

# Redeveloping BROWN FIELDS: A Different *Conversation*

PROCEEDINGS OF AN INTERNATIONAL SYMPOSIUM  
April 7 and 8, 1998, Toronto, Canada



**The New York Times**  
TUESDAY, MARCH 3, 1998

**to Defer a Plan  
icare Eligibility**  
*Wants Time for Study*

**FEAR**  
... President's proposal, along with their ideas for far-reaching changes to the structure of Medicare.  
... Congress created the commission, and the commission is specifically required to look at this question," Mr. Brown said. "Why don't we wait for that commission? The difficulty here is not an argument that it takes so long to get the law passed in Congress in the last few months of the session, right before the election. It's that we want to get the political feedback, and that will not ensure the best administrative result."  
... Senator Brown said his panel would study the proposal to let people 55 to 64 buy into Medicare for retirement at \$26 a month, but he said Congress should defer until after the proposal until the commission completes its work and issues a report in March 1999.  
... Mr. Brown said he hoped that his panel, the National Bipartisan Commission on the Future of Medicare, would "take the politics out of health care."  
... But Democrats in Congress said they worried that the proposals of Medicare would meet a genuine need and that a vote to delay would work to their political advantage.  
... Mr. Brown is an influential member of the Senate Finance Committee, which writes Medicare legislation, and he is respected by members of both parties as an energetic lawmaker who gets things done.  
... The Senate's Medicare proposal is uncertain, since the bill has not yet begun on Capitol Hill. Legislation for the industry will not be introduced in 1998, the year-end, which is a month before the presidential election.  
... The President's proposal would, for the first time, open Medicare to non-retired people under 65. The program also covers more than 23 million people 65 and older and 1 million people under 65 who have long-term disabilities.  
... Congress lightened the program last year to save money, but industry's hospital insurance cost fund will spend more next year than it did in 1997. It is expected to run out of money in 2001, but before the end of 1998, it will have to raise \$1.5 billion to cover the gap.  
... (Continued on Page A12)

**For Urban Wastelands, Tomatoes and Other Life**

**New Laws and Funds  
Fuel Revival of Land  
Fallen Into Disuse**

**By ANDREW C. MELVIN**  
... an industrial strip in Buffalo, where just over a year ago the remains of a coal and lignite mine lay in a wasteland, he, lawmakers say, is demonstrating the power of federal and state funds to transform a brownfield into a competitive, job-creating business. The state, the federal government, and the city have provided the money to build the greenhouse. The state, the federal government, and the city have provided the money to build the greenhouse.

**MIKE KELLER, top, tends to some of the more than 200,000 tomato plants at the Village Farms Greenhouse in Buffalo. The greenhouse, left, was built on abandoned industrial land. A site proposed for new industry, right.**



December 1998

## Canadian Cataloguing in Publication Data

Main entry under title:

Redeveloping brownfields : a different conversation : proceedings  
of an international symposium, April 7 and 8, 1998, Toronto, Canada

ISBN 0-7778-8183-7

1. Brownfields—Congresses. 2. Industrial real estate—Congresses.  
3. Real estate development—Congresses. I. Ontario. Waterfront  
Regeneration Trust.

HD257.R42 1998

363.739'66

C99-964001-1

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April 7 and 8, 1998, Toronto, Canada



December 1998

# ACKNOWLEDGMENTS

*Redeveloping Brownfields: A Different Conversation* (April 7 and 8, 1998) was made possible through the co-operation and support of private and public sector partners. In particular, the Waterfront Regeneration Trust acknowledges the contributions and support of the following:

Environment Canada

U.S. Environmental Protection Agency Office of International Affairs

Ontario Ministry of the Environment

Canadian Urban Institute

Toronto Economic Development Corporation (TEDCO)

Canadian Imperial Bank of Commerce (CIBC)

AIG Environmental

Urban Development Institute

# THE WATERFRONT REGENERATION TRUST

**T**he Waterfront Regeneration Trust is a catalyst for action.

Since 1992, the Trust has been committed to bringing together people, ideas and resources to invest in the revitalization of waterfronts and their associated urban areas.

David Crombie, and the people who work with him at the Trust, have a unique ability to bring all the parties together — agencies, businesses, the development industry, the financial and insurance sectors, service clubs, community groups, and the public — using an integrated approach to solve problems, overcome barriers, and empower action. This approach is based on understanding the complexities that link the environment, economy and communities.

