BROWNFIELDS AS PLACES
A Case Study in Learning to See Assets as Well as Liabilities, Opportunities as Well as Constraints

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The Nine Mile Run site is 18 stories of steel industry waste dumped on 240 acres over 50 years. The site features two broad slag plateaus split by a slag valley and an urban stream. As the development team struggles with issues relative to the site grading, the surrounding community is currently organizing on the basis of three issues: toxicity, traffic, and housing value. This article will contrast the standard liability assessment against a qualitative, integrated community-based assessment.

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Historically, reclamation has been understood as a process of moral rescue. Missionaries "reclaimed" Indians from savagery; pioneers "reclaimed" wilderness for agriculture or industry. Whether the object of reclamation was a human being or a plot of land, it was treated as a moral or a cultural void, awaiting the civilizing hand of the reclaimer. Today, this notion of reclamation continues to haunt discussions and plans surrounding the development of brownfields, or postindustrial landscapes. Brownfields are the modern parallel of the old notion of wasteland: landscapes so marred and contaminated by industry that they have lost all value.

In this case study, we have chosen a brownfield in Pittsburgh, Pennsylvania—the slag-filled terminus of the Nine Mile Run watershed—and examined it through a different lens. Our starting point was the notion that it was not a void but a legitimate place with its own aesthetic and natural value and with a continuous history of community use. Although we recognized and examined the site's environmental problems, our aim was to initiate a process of qualitative assessment, within academia and within the local community, that would go beyond traditional liability analysis and investigate the site's assets—its positive value to the city and the region.

In this process, we have taken our theoretical cues from fields as diverse as social work and landscape architecture. John McKnight (1995) has argued that service professionals and policy makers are destroying communities by ignoring their assets and redefining their needs as problems to be solved by experts. Ian McHarg (1992) has urged urban planners and designers not to impose artificial systems of design and vegetation on landscapes but instead to discover and nurture what he calls "the genius of the site" (p. 175). Both of these writers are asking us

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Figure 1: The Nine Mile Run Valley With Bare Slag in the Foreground and Vegetated Slag in the Background
SOURCE: STUDIO for Creative Inquiry, 1997.

to respect and work with the preexisting values and resources of a place, whether it be a human community or an ecological system.

Over the past two decades, this sort of qualitative assessment of particular places has been pioneered in another, less expected arena—that of public art. Increasingly, public artists have been crossing disciplinary boundaries and engaging in community-based investigations of what Jeff Kelley has called "the human particularity of places" (quoted in Lacy, 1995, p. 141). Such artists have become attuned to what makes a "site into a place":

> One might say that while a site represents the constituent physical properties of a place—its mass, space, light, duration location, and material processes—a place represents the practical, vernacular, psychological, social, cultural, ceremonial, ethnic, economic, political, and historical dimensions of a site. Sites are like frameworks. Places are what fill them out and make them work. (Lacy, 1995, p. 142)

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Our assessment of Nine Mile Run is designed to identify how to reclaim a massive brownfield as a place in a community. Although our case study remains incomplete—the development outcome has not yet been decided—we believe that the process of assessment we have initiated is broadly applicable to other brownfield sites. In this article, we are not arguing for a particular outcome—for example, open space over economic development. Instead, we are advocating a new process of qualitative, experiential, community-based assessment that may lead to a variety of outcomes depending on the particular circumstances of the case. We argue that this process has several concrete benefits:

- It helps to counter the generally negative image of brownfields and to mobilize interest in them.
- It builds community support for reclamation and community consensus about how reclamation should proceed.
- It encourages creative thinking within the community about reclamation strategies.

Brownfields in Existing Literature

A recent survey of brownfield case studies defines brownfields as "abandoned or under-utilized, often contaminated, industrial properties" (Pepper, 1997, p. 3). The paradigmatic brownfield in the current literature is a site that was once economically productive but now idle, polluted, and useless; the literature focuses on the problems or the barriers the site poses for renewed economic development and how those can be overcome through public policy and private initiative (Iannone, 1995).

