

Reclaiming Residual Space from Elevated Transport Infrastructure

Time, Space, and Activity under the Chicago Brown Line

By
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July 2000

[ROTCH]

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ABSTRACT

This thesis studies the non-transport functions of the residual space generated by elevated transport infrastructure and its relationship with abutting neighborhoods. The space under the Chicago Brown Line, among all other elevated train lines, is often considered as an undesirable and useless urban eyesore. As part of the transit authority's right of way, such space is usually labeled "mass transportation corridor" on planner's land use maps. However, more careful observations reveal that a considerable portion of the land underneath the train tracks has been actively used by the adjacent residents or business owners for a variety of purposes other than providing transit service.

These observations place an interesting question mark on the stubborn negative common perception of the residual space associated with the elevated train lines and other large scale transport infrastructure: why the fact that such residual space is actually being used cannot change the notion that it is not usable? By categorizing the observed activities under the Brown Line into private, quasi-public, and public use types, it is clear that most of the spontaneous reclamation actions are intended for private activities. This in a sense indicates that private activities have limited contribution to the entire image of the social character of the residual space. Analysis of the physical characteristics of the residual space shows that although the physical condition of a given plot of residual space does not determine the occurrence of activities on it, the quality of the physical environment is an important factor of the quality of the social activity. Therefore, this thesis argues that one effective way to reclaim the residual spaces both physically and psychologically is to showcase a series of key projects that transform them into delightful places well-programmed for public/quasi-public activities.

Following this argument, the main body of the thesis explores strategies of reclaiming the residual space by presenting cases of similar practice in other places and proposing implementation prototypes designed for the Brown Line. The lessons learned from the case studies and the design exercises are conceptualized into guidelines that cover a broad range of considerations from engaging participants, programming activities to spatial design and temporal planning.

In all, this thesis attempts to provide alternative view points for the transit authority to upgrade, manage, and maintain its right of way, to urge city planners to look into flexible and overlapped land use patterns, and to express my strong belief in good urban environment.

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Introduction

Topic and Motivation

Urban trains provide high-efficiency public transit service crucial to mobility in high-density cities, because they conserve land, resources, and energy that would otherwise be required for private automobiles. However, in a way that is similar to their modern expressway counterparts, the not-so-elegant structures of elevated train lines cut through the neighborhoods ruthlessly. When being erected, they tear down buildings, wipe out backyards, and deprive people of the activities that once took place in these spaces. On top of the structure, trains packed with people traveling from place to place vitalize the city; under the structures, wild plants and accumulating trash gradually blight the neighborhood.

The Brown Line in Chicago is no exception.¹ Except for station head houses and a few CTA facilities, originally, the space underneath the elevated EL structures in Chicago was not designed for any transportation functions. Thus, these spaces became "residual spaces" that do not provide direct utility and benefit to the transit authority and transit users. However, over the years, many residents and business owners who live or work right beside them have been actively readapting these residual spaces for various activities that are beyond the scope of transit services.

In this thesis, I will study the non-transport functions of the residual spaces generated by elevated transport infrastructure and its relationship with the abutting neighborhood.

My interests in these seemingly unattractive spaces started with my experience as a regular rider of the Chicago Brown Line for an entire summer. When I occasionally peeked behind the fence of the stations, the scenery always made me feel uncomfortable: an inaccessible place perfect for accumulating dust and trash. After finding the dark backyard of the stationhouses, I could not help wondering what it looked like between stations. Working as an intern for the Brown Line capacity expansion project, I learned that the scope of design work of the line renovation was basically confined to the immediate station area as if the whole alignment were no more than 18 isolated

¹ *Among all the elevated train lines in Chicago, I have particular interests in the Brown Line for a number of reasons. First, the Brown Line winds its way through very active and dense urban areas consisting a variety of neighborhoods. Second, the Brown Line has a very long history. The characteristics of the residual spaces underneath evolve with their neighbors' efforts both to adapt themselves to the particular living condition and to adjust the environment for their daily life. Third, the Brown Line is currently undergoing a major capital improvement program. This offers a good opportunity to study the entire corridor systematically.*

spots. This made me think about whether the long corridor could be more effectively used so that there could be fewer dark backyards. When curiosity and concern grew into a serious research topic, I decided to take a walk along the entire Brown Line corridor. Not surprisingly, I was struck by quite a few deserted spaces spotted with litter. Yet I also saw gardens growing, cars parking, buildings filling, streets extending. This field survey raised my initial research questions:

- How are the residual spaces under the elevated used and who is using them?
- How do people feel about such space? Why do most people take them as desolate urban eyesores although in fact a lot of spaces are actively used?
- How can we use these residual spaces more effectively?

Necessity and Significance of Reclaiming the Residual Space

My curiosity about the residual space under the train tracks has compelled me to observe it more closely and compare it with other places where creative projects have been done to transform the space. The more research I do, the more I feel that this is not trivia to the transit authority or the neighborhood.

If not treated properly, the residual space may cause some problems to the transit authority such as:

- Liability and responsibility for maintenance
- Security consideration
- Zero financial income
- Negative transit corridor image

Although these problems do not seem to harm the transit operation directly, they have a strong long term impact on people's perception of the transit service and may affect ridership in the future.

Unused or poorly maintained residual space may also cause problems to the immediate neighborhood. First of all, it is a huge waste of an urban land resource. Moreover, such space is also a potential site for vandalism, which may impair the security of the neighborhood.

Background: a Brief History of the Brown Line

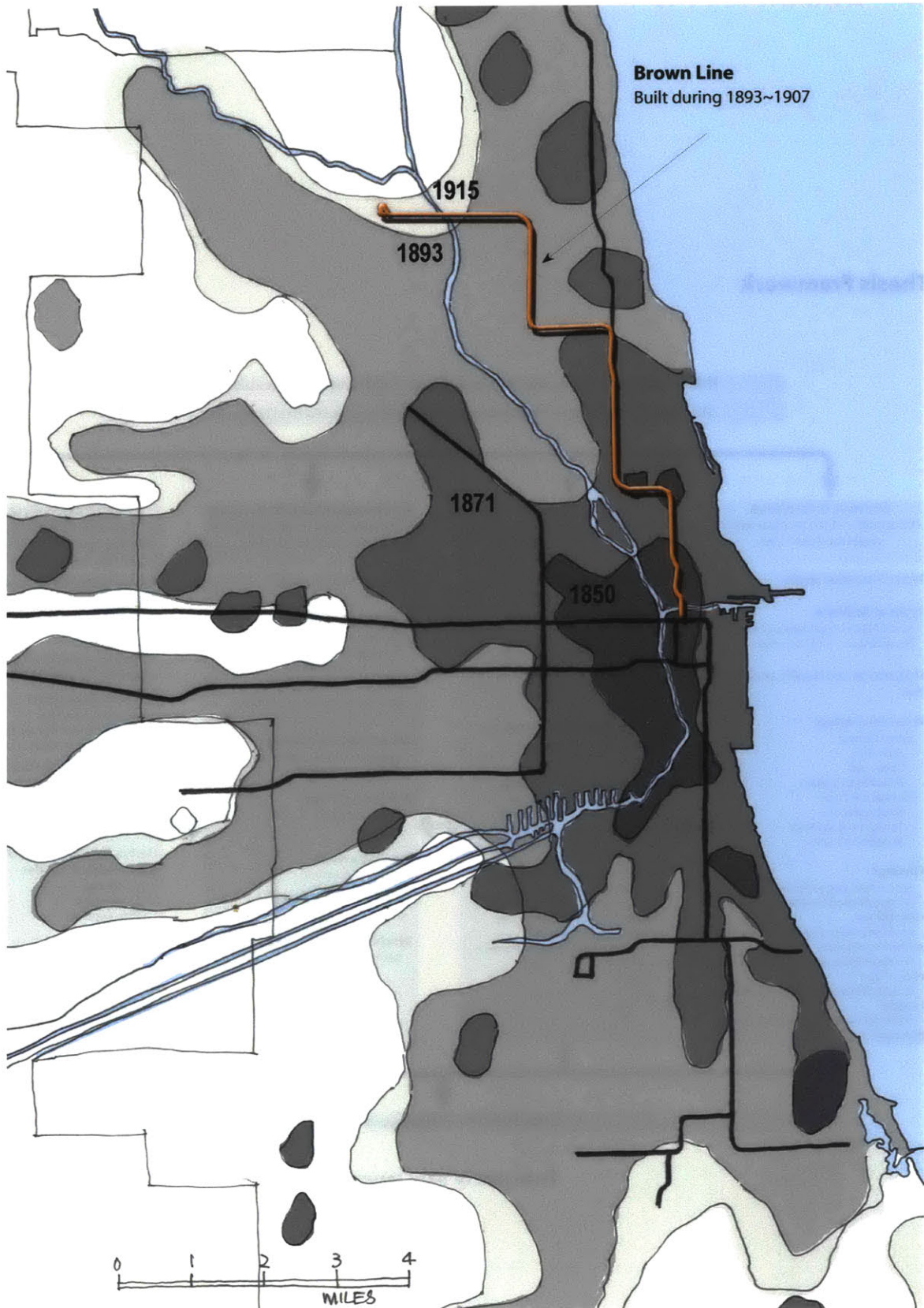
The Brown Line had a tortuous start. It began to be built at the end of the 19th century. From the very beginning, the Brown Line would encounter numerous difficulties. The Northwestern "L" was incorporated in 1893, it was not in full service until 1900 partly due to the depression of the mid 1890's. The final opening date of the full line did not happen until 1907.

For the ease of getting agreement from property owners the line would pass through, the Brown Line, (originally called the Ravenswood Line), was planned to zigzag through backyards and alleys. This hid the line behind the buildings that faced the street. Today, people still have a lot of backyard-kind of feelings towards the Brown Line.

As shown the map on the facing page, a transport infrastructure intertwined with the urban fabric. The Brown Line has been always serving a constantly growing and active community. It runs through important urban activity nodes.

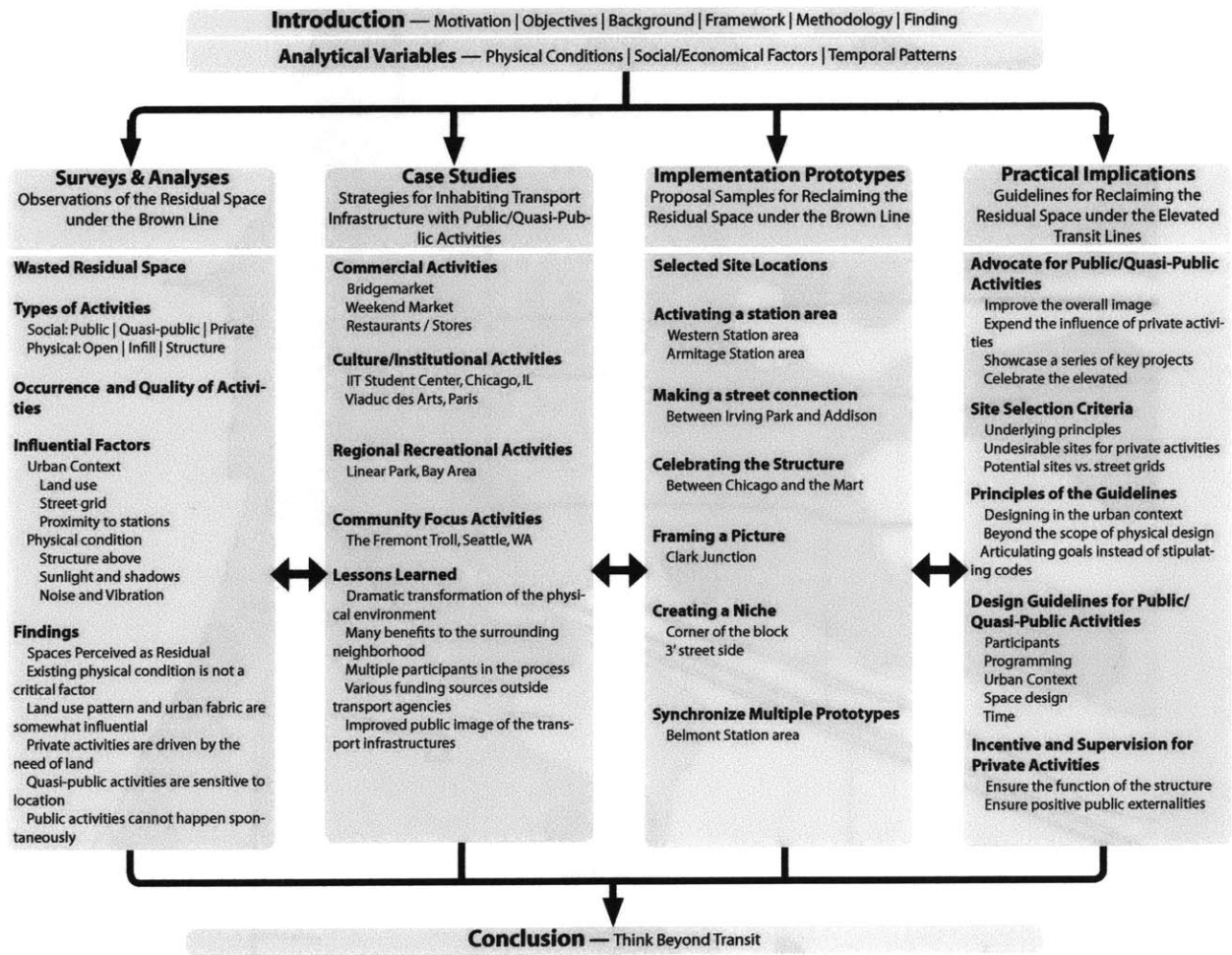
To survive the changing economics, the Brown Line, as well as other elevated rail lines has gone through dramatic institutional changes. It was initiated by individual private companies and later unified into a large corporation. For a time, it was managed by the regional transportation agency, and finally, a public agency, the Chicago Transit Authority, took full charge of the operation and therefore made the lines truly public.

Currently, the Brown Line is undergoing a major renovation project. All of the stations and platforms will be expanded to accommodate 8-car trains and to include elevators and better egress in the station area.



BROWN LINE ALIGNMENT AND THE GROWTH OF THE BUILT-UP AREA OF CHICAGO

Thesis Framework



FLOWCHART OF THESIS FRAMEWORK

Research Methodology

To make the writing simple and clear, these four components, survey and analysis, case studies, implementation prototypes, and practical implications, are presented in a linear sequence. However, it must be pointed out that the actual process of research has been filled with back-and-forth comparison and revision. Casual observation triggered my interests in the residual space under the elevated transit lines and urged me to look for examples of how other people deal with such space. The lessons learned from other cases requires me to do more observation and research on the Brown Line to see their application. The design exercise and the proposals are not the final product but are the tools to help me better understand the space. The ideas behind these proposals have been conceptualized into design guidelines that could have broader application. Again, the guidelines also guide me to revise the design proposals. Meanwhile the design exercise is also important for checking the validity of the guidelines. In a word, this piece of work is evolved from a reflective thinking process and the total understanding of space is gained from the constant interaction between passive observation and active design intervention.

Major Findings

- Existing physical attributes of the residual space are not the determinant of the occurrence of activities, although they are the prerequisite condition for any potential activities. However, physical attributes have strong influence on the quality of the activities in the space.
- Private activities are driven fundamentally by the need for extra land to support existing activities on adjoining private property. They can happen spontaneously.
- Quasi-public activities can occur spontaneously provided the location can bring the business enough benefit to compensate for the cost. Quasi-public activities in less favorable locations can still be feasible if there are enough incentives.
- The fact that public activities haven't happened spontaneously under the Brown Line does not necessarily mean that people do not need them. Encouragement from the city and the transit authority can provoke more demand for public activities for the residents.
- Public and quasi-public activities can be organized and maintained by both private and public owners. Strategies for reclaiming the residual space should involve various participants outside the transit authority for both implementation and maintenance.

Chapter 1 Survey and Analysis

Observations of the Residual Spaces under the Brown Line

Although seemingly trivial for the transit operations, residual spaces under the Brown Line are not entirely neglected. Besides the station head-houses and substations, the transit authority reserves part of the land for equipment and service. In one instance, the CTA has also made the effort to convert a back corridor into a public walkway that directly connects the train station with a major city street. The abutting neighborhoods, meanwhile, take a more active role in readapting the residual spaces under the El. Some adjacent residents have transformed the barren land under the track into planted yards and gardens; some adjoining business owners have utilized the vacant land for parking and service; and a couple of small stores suit themselves well under the tracks. Yet, still a large portion of the land under the elevated remains as no-man's land.

This chapter summarizes several field observations of the residual space under the Brown Line. By categorizing the observed activities under the Brown Line into private, quasi-public, and public use types and color-coding them on a map, it is clear that most of the spontaneous reclamation actions are intended for private activities. In terms of square footage, more residual space is being used than deserted. Analysis of the physical characteristics of the residual space shows that although the physical condition of a given plot of residual space does not determine the occurrence of activities on it, the quality of the physical environment is an important factor in determining the quality of the activity.

These observations lead to a preliminary conclusion that private activities, although exist widely, have varied quality and make a limited contribution to the overall image of the residual space under the Brown Line. Lack of high quality public/quasi public activity may be another cause of the underrated perception of the transit. Therefore, an more effective way of reclaiming the residual space under the Brown Line, both physically and psychologically, may be to showcase a series of key projects that transform it into delightful place that is well programmed for public/quasi-public activities.



1.1 Wasted Residual Spaces

Wasted no-man's land is a pre-conceived picture of the residual space under the elevated train tracks in my mind. Not surprisingly, quite a few vacant lots were observed under the Brown Line. Some lots underneath the Brown Line structure are either densely covered by wild plants or being used as a place to dump trash. No human activities were directly observed during the field surveys. Some unused spaces under the train tracks are fenced off to keep people away. Even in such spaces, litter can be found. However, it should be noted that from its appearance, sometimes it is hard to tell whether a dilapidated space is totally wasted, reserved for future use, or currently in use but very poorly maintained. All of these situations render an image of a desolate space under the tracks, and are considered "wasted" in this thesis.



Residual space with no activity or attendance is considered to be the most undesirable space under the train tracks, because it has a negative impact on the transit authority, the abutting neighborhood and the city as whole. Deserted space not only wastes a precious land resource in a dense urban area, but also forms a base for vandalism. The presence of such spaces adds an insecure sense to the adjacent neighborhood. When it is associated with the transport infrastructure, it impairs the overall image of transit service. An objective of this project is to eliminate such no-man's-land wherever possible.



1.2 Types of Activities under the Brown Line

Several field surveys have revealed that in terms of square footage, more space under the Brown Line is currently being used than is deserted. To better understand various activities and their impact on the overall image of the residual space under the train tracks, observed activities under the Brown Line are categorized on the basis of their social and physical characteristics. Based on the social characteristics, different activities are grouped into private, quasi-public, or public types. This categorization focuses on the relationship between the people who participate in and people who are responsible for the activity. Based on the physical characteristics, different activities are grouped into open air, enclosed, and on-structure types. This categorization focuses on the location where the activity occurs and the type of construction involved.



PRIVATE



QUASI-PUBLIC



PUBLIC

Category by social characteristics of the activity

Private:

The user is responsible for the activity participated in which she participates, thus providing utility exclusively to the user. Although some of the activities may have positive externalities to other people, this is not the primary intention. It should be noted here that in a private activity, the user can be either a single person or a group of people sharing the same responsibility and benefits. The latter one is viewed as collective private activity, which is still private in nature despite the fact that many people are involved. Most auxiliary residential and corporate uses belong to this category.

Quasi public:

In this case at least two groups of people participate in the activity at the same time. One group provides certain utility to the other, while gaining benefits directly from the other group's participation. The key feature of this quasi-public activity is the reciprocal relationship between the two groups. The one who is responsible for the activity has to provide utilities to the participator in order to gain expected benefit from the activity. Most commercial and service uses belong to this category.

Public:

In truly public activities, the responsible person does not gain benefits directly from the activities, although she is primarily concerned with the positive externalities of the activities. People who participate in the activity benefit from it but are not responsible for organizing and managing it. On the other hand, people who are responsible for the activity do not have to be present in the activity. Most municipal and community uses belong to this category. Institutional activities are also deemed as public in this report.

Category by physical characteristics of the activity

Open Air:

Private activity in open space is primarily auxiliary use to an abutting building or lot. In single family residential areas, private activities in open space under the EI include yards and gardens, parking, and driveways. The space underneath the train line is also used for surface parking lots for multi-family apartments.

For industrial and corporate buildings, the adjacent residual spaces under the EI are used as parking lots, outdoor storages, loading docks, driveways, or service areas.

Open space for quasi-public activities is usually a consumer service or a gathering place in front of commercial buildings. Spaces for such activities are not necessarily at the station area. For example, an auto body shop uses the space under the tracks on Lincoln Avenue as its front yard. Commercial parking is another type of quasi-public activity observed along the transit right-of-way.

Open space for public activities observed along the Brown Line takes form in plazas, streets, alleys, and walkways. The only plaza is observed at Lincoln Square Plaza besides the Western Station. Although planned for public gathering and resting, and located right on a commercial and transit node, this plaza is not very well used by the public.

Streets and alleys are the major types of public uses under the Brown Line guideway. Such spaces are unquestionably public, since they are maintained by the city and open for everyone for walking or driving. However, it should be noted that in Chicago, such street and alleys have been existing before the EI was erected. They continue to be used without much influence by the structure. In this sense, they are not typical examples of reclaiming residual space for public uses.

The walkways linking to the train station need to be specially pointed out here, because such walkways are clearly CTA's effort to actively exploit the residual space to provide convenience for the transit riders and enlarge the practical transit catchment area. One of these walkways links Lincoln Street and the Western Station. "Unofficial" public use of the outdoor residual space has been observed. Trace of the frequent visit or pass-by suggests that people have been in fact using the space as a public space.



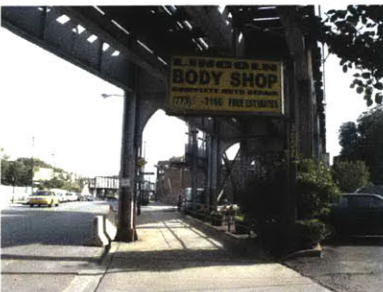
YARD AND GARDEN



PARKING



INDUSTRIAL STORAGE



COMMERCIAL FRONT YARD



PUBLIC WALKWAY



STREET



"UNOFFICIAL" PATH

Enclosed:

Three places along the Brown Line right-of-way have been filled with commercial buildings: an antique store at Western Station, a row of small stores at Belmont Station, and a restaurant/store at Fullerton Station. These buildings are typically one-story high with their entrance right in front of the train station. They are all privately owned commercial buildings that benefit from the proximity to the transit stations. Meanwhile, they provide services and gathering space for the neighborhood and transit riders and help to keep the street neat and active. By attracting more people to the station area, they also bring in more potential transit riders. In these sense, commercial infill building development around the station is considered here as quasi-public activity that has positive externalities.

Enclosed space provides better weather protection, accommodates more complex indoor activities, and makes the activities more formal and longer-lasting. However, due to the extensive construction work and complicated legal/contracting process involved, only a handful of infill buildings under the Brown Line have been built. Among the three examples mentioned above, two were built before the CTA began to take charge of the elevated train system. Moreover, neither enclosed public nor indoor private use is observed under the Brown Line. The transit authority can hardly justify the cost of infill building for non-transit public use. The current leasing agreements, parking, yard and garden, and concessions, do not allow construction without special permission.

On Structure:

First, there are objects attached to the structure that do not provide any amenity to the activities on the ground. Neither is there any value in their visual presence. Cables and wires are an example of such appendages.

Second, there are objects attached to the structure that directly facilitate the activity happening in the area. Lighting fixtures and drip-pans are among the most common appendages in this category. In residential areas, people also use the structure for planting vines or even hanging swings.

Third, there are objects attached to the structure taking advantage of the visual prominence of the structure per se. For example, advertising billboards and various signs are found attaching to the structure. At the Belmont Station, public art work is hanging over the street. However, more commercial signs are observed than public art work.



