrayed, the grid on Bayard’s estate was at the periphery of the city when initially platted. Development lay to the south and the grid was laid out with each of the oblong block’s long sides parallel to the existing Bowery – the High Road to Boston. With the grid so oriented, considerable frontage was provided on the north-south streets leading to and from the bulk of the city.

When the city enveloped the estate, and large communities settled into areas on the old DeLancey estate to the east, the east-west streets connecting both estates, like Grand and Hester, became desirable commercial thoroughfares. (Grand Street was described by one long-time resident of Little Italy as having been “...our Fifth Avenue,” (41. Mott Street Senior Center, personal communication 1994) which favorably compares Grand with the City’s most upscale retailing avenue.) To take advantage of this, a considerable number of the lots on the case study blocks were realigned to provide frontage on these east-west streets.

The case study also indicated that Lot Consolidation was common on the case study blocks. Consolidation was
also an important factor in the block's ability to house new, and larger, building types. Among the building types introduced into the blocks through this process were the New Law Tenement and the industrial loft building.

In considering these two processes, a logical question arises. What is an appropriate size for an urban lot designed for change and how should they be distributed? Anne Vernez Moudon (27. 1986a & 1986b) has presented a case for narrow and deep lots when initially subdividing blocks. These lots, she argues, distribute control over the environment among many individual owners and this would tend to promote greater variety. Another approach to creating variety is by varying the grain of the lots fronting on the street. This approach involves establishing an increment of frontage that can be assembled into lots that are multiples of the standard unit. Groth (27. 1981) discusses this as a practice typical of early American land subdivision and it has since been adopted by Duany-Plater Zyberk. (40. Krieger & Lennertz 1991) They first employed this practice in a 1988 plan for Belmont, Virginia where a 16-foot (the equivalent of the colonial measure of a "rod") increment was established.

In the absence of legal constraints, this practice would seem destined to achieve the same results as delineating narrow and deep lots. For example, the approximately 25 by 100-foot lots found in the study area were initially considered the standard buildable lot. This buildable lot size, Spiro Kostof (26. 1991) argues, has historically been derived from the "leading type" of building initially considered for that area. It would follow then that the leading type, in similar circumstances, would tend to result in similar lot dimensions. Had the 25-foot frontage been found unsuitable in accommodating the leading type, consolidation would probably have occurred immediately during the initial process of development, accelerating the introduction of varying lot sizes.

A different approach, also often used in early American land subdivision, is the initial delineation of lots with large frontages. With six or eight lots on a block, the process of change typically involved the subdivision of the large lots into small lots of often idiosyncratic frontages, which are later reconsolidated into very large lots. (27. Habraken 1988; Moudon 1986a & 1986b; Groth 1981; 26. Kostof 1991) When the history of blocks having this type of initial lot configuration, as applied to the grid in San Francisco, is compared to the history of the case study blocks, it becomes apparent that both approaches have ultimately resulted in very similar lot configurations. (see Figure 5-4 - Lot Configurations Compared)

In either case, it would seem that left to its own devices, and particularly without regulatory constraint, the market would arrive at the most desirable lot dimension if faced with either situation. This would appear to be true even if it involves consolidation of several lots only to immediately subdivide them again into lots of a more appropriate size. This apparently happened with several lots on the east side of Mott Street between 1828 and
Lot consolidation and initially large lots would tend to favor more affluent investors though and would likely be more prone to the construction of unified "projects" (as in Milwaukee's recent East Point development) instead of subdivision. Small lots would tend to permit the less-capitalized investor to influence the process earlier, which would probably generate more variety. (27. Groth 1981) Also, the more individual owners involved, the more difficult it would be to create the "assemblage" of lots required to consolidate into one.

In terms of determining an appropriate lot frontage, two suggestions might be useful in considering initial minimum lot sizes in a contemporary urban environment. The first suggestion was made in the zoning study in *Built for Change* (27. Moudon 1986a) and this was a frontage of 35-feet (measured from building entry to entry). This was a compromise, to better accommodate "contemporary residential design" from the more desirable 25-foot frontage traditionally used in the city. The second is derived from Duany-Plater Zyberk's use of the 16-foot increment for varying lot assemblage. They state that it "...fits current building types exceedingly well..." (40. Krieger & Lennertz 1991) and considering that in practice, the smallest viable lot size has 32-feet of frontage, this claim falls very close to Moudon's pragmatic suggestion. Within the case study face blocks, the 25-foot frontage has been apparently successful for ground floor usage, but the upper floors have long been considered inadequate for multi-unit housing (the reason why the Tenement House Acts ultimately led to lot consolidation). At this point, a lot with 32 to 35-feet of frontage would appear to be more adaptable which would require less immediate lot consolidation.