What this literature tends to overlook or downplay is the way in which brownfield sites can retain positive value—and community use—even during long periods of neglect by property owners and municipal authorities. Of course, some brownfield sites have become so contaminated that any human use is dangerous or impossible, but others, especially those along waterfronts, still have historic, ecological, and spatial value despite their condition. Some—like the abandoned factories along the river in Buffalo—are gradually revegetating, reverting to wildlife habitat and community greenway (Schneekloth, 1996).

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Pittsburgh's Nine Mile Run, the site of our case study, exemplifies a brownfield with a continuous and multifaceted history of community use and value. Today, it remains the site of an open woodland stream with a resilient ecology that has managed to survive and adapt amidst millions of cubic yards of heavy dumping from the steel industry. We believe that, despite its size, it is typical of many brownfield sites and that our approach to it will have broad relevance.

The Nine Mile Run Site Profile

The Nine Mile Run project site is a north-south river mouth valley that drains a 7.7 square mile watershed into the Monongahela river. The site is within the city of Pittsburgh, in between the large prosperous neighborhood of Squirrel Hill on the west and the much smaller neighborhoods of Swisshelm Park and Duck Hollow on the east. Directly upstream is a relatively wild, 476-acre city park called Frick Park. The open-air streambed of Nine Mile Run and several well-used trails alongside it link the park to the project site, thus forming one continuous riparian corridor from the wooded slopes of Frick Park to the densely forested north shore of the Monongahela.

Although the site was once home to a variety of industrial and recreational uses—including a golf course in the early 20th century—the watershed was dramatically altered when the Duquesne Slag Company decided to dump steel-mill slag there beginning in 1924. Up through the early 1970s, 12 trains per day dumped slag continuously, each trip depositing up to 180 tons of often molten material into the flood plain.

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Today, the valley in the project site is framed by two steep slag slopes of up to 18 stories high with a flat plateau above on each side. These plateaus are the primary interest of the Nine Mile Run Associates, a development team that is in final negotiation to build up to 800 homes. Current plans call for most of the ravine to remain in open space, with the intention of maintaining a corridor to Frick Park.

It is important to note that Nine Mile Run is uniquely situated at the edge of a major city, deep in a river valley. It is barely visible to the surrounding communities. The stream has long