ANTIQUA STORE AT WESTERN STATION



SMALL STORES AT BELMONT STATION



RESTAURANT/STORE AT FULLERTON STATION



POWER CABLE



ART WORK



COMMERCIAL ADVERTISEMENT



SWING

1.3 Occurrence and Quality of Activities

After categorizing the observed activities under the Brown Line into social- and physical-types, a further step was taken to examine where and how they occur, and how they build up the overall image of the residual space under the Brown Line. With limited time and resources, quantitative statistic analysis could not be accomplished. Instead, the analysis is done in a graphical way by color-coding different types of activities on a map. To study the quality of the activity under the Brown, different scenarios of each type were displayed and compared.

Occurrence of Activities under the Brown Line

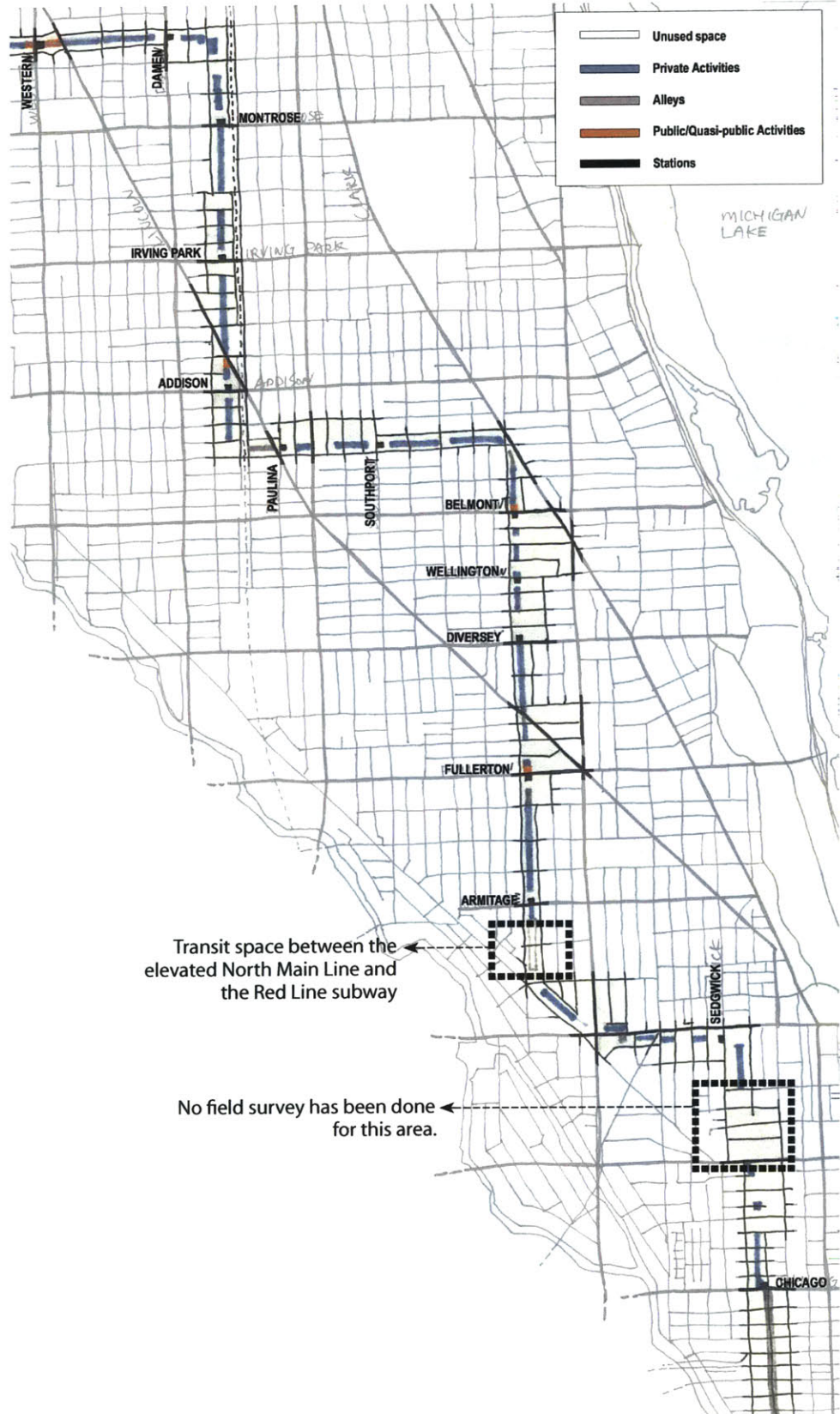
The map on the opposite page records the result of several field surveys along the Brown Line. Residual space used for private activity is marked blue; alleys or streets under the train tracks are marked grey; residual space for other intentional public and quasi-public activity is marked orange. Stations are drawn as black dots on the map. Totally unused space is left blank. Nearly every foot under the elevated portion of the Brown Line has been observed and recorded either by photo or by notes, except for one four-block stretch where I did not walk for security reasons.

Although eyeballing and hand-drawing have certainly introduced inaccuracy, mapping has turned out to be an effective way to reveal the overall picture of the residual space under the Brown Line. The map of occurrence of activities confirms several impressions of the residual space under the Brown Line in my mind:

- Public and quasi-public activities are very rare. They tend to take place near stations.
- Unused residual space spreads all over the line but does not distribute evenly. No-man's-land tends to cluster around specific sites.

However, one story told by the finished map was quite unbelievable to me at first. After a few walking trips along the Brown Line, I have established a picture in my mind that approximately half of the residual space is used in some way while half is deserted. Shockingly enough, the map clearly shows that most of the residual space is used in some way, mostly for private activities. Completely unused space only occupies a small portion of the entire corridor in terms of square footage. The possibility of major mistakes in the map-making process was basically eliminated after double checking my notes and the over 500 photos taken along the line. Although I cannot fully explain why the camera and the brain have different memories, I think at least two factors contribute to discrepancy between the real picture and the mental picture:

- Private activity may have made very limited impression on one's mind. Most types of private activities have a homogenous image. It is not very easy to tell the difference between parking lot A and parking lot B. Therefore, the remembered sites used for parking may be much less than the actual number of sites because they are too similar to make impression. Further, private activities are usually not the focus of the shared memory of a community because they do not involve multiple participants as public or quasi-public activities do. Seldom will two neighbors compare the 10 back yards and driveways under the train tracks in their block. Even less likely would one use this as a conversation topic with a visitor to the neighborhood. Thus, private activities usually do not have strong impact on the collective memory of the residual space.
- However, space used for private activities does make an impression when it is exceptionally good or bad, or very unusual. This is the information that is not shown on the map. Regardless of the quality, as long as it is used as a backyard, the residual space is labeled "private activity" on the map. In reality, for those badly maintained backyards, my brain might remember them as dumpster and thus label them "deserted space". This also partly explains why the unused space made stronger impression than the well-used private yards: Without regular maintenance, unused space is often in very bad shape. Compared with the nice streetscape in the northern part of Chicago, the nice private yards are not very outstanding, but the deserted space is notably shabby. In a word, although it occupies a much smaller portion of the residual space than private activity does, unused and unattended space has much stronger impact on the overall image of the space under the transit line. Very sadly, it is a negative impact.



Transit space between the
elevated North Main Line and
the Red Line subway

No field survey has been done
for this area.

MAP OF OCCURENCE OF ACTIVITIES UNDER THE BROWN LINE

Quality of Activities under the Brown Line

Strictly speaking, the definition of the quality of activities could be very complicated. It should include a series of measures that can indicate all aspects of an activity. To make it simpler, in this thesis, only two factors are considered: how well is the activity programmed and what is the physical condition of the place where the activity happens. Contrasting photos are shown below for each type of activity. Quality of activities in the residual space under the Brown Line varies noticeably. In summary, private activities are in various conditions. It is not appropriate to measure the quality of private activities in a single standard. Quasi-public activities have positive externalities to the neighborhood. Their physical condition varies. Public activities are rare and the spaces that support them are in poor shape.



Private backyard

Quality of the backyards under the tracks varies dramatically. At the same time, there is no, and should not be, any standard to “measure” the quality of private backyard.

Parking lots

Residual space under the tracks that is used as parking lots also varies in quality. Some lots are paved with asphalt with painted lot lines. In other space, cars park wherever they can on the unpaved ground.

Open-air quasi-public use

Business owners also treat the residual space adjacent to their stores/restaurants differently. Some include the residual space as part of their front yards. Others see it a leftover space outside their properties.

Enclosed quasi-public use

The three sites with infill quasi-public buildings under the tracks are basically in similar condition. Although these buildings are nothing fancy, they help keep a consistent street front and animate the urban life. In this sense, they have y good quality of being a good neighbor in the city.

Public use

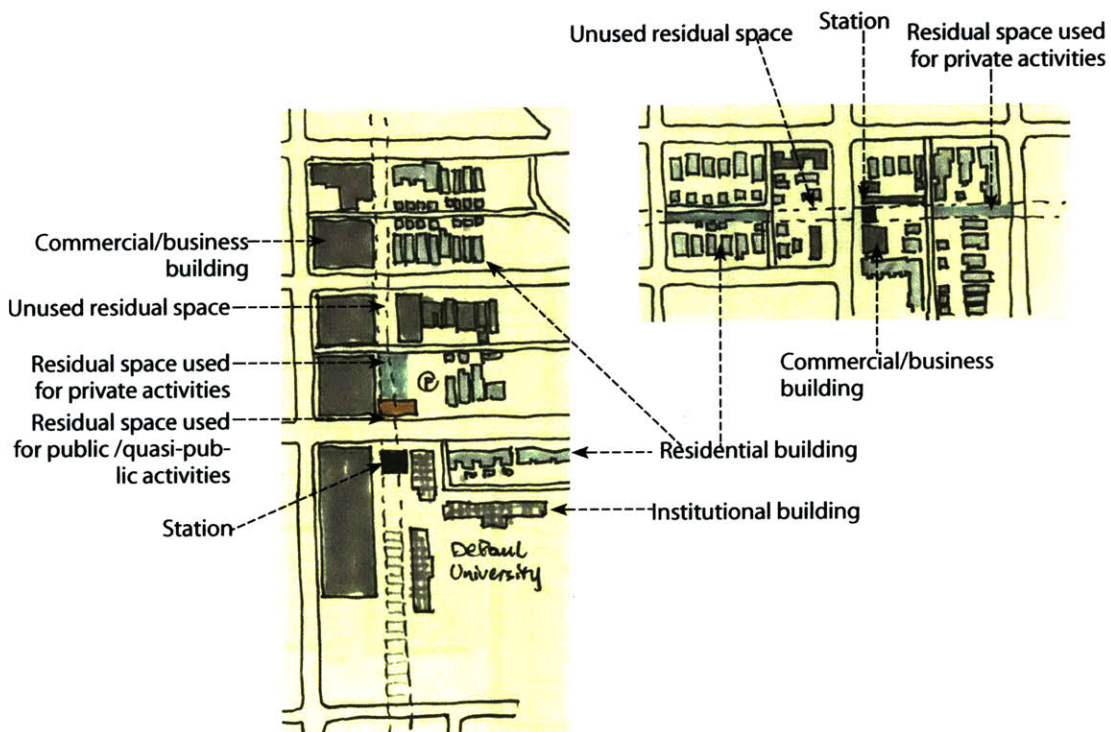
Public activities are very rare along the Brown Line. The public walkway at Western Station is the only case observed. Unfortunately , it is not in very good condition. No examples of high-quality non-transit public activities, neither outdoor or indoor, have been observed along the Brown Line.

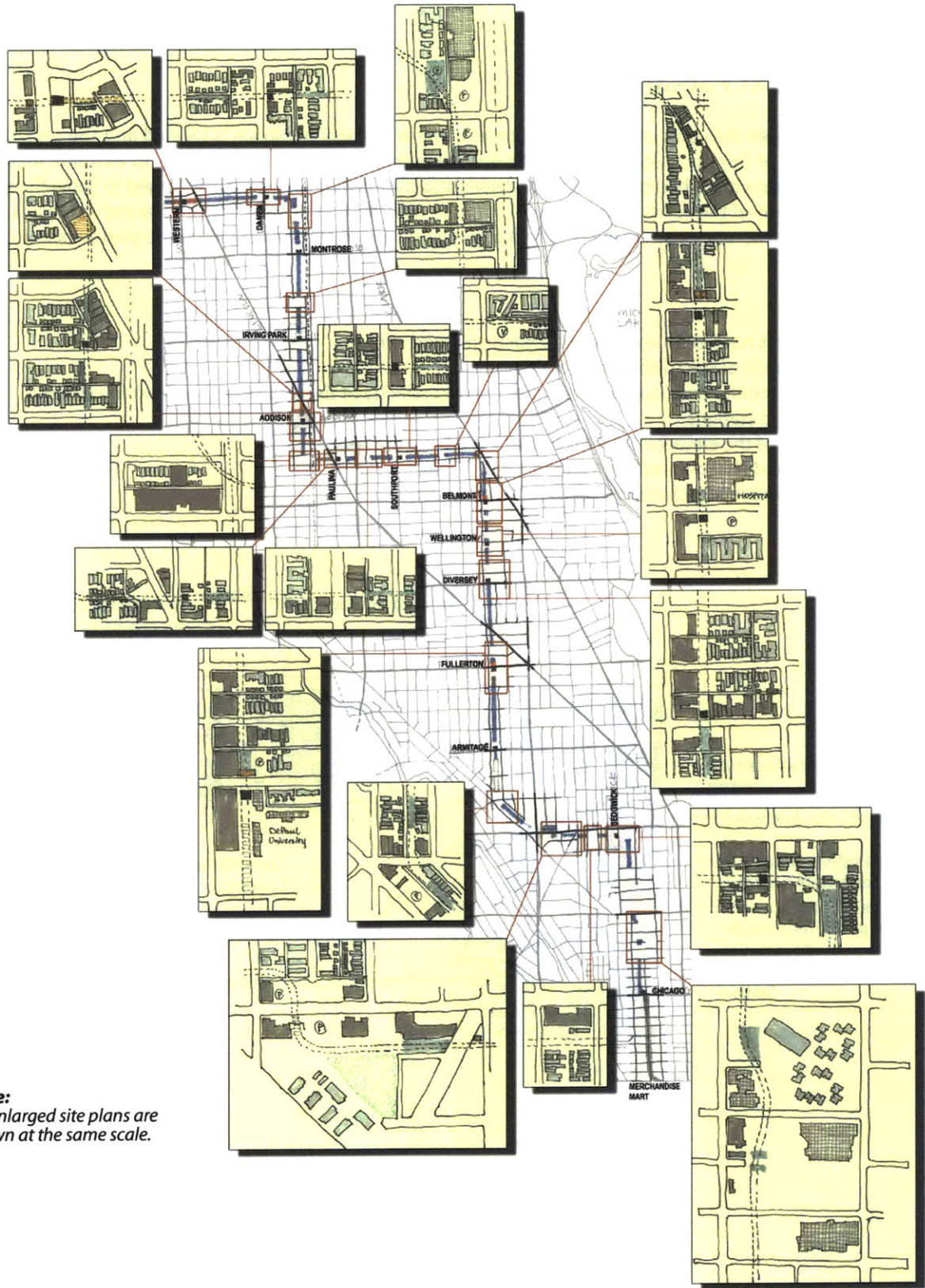
1.4 Influential Factors

Two aspects are taken into account: the urban context where the residual space is located and the prerequisite physical condition of the site associated with the elevated transit infrastructure. In order to examine these two aspects, specific sites with public/quasi-public activities and sites with no activity are enlarged to show the spatial and land use pattern of the surrounding area. A map of occurrence of activities with enlarged site plans and a reference land use map are shown in the next two pages. (Two examples of an enlarged site plan are shown on this page.)

The following factors have been compared for each enlarged site:

- Land use type of the surrounding buildings
- Street grid configuration, which indicates the accessibility of the residual space from the street
- Proximity to stations
- Condition of the elevated train track structure above the space
- Sunlight and shadows received on the residual space
- Noise and vibration caused by trains





MAP OF OCCURENCE OF ACTIVITY WITH BLOW-UPS OF SITES WITH NO ACTIVITY AND SITES THAT ARE OCCUPIED BY PUBLIC/QUASI-PUBLIC ACTIVITY

Note:
 This is not a precise map of current land use pattern of the area due to the unavailability of a complete official land use map. Here, a reproduction of the city's zoning map is used to roughly represent the actual land use. Since the concerned area is well established for a long time, it is reasonable to believe that this map shows valid information for the purpose of the non-quantitative comparison between occurrence of activity and land use.

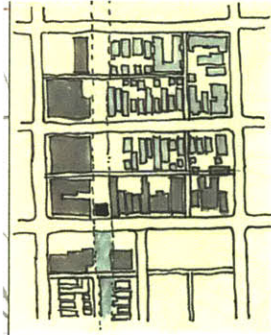


- BUSINESS
- COMMERCIAL
- RESIDENTIAL
- PARK
- PLANNED DEVELOPMENT
- MANUFACTORY

MAP OF LAND USE ALONG THE BROWN LINE

Instead of describing the details of every enlarged site, a summary of finding for each hypothetical influential factors is listed here.

Factors concerning urban context of the residual space

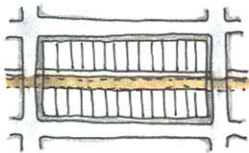


Land use type of surrounding properties

Different types of properties find the usefulness of the adjacent residual space under the tracks in different way. There is no obvious relationship between the occurrence of activity in the residual space and any single land use type of the abutting property. Nor can any single use type of the abutting property guarantee good (or bad) quality of the activity.

However, when an area contains properties of more than one land use type, the inconsistency in the urban fabric may result in obscurity of potential ownership of the residual parcel, and thus discourage the occurrence of spontaneous private activities. (One example is shown on the plan on the left.) On the other hand, a well-mixed residential and commercial land use pattern does not seem to have this negative influence.

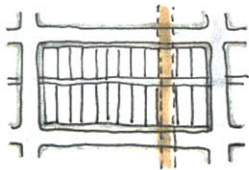
-- **Somewhat influential**



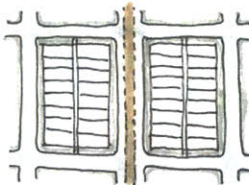
Street grid

The diagrams on the left show four different ways in which the elevated train lines intersect with the traditional street blocks (from top to bottom):

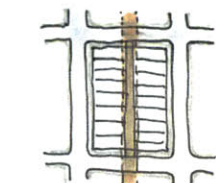
- sandwiched between alley and the back of the abutting properties
- cutting through the block perpendicularly to the street and alley and occupying one or two regular lots
- directly over a street
- directly over an alley



The first situation most ensures that the abutting properties will need to use the residual space under the track because it is the only access from the backyard to the alley.

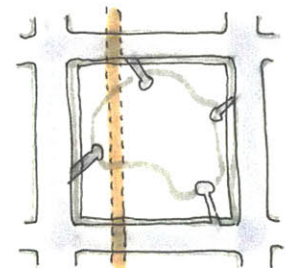


Different scenarios have been observed in the second situation. Sometimes the abutting property owner will rent the residual space under the train tracks and make it into a nice garden almost as big as her own property. Sometimes the residual space is left unused and collecting trash. Sometimes, people will use such an opening as a shortcut to avoid going around long blocks.



In the third and fourth situation, the alleys and streets under the tracks were often built before the elevated and thus are not quite relevant to this discussion.

Another type of city block – the modern "towers-in-parks" development, which is usually much larger than a traditional block, seems to discourage the use of the residual space under the track. (Refer to the diagram on the right.) It is often not used for parking because there is plenty of space designed for parking within the property. Moreover, the residual space under the train tracks is often mingled with other residual space generated by the adjacent large-scale development.



-- **Somewhat influential**

Proximity to stations

All of the enclosed quasi-public activities are found close to the stations that are located on dynamic main streets. However, proximity to stations does not necessarily attract development under the tracks. Many lots across from a station entrance remain empty.

---Somewhat influential



INFILL BUILDING UNDER THE TRACKS ACROSS FROM BELMONT STATION



EMPTY LOT UNDER THE TRACKS ACROSS FROM DAMEN STATION

Factors concerning the physical condition of the residual space determined by the elevated structure

Condition of the elevated train track structure above the space

Only the extremely clumsy space is not used, i.e., bents on four sides. The two photos on the right show two sites with similar overhead structures. One is packed with cars carefully parked between the columns. The other one is left unused.

-- Barely influential.



Sunlight and Shadows

A commonly believed myth is that the elevated train guideway creates deep shadow right under it, making the space undesirable for gardening or other uses. This is only partly correct. It is true that the elevated structure does create shadow against the sun. However, this shadow is not always directly under the track and the structure is not as deep and solid as the general preconception. Most of the residual space under the tracks receives adequate sunlight for plants to grow. Whether the residual space is used as a garden, a parking lot or left empty does not seem to have a strong relationship to whether or not the space can get a lot of sun. Moreover, even in the relatively dark space that is surrounded by two or three tall buildings, there are still some nice gardens. People simply choose the plants that grow in the shaded area.

-- Barely influential



Noise and vibration

Noise and vibration are constant throughout the whole line. Although I do not have scientific data of the noise level under the tracks, it is not much worse than a busy arterial road. In addition, trains come and go at certain headways. Thus the noise is not constant all the time. The problem of noise was exaggerated partly by the visual appearance of the aged steel structure that make people think they are more noisy than highways.

- Not influential

1.5 Summary of Findings

- The space under the train tracks is perceived as worse than it actually is because the negative image may have made a stronger impression on people's mind than its positive side.
- Private activities, although widely spread throughout the entire corridor, have limited impact on the overall image of the residual space under the tracks.
- Urban context factors such as land use pattern and urban fabric are more influential to the occurrence and quality of the activities in the residual space than the physical condition of the space determined by the elevated structures.
- Private activities are driven by the need for land. They could happen spontaneously under various conditions.
- Quasi-public activities are sensitive to location. They could happen spontaneously where high profit could compensate for the high cost of complicated construction and legal procedures.
- Public activities cannot happen spontaneously. They need incentives and planning.

Chapter 2 Case Studies

Strategies for Inhabiting Transport Infrastructure with Public/Quasi-Public Activities

This chapter examines a series of cases in other places where the residual space under elevated transport structures is used for public activity. Based on the purpose of the activity, they are categorized into 4 types:

- commercial activities
- institutional/culture activities
- regional recreation activities
- community focus activities

Each type of strategy has its own advantage, application and limitation. From each case, different lessons can be learned for the Brown Line.

2.1 Commercial Activities



FARMER'S MARKET UNDER THE QUEENSBOROUGH BRIDGE IN THE EARLY 20TH CENTURY



THE SPACE UNDER THE QUEENSBOROUGH BRIDGE USED BY THE DEPARTMENT OF TRANSPORTATION FOR A SIGN-PAINTING SHOP, STORAGE, AND GARAGE AFTER THE 1930'S DEPRESSION



THE BRIDGEMARKET COMPLETED IN LATE 1990'S



INTERIOR OF THE BRIDGEMARKET

Case 1: Bridgemarket, New York City

Today, high-end stores and an upscale restaurant are sitting under the arches of the Queens Borough Bridge in New York City. However, this use and appearance of the space has changed many times. The Queens borough Bridge was completed in 1908. This double-decker steel structure was decorated with terra cotta and granite skin for its initial intention of using the residual space as an open-air market place. The market place was so successful that it was glazed in 1916 to make it a permanent four-season market. Unfortunately, the Great Depression of the 1930's also depressed the market. In the fifties, The Department of Transportation took over the space and used it for a sign-painting shop, storage and garage. This gradually transformed the surrounding area into an industrial land.

Starting in 1972, the Office of Midtown Planning and Development launched the Queensborough Bridge Area Study and called for landmarking the bridge. In the following years, various plans were proposed and failed due to lack of funding, unsmooth relationship with the city, improper marketing, or lawsuits by local residents. HHPA, the architect for the Bridgemarket today, has been involved in re-developing the area since the late 1970's. The final success came after the DOT began to restore the Guastavino tile using government funds and the design and developer Conran directed the project into the high-end market.

Commercial activities (quasi-public) under the elevated transport infrastructure are not always upscale or enclosed. The pictures on the opposite page show a couple of alternatives to the Bridgetmarket under the Queens borough Bridge. Fairway Market is a not-so-fancy market place built under the West Side Highway in New York. It fits under the much lower elevated highway infrastructure and serves the neighborhood well. A proposal for an open-air weekend market has been made for the residual space under the slip road of the Orbital Expressway in Frais_Vallon, Marseille, France. It could accommodate more flexible programming than a enclosed market place could.

