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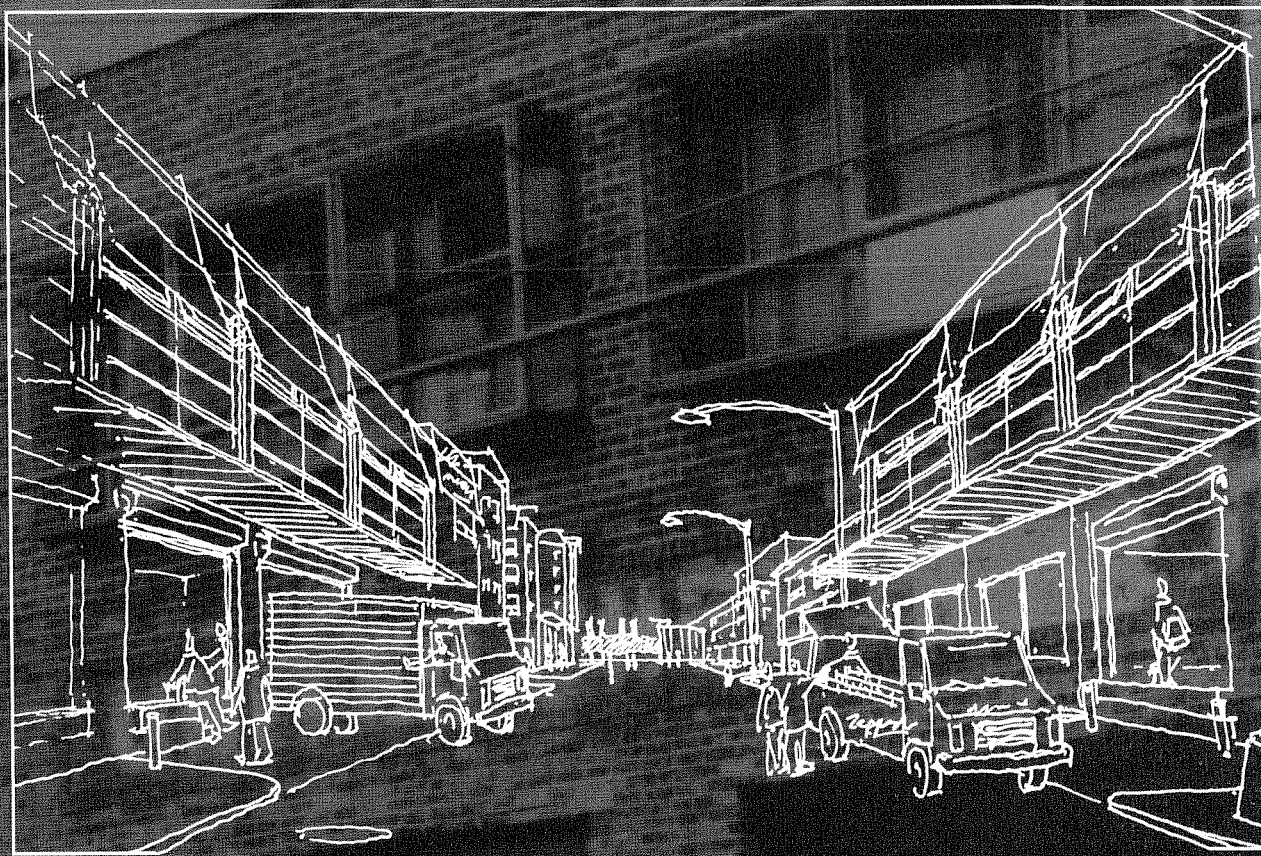
Manufacturing Communities

John A. Loomis

The U.S. currently faces two urban priorities: providing jobs for a diverse population and rebuilding neighborhoods. While urban areas from South Central Los Angeles to the South Bronx epitomize the unraveling of our cities' economic, physical and social fabrics, the potential for linking urban policy and industrial policy is rarely considered. The revival of urban manufacturing is a viable opportunity for creating jobs and rebuilding communities.

