A Reinterpretation

Of Urban Industrial Space

Sean Rotar
May, 2000
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Urban Industrial Space

LA 404 Comprehensive Project
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May, 2000
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A Reinterpretation

Of Urban Industrial Space

Acknowledgements

My parents, Don and Kathy Rotar, for their love and support

Malcolm Cairns

Ron Spangler

My Classmates

The Youngstown Historical Center of Industry and Labor
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Abstract

Many American cities have hundreds of acres of former industrial land lying abandoned as a result of plant closings and mergers as U.S. industry attempts to compete in a more global market. Since these sites are often located in the heart of urban areas, along rivers, and near transportation routes, they are ideal for renovation into modern industrial uses, urban open space, and/or community focus points.

Working to transform these sites into more useful urban spaces is a complex issue. The first component that must be studied is the proper balance of these many uses within the context of the particular city. This will help determine what the proper interpretation is for this site. Any investigation of the topic would also need to consider the environmental damage that has historically been done to the site through poor practices and explore how these problems might be mitigated.

The place this project will investigate is the former U.S. Steel Ohio Works in Youngstown, Ohio. This site is a classic example of these types of places: a heavy industry site, real or perceived environmental damage, a close proximity to urban homes and the downtown area, river frontage, connections to neighborhoods, etc. In addition, this community would be aided by having a planned, historical, teaching open space for residents to take pride in.

The major point of study in this project is how this landscape can reflect the historic industrial landscape of the City of Youngstown while providing the city's modern inhabitants with amenities, open space, and learning opportunities.
Introduction

- Problem Statement

The industrial landscape has undergone many changes in the past quarter century, leaving cities with decaying remnants of their industrial might. Not only factories and mills left abandoned, but entire neighborhoods have begun to disappear as a result of these changes. What can cities do to revitalize these prominent places and reclaim these lands to beneficial use?
Introduction, cont.

• Sub-Problems

Many other problems are connected to the general statement of problem, but they seem to fall around several general categories:

• Investigation of social fabric of the landscape—the real strength of the industrial landscape is in the strength of the industrial community. Small neighborhoods and other enclaves within cities were bastions of people who shared ethnic heritage, religion, family, workplace, and beliefs. A reinterpretation of urban industrial space demands tribute to these people and places.

• Economic problems—the recent absence of industrial capital and revenues for cities through taxes, as well as the loss of jobs and private revenues through the life needs of workers has contributed to decline in many American cities. A reinterpretation of urban industrial space offers opportunities to study and address these problems.

• An additional problem that exists with a project of this type is developing public appreciation and support for it. Many people have not yet learned the value of industrial landscapes, so these places are often viewed by developers, community governments, and the general public as useless places, and therefore act with little regard for the historic and social worth of the industrial landscape.
• Delimitations

In working to find solutions to the problems of the industrial landscape, many of the problems cannot be dealt with within the limited scope of this project. Therefore, further investigation of economic solutions to problems was avoided, and the only interest that was taken in environmental issues was a simple investigation of some technologies for remediation that have been accomplished on other sites.

The majority of the project, then, dealt with a study of how the important social and community issues of the past could be reflected in a new industrial landscape.

• Importance of this study

Youngstown, as a prototypical example of many of the problems of the modern industrial landscape, has been severely affected by economic changes of the past 25 years. A project of this type, looking at the past as a guide for systems of the future, addressed solutions to the problems.
• Design Study

For this particular project, the design process included a careful assessment of the context of the site and how it could be positively affected by this project. Also, the project took into account the needs of the community, so public input was a component. The opportunities within the site itself (related to historically significant components, topography, connections, etc.) were discovered and noted in an inventory and analysis phase. From these directions of input, the conceptual designs and final master planning were realized.
"We seem, as a nation, to lose our industrial places with such equanimity. For many of us, if we think of them at all, they are places apart, intrusions on the landscape we'd just as soon see in someone else's neighborhood or someone else's town...But I believe it is important to understand the industrial landscape. It is important for us to realize that when we lose our industrial places we lose more than we may be aware of, that the loss is more than economic, and experienced by more than those most immediately involved. The industrial experience is elemental to our human experience. When we lose our industrial places, we lose a vital part of who we are."