Lessons Learned

Non-transport activities for the residual space were included in the original plan.

The Bridgemarket is a very rare example of the evolution of a transport-infrastructure residual space with initial non-transport activities. The intention at the beginning was to cover the skeleton of the bridge's steel structure with masonry. The success of the first market under the bridge gave the space a strong identity. It was this identity that made the place able to bounce back from the deep injury caused by the Depression. Suppose it had never been treated as an important civic activity node, could people find its "historical" value later? Overtime, the space may be open or enclosed; the market may be upscale or downscale; but the place remains recognizable and unforgettable in the collective memory of the city residents and visitors.

By contrast, it is difficult to find a piece of residual space under the Brown Line with an initial intention for non-transport use. Adding to the backyard alignment of the corridor, this made the "under-space" outside of the stations along the Brown Line obscure and desolate in the common perception. The steel structure, which has been widely believed to be a negative factor that makes the space underneath it unusable, has been exposed to bad weathering. The simple and ugly drip pans attached here and there from time to time, although functionally getting rid of the rain and debris, cannot change the image in the way the image of the Queens Borough Bridge has been changed.

Here, I'd like to argue that it was the original intention of using the space underneath the bridge encouraged people to adapt the physical space to be usable and enduring. The activities that actually took place there have gradually changed the space.



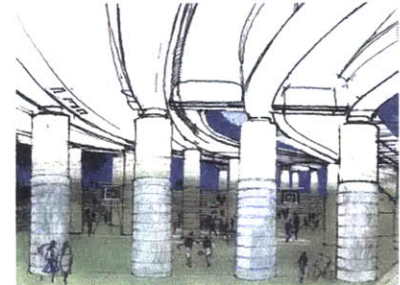
FAIRWAY MARKET UNDER THE WEST SIDE HIGHWAY, NEW YORK, NY



INTERIOR OF FAIRWAY MARKET



EXISTING SITUATION UNDER THE ORBITAL EXPRESSWAY, FRAIX_VALLON, MARSEILLE



FRANCIOS SEIGNEUR'S PROPOSAL OF USING THE SPACE FOR A DAILY GATHERING PLACE

2.2 Institutional and Culture Oriented Activities



VIADUC DAUMESNIL BEFORE THE VIADUC



AERIAL PHOTO SHOWING PROMENADE PLANTÉE ON TOP OF THE RAIL AND VIADUC



STREET VIEW OF VIADUC DES ARTS

Case 2a: Viaduc des Arts, Paris

Viaduc des Arts, designed by architect Patrick Berger, is a distinctive part of Paris's three-mile greenway Promenade Plantée, where the abandoned elevated railway Viaduc Daumesnil has been converted into an aerial pedestrian walkway punctuated by staircases to the street below. On top, the promenade is enriched with gardens and greenery. Below the structure, sixty artists' studios and shops fill in the arches. Arts and crafts, such as furniture design, fine woodworking, and weaving, have been a tradition of the 12th arrondissement on Paris's right bank where the reclamation project Viaduc des Arts is located. Complementary to the gardens and strolling paths above, the street level studios and shops greatly vitalize urban life with a unique style.

The architecture is simple but striking. The 400-foot-long nineteenth-century viaduct was restored to reveal its red brick and stonework vaults, piers, and arches. Berger has also provided design guidelines for the infill spaces to make sure all the storefronts are recessed and moderate in order not to compete with the predominance and consistency of the original viaduct structure.

Viaduc des Arts and Promenade Plantée reflect the policy of Paris to reclaim defunct industrial sites for mixed use and green space type of revitalization. The City of Paris has taken the responsibility for the renovation since the early 1990s and has made it open to public in segments since 1998. The promenade is regularly patrolled by the parks department police and is closed at night.

Lessons Learned

Policy and participation of the City are crucial to large-scale reclamation projects.

Without the positive attitude and action to reuse the obsolete industrial and transportation facilities, a project of this scale with a focus on open space, arts, and culture can hardly be conceived. Although the investment from the city is enormous and "risky," its effect of transforming the overall image of the whole district is also remarkable. Viaduc des Arts has not only made its site, a previous little-known working class district, noticeable and beloved in Paris, but also has been inspiring people overseas to improve their problematic but potential residual spaces. Among them, is the Friends of the High Line in New York City.

The aerial promenade on top of a defunct railway may not be directly applied to the Brown Line, a vital artery of mass transport in Chicago. However, the cooperative relationship between the city departments and the railroad agency serves as a good lesson. To make enhancement of the entire corridor of the Brown Line possible, the City of Chicago would need to play a very important role.

Case 2b: IIT Campus Center, Chicago

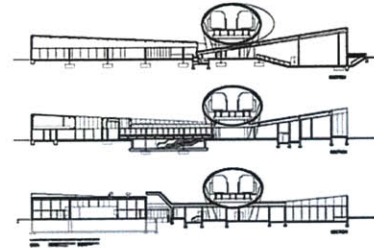
The new IIT Campus Center is designed by Rem Koolhaas. It is the winning entry of the competition. It represents new ways that innovated design concept and contemporary building technology could do to completely change the image of the residual space under the tracks. The building includes a steel tube wrapped around the elevated green line. A one story complex building for student service fit itself under the tube. It was completed in 2003.

Lessons Learned

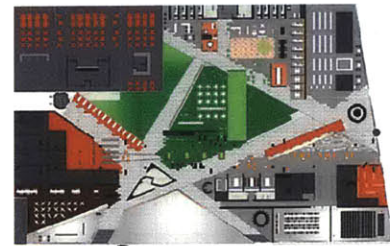
Infill building as a center piece that reshape the whole campus

Most people think the most distinguished features of the building include the steel tube that mitigation the noise, fancy materials used for the interior, and the high cost of the construction. To me, the most impressive point of this building is that it has completely transformed an undesirable residual space into a new center piece of the campus. The series of diagram below shows that the original Mies Van Der Rohe campus was confined to the boundary of the Green Line and the Metra Line. In 1990s, a study was done for the expansion of the campus. Once again, the Green Line was considered as a backdrop of the sited and was concealed by garages and back sides of the building. Koolhaas proposal, on the contrary, views the space on both side of the Green Line as whole. The entrance of the new building sits directly under the elevated tracks. The steel tube also becomes a unique canopy above the entrance. The elevated tracks thus become an integral part of the building and give the building distinctive characteristics that cannot be achieved anywhere else. Further, the new Campus Center under the track makes a bold statement that the elevated tracks could come to the front of the street scene. In short, this building has established a new pivot point at which a potential north-south development axis intersects with the east-west boundary of the existing campus.

Although the cost for the building construction is high, it did not occur to the transit authority. Further, the construction of the steel tube was funded by state funding.



SECTION SHOWING THE RELATIONSHIP BETWEEN THE CAMPUS CENTER AND THE STEEL



DIAGRAMMATIC PLAN



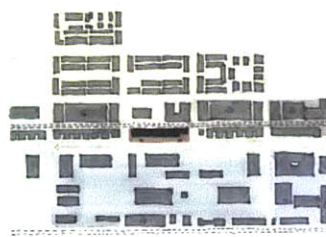
ENTRANCE UNDER THE ELEVATED TRAIN TRACKS



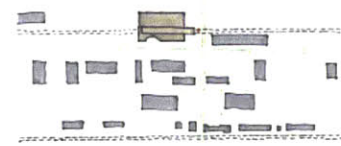
INTERIOR OF THE CAMPUS CENTER



MIES VAN DER ROHE'S IIT CAMPUS PLAN



1991 IIT CAMPUS MASTER PLAN



REM KOOLHAAS'S IIT CAMPUS CENTER DEFINES THE CENTER OF THE CAMPUS

2.3 Regional Recreational Activities



LINEAR PARK, BAY AREA

Case 3: Linear Park, Bay Area

Linear Park is a 2.7-mile landscaped recreation area which runs through the township of Albany and El Cerrito, California. The park was planned for the narrow (30-45ft) right-of-way under the BART (Bay Area Rapid Transit) guideway after the basic design for the guideway was already completed. A strip of land packed with a path and flowering bushes, the park includes periodically placed special facilities designed for joggers. An attractive and well-used community facility, Linear Park mitigates the impact of the guideway structure and helps relate it to the neighborhood.



CARRASCOPLEIN, AMSTERDAM,
DESIGNED BY WEST 8,
DAY AND NIGHT SCENES

Lesson Learned

Regional Recreation activities have high environmental benefit, but they often require large open land and therefore have limited application to the Brown Line due to the backyard alignment. However, for the sites with tower-in-park type of development, this may be a possible solution to organize the loose fabric.

Recreational activities and landscape schemes cannot be understood narrowly. As shown in the left two photos, in the space where landscape is hard to achieve, hardscape maybe a feasible alternative. Various elements could be used in the hardscape. In this example, the scattered sculptures along the path under the elevated highway structure are also used as lighting fixtures at night.

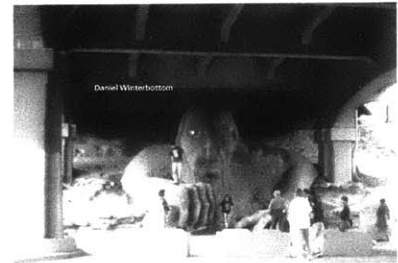


CARRASCOPLEIN,
AMSTERDAM, PLAN

2.4 Community Focus Activities

Case 3: Linear Park, Bay Area

An interesting example is a troll sculpture emerging from the Aurora bridge embankment in Fremont, Seattle, WA. The leftover space underneath the bridge had been used for transient people before a group of University of Washington students won a public competition and built the large figurative sculpture named "The Fremont Troll" on the embankment. The troll is conceived as an iconic figure, reflective of Scandinavian mythology, a tribute to those who settled the area. Creatively and humorously, the troll reclaims the underside of the bridge and highway for the neighborhood. Besides the original idea, this project should be highlighted for its successful community involvement. It is funded by the Fremont Arts Association, a neighborhood organization. During the construction, many community members joined the force. This turns out to be a very successful process. Now, the troll has become a celebrated landmark, its image replicated in a local grocery store and on T-shirts sold in the neighborhood. At any time of the day, there are always residents and visitors having their pictures taken with the giant troll.



THE FREMONT TROLL, SEATTLE, WA

Lesson Learned

Sculptural and symbolic meaning of art installation

One of the successful strategies of this project is that it has chosen a perfect subject for the sculpture for its symbolic meanings and its deep relationship with the local culture. Very often, art installations are subjected to controversial criticism. The Fremont Troll project set a good example of making the art piece relevant to its site.

Great community participation process

Another successful strategy that made Troll a beloved idol in the neighborhood is that the entire process of planning, building, and maintaining the sculpture was open to the public and the residents in the community played an important role in accomplishing the project. This public participation process is a shared memory of the local residents.

Animate a dead spot with a simple attraction

Great ideas are not necessarily expensive ideas. As simple an attraction as a stone sculpture could completely change the image of the residual space.

2.5 Summary of Lessons Learned

The diversity of the cases presented in this chapter suggests that the only limitation of reclaiming the residual space under elevated transport infrastructure is people's imagination and willingness to change the space. In summary, several important lessons have been learned from the cases:

- Various types of public and quasi-public activities could use the residual space under the elevated.
- Projects of reclaiming residual space under the elevated could happen under various physical conditions of the site. The most undesirable feature could be turned into a unique feature of the project. A dramatic transformation of the existing physical environment could be achieved by thinking about the residual space in a non-stereo manner.
- Multiple participants have to be involved in the process of planning, building and maintaining a public project. A built space for the public, no matter how beautiful it is, would not become a truly public space unless it is built with the ideas and effort of the public.
- Reclaiming the residual space for non-transit public activities does not necessarily increase the financial burden on the transit authority. Various funding sources outside transport agencies could be used. Further, the transit authority may even gain financial benefit from such projects because the responsibility of maintaining the space might be transformed to the one who is using it.
- Improving the image of the residual space under elevated transit infrastructure may help improve the image of public transit service.

Chapter 3 Implementation Prototypes

Proposal Samples for Reclaiming the Residual Space under the Brown Line

Understanding the residual spaces is only the first step to reclaim them. Seeing all the wonderful places converted from previously desolate residual spaces underneath giant transport infrastructures in Chapter 2, one cannot help imagining a brighter image for the Brown Line corridor. Without creative and suitable implementation tactics, the action of making over the residual spaces cannot be fulfilled.

This chapter, based on the analysis of the current situation under the Brown Line and inspired by the examples all over the world, explores viable implementation strategies to more efficiently use the residual space under the Brown Line. To stress here again, the focus of this chapter and the whole thesis is on public/quasi-public activities that I believe are conducive to a better over-all image of the transport infrastructure.

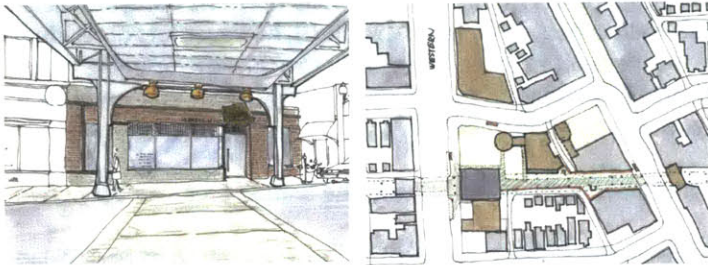
Due to the complexity of the Brown Line context and my own limited vision, a single all-inclusive enhancement proposal for the entire corridor is inappropriate and impossible. Nor will any single universal solution be suitable for the entire line.

To avoid the same detachment from the social and physical urban context taking place again under the tracks, six implementation prototypes for potential sites for public/quasi-public activities are demonstrated in this chapter. For each prototype, reclaiming action, integration of activity programming and design elements, are based on the local community situation. In organization and funding options, appropriate timing of the implementation, different roles and cost to CTA, other participants for installation and maintenance, and long/short term funding sources are discussed to examine the economic and institutional feasibility of each prototype. Last but not least, the applicability of each prototype is discussed.

The sample proposals drafted out in this chapter should not be viewed as the final product of a mental exercise. They constitute an essential part of the process of understanding the residual space under the elevated and conceptualizing the design principles for reclamation. Countless reflections have been made back and forth between sketching out specific implementation prototypes and establishing a set of guidelines to facilitate broad application. Thus, although for the convenience of writing, the implementation prototypes and design guidelines are described successively in two chapters, they should be considered as a whole.

Image Index of Implementation Prototypes

Activating a Station Area (Ex1a. Western Station)



(Ex 1b. Armitage Station)



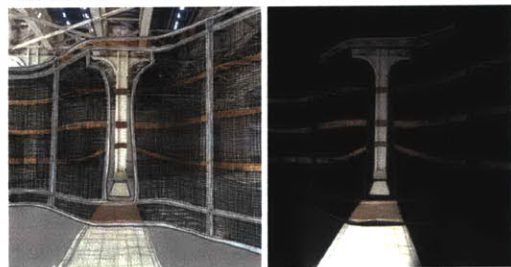
Making a Street Connection (Ex 2. Irving Park to Addison)



Celebrating the Structure (Ex 3. Chicago to the Mart)



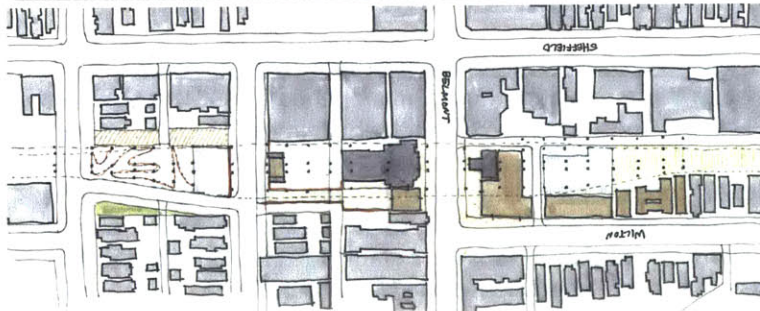
Framing an Image (Ex 4. Clark Junction)



Creating a Niche (Ex 5a. Block Corners) (Ex 5b. 3' Street Side)



Synchronizing Multiple Prototypes (Ex6. Belmont Station Area)



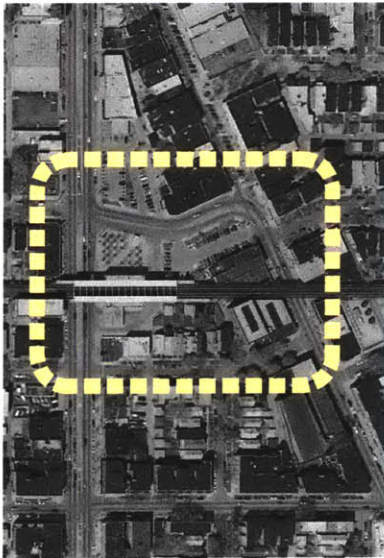
3.2 Prototype 1: Activating a Station Area

Intuitively, transport station areas are the best sites for public and quasi-public activities, since they are usually located at important neighborhood nodes and many people routinely visit there. Ideally, the mass transport facilities and neighborhood activity center should benefit each other. As noted in Chapter 1, however, lots of residual spaces across from or surrounding station houses are underutilized in reality. In order to achieve a desirable reciprocal relationship between the transit facility and its vicinity, these residual spaces need to be more efficiently used for a more smooth access to the station and/or for a more animated street life.

Based on the different characteristics of different stations, proposals to activate the station area can vary. Two examples are illustrated here:

- Western Station area as an example of intensive development as well as reconfiguration of pedestrian and vehicular circulation;
- Armitage Station area as an example of small-scale, semi-open infill across from the main station house.

EXAMPLE 1A: WESTERN STATION AREA



AERIAL PHOTO OF WESTERN STATION AREA

Existing Site Condition

Prime location with growing potential

Western Station is located at an important nodal place in Lincoln Square, a historical residential neighborhood in the Ravenswood neighborhood. It is at the corner where Western Avenue and Lincoln Avenue, two major commercial streets of the city, are connected by Leland Avenue and create the Lincoln Square Plaza (*fig 4.xx*). It also forms the beginning of Giddings Plaza (*fig 4.xx*), officially named as Harry and Guenter Kempter Plaza, a newly renovated shopping/dining street hosting frequent open-air neighborhood festivals. It is the last stop (from the Loop) on the Brown Line for 24-hour service.

Currently, Western Avenue is somewhat less active in commercial activities. However, some major developments begin to emerge at the street corner. For example, a three-story apartment building with ground floor retail is now under construction at the corner of Western and Leland, looking south-east to the Lincoln Square Plaza and Brown Line station (*fig 4.xx*). Moreover, centered on the Lincoln Square Plaza, Western Avenue is designated as a Tax Increment Financial (TIF) district (*fig 4.xx*). Thus, we can foresee a much busier street life in this area in the near future.

Modern station occupying large land with little public activities

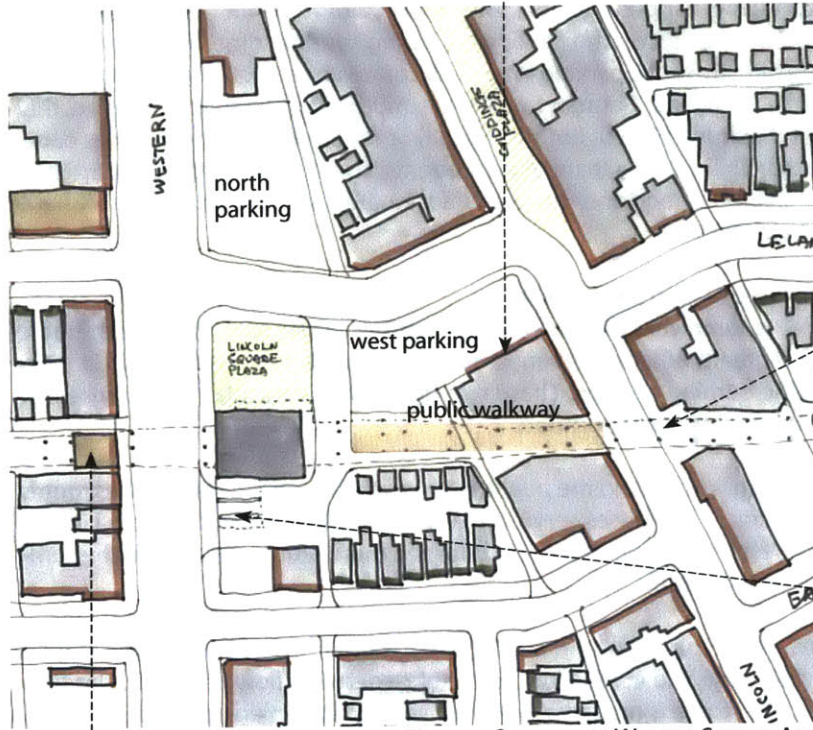
The existing Western station house was opened in 1981, replacing the original station house built in 1907 and rebuilt in the 1920's. It is the last elevated station on the Brown Line from the Loop. Backed by an open-plan design concept prevailing in the 70's and 80's, the station house is very spacious and is equipped with escalators, elevators, and concessions. It has entrance or exits on all four sides of the building. Outside, the station house is surrounded by publicly-owned land by both the transit authority



EXISTING MURAL



LINCOLN SQUARE PLAZA



EXISTING SITUATION OF WESTERN STATION AREA

infill building:
one-story antique store

commercial/
business
RESIDENTIAL



"GAP" ON LINCOLN AVENUE



BUS WAITING WITH CANOPY

and the city. CTA uses part of the open land to facilitate the transit service it provides. A three-lane bus waiting area to the south of the station is under a concrete canopy. Besides this canopied bus waiting shelter, there are another four bus stops in the nearby area. A concrete walkway protected from the overhead tracks with drip pans and with lighting fixtures leads from the east exit of the station directly to Lincoln Avenue. The city has also invested in this area. Lincoln Square plaza, a tree-shaded city plaza, sits north to the station house. Surrounding the plaza are two city owned public parking lots with 86 surface parking spaces in total.

As shown in the above diagram, the Western station area is fragmented in both space and activity. The bus shelter is being used very inefficiently. Only the 49B Bus that terminates at Western uses the bus shelter for a brief layover time of 3 minutes or so in 8 to 11 minute headways during the peak hours. The 11 Bus drives through the turn-

around on route to pick up passengers directly from the train station without stopping at the bus shelter. Instead, it stops right in front of the train station with other buses.

Nor do many people stay on the plaza for a significant duration of time. During my three visits to the plaza, including a weekend in fall, two early evening peak hours in winter and spring, I have observed no purposeful activities on the plaza besides waiting for buses at the bus stops and passing through the empty plaza to get to the adjacent parking lots. Parking itself does not generate more active public activities.

Interestingly enough, some important local events happen right within this area, although not right on the plaza. For example, there is a weekly Tuesday morning market on the parking lot during summer time. The back wall of the Northern Home Furnishing store, facing directly to the parking lot, was decorated by a 3000-square-foot mural (*see picture on the previous page*). Depicting a traditional German town with a multicultural group of children, this mural symbolizes the historical heritage and cultural diversity of the Lincoln Square neighborhood. It was completed in September 1991 by the artist Lothar Speer with a team of art students, and was restored by the artist in 1999. This mural has become a gem of the neighborhood and the city. Unfortunately, such a treasure is very hard to be spotted from the city plaza and the train station.

Confounding circulation pattern and broken pedestrian connectivity

Vehicular circulation around the station area is somewhat chaotic. Western Avenue carries four lanes of fast traffic plus on-street parking on both sides. The segment of Leland Avenue between the Western Avenue and Lincoln Avenue is also extremely wide without traffic calming devices. These two high-speed vehicular roads segregate the train station and city plaza from the surrounding neighborhood.

Inside the block, the alleys are mixed with the bus routes and the public walkway linking to the station. Bus routes compound the already fragmented urban fabric. Four buses serve the Western Station: Route 11 along Lincoln Avenue, and Route 49, 49X and 49B along Western Avenue. However, both the bus waiting shelter and the turn-around route are used very infrequently and inefficiently.

An inaccessible circumference with an inexplicit core results in a broken pedestrian connection to the station and the plaza. In the diagram on the facing page, the conflicting points of pedestrian flow and vehicular flow are highlighted. The diagram clearly shows that there is no easy pedestrian connection linking the station to any meaningful destination. In addition, a lack of clear demarcation of the public territory also adds to the problem. For instance, the walkway leading to Lincoln Avenue stops at a vacant lot under the track that seemly is used for parking. Therefore, from the angle of the station, what we can see at the end of the walk is nothing but an endless "under-space" overcast by the elevated tracks. In the opposite, literally and symbolically, at the other end of the station on Western Avenue, a small one-floor antique store was filled in a dignified way right under the track across from the main station entrance. It not only continues the street front of the west side of Western Avenue, but also clearly defines the boundary of the station area.