Cities have traditionally been places of production. Today, however, conventional wisdom and the real estate industry favor service sector development in cities, ignoring the role manufacturing can still play in urban economies. This missed opportunity undermines a city's economic diversity and social welfare.

The key to an industrial renaissance in U.S. cities lies not in large, traditional, smokestack industries but in the nation's 20 million small manufacturing concerns, most of which employ fewer than 50 workers. These small and flexible firms are a major economic engine; production in this sector employs two-thirds of the country's blue-collar workers and is



growing faster and creating more new jobs than any other sector of the manufacturing economy.

Many of these firms flourish best in urban environments. They exist as clusters of compatible and interrelated production facilities; consequently, proximity to each other is important. They act as specialized suppliers to large producers, providers of specialty products for exclusive niche markets, or makers products for local and regional distribution; therefore, proximity to marketing and financing operations typically found in center cities gives them a competitive edge. New forms of production, organized into the small firms described earlier and increasingly reliant on computer technology, take up less space and are more urban friendly than their smokestack forebears.

In New York, the garment industry is an example of a still important and evolving manufacturing network. Advances in technology increasingly enable New York firms to specialize in small, specialized orders for which close communication with designers and marketers and quick turnaround time are critical. Sources of future growth include high-value-added spe-

Background: Street life in mixed-use neighborhoods like Northside, Brooklyn, is animated by manufacturing activities.

Above: A proposal for extending the mix of buildings and uses characteristic of Northside onto abandoned waterfront property.

(Photos and graphics © John A. Loomis, unless noted otherwise.)

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Bedford Avenue, Northside's well-tended main street, also includes a mix of community serving retail and office space. (Todd W. Bressi)



cialty production activities like metalworking, woodworking, food processing and electronics assembling — all operations that could be compatible with mixed-use communities.

Manufacturing and Urban Form

A rich mix of functions woven throughout the city, in plan and section, has characterized traditional manufacturing cities. Before the Industrial Revolution, craft production was tightly knit into the urban fabric, often taking place in small buildings that were indistinguishable from or included residences.

In the late nineteenth century, these relationships began to dissolve for a number of reasons, including the advent of Taylorized, assembly-line manufacturing processes and the emergence of national markets for manufactured goods. The scale of production grew and so did the impact of factories on cities: Critics noted unsafe and unhealthy urban industrial conditions and the negative impact of industry on residential and commercial property values. Public officials sought to segregate industry from other functions, particularly through zoning, and industry often found it difficult to find suitable sites in built-up cities. As a result, hazardous and unhealthy industrial activities began to disappear from cities, but the increasing compartmentalization of activities diminished the diversity of urban life.

There still exist, however, in many cities across the country, mixed-use manufacturing and residential districts formed prior to the codification of modern zoning. Parts of the “flatlands” in Berkeley and Oakland, Calif., neighborhoods in South San Francisco, New Market in Boston, East Cambridge and many other communities that ring the urban cores of American cities are living examples of this type. Many of them are still vibrant

and vital, defying the conventional wisdom that favors separation of functions. These places can be both loci and models for urban industrial revitalization. They have much to offer in terms of existing infrastructure, services and a local work force with a vested interest in the community. An understanding of the physical and social elements of these communities could lead to creative new planning and development strategies for new mixed-use communities.

Brooklyn's Northside: A Model of Mixed Use

Brooklyn is home to several traditional mixed-use neighborhoods, such as Sunset Park, Red Hook, Greenpoint and Williamsburg. Each functions as a small town containing a “main street”-style commercial district as well as schools, churches and parks serving the local population. Each includes a variety of kinds and scales of activities (production, retail, housing) that are housed in a variety of building types and interact to form a productive community. Walking to work is a way of life in these places, with residences and workplaces located a short distance from each other or actually sharing the same blocks and streets.

Northside, across the East River from Manhattan, opposite 14th Street, is a representative mixed-use, manufacturing-residential community of about 11,000 inhabitants. Despite the decline in manufacturing in New York, Northside still supports a diverse range of production activities that largely serve markets in the metropolitan area. They include food processing, metal spinning and stamping, steel fabrication, woodworking, and the manufacture of textiles, garments, corrugated paper products and plastic bags — activities that contribute to the 4,000 production jobs found in Williamsburg.