Though the industrial landscape includes those mills, factories, railyards, and docks that once lined the nation's waterways, its scope is not limited solely to these items. In fact, these items are only partial remnants of the industrial fabric which also includes workers and families, neighborhoods and community, the building of cities, and the immigrant experience. These social and historical aspects of the industrial landscape are of vital importance.
The fundamental industry in the building of America was iron and steel manufacturing. It was this labor-intensive, hot, dangerous, beautiful, smoky, and fiery industry that built the modern United States more than any other. Steel provided the material for skyscrapers, rail lines, locomotives, ships, and automobiles. It was a major impetus for bringing immigrants here in search of work, freedom, riches, and a better life, and, it was steel that helped organize these immigrant workers into the communities and neighborhoods around the mills in which they worked. Robert Bruno relates this phenomenon in his book Steelworker Alley: “My uncle Frank lived within ninety feet of my grandfather and less than a block from my great-grand-uncle Louie. Each of them lived next to other steelworkers. They may have worked for different mills, but they lived on the same street. The neighborhoods were critical to social interaction.”

For workers, the “family” was more extensive than simply the home, spouse, and children. Often, families included neighbors, friends, and co-workers, each with a special role to play in the community. Bruno relates, “days were wrapped around collective activity outside the plant gate....friends went directly from homebuilding [the author earlier related a story of a group of workers helping a buddy build his home] to steelmaking. They never stepped clearly away from the familiar realm of home and intimacy into a space dedicated purely to economic ends. What the workers experienced inside of the plant came home with them, and what they did in the community was inextricably linked to their mill relationships.” Steelworker Sam Shapiro, quoted by Bruno, tells the story this way: “My best friends were from the mill, and when you needed help they were there. They were goodhearted men who knew...and trusted each other.”
Another stitch in the fabric of community for working class people was found in the churches found at the center of these neighborhoods. Because these neighborhoods were ethnically diverse, the church communities were also diverse; however, because most of the immigrant groups to the area came from predominantly Catholic countries, most of these neighborhoods and churches were Catholic. According to Thomas Fuechtmann, as late as “1978 they [Catholics] still constituted 68% of the population of Mahoning County.” The church center was often led by priests who “was an administrator....[an] interpreter of the larger society for newcomers....[a] Broker for the interests of his people with government officials...” Often a new immigrant to the area “went first to the parish priest, who took the newcomer to the mill to arrange for a job.” The importance of the Church in these neighborhoods was vast. As such, the church became another social center for people and ceased to be merely religious in nature. In fact, churches sponsored dances and dinners, and hosted many organizations, like the Knights of Columbus and the Altar and Rosary Society, which were only outwardly religious groups; the true purpose was social.

Membership in other social groups heightened this sense of community and belonging for working class people. Among the most important of these groups were the union organizations. Unionization of the major steel producers was not an easy task. Though the Steelworkers Organizing Committee was first implemented by the Committee of Industrial Organizations (CIO) in 1935, this force was not recognized by US Steel and the other large producers until 1937. Following this labor victory, the workers struck the “Little Steel” companies—including Youngstown Sheet and Tube and Republic—in a prolonged and bloody series of conflicts. By the arrival of World War Two, these companies had been mainly organized. It was this union group that became the United Steelworkers of America in 1942. For steelworkers, these groups became another place of meeting with their extended family of co-workers outside of the workplace. Pressure from friends and neighbors was so intense, that during the 1960’s and 1970’s, the Youngstown district 26 of the USWA boasted over 50,000 members.
Background Review

It would be irresponsible to romanticize the lives of steelworkers and their social structures; however, these communities were essentially cohesive and vital places. Why? Primarily, these neighborhoods drew their strength from their place as a small, tightly-knit portion of people who shared a common class, occupation, values system, and often a common ethnicity and religion that fit into the larger fabric of the larger city. Though vital, the lives led by the members of these communities were marked by hardship. Author Robert Bruno described his experience as a temporary summer worker this way: "I did every dirty, labor-intensive job there was. If a concrete block needed to be dislodged from beneath the open hearth furnace...if the masons needed some cement to repair the furnaces' brick lining...when the 'checker-chambers' needed to be flushed so the hot air could circulate up into the furnaces, it was 'Bruno!...my back ached and my lungs burned. This went on, without letting up for about three months. What I could do for less than a summer, my father did for thirty-seven years." Yet steelworker Charlie Petrunak said of hardships, "hard times brought you close. It made you a good person. You couldn't do anything by yourself. You had to pull together. There was nothing you could do individually."
The hardships of this environment led the community of workers to a cohesiveness and a connection to each other. This connection to place and to the landscape was also found in the connection of people to the steel industry itself, because of people's proximity to the mills and their essential role within the industrial landscape. This connection invaded the lives of everyone in the landscape, not just workers.