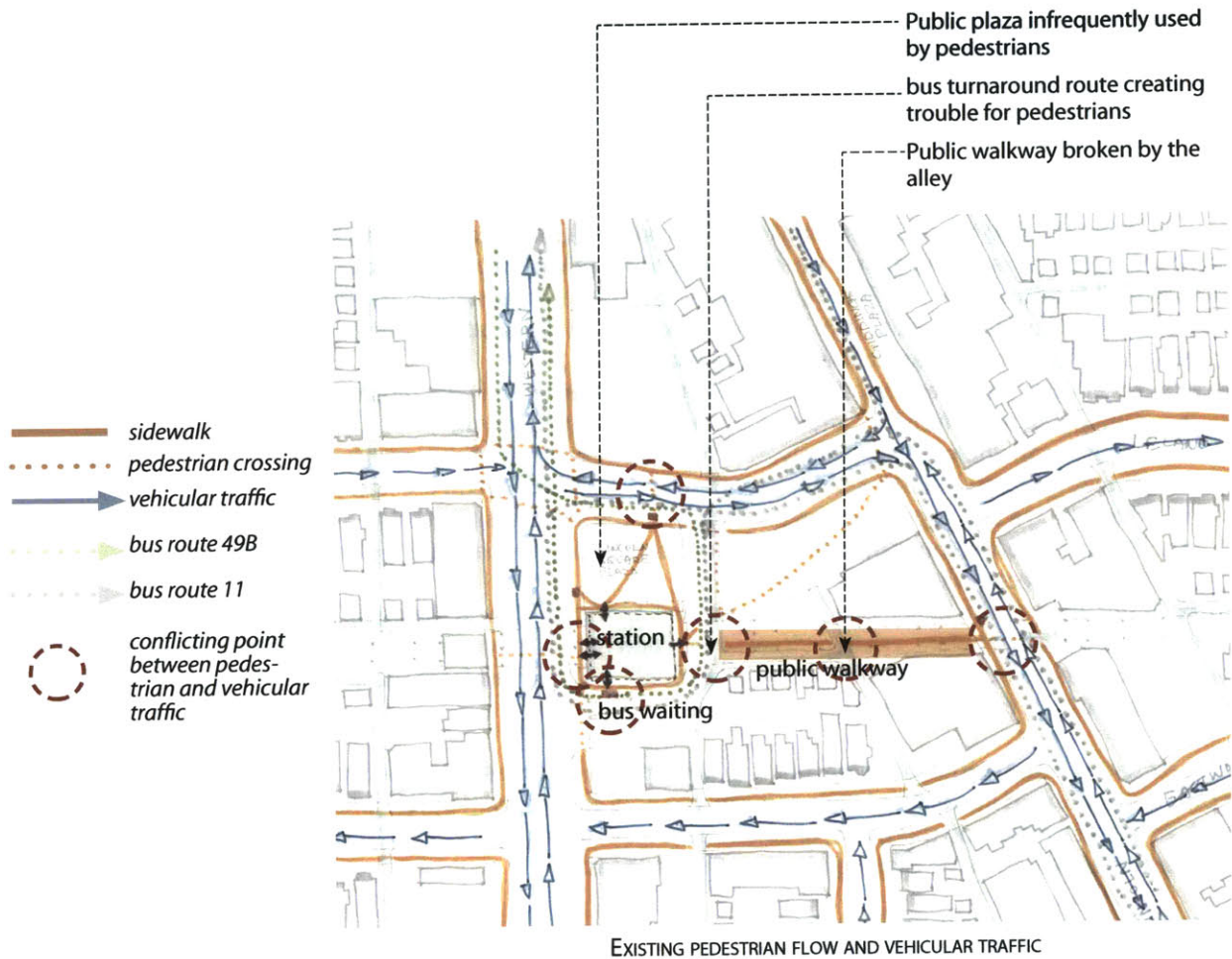
LINCOLN AVENUE: ENDLESS "UNDER-SPACE"



WESTERN AVENUE: IN-FILL BUILDING THAT DEFINES AN END

Public space in poor repair

Although the physical condition cannot determine the occurrence of activities, as we discussed in Chapter 1, dull environment is never inviting. There is no seating available on the entire plaza. The public walkway under the track is poorly drained and lighted. The place where the walkway passes through a dark and narrow opening between two blank walls is the place where beggars are found soliciting. Other unpleasant scenes include obscure signage and minor things such as over-height planters with no plants. Although people still take the walkway as a convenient shortcut from the station to Lincoln Avenue before heading towards the south, the experience of walking through the space is not a very cheerful one. In short, a degraded physical condition degrades the psychological image of the public space, making it vague and unidentifiable.



PUBLIC WALKWAY IN POOR REPAIR



BACKYARD TRASHBINS



TRUCK BLOCKING THE WALKWAY



POOR DRAINAGE

Reclaiming Actions

Activating the station area, given the context, thus becomes the primary goal of reclaiming the vast underutilized public land around the Brown Line Western station. Two major actions need to be taken to invite people to come and stay in this area. This first one is to bring in new development to densify the area and provide more commercial-oriented quasi-public activities; second is to re-configure the circulation pattern, including the bus routes, in this area to provide more convenient and concentrated pedestrian connection to the station in the vicinity and destinations, especially those on Lincoln Avenue.

Enliven the city plaza with new development

The only way to attract people to the station area and the plaza is to add intentional activities to make it useful all the time, not only on Tuesday mornings in the summer. Taking the public transit per se is a public activity but a transient activity in which people do not usually stay long. Considering the strategic location and growing demand, development with retail or other service type commercial activities will be most welcome immediately adjoining the station. In a larger area, including the north parking lot, a significant number of housing projects, preferably apartments or condominiums, need to be built in order to make the area vigorous day and night through the year.

The most critical development should be facing, and connected without interruption, to Lincoln Square Plaza. Here, I suggest dividing the public parking lot at the corner of Leland and Lincoln (annotated on the diagrammatic plan on the page 39 as “west parking”) into two parcels for private development to provide quasi-public activities such as retail, food and services. The west parcel is vital to the plaza, station, and the walkway, and the rest of the parking lot (an unofficial public plaza). To make it work for all these public spaces, the building, in whatever form or style, should conform at least to the following principles:

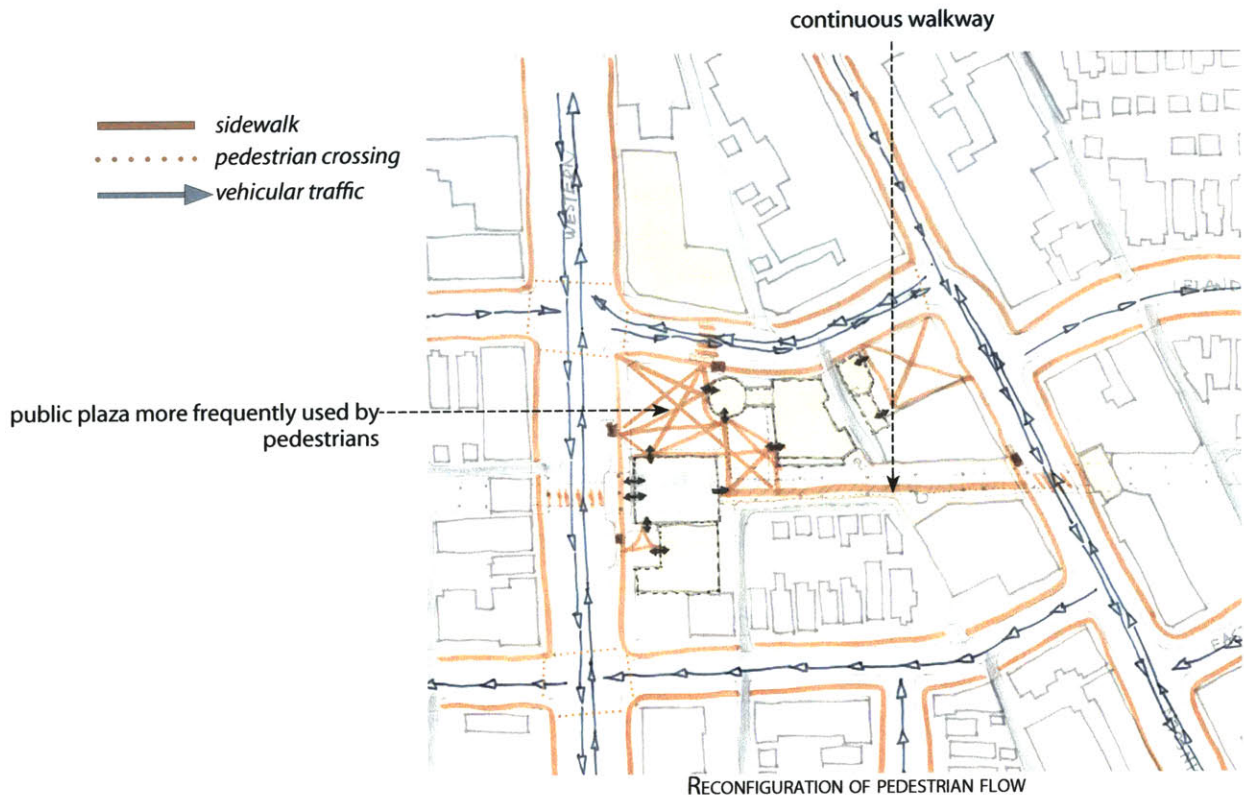
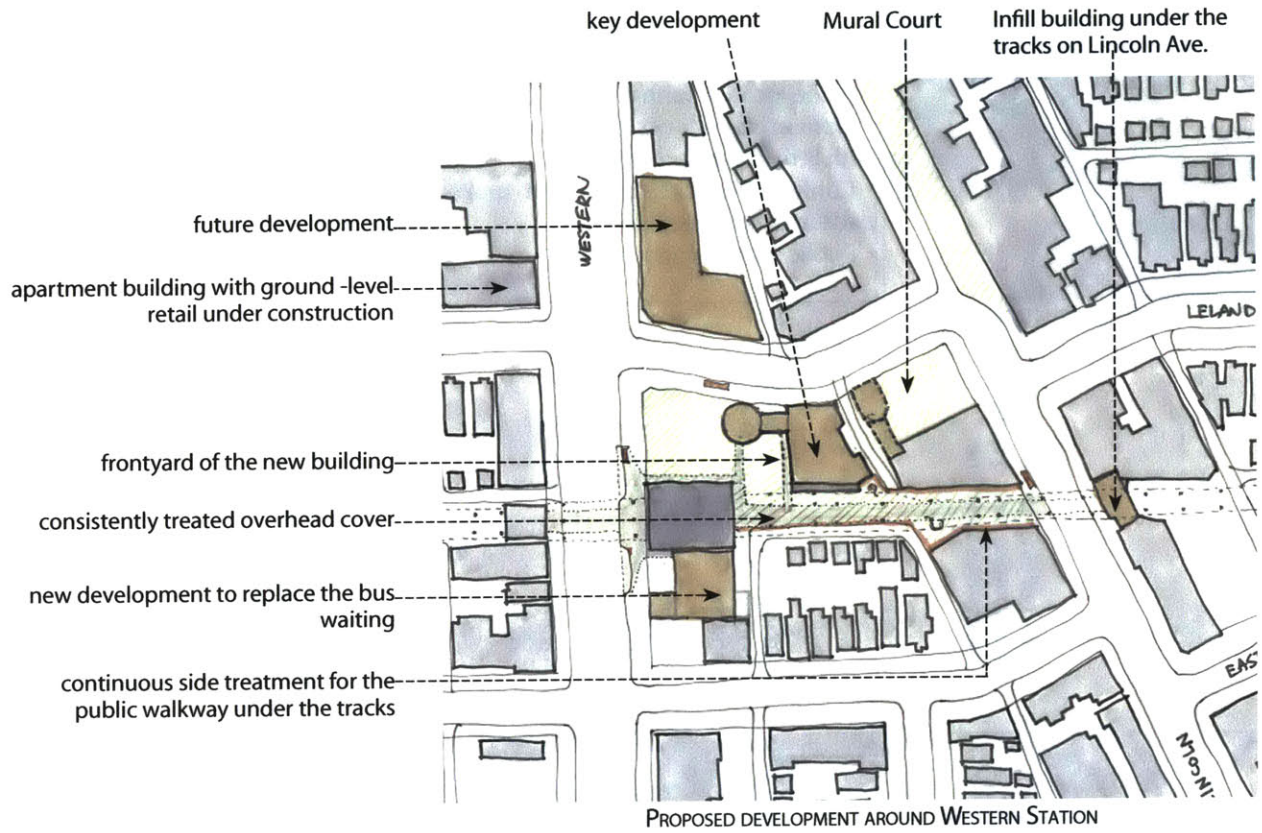
- Locating the main entrance to the building’s commercial activities directly facing onto the plaza
- Offering outdoor furniture and activities in front of the building
- Allowing an unblocked view between the city plaza and the public walkway
- Avoiding any awkward residual space between the building and the new staircase of the station
- Furnishing a semi-open walking connection to the station entrance
- Providing convenient physical and signage connection to the Giddings Plaza and the mural
- Framing decent views of the mural.

We need not worry that a building in this position will block the view to the mural from the plaza and the station house. As pointed out before, existing visual connection here is very weak. On the contrary, if designed properly, inserting an important building with public/quasi-public will only reinforce the present of the mural and provide nice vantage points to the mural.

The east parcel of the existing west parking can have more a flexible scheme. It can remain as a public parking lot, it can be transformed into a mural park, or it can also hold some decent development framing a nice mural courtyard. Any development on this parcel of land should maintain a good view to the mural and define the corner of the block as a prelude to the Giddings Plaza to the northeast.

At the same time, some buildings need to fill in the gashes to complete the street front and tie up the urban fabric. A bold suggestion here is to remove the bus turnaround and the bus waiting canopy. This underutilized right-of-way can be designated for commercial development. The buses, alternatively, will turn around the entire block and wait at the on-street set-back bays near the north entrance of the station house, which is within the plaza. (This action will be discussed in detail later.) Another development important to form a clear boundary of station area is to fill in a one-story store under the tracks facing the sidewalk under on the east side of Lincoln Avenue (*refer to the perspective sketch on page 44*). This building could either be an extension of the abutting property or an independent new development. Sealing this gap on Lincoln Avenue will help form a consistent street front and end the walkway properly.

The north parking lot could be considered as a future opportunity for development. A residential/office complex with ground floor retail will further animate the area. However, decision of whether to develop this area cannot be determined by the transit authority. Instead, the options are left to the city and the will of the developers.





EXISTING SITUATION

Existing Site Condition

- Prime location with growing potential
- Modern station occupying large land with little public activities
- Confounding circulation and broken pedestrian connectivity
- Public space in poor repair

Reclaiming Actions

- Enlivening the city plaza with new development
- Accentuate unobstructed pedestrian accesses
- Alternatives

new building facade flush with the abutting building to make a continuous street line

lighting fixtures that work for both the building entrance and the sidewalk

storefront consistent with the pattern of neighboring buildings

clearly marked cross walk

set-back to avoid blocking the side window of the adjacent building



INFILL BUILDING UNDER THE TRACKS ON LINCOLN AVENUE

Accentuate unobstructed pedestrian accesses

To erase the bus turnaround is the most difficult but most important step to build a pedestrian friendly station area. Now the bus turnaround creates at least three major problems:

- Breaking the connection from the public walkway to the east exit of the station
- Making the location of current west parking lot an undesirable place for development that wants to benefit from the proximity to the station and the city plaza
- An over-wide route that encourages buses to pass through the area at high speed and a mixed through-traffic of private automobiles.

In addition to the bus turnaround, the west parking lot also creates trouble for the pedestrian flow. Pedestrians who want to go the Giddings Plaza usually take a shortcut through the parking lot. Those who use the public walkway to another direction on Lincoln Avenue are often blocked by a truck belong to the Northern Home Furnishing store parking in the middle of the walkway.

Therefore, only by replacing the bus turnaround routes with a surface for pedestrians can the walkway really be a "walk" way and the land for parking used more economically and actively. Although one can argue that requiring the bus to turn around the entire block will increase the running time for the bus route, there are still strategies to compensate for this extra one minute. First, the 11 Lincoln Bus does not have to turn around to pick up the passengers directly from the train station entrance after the entire station area is treated as whole and offering high-quality outdoor environment. Second, for the 49B North Western Bus, which is the only bus that does require a turnaround and layover, the extra running time could either be saved by slightly reducing layover time. Further, a sheltered bus waiting area should be built to the north of the station to serve both the station and the plaza. Anyway, rerouting the bus has a big impact on the transit operation and a rider's traveling pattern. The last compromise is to leave the bus route as it is now but reduce the width to just one lane. The narrowed bus route should be paved with the same material as others in the public plaza and may need to be equipped with traffic calming devices.

For a building to be erected to the east of the station, a new alley will need to be installed. This can be taken as an opportunity to alter the existing alley that interrupts the walkway. A new alley entering from Leland Avenue and stopping before the walkway will serve both the old and new buildings but not block the walkway.

After the path is cleaned up for pedestrians, the physical condition needs to be improved to make the walkway more predominant and an integral element in the station area. It needs to be paved with the same material and furnished in the similar style to the plaza. This is to make it an extension of, or prelude to, the station and the plaza rather than a detached element on its own. While adding more connection to the public domain, a certain degree of visual separation from people's back yards should be also provided. Instead of marking the walkway with the steel-post bollards, more interesting and functional elements, such as information/advertisement boards could be used. The caveat is that whatever the element is, it should permit some visual penetration from the neighboring property and should not be overwhelming in size and scale that casts a deep shadow on the walkway with the consideration that it is on the south side. To change the image of the walkway from a backyard alley to a public passageway, the blank walls that flank it also should be decorated and lit up.

Alternatives

Conversely, there could be an alternative scheme to eliminate the current mid-block walkway and concentrate pedestrian flow on city streets and plazas, given the short length of the block. However, this alternative is not included in this thesis for two reasons. First, quite a few transit riders are currently using the walkway as a regular path in their daily trips to/from the station. Removal of a regular path will cause even more confusion in the area. Second, since any development will naturally locate at the fringe of the block to gain street access to the property, the most inner part of the block will be left as an empty hole after the area has been densified. Inner blocks left open are usually not a problem since the abutting property is apt to use and take care of it. In this case, however, a piece land left over in the middle could cause some potential problems to CTA, given that a major exit is facing the middle of the block and a new exit stair is going to be added in this area. Therefore, CTA needs to preserve this

land for transport service purpose. An empty space surrounded by backyards on three sides can hardly become a good spot for public activities.

Organization and Funding Options

Collaborate intensively with the City and CDOT

Since the city owns a large amount of the land around the station area, it is necessary to incorporate any improvement plan for the station area with a larger-range cityscape beautification project. Beyond enhancing the physical environment of the public space around the station, the City must take an important role in organizing events and activities in the improved space. Many of the City's departments need to be involved. Among them, CDOT (Chicago Department of Transportation) will be an important cooperater in the reconfiguration of vehicular and pedestrian circulation.

Employ joint venture for critical development(s)

Within a wide range of options, the west parking development is best, conceivably, a joint venture by CTA, the city, and a private developer. Using partly city-owned land and partly CTA's right-of-way, the private developer can benefit from a lower, or even free, land acquisition cost. In return, the developer is responsible for the construction, management, and maintenance of a renovated station front and city plaza, which is now also the front door of his/her own property. An additional benefit of a joint venture is that CTA and the city will be able to have more control over the site plan of the building to ensure its positive contribution to the train station and a large city area.

Time with the Brown Line Renovation Program

A plenary overhaul of the station area cannot happen easily. Requiring a tremendous amount of new construction and renovation, the best chance to activate to the entire area is to synchronize with the Brown Line Renovation Program, in which a new exit stair will be added with an extended platform and urban design around the station area will be studied. Actions such as demolishing the bus waiting canopy, relocating the bus waiting space and turnaround routes, replacing paving and fencing materials for the walkway would add a moderate marginal cost to the construction of the stairs. For example, in order to build the stair, the walkway must be dug up for the foundation structures and covered again later. According to the current design document, the walkway will then be repaved with the same concrete as it is now. However, if a careful design of the walkway as part of the plaza could be plotted out before the construction, repaving the walkway with more appropriate and attractive materials will not add to the cost significantly. On the contrary, if these are to be implemented separately afterwards, the capital cost to be incurred on CTA would be greater.

Timing the proposed work with the Brown Line Renovation Program also simplifies the procedure of collaboration with multiple participants. A close collaborative relationship between the transit authority, the City and its departments, especially the CDOT (Chicago Department of Transportation) has been building up over the years. Communication between these institutions is more efficient within large-scale system-wide projects. At the same time, during the process of CTA's largest capital renovation project, it may be easier to find private developers who are interested in investing around public transport nodes. It is also easier for CTA to guide and supervise the private development to contribute to a large picture of a neighborly public transport node.

To state it from another angle, the actions for reclaiming residual spaces along the right-of-way are best to be included as part of the Brown Line Renovation Program. Around the stations, these actions could be part of the urban design studies of the station. In-between stations, a corridor improvement project should parallel the station renovation. This item will hold true for all other implementation prototypes, and thus is not going to be repeated for each example in the rest of the chapter.

Compensate CTA initial capital cost by long-term benefit

Residual spaces around station area have direct impact on every rider's transit experience. In order to improve its service quality, CTA is obliged to devote resources to make these residual spaces useful and delightful. The initial cost incurring to CTA will be for the improvement of the walkway, including cost to replace and expand the pavement and erection of separating panels/fences between the walkway and the public alley. Rerouting the bus turnaround and relocating bus stops is also going to be an expenditure of CTA. Demolishing the existing bus waiting canopy could be tied with the new development that replaces the site. The sale of this site will generate income for the CTA.

In addition to improving the transit service quality and transit image, an enhanced station area would also be more attractive for private development in its vicinity. In return for a careful planning, collaboration with the city, and leasing extra right-of-way to the private developments, CTA would benefit greatly from long-term savings on resources for maintenance and management of the station and its surrounding area.

Application

Station areas are the best sites for quasi-public activities in which people exchange goods and services. The Western Station serves as a typical example of a large transport facility located in an active/growing neighborhood center. The Brown Line Renovation Project will expand and modernize 18 stations. Many of the thoughts in this prototype will be viable to almost all the stations, especially for stations occupying large spaces such as Belmont or Fullerton. (These two transfer stations are in a more complicated condition and are to be discussed in detail in Prototype 6 – synchronizing multiple prototypes. However, the strategies for activating the station area in Prototype 1 will remain as the core action in the last prototype.) The wide application of this prototype and its functional and symbolic significance to the public transport are also the reason for me to elaborate it at length.

Filling in Revenue-generating building in the station area

Although buildings or other enclosures can be filled virtually anywhere underneath the elevated train lines, station areas are among the best location choices. On one hand, infill buildings often require higher cost, more complicated design and construction process, and more participants in the project. On the other hand, train stations bring numerous patrons to the adjacent establishments. Thus, revenue-generating infill buildings are recommended to fill in the station-area residual spaces. The benefit brought by the transit will justify the cost of construction and the constant income will help maintain and manage the space in the long term.

Shaping the open space by agglomerating existing and new buildings

Western Station is a typical example where the open space is large but loosely defined. To make such space work, simply reducing the size of the space is not enough. The boundary of the space must be clear and abundant with activities. Any new buildings to be introduced in such area, therefore, will be required to help shape the outdoor space. Further, more desirable design solutions should agglomerate existing and new buildings into an entity that forms the open space integrally.

Looking at a large scope to make a small piece of residual space work as public space

The passage under the tracks could not be a very pleasant walkway unless it is connected and treated as part of the station plaza. This teaches us a lesson that the residual space under the tracks cannot be considered in isolation. The spaces under the tracks became residual due to a large extent to the conception that the transport infrastructure is a single-function autonomous object detached from its location. Yet in reality they are or potentially will be an integral part of a large useful space. To reclaim the residual spaces is, after all, to discover this potential.