## **What We Do: Regeneration in Action**

The Trust's work takes many forms — from protecting the waterfront with stewardship initiatives to restoring it with remediation and reuse projects; from promoting community participation in the waterfront to creating new opportunities for economic development; and from communicating the need for and benefits of waterfront regeneration to seeing that message translated into action on the part of government, business, community groups and individuals.

The Trust brings to this work credibility with communities, corporations and governments; strategic knowledge of decision-making processes; and a unique ability to build understanding, commitment and action.

## **BROWNFIELD REGENERATION**

One of the important elements in waterfront regeneration is being able to effectively address issues associated with brownfield restoration and reuse.

There are many waterfront locations where industrial manufacturing and bulk storage operations have ceased and corporations are considering options for decommissioning, divestment or redevelopment. In our brownfield work we collaborate with private and public sector partners to improve the investment climate by providing more certainty with respect to regulatory requirements and municipal land use planning processes, providing strategic advice to decision-makers and by facilitating public discussion of specific project plans.

Together these activities place the Trust in a unique position to offer land owners and developers strategic advice that improves the value of their assets by developing strategies to address the key environmental, financial and legal issues in a comprehensive manner so that vacant or underutilized industrial properties can move into more productive uses.

For more information on our brownfield regeneration initiatives, contact Beth Benson at (416) 314-9482 or by email: [bb@wrtrust.com](mailto:bb@wrtrust.com).

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# EXECUTIVE SUMMARY

On April 7 and 8, 1998, one hundred people gathered in Toronto for a different conversation about the redevelopment of former industrial properties (often referred to as “brownfields”). Participants represented Canada, the United States, the Netherlands, Germany, Spain, and Italy, and included landowners, investors, banker, regulators and community development specialists.

This diverse group shared a belief that the technical challenges and financial risks so long associated with brownfields can now be seen in a different way — as opportunities for economic and environmental revitalization. Long dormant sites are being revitalized as owners, investors and regulators find new ways to regenerate old industrial areas. The result is a new “can-do” attitude that is improving the investment climate and establishing the partnerships needed to ensure the environmental and economic health of cities around the world.

To build on this momentum, the Waterfront Regeneration Trust, Environment Canada, the Ontario Ministry of the Environment, the United States Environmental Protection Agency and other partners were pleased to present this forum which brought together leaders from the community, the banking, insurance, land development and government sectors. Our “Different Conversation” allowed participants to relate their experiences, and in doing so, describe ways to unlock the environmental, economic and social potential of brownfield sites. This two-day conversation was designed to let each participant know that none of us are alone in our hope for, and enthusiasm about, brownfields.

This record of the proceedings is based on the speakers’ presentation notes, where those were available, and on notes taken by Waterfront Regeneration Trust staff throughout the Symposium. We hope that we have captured the thoughts and insights of the speakers accurately. In some cases, comments have been edited or excerpted for publication purposes.

The Symposium proceedings summarize the presentations and the key points that emerged during the plenary sessions.

The results of the Symposium suggested several important lessons that can be passed on to others engaged in brownfield redevelopment:

**1. There is no single generic approach.**

Best practices for brownfield redevelopment are not so much a list of directions or a prescription as much as a new way of thinking. The best redevelopment approach is closely related to a site’s competitive advantage: its marketability, the intended use, and location. The key is to integrate site restoration and the land redevelopment process in a way that fosters reinvestment.

**2. A project is nothing without a vision.**

It is important to be able to imagine and articulate the possibilities — to describe what others cannot yet see — because brownfield redevelopment is about protecting and revitalizing the heart of our communities.

**3. Integration makes it happen.**

The planning, design and environmental issues should be addressed together in an integrated, transparent process.

#### **4. A diverse set of players is needed.**

Project teams must have diverse skills and experience. In addition, brownfield redevelopments benefit from collaboration between players — regulators, citizens, investors, bankers, technical experts and the other members of the design team. Getting the right players involved at the right time saves time, money and effort.

When you look at the successes, it is clear that they are driven by creative and committed people. Because brownfield redevelopment projects involve so many interests related to the needs of the community, environment, and economy, you must have a strong and committed team to pull it all together and to sustain a project.

