

## **BROWNFIELDS 2003: THE CHANGING LANDSCAPE**

### **KEYNOTE ADDRESS: POSITIONING BROWNFIELDS AS AN ESSENTIAL BUILDING BLOCK FOR SUSTAINABLE COMMUNITIES.**

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Good morning everyone, I am truly delighted to be at the Canadian Urban Institute's Brownfields 2003 conference today, to see many of the people that have helped me with my research over the years, and to once again speak to those who are actively engaged in brownfield redevelopment [Slide 1]. Indeed, this is a great honor for me because I have always conducted my research with the aim of providing findings that can assist in your redevelopment efforts. Hence, I would like to thank Glen Miller for inviting me to speak with you today, as well as Steve Rowe, the city of Kitchiner and others involved in making this event happen.

I have been asked to give you some thoughts today on the role of brownfield redevelopment in creating more sustainable communities. The last time I was asked to link brownfield redevelopment to sustainability was at the beginning of my academic career when my Ph.D. committee recommended that I look more closely at emerging theoretical models of development. At first, I felt somewhat frustrated with the thought of having to delve even further into convoluted theory, but since then I have come to realize that sustainable development provides an ideal framework for understanding and addressing the brownfields problem.

While I promise not to give you a overly theoretical lecture today, I will spend some time arguing that sustainability theory can be readily applied to brownfield redevelopment and that we are already seeing positive results in the use of brownfield projects to build more sustainable communities. I feel strongly, however, that we should be doing even more.

[S 2] I have divided my talk this morning into four parts. First, I will discuss and reinforce the connection between brownfield redevelopment and sustainability. Second, I will talk about research that others and I have conducted supporting the notion that brownfield redevelopment is indeed an essential building

block for creating more economically, environmentally, and socially sustainable communities. Third, I will discuss important ways in which we can "raise" the bar on brownfields and create projects that are "models" of sustainable community development. Lastly, I will conclude by making some suggestions for the future.

### **Linking Brownfields and Sustainable Development**

[S 3] As you know, in 1987, the United Nations' World Commission on Environment and Development defined the term sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." Indeed, the brownfield problem is a perfect example of how past activities have compromised the ability of this generation to meet its needs, otherwise we would not be meeting here today.

[S 4] To me, the most important contribution of the sustainable development perspective to understanding and managing the brownfield problem lies in the requirement to consider its economic, environmental and social implications.

The key challenges to brownfield redevelopment, whether they are perceived or real, can be best defined through the 3-way lens of sustainability. From an economic perspective: brownfields suffer from high costs and low returns; they generate little or no property taxes; infrastructure is often in poor condition; to many they represent the "old economy;" and some existing tenants are those we often lovingly refer to as "bottom feeders."

From an environmental perspective: the known or suspected presence of contamination continues to be a primary concern. These sites are also perceived as gardens of invasive weeds where wildlife is comprised of rats and sea gulls. I heard this first hand while researching a park project near downtown Chicago this summer. I asked two teenagers if they felt the park, built on the brownfield, increased the amount of wildlife in the community. They entertained me for the next 20 minutes, describing how enormous "contaminated" rats emerge from the ground and night, run to the river, and launch themselves against the rocks. Unfortunately, I did not get to see the rats, but a local fisherman

suggested that they were likely raccoons that go between the rocks to get at the fish he sometimes discards.

From a social perspective brownfield sites, especially those clustered in industrial districts, are often perceived as areas of high crime, poverty, and places where blight and disrepair have overtaken the community. This is particularly common in inner-city neighborhoods in the US, where blight and disrepair occur at levels not seen in Canada.

[S 5] The three-way lens of sustainability also helps us make sense of the stakeholders involved in brownfield redevelopment; including the developers, landowners, lenders or economic development officials in the economic circle; the scientists, engineers, environmentalists or recreation advocates in the environmental circle; and the community groups, NGOs and planners in the social circle.

[S 6] The sustainability lens also helps link the fundamental objectives of these stakeholders. Economically, stakeholders seek growth in terms of profit, tax base, and economic renewal. Environmentally, they seek to manage contamination risks, restore nature, enhance recreational opportunities and reduce development pressure on greenfield sites. Socially, they seek to breath new life into neighborhoods and create jobs.

Only by bringing the economic, environmental and social aspects of brownfield redevelopment together can we hope to achieve sustainable brownfield development.

Indeed, this is what many of us here have been trying to do with brownfields over the last decade. The question is: Are we succeeding? Is brownfield redevelopment helping us achieve more sustainable communities?