EXAMPLE IB: ARMITAGE STATION

Existing Site Condition

Highly contrasted to the Western station, Armitage Station is situated in a more fine-grained urban texture and is a confined space. Armitage Avenue is a historically established local commercial street. The store front is continuous and consistent; the street life is vigorous. The entryway of the Armitage station is treated nicely with plants and a path to the exit rotogate. Currently, the vacant land across from the station house is paved with asphalt and used for parking. On the wall of the substation building, there is a mural depicting a cityscape. This is the only art work found in the residual spaces under the tracks along the Brown Line.

According to the new station design document, the historic station house will be preserved and enlarged at the existing site. No abutting building will be demolished. Across from the main station house, auxiliary exits will be added on the current parking lot. The residual space left in between the stairs and rotary-gates under the tracks will be fenced off and saved for future development opportunity.



STREETScape OF ARMITAGE AVENUE



EXISTING SITUATION OF ARMITAGE STATION AND ITS VICINITY



ENGRess OF THE HISTORIC ARMITAGE STATION WITH PLANTED WALKWAY



PARKING AND MURAL ACROSS FOR THE STATION

Reclaiming Actions

The congenial atmosphere of Armitage Avenue and the limited available land suggest a less intensive and more compact design to activate the station area. A semi-enclosed fair place is proposed here as one alternative to develop this residual space that opens right onto Armitage Avenue.

Leasing the space for vendors, exhibitors, and neighborhood festivals

The space would be called "Armitage Fair". It is conceived as a friendly but informal gathering place for the local neighborhood. Artists should be invited to display their work on a rotating schedule. Farmer's markets and art markets could take turns in the place. Vendors, especially food vendors should be allowed for certain hours of the day. Special neighborhood events could also take place under the canopy of the train tracks.

Filling the residual space with a semi-enclosed public living room

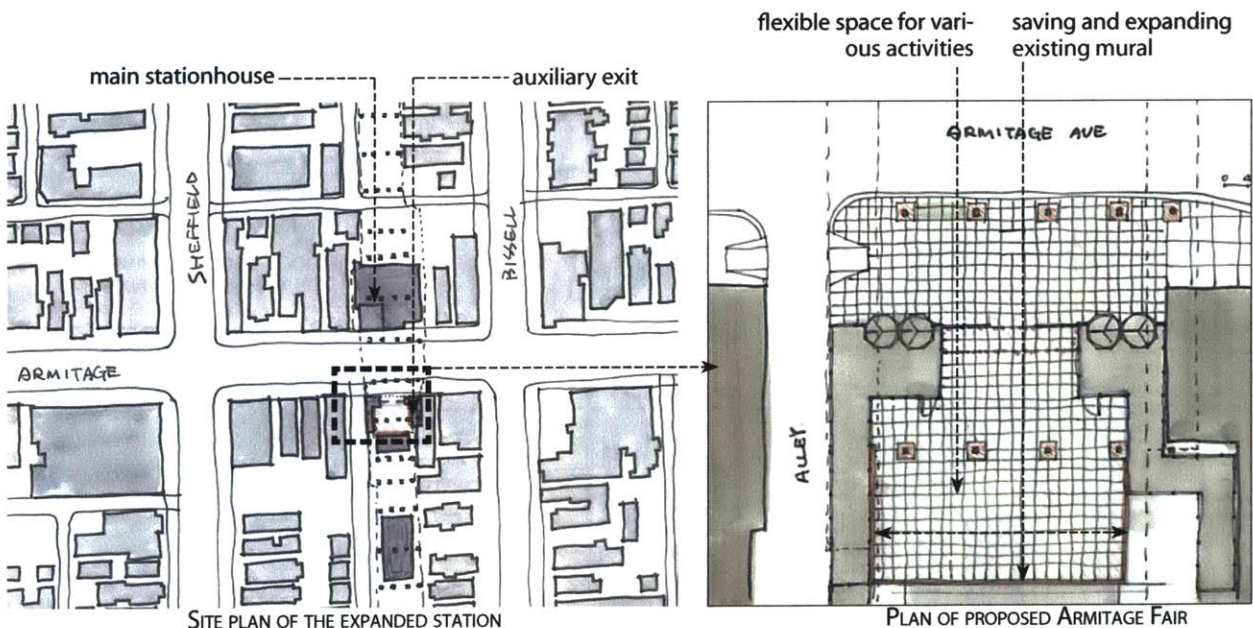
Besides saving construction cost, keeping Armitage Fair semi-enclosed can better suit the site defined by the open structures. Moreover, this could lend to the space an informal sense that fits the cozy atmosphere of the surrounding neighborhood.

Saving and expanding the mural

The existing mural should be saved and restored. It should be viewed without obstruction from the sidewalk and from the main station entrance across the street. Further, two sidewalls could be built to expand the original mural and to provide a continuous background for the Armitage Fair.

Displaying the steel structure

The elegant steel structure of the train line will serve as a decent entrance arcade to Armitage Fair. The columns and the beams on the sidewalk form a series of arches that add a nice arcade in front of the Armitage Fair and the auxiliary exit of the Armitage Station. They should be cleaned and repainted. Columns located inside of the fair place could be used and decorated as part of the exhibition.



Organization and Funding Options

Involving local artists, commerce guilds, and community organizations

Armitage Fair is intended to be a flexible place for various activities. To make it work, a variety of participants need to be involved in planning, organizing, and managing different activities. CTA may invite the city or the neighborhood leaders to initiate the program. Later on, different types of activities could be arranged on a rotary schedule while allowing flexible time for special events.

Easy shell installation by CTA

The shell of the Armitage Fair can be installed by CTA without significant additional cost. Three side walls will be already in place after the new stationhouse and the auxiliary entrance are built. No matter whether this residual space is to be used or not, drip pan and exterior lighting fixture have to be provided for the auxiliary entrance. With a small marginal cost of extension of drip pan, extra lighting, and simple identification signage/decoration, the place will be ready for multiple uses. Instead of waiting idly for a developer to claim this space in the future, a very moderate set up by CTA could polish and animate the small space.

Leasing income designated for maintenance

The open-air fair place can be leased in the similar way to leasing an in-station concession. Currently, the leasing income from the concessions goes to CTA's general resources. If part of the income could be designated for maintenance of the concession space, whether indoor or outdoor, the space could be maintained more efficiently.

Private adoption option in long term

Once the space gains its name and is recognized by the public, Armitage Fair could be adopted by a private developer or neighborhood organizations in the long run. CTA shall still maintain the air-rights above, but free of maintenance responsibility on the ground.

Application

An important lesson learned from this example is that development around transit stations may not necessarily take place at large scale. Small additions to the existing space may turn a left-over corner into a live urban attraction. The key here is to consider the urban context when designing the space and to involve the local neighborhood in programming the space.

Punctuating continuous street front with weather-protected open space

In the Western Station case, the focus is given to adding a new building to complete the street the line. On Armitage Avenue, although the same infill strategy may also work, setting aside a small open space is more preferable, because the existing street front is continuous and consistent. The well-structured urban fabric clearly defines the space intentionally left open. More than a canopy that protects the semi-open space from the weather, the elevated train track structure further defines the volume of the space. As a result, a clearly defined semi-open space would be viewed as an interesting punctuation on a homogenous streetscape.

Flexibility in space configuration and activity organization

A singular space could serve multiple purposes if it could be carefully programmed. This flexibility of space can be achieved by two ways. One is to engage multiple participants. Different organizers will use the same space for different functions. The other is to organize different activities on different time. People may use the same space in different ways on weekends or on weekdays, at lunch time or at night. These two ways are not totally separate. Combining them together, a small piece of left-over space can be filled with wonders.

It needs to be pointed out here that in order to make a flexible space, a strong identity of the space must be established first. People need to know the place before they could add their creativity into it. For this reason, the sample proposal gives the semi-open space a specific name – "Armitage Fair" and suggests the possible organizer to initiate the program.

Existing Site Condition

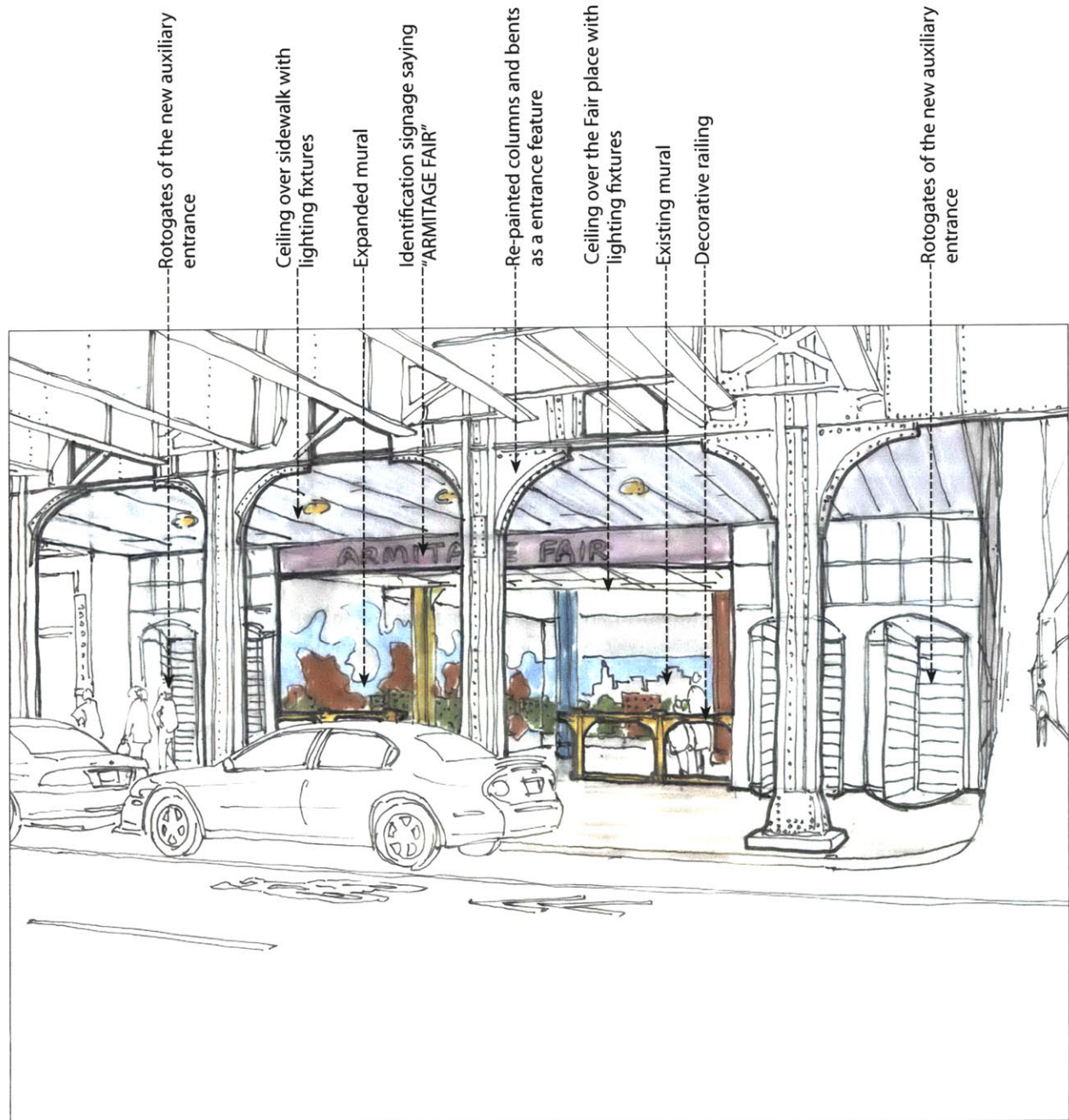
- fine-grained urban fabric
- confined space
- "hidden" mural

Reclaiming Actions

- Leasing the space for venders, exhibitors, and neighborhood festivals
- Filling the residual space with a semi-enclosed public living room
- Saving and expanding the mural
- Displaying the steel structure



EXISTING SITUATION

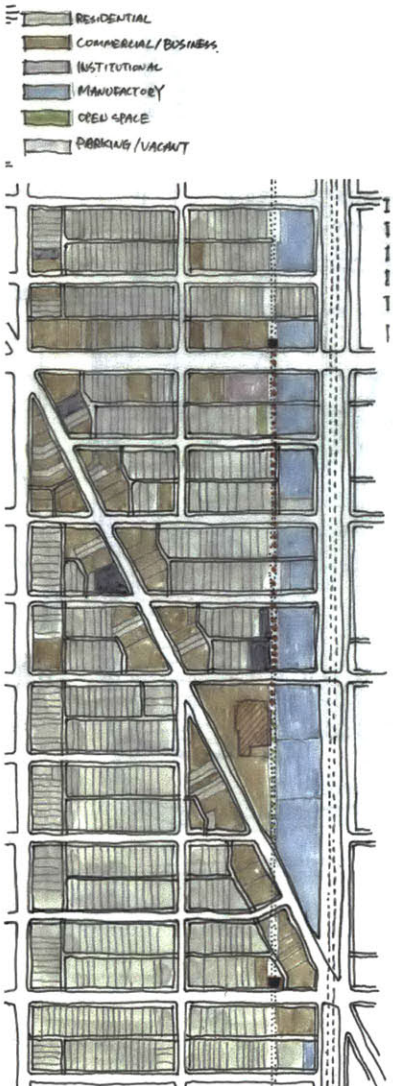


PROPOSED ARMITAGE FAIR UNDER THE TRAIN TRACKS

3.3 Prototype 2: Making a Street Connection

Determined by the shape of the train line structure, the residual space underneath it often exists in a long and narrow form. This strong linear feature spatially conforms to a street or other links such as an alley or a walkway. If appropriately sited and programmed, disordered residual spaces can be converted into neat and lively neighborhood streets that connect important destinations and improve the local circulation of the adjacent neighborhood. Moreover, when the transport structure is brought out from the hidden back/side yards to the open streets, it can help illustrate a more public and buoyant image of mass transport. Exemplified by the Brown Line segment between the Irving Park Station and the Addison Station, Prototype 2 explores the site selection, program strategies, and design elements of making a street connection.

EXAMPLE 2: BETWEEN IRVING PARK AND ADDISON



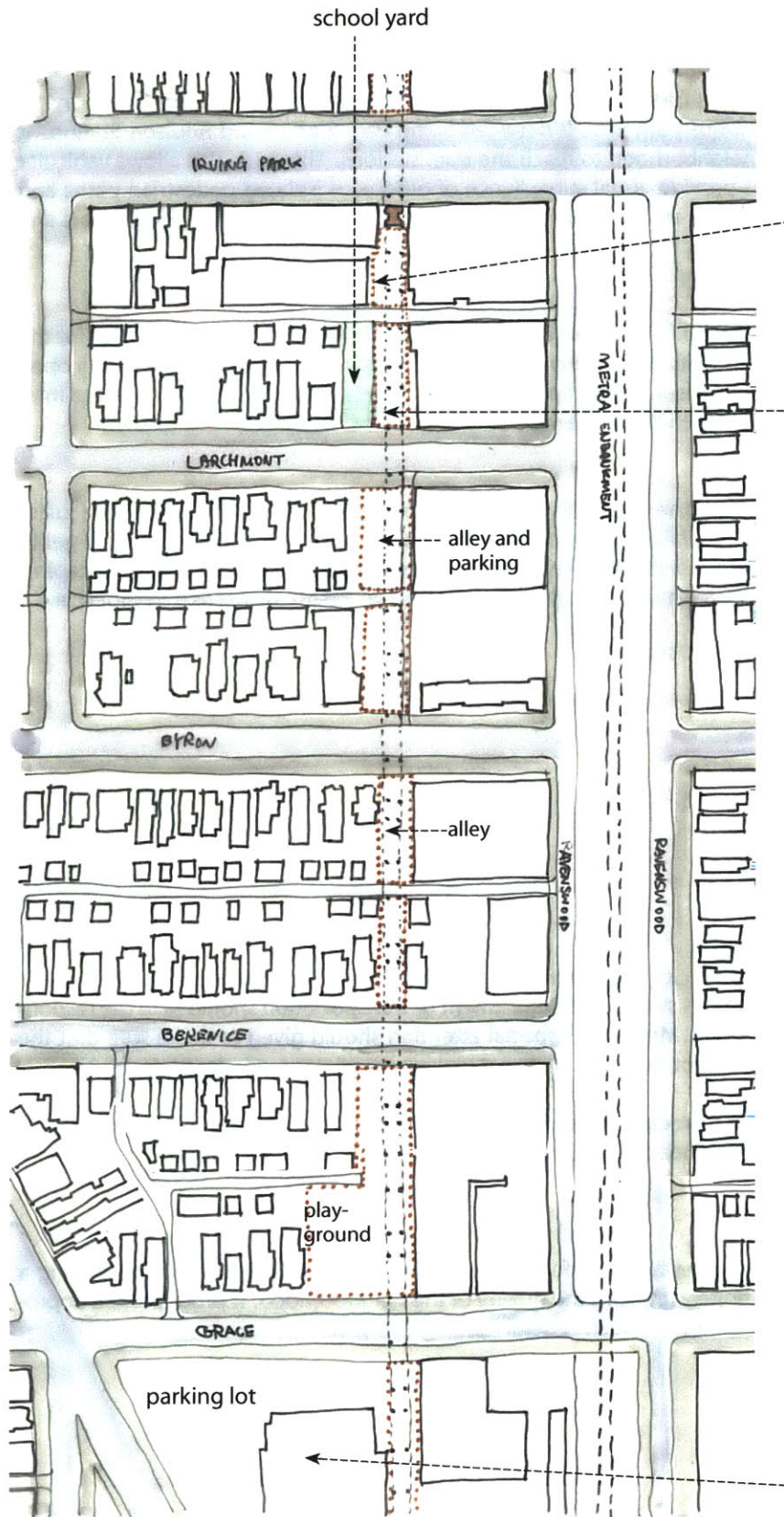
SEGMENT LOCATION AND LAND USE PATTERN OF ITS SURROUNDING AREA

Existing Site Condition

The segment from Irving Park to Addison is located at the boundary of the North Center and the Lake View neighborhoods. The district is characterized by a mix of primarily residential and a certain amount of industrial uses. The Brown Line structure lies on the boundary between the residential district and a strip of industrial zone along the Metra railroad. To the west of the elevated guideway is mid-density residential area. There is a school yard adjoining the Brown Line right of way.

The north end of this segment is Irving Park Avenue, a local commercial and service street in the area. The south end of this segment ends at a popular houseware store called CB2.

Currently, parking and two alleys occupies the residual space. Traffic flow is unorganized. The ground paving is in various conditions.



IRVING PARK TO ADDISON: EXSITING SITE CONDITION



PARKING



UNORGANIZED SPACE



AERIAL PHOTO



HOUSEWARE STORE CB2 AT THE SOUTH END

Reclaiming Actions

Organizing local circulation

The purpose of making a street connection is first to carry traffic of pedestrians, cyclists, and automobiles. In the plan shown on the facing page, a continuous path is built between Irving Park Station and Addison Station. It provides a shortcut for residents in the neighborhood to reach the train stations. This path also allows vehicular traffic. Occasional vehicular traffic helps provide visual surveillance of otherwise isolated pedestrian paths and thus provides security. The alternation of split and merged lanes intends to greatly reduce the speed of cars and to prevent unnecessary through-traffic.

Defining a neighborhood boundary

Of the same importance, this short street should more than a just passage. It should also be a public plaza for the local neighborhood. Bearing little through traffic, this stretch of land should be able to provide high-quality open space for children to play, for neighbors to meet. Landscaping, lighting fixtures, and gateway features are integrated to create a distinctive boundary between the residential neighborhood and the industrial district.

Building a civilized street

A civilized street could be created by fulfilling the two goals mentioned above. A civilized street should be full of moments: both for pedestrians and vehicles. Walking should be an easy and pleasant experience. Cars can get to their destinations at a controlled speed. Parking should take minimum space and be integrated with landscaping. A civilized street should also add features into the neighborhoods. It should be a path as well as a destination.

Organization and Funding Options

Collaboration with CDOT and the community

Building a street would inevitably involve the city's Department of Transportation. The transit authority needs to designate this stretch of right-of-way for a local street. The Department of Transportation should take the responsibility of building and maintaining the street. Meanwhile, special attention should be given to make sure that the engineering standards made for cars should not overrule the street making principles made for pedestrians.

Local residents should also be invited in the process of planning and designing the new street. They could even be involved in the construction and maintenance of the street.

Potentially eligible for Federal Funding

Several federal funding programs have been established for enhancing the livability of communities. Making a local street with calmed traffic would definitely improve the quality of the neighborhood. If programmed appropriately, this project could be potentially eligible for such Federal funding options.



IRVING PARK TO ADDISON: MASTER PLAN OF PROPOSED STREET CONNECTION

Application

Connecting destinations

Due to the linear features of the available land under any elevated transport infrastructure, it is a very common strategy to convert the at-grade right of way to a pathway or linear park. The cases of the Linear Park in the Bay Area and the Promenade Plantée in Paris showed in Chapter 3 are both excellent examples. However, this strategy must be applied with caution. First, a street or pathway will not work unless it connects certain destinations. Usually, people use a street to get somewhere for certain purposes. Even when just for recreation, i.e., taking a stroll on a nice weekend morning, people tend to choose a route that can meet other needs as well. When traveling by train, people care more about the stations than the alignment between stations. In a sense, this is also a true for making a street underneath the structure: the street cannot start from nowhere and go to nowhere, although the places it connects are not necessarily the same places the train line above links.

Creating a destination

On the other hand, a street itself can sometimes be a destination. Sometimes a street becomes a destination because the many bordering properties are urban attractions. Sometimes a street becomes a destination because it provides points-of-interest itself, such as corner gardens and art installations.



SPACE UNDER THE TRACKS USED AS AN ALLEY

Spatial condition

In order to make a full-sized street accommodating both vehicular and pedestrian traffic, the available space needs to be wide enough. Very often, the existing physical space is adequately wide. It is perceived as narrow because the space is not organized and the overhead train tracks make it difficult to perceive the space as a whole. In addition, a street that is not wide enough for a highway lane is often adequate for slow local traffic.

In short, streets constitute the most fundamental and extensive public network that bond the city. Making a street is in a sense making the city. Therefore, its alignment, space, ends, and borders must be designed from its urban context, and not solely from the availability and condition of the residual space under the tracks.

Other connections suggested by the existing travel pattern

Trace of frequent traveling often suggests the potential need and possibility of a street connection. The space under the tracks is often used as an alley. When there is a need to convert the residual space into an alley, the ground should be properly paved and drained.