"Before the advent of newer steelmaking technologies and before environmental controls were in place, the fire of furnaces roofed the night with an orange/red light. Iron oxide from the open hearths cloaked houses, shrubbery, automobiles in a dull reddish dust. On windy days, black grit hit against windowpanes. Senses filled with the smell of sulfur and burning coal, the pervasive taste of the metal, the call of the turn whistles, the booms of heavy machinery at work." Even the mere physical space was influenced by the mills' presence. "Mill walls and stacks loomed all out of scale above houses clustered alongside." But to the workers, the size and scale of the machinery, the heat and flame of the steel process, and the sublime beauty of the molten metal were almost addictive.

Laurie Graham relates this story about her first visit to a steel mill. "Nothing had prepared me for the bedazzlement of that first moment inside, the confusion in the presence of the awesome, the momentary loss, as my dictionary phrases it, of the power to think or notice. It was as if I had entered totally without bearings the vastness of pure space. Structural details gradually came into focus, highlighted by torchlike pilot flames and the light of the furnace mouth. It was impossible not to feel momentarily adrift in the massive semidark." Yet this connection was so profound, in spite of the hardships, that steelworker Manny Stoupis was led to say, quoted by Laurie Graham: "If I had to do it all over again, I'd do the same thing. I would go to the blast furnace. As bad as its been, as hard as it was, as hot as it was. All I knew was the mills. That was the life, that was our life."
Obviously, the economy of Youngstown was almost entirely dependent on steel. "Not only was steel the largest single employer; it was the largest purchaser of materials and services from local business. A number of steel-related industries sprang up to service the mills with raw materials, transportation, and milling equipment. Steel was also the supplier for steel fabricating companies and for metal furniture and equipment manufacturers (steel kitchen cabinets from Youngstown Kitchens, steel office furniture from Youngstown Fireproofing, railroad car doors from Youngstown Steel Door, and machine parts from Commercial Shearing)." The story of Youngstown steel, and indeed the modern industrial landscape itself, has seen trials and failures in the past 25 years. As this nation continues its shift from a manufacturing economy to a service based, global economy, the once rock-steady steel industry has been rocked to its very foundation. This downturn in the Youngstown area began as early as 1968 when the Youngstown Sheet and Tube Company, organized by local entrepreneurs George Wick and James Campbell in 1900, was acquired by Lykes corporation, a New Orleans Shipbuilding consortium. With this move, Youngstown lost local control over its flagship steel company, and almost as quickly, the new owners began using profits from steel to finance losses in its other enterprises instead of re-investing profits in the infrastructure in Youngstown. The problems in Youngstown came to an emphatic point on September 19, 1977. On this day, referred to as 'Black Monday' by local inhabitants, over 4100 workers at the Youngstown Sheet and Tube Co. Campbell works were released with no prior warning by Lykes-Youngstown. After 77 years, the area's largest steel employer closed its largest facility in a matter of weeks.
The repercussions of this action in the steel community of Youngstown were severe. As a closed economic center, with very little economic diversity, Youngstown was in a particularly precariously position. Soon, many mills that were going through similar troubles as the Sheet and Tube took the same ultimate route. Within the next four years, Youngstown lost 75 percent of its steel related jobs—by 1969 almost 46% of all manufacturing jobs were in steel. Related to the loss of employment was a loss of tax revenue, the continued fleeing from the industrial city and traditional neighborhoods, and the loss of the tie to the industrial landscape. Today, Youngstown is a city of approximately 92,000 (down from its height of 168,000+) with very little industrial base left, a very economically depressed area. Here, truly, we are in danger of losing completely what was good in the industrial landscape.
• **Project Description**

In choosing a site for this project several options were explored. The fundamental needs for this study was: a site heavily linked to the neighborhoods where its workers lived; and a very visible location in the city. Proximity to downtown and other resources was also very important. The site that was chosen for this project is the former U.S. Steel Ohio Works in Youngstown, Ohio, for several reasons. First, it met the criteria that have been previously explained; it is a prototypical example of the breakdown of the industrial landscape. Second, there were possible links to open space networks in the region, including the Mill Creek MetroParks and a branch of the Lake to River Greenway, a rails to trails conversion in Ohio. Third, there is a possible connection with the Ohio Historical Center of Industry and Labor, located in downtown Youngstown. Finally, a personal familiarity with the site and context, as well as with several of the interested groups, made the selection of this site the best solution.