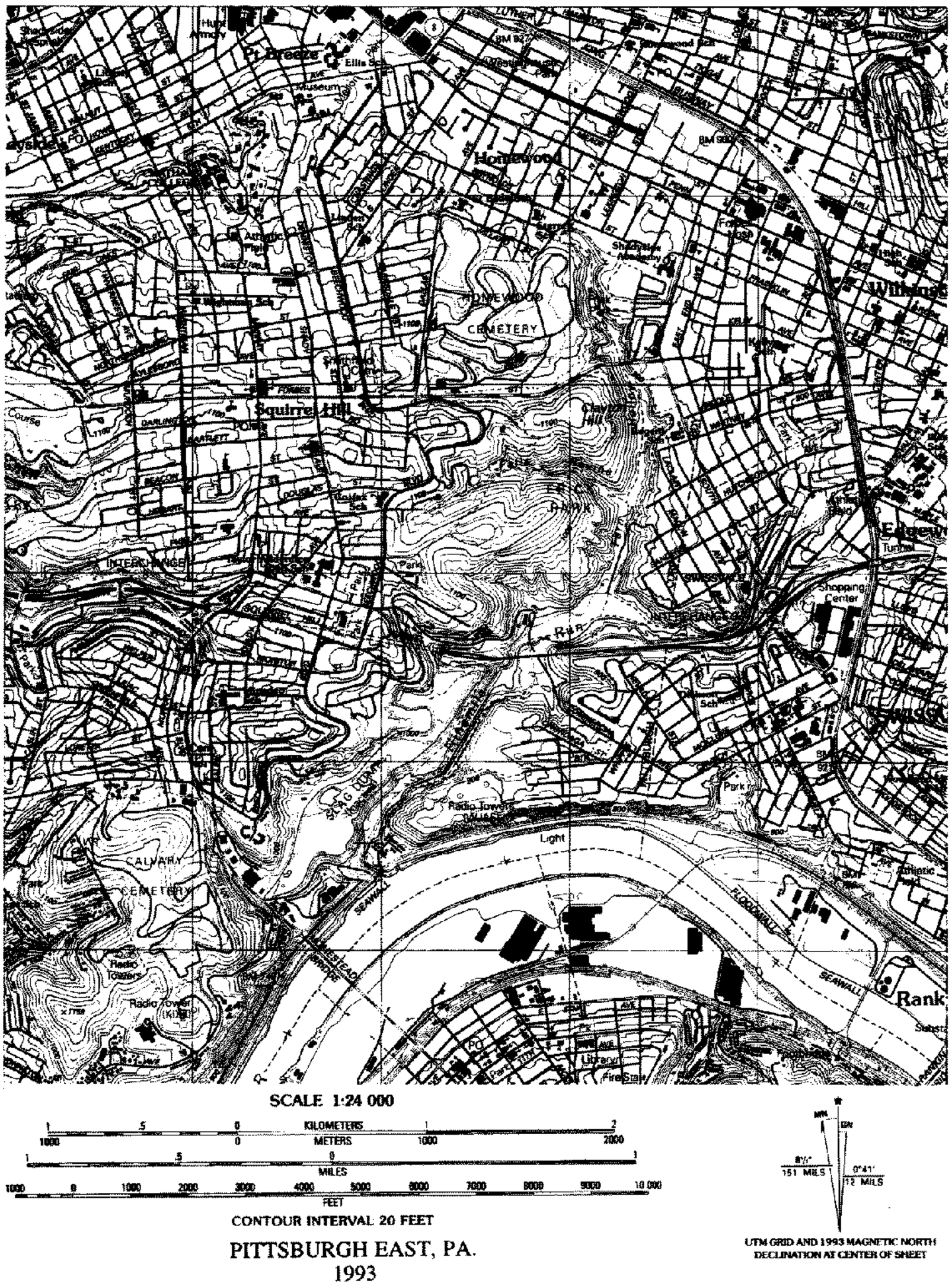

Figure 2: The Slag Dumps and Surrounding Environment
SOURCE: Map by the U.S. Geologic Society, layout by the STUDIO for Creative Inquiry, 1997.

been polluted by residential sewage from various upstream communities, and the problem continues today. Although for many years the area has remained out of sight and out of mind to much of the city and region, it also attracts others who visit regularly and appreciate its relative isolation and unusual blend of industrial and natural landscapes.

The Stakeholders

DEVELOPMENT TEAM

Pittsburgh Urban Redevelopment Agency (URA) is the current landowner and the city agency responsible for the development of the site. In the master-planning phase, the URA has taken responsibility for site preparation, infrastructure, and open-space development.

Nine Mile Run Associates is the local development, design, and construction consortium negotiating to develop the housing and built environment. They are not currently signed to a contract.

Pittsburgh Department of City Planning has developed a master plan and is responsible for the public hearings and the development of the open space.

ORGANIZED COMMUNITY GROUPS

The Citizens for the Responsible Development of Nine Mile Run is an intercommunity citizens group organized specifically to challenge the proposed development. They have criticized the development team on toxics, traffic impacts, and effects on existing housing values.

The Squirrel Hill Urban Coalition is an active community group that previously produced a neighborhood master plan with its own ideas for the Nine Mile Run site. Currently, the group has four working committees on traffic, housing impacts, slag and environment, and open space. They publish and distribute their committee findings and are currently making a series of demands attempting to leverage the upcoming zoning board hearing.

The Swisshelm Park Community Organization tried and failed to stop the slag dumping decades ago by attempting to have the existing residential zoning on the site enforced. They are currently blocking the proposed connection of development streets to their community and are championing issues related to schools and environment.

The Regent Square Community Organization represents the furthest upstream constituency, adjacent to Frick Park. They are actively engaged with water-quality issues and have begun a series of productive discussions with intermunicipal officials and citizens about the problem.