Additional questions include:

Is the 32 to 35-foot lot frontage actually optimal?

How deep should a lot be?

Does the optimal frontage vary according to culture, or region?

To what degree is variety of lot dimension desirable versus promoting a more building scale-based variety? The former might be seen as being advocated by DPZ and the latter by Moudon.

How have the colonial lots developed around a standard frontage increment changed over time? Is there an appropriate standard unit for use in contemporary planning? How has the use of a 16-foot unit in the new town of Belmont worked?

**Buildings**

The existing buildings in the case study were constructed generally as tenements with ground-floor storefronts, or as industrial loft buildings. Even considering this disparity of uses, these mid to late 19th and early 20th cen-
tury buildings had several things in common that appear to have factored into their use and re-use. These common features include a similar treatment of the ground floor versus the upper floors, and that all of the buildings have no front setback.

The elevation

In the Pre-Law and Old-Law tenements the ground floor was visually divided from the upper floors by a cornice spanning most of the width of the building. Beneath this cornice, the elevation was treated as “infill” which was typically comprised of an upper level entry and one or two storefront(s) with large display windows held in a wooden or cast-iron structure. Above the ground-floor cornice, the elevation was constructed as a solid plane of brick with “punched” openings for windows. (New Law Tenements have greater frontage and often have expanses of brick on the ground floor in addition to infill storefronts.)

As discussed in Chapter Three, the industrial loft buildings also treated the ground floor as “infill.” The Jaeger Building (see Figure 3-6 – The G.L. Jaeger Building, on pg. 39) had a tri-partite elevation quite similar to an Old-Law tenement (although with far greater frontage). On the ground floor, the company had offices in lieu of shops, and manufacturing occurred in the floors above. The later, and more ornate Meitz Building still made an elevational distinction between the ground floor and the upper floors. In this case, the Meitz Building’s ground floor initially had wooden doors, infilled between masonry columns, that were used for entries and loading and unloading.

By sharing a common setback and ground-floor treatment with the tenement buildings, the loft buildings have proven to be easily converted to storefronts, as the ground-floors of both the Jaeger and the Meitz Buildings have been in the past 15 years. One building, an Old Law Tenement in the case study area, has also had its ground-floor converted to residential use. These observations permit the conceptualization of the buildings on the case study as being comprised of a “Base” and a “Top.” (see Figure 3-8 – Basement-Base-Top, on pg. 41) This conceptualization is similar to Ann Vernez Moudon’s (27. 1986a) observations regarding wood frame buildings in San Francisco. N.J. Habraken (27. 1988) has also noted the independence of the ground floor of mixed-use commercial/residential buildings.

Commercial form transforms faster, it seems, than residential form. When shop after shop is adapted over time to new styles and fashions, this sidewalk oriented zone becomes divorced from the architecture above, living its own life. The result in today’s cities is the almost autonomous band of commercial spaces lining the major arteries, displaying its facades as quite separate entities from those above. We see the historic facades floating in the air while under them the continuous transformation of shop facades takes place . . . (p. 127)
The ground floor plan

Also important to the independence of the ground floor are the simple open ground-floor plans found in most of the buildings. However, within this similarity there is a noticeable distinction between floor plans of the types of buildings found on the face blocks. This distinction is based upon how much unobstructed square-footage is available. There is a clear distinction between the Old-Law and Pre-Law tenements versus the New-Law tenements and the loft buildings in terms of total square footage. There is even a difference among the Pre-Law tenements, however. This difference is a function of where the upper floor entry was located and whether or not it extended all of the way through the ground floor.

If the entry extended all of the way through the building (see Figure 5-5) and was located in the center of the ground floor elevation, the ground floor plan was irretrievably cut in two. If the entry was located adjacent to a party wall, the bulk of the ground floor was made available for use by one store alone. On a 25-foot wide lot, the former situation results in two storefronts with roughly nine-feet of frontage, and in the latter, either one store with 18-feet of frontage, or two with roughly nine-feet of frontage each are possible.