— Charles Bartsch

#### **5. Partnerships enhance project viability.**

Every brownfield project requires partnerships to make it work. Those partnerships can result in consensus about the next use and site design, as well as innovative financing strategies, formal agreements regarding clean-up and monitoring, and ongoing communication and community development initiatives.

#### **6. Innovative, proactive local agencies play a lead role.**

Local government and its citizens know best what is needed to spark reinvestment in brownfields. The local spark may come from the public sector (e.g., city department, agency or politician) or the non-profit sector (e.g., local economic or community development corporation). Improving the investment climate by clarifying and

streamlining the decision process, and articulating the community vision, are two areas where local government can play a key role.

#### **7. Those who understand and communicate risk and can measure it in their own terms are likely to yield the greatest rewards.**

Risk-based decision-making is about managing change, ensuring that environmental and human health are protected in cost-effective ways, and making sound economic investments.

#### **8. Effective communication is essential.**

Broadening the scope of the discussion leads to better understanding and better decisions. Effective communication should be seen as a priority task for all members of the project team.

#### **9. Public education and community-based redevelopment projects build ecological literacy and community capacity.**

This is best viewed as a shared responsibility of private and public sectors. When we speak of education around the issue of brownfields, the discussion has traditionally been focused on public education. The question of education and learning must be more comprehensive and should include all stakeholders, such as risk-assessors, lenders, landowners, purchasers, and developers.

Our visions are always determined by our own experiences. Unless we develop a better mechanism to communicate these experiences to a broader range of people, we're going to be unable to engage the community or stimulate better ideas.

— Ronald Shiffman



**10. Public sector financial assistance can be used creatively to lever private investment.**

Many successes in have resulted from upfront public sector investment in environmental restoration, infrastructure improvements and job creation. Setting a new standard for design and land use can go a long way to improve the investment climate.

Please stay in touch. We welcome your comments and suggestions. The Waterfront Regeneration Trust's website, located at <http://www.waterfronttrust.com>, provides updates on our most recent brownfields initiatives. This site also provides links to international brownfield initiatives in the United States, the Netherlands, Germany and Spain.



# OPENING REMARKS

## Stepping Stones to City Building

THE HONOURABLE DAVID  
CROMBIE

CHAIR, WATERFRONT REGENERATION  
TRUST

*Brownfield redevelopment concerns much more than harnessing the value of abandoned industrial lands — it is about regenerating urban places. David Crombie, Chair of the Waterfront Regeneration Trust, began the symposium with a few words about the challenge and necessity of integrating ecology, economy and community in decisions about the future of our cities.*

There is something besides “practical optimism” that brings us together in this different conversation. It is the fact that we have all been touched by the same historical forces. Everyone talks about the transformation of our economies, the diversity of our populations, the shifts in the roles of government, the changing attitudes toward the environment, and the relationship between people and nature. All of those changes have happened and continue to happen throughout the world, and they have led all of us to change our thinking and ways of doing things.

At the Waterfront Regeneration Trust, we follow two fundamental principles:

- Begin by understanding that everything is connected to everything else. This is the first principle of ecology, but also of physics, medicine, chemistry and life.
- Remember that human beings are part of nature, and not separate from it.

When you take those two principles together and put them into practice, you realize that we have a responsibility for the consequences of our actions,

to ourselves, our world, to other generations and other species. The idea that you can move in, use up and move on is no longer acceptable. It’s not only morally wrong, but also economically destructive.

We have to approach our urban places by integrating environment, community and economy. They are interdependent. Some people don’t believe that, assuming that we can have economic development without environmental health. But if that happens you gradually erode and deplete the asset. Similarly those who don’t believe that economic development is important, ignore the need for people to support themselves and their families.

A simple word like “partnerships” is not as simple a word as it sounds. We can no longer do things alone. You have to bring people together to realize meaningful results. Partnerships are the way that we bring people, ideas, and resources together into an “ecosystem approach” for sound planning, sound decision-making, and sound financing.

Working partnerships create a new kind of accountability. Those of us who have the opportunity to look for solutions, to move forward in the areas of environment, economy and community, have an obligation to one another and to ourselves. We are indeed the stepping stones to the city of the new millennium. Accountability starts with each of us. It is not up to someone or something else.