• **Users and Benefits**

There are a multitude of users for this site: the residents of the surrounding neighborhoods looking for recreational space, schoolchildren learning about industrial history, grandparents taking their grandchildren to experience how they once lived, visitors from around the country, residents of the greater area for celebrations and festivals, and many others. A project of this type would be beneficial, not just because it is creating an historic, detailed, urban place out of abandoned wasteland, but also because it would serve as a precedent and impetus for other such projects, both in Youngstown and across the nation.
Site/Setting/Context

Youngstown, seat of Mahoning County
• Proposed Site: Context and information

This site location is extremely accessible to many important parts of the community. Its proximity to the workers neighborhoods of the Lower West Side and Brier Hill, to downtown, to the Ohio Historical Center of Industry and Labor, and to Mill Creek Park offers excellent opportunities for connection. The fact that the site is situated on the Mahoning River means access to the waterfront and river redevelopment (perhaps helping to meet some of the environmental goals of the state EPA and local environmental groups). The site has, unfortunately, been cleared of almost all industrial structures, eliminating a more strictly historical solution.

• Assumptions

1. That the actual construction of the “Ohio Works Industrial Park” is not occurring on the site at this time.
2. That, based on the completed environmental assessment studies, there will be no environmental barrier to this redevelopment.
Problems of the Modern Industrial Landscape

- Loss of workplaces, loss of employment

- Flight from traditional urban neighborhoods

- Pollution

- “Doughnut-ing” in the central business district
Youngstown, Prototypical

- Loss of workplaces, loss of employment
  Single industry, virtually decimated
  "Snowball" effect into other manufacturing industries
  93,000 workers in manufacturing to less than 50,000

- Flight from traditional urban neighborhoods
  40,000 residents move between 1970-1990

- Pollution
  Pushed suburban growth before many comparable cities

- "Doughnut-ing"
  CBD sales fell 27.1%......only 14.9% in comparable cities
Former U.S. Steel Ohio Works: today, a wasteland
structures were leveled, furnaces scrapped
Only a few remaining structures, including the operating Youngstown
Sinter Co.

Location Analysis
Brier Hill Neighborhood: This neighborhood was historically an Italian Enclave within Youngstown, and while many of its workers worked for the Youngstown Sheet and Tube company, some would have been employed across the river at the Ohio Works also. Though the Italian population of this area has dispersed to be replaced by African-Americans, the area is still seen as an Italian area because of the strong anchor of St. Anthony’s Church. This institution draws most of its members from the families of original residents of the neighborhood, and its traditions are strong. The phenomena that this neighborhood represents—a breaking of physical but not emotional ties to places—would be an asset to the programming of the Ohio Works Site.

Location Analysis
Inventory and Analysis

Lower West Side Neighborhood:
This place would have been the neighborhood where many of the Ohio Works workers and their families would have lived. Originally this was a Hungarian/Slavic enclave within the city. Today, this neighborhood is mixed racially and ethnically. Its anchoring institutions, two Catholic churches and a city park, are still very strong. Opportunities exist to relate the site to this neighborhood both in a historical context and by meeting the needs of its current inhabitants (open Space, Jobs, etc.)

Location Analysis
**Downtown:** Downtown Youngstown has historical importance as the center of the economic, religious, and governmental importance for the city as a whole. As in many cities today, this downtown is losing its prominent place in people’s lives, and as a result is in decline. The development of this project offers opportunities to relate to the historical importance of the downtown while providing an impetus for development and growth.

**Location Analysis**
Mill Creek Park: A large urban open space, Mill Creek Park follows Mill Creek and many tributaries through Youngstown. Its 2550 acres offer residents recreational space in a natural setting. Its importance to the development of the Ohio Works Site is in its proximity, offering a link between the two places for recreational uses. Its location also reduces the call for active recreational open space in Youngstown.
Vehicular Circulation

The web of city, county roads were the first means of auto access to the site, and are today the primary way to directly access the site for residents and visitors.
**Inventory and Analysis**

**I-80**: As a major East-West link through the nation, I-80 offers opportunities to bring nationwide visitors to the site with relative ease.