On any 25-foot wide lot in the study area, any building having the ability to house a larger, approximately 18-foot-wide storefront does. In the case of 135-137 Mott Street, (Figure 3-19 on pg. 57) an unusual situation has developed where a party wall was pierced to connect two 9-foot-wide frontages in two adjacent buildings. (These party wall "punctures" are represented in Building A in Figure 5-5) Even considering this action, there is still an apparent demand for the smaller storefronts too. In the buildings with the largest frontages (e.g., the loft buildings and the New Law tenements), and the opportunity to house larger storefronts, there are several stores with 9 to 10-foot frontages. (see Figure 5-5) The key would appear to be the ability to choose.

A more adaptable upper floor center entry is commonly found in San Francisco. For example, in the Figoni Hardware store at 1351 Grant Avenue, (Figure 5-6) the upper floor entry hall does not run all of the way through the ground floor. Instead, it only extends far enough back to contain a modest ground floor landing and the rise of the staircase to the second floor. This permits a connection to be made between the two frontages behind the stair, or in other words, the storefront "wraps-around" the entry. Again, two storefronts could also easily be accommodated. The catch is providing rear lot access if necessary, and resolving the upper floors in terms of adaptability.

Moving back to the study area, open floor plans were also made even more flexible in most of the later buildings by opportunities to expand the ground floor into rear or side yards, independent of the setbacks required of the upper floors (this also involves legal issues and will be discussed in that section). Ground-floor expansion has occurred into rear yards of several buildings on the site as depicted in Figure 4-1 (pg. 78) and 5-5. This
LEGEND

- A - Pre-Law Tenement
- B - Loft Building (The Meitz Building before Reconstruction)
- C - New Law Tenement

- 1 - Approx. Space of New Storfront
- 2 - 1-story Extension into rear of lot
- 3 - Center Entry running through Bldg.
- 4 - 9 to 10-foot store frontage
- 5 - 20 to 25-foot store frontage
- 6 - Undetailed Apts.

Figure 5-5 -- Ground Floor Plans
Shown in their relative locations on Mott Street and at the same scale
(Base Plans from NYC Bldg. Dept. w/ elements added from field observation)
expansion is particularly notable when the portion of the lot being expanded into fronts on the street. An example of this can be seen in the view of Mulberry Street in 1932 (Figure 3-13 on pg. 48). The one-story storefront below the "billboard" occupies the backyard of the corner building. Figure 3-29 (pg. 63) shows a similar expansion of the ground floor of Angelo’s restaurant, laterally (leftward) toward the corner building.

Related to the expansion of the ground floor is the control of the sidewalk in front of the building, which can also become an extension of the business's operations. This is linked to the flexibility of the ground floor elevation and is clearly important in the case study area.

Smaller Than Buildings

Since the preceding section began to focus on the component parts of the building this section can focus more quickly. The top floors of the buildings, with regard to the public domain, have changed relatively little since they were constructed. The most significant changes involved the addition of fire escapes, some windows were replaced or "bricked-up," some buildings have been painted and one has had stucco applied to it. (for one example, see Figure 3-30 (pg. 64) - Where the Top of the building housing the gift shops has been recently painted “brick" red.) During the 20th century, the ground floors have been the locus of physical change on the case study blocks. This is even more apparent when one considers that much of the activity on the sidewalk is an extension of the activity on the ground floor of the adjacent buildings, or that the stores and the activity are in a symbiotic relationship. For example, the "stoop stands" in front of the storefronts on Mott Street were often an extension of the retail functions of the store, but the independent pushcart peddlers, in conjunction with the stores, created a two-block long, indoor and outdoor market in the 1930's.

Accordingly, change at this scale involves non-fixed and semi-fixed features as well as fixed-features and it is not confined to the legal boundaries of the preceding scale.

The Building Enclosure

As the previous section noted, the ground floor elevations of the buildings on the case study site were designed differently than those of the upper floors. The ground floors of the tenement buildings were often occupied by shops and their elevations were initially designed with a Neo-classical cornice topping a bay window(s) adjacent to a recessed entry door. Adjacent to the storefront would be a door leading to the upper floors. (A good existing example can be seen to the left in Figure 3-26 on pg. 61) The stores also typically had large, retractable canvas awnings. The loft buildings also followed this pattern with the exception that office windows or large loading doors
would have replaced the storefronts.

