

Turning Brownfield Redevelopment-the Case of Summerset at Frick Park Neighborhood

XIAODAN LI, HAO YANG

School of Mechanics and Civil Engineering
China University of Mining and Technology, Beijing
Ding No. 11 Xueyuan Road, Haidian District, Beijing 100083
CHINA
yanghao328@126.com <http://english.cumtb.edu.cn>

Abstract: - Brownfield redevelopment faces many challenges particularly in restructuring its ecological environment and economy benefits. This article analyzes a critical housing project named Summerset at Frick Park established in a huge slag heap taken in Pittsburgh. The complicated project involved in the restoration of piled up slag, polluted stream and real estate development, which were required to design as green buildings. The multi-stakeholders project became effective because of utilizing a collaboration model through public-private partnerships during past decades, which creates an institutional framework provided private sector strategic profit while the public sector delivered. By studying detailed on what kind of public-private partnerships participated in, and how public-private partnership contributed to the brownfield redevelopment case, the paper addresses that public-private partnership produced backbone in promoting and stimulating the brownfield reclamation. Besides, the success in governing pollution and sustainable development of this restoration project also provides experiences to other cities that suffering similar trajectories.

Key-Words: - public-private partnership, redevelopment, brownfield, Summerset at Frick Park

1 Introduction

Pittsburgh, PA was once the core steel industrial city in America. With numerous steel mills and plants, it provided America half of the steel production during the World War II. Past industrial glorious also left Pittsburgh polluted stream, piled up slag, and non-vegetation brownfield, which obstructed Pittsburgh's redevelopment. To respond and solve these problems, Pittsburgh government and non-profit organizations gathered together and made a series means to renew the city since the mid-20th century. After decades of years' persistence, now Pittsburgh is well known for its revitalization efforts. Much credit for this change comes from the leadership of Pittsburgh applied a coordination model—public and private partnership, in which both public and private sectors participate and make efforts in the city's revitalization. In 2015, Pittsburgh was selected as one of the eleven most livable cities in the world by Metropolis Magazine. (figure.1)

Among many brownfield redevelopment projects, Summerset at Frick Park neighborhood is the biggest residential project since World War II as well as one of the first transformation project which turned industrial discarded site into residential community in Pittsburgh. The site is located 5 miles

away from Pittsburgh's CBD-golden triangle, adjoined Squirrel Hill South and Swisshelm Park

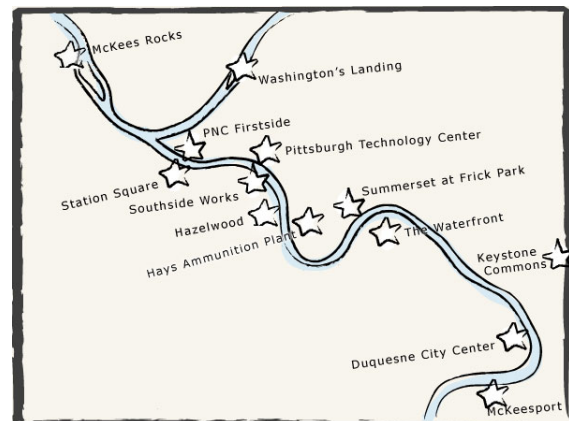


Fig. 1. Important Pittsburgh brownfields.

Source from Western Pennsylvania Brownfields Center

neighborhood. Nevertheless, The site was once covered by a 120 feet tall toxic slag heap for 50 years, over 20 millions tons of slag were dumped here. The slag heap lied along the Nine Mile Run, which was Pittsburgh's biggest urban stream flows into Monongahela River. Mayor Tom Murphy used

to take daily exercise around the site and consider its future. When the government decided to manage this site, it took the government and other departments more than 20 years to work on the polluted site. In 1995, the URA (Urban Redevelopment Authority), under the leadership of Mayor Murphy, purchased the 238 acres for \$3.8 million. In the next year, the master plan for residential development released by URA. Three years later, ground broken and grading began, it meant the development of the brownfield was starting. Instead of moving away huge slag, through ecological technology methods recovering soil and vegetation, the housing was established on the slag slopes. By 2013, Summerset at Frick Park project totally cost \$250 million and provided 713 New Urbanism designed housing units, as well as 110 acres park space for the city.