**I-680**: Because it offers connection the site to both the western and southern suburbs of Youngstown and can facilitate visitors from both those areas, this interstate becomes a very important link. Connected to this is the Madison Avenue Expressway and the Division Street Expressway, (Spur and Innerbelt) both of which help link this interstate to more residents of the greater Youngstown area and to downtown.

**Vehicular Circulation**
Inventory and Analysis

LYNCHPIN:
This area offers the opportunity to bring together this site, a proposed greenway corridor and its users, and the users and resources of Mill Creek Park.

Mill Creek Park

View from the "lynchpin" portion of the site to remaining industrial structures.
Inventory and Analysis

500 year floodplain

100 year floodplain

Some of this portion of the site is in the 100 year plain. This would be a limitation for buildings, but would be excellent for this project's open space requirements.

Views to the Mahoning River

Floodplain Information
This former Conrail line (in orange) is currently being considered as a rails-to-trails project, linking the Lake to River greenway to the Stavich Trail in Struthers, Ohio.

**Rail Corridor Opportunities**
There are many opportunities within the site for views of steel bridges, industrial sites, and links to the industrial history and character of the area.
Elements for consideration

Steel mills as an icon for the city

Steel as a visible product in Bridges, signs,

Ethnicity: traditions, neighborhood enclaves, food

Churches as a community force and a visible icon

Idora Park: Youngstown's beloved playground

Mill Creek Park as nature, beauty, and open space

Community Analysis
Site Program

- Historical Component

  Recreation of mill structures in size, scale, and in manufacturing power; social neighborhood structure

- Educational Component

  Exhibits and interactions to teach visitors about industry and labor in the Mahoning Valley

- Civic Component

  New social gathering spaces, festival & celebration space, amenities for residents
  New retail, open spaces for neighbors of the site
Thematic Concept: City makeup

This concept included a mix of uses for the site:

The Civic Component: “BigBox” stores, warehouses, which provide jobs and retail spaces for nearby residents, but conforming to the layout of the Ohio Works structures and dressed to look like them.

The Historical, Civic Components: Bringing together festival space, food vendors, environmental art, amusements (especially remembering Idora Park), religious spaces, neighborhood enclaves in community space.

The Educational Component: Through the layout of these common spaces, the visitor would come to experience ethnicity, religion, and steel, the major factors in the City’s history.
Conceptual Themes

Thematic Concept: A Bold Statement of Loss

Called for the Conversion of the entire 400+ acre site into open space (civic space)

The Historical Component: reconstruction of the structures of the Ohio Works in Skeleton (within a general ‘park’ setting), creating a bold statement of loss.

The Educational Component: a simple visual lesson of size and scale, punctuated by light, fire, and smoke, produced for effect.

Parkland as civic space means the inclusion of festival areas, passive recreation spaces, river access, outdoor art and sculpture, pleasure gardens, and other similarly themed program elements.
A synthesis of ideas......

**Neighborhoods**
Ethnic, social places, recalling past, but with new uses

**Industry**
recalls the former site uses

**Civic Space**
New social gathering spaces, festival & celebration space, amenities for residents

“**Loss**”
reconstruction of the structures of the Ohio Works in Skeleton (within a general ‘park’ setting), creating a bold statement of loss.

**Retail Space**
“BigBox” stores, warehouses, which provide jobs and retail spaces for nearby residents, but conforming to the layout of the Ohio Works structures and dressed to look like them

**Rails to trail greenway**
non-vehicular connection to this place and other stops, including Mill Creek Park

**Land Uses**
Conceptual Development

**Vehicular circulation**

**Pedestrian Circulation**

- Truck Routes
- Auto Routes
- Minor Routes
- Major Routes
Landscape Character Areas

- River influenced
- "Parklike"/promenade
- Industry
- Meadow/loss
- Tree-lined, influenced by recreated structures
- Meadow/river
Master Planning

Neighborhoods

Civic Festival Space

Industry

"Loss" Reconstructed, skeletonized blast furnaces

Retail areas in mill dress
Youngstown Heritage Center:
as a visitor’s center for the site, the
YHC included exhibits and
educational experiences in conjunction
with the Historical Center for Industry
and Labor. One such exhibit called for
there-construction of the Tod Steam
engine, a salvaged continuous mill
power plant from the YS&T and using
it as a focal point of people’s visit.

