

BRIGHTFIELDS



Chicago Brightfields: A Success Story

On August 4, 1999, the City of Chicago announced a partnership with the Department of Energy (DOE) to reuse an urban brownfield site through the use of solar energy. Chicago had identified an underused and polluted site, cleaned it up, created new jobs, and integrated solar energy technologies into its redevelopment plans — turning a Chicago brownfield into the Nation’s first Brightfields. As a result of the development of the Brightfield, Chicago has created 100 new jobs, built a high-tech factory, cleaned up a brownfield, and added solar energy to its energy economy.

The City of Chicago’s Vision

Chicago’s Department of the Environment and Department of Planning were challenged by the Mayor’s office to locate blighted sites, clean them up, and return them to productive use for the community. While the Department of Environment focused on site clean-up, the Department of Planning looked for creative economic development solutions to attract business to relocate onto the cleaned up sites while employing local residents. Implementing a Brightfield served all of these

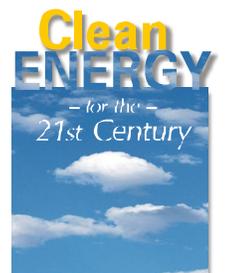
objectives. As the Commissioner for Chicago’s Department of the Environment said, “The City wanted the project to make a positive contribution to the residents’ quality of life and the area’s economic strength, and this project addresses this in a very concrete way. It demonstrated that local tools and assets could drive the brightfield.”

A Coalition of Stakeholders

In addition to brownfields redevelopment, Chicago’s Department of the Environment wanted to improve the City’s electric system reliability and air quality. The Chicago Solar Alliance was thus formed to engage the City government, the Chicago Transit authority, the Chicago Park District, Chicago City Colleges, and the Chicago Public School System in this effort. This group worked with DOE and the DOE Chicago Regional Office to explore potential solar energy strategies for Chicago.

The Role of the Department of Energy

The U.S. Department of Energy’s Assistant Secretary for



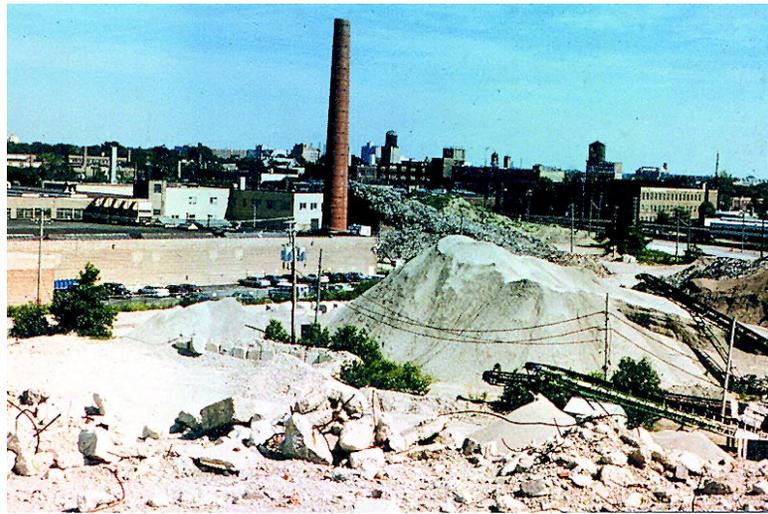
U.S. Department of Energy
Office of Energy Efficiency
and Renewable Energy

Energy Efficiency and Renewable Energy, had analyzed the potential for Brightfields throughout the country and recognized that Chicago had all of the factors required for a successful Brightfield project. DOE officials traveled to Chicago and presented the Brightfields concept to the City's leadership and the Chicago Solar Alliance. DOE explained that the goals of the Brightfields approach were to use solar energy systems to spur local economic development, improve local air quality, enhance electric system reliability, and create local solar energy markets."

Following these meetings, the City of Chicago was introduced to solar energy equipment manufacturer Spire Corporation, which had expressed an interest in locating manufacturing facilities in Chicago. DOE brought the parties together, helped them develop a partnership, and assisted the City in analyzing the deal with Spire. DOE's Chicago Regional Office developed a close working relationship with the City and provided critical technical assistance as the City identified potential sites and evaluated their applicability to the Brightfields concept.

Forming Effective Partnerships and Thinking "Out Of The Box"

All of the parties learned something new in the process of making this project a success. The Commissioner of Chicago's Department of the Environment credits the partnerships and committed local leadership as the key factors in the success of Brightfields. One key participant in the deal for the City of Chicago remarked, "The paradigm shift from simply installing systems to developing a Brightfield with the intent of manufacturing solar energy systems wouldn't have happened without



"Chicago brownfield site before remediation
Photo courtesy of City of Chicago Department of Environment"

DOE's technical and educational assistance." Mark Berger of Spire Solar Chicago added, "The patience exhibited on behalf of all of the parties was critical because there was no manual as to how to develop something that had not been done before."