In 2015, the American Society of Landscape Architects (ASLA) conferred Summerset at Frick Park the 2015 Merit Award in Design, which honor the most representative landscape architects around the world. Besides, Pennsylvania brownfields Conference honored the community the Act 2 Award for "Place to Live". The redevelopment project Summerset at Frick Park turned the brownfield into hub of residential community, it also improves environment quality, expands tax and creates revenues in:

- Restoration land using values, eliminating urban vacant land, shaping the city a healthy image
- Supplying new green public space for the citizen, a new 1.5 mile trail linked the site to downtown
- Generation property tax revenue for the city, as estimated it will contribute \$5.7 million income when completed

Public-private partnership provides strategic policy for private sectors to participate in the redevelopment project with reason, it also apportions and reduces public sectors policy decision and investment risk. Well-configured public-private partnership produced both backbone and innovation in brownfield regeneration. Pittsburgh has experienced a long history and obtained a reputation for well used public-private partnership since the first phase Renaissance in 1945. To adaptive new development challenge in 21 century, the public-private partnership model was transformed from its traditional corporatist style of organization (Coleman, 1988) to contain nonprofit organizations, such as universities, foundations and social organizations (Ahlandt, 1986; Lubove, 1996; Sbragia, 1990). To elaborate how public and

private sectors contribute, it is necessary to identify types of public and private sectors constitution. It helps to understand how private sector influences public decision-making and how public sector provides strategic policy for private activity. This paper intends to show how to utilize public-private resources and how they make sense to urban regeneration in the context of ecological civilization through the Summerset at Frick Park project.

2 Public officials in redevelopment – the URA

The Urban Redevelopment Authority of Pittsburgh (URA) is an official economic development agency, which covered extensive works such as creating jobs, expanding tax and improving the quality of city's neighborhood. Since incorporated in 1946, the URA is engaged in utilizing its authority to create appropriate strategic policy for development activity, particularly in development priorities, tax credits and public fund use. Besides, the URA also provides professional technology support and financial service, including making master plan, construction comments, and business financing advice. The URA provides a flexible business development environment for Pittsburgh, which helped its brownfield redevelopment possibility [1].

Though as an authority closely to the mayor's office, the URA serves for both public and private aspirations, assisting both government officials and local citizens. As Malik Bankston, the executive director of the URA said, "Today's URA is not only interested in deals, but most importantly, in where and how the deal develops. They partner with us to support the growth of ideas at the neighborhood level in unique and special ways. They have put 'community' back into community development." [2] The URA's business scope contains:

- Preparing, integrating, even purchasing places for broad-scale exploiting
- Operating financing projects and development platform for developers and engineering companies, for example, business location, housing construction and reconstruction, even demolition projects
- Assisting special affordable housing projects for low income citizens and brownfield reclamation programs for the city

As catalyst in chemical experiment, the URA plays a catalytic role in transformation Pittsburgh's brownfields into valuable properties. In order to

attract the private developer, the URA carried out activities such as acquisition brownfield, clean up the site, construction the roads, utilities and parks, partition and market the property to make the private project possible. As Summerset’s case, Mayor Tom Murphy urged the URA to purchase the 238 acres site in 1995 and committed resources and funds for Summerset’s redevelopment. The Developer wanted the URA to construct the roads and utilities much like a Master Developer would do in the suburbs here. The Master Developer (SLDA) then marketed the lots for sale based on approved product types assigned to that lot. Establishing who would construct and fund the various aspects of the infrastructure was a key issue. As most brownfields suffered toxic pollutants and non-vegetation, it cost the public investment a lot in funding site remediation and infrastructure construction. A river named Nine Mile Run located next to the Summerset’s site, where covered a 120 feet slag heap and polluted it touched areas. Sewage treatment and land restoration was the top priority in environmental governance. The URA graded the site to a level plateau and did not fill in the Run as the earlier plan suggested reducing the amount of capital needed to execute the project. Meanwhile, the URA provided management grant to deal with the environment. As a consequence, the URA worked with the slag, a 3 feet tall clean soil was covered on the top of the slag for vegetation planted on it. A \$10 million funds was spent on the environmental governance. The URA managed the entire clean up effort and took about 3 years to complete. Until 2013, there are totally \$38 million public financing utilized here (Table 1):

Table 1. Public financing utilized in Summerset at Frick Park Project.