ACADEMIC AND NONPROFIT STAKEHOLDERS

The STUDIO for Creative Inquiry is a research facility at Carnegie Mellon University that is taking an interdisciplinary research interest in the assessment and conceptual design of the public open space. The STUDIO is also exploring resolution options for upstream water problems. They are partnered with the Pittsburgh Department of City Planning and the Environmental City Initiative.

The Environmental City Initiative is a nonprofit group that is committed to realizing the concept of Pittsburgh as a sustainable city. It works to promote market approaches to these concepts through the environmental business network.

OTHER COMMUNITY PARTICIPANTS

Many local individuals have made use of the project site for various forms of recreation and nature study over a period of decades. Workshops organized by the STUDIO have brought some of these people together for the first time in an effort to formulate their vision of Nine Mile Run's future.

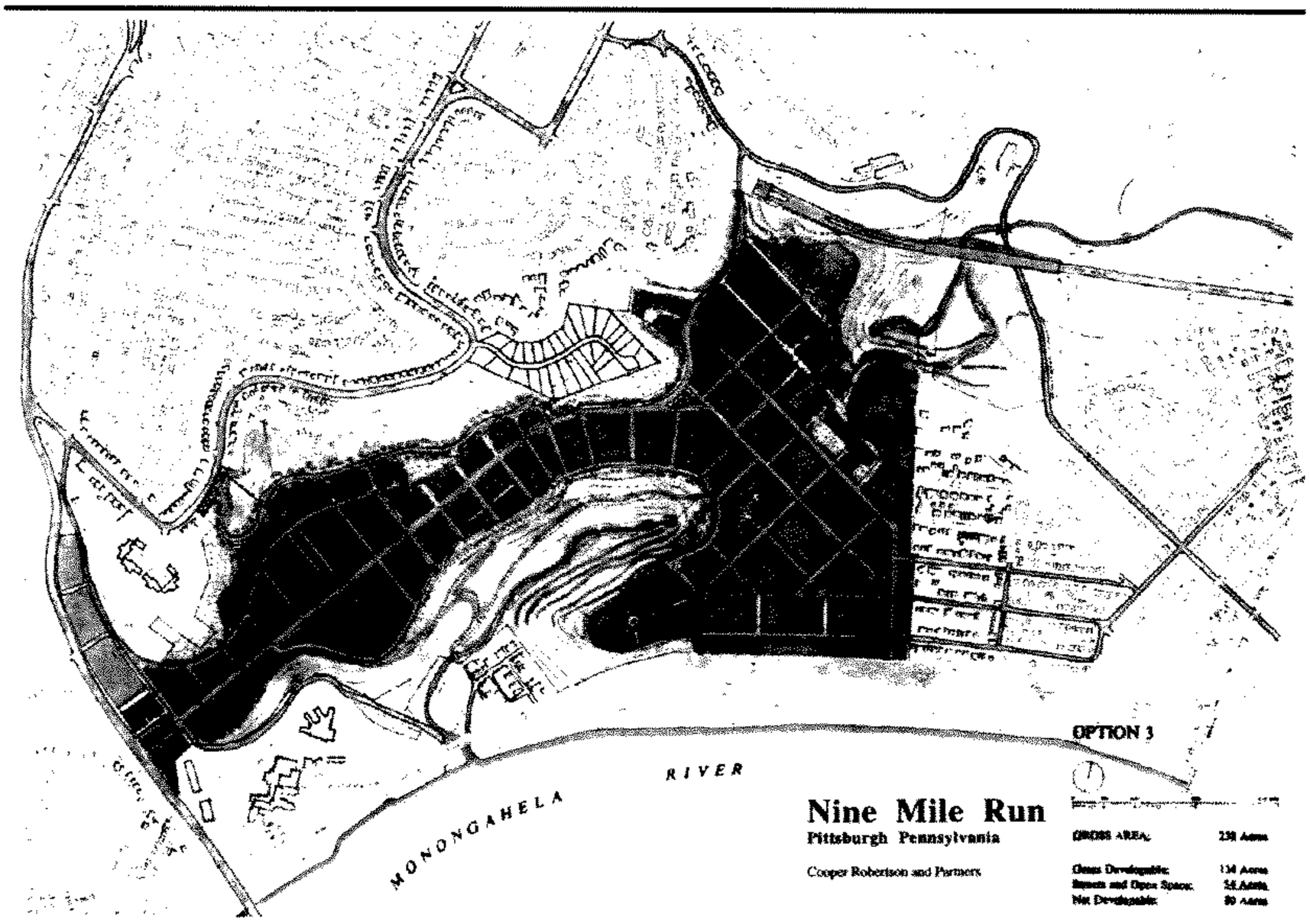

Figure 3: The Nine Mile Run Master Plan Footprint
SOURCE: Cooper Robertson and Associates (1996).

In 1995, the URA purchased the site for the purpose of developing it. A planning team was assembled and began to draft various options for large-scale residential development. From the beginning, the intention was to create a new, "neotraditional" neighborhood that would connect the adjacent communities of Squirrel Hill and Swisshelm Park.

The Development Baseline

In 1995, the URA purchased the site for the purpose of developing it. A planning team was assembled and began to draft various options for large-scale residential development. From the beginning, the intention was to create a new, "neotraditional" neighborhood that would connect the adjacent communities of Squirrel Hill and Swisshelm Park. The problem for the planning team was how to connect the two slag plateaus on either side of the streambed. Several options were considered: a massive bridge over the stream; a winding road into and out of it; and, finally, large-scale regrading and infill of the valley slopes to expand the development footprint. In 1996, this final option was adopted by the planning team, written into a master plan, and presented to the public. The plan called for culverting a third of a mile of the stream, burying it with slag, and laying residential streets on top that would form one continuous neighborhood between the two facing plateaus. This would necessitate moving 50 million cubic feet of slag, roughly 20% of the physical mass of the site. The plan represented a continuation of the dump-and-fill approach used by Duquesne Slag Company—reshaping the terrain without much concern for the preexisting riparian ecology or topography.