Several generations of industry, in this case beverage bottlers and distributors, have located in Northside. (Todd W. Bressi)

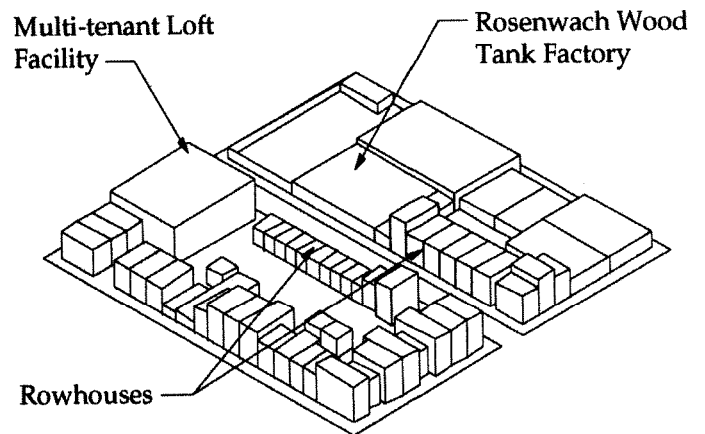
These activities form a network of small, local enterprises that contribute to the diversified economic base of the neighborhood, providing employment for its inhabitants and helping to support other local service and commercial businesses. Northside's population is mostly Polish and Hispanic, and it is also experiencing an influx of artists, driven out of Manhattan in search of affordable studio space.

Bedford Avenue serves as Northside's main street, providing a physical, commercial and social spine for the community. On this street, ground floors are given over to commercial uses, predominantly neighborhood retail in character — grocery stores, bakeries, coffee shops, travel agencies, etc. The floors above these stores are mostly residential.

Around the node of Bedford Avenue between Sixth and Eighth streets, blocks are predominantly residential and lot sizes generally conform to the city's standard of 25 by 100 feet. As one moves east or west, building uses change to production and warehousing, but not evenly. Lot sizes also tend to become larger and the massing of buildings sometimes increases with the lot size, but not always. This transition from residential to production uses results in many blocks whose uses and building types are heterogeneous and in buildings that accommodate a variety of uses.

The social patterns of neighborhoods like Northside are as varied and rich as their physical patterns. The social life of the street takes its character from the mix of building types and uses along it. One neighborhood in Northside worth examining contains the Rosenwach Wood Tank Co., a well-established business on North Ninth Street between Wythe and Berry avenues.

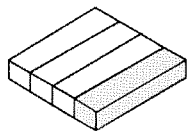
Rosenwach, which has made wooden water tanks for New York City for generations, is an example of a good neighbor, an urban friendly industry. Though Rosenwach takes up half its



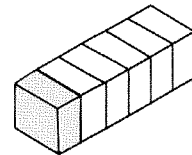
A block of North Ninth Street in Northside, showing relationship of Rosenwach Wood Tank Co. to adjacent residences and industry.



The small-lot workshop, the basic productive cell of the neighborhood, generally accommodates craft, production or repair activities employing only one worker.



Row houses next to a small-lot workshop. Row houses can be used for residential, commercial or production purposes, and can accommodate one or several tenants.



block, it in no way dominates the tree-lined street. The rest of that side of the street comprises five-story, residential row houses. The opposite side of the street is anchored by a multi-story, multitenant manufacturing facility; the rest of that side also comprises residential row houses, notably eleven charming, two-story cottages with small front gardens facing the Rosenwach shop.

On sunny days residents of these cottages sit in their well-tended gardens, watching the comings and goings at Rosenwach. The coiling doors of the production shop are open to the street. The whirring saws and other production activities are part of the life of the street. A forklift scooting in and out and around the corner to a storage yard is a part of normal activity.

Nearby, on North Sixth Street between Berry and Wythe avenues, production is spread among a network of independent food processing, distributing and warehousing companies. Many of the buildings have residences above, where artists live and work. The street functions less as a social space and more as a collective loading dock. On work days, during business hours, commercial activity is heavy, but on weekends residents relax on the loading platforms as if they were broad stoops.