An example of a column heading	Cost	Public Institution
Land restoration	\$11,687,766	City Bond
-	\$3,101,828	Land Proceeds
-	\$330,000	EPA Grant
Monitor dust and airborne particulates	\$750,000	Foundations
-	\$12,500,000	State - RACP
-	\$742,080	State – Growing Greener
-	\$1,500,000	County – LCTF
-	\$8,235,000	PWSA
-	\$38,846,674	
Total		Total

Source from the Urban Redevelopment Authority

A shared vision between the URA and the citizens made the brownfield redevelopment realization. The site located in Pittsburgh’s highest

density residential areas, around Summerset are the Squirrel Hill and Swisshelm Park, a high school is also not far away from the site. Clamping slag here is so uncoordinated with the surroundings and reclamation the site is the common aspiration. A builder once served for the Summerset’s construction said “We all had an appreciation for the risks and the solutions, the problems and the potential, the public sector and the private sector brought their skills and abilities and worked as one [4].”

As the URA’s comment, collaboration with private sectors plays a key role in bring brownfield back to life. After drawing up the initial master plan and picking an appropriate developer, hearkening the communities voice became another major work for the URA. According to the master plan, the Summerset neighborhood was designed with the principle of Traditional Neighborhood Development (TND), mix-used land, sidewalks and pedestrian paths, front porches and gabled roofs (figure.2).



Fig. 2. Summerset under Traditional Neighborhood Development principle.

Many community meetings were held some stakeholder groups provided input throughout the development process. In Summerset’s example, the URA had arranged and met all communities around the Summerset project. The communities concerning and trepidation were well considered and influenced the housing project process through meetings organized by the URA. One community put forward dust from construction would be harmful to their health, another community concerned the reclamation of brownfield may be result in releasing metal contamination to their daily life. These residents assert the county healthy department to response for their environment health. Thus, the URA hired health and environmental experts for the site. Even before the URA release new agenda, it needed to get advice from an

environmental assessment company who provided professional advisory for the URA. An air detector was also installed in the site to indicate the dust and airborne particulates polluting index. It required an Air Dispersion Modeling effort assessing air quality risks associated with the slag adapting efforts. The URA indeed respect public's desire, there was \$750,000 fund spent on detecting dust and air pollutants. During the process counseling with citizens and their groups, the URA fostered a good relationship with community organizations.

3 Nonprofit organizations' work – Carnegie Mellon University

As Pittsburgh's most important urban stream, the Nine Mile Run flew through Frick Park. From 1923 to 1972, the Duquesne Slag Company purchased the site filled the steam, and dumped slag here (figure.3). Reclamation the land and restoration the property's value is in priority. Thus, a restoration engineering named Nine Mile Run Greenway Project charged by Carnegie Mellon University (CMU) became a significant composition of the brownfield reclamation. As non-profit organizations, Carnegie Mellon University (CMU) and its group provided technological approaches and exerted a great influence in the green restoration project. Collaboration between the public government and



Fig. 3. Slag heap in Nine Mile Run.

the non-profit organizations excited social latent chance in brownfield redevelopment process.

Before Carnegie Mellon University's participation, only official took part in the decision-making process in the brownfield redevelopment, and developing the commercial housing is their major task. Under the university's perspective,

developing the public space is also in urgent need. Experts got a dialogue with the assistant director of Pittsburgh City Planning, and they were told that they need to find supported fund themselves to develop the public space, and their research is unofficial and need to keep away from the commercial housing [5].

The professors and artists organized a series of education workshops to spread and discourse their thoughts, the Studio for Creative Inquiry supported the program. They exhibited and shared their research progress for the public in the university. Meanwhile, they assembled public tours to the site, appealed local residents participation in the protection of the remained rivulet. As the professors' perspective, local residents need to help reclaiming the public space. At the same time, the professors remained to keep sustainable dialogue with the City, to get a permit to develop the public space official, and they got it. In 1996, three experts submit their application to the City to participate in the Ample Opportunity: A Community Dialogue group, which was supported by a grant from the Heinz Endowments. The Dialogue was included Carnegie Mellon University, STUDIO for Creative Inquiry and Steering Committee. The public workshops introduced the advanced approaches used in other brownfield site, the necessary to encourage public participate in the redevelopment, and technological methods to solve the sewage treatment and environmental restoration.

In the initial master plan, it was designed to move the slag away. Earlier Cooper Robertson and Partners were engaged to prepare the original master plan. This anticipated over 1200 units and substantially more public investment as well (\$100million). It was deemed impractical for cost purposes as it required the culverting of the Run and massive amounts of earthwork to fill and grade the new plateau area, which would cost \$20 million, they changed their mind and modified the master plan to leave the creek as a public space, which also gave CMU's Greenway Project opportunity to achieve. At the same time, the city got a special fund from the Pennsylvania Department of Conservation and Natural Resources to protect the Nine Mile Run.