Civic Festival Space
"Steel Alley": This walkway linking the retail center to the civic festival space used steel sculpture and inscriptions in the paving to immortalize greatness in the steel industry and in this community.

And the bar of steel is a gun, a wheel, a nail, a shovel......Pittsburgh, Youngstown, Gary....they make their steel with men
Carl Sandburg

Civic Festival Space

Example of sculptural piece
Idora Carousel: As the centerpiece of the site, the Idora Park Carousel anchored the Civic Festival Space. Its inclusion in the site was a response to the people of Youngstown's connection to that place. It also acted as an icon for the site.

Civic Festival Space
Idora Ballroom: This reconstructed place also recalled Youngstown’s link to that historic place, while providing a new location for activities such as ethnic dances, wedding receptions, festivals, and concerts. This building also began terracing down as the festival lawn rolls to the river, providing space for many larg civic gatherings.

Civic Festival Space
Marshall Street Bridge: This steel girder bridge was slated to be razed by the city road department, and it was proposed that it simply be relocated here, as a strong tie to the heritage of steel as a product in the city. Its location also acted as a gateway from the Civic Areas to the Neighborhood Areas.
Master Planning

Important Neighborhood Places:
- Church
- Shop
- Bar
- Home

Neighborhood Spaces
"Church": This outdoor area had occasional religious uses, but for the most part functioned as a place for smaller meetings and gatherings. Reminiscent of the form of traditional church architecture, it utilized a central aisle with trees as the columns and the overhead roof structure. The sides were enclosed by steel forms in the shape of gothic arched, recalling windows.

Neighborhood Spaces
"Houses": Instead of actually building homes that would sit empty, this neighborhood utilized homes constructed of steel tubing in the outlines of typical workers housing. These skeletons offered the chance to experience the size and scale of neighborhoods. The uses of this area were varied: in some, garden spaces showed a typical layout of rooms; in others, photographs of families and housing were displayed. Each of these homes then was used as a façade which vendors could pull under to sell ethnic foods at a food festival, rummage material at a flea market, and other programmed uses.

Neighborhood Spaces
Other Ideas for neighborhood areas:
Corner Store: functions as a store/cafe during festivals
is a structure comprised of large photos of other
corner stores in a mosaic to create the façade
"Victory Gardens"-- community gardens
"Open House" for a business and industry information fair

Neighborhood Spaces
Retail Additions: Retail areas continue to be a need for residents of Youngstown, as virtually no shopping areas exist. Mingling some of these need with the need to re-create the traditional industrial skyline of Youngstown created a unique concept: since the “big box” stores—Walmart, Lowes, etc.—are so out of scale in the suburban/rural landscape, why not utilize them where there scale would be an asset. Of course, these structures were then dressed in mill clothing, to aid in that re-creation of the skyline.

Retail Spaces
Reconstructions of Blast Furnaces: Situated alone in a large open meadow, these reconstructions of the Ohio Works Blast Furnaces helped to express the sorrow felt by the loss of this industry. These structures, like the neighborhood homes, were designed as skeletons of the former units. Again, restoration of the traditional skyline was a factor, but these structures also utilize another component missing from Youngstown since the loss of the industry: the glow of mill flames and the smoke of smokestacks, each produced for effect in a non-polluting manner.

"A Statement of Loss"
Conclusion

Perhaps the most fundamental aspect of the industrial landscape is the experience of struggle, success, and loss, in constant circular movement. These places were not only about the struggle of hard work and difficult living conditions, but also the joy found in honest labor, the love of family, and the triumph over an extremely difficult situation. In order to survive, families and communities were forced to pull together, to help each other through the hardest times. Though many losses were experienced, including the losses of infant children to disease and of loved ones to industrial accidents, perhaps the greatest loss occurred when these mills, around which they had built their lives and communities, released their workers, cooled their hearths, and shut down. However, perhaps this final loss was not the crushing blow it has been perceived to be. Rather, was this occurrence simply the final step in a long line of people slowly pulling themselves up, through hard work, to rise above their station in life? Leaving behind the life of a steelworker was often the goal of father and son alike, and perhaps the greatest triumph of immigrant people in our recent history is the fact that they are no longer tied to the industrial landscape, to the inner city neighborhood, to the church, or even to their own ethnic traditions. Instead, they became so adept at fitting into America, they left behind these concepts never to return. However, this success has not come without its price: tradition, identity, and community, at least, are losses for immigrant people.