Even without such research evidence, the theoretical link between sustainability and brownfields has been enough for governments throughout North America and Europe to help encourage such redevelopment (De Sousa, 2001). A recent study by the US Conference of Mayors (2003) for instance, found that 153 cities have already redeveloped 900 brownfields representing over 10,000 acres and there are another 700 sites in the works. A 2001 study conducted by Professor Robert Simons (2001) of Cleveland State University found that 63 communities in the US have already

redeveloped 5% to 8% of their brownfield land. However, is this redevelopment more sustainable? Various studies have started to examine this question in more detail.

[S 7] In terms of jobs, taxes and investment, the evidence is already pouring in. The 2003 US Conference of Mayors' study found that 74 US cities have already created over 83,000 new jobs and 45 cities have added \$90 million to local tax revenues. A study I recently carried out for Milwaukee County found that the 127 projects undertaken from 1995 to 2000 averaged about \$5.6 million in redevelopment per project, created an average of 80 jobs each; and that \$57 in private investment was leveraged for every \$1 the city spent (De Sousa, in progress a).

[S 8] Recent research on both Canada and the US has provided more evidence of the implications of brownfield redevelopment to economic conditions in the surrounding community. The study by Hara Associates (2003) for the National Round Table on the Environment and the Economy revealed that the value of commercial property surrounding a brownfield redevelopment typically increases by 10% and the value of residential property by 30%. The International Development Council (2001) found that brownfields converted into green space rose nearby property values by an average of 116%, or 4 times more than the increase witnessed generally in those cities. The Regional Analytics (2002) study for the National Round Table also revealed that \$1 spent on brownfield redevelopment in the Canadian economy generates an additional \$3.80 in outputs from industries Canada wide.

Ultimately, however, a brownfields program can only sustain itself when those redeveloping these sites make a profit. Therefore, we must consider the economic goals of private developers as an essential component of a sustainable solution. Research I carried out on that issue finds that brownfield redevelopment can produce a solid return on investment if the market conditions are right (De Sousa 2000). If these projects are profitable, "they will come" and "others will follow" leading often to a domino effect. Unfortunately, that research also found that industrial land uses are not sufficiently profitable on brownfields without government support; something I will address later.

[S 9] The reason I initially became interested in the redevelopment of brownfields was to examine its environment impacts, including in terms re-using urban land to help preserve greenfields in the periphery. Taking brownfield and greenfield projects from the GTA, I found that 1.75 acres of greenfield land was required to support the same population living on 1 acre of urban brownfield, and that 1.25 acres of greenfield land was required to support the same number of industrial workers on 1 acre of urban brownfield (De Sousa 2002). A recent study in the US by Deason et al. (2001) found that 4.5 acres of greenfield land are required to accommodate the same development as 1 acre of brownfield. Another impressive finding in the 2003 US conference of Mayors study is that 113 of the US cities surveyed could support an additional 4.3 million people without placing an additional burden on existing infrastructure.

[S 10] On top of preserving greenfields, the public health benefit associated with cleaning up brownfields is directly reflected by the millions in site assessment and remediation that have already been invested thus far.

Furthermore, my work on the GTA also found that the transportation-oriented costs imposed by those living and working on brownfield sites in Toronto are significantly lower than by those living on greenfields; \$66,600/yr. less for residents & \$19,200/yr. less for industrial employees (De Sousa 2002).

[S 11] While little research has been performed on assessing the community benefits of brownfield redevelopment, outside of tracking jobs & economic spin-offs, there is a growing interest in assessing the impact these projects have on the quality of community life. Of the 476 people my student assistants and I surveyed over the summer at the 3 brownfield to park sites, over 70% visited the park at least once per week, primarily to walk, enjoy the scenery and relax. Interestingly, many of those surveyed were unaware of what existed on the site before the park was constructed. Those who did, remembered the site as being an ugly, dirty void in their community (De Sousa in progress b).

Over 90% of the respondents felt that park space was a good end use for the brownfield, while only 1% stated that it should have been used for something else. Most felt that the main benefit the site provided them was with a good place to exercise, enjoy the scenery, have kids

play and relax. As for community benefits, most felt that converting the brownfields to parks had a major positive impact on: the scenic beauty of their community; access to trails and recreation spaces; increasing neighborhood appeal and community pride; removing blight; raising property values; and even increasing the fitness levels of those in the community.

[S 12] For those who need to see the sustainability benefits in monetary terms, my study on the Greater Toronto Area found, for instance, that the public benefits of redeveloping brownfields in the city and keeping that development off greenfield land in the periphery are extensive-equaling over \$100,000 per hectare per year for industrial redevelopment and \$74,000 per hectare per year for residential redevelopment. In addition, if we were to redevelop all of Toronto's brownfields, the public benefit considering economic, social and environmental implications would range from \$16 to \$32 million dollars per year (De Sousa 2002). Dan Hara's 2003 study for the National Round Table on the Environment and the Economy concluded that the public benefits of redeveloping Canada's brownfields could range from \$4.6 to \$7 billion dollars per year (Hara Associates 2003).