Reclamation brownfield is an interdisciplinary and complex project, which needs to integrate ecological, geographic, sociology and aesthetic knowledge. The university opens variety courses, experts in the university always have ethics to serve the community. The CMU gathered data, produced GIS mapping, and participated in the final protection plan. They also collaborated with the

county health department to work on the upper watershed's sewage. In order to expand the thoughts of saving the Nine Mile Run, the CMU cooperated with the Pittsburgh Children's Museum, organized tours for the young. The CMU also worked with the City of Pittsburgh and obtained a fund from the federal Environmental Protection Agency for testing vegetation on slag heap. The re-vegetation land would also extend to Frick Park.

3 Conclusion

This article has attempted to address that brownfield redevelopment project cannot move forward without both public and private participate in the project. In so doing, it has examined the public and private sector's efforts in Summerset at Frick Park brownfield redevelopment project, particularly emphasized that universities as nonprofit organizations played a significant role in the reclamation.

Brownfields redevelopment requires the perspective of various disciplines, involving in policy management, urban planning, cutting-edge environmental engineering, economic theory and finance. Brownfield redevelopment's complexity implies neither public officials nor private developers or nonprofit organizations can complete it alone. Pooling resources and risk sharing are required. From Summerset we noticed the public officials – the URA was as promoters, advocates and risk takers [6]. The public officials moved brownfield redevelopment projects forward, adopting public and private approaches for brownfield redevelopment, shifting policy to share risk with private partners. The URA as local entity can accept State funding to redevelop brownfield sites. Summerset was much like the other brownfield sites where the URA obtained funding to undertake the testing and remediation using the States' Act II Clearance process leading to a Consent Order and Agreement (COA). Uniquely though here the expansive nature of the slag was a serious issue and early on efforts were undertaken to establish special foundation systems to address that issue.

The URA called Request for Proposals where its solicit interest from Developers. The URA marketed the site nationally. At the time however, Pittsburgh was not considered to be a part of any major market, i.e. the Atlantic Seaboard, the Midwest, etc. therefore outside or new developers considered the project a risk. The URA essentially selected a team locally that represented recent successes in the City and used other national models to establish the plan.

Carnegie Mellon University's Nine Mile Run Greenway Project provided brownfield reclamation technological support in this case. The CMU acted cooperative rather than adversarial to the public officials. They have the willing to collaborate and establish true partnership with the officials. Through scientific and professional activity, the university served as consultant to the officials, and the officials relied on their research result to move forward the whole project. There are also a growing number of brownfield redevelopment projects all over the world, some experiences and lessons may be studies from Summerset example.

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References:

- [1] Osborne, Stephen. Public-private partnerships: Theory and practice in international perspective. Routledge, 2002.
- [2] http://www.ura.org/about/about_us.php
- [3] http://www.ura.org/working_with_us/brownfieldProjects.php
- [4] 2002 National Association of Home Builders Report
- [5] Carney, Lora Senechal. "Ecology and the Ethics and Aesthetics of Collaboration: The Case of Nine Mile Run." RACAR: revue d'art canadienne/Canadian Art Review (2010): 63-72.
- [6] Sagalyn, Lynne B. "Public/private development: Lessons from history, research, and practice." Journal of the American Planning Association 73.1 (2007): 7-22.
- [7] Collins, Tim. "Interventions in the rust belt: the art and ecology of post-industrial public space." ECUMENE-LONDON- 7.4 (2000): 461-467.
- [8] Ferguson, Bruce, Richard Pinkham, and Timothy Collins. "Re-evaluating stormwater: The nine mile run model for restorative redevelopment." Rocky Mountain Institute, 1739 Snowmass Creek Rd Snowmass, co 81654(USA). 32 (1999): 32.
- [9] Teaford, Jon C. "Urban renewal and its aftermath." Housing Policy Debate 11.2 (2000): 443-465.
- [10] Detrick, Sabina. "The post industrial revitalization of Pittsburgh: Myths and

evidence." *Community Development Journal* 34.1 (1999): 4-12.

- [11] Tarr, Joel A. "The metabolism of the industrial city the case of Pittsburgh." *Journal of Urban History* 28.5 (2002): 511-545.
- [12] Jezierski, Louise. "Neighborhoods and public-private partnerships in Pittsburgh." *Urban Affairs Review* 26.2 (1990): 217-249.
- [13] Schilling, Joseph, and Jonathan Logan. "Greening the rust belt: A green infrastructure model for right sizing America's shrinking cities." *Journal of the American Planning Association* 74.4 (2008): 451-466.