TRACE OF FREQUENT PASSING

Existing Site Condition

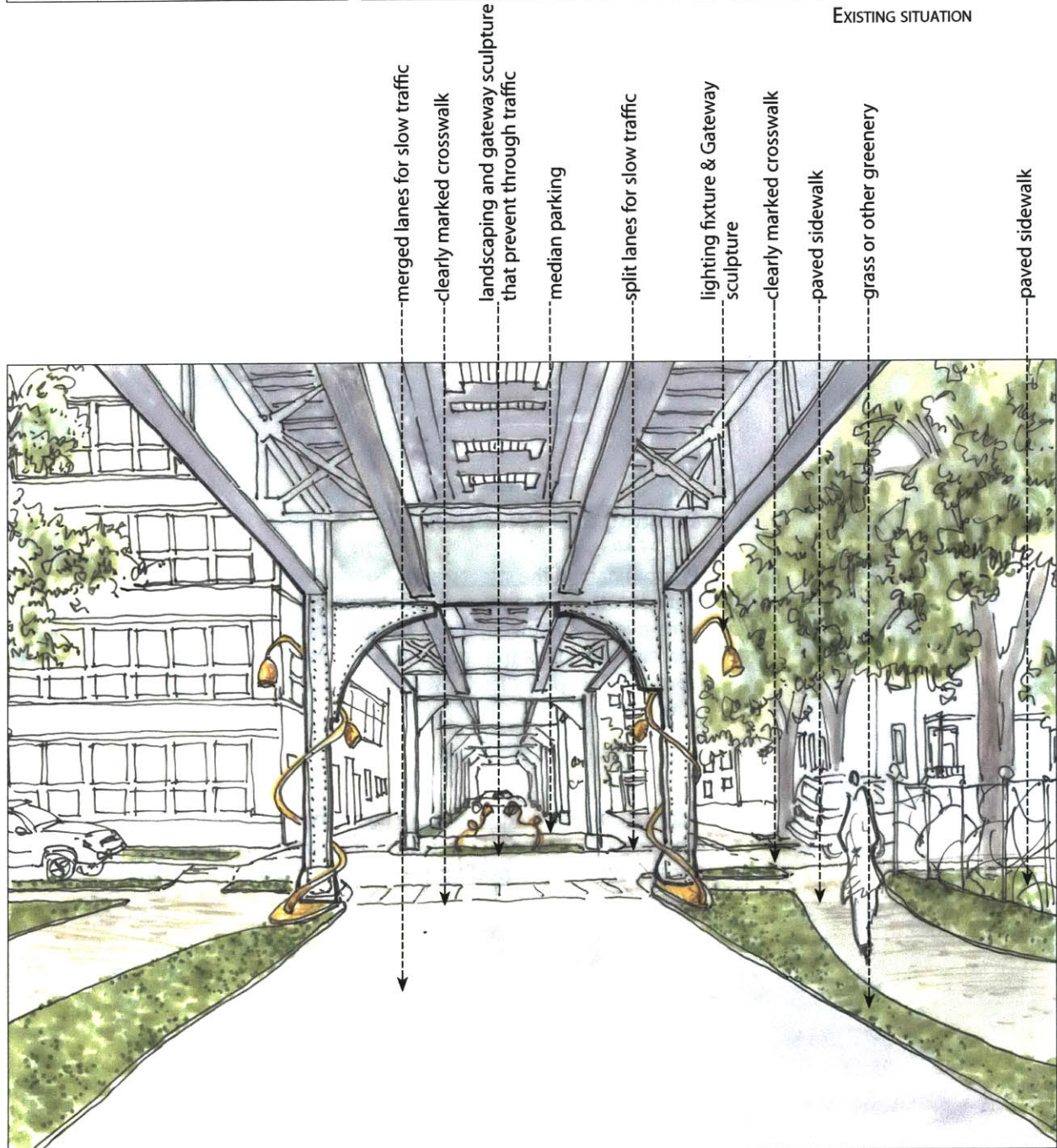
- Unorganized space with mixed traffic and parking
- Between residential neighborhood and industrial district
- Major destinations at the ends

Reclaiming Actions

- Organizing the local circulation
- Defining a neighborhood boundary
- Creating a civilized street



EXISTING SITUATION



IRVING PARK TO ADDISON: PROPOSED NEIGHBORHOOD STREET WITH CALMED TRAFFIC AND GATEWAY FEATURES

3.4 Prototype 3: Celebrating the Structure

This prototype applies particularly to over-street structures. The Brown Line, like all elevated urban train lines, is a vital spine for the City of Chicago. The presence of the elevated structures is an important visual element to the cityscape as whole. It is also a symbol of mass transit service. Over-street structures in poor shape could impair the general perception of the transit service. On the other hand, if treated properly and creatively, the over-street train tracks can also symbolize the well-managed transit service of the city.

The steel structure of the Brown Line was a magnificent achievement back to a century ago. Today, we can still appreciate the inherent aesthetics of its engineering work. However, the appearance of the structure is aging badly: the paint is peeling off and the metal is rusting. It needs a make over to reveal its grandeur.

EXAMPLE 3: BETWEEN CHICAGO AND THE MART



OVER-STREET STRUCTURE PREDOMINANT IN THE STREETScape

Existing Site Condition

Predominant in the streetscape

Between the Chicago and Merchandise Mart stations, the Brown Line runs over the Franklin Street, passing through the city's famous Gallery District. Outside of the Loop, this is the only stretch of the Brown Line that completely exposes itself over the major city street. It predominates the streetscape.



EXQUISITE ELEVATED STRUCTURES

Exquisite steel structures in poor painting condition

The exquisite historical steel structures are very impressive. However, for most portions, the peeling paint makes them appear dark, heavy, and aged.



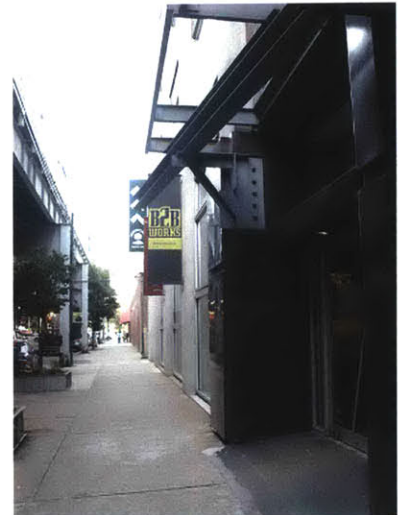
STEEL STRUCTURES IN POOR REPAIR

Aging transport infrastructure vs. vanguard art and design community

The aging elevated train structures do not match the trendy style of the Gallery District below them.

Local studio taking the structure as its front door

As neighbors of the elevated, some local studios are inspired by the steel structure to decorate their front doors. This unique design not only distinguishes a store from others, but also forms an interesting visual dialogue between the two sides of the sidewalk.



CANOPY MADE OF A STEEL BEAM FROM THE ELEVATED



PLANTER MADE OF A STEEL PIECE FROM THE ELEVATED

Reclaiming Actions

"Art Structure" Program

Given the special site location, an "Art Structure" program is proposed here to engage the creativity of local artists and designers. This program would invite the neighboring galleries and studios to claim a portion of the elevated structure as part of their storefront and decorate it in their own design. The three main components of this program are:

1. Bent structure to be decorated as an extension of their storefronts by local studios and designer's stores
2. Customized lighting fixtures to be suspended between the EI structure and the storefronts
3. Truss structure to be painted by CTA using a neutral light tone



AERIAL PHOTO OF FRANKLIN STREET

Organization and Funding Options

Timing with CTA's painting schedule

This program would be very feasible if it is synchronized with the CTA's structure painting schedule. CTA should establish the basic color palette and provide the painting materials to the artists to make sure proper paints are used to protect the structure and are environmentally friendly. This program would not add to CTA's cost and would greatly improve the transit image.

The City, private sponsors, and art grants

"Art Structure" program would also seek funding outside of the transit authority. For example, it could be part of the City's program of special events, since Chicago is well known for its city-wide art programs. Private sponsors may also invest in this activity. Various art grants should also be considered as a source of funding.

Application

Highly visible portion of the structure as an art canvas

Currently, commercial advertisements occupy the most predominant locations of the elevated structures. Sometimes, these advertisements are not conducive to the improvement of the transit image. For example, quite a few automobile advertisements have been seen attached to the structure. In the "Art Structure" program, the elevated structures would be displayed in various art forms in order to improve the state of the art of the urban mass transit.

Over-street train tracks as part of the street

Rather than considering the elevated structures as an autonomous entity on its own, this proposal views it as part of the street. Therefore, the painting scheme is not based on the structural logic but is based on the sidewalk logic. Part of the train structure is visually connected with the storefronts. Together, they form the space of the sidewalk. The part in the middle is viewed as a background, and thus is painted in a neutral tone.

Existing Site Condition

- Predominant in the streetscape
- Exquisite steel structures in poor painting condition
- Aging transport infrastructure vs. vanguard art and design community
- Local studio taking the structure as its front door

Reclaiming Actions

- "Art Structure" Program



EXISTING SITUATION

truss structure painted by CTA
in a neutral tone

bent painted by local artists or
designers

custom design lighting fixture
for the storefront and the
sidewalk



"ART STRUCTURE" PROGRAM: BETWEEN CHICAGO AND THE MART

4.5 Prototype 4: Framing a Picture

The previous three prototypes all aim at transforming the dull residual space into useful and cheerful public/quasi-public spaces that invite people to pass by or stay in. Some spaces under the EI, however, cannot be so easily and actively used. The Clark Junction, a strategic converging point of two elevated lines, is among these spaces. In this case, making the space at least visually elegant or interesting will help to reduce the appalling feel of such space. Prototype 4, framing an image, is an attempt to control the view of the structure and the inaccessible residual space from nearby main streets by hiding undesirable sights while highlighting selected spots of interest.

EXAMPLE 4: CLARK JUNCTION



AERIAL PHOTO OF CLARK JUNCTION

Existing Site Condition

Complicated structure and facilities

At the place where the Brown Line tracks and the North Main Line tracks converge into the North Main Line, extra supports are provided to hold up the widened trackway above. As a result, these densely arranged bents and trusses make a very clumsy space under the structure. The joint of the two lines also requires additional transport facilities such as control, communication and equipment storage to be built under or close to the junction.

A hidden location deep inside a big block

This junction is hidden deeply inside a big city block bordered by Clark Avenue and Sheffield Avenue. Most portion of the space under the tracks cannot be directly accessed from major street. Part of the space is used as alleys and parking lots. The rest is unused.

Inconsistent streetfront on major commercial streets

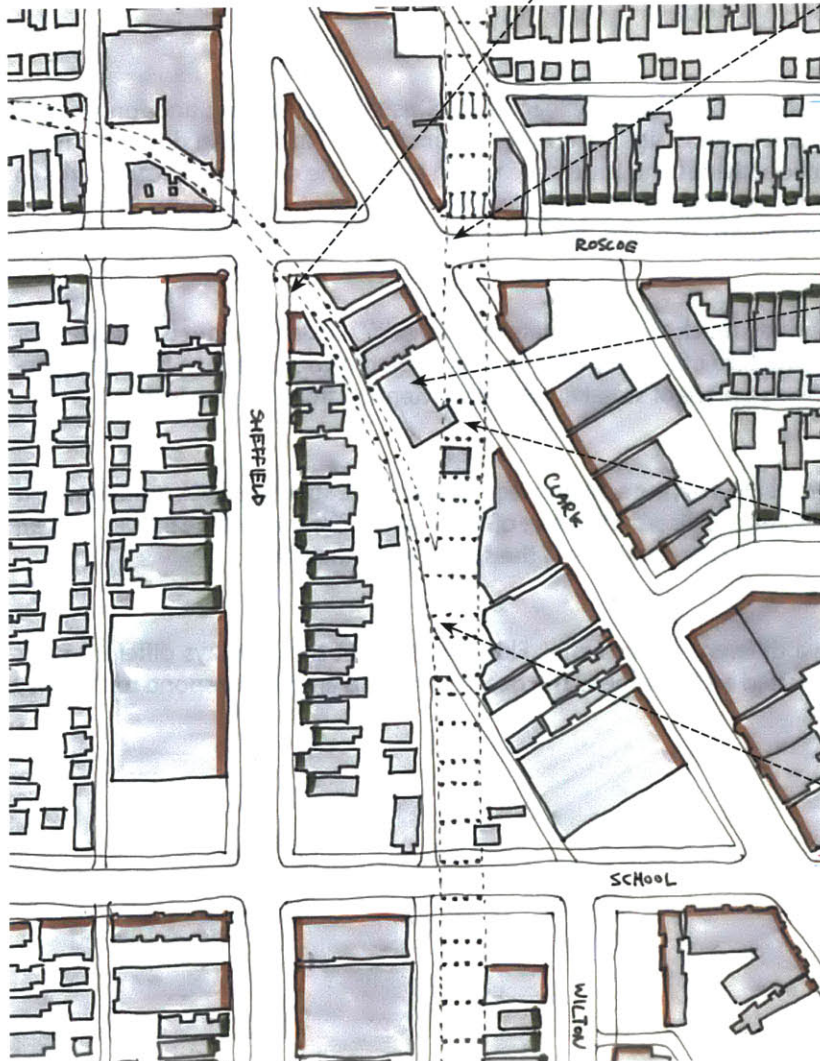
The overhead train tracks diagonally intersect with Clark Avenue, breaking the main street front on this business commercial street. A CTA service/equipment facility occupies a large streetfront property.

Poor lighting for a street crowded with night life

This portion of Clark Avenue is filled with bars and restaurants. It becomes very busy when night falls. Occasionally, people use the alley underneath the train tracks as shortcut to walk through the large block. However, neither the sidewalks nor the alleys in this area have adequate lighting at

commercial/
business

RESIDENTIAL



CLARK JUNCTION: EXISTING SITUATION



BROWN LINE INTERSECTS WITH SHEFFIELD



NORTH MAIN LINE INTERSECTS WITH ROSCOE



CTA FACILITY FACING CLARK AVENUE WITH A BLANK WALL



UNACCESSIBLE SPACE OCCUPIED BY COLUMNS, A SUBSTATION, AND A FACILITY



CLUMSY SPACE UNDER THE TRACKS

Reclaiming Actions

Screen the undesirable sights

Given the fact that the spaces under the tracks are physically inaccessible, visually unpleasant, and functionally critical, a practical strategy is to hide the undesirable sights from the major streets. Rather than dramatically reconfiguring the space to hold active public activities, this prototype would restate the complicated structures as background. On the street front, an artist's designed screen would define the edge of the sidewalk. The screen itself would allow a certain extent of visual penetration, and therefore give a hint of the space behind it.

Focus on a point of interest

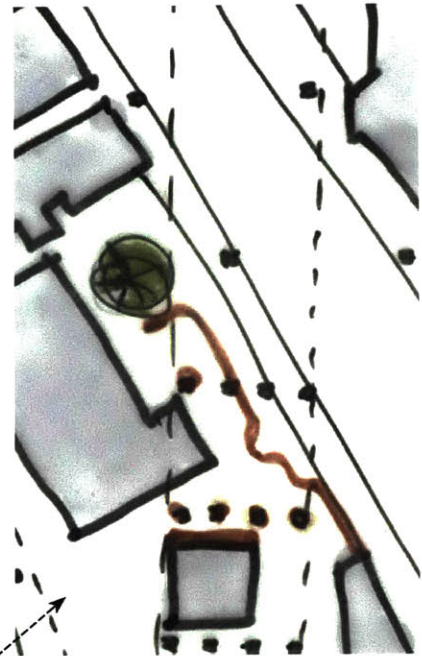
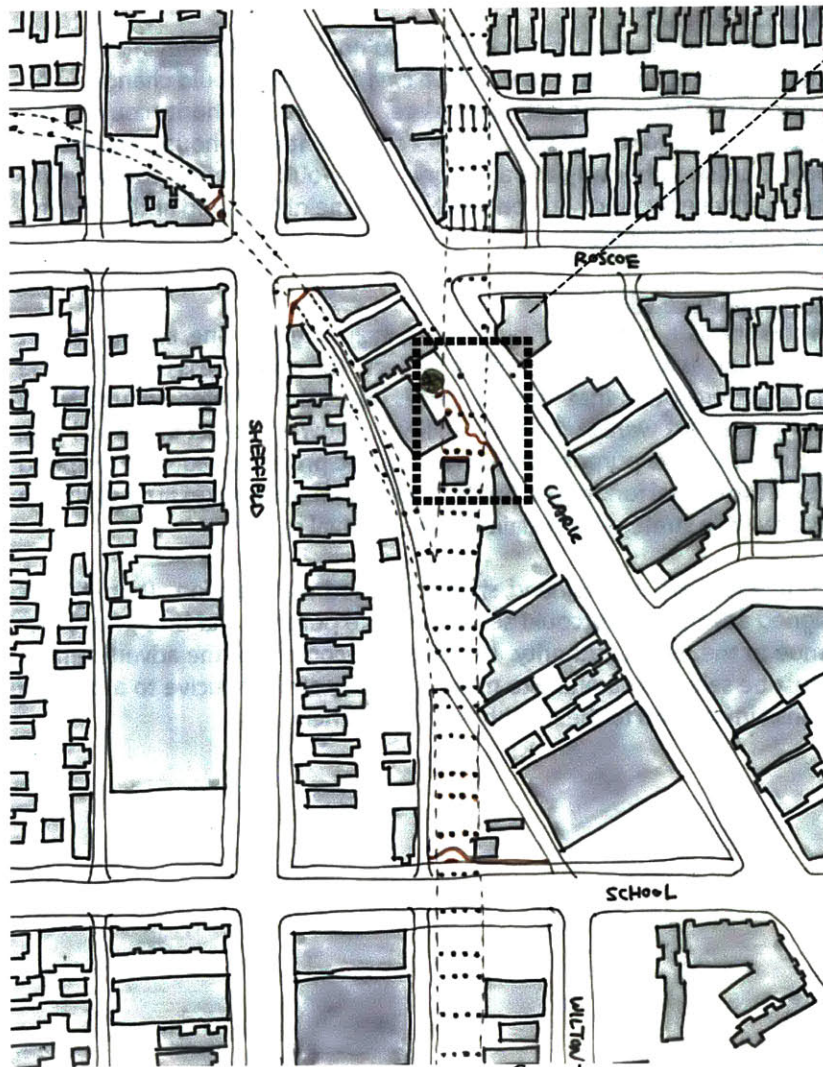
Simply hiding the unattractive sight cannot do much to animate the street life. Thus, a cut-out is designed for the screen. Through the cut, part of the structure of the elevated such as a column could be seen from the sidewalk. This point of interest would function as a piece of street art drawing attention from the passersby.

Define vantage point for viewing

From a certain vantage point marked on the sidewalk, the screen foreground and the structure background would be viewed as a complete picture. At this point, the disorderly scene of the column forest would be framed into an orderly picture that could still reveal the unique characteristics of the space under the tracks.

Create different day and night scenes

Spotlights would be used to illuminate a different night scene. Fluorescent paint that displays different color under different lighting sources would be used on the screen. The goal is make this art piece respond to the busy night life in this area.



PROPOSED SCREEN LOCATIONS AROUND CLARK JUNCTION

Organization and Funding Options

Minor cost to CTA

Erecting an interesting screen wall would not be significantly more costly than putting up a regular fence. Yet a creative design could change an ordinary fence into an interesting art piece. The transit authority could either invite an artist to design specific sites, or appoint an in-house designer to be the artist. Either way, the additional cost would be trivial compared to the positive effect it could contribute to the neighborhood and to the image of transit facilities.

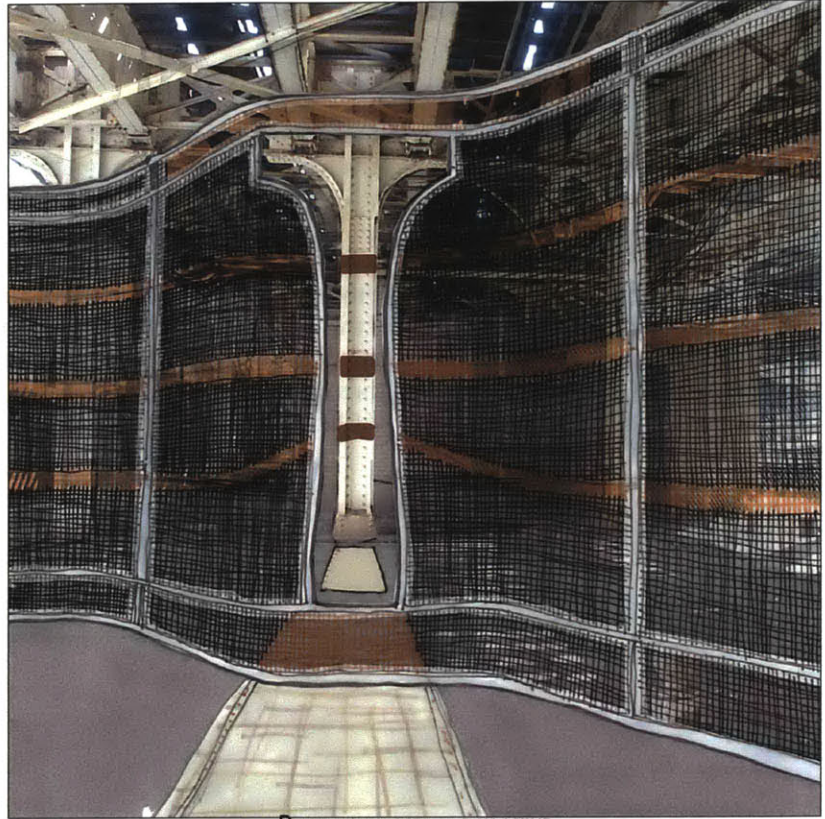
Art vs. commercial art

In this thesis, a number of prototypes, including this one, employ an art installation as a center piece of the project. The objective is to change the general perception that residual spaces under the elevated are unattractive spaces. Art works, with their ability to show an object in a usual way, would fit for this purpose perfectly. A public project is required to spend 3% of the capital funding on public art program. This makes art installation as a feasible strategy for reclaiming the residual spaces.

Commercial art, on the hand, should be used with caution. Properly designed advertisement could serve the same purpose and bring extra revenue to the transit authority. However, the content of the advertisement must be selected carefully to make sure they are conducive to a positive transit image and to the neighborhood in general.



EXISTING SITUATION



PROPOSED SCREED -- DAY SCENE

Existing Site Condition

- Complicated structure and facilities
- A hidden location inside a big block
- Inconsistent street front
- Poor lighting at night

Reclaiming Actions

- Screen the undesirable sights
- Focus on a point of interest
- Define vantage point for viewing
- Create different day and night scenes



PROPOSED SCREED -- NIGHT SCENE

4.6 Prototype 5: Creating a Niche

Creating a niche is an implementation prototype that reclaims the small street-side residual spaces under the elevated train tracks. Two examples are given here. The first one creates a recessed public space that invites passersby to enter and briefly stay. The second one installs functional street furniture that clearly separates the public sidewalk and the private backyard.

One advantage of this prototype is that the size of the space is some and the construction is relatively simple. However, it may have strong impact on the neighborhood as a whole because the amenities it offers benefit everyone in the neighborhood. Therefore, once a program is properly established, in the long run, it would be possible that the maintenance of the niches under the tracks could be perform by the neighborhood group, local merchants association, or even the city of Chicago.

EXAMPLE 5A: STREET CORNER

Existing Site Condition

As shown in the photo on the next page, some street corners under the tracks are unused and filled with trash. Although they are behind the fence, they still impair the quality of the sidewalk experience.

Reclaiming Actions

The strategy is to open the fence and use the small corner as a sculpture garden (refer to the sketch on the facing page). A dramatic change could be realized with minimum construction:

installing a miniature train track (or other sculpture) to end the endless view of the corridor under the tracks,

- paving the ground and adding a name plate on the ground,
- keeping the existing tree and making it part of the new landscape,
- adding a bench,
- adding a few lights.



EXISTING SITUATION

existing tree integrated into the new garden

bench

a miniature of the elevated that ends the endless corridor under the tracks

lighting fixtures suspended from the elevated structure

name plate on the ground



PROPOSED STREET CORNER SCULPTURE GARDEN

EXAMPLE 5B: 3' STREET SIDE

Existing Site Condition

This is a common scene in along the Brown Line: private parking or backyard, public alley, and sidewalk are mixed under the overhead train tracks. It makes walking on the sidewalk an unpleasant experience.

Reclaiming Actions

Simple street furniture would be installed to clearly define the sidewalk, the public domain. It serves several purposes at the same time (refer to the sketch on the facing page):

- blocking an unpleasant view to private parking or backyard,
- providing a resting spot for pedestrians,
- exhibiting neighborhood information,
- increasing the aesthetic value of the sidewalk,
- and displaying a better transit image.