Over time, the storefronts in the tenement buildings have followed somewhat diverging paths of change depending on the street that they are located on. On Mulberry Street, many of the original storefronts have been "modernized" over time. (see Figure 4-6 - The Caffe Palermo, on pg.s 88-89) This process of modernization has often involved a change in exterior materials, the use of large single panes of glass in lieu of smaller divided panes, an increase in the glazed area if possible, new signage, occasionally the addition of lighting, new awnings, and new entries. The original bay windowed storefront with its ground floor Neo-classical cornice (for another example, see Sal's Hairstylist in Figure 4-6) is now a rarity in the study area. The original storefronts are usually found only in locations that have been essentially withdrawn from the market or that have an interest in the "traditional" character of the street. For example, the Banca Stabile storefront at 151 Mulberry Street has been held vacant for years by the Stabile family as a "personal landmark." (32. Willensky and White 1988)

Loft buildings like the Jaeger Building, have also had similar changes in their ground floor elevations as they were subdivided into separate storefronts. These changes possibly had more impact on the visual characteristics of the street than the former due to the scale of the transformation. The Jaeger Building alone occupies a third of the frontage on the east side of Mulberry Street. (For another example of differing frontages among building, see Figure 5-5) Accordingly, when the ground floor was changed into storefronts it represented something of a reversal of the lot consolidation process that had created a large uniform ground floor across the building. During this building's transformation each of the roughly twenty foot wide storefronts that were introduced into the ground floor adopted a different elevational appearance. The original ground floor cornice was removed and the stores' replacement strategy varied from the use of wood to conceal any trace of the old cast-iron columns to painting the columns and infilling around them with new glazing, brick and metal. Each storefront has also adopted different colors - ranging from the colors of the Italian flag, or blue and aqua, to black and pink - which have carried over into many of the semi-fixed features, and in the signs and canvas and plastic awnings. These last elements, particularly the awnings, have been shown to change even when the restaurant remains the same.

On Mott Street change has also been occurring but the results have been somewhat different. The most apparent difference is that while some of the original storefronts have been replaced by similar "modernized" enclosures, as on Mulberry Street, many have also been removed entirely or the new enclosure has been set back several feet into the building. In either case, rolling metal security gates are routinely installed in place of, or just below, the old cornice (these gates are generally absent on Mulberry). Metal or plastic awnings cover these gates and together with the signs attached to the wall above them, they play a large role in establishing the identity of the business and Chinese-language char-
acters and the colors red, yellow and green predominate in the design of these features.

**Semifixed features**

Mott and Mulberry Streets appear to have had different ambiances for much of the twentieth century, with the possible exception of the feast days early in the century (see Figures 3-10 on pg. 44 & 3-14 on pg. 49). In the 1930's, Mott was a largely a marketplace with the storefronts and the pushcarts selling meat, produce and pasta to the local Italian community. Mulberry seems to have been a quieter street in the sense that much of its frontage was occupied by manufacturing concerns with a few isolated storefronts. In the 1990's, both streets have had dramatic changes in ambience and together with the aforementioned elevational changes, semifixed features have had a large role in the transformation.

Today, instead of pushcarts, cars and trucks line the curbs of Mott Street and the sidewalks are filled with tables displaying produce and fish. Boxes are frequently stacked at the curb as the stands setup for business. Bags, portable lights and scales hang from the awnings, boards divide one enterprise's tables from the next and small paper signs are taped to walls and windows or stuck in the produce. On occasion, a peddler still appears, usually with a shopping cart or a luggage cart full of goods for sale. At the end of the day, most of the features are packed away leaving only the large wooden or iron tables on the sidewalk before the closed security gates that conceal the storefronts.

This inventory is pretty constant throughout the year, and the street has been a part of Chinatown for several years now, but change is still occurring at this level as Chapter Three discussed. There have been many new immigrants from places other than southern China since the 1980's, so the goods for sale have been changing also, according to new and differing tastes. For example, more food associated with Taiwanese and Vietnamese cuisine has been appearing. The same change has been occurring in San Francisco's Chinatown. (41. Chan, personal communication; Lau, personal communication 1994)

On Mulberry, since the numerous restaurants have been established in the ground floors of the loft buildings, in fair weather sidewalk cafes appear along much of the west side and especially the east side of the block. Most of the restaurants set up tables similarly, along the building and in the outer sidewalk zone and the tables typically have large umbrellas. Even in continuous stretches of tables, the portion of the cafe controlled by each restaurant is clearly identifiable though, through different table settings, the patterns and colors of the table cloths, and by the colors and lettering on the umbrellas. Also, temporary signs and plants often hang from the awnings and the building wall and potted plants mark the boundaries of some restaurants' claims to the sidewalk. Temporary signage, as the last chapter has displayed, also frequently spans the thoroughfare.
Summary - The Physical Framework

In Chapter One, there were several variables presented that might require a change in the use or the reconfiguration of a portion of the environment. These variables involve change for Instrumental, Expressive/Latent, Social, Cultural, Demographic and Economic reasons. Demographic and Cultural change has been shown to be underlying the whole process of sequent occupancy on the face blocks, and in the Lower East Side in general. The diverging cultural factors contributing to the use of space on Mott and Mulberry have particularly been driving the creation of two different cultural landscapes. Instrumental change is most evident through the introduction of the car into the face blocks and particularly in the transformation of the parking strip from a fairly active and flexible, pedestrian-oriented space to a space largely used for car storage. Expressive/Latent change is evident in the disparity between, and the variability within, the two “inventories” of features comprising the Italian and Chinese storefronts.