Charles Sauriol is a well-known Ontario pioneer, naturalist and conservationist who dedicated his life to the conservation of the Don River Valley, one of the most important urban

greenways in the urban core of Toronto. He wrote this poem and I offer it to you as you begin this symposium:

Isn't it strange that princes and kings  
And clowns who caper in sawdust rings  
And simple folk like you and me  
Are builders of eternity.  
To each is given a bag of tools  
A shapeless mass and a book of rules  
And each before his life has flown  
Must be a stumbling block or a stepping stone.

## Bringing People Together for a Conversation that Leads to Solutions

JOHN MILLS

DIRECTOR GENERAL, ENVIRONMENT CANADA

*When sectors, organizations and people collaborate, a great deal of value is added. Environment Canada has seen that happen with the "Great Lakes 2000 Cleanup Fund" and with many other projects. John Mills, Director General with Environment Canada, spoke about his hope that the value added by this symposium would take the form of increased action on redeveloping brownfields.*

Over the past decade Environment Canada has brought people together for the purpose of consensus building leading to the completion of several projects. It is people like you who have built the technological know-how that has made possible action in our Great Lakes to improve water quality and restore degraded natural habitats. It is now time to take what we have learned in the Great Lakes and apply that

knowledge to land based issues.

We are all aware that effective and competitive management tools and clean-up technologies are needed. This will ensure contaminated sites in Canada are neither an environmental threat nor an obstacle to economic development. For this reason Environment Canada has identified site remediation as a priority area to promote the growth of environmental technology.

Environment Canada will continue to support technological innovation through the Green Technologies Program. Innovative technologies have been demonstrated and will continue to be supported. SEDTEC and REMTEC are two computer directories which have been developed as management tools to assist in identifying appropriate technologies for site remediation.

Today, we are no longer faced with the same scientific limitations or barriers to technology advancement. What is needed is a coming together of multi-level, multi-agency groups who are willing to form collaborative agreements. No one jurisdiction has all the answers. We need to work together to form solutions.

Over the next two days, you will have the opportunity to listen to case studies from around the world. Over the years, there has been plenty of discussion on what the barriers are to redeveloping brownfield lands. Let us re-focus ourselves and begin to spend our time and energies on how these barriers have been overcome worldwide.

This symposium was developed to bring leaders together for the purpose of consensus building. At the end of these two days, let us walk



out of these doors with the firm conviction that this is the start of a different conversation: a conversation that leads to solutions which give certainty based on sound decisions that will kick-start action. I look forward to the results of your deliberations.

## The International Context

DALE MEDEARIS

UNITED STATES ENVIRONMENTAL  
PROTECTION AGENCY, OFFICE OF  
INTERNATIONAL ACTIVITIES

*Dale Medearis of the US EPA International Office speaks to the importance of sharing brownfield success stories and information on an international level and some of the mechanisms to accomplish improved discussions across continents.*

I want to help shape the context for why we are engaged in this international dialogue and what we hope will come from the discussions that will follow.

There is a very rich precedent in the brownfield process for the international sharing of experiences. It is a precedent which we hope we can build on, particularly through meetings such as these.

We have learned, for example, that the concept of enterprise zones in the United States were originally ideas started in the UK.

We are also finding, for instance, that the transformation of brownfields into ecological industrial parks is working in Cape Charles, Virginia and Baltimore, Maryland and that the concepts of industrial ecology were actually

borrowed from Denmark.

Labor retraining is a prominent feature within the U.S. national brownfields program and we are learning how the U.S. states of Wisconsin and West Virginia have successfully adopted Germany's dual technical training education system for teenagers.

The EPA is eager to support and promote this international discussion of "best practices" brownfields redevelopment in order to promote the creation of sustainable communities in our own backyards.

Building partnerships is the theme underlying the U.S. brownfields program. It is not uncommon to hear how cities such as Los Angeles learn and borrow experiences on brownfields redevelopment from Chicago. We hope that through these international partnerships and discussions that cities such as Los Angeles can also borrow approaches lessons from Bilbao, Amsterdam and Gelsenkirchen.

In order to promote this international dialogue, and to "widen the tent", as Beth Benson said, EPA is interested in supporting not only workshops such as this, but also contact directly between brownfields practitioners.