Application

This prototype, creating a niche, has very wide application throughout the whole Brown Line Corridor, because it does not require costly large-scale construction and can easily adapted into plans that fit specific sites. The main principles of this prototype are highlighted below:

- Utilizing the smallest street side residual spaces throughout the corridor
- Defining the space with functional amenities and meaningful objects
- Showcasing selected sites
- Offering a standard kit-of-parts



EXISTING SITUATION

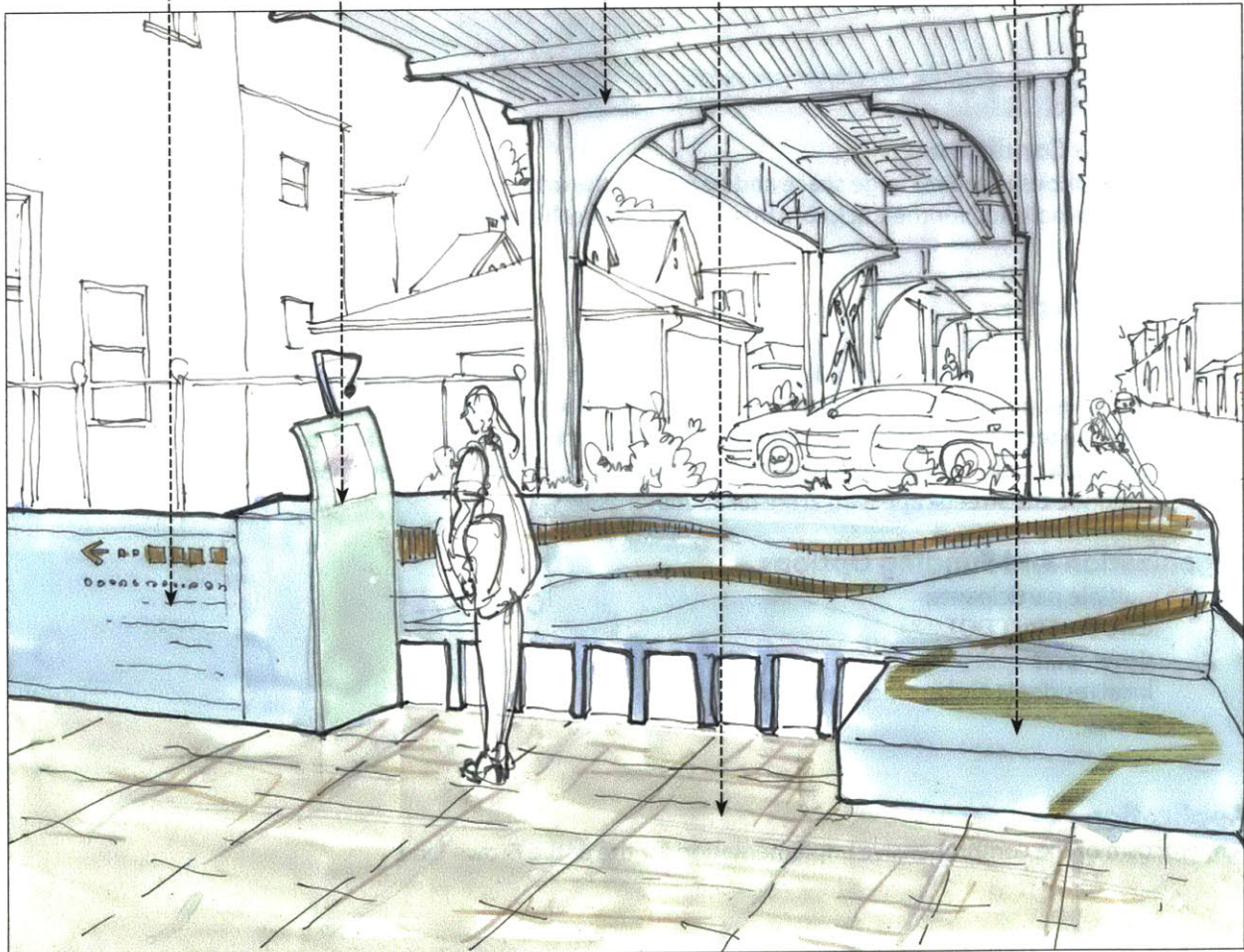
local directory and directions

information board

elevated track structure functioning as a canopy to the niche below

extending sidewalk paving

fence with seatable surface



PROPOSED STREET SIDE AMENITIES

4.7 Prototype 6: Synchronizing Multiple Prototypes

Station Expansion will often require the acquisition of properties near the existing stations. Buildings are to be torn down to accommodate more spacious and modern station facilities with elevator access to the platforms and improved emergency egress. This kind of acquisition is particularly extensive at major transfer stations, such as Belmont and Fullerton. The complicated function and the inner circulation pattern force the design solution to focus on the transportation service per se, as it should be. However, a side product of this approach is a certain degree of segregation of the transport structures and facilities from their urban context.

Not coincidentally, large transfer stations are very often located in busy neighborhood nodes, where activities are vigorous and land is valuable. The new and bigger stations intend to bring more people to the nodes while demolishing the buildings that have been serving the people in the same area.

As stressed several times throughout the thesis, the ultimate goal of any urban mass transport system is not only to provide the service, but to make the city a better environment. Through careful infill of the remnant parcels the gap between the new station and remaining commercial facilities can be filled.

This prototype is not a new one. It is a synthesis of the previous 5 prototypes. It exemplifies a way to combine different strategies for a specific site. In this sense, it could be a microcosm of the implementation throughout the entire Brown Line.

EXAMPLE 6: BELMONT STATION AREA

Existing Site Condition

The new stationhouse requires large space and fragments the urban fabric.

Buildings are demolished for the track construction. However, they are not replaced by new development.

Reclaiming Actions

Synchronize multiple prototypes in this area. Different activities are organized for street fronts and backyards under the tracks. A few items are highlighted here (refer to the diagram on page 76):

- key development on the north side of Belmont Avenue to form a new plaza
- save the temporary stationhouse on the south side of Belmont Avenue for a concession
- provide a public walkway and street connection on the south of the new main stationhouse
- continue the streetscape with art installations

Organization and Funding Options

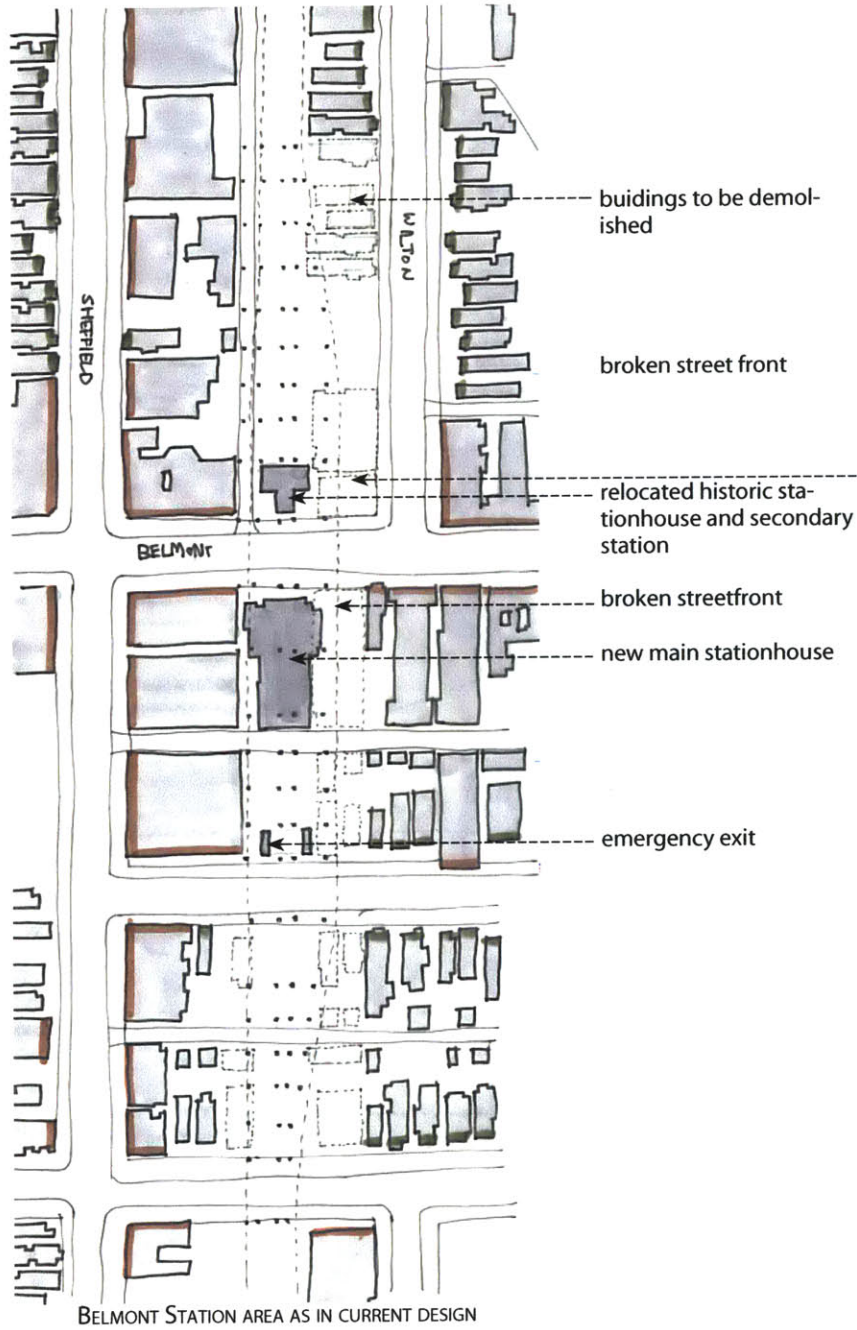
Engage multiple participants:

- CTA, the City, CDOT
- developers
- local residents and business owners
- artists

Application

A microcosm of the comprehensive implementation for the entire Brown Line.

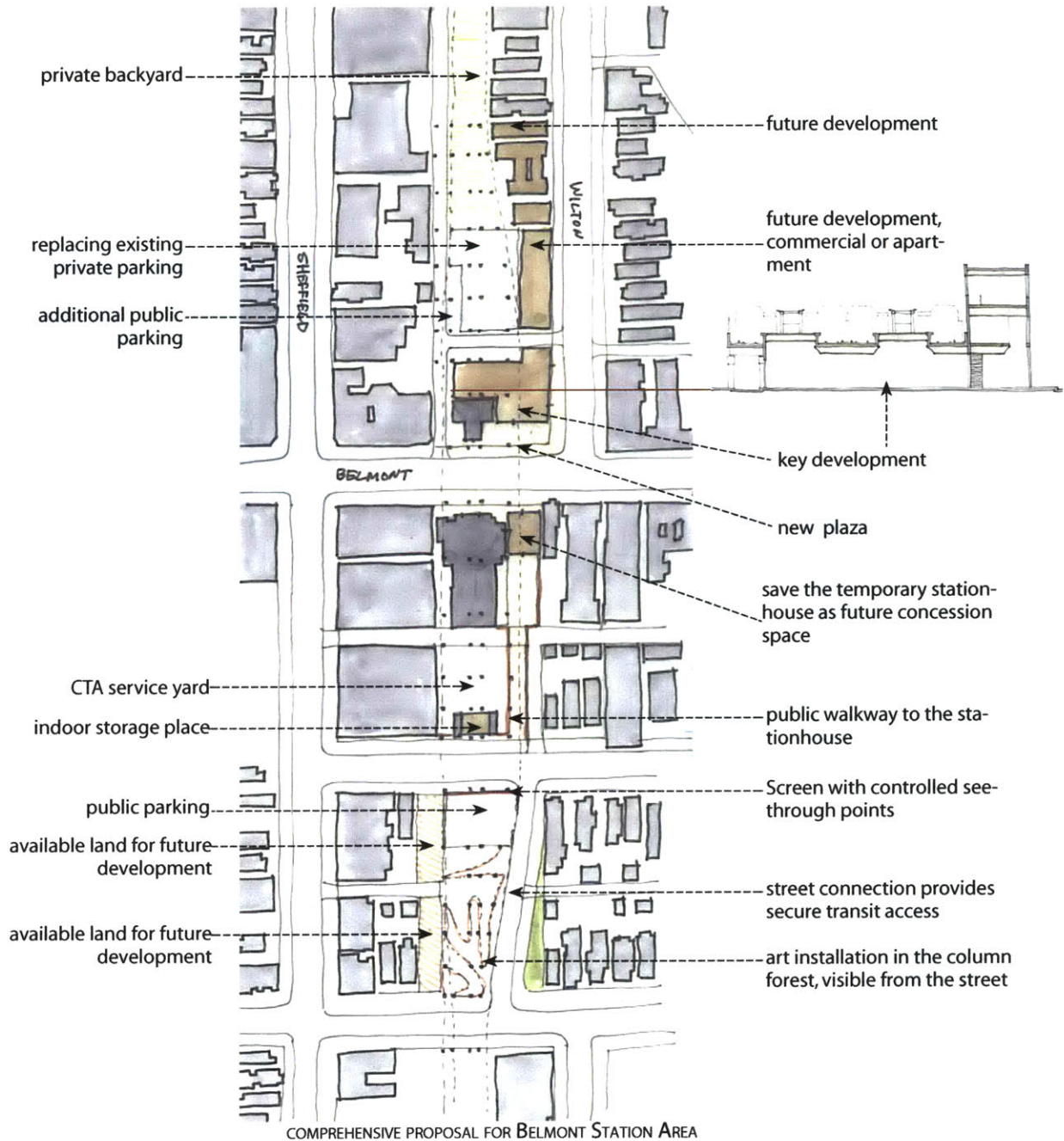
commercial/
business
RESIDENTIAL



Corner building to be demolished

backyard activities

streetfront activities



Chapter 4 Practical Implications

Guidelines for Reclaiming the Residual Space under the Elevated Transit Lines

The lessons learned from the cases in Chapter 2 and the design exercises in Chapter 3 constantly raise questions to me about the basic mechanism behind various schemes that would make them work. Although there are no set formulas that can consistently generate excellent design solutions, I believe that there are some fundamental principles that any good idea must follow and essential components of which any high-quality plan must consist. Therefore, this chapter aims at conceptualizing and articulating these hidden principles and guidelines.

Once again in this thesis I will strongly advocate more efficient and active use of selected residual spaces under the Brown Line and other elevated transit lines for public and quasi-public activities to evoke more attention to such space and lighten the ungracious perception common to them. To find the right residual spaces for non-private activities along the Brown Line, most fundamental site selection criteria will be discussed. Before listing the dos and don'ts in transforming residual spaces into public spaces, several underlying principles of the guidelines are to be explained. The main body of this chapter will illustrate eleven indispensable considerations to be taken into account in any design. In the end, a few words on private uses attempt to somehow compensate for the over-emphasis on public/quasi-public activities in this thesis.

It should be noted that although these guidelines are presented after the design exercises of Chapter 3, they are not merely a simple summary of the lessons learned through the development of these design schemes. In fact, these guidelines were developed simultaneously with the design solutions. The design exercises helped to check the validity of the guidelines. The articulation of the guidelines helped to refine design solutions. As mentioned in the introduction, this iterative process between experimenting design solutions and abstracting design guidelines is an essential methodology of this thesis project: reflective thinking and learning.

4.1 Advocate Public/Quasi-public Activities under the Elevated

Improve the Underrated Image of the Residual Spaces

Most people's intuitive response when being asked about their impression of the residual space underneath the El include, if not exclusively, descriptions such as: desolate, dark, noisy, and dangerous. Even those who have worked for the train lines for years have the same perception. I was among them before making the field survey. The observation told me that this perception was only partly true. Along the elevated portions of the Brown Line, there do exist quite a few no-man's-lands in inferior condition. Statistically, however, more land is used than is deserted; more parcels receive adequate sunlight than are overshadowed; most portions of the line are quieter than a busy arterial street; and not all the backyards with the tracks overhead made me feel insecure. But the small amount of no-man's-land and the usable space of low quality has had a strong impact on my memory of the entire corridor. Although I was very impressed by some nice private gardens under the track, they can hardly enter the collective memory of the city. In short, the residual spaces under the elevated are more mentally unfavorable than materially dilapidated. To improve the perceived picture of the residual space is more than just improving the physical condition under the tracks.

Expand the Limited Contribution of the Private Reclamation toward Shaping the Collective Perception of Residual Spaces

The nice private gardens under the elevated, unfortunately, cannot totally change the overall depreciation of the residual spaces. Private activities, usually involving limited number of people in a small circle, hold an important position in individual memory but are relatively trivial in the collective memory of the neighborhood and the city. Second, there is no strong relationship between one private activity to another. Additionally, these private activities are physically spread out along an 8-mile line, so it is very hard to form a systematic impression of the entire line. Third, constrained by the alignment of the Brown Line, the private uses are mostly backyard-type activities. These auxiliary uses usually do not attract other people's attention beyond that of the user him/herself. Therefore, although private activities have been taking place in the residual space extensively for years and greatly change the physical spaces under the tracks, they have done little to change the mental picture of these spaces.

Showcase Public/Quasi-public Activities in Key Sites to Upgrade the Mental Image of the Residual Spaces

To build up a decent image in people's minds is not as easy as to pose a nice picture in front of a camera's lens. In order to make people recognize and remember the space, the space must be public to be part of the collective memory of the city.

While numerous sites for private uses cannot form an significant part in the collective memory of the city, a handful of highlighted public activities can be very notable to the public. Currently, only three commercial buildings fill space underneath the Brown Line structure. Two of them will be demolished shortly with the construction of the new stations. The only public walkway under the tracks hides itself in a back alley. These are too scarce and too inconspicuous to overcome the stereotype of the residual space under the El. Showcasing several well-programmed public/quasi-public activities with creatively designed physical space therefore becomes an effective measure to correct the distorted common apprehension of the residual space.

However, not every square foot of the residual space should be placed in public space. To concentrate on key sites is also to spend limited resources most effectively and efficiently. Many residual spaces gradually deteriorate partly due to lack of attention. With limited labor and capital resources, it is impossible for CTA or the City to keep the residual space the whole line in regular repair. Thus, by focusing on specific cases, I am hoping that more attention will be given to the space in general, and more creative private uses will take care of most of the rest of the land under the elevated.

Celebrate the Presence of the Elevated

Supporting countless trains running for a century, the elevated structure is an engineering marvel. It deserves more attention than just being a support for electric conduits and advertisement boards. It needs to be treated as a prominent element to evoke civic pride.

The historic and aesthetic beauty of the EI is gradually fading due to age and lack of repair. To reveal its original look, the peeling paint needs to be replaced and the exquisite steel structure should be displayed.

More aggressively, the elevated structure needs to be dressed up. The Brown Line is a heritage of the past. It is also an artery of Chicago's contemporary life and it will definitely stand well into the future. In certain places, the structure might even show itself off with bold colors and exaggerated design.

4.2 Site Selection Criteria for Public/Quasi-public Activities along the Elevated Transit Line

Underlying principles

Three underlying principles for selecting sites for public/quasi-public activities under the elevated transport infrastructure are listed here. The basic thoughts are that public activities must be easily accessed and seen from the city's public domain. However, most of the residual spaces under the EI are not readily in such condition. Thus, these principles must be applied creatively, especially in seeing the potential of "unfavorable" sites. Sites that are proximate to the train stations and other transit facilities are considered desirable for public activities due to the large number of people who regularly come and go.

It should be noted that the structural situation and existing physical condition of the space are not considered as criteria for choosing the potential site. Learning from the cases and the design exercise, I believe that unattractive physical condition is not the fatal obstacle to using the space actively. Instead, it is only part of the design problem to be solved. Some sites may be challenging in terms of physical configuration, but those are also sites which offer the most exciting design solutions.

Connected or potentially connected to the public realm of the neighborhood

A site for public activities must be easily accessible by the public. It is the key to integrating a piece of reclaimed residual space back into the urban fabric.

Visible or potentially visible from the public realm of the neighborhood

The visual connection between a reclaimed residual space under the tracks and the larger public realm of the neighborhood is crucial for at least two reasons. First, public activities involve strangers who may not know the place in advance. Thus the site must be seen clearly from the outside so that a potential user of the space can make a judgement about the space before he/she enters it. Second, visual surveillance for the public realm is an important element to ensure a sense of security of the space.

Incorporating transit facilities

Around the stations, the residual spaces under the elevated gain their unique characteristics from the track structure. Transit riders are their frequent visitor. The transit authority needs to make full use of these spaces and take care of them in the long term in order to make the stations themselves work well. Meanwhile, visual and pedestrian connections between these residual spaces and the station houses often exist or can be easily established. Therefore, selecting sites that can incorporate transit facilities is a not a new criterion in addition to the first two. It is highlighted here to emphasize that mass transport nodes should provide amenities more than transit itself and should be congenial in the local urban environment.

Most Undesirable Sites for Private Uses Become Potential Sites for Public Activities

Special attention should be given to the spaces that are not currently being used by the abutting property owners. Since such spaces are optional to their bordering properties, they are less likely to be claimed and tended without any incentive. Giving this space a public identity could be a way to create a need for the space. As William H. Whyte pointed out in his book *The Social Life of Small Urban Spaces*, for good urban spaces, "supply creates demand". Moreover, dramatic transformation from the worst unclaimed wasteland to high-quality public urban space can best demonstrate the determination and possibility of reclaiming the residual spaces and therefore, have significant impact on the common perception of the elevated transport infrastructure.

Potential Site Location Indicated by Street Grid

The analysis in Chapter 1 indicates that there is a correlation between the configuration in which the elevated overlays the street grid and the occurrence of spontaneous activities under the elevated. Extending this finding, a quick site-picking kit is diagrammed on the right. At first glance, space underneath the Brown Line may be unsuitable for public activities, since it mostly passes through backyards and alleys. But a closer look at the city blocks containing the El structure tells us that opportunities are abundant.

Shaded areas mark the potential sites for each typical El alignment in relationship to the street grid.

Potential Sites where the El overlays traditional street grid

a. Where the elevated is located between the alley and backyards, the residual space is usually used by the abutting house or business owners to reach their properties. The ends of such blocks are often suitable for a small niche with urban amenities or greenery that would help to distinguish a continuous public sidewalk from the private backyards.

b. Where the elevated cuts through a block, the space underneath it becomes optional for the abutting properties. Many such spaces remain vacant. They conform the basic principles of site selection, and can be converted into various public and quasi-public activities. The key here is to design "gateways" to the inner-block properly so that people on the sidewalk can quickly realize the existence of this public space and identify its entrance.

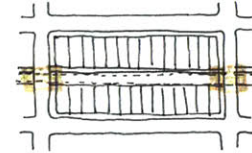
It should be noted that at the turns of the Brown Line, the configuration of the residual spaces can be viewed as a combination of **a** and **b**. There are good chances to use such space as corner gardens or plazas.

c. Where the elevated runs over a major city street, the structure should be displayed brilliantly. It is the best place to celebrate the presence of the elevated and to make a deep impression of a more cheerful El in the collective memory of the city.

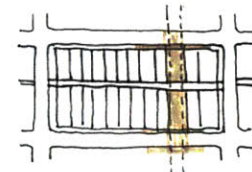
d. Where the elevated runs entirely over the alley, the ground should be paved and the passage should be kept open. Alleys are considered public space and should be taken care of by the city. Similar to configuration **a**, the ends of such blocks are suitable for niches of urban amenities. Spaces that are informally used as alleys or walkways should also be considered and treated in the this way.

Potential Sites where the El overlays modern "Tower-in-Park" development parcels

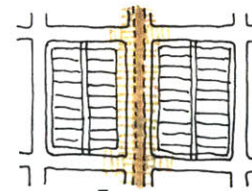
e. Where the elevated passes through a large modern "tower-in-park" type of development, the residual spaces underneath the tracks are often mixed with other residual spaces within a larger site. With abundant available space, such areas are usually problematic and lack spontaneous activities. In a positive way, they can be viewed as candidate sites for larger public space such as linear parks or other regional uses.



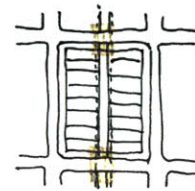
A. EL BETWEEN THE ALLEY AND BACKYARDS



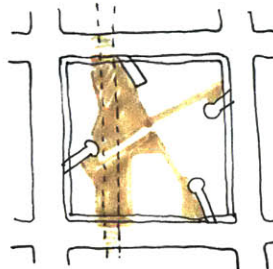
B. EL CUTTING THROUGH THE BLOCK



C. EL OVER STREET



D. EL OVER ALLEY



E. EL IN LARGE "TOWER-AND-PARK" PARCEL

4.3 Principles for Making the Design Guidelines

Designing in the Urban Context

Residual spaces can be transformed into usable civic places only when they are knit back into the urban context. This is the principle of all the guidelines that direct any project to re-utilize the leftover space. A transport infrastructure segregates the city because it was designed as an autonomous object detached from the environment. Once it was erected, nonetheless, it has become part of the city and plays more than just a singular role as a mass transport provider. Any ignorance of its external relationship with the urban environment results in nothing but awkward residual spaces that are often regarded as eyesores of the city. To make up for the fait accompli of carelessness, the action of reclaiming the residual space must look at the bigger picture of the neighborhood and the city.

Beyond the Scope of Physical Design

As discovered in Chapter 1, the physical condition of a space does not determine the occurrence of activities in it. Therefore, improving the physical environment is far from the whole task required to use the space effectively and efficiently. The guidelines to be established here consider a wide range of factors to unshroud neglected residual spaces into celebrated civic spaces, to make these spaces really work, and to keep these spaces working over time. Physical design techniques only occupy an important but small portion of the entire guidelines. When talking about design in this thesis, I refer to its broader sense: not only about creative arrangement of materials but also about the process of design, implementation, and long-term maintenance and upgrading.