Disparity between the two inventories has often been apparent in the selection of materials (metal versus canvas awnings), in the color palate (which overlaps in red and green, but differs regarding yellow), in color application (a red background versus white for a hand-lettered temporary sign), in religious iconography (Images of Saints versus Buddhas) and most obviously in storefront enclosure (often open versus always enclosed).

Variability within the inventories addresses personalization and can be seen in how each storefront has taken the basic elements of the inventory and applied them differently than similar storefronts on the street. Within each face block, different choices have been made regarding awning and signage color, material and design and storefront and interior elevational finishes. Personalization is also apparent in the features that are not shared among the two inventories, including the different table settings and umbrellas on Mulberry. It should also be noted that the decisions made in personalizing a store are not static, they change over time, e.g., the recent replacement/addition of awnings on Mulberry Street.

In simply reviewing these variables in the light of the changes identified in the case study blocks, it becomes apparent that the creation of cultural landscapes in this environment is largely a factor of being able to express identity on a cultural and small group/individual basis. This expression occurs through change at the smallest scale of the environment – at least in cases of sequent occupancy. Providing the requisite flexibility and adaptability at this scale should be the ultimate focus of designing for change.

In endeavoring to further develop this concept it should be noted that the environment that the case study was based in is only one of many different environments found in a long-established, contemporary American city. The area has a relatively high-density and it has long been characterized by a mix of uses. It has also undergone periods of intense redevelopment. For these reasons, with regard to urban frameworks, it can only pro-
vid a portion of the data necessary to develop such a concept. Anne Vernez Moudon's (27. 1986a) study has delved further into "neighborhood" architecture, and has done so on a grander scale, in an area of slightly more recent vintage.

However, many cases of sequent occupancy are occurring on the periphery of the city now, or in suburbia, and the concept needs to address change in these areas also. Many of them are low-density, of homogeneous use, were established after zoning was implemented, and their original building stock is intact. Through additional comparative research, these environments can help to answer questions regarding the effect of change on areas with segregated land-uses and to provide material in addition to that provided by these older "inner city" areas.

THE LEGAL FRAMEWORK

The legal framework came into existence in a different sequence than the physical framework. (see Figure 5.7 - Regulations Compared to Periods of Construction) It began with controls on particular elements of urban buildings and developed into a system of complementary and overlapping regulations regarding building components, buildings and their context. As Chapter Four demonstrated, many of the large scale regulations were implemented too late to have affected the cultural landscape of Mott and Mulberry Streets however, other regulations, that were not necessarily intended to affect the cultural landscape, did have considerable impact. As well, many of the later regulations began to wield greater control over Smaller Than Building scale elements and they also have had a great impact due to the more rapid construction/reconstruction cycle operating at this scale.

Blocks and Streets

At this scale, there are currently several types of regulations available to planners, two of which can be found affecting the site study site. These two are the Zoning Resolution and The Special District, and the third is the Historic District. Chapter Four has shown that none of these regulations have had a substantial impact on the visual characteristics of the site at these scales. However, in the event of another series of redevelopment, these regulations will have a profound impact. This situation is not unlikely considering the continuing expansion of the Civic Center to the south or the recent, and substantial, investment in the area from Hong Kong. In this event, these regulations will have influence on the blocks’ buildings in numerous ways including massing, setbacks, FAR, and height.

The Zoning Resolution and the Special District have had some influence in the use of the blocks. Since the transformation to largely industrial use never materialized in the area as the 1916 Zoning Resolution predicted, the area was rezoned to commercial usage in 1961. This had a constraint stating that existing buildings could not be converted to residential uses without a permit. The Special District also added a requirement for ground-floor
### Figure 5-7 -- Regulation in Effect vs. Periods of Construction

Construction periods are based upon broad estimates, particularly in the Smaller Than Building scale. Numbers in cells to the left of shaded cells indicate that a regulation was adopted in the latter half of the preceding decade.