Streets like these breed a familiarity between the residents and the workers. They regularly wave to each other and cross the street to chat. The diversity of building types and activities

along the street contribute to, rather than detract from, the success, harmony and stability of the neighborhood.

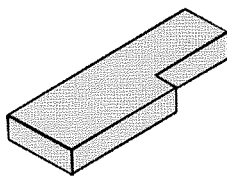
Building Types and Combinations

The diverse mix of economic and social activities in Northside is enabled by a mix of building types common to many New York mixed-use neighborhoods. These commonly found types are background buildings, characterized by architectural anonymity; they are modest structures that nevertheless form the overall fabric of the community. Their form, the ways they are occupied and the ways they are organized within blocks provide valuable urban design lessons. Different building types support different activities, so a mix of buildings along a block contributes to a rich experience of everyday life along the street.

Multistory Lofts are found where lot sizes expand from the standard 25-by-100 feet. These buildings tend to have large footprints and rise from three to twelve stories, serviced by elevators and, usually, a loading dock. The generally large floor plates and sturdy construction make them flexible and easily subdivided and suitable for a variety of uses. Some still accommodate multiple manufacturing tenants and others, because of their large, well-lit floors, have more recently become live-work space for artists and artisans. Others lie vacant due to the



Infill production buildings offer broad, one- or two-story spaces. They provide accessible and flexible production space integrated into a mixed-use block.



economic forces that have caused the decline in many areas of urban manufacturing.

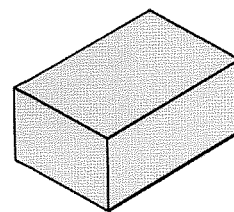
Pancake Production buildings dominate areas further away from the neighborhood's center, toward the river. They are broad and flat, are exclusively one story (sometimes with a mezzanine) and often have large footprints, which make interior subdivision easy. These buildings are utilitarian and often present an unfriendly face to the street, contributing little to it as a social space. Nevertheless, they serve a definite economic need by providing inexpensive, accessible storage and have the potential to become flexible production space.

The *Infill Production* type is a hybrid between the Multistory Loft and Pancake Production types. It takes on various configurations — flanking a street, wrapping a corner, or weaving through the block — and ranges in height from one to two stories. These buildings generally are used for production, not storage, and they are usually quite compatible with the neighborhood's scale and context. Metalworking and woodworking activities are often found in these buildings.

The *Row House* type is remarkably flexible in terms of use. It is predominantly found on 25-by-100-foot lots, is typically three to five stories tall and generally repeats itself along the street. Along Bedford Avenue, row house ground floors are often occupied by commercial activities; on cross streets, ground floors are sometimes occupied by productive facilities;



Multistory lofts next to residential rowhouses. Lofts tend to be solidly built and offer large floor plates; they can accommodate large companies or multiple tenants.

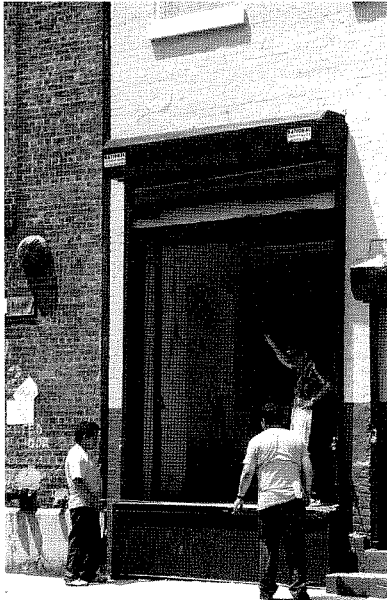


in some places, the upper levels are used for storage. Even within a row house that is exclusively residential or production, there may be multiple tenants.

The *Small Lot Workshop* is the basic productive cell of the neighborhood. This type of building characteristically covers part or all of a 25-by-100-foot lot and is one story high, sometimes with a mezzanine. Where it does not extend the full depth of the lot, it accommodates a rear service yard and, sometimes, a residence at the back. Like the row house, it is often found in a series. These buildings generally accommodate craft, shop-production or maintenance-repair activities employing only one or two workers.