### **Raising the bar: Brownfield redevelopment as a model of sustainable development**

[S 13] The current research is telling us that brownfield redevelopment is already proving itself to be an important building block for achieving sustainable communities, so the question that most of the speakers today will be addressing is how do we get more brownfield sites redeveloped? While the effectiveness of alternative policies and programs for redeveloping brownfields is a very important issue that I myself have conducted research on, I have decided to spend my remaining time this morning on my task of fusing together sustainable development and brownfields redevelopment. I will do this by "raising the bar," and pointing out ways in which brownfield redevelopment can be an even more effective for building sustainable communities. Indeed, where better to put a model of sustainable development for the future than on a site that reflects the unsustainable actions of the past. This idea is gaining ground in the US, especially given the extensive quantity of public

investment in brownfields. While I am not arguing that every brownfield project has to be a model of sustainability, I am saying that we need to aim for that goal. This requires that we pay more attention to at least four things; (1) re-industrialization, (2) green building & design, (3) public open space, and (4) tracking our performance from a sustainability perspective. If it helps, you can look at this part of my talk as an episode of a new show called the academic eye for the real world guy.

### *Re-industrialization*

[S 14] You are probably asking yourself why I would put re-industrialization as a key priority for building sustainable communities. Why would I want ugly old industry back on brownfields? Didn't it get us into this mess in the first place? The reason is social equity. Industrial employment tends to pay a "living wage" and employs many people who do not have the education or skills to participate in the so-called "new economy." Without public investment in brownfield redevelopment, re-industrialization does not work. I'm not saying that prime pieces of real estate need to be kept for industrial use; but if cities have a strategy for developing the new economy and flashy residential districts, they can also devote some attention to developing one for industrial revitalization.

In the US, there has been more support for the re-industrialization of inner-city brownfield districts. Chicago, which is often perceived by Canadians as the Mecca of downtown revitalization and brownfields redevelopment, has also invested extensively in inner-city re-industrialization. An ideal example is Goose Island, a 146-acre parcel located just northwest of downtown Chicago near the infamous Cabrini Green housing project and the rapidly gentrifying Lincoln Park neighborhood. Industry that started growing there in the 1860s and peaked in the 1920s, started to decline extensively in the 1970s and 80s leaving behind many brownfields. Pressure to re-industrialize the area actually came in response to pressure to build retail, residential, and commercial projects on the island. To preserve industry, the city of Chicago established a Planned Manufacturing District in 1991 to fund infrastructure improvements and to encourage industrial investment, modernization and expansion. This initiative was closely aligned to a YMCA (Local Economic and Employment

Development) Council's efforts to provide employment and training for low-income residents in local neighborhoods. The combination of public investment, education, and private investment has transformed the area. From 1991 to 2000, the number of companies rose from 14 to 36, the number of jobs from 1076 to 5000, and there has been a total private investment in facilities of over \$130 million dollars. It should be noted that public investment for this was \$70 million.

### *Green Building & Design*

[S 16] To take down a dilapidated brownfield and replace it with a big-box or industrial shell only goes so far when one is trying to argue that brownfield redevelopment is sustainable. Consequently, there has been an effort in many cities to ensure that new buildings & plans are as green as possible and that they blend in with the historical character of the neighborhood. The city of Milwaukee for instance has come up with green guidelines to help those developing buildings in the 1000-acre Menomonee Valley, Wisconsin's largest brownfield district.

An excellent example of green brownfield redevelopment is the Center for Green Technology in Chicago. Located just two miles from Goose Island, the building was originally constructed in 1952 and since then has had a number of different owners. When it came to the attention of the city in 1995, a crushing company that owned it had gone far beyond its permit, filling in all 17-acres of the site with illegally dumped debris that reached up to 70-feet high. The city took the company to court, closed down their operation, and became the new owner. The clean up took 18 months to complete and cost about \$9 million dollars.

[S 19] By 1999, Chicago was the proud owner of a cleaned site and vacant building. Rather than simply renovating the building using traditional methods, they created an energy efficient building using the highest standards of green technology available. A team of local architects designed the building using guidelines established by the US Green Building Council and to match the vision of the building, the city selected tenants that are environmentally focused, including Greencorps Chicago, the city's community landscaping and job training program; Spire Solar, a manufacturer of photovoltaic panels; and WRD Environmental, an urban landscape

design/build firm. Now the building is one of the top rated green buildings in the US and provides a “model” of sustainability in the center of what was an old, ugly brownfield district.