<table>
<thead>
<tr>
<th>REGULATION</th>
<th>18th Century</th>
<th>19th Century</th>
<th>20th Century</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Housing</td>
<td></td>
<td>6</td>
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</tr>
<tr>
<td>Zoning</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Peddling/Vending</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Special District</td>
<td></td>
<td></td>
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</tbody>
</table>

**CONSTRUCTION BY SCALE**

- Street
- Block
- Lots
- Building
- Smaller Than Bldg.
retail use in new and renovated buildings.

Lots and Buildings

Zoning and the Special District are designed to carry out Block scale goals via coordinated impact at the Lot and Building scales. Again however, the effect of these regulations has been negligible in the case study area due to a lack of large scale redevelopment since their implementation. The construction in place on the site did respond to a considerable array of different regulations though. Building laws/codes and housing laws had been becoming increasingly stringent since the early 1800's and by the late 1860's, comprehensive building laws and more narrowly targeted housing laws began to significantly affect the cultural landscape on this large scale. In a process of frequent revision and amendment, regulations concerning materials, building height, massing, width, frontage and setbacks were put into place.

As the laws responded to existing conditions, they left a legacy of buildings that describe their path to increasing stringency. This path can be seen in the form of the many tenement buildings on the two face blocks. Even the earliest of these buildings has a front elevation of brick, in response to one of the earliest requirements for fireproof external construction. This, by itself, marked a great change from the many wood-clad buildings that appear to have occupied the streets before. Then the massing of the tenements on the 25-foot wide lots increased as the rear-lot tenement was banned, a maximum limit on coverage was implemented, and ventilation standards grew more strict. Finally, responding to an exception made for non-fireproof construction in relation to a maximum height limit, and increased setback requirements, the New Law tenements were constructed on large consolidated lots that had considerably more frontage than their predecessors.

Smaller Than Buildings

The regulation of the elements in the Smaller Than Buildings category has been present in the City since the 1600's, and was somewhat common by the mid-1800's. In the 20th century though, the regulation of smaller scale elements of the cultural landscape came to fruition. Prior to the 1916 Zoning Resolution the impact of the law on the cultural landscape was apparently not given great consideration. With the original Resolution this changed and it explicitly sought to control the large scale elements of the environment with an eye toward attaining a particular image of the City.

The Resolution was not retroactive however, and the older areas of the City remained largely unaffected. The Resolution’s controls were also not specifically targeted at the small-scale features of the environment. Consciously designed, small-scale regulation of the cultural landscape had not yet come of age in 1916. In the 1930’s however, Reformers had begun to gain support for the implementation of a variety of regulations that would rid the Lower East Side of its “old-world” ways and consequently, peddling, stoop stands and “pulling-in” be-
came largely illegal. At approximately this time, the building laws also began to expand their scope and numerous small-scale elements were brought under the Building Department's consideration. These ultimately included features like signage, awnings, sidewalk cafes and exterior lighting. In 1961, the Zoning Resolution was revised and the scope of its regulations also expanded into the control of small scale features, including storefront enclosures, signage, and sidewalk cafes.

The progression toward increasing control over the elements (as discussed above) that were most often manipulated in the (re)creation of cultural landscapes continued and it culminated in the creation of the Historic District and the Special District. Both of these had specific agendas for the maintenance of particular urban cultural landscapes and have been applied liberally in New York City.

The Little Italy Special District displays the detailed control of small scale elements now available to public authority. The guidelines in the Mulberry Street Retail Spine for example, have been explicitly developed to require new stores to recreate the essence of the late 19th and early 20th century wood and cast-iron storefronts commonly found at that time in Little Italy. However, these storefronts were apparently typical of Pre-Law and Old-Law tenements throughout the City and were not characteristically Italian.

As the discussion in the previous section suggested, regulation of elements at this scale can interfere with the creation of a cultural landscape. In many places within the Mulberry Street Retail Spine this appears to be happening since the options available to some Chinese storefronts are limited when the regulations are enforced, e.g., an open storefront is not a possibility. In any event, even the Chinese storefronts built under these guidelines are unmistakably part of Chinatown, not Little Italy.