Northside's geometry is defined by rectangular blocks, generally 200 by 400 feet, that accommodate many types of subdivision and arrangements of uses. While the block is the basic module of urban form, the street is the organizer of urban activity and the means through which the urban environment is experienced. The ways that different building types are combined along streets, particularly their groupings and relative locations, affect the nature of the communities that form along each block.

The purely *Residential Block* is rare in Northside but common in other neighborhoods. It is made up predominantly of rowhouses with backyards and occasionally includes apartment buildings. Its friendly, tree-lined sidewalk, greeted by stoops reaching out from the residences, is a familiar, welcoming sight.



Above: After work hours, stoops and loading docks become places for play and relaxation.

Below: Northside is characterized by a mix of building scales and types.



The exclusively *Production Block* is quite common around the periphery of Northside, especially toward the river. While this type of block might be homogenous in use, it might not be homogenous in building type and scale, accommodating a mix of all five types described earlier. Where there is active production taking place, the street can be full of activity. But if the buildings are used as warehouses, or are empty, the street can become a desolate place.

The clustering of residences in mixed-use areas, both side by side and across the street from each other, tends to create friendlier streets than situations where residences are very scattered or individually isolated in mixed-use blocks and streets. By observing the urban form and social life of Northside, it appears that at least 30 percent of the street frontage needs to be residential in order to create a critical mass for a friendly neighborhood.

Northside is a patchwork of mini-neighborhoods composed of these street and block relationships. Some mini-neighborhoods are more successful and vital than others. Their success might depend, for example, on the degree of residential clustering or the relationship of loading and materials handling to the neighborhood. When deliveries are an occasional occurrence and are handled by medium-sized vehicles, they do not tend to conflict with residential activities. Where deliveries are frequent or require large tractor-trailer trucks, they are best served when they are grouped to one end of a block or located on a side street.

Toward a Mixed-Use Enabling Strategy

Mixed use can occur on different scales: within the community at large, divided into different groups of blocks of like uses; within blocks and along streets; and within buildings themselves, with the building's section being a framework that accommodates a diversity of functions.

Mixed-use communities are complex systems, at first glance seemingly random and disordered. But like all complex systems, clusters of order exist. These clusters have formed around nodes that generate other development. A node could be a small factory, a group of related workshops, or a series of residences that support further development.

These clusters of order, such as the Rosenwach block, are themselves systems that have occurred more or less spontaneously at different times throughout the community. The clusters of cottage row houses and standard row houses provide a critical mass of neighborliness. The clustering of the tank factory and the multistory loft building gather the loading activities along the street.

Northside's patterns of use, clustering of building types, block types and hierarchies of circulation can be extrapolated into a "kit of parts" that can help direct the design of infill projects and larger development along the waterfront. Prototypical arrangements may be prescriptive in terms of size and scale, but not necessarily in terms of use.

Reviving The Brooklyn Eastern District Terminal

Northside is bounded on the west by the now abandoned Eastern District Terminal, from whose docks and warehouses materials and goods were once shipped to and from the many factories throughout Williamsburg and Greenpoint. The freight terminal's docks and warehouses, which occupy a stretch of waterfront along Kent Avenue, have been neglected since the terminal was abandoned in 1985.

This site could be developed as a new mixed-use addition that respects the positive natural ordering and organization of diverse uses found in the successful street and block formations in the existing community. Small- to medium-sized flexible manufacturing concerns — the smart, flexible and urban-friendly firms described earlier that offer the potential for economic growth — could be accommodated. The plan could also introduce new interventions, such as a public promenade at the water's edge.

Northside's existing block system could be extended through the terminal site west to the river, respecting the fundamental framework of the neighborhood and providing the opportunity for blocks and streets that are friendly to a variety of uses (including various scales of residential and production space). This strategy would maintain view corridors to the river and Manhattan and allows Kent Avenue (a major thoroughfare for passenger vehicles and for moving goods) to continue as a permeable seam between Northside and the terminal area.