What we neglect or remain unaware of is what has been honorable and good in industrial life. We neglect the lessons we can learn there about leading a good life—about life in community, about the meaning of physical work, about what it is that ties us to landscape, about the act of being and living in a place. We may continue to lose our industrial landscapes. What we should not lose is their story.2

Appendices

Appendix A
Notes from "Background Review"

Appendix B
Bibliographic Information

Appendix C
Tables, Charts, Graphs

Appendix D
Photo/map/chart credits
Appendix A

Notes from “Background Review”

5 Ibid, p.42.
9 Ibid, p. 53.
11 Ibid, p. 36-37.
16 See “Steel Company Averages” table, 1.4, appendix C.
17 www.cisnet.com/imilko/index.htm
Appendix B

Bibliographic Information

**Books**


Appendix B

**Government Publications**


**Periodicals**


Appendix B


Mulvihill, David A. *What is the State of Brownfields Redevelopment?* *Urban Land*: 1995 Nov., v.54, n. 11, p.84.


**Internet Sites**

www.as.ysu.edu/~cwcs/

www.bsn.org/eccoey.html

www.brownfieldsnet.org

www.cfc.cornell.edu/WEL/newsrel.html

www.epa.gov

www.uswa.org/frameset_resources.html
Table 1.1. Population of Youngstown, 1900-1980

<table>
<thead>
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<th>Year</th>
<th>Population</th>
<th>Percent change</th>
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<td>1910</td>
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<td>1920</td>
<td>132,358</td>
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<td>166,689</td>
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<tr>
<td>1970</td>
<td>139,788</td>
<td>-16</td>
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<tr>
<td>1980</td>
<td>113,456</td>
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Source: U.S. Census Bureau.

1.2 Steel Take-Overs by Conglomerate Corporations

<table>
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<th>Steel Take-Over Target</th>
<th>Company Making Offer</th>
<th>Year Offer Inaugurated</th>
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<tr>
<td>Jones &amp; Laughlin Steel</td>
<td>Lykes</td>
<td>1968</td>
</tr>
<tr>
<td>Youngstown Sheet and Tube</td>
<td>Cold Industries</td>
<td>1968</td>
</tr>
<tr>
<td>Crucible Steel</td>
<td>Grumman</td>
<td>1968</td>
</tr>
<tr>
<td>OH &amp; I</td>
<td>NAVI</td>
<td>1968</td>
</tr>
<tr>
<td>Sharon Steel</td>
<td>Northwest Industries</td>
<td>1966</td>
</tr>
<tr>
<td>Lone Star Steel</td>
<td>Bethlehem Steel</td>
<td>1966</td>
</tr>
<tr>
<td>Jessup Steel</td>
<td>Bethlehem Steel</td>
<td>1966</td>
</tr>
<tr>
<td>High Steel</td>
<td>Bethlehem Steel</td>
<td>1966</td>
</tr>
<tr>
<td>Columbia Steel</td>
<td>Bethlehem Steel</td>
<td>1966</td>
</tr>
<tr>
<td>Continental Steel</td>
<td>Bethlehem Steel</td>
<td>1966</td>
</tr>
</tbody>
</table>

*First acquired by Philadelphia Reading and at turn was acquired by Northwest Industries.
### Table 1.3. Principal Mahoning Valley manufacturing firms