Summary - The Legal Framework

Clearly, contemporary law has come to exert great control over every scale of the urban environment and its scope encompasses an extraordinary range of fixed, semifixed and non-fixed features. Some have used an analogy to a web of legal issues but this seems to diminish their combined complexity. The range of laws and overseeing bodies would more appropriately be described as layered. In the regulations that are consciously designed to manipulate the cultural landscape, their controls are increasingly conservative and resistant to change. Also, many relevant regulations have not been traditionally considered as determinants of cultural landscapes. The question then becomes one of how to reconcile the "deliberate" and "indeliberate" determinants of city form within the legal system with each other and with the needs of the inevitable process of sequent occupancy.

As the previous section suggested, flexibility and adaptability at the smallest scales of the environment are crucial to designing for change. The case study has indi-
cated a trend in legal frameworks that has run contrary to this for much of this century. Accordingly, as discussions of land-use regulation have moved, within the last few years, to a consideration of "flexible" zoning, the effects of regulation on the smallest scales of the environment would warrant consideration.

To qualify the conclusions of this case study, with regard to the legal framework, it must be recognized that they have been developed without extensive comparative work during the project. Further research is needed in similar situations in other cities. The most evident location is San Francisco which has been shown to have similarities to New York with regard to sequent occupancy. It also has made extensive use of the Special District. Cross-cultural studies outside of the United States would also be useful. Aside from delving further into case studies of legal frameworks, future research on legal controls could potentially tap into the expanding abilities of computer modelling and simulation. Such modeling could become a tool useful in identifying unforeseen consequences within the complex interactions of the law.

SYNTHESIZING THE PHYSICAL & LEGAL FRAMEWORKS

In considering the physical and legal frameworks together, it becomes apparent that there is a range of actors responsible for "designing" the urban environment. The actors include: individual architects, urban designers, planners, engineers, interior designers, contractors, residents, tenants, property owners, speculators, investors, developers, zoning officials, housing authorities, building departments, lawyers, financiers, state and local legislatures, etc. The efforts of these actors are rarely coordinated and in some circumstances, one party may be working to constrain the efforts of another. Decisions made by this collection of actors are also distributed across time and are, as this thesis has endeavored to demonstrate, linked to the differing scales of the urban environment.

In light of this, how can these frameworks be designed to accommodate change in cultural landscapes? Assuming that the ability to accommodate change is accepted as a valuable characteristic of the urban environment, it appears that each actor needs to recognize their role in relation to the scales used within the model. They also need to recognize which of the two frameworks it is that they have influence on. For example, an individual architect working on the design of a single building only wields influence over the Building and Smaller Than Buildings scale and can really only work to accommodate change at the smallest scale - the most important scale in dealing with change in contemporary urban cultural landscapes. This
architect has to work within the "supports" provided by the actors who designed all of the larger-scale elements of the environment and they cannot, usually, affect any of the regulations placed upon the environment, at any scale. Accordingly, it is in the architect's interest that the larger scales – the supports of the Building scale – have been designed to accommodate their building program. Likewise, it is the architect's responsibility to provide the necessary supports to accommodate the necessary degree of open-endedness at the Smaller Than Building scale. This argument applies to each actor involved in the process, across all of the scales and in both the physical and legal frameworks.

143 Mulberry Street

To conclude this project, and to act as a demonstration of the application of the position advocated above, the results of a brief (literally about 24-hours) and incomplete, one-person design charrette will be presented in this section. The goals of this charrette were to develop a schematic design of a building that would foster the necessary degree of open-endedness on the Smaller Than Buildings scale. In displaying this process, it is hoped that the interconnectedness and determining roles of both frameworks become readily apparent.

In addition to creating the supports for change at the Smaller Than Building scale, other goals for the charrette included pushing the building to "the limits." In other words, the design would try to achieve the maximum zoning envelope, e.g., the largest massing permissible. In trying to accomplish this goal, each of the relevant building regulations in effect on the site was consulted. However, other aspects of these codes have not been thoroughly considered and accordingly, the building should not be considered a prototype of a building "designed for change." It is only intended to be a demonstration and it is very diagrammatic. Many issues are unresolved in its current state. It is most useful to display the convergence of the two frameworks in one building.

The design will be discussed largely via diagrams and annotations but to provide some background: the site is 143 Mulberry Street, a slightly irregular 25 by 100-foot, interior lot, which is currently occupied by private car parking. The last buildings to appear on it were two Pre-Law tenements, one on the front of the lot and the other in the rear, which were demolished after 1914.
STEP ONE - SITING

The Building is located in the Mulberry Street Retail Spine. As a condition of the Special District, it has to maintain the "streetwall." Accordingly, there is no front setback, which is in keeping with the case study findings that similar front setbacks among buildings on the face block promoted some ground floor flexibility.