Brownfield Selection and Remediation

To ensure that Brightfields is indeed a sustainable approach, some of the solar energy systems manufactured at Spire Solar Chicago's new plant will be installed as solar power plants on brownfield and landfill sites. The electricity from these systems will generate revenues that will be used to convert other brownfields throughout the city into Brightfields. Through these actions, Chicago is demonstrating innovative sustainable development at the local level by using local resources.

Chicago's Departments of Environment and Planning reviewed their inventory of brownfield sites. An abandoned concrete and stone crushing facility, formerly used as an illegal dump in the Kinzie Industrial Corridor on the south side of the city, looked promising. The Department of Environment cleaned up



Artist's rendering of the Midwest Center for Green Technology
©2000 Farr Associates Architecture and Urban Design, Chicago.

the site while the Department of Planning designed the renovation of the building and began to search for potential tenants. DOE's technical expertise in solar energy systems helped them target appropriate solar technologies once the site was selected.

The Department of Planning, which works closely with the Chicago Chapter of the American Institute of Architecture's Green Builders Council, also decided to make this building an example of Chicago's commitment to sustainable design by renovating the building to achieve a Platinum LEED™ rating, the Green Builders Council's highest rating for "green buildings." This required incorporating a number of advanced sustainable design measures.

Financing Brownfields Reuse for Economic Development

Each of the parties involved in the process faced critical issues that required creative, and time sensitive, solutions. The City placed a "garbage lien" on the property to force clean-up of the site. A garbage lien gives the City the authority to remove garbage and debris from a site after the owner has been given notice to do so and fails to comply. The City

can then place a lien on the property to force the owner to pay for the clean-up costs. In this case, the owner filed for bankruptcy and the City was named as the receiver of the property. To pay for the site's anticipated \$9 million in clean-up costs, the Department of Environment moved City-owned rock crushers to the site and sold the recycled crushed concrete to the Public Works Department for use in road repairs. The City then foreclosed on the property after clean-up was completed, and the site was transferred to the Department of Planning to renovate and lease.

Building Solar Markets Through Partnerships with the Private Sector

Spire created a wholly-owned subsidiary, Spire Solar Chicago, to physically locate their manufacturing plant on the cleaned-up Brightfields and to focus on the local market. However, for the business model to be successful, Spire Solar Chicago needed a guarantee that a portion of their annual output would be purchased to reduce some of their initial start-up risks. This was accomplished through guaranteed purchases of their product by both the City and Commonwealth Edison – a major electricity utility.

Spire Solar Chicago's business model was deemed successful for multiple reasons. First, they have an advantage in the local and regional market as the first market entrants, and they have a safety valve provided by their ability to export to high-value international markets. With these advantages, Spire Solar Chicago believed and expected that they are in a position to maintain a lead in the regional market for some time. The City of Chicago will purchase some of its product and will also

be educating the public about the benefits of solar energy. In the longer term, the new company will rely completely on its own sales and marketing for new purchases.

A Bright Future...

Chicago's Brightfields goals are being met. They have been able to clean-up a brownfield and attract a high-tech manufacturing tenant in Spire Solar Chicago. The venture will create more than 100 new local high-tech jobs. Spire Solar Chicago has teamed with a

local non-profit organization to provide vocational training to local residents who will be employed at the manufacturing facility. The solar energy systems themselves will produce more than 10 million kilowatt hours of electricity, displace nearly 25 million pounds of carbon dioxide, and help Chicago improve air quality by reducing emissions of nitrous oxides, sulfur dioxides and other conventional pollutants. Commonwealth Edison and the City will install the solar energy equipment throughout the city to improve electric system reliability. Remaining systems will be sold to residential, commercial, and industrial customers in the metropolitan Chicago area.

According to the Commissioner of Chicago's Department of the Environment, "The bottom line for the future is that there are multiple authorities and resources that can be exploited in Brightfields programs once the awareness of these resources is developed. Now that we in Chicago see the potential of the Brightfields approach, we will be more strategic and more active in developing our contacts and expertise in the energy economy."



Wiremen in the IBEW/NECA Sunology Apprenticeship Program
Photo courtesy: International Brotherhood of Electrical Workers Local 134.

How do I find out more about Brightfields?

Please contact the U.S. Department of Energy's Brightfields Coordinator at:

Email: brightfields@ee.doe.gov

Visit the Brightfields website at

<http://www.eren.doe.gov/brightfields>



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