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Since the unveiling of the master plan, the development team has been reconsidering its dump-and-fill approach—primarily because high costs make it economically unfeasible. Another factor is community opposition: In a series of community meetings organized by the city to solicit comment on the master plan, intense opposition surfaced especially among some residents of Squirrel Hill. The URA has now taken a stand against culverting the stream, and the development team is currently considering several options that would scale back the development footprint and, therefore, allow more open space. The Department of City Planning in September 1997 held its first public meeting to solicit input on the open-space issue. However,

the amount and location of open space—and, to some extent, its ecological character—still depend on decisions made by the development team, which is refining its plans with minimal community consultation. Various community groups are braced to fight the development plans when they are finally redrafted and presented at zoning board hearings.

Two "Public" Processes: A Liability-Based Assessment and an Opportunity-Based Assessment

THE OFFICIAL SITE ASSESSMENT

The assessment of the site carried out by the development team focused on the site's liabilities: the potential obstacles to, or constraints on, housing development. It was not conceived as a public process but instead as a technical one, to be carried out by specialists. The assessment covered such issues as levels of contaminants in slag and soil, stability of the slopes, water quality in the stream and groundwater, and sewage capacity. On the issue of toxicity, the slag was found to be relatively clean, with little in the way of industrial contaminants. For metals that do occur in the slag, a risk assessment calculated hypothetical exposures to be within accepted Environmental Protection Agency (EPA) standards, even in airborne dust that would be produced during the construction phase.[1]

Because the community was not invited to participate in this site assessment, the community could only react to it, either by accepting its conclusions or disputing them. For those in the adjacent neighborhoods already worried about the development's impact on their housing values and local traffic, the obvious choice was to dispute the assessment, particularly on the volatile issue of toxic contamination. Given an opportunity to comment rather than participate, concerned citizens could empower themselves only through adversarial tactics. As the development team presented its findings and plans to the community, a citizen group passed out its own document heightening fears about toxicity, and meetings became increasingly combative. Citizens trying to comment on the benefits of the housing project have been shouted down. Thus, the development team's assessment process has had the unintended, but predictable, effect of creating an oppositional public—a highly vocal segment of the community mobilized to oppose the development team's official pronouncements.