There is no requirement for a sideyard in any of the regulations so the building occupies 100% of the width of the lot to take advantage of the frontage.

STEP ONE - SITING (continued)

At the rear of the lot, there are several regulations that influenced the design. The first is a requirement by the Special District that the building can achieve 100% coverage on the ground floor, but is restricted on the upper floors to 60-70% coverage. Since this is intended to be a mixed-use building with the upper floors capable of being used for residences, the Multiple Dwelling Law factors in too. This law requires a 30-foot rear setback for a building of this height.
STEP TWO - MASSING

The Special District permits the building to rise 7 stories, as long as the building has a front setback above 60-feet. The Zoning Resolution also places a FAR limitation of 6.02 on the building. As the drawings display, the building is only 5-stories high. This is a result of a constraint placed upon it by the Building Code. This constraint is directly linked to the decision to use only a single fire-stair because of the building’s limited footprint. The Code permits a building of occupancy groups J-2 (apt. bldgs.) or E (some types of commercial use) to have one fire stair if the building is fireproof and not taller than 60’. (The Multiple Dwelling Law would have permitted a six-story building with one fire-stair.)
Like the other buildings on the site, the building was designed with the Base and Top elevational and functional strategy. The Base, which is required by the Special District to be occupied by a retail use, has an upper floor entrance flush against the northern party wall. The remainder of the Base Elevation is treated as "infill" and is intended to be visually distinct from the Top (this distinction, as Habraken (27. 1988) indicated would be likely to increase with time).

In other words, the storefront can be removed, replaced or modified (see facing page) and all of the Base's elevational materials would be "flexible." A commonly used storefront material like metal panels could be used for the opaque surfaces to begin with. Each ground floor tenant could then manipulate these finishes as desired.

The largest opaque surface on the Base is a band above the storefront and the upper floor entry. This band is four-feet high and spans the elevation. This area is available for attaching signs, lights, awnings, etc. It begins ten-feet above the sidewalk, which is the maximum height for a display window according to the Special District and the lowest point that the Building Code permits signage to hang above a sidewalk.

The upper floors, which the case study indicates do not need to be as flexible in elevation as the Base, could be finished in brick like the other buildings on the block.

Since the Special District permits some elevational recesses, each upper floor features a balcony with the maximum projection permitted by the Building Code. (22")
Variations on the Storefront Enclosure

Left - A design conforming to the Special District Guidelines

Middle - An Open Storefront possible only if the Special District Guidelines are changed.

Right - A Setback Storefront, also only possible if the Special District Guidelines are changed.

While two of these designs are not possible under the present regulatory circumstances, the case study has shown that buildings often outlast specific legal controls.
STEP FOUR - FLOOR PLANS

In considering the floor plans, an attempt was made to design them to be adaptable. On the ground floor (within the public domain and the floor closest to the focus of this study) this manifests itself in placing the upper floor entry to the side, against a party wall. This provides the maximum uninterrupted frontage for a single storefront. It also permits the subdivision of that frontage into two storefronts, if desired.

The upper floor access continues along the party wall to the center of the building where the fire-stair and an elevator are located. The elevator was considered necessary when the building was thought to be capable of rising seven stories. At five stories, the elevator might be an extravagance. However, if the upper floors were used as commercial space the elevator might be an important feature. This is one aspect of the plans that would need to be resolved.

The elevator and the fire-stair divide the "front" of the storefront from the "back." The latter is typically the location of food preparation and storage in both the Italian restaurants and the Chinese storefronts.

In any event, the rear wall, like the front wall, is treated as "infill" to permit the ground floor to expand to fill 100% of the lot if desired. This expansion is permitted by the Special District.

The upper floor is the most unresolved portion of this schematic design. As already mentioned, the upper floors could house residences or some commercial uses, like professional offices. With these differing uses in mind, a redundant circulation (and entry) system has been introduced that would permit each floor to house 1 large apartment, 2 small apt.s or 1 or 2 offices.
This design charrette was intended to be a simple demonstration of the interaction of the two frameworks. Even considering its brevity and limited scope, the impact of the legal framework on the design was considerable as were the large-scale features such as the 25-foot wide lot. The resulting design should not be construed as having attained its full potential with regard to the regulations in effect, however. For example, there are exceptions to some of the regulations that might permit the building to add an extra story. In other words, this building, like this thesis, is just a brief introduction to some of the principles involved in accommodating change in our urban cultural landscapes.

A diagram of 143 Mulberry Street as it might look with an Italian Restaurant