Articulating Goals Instead of Stipulating Codes

Some conventional design guidelines, especially guidelines for civic construction, are stipulated in a code-like format. They are very specific on physical dimensions, selective materials, particular uses, and rigid timelines. These are useful in the sense that they can guarantee a very predictable result for the design product. But this guarantee has two sides. At the same time when it rules out "undesirables", it also rigorously limits the innovation of design ideas. A more serious hidden problem of code-type guidelines is that they are sometimes misleading. When a set of codes are so established, people begin to take them for granted without questioning their origins. Design guidelines were created for certain purposes. As time goes by, the social and physical situation changes, thus the original rationale behind the guidelines may not be valid for another time and space. Blindly following and reproducing the set codes often helps to spread common mistakes in design quickly and officially.

Therefore, in the next section, the guidelines do not include preset numbers and standard drawings. Instead they are stated as a series of actions with their goals and rationales in order to overcome the dogmatism that hinders creativity. By exposing the core of the guidelines, I hope that any mistaken and obsolete item can be spotted easily and timely.

It is arguable that this approach could add to the requirement for the design review process. But I believe such a comprehensive understanding for the whole design process should be a beneficial addition. Further, these guidelines are not intended as a replacement for the conventional checklist for specific design components. Instead, they are the base for establishing specific checklists and for checking the validity of the established checklists.

4.4 Design Guidelines for Public/Quasi-public Activities along the Elevated Transit Lines

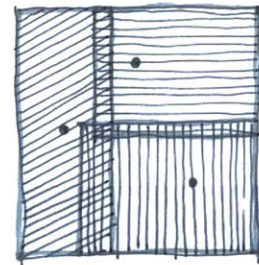
In this section, eleven basic design guidelines are illustrated. They cover a broad range of considerations including the participants, activity programming, urban context, space design, and temporal factors in the course of reclaiming the residual spaces under elevated transit lines for public/quasi-public activities. These items constitute the whole sequence from planning, designing, and building to maintaining and upgrading. Rather than being taken as a checklist for individual components, these guidelines should be viewed as a guidance for establishing a comprehensive framework for specific reclamation projects.

PARTICIPANTS

1. Identify participants and clarify their responsibilities.

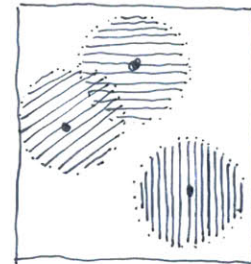
Participants and their responsibilities should be identified clearly throughout the whole process. Reclaiming residual spaces is a process of returning the single-function transport infrastructure to a multi-fold urban life. This process cannot be complete without multiple participants.

As shown in the upper diagram, clarified responsibilities of each participant will help ensure that every aspect of the project is taken care of by some one. If each participant just contributes according to his/her own interest, new "residual space" is likely to appear in the reclamation process as shown in the lower diagram.



Engage the local community in the planning, implementation and maintenance process.

As a very important participant, local communities need to be engaged throughout the entire project because they are the actual client for whom all these activities are to be planned and implemented. Merely showing the blueprint at community meetings cannot fully incorporate local knowledge and insights into the scheme. From the conception stage, local communities need to be heard for their needs and ideas. Effective communication between the authority and the community should reduce the danger of severe neighborhood protest against a project. More positively, local communities should also be engaged as a major force in implementation and maintenance of a reclaimed space. For those neighborhood organizations willing to initiate any project or program to adopt a leftover space under the track, CTA should be supportive and cooperative.



Secure funding from various sources.

To clarify each participant's responsibilities is also a way to secure funding from various sources outside of the transit authority. Both the capital funding to get the project going and long-term operating and maintenance funding needs to be planned ahead.

ACTIVITY

2. Begin with specific uses and designated activities.

A plot of land open to the public does not guarantee that the public will come, linger, and mingle on it, regardless of the quality of the physical space. A good public space is supported either by the activities on the bordering properties or the features of attraction inside the space. Thinking of a bustling public space in downtown, we often picture cafés or restaurants with food vendors at street corners, local stores facilitating daily life or an open-air market, and theaters or improvisation by street performers. Thinking of a much quieter open space in a residential area, we often remember a playground for children to play or a nice garden to promenade. Thinking of city streets, the elementary units constituting the urban public domain, what we care most about is not only where we can get by the street but also what we can do on the street.

From another angle, the same mechanism determines how people image unused residual spaces in their mind. A piece of land underneath the elevated becomes wasted when first, the owner of the land – CTA is not using it, and second, the abutting property owner does not see it necessary for him/her to use it. At the same time, the activities within the bordering properties do not encourage people to stay. As a result, these spaces are largely forgotten – that is why they are "residual". In short, the space does not serve any purpose. Therefore, to assign a specific use for the space is the first step to activate it.

Certainly, not all activities can be planned. Nor should they be. Starting with at least one designated activity is the first step to assign the space an identity. Only when a space has something that people can talk about and a certain name that people can refer to, can it begin to be perceived as a recognizable public space, although the actual physical space may have existed for a long time. Only after this psychological public space is built in the local collective memory, can the physical space be used successfully by the public.



The diagram on this page shows the abstract process of a designated initial activity helping to form an identity of the place and later transforming the physical space and accommodating multiple new activities.

From top to bottom:

- 1. Residual space with no identity is vague in the collective memory.*
- 2. An initial activity draws attention to the point, and the space itself begins to emerge in the collective memory.*
- 3. Attention turns from the center activity to the space that holds it. Gradually, the space becomes identifiable and clearly defined in the collective memory.*
- 4. An identifiable space will eventually attract more activities that are not planned in the initial stage. More activities will reinforce an established image of the space in the collective memory. They may even change the physical space to fit the new activities.*

ACTIVITY

3. Organize activities relevant to their locale.

Public activities are for the public. They need to be part of the local culture. Public spaces are open to everyone in the neighborhood. They should be agreeable to the local environment.

Developer and designer sometimes may have acute insight into local community life and may propose activities congenial with the locale. As seen in the Bridgemarket case, the latest development of the high-end restaurant and stores was brought by the developer and welcomed by the neighborhood.

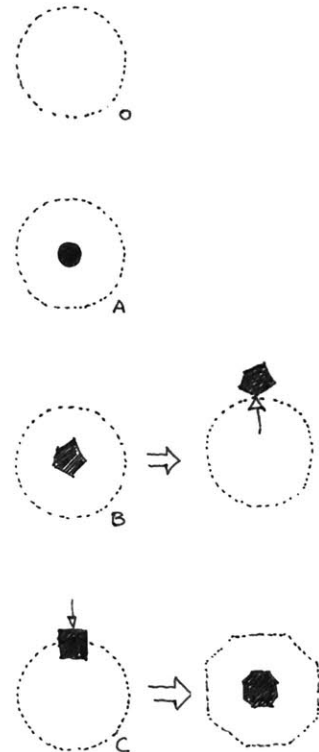
Diagram A: Compatible activities acceptable to the local environment.

More often, it is difficult for an outsider to fully understand the local needs. If a non-compatible activity is forced into the community, although with good intention, it may also be forced out. Protest from a community sometimes even completely aborts a project. Again in the Bridgemarket case, an earlier developer attempted to introduce a large number of small markets under the bridge. But the neighborhood was against him for the fear that such development might endanger the land value of their properties.

Diagram B: Non-compatible activities rejected by the local environment.

To introduce new things into a neighborhood is not necessarily a bad thing. But the process should involve public participation in very early stage, even as early as the conceptualization stage of a potential project. The scheme proposed by an outsider needs to be adjusted into the locale. Successfully introducing new things into a neighborhood may also change the characteristic of the neighborhood. This becomes very important for the sites with potential problems that are not fully understood and articulated by the local community itself.

Diagram C: Alien activity adjusting itself and transforming the local environment to achieve a new compatibility between the old and the new.



CONTEXT

4. Connect the residual space to the public domain of the neighborhood.

The Brown Line aligns itself mostly in the alleys and backyards, making most residual space undesirable for public use. Only those parcels that can be connected with the public realm of the city such as streets or plazas qualify as good candidates for public/quasi-public uses. In the previous section, criteria for selecting such sites has been discussed.

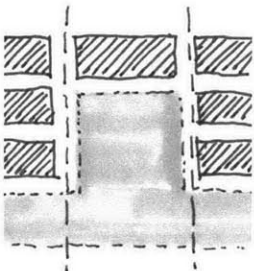
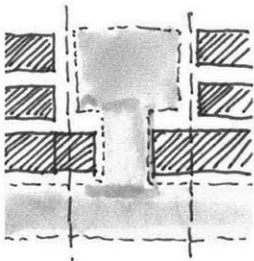
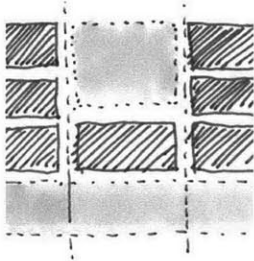
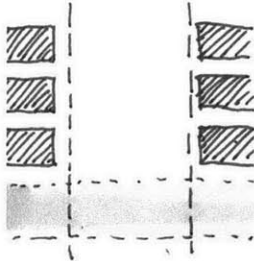
Finding these spots, however, doesn't guarantee a good connection with the public domain. The site plan must be carefully studied. Sometimes, small details make a big difference.

The diagram shows three scenarios of connecting a piece of residual space to the existing public domain. All of three utilize the same amount of space under the track. Public spaces are shaded in warm gray.

From top to bottom:

- 1. A plot of residual space suitable for potential public activities because it is connected to the existing public domain of the neighborhood.*
- 2. An undesirable plan in which the new public space is isolated.*
- 3. An acceptable plan in which the old and new are linked, although weakly linked.*
- 4. A favorable plan in which the new public space adds to the existing one and forms a new entity.*

Although the diagram on this page is shown as a plan, the actual connection between the reclaimed residual space with the contextual public domain should be designed in three dimensions. The overhead structure and the volumes of the adjacent buildings are all important elements that shape the visual and spatial connection as a whole.



CONTEXT

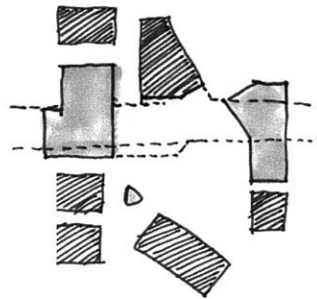
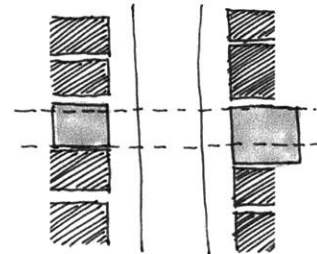
5. Contribute to a larger, consistent and legible urban public system.

Creatively using the residual space for public/quasi-public activities can also contribute positively to form or reform a larger urban public territory. Recall the case of the IIT Campus Center that gives a campus without a center and edges a new pivot point right under the tracks. In fact, this principle is so essential in the reclamation of residual spaces associated with infrastructure that every implementation prototype in the previous chapter attempts to demonstrate it in a certain way.

But this is more easily said than done. Designers need to enlarge their canvas to include the bigger picture of the site. The residual space needs to be part of the entire drawing. A hard lesson I've learned from the design exercise is that to make a small piece of land under the tracks work as a good public space, a very broad context must be considered. Improvement of the walkway on the tracks at Western Station is among the many examples.

In some place, the urban fabric is easily understandable, and the gashes created by the residual spaces are easily identifiable. As shown in the top diagram, filling in small buildings to complete the street front is a very obvious option on traditional streets.

In another place, the residual space underneath the track may be mixed within other no-man's-land as shown in the middle diagram. Under this situation, a legible civic pattern might be hidden deeply. In this case, reclaiming the residual space should not be confined to the boundary of the tracks. The bottom diagram shows a possible solution by filling in new buildings with portions tucked underneath the elevated. As a result, a more clearly defined common space in between the buildings emerges. Depending on the site, this common space could be either a public plaza, with adjacent buildings facing it, or a semi-public court yard of the cluster. In addition, using the space under the track as a semi-open space that is part of a larger open space will add interesting layers into the existing place.



SPACE



6. Demarcate the space clearly and cleverly.

Jane Jacobs pointed out in *The Death and Life of Great American Cities* four decades ago that “public and private spaces cannot ooze into each other.” This problem still prevails in present cities. Residual space under the elevated is one type of such ambiguous space that is hard to be defined as either public or private. To eliminate this ambiguity, a reclaimed space for public activities should be marked clearly to distinguish itself from its bordering spaces that are used for private activities.

A clear boundary between private and public domain should be seen and understood easily. A clearly defined public space does not need authorized-persons-only signs for the abutting private spaces.



Clarity of demarcation is necessary but not sufficient for making a good space. In a clever design, the element used for demarcation might have other functions and/or might enhance the aesthetic quality of the space as well.

Photos and drawings on this page show different scenarios where the Brown Line is over the sidewalk and leaves a small patch of residual space beside the sidewalk.



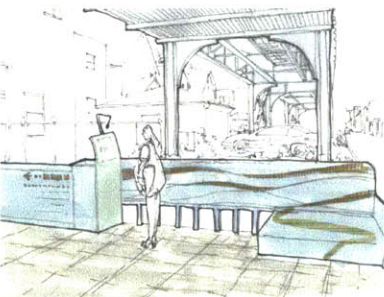
From top to bottom:

1. Barely demarcated space: the bollards can only prevent cars from driving onto the sidewalk. They do not cure the space oozing problem among the public sidewalk, the alley, and the private parking lot. Neither could these not-so-carefully placed rods improve the quality of the space.

2. Low bushes clearly define the private property and make the sidewalk more pleasant.

3. The fence is set back to widen the sidewalk with well-maintained greenery. It allows certain visual penetration while clearly defining a mini pocket garden separating the sidewalk from the backyard of the private property.

4. Installing simple street furniture to demarcate the space could also add to the functionality of the space. Here, the elevated structure works as a natural canopy to protect a resting pedestrian from rain and sun.



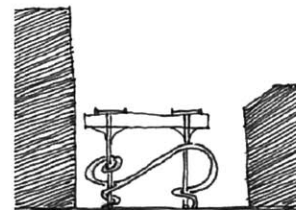
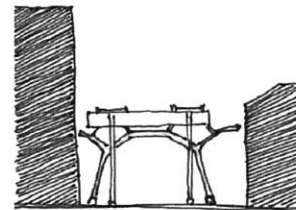
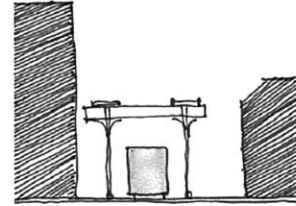
SPACE

7. Include the elevated structure as an integral part of the space.

The presence of the EI distinguishes the residual-space-converted public space from all other public spaces. Integrating the elevated structure as part of the space will add to the individuality of the space itself.

Good designs are also those that display an interesting dialog between the EI structure and the new design elements.

The diagram on the right shows three scenarios of for introducing an element into the residual space defined by the structure. A New element can be either derived from the EI structure but metamorphosed into its own form, as shown in the middle diagram. Or it can contrast but somehow remain related to the structure as shown in the bottom diagram. The top one is undesirable since the two parts do not communicate.



Overstreet structures are a potential canvas for station identification and artwork. They are also good spots to better display the structure itself. One of the implementation prototypes — Celebrating the structure — illustrate this approach in a more concrete way.

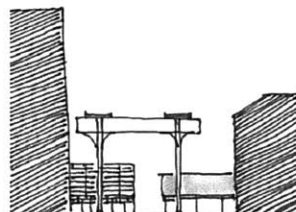
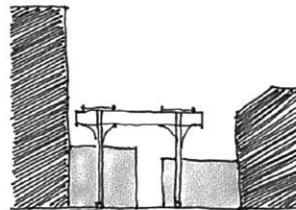
8. Expose the residual space to public surveillance.

Public surveillance from other public spaces and from adjacent properties is the key to the security of the public space by making it self-policing. This is especially important for the spaces in between stations where regular attendants are not available.

Increasing the visibility of the residual space makes it more identifiable and attractive. The more visible a space is, the less vandalism will be done to it.

Strategies for providing public surveillance vary from site to site. Openness and visual penetration are the simple principles. The watching eyes from adjacent properties should also be considered as part of the surveillance system.

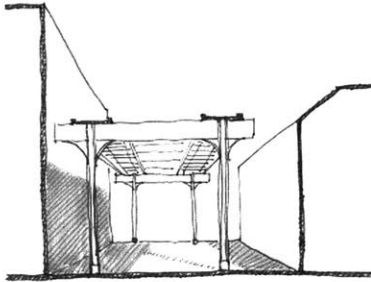
The diagram on the top shows an example of inadequate public surveillance caused by solid panel that creates a hidden spot behind. The bottom one shows improved public surveillance under the same space configuration by substituting high solid panels with penetrable materials or low panels on open supports.



TIME

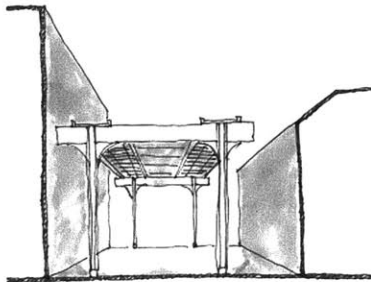
9. Response to the cyclical temporal changes of space and activities.

Space and activities are not static. The physical conditions and activities change within a day, a week, and a year. A critical consideration for public space is to make it work around the clock and the calendar.



Trains come and go on regular headways, rendering the acoustic feature of the space underneath with a regular pattern. When night falls, the space becomes darker and more hidden. Weather changes dramatically with the alternation of the four seasons in Chicago. Such cyclical temporal changes always exist.

Basically, there are two types of responses to cyclical temporal changes. One is to put in artificial equipment to minimize the differences caused by time. In the places where urban life becomes busy at night, adequate lighting should be provided. Filling the residual space with enclosed shelters would be one way to offer a constant micro-environment.



The other is to utilize or to amplify a cyclical pattern. Near the stations, some space under the tracks can be used as shortcut walkways during the rush hours but allow parking at night. There are also interesting art installations that use the vibration of a passing train to make changing sounds or lighting.

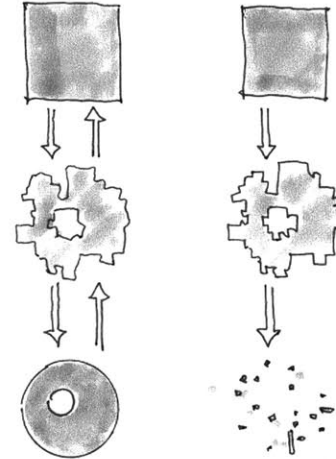
Either of these two approaches has its own application. They can be used together or separately for a specific site. In general, the first approach emphasizes more the space design and the second the activity programming.

The diagram depicts the different moods of the same space during the day (above) and the night (bottom) due to the change of light and shadow.

TIME

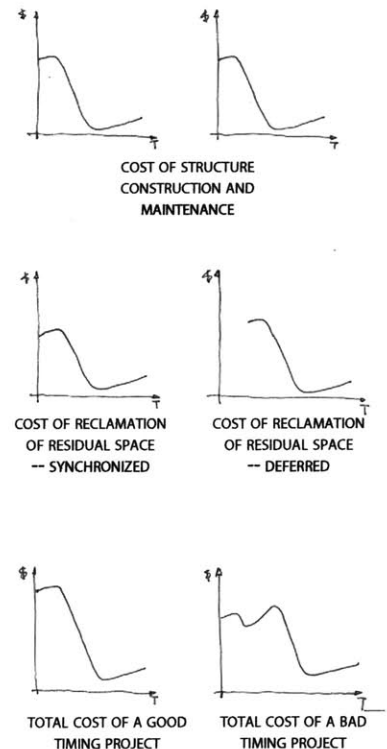
10. Consider the evolution of space and activities in the long term.

The characteristics of space and activities evolve over time. The natural deterioration process is inevitable. It must be taken into account even before a project starts. Otherwise, as shown in the right diagram, without regular maintenance and upgrading, a nicely built place today might gradually erode and eventually lose its shape and identity in the future. On the contrary, adding in creative inputs from time to time would keep the original space in shape or even help it evolve into a new form that fits the different needs at another time. This virtuous cycle is illustrated on the left diagram.



11. Time the project with other structure construction and maintenance schedules.

Good timing of a project could often lower the cost by using labor and capital resources more efficiently. This principle is particularly useful to projects that reclaim residual space under the elevated. The key is view the land under the track as an integral part of the corridor rather than left-over space. The undergoing Brown Line Capacity Expansion Project provides a perfect time to launch a series of "model" projects exemplifies different strategies for exploiting the residual spaces for a variety of activities. Small but effective actions such as adding lighting fixtures or re-painting the structures would only add a marginal cost to the entire line renovation project if they were implemented simultaneously with other major constructions. For more complex projects such as redevelopment around the station area, implementation would be more difficult if missing the opportunity of going together with the major station expansion project, because they usually involve multiple players, extensive real estate acquisitions, demolitions and new constructions. Even if the construction work cannot be synchronized with construction work of the line renovation, the planning and designing process must be coordinated carefully to avoid unnecessary additional cost later.



4.5 A Few Words on Private Activities along the Brown Line

Although the focus of the last two chapters is concentrated on public and quasi-public activities, private activities occupy most of the land underneath the elevated Brown Line. More private activities are welcome, because they alleviate the burden of the transit authority to maintain expansive the right-of-way throughout the city. However, the broad distribution, the spontaneity of occurrence, and the variety of uses and quality make it difficult and unsuitable to establish a set of fixed rules to regulate all private activities. Hence, in the following paragraphs, only a few fundamental principles will be stated.

Incentives

More incentives for spontaneous activities should be given to the abutting residents and business owners. People who actively use the residual space could be rewarded with tax incentive. The transit authority could provide more flexible agreements and more options for leasing the residual space for private activities. Special incentives should be given to the non-residential area.

Supervision

Supervision of the private activity has two folds:

- To ensure the normal operation of the transit facilities.
- To encourage the activity to contribute positively to the public domain.

Conclusion

Details and specifics of reclaiming the residual space under the elevated transport infrastructure have been studied and discussed throughout the thesis. They are indispensable for conceiving and completing a reclamation project. In the conclusion of the thesis, however, I want to highlight some most fundamental but essential concepts that have been developed during the past two years. Without these underpinning principles, all the details and grand ideas would be only fragmented information.

“Every square-inch of public land should be taken care of.”

This is a quote from my thesis advisor Ken Kruckemeyer. Advocating this notion loudly is both my beginning point and my ultimate goal in completing this thesis. The transit authority, the transit service provider, is also responsible for properly maintaining the public land they are entitled to. With limited resources of its own, the transit authority needs to be open to alternative strategies that will make sure that this public land is well taken care of, either by the authority or by the people who use it or benefit from it.

Actively using the residual space for public/quasi-public activities enhance the public image of the elevated transport infrastructure

Using the residual space under the elevated structures for private activities cannot fully change the overall image of the space. To make the space memorable, public programs need to be involved.

Building and maintaining public space with diverse resources but planning it for the public

Both public and private resources could be used for reclaiming the residual space under the elevated. Both public and private activities could take place in the reclaimed space. However, any project must be planned with the greater public in mind, to make sure the private uses will have positive public externalities.

Initiating a public program by the agency to stimulate more spontaneous reclaiming actions by the residents and business owners

Launching a series of showcase projects to reclaim the residual space by the transit agency should only be the beginning of transforming the image of this space. If these projects are successful, they could inspire more spontaneous reclaiming actions by the abutting residents and business owners.

Concentrating limited resources on selected sites

The success of reclaiming the residual space under the elevated does not depend on the size of the space transformed, but in the quality of the space transformed. The limited resources would be used most efficiently when they are concentrated on carefully selected sites for exemplification.

Investing moderately to gain substantial benefits

The moderate investment made by the transit authority could gain substantial benefits that cannot be calculated by simple cost-efficient models.

Thinking beyond transit

In all, in order to improve the image of transit infrastructure, one must see beyond the transit operation, engineering, and organization. The elevated transit infrastructure is part of a city's public property; the residual space underneath is part of a city's public space. It must be working for the public and the city as whole, not only working for the trains.

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