These opponents mistrust the official site assessment because it came from a development program that they had no part in formulating; they feel that the city has a vested interest in minimizing the risk estimates.

At the same time, the opponents have a vested interest in maximizing the site's liabilities and perpetuating its negative image as a brownfield; the more they question the site's fitness for human use, the more difficult it is for the city to sell the idea of the housing development. This strategy reached a zenith of sorts when the major opposition group succeeded in inspiring an inflammatory news story in a local weekly in which the site was described as "mostly trash from top to bottom"—a ludicrous assessment for anyone who has had personal experience of Nine Mile Run.[2]

AN ALTERNATIVE PROCESS

In 1996, the STUDIO for Creative Inquiry began to assemble an interdisciplinary team of academics interested in the history, ecology, and aesthetics of Nine Mile Run as well as its public policy and civil engineering challenges. The STUDIO team visited the site regularly, installed and equipped a trailer on site, and began to study its geological and human history, its flora and fauna, the streambed itself with its antiquated sewer system, and methods for revegetating the slag.[3] We encountered many people from the surrounding community who used the site often,

for everything from nature walks and bird watching to jogging and dirt biking. Then, with a grant from a local foundation and cooperation from the Department of City Planning, the STUDIO opened its process to the surrounding community in the summer of 1997 with a series of public workshops called "Ample Opportunity: Community Dialogues." Each workshop centered on a discrete theme: history and public policy; urban-stream issues; ecology, soil, slag, and wildlife; and sustainable open space.

The workshops were designed to be educational, in a reciprocal way. We wanted to share our expertise about the site with the community, to make people aware, for example, that beavers have been seen on the stream and that threatened plant species survive in close proximity to the slag; but at the same time, we wanted community members to share their knowledge and personal history of the site with us. We also wanted the workshops to be a forum for exploring the experience of the site. Toward that end, we began each workshop with guided tours of the site and later conducted breakout sessions with the participants. Thus, the workshops provided a particular experience of the site and then asked participants to reflect on their experiences and to imagine the kinds of experience they might want the place to provide in the future.[4] Finally, we wanted the workshops to be a public space for the kind of discussion that had become impossible in the official hearings—to allow the community to articulate Nine Mile Run's diverse opportunities for public use and to help the community assess the quality and priority of those various opportunities.

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Each workshop attracted between 40 and 100 participants, far more than attended the Department of City Planning's public meeting on open space but generally fewer than the numbers attending the more heated official hearings. Although some of the antidevelopment activists attended and directed their adversarial energy at us, many more were there simply because they were curious about the site or had a fond personal history of it. The experiential component of the workshops was popular and led to some interesting reflections on the site as a unique urban interface between industry and nature, between ecologies of slag and stream, and between man-made sewer systems and natural watersheds.

The response of the participants was generally positive, and among them, a consensus emerged that the riparian corridor had a unique value to the region that should be preserved and enhanced. Thus, the workshops created an alternative public that had been without voice, hence invisible, in the adversarial space of the official hearings. This alternative public was a diverse group within the community united around a clear and constructive goal. This goal was to save the stream and its riparian ecology from further environmental destruction and from its history of public neglect.

The workshops were not without problems. Some wondered about our connection with the city and the development team and whether our efforts were really just a cover for promoting the housing development. Others did not question our motives but expressed genuine frustrations that (a) this assessment process was happening far too late, while plans for a housing development were already far along; and (b) therefore, that they had no real capacity to realize their visions for the site. Our position in relation to the official process was in fact ambiguous. We were neither advocating the development nor opposing it, but at the same time, our mission to allow the community to assess the site more fully was in conflict with both the advocates and the opponents of the development. Generating interest in "saving" Nine Mile Run could well create additional constraints on the developer (by insisting, for example, that regrading not interfere with habitat preservation); at the same time, that interest could lead to support for some kind of housing development on the plateaus that would help pay the costs of enhancing and maintaining the open space in the valley. Both the developer and the opposition had real incentive to ignore the assets of the site, and our desire to explore those assets with the community was bound to create problems with the URA (who wanted to manage the issues) and with the oppositional public (who sometimes felt we were not allowing them the voice to express issues beyond our open-space agenda).