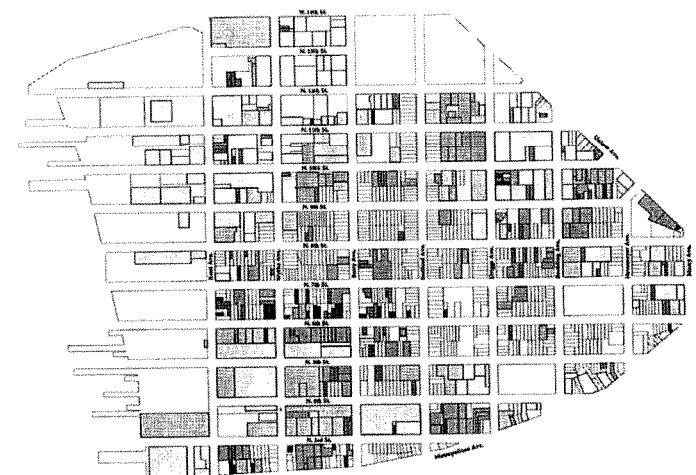
Kent Avenue would be lined with new and infill multistory mixed-use buildings, reflecting the massing of the existing fabric. The ground and, perhaps, the second floors would be given over to the type of factory outlets and discount warehouses that already exist along other parts of Kent Avenue to the north and south. This retail activity would support local production and activate Kent as a commercial strip with pedestrian and vehicular activity. Open lofts above the commercial space would provide flexible production or live-work space.

The northern and southern ends of the new development would consist of multistory, multi-use production facilities. One would consist, in part, of an existing multistory production facility; the other would be entirely new construction. They would be similar to the Brooklyn Army Terminal or



The mix of production building types in Northside.

- Row house
- Infill production
- Small-lot workshop
- Multistory loft
- Pancake production



- Commercial
- Production
- Residential/ground floor retail
- Institutions
- Residential
- Park/vacant

Bush Terminal (historic loft facilities in Sunset Park, Brooklyn, that are almost entirely leased) — providing flexible production space for a variety of businesses and would also provide amenities for common usage, such as loading, storage, cafeteria, classrooms and community meeting spaces. They would be connected by a new north-south avenue lined with mixed-use row houses that would tend to favor production activities.

The cross streets would be composed of row houses that could be used for both residential and production activities, concentrated around Seventh and Eighth streets, giving way to a mix of small-lot workshops and infill production facilities as one moves to the north and south. The mix would favor residential uses in the central area and shift to production as one moves toward the large complexes at the north and south ends. These streets are intended to welcome a rich and diverse mix of residential, production and live-work uses.

Finally, the waterfront is a wonderful potential public amenity. Since it is no longer needed for the delivery of goods, there is no reason that it should not be given over to public activity. Its edge would be marked by a new north-south avenue and esplanade with attached public access piers. Apartment buildings looking toward Manhattan would line the avenue, which would terminate to the north at a public plaza and passenger ferry stop.

The development of a project like this would, of necessity, result from a creative joint-venture, public-private initiative; it does not have any precedents in the private sector. But the project does have very real precedents in the way mixed-use communities function and in the way mixed-use communities take shape physically.

Industrial Policy, Urban Policy

All too often, production has been forced out of cities by misguided public policy and short-sighted economic priorities that have favored the service sector. While manufacturing may never resume the dominant role it once had in cities, it nevertheless can still be an important component of a diverse, successful urban economy. Flexible technologies, custom manufacturing and other new forms of production offer new opportunities for urban manufacturing and the resurgence of mixed-use communities.

Successful productive activities should be encouraged to remain in the city and new ones should be encouraged to become part of mixed-use urban environments that support a healthy mix of living and working. There would be many economic, social and urban benefits to encouraging manufacturing to continue as part of established urban communities.



Above: Northside's manufacturers depend on the presence of skilled laborers in the neighborhood to fill jobs.