<table>
<thead>
<tr>
<th>Company</th>
<th>Employment</th>
<th>Product description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Motors</td>
<td>17,404</td>
<td>Auto and truck; wagon</td>
</tr>
<tr>
<td>Youngstown Sheet and Tube</td>
<td>12,144</td>
<td>Steel and steel products</td>
</tr>
<tr>
<td>Republic Steel</td>
<td>11,668</td>
<td>Steel and steel products</td>
</tr>
<tr>
<td>U.S. Steel</td>
<td>11,668</td>
<td>Steel and steel products</td>
</tr>
<tr>
<td>Wear-Resist</td>
<td>2,345</td>
<td>Metalworking machinery</td>
</tr>
<tr>
<td>Copperweld Steel</td>
<td>2,002</td>
<td>High-alloy steel</td>
</tr>
<tr>
<td>General Electric</td>
<td>2,431</td>
<td>Electric lamp bulb</td>
</tr>
<tr>
<td>General Fiberglas</td>
<td>2,282</td>
<td>Metal office furniture</td>
</tr>
<tr>
<td>General American</td>
<td>2,146</td>
<td>Railroad and tank cars</td>
</tr>
<tr>
<td>American Welding</td>
<td>1,109</td>
<td>Welded assemblies</td>
</tr>
<tr>
<td>Reactive Metals, Inc</td>
<td>1,088</td>
<td>Titanium, metal products</td>
</tr>
<tr>
<td>Youngstown Steel Door</td>
<td>1,280</td>
<td>Freight car doors and sides</td>
</tr>
<tr>
<td>Commercial Shearing</td>
<td>1,023</td>
<td>Metal machinery and parts</td>
</tr>
<tr>
<td>North American Rockwell</td>
<td>1,028</td>
<td>Auto bumpers</td>
</tr>
<tr>
<td>Aeroquip Republic Rubber</td>
<td>966</td>
<td>Rubber products, hoses</td>
</tr>
<tr>
<td>N.M. Corporation</td>
<td>868</td>
<td>Foundry</td>
</tr>
<tr>
<td>Grinnell Corporation</td>
<td>793</td>
<td>Industrial pipe</td>
</tr>
<tr>
<td>Pittsburgh Steel</td>
<td>787</td>
<td>Steel coatings</td>
</tr>
<tr>
<td>E.W. Bliss Co.</td>
<td>735</td>
<td>Rolling mill equipment</td>
</tr>
</tbody>
</table>
### 1.4

<table>
<thead>
<tr>
<th>Company</th>
<th>Reinvested Profits, Y.S.F.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Capital</td>
</tr>
<tr>
<td>Youngstown Steel &amp; Tube</td>
<td>5.27</td>
</tr>
<tr>
<td>Industry average*</td>
<td>2.45</td>
</tr>
<tr>
<td>U.S. Steel</td>
<td>3.92</td>
</tr>
</tbody>
</table>

*American Iron and Steel Institute estimate.

**Source:** James W. Stimson, 1978

### 1.5

<table>
<thead>
<tr>
<th>Company</th>
<th>Location</th>
<th>Number Laid Off</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. Steel</td>
<td>Duluth (MN), Ellwood City (PA), Youngstown (OH), Torrance (CA), Waukegan (IL), Joliet (IL), and elsewhere</td>
<td>13,000</td>
</tr>
<tr>
<td>Bethlehem Steel</td>
<td>Johnstown (PA), Lackawanna (NY), and elsewhere</td>
<td>12,000</td>
</tr>
<tr>
<td>Youngstown Sheet &amp; Tube</td>
<td>Youngstown (OH)</td>
<td>5,400</td>
</tr>
<tr>
<td>Alan Wood Steel</td>
<td>Conshohocken (PA)</td>
<td>3,000</td>
</tr>
<tr>
<td>Cyclops Corporation</td>
<td>Mansfield (OH) and Portsmouth (OH)</td>
<td>1,300</td>
</tr>
<tr>
<td>Phoenix Steel</td>
<td>Phoenixville (PA)</td>
<td>5,700</td>
</tr>
</tbody>
</table>

**Source:** Individual steel companies

Nationwide Company Layoffs
1.7 Basic Steelmaking Process
Appendix D

- The cover image and the images of steel mills and workers found on pages 4-6, 8-11, 13, 16-21, and 34 are from the Library of Congress Web Site at: www.lcweb.loc.gov/ammem/amhome.html

- The Aerial Photograph of Youngstown is from Microsoft’s Terraserver web site at www.terraserver.com

- The maps found on page 18 are from www.mapquest.com

- The photos of St. Anthony Church on page 24 are from their web page, www.girard.lib.oh.us/community/anthony.htm

- The photo of the Tod Steam Engine is courtesy of the Jeannette blast furnace preservation association http://members.aol.com/todengine/webpage.html

- Illustrations 1.1, 1.3, 1.4, 1.5, and 1.7 in Appendix C come from Steeples and Stacks, by Thomas Fuechtman

- Illustrations 1.2 and 1.6 in Appendix C are from Shutdown and Youngstown by Terry Buss