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Figure 4: The Stream at the Base of the Nine Mile Run Slag Dumps
SOURCE: STUDIO for Creative Inquiry, 1996.

Conclusion

It is clear that the process we initiated should have taken place before any development plans or decisions were made. The liability assessment undertaken by the development team served their narrowly focused needs for information, but it did not help to galvanize public support for their development plans. In fact, once the mode of liability assessment was put in effect, it had the opposite result of producing far more dire liability analyses by community opponents intent on "trashing" the site. With this negative cycle in motion, it was difficult to create an alternative space for a positive assessment of the assets and opportunities offered by Nine Mile Run. Nevertheless, our workshops did manage to give voice to an alternative public interested in the qualitative, experiential assessment of this brownfield. This public is conspicuously different from both the development team and its oppositional public because

- it recognizes the brownfield as a place in its own right and can articulate the value of that place to the community, and
- it can begin to think creatively about how best to sustain and nurture that community value.

However, it still remains to be seen what voice this alternative public will be given in the development process.

We believe that the understandable desire to solve brownfield problems through economic development—that is, through efforts focused on "highest and best use" in private economic terms—can lead planners and developers to overlook the intrinsic value of brownfield sites. In the case of Nine Mile Run, that official tendency to ignore or even erase the site's positive qualities has backfired, creating a negative image problem that is making development more difficult to promote. A more open-ended assessment of the site, both quantitative and qualitative, technical and experiential, has now begun and may lead to a more community-based resolution of the challenges and opportunities this unique site presents. Anyone interested in the reclamation of brownfields, particularly those that have some interface between industrial and natural

landscapes, would be wise to heed the lessons of Nine Mile Run and to ground their planning process from the beginning in a genuinely open-ended, community-based, opportunity-focused assessment.[5]

Notes

1. No contaminants in quantities greater than residential soil statewide health standards were found. In the interest of public health, chromium, lead, mercury, nickel, and PCBs were identified as constituents of potential concern. They were subsequently examined under a quantitative risk assessment. Analysis considered incidental ingestion and airborne inhalation pathways for on-site and off-site populations. Adolescent trespassers, future construction workers, future on-site residents, and adjacent off-site residents were all considered as potential receptors. The results of the risk assessment analysis show levels below the EPA target risk range of 10^4 to 10^6; hazard indexes are below EPA benchmark values of 1.0 for all receptors (Advanced Technology Systems, 1997).

2. Marty Levine, "There Goes the Neighborhood," *In Pittsburgh*, (September 10, 1997, p. 10).

3. The STUDIO, in partnership with the Department of City Planning, has sponsored a botanical and entomological survey of the site. Team members have been researching the land-use history of the site, recording flora and fauna encountered on site, measuring water quality from stream samples, and doing on-site examination of the upstream sewage systems that drain into Nine Mile Run.

4. In the planning stage for each workshop, advisors were brought in from the community, industry, academia, and nonprofits to outline the key issues relative to the theme. An 8- to 10-page document was prepared to provide the public with background information and an objective view of the issues; this was mailed out to 600 individuals along with an invitation to attend the workshop. On the day of the workshop, the advisors and one national speaker were in attendance. Advisors and project team members led site tours and on-site workshops in the morning, then the afternoon was spent in presentations and breakout sessions. Each event was recorded, and a written recap of the breakout session was mailed to the participants and others on the mailing list.

5. In the few cases in which brownfield reclamation has incorporated a substantial public component, it has usually come about because of this sort of community-based planning process; see, for example, the case of Chattanooga Tennessee (Pepper, 1997).

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