[S 23] While not green design, the Angus shops project in Montreal and the Gooderham and Worts project in Toronto provide good examples of how projects can be designed to incorporate historical features, such as retaining the walls of the Shops facility around the Loblaws parking lot.

### *Parks & Open Space*

[S 27] Using brownfields to build more sustainable “communities” also requires us to consider public open space as a possible end-use. I have devoted a significant amount of time to researching this type of reuse because it is particularly challenging, especially in the US where many policy-makers still question the value of such space (De Sousa 2003). The good news is that most Canadian cities see green space as a viable end-use for brownfields. For instance, the greening of Hamilton Harbor has already had a positive impact on the state of the environment and on local real estate prices.

[S 28] The city of Toronto has over a dozen green spaces built on brownfields; some to service neighborhoods, such as Woodbine Park and the Beaches project, where the city and the developer worked together to remediate the site and turn it into a multi-use park that has recreation, entertainment and ecological functions.

[S 30] Sauron Park in Toronto sits on a former munitions facility, is as a good example of a neighborhood parks built to serve an under serviced community and consider social sustainability and equity.

[S 32] The projects along the Don River serve as the best North American examples of using brownfields to enhance the ecological functioning and overall environmental sustainability of an urban watershed. Here you have the Brickworks project.

[S 33] Chester Springs marsh, a wetland reconstruction on a former landfill.

[S 34] The Domtar Polyresins site, which is a good example of linking emerging technology to

remediate a brownfield for ecological and recreation use.

Unfortunately, open space projects are often ignored because they are time consuming and expensive to construct, and often stand in the way of tax and employment generating projects. Without considering the broader social, environmental, and economic contribution of these spaces to a community’s quality of life, we cannot claim that sustainability is our central goal.

### *Sustainability Benchmarks for Brownfields*

[S 35] Finally, to make sure we are using brownfields to help build sustainable communities, we need to develop benchmarks to track our efforts in this regard. Most cities and states in the US already track brownfield redevelopment activity on the basis of building area, investment, employment, and tax oriented benchmarks; but they do not track environmental and social quality of life factors. Even the Environmental Protection Agency does not track this type of information. I have been trying to deal with this issue in two ways. The first is by coordinating a sustainability report to study the environmental, economic and social state of Milwaukee’s Menomonee Valley ([www.mvbi.org](http://www.mvbi.org)). The second is by conducting a survey to determine what brownfield stakeholders think about applying sustainability-oriented benchmarks to assess brownfield redevelopment activity.

The Menomonee Valley sustainability report was useful for helping identify the issues central to creating a “sustainable” brownfield district. In the future, it will help assess whether we are moving closer or further away from our goals.

[S 36] The study on benchmarks for tracking brownfield redevelopment activity revealed that while both public and private sector stakeholders still view economic outcomes as being the most important issues overall, environmental and social benchmarks are still significant (De Sousa, in progress a). Most viewed the increase in tax base, the influence on local property values, and the reduction of risks posed by contaminants as very important outcomes to track. Other benchmarks considered important were the affect of the project on local economic activity, on the image of the community, on enhancing quality of life

and in increasing the number of “living-wage” jobs in the area.

Interestingly, public sector stakeholders felt that such indicators could help advertise the long-term benefits associated with brownfield redevelopment, which would help them justify public expense and involvement. Their main fear however, was devising measurable indicators and deciding who would do the measuring. Private-sector stakeholders, on the other hand, felt that the desire to monitor and seek out broader outcomes was fair given the level of public commitment and the need to obtain public support generally. Some also felt that a broader range of outcomes would take the focus off jobs and taxes. They were concerned however that the sustainability criteria would be used to determine who gets funding, and that redeveloping brownfields was hard enough without adding a new burden.

#### *Concluding Remarks*

[S 37] One of the main benefits of studying brownfield redevelopment from a sustainability perspective is that it forces me to consider its challenges and rewards from the perspective of different stakeholders. I have been particularly impressed by the role of private developers in Canada who continue to pursue redevelopment despite its many challenges. A number of excellent speakers today will address those challenges in detail, offering suggestions on how they can be overcome. My main goal today was to let you know where we are and where we could possibly go. I do know, however, that increasing brownfield redevelopment activity in a sustainable manner will take the concerted effort of the public and private sectors. Both are going to have to stick to the principles of sustainable development and commit the money and time necessary to support its goals. Because, as the old saying goes, there is no such thing as a free lunch, especially when we want one that can sustain Canadians now and into the future.

Thank you.

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