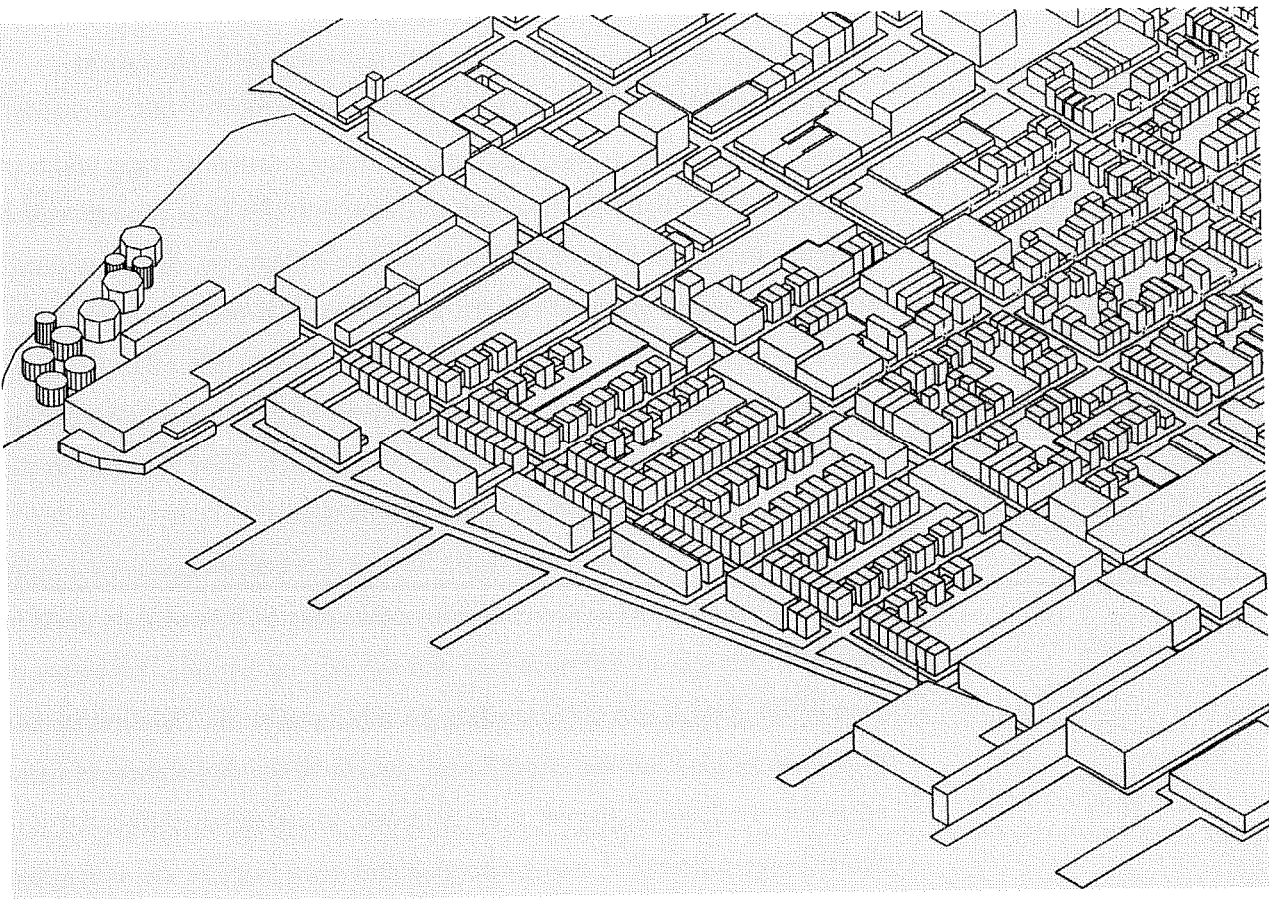
Below: A food preparation company and residences share one Northside block.

(Photos by Todd W. Bressi)





Perspective of a typical street in the proposed redevelopment of Brooklyn's Eastern District Terminal. (Drawing by Irv Glassman)



Computer-rendered drawing of proposal for Brooklyn's Eastern District Terminal, showing the mix of building types and blocks characteristic of Northside.