For example, we have worked closely not only with the Waterfront Regeneration Trust, but also with the Pratt Institute, the U.S. Department of Housing and Urban Development, the German Marshall Fund of the United States, and others to support exchanges and meetings between practitioners.

With the help of the International City/County Managers Association (ICMA), four

“best practices” international case studies, including the work of the Trust, the Westergasfabriek, Emscher Park, and Groundwork Trust, have been developed. We hope to add more over the next year.

We are also working closely with the Organization for Economic Cooperation and Development’s Group on Urban Affairs and the European Union’s Concerted Action on Risk Assessment for Contaminated Land in the European Union (CARACAS) and Contaminated Site Management (COSIMA) projects to share technical data on spatial planning and risk assessment with U.S. brownfields communities. We are also refining our Internet home page to make as much of this information available and to capitalize the rich knowledge here before us in this room.

From where we sit in the International Office of EPA, the concepts of sustainable development can be very abstract. It is often difficult to make the direct connection between the talk on Agenda 21 and sustainable development taking place in multi-national environmental fora and the communities endeavoring to link social equity, environmental protection, and economic development. It is a pleasure to be able to find that place-based connection here with the international and domestic brownfields work. It is also a pleasure to see, as we have today under this “big tent”, the many concrete success stories that embody the spirit and ideals of sustainable development and Agenda 21.

## A Municipal Perspective

JOAN KING

COUNCILLOR, CITY OF TORONTO, AND  
VICE-CHAIR OF THE ASSOCIATION OF  
MUNICIPALITIES OF ONTARIO

*How are Ontario’s municipalities handling the brownfield development responsibilities that have been “downloaded” by the provincial government? Joan King described a model that is being developed by the Regional Planning Commissioners of Ontario to clarify and streamline municipal planning processes.*

As homeowners, we don’t use and throw away — we maintain and we repair. So it is with each city’s brownfield properties: they are a resource and an asset that need to be brought back to their most productive use. Fear of the unknown has shadowed brownfields for many years, but a different attitude now makes a different conversation possible.

In 1997, the Ministry of Environment released the Guideline for Use at Contaminated Sites in Ontario. Over the past few years, the Province has downloaded many responsibilities to municipalities, including responsibility for development of contaminated sites. At first this caused a lot of confusion as municipalities tried to understand their roles and responsibilities, and perhaps their potential new liabilities. We knew that if redeveloping brownfield sites required municipalities to accept new liabilities without the expertise or resources to properly manage the risk, then municipalities would simply not be able to take this on. But the Ministry of the Environment made it clear that the new approach would offer new flexibility, and could create a



more streamlined development process for contaminated sites.

Municipalities have seized the opportunity. The Regional Planning Commissioners of Ontario are developing a process that deals with brownfield redevelopment in a clear and consistent manner. Like the Province's Guideline, it keeps the responsibility for the site clean-up with the owners and the expertise of their consultants. It is an approach that ensures that the rules for development are predictable, reasonable and understood by the community, landowners and investors.

The process will clarify municipal involvement in development on contaminated sites, using site restoration criteria and technical guidance provided by the Ministry of the Environment. The process will expedite the development review process – without adding to municipal liability. Planners at the new City of Toronto, for example, are working towards adopting and implementing this model as a priority and are providing the resources to ensure that it works.

Someday, redevelopment of industrial areas will be the norm, and then communities can get back the investments they have made in services by attracting new businesses, and new residents and employees. This is already happening in Toronto — in the Port Lands, the railway lands and other industrial areas — but more can happen, and the City wants to be part of it.



# SESSION ONE

## Setting the Scene For Investment

### The International Public Policy Context

TERESA SALAMONE, J.D.,  
ENVIRONMENTAL CONSULTANT

*“Brownfield redevelopment” has captured international attention because it offers the opportunity to address several urban issues concurrently, including the need to utilize existing infrastructure, to improve public transportation, and to improve the quality of life in the core of urban communities. In response to the need to foster redevelopment of old industrial areas and to protect health and safety, North American and European jurisdictions have pursued public policy initiatives that have a number of features in common, as well as their own unique qualities. This summary paper provides an overview of the international policy context that highlights those features and draws attention to “what works” to foster redevelopment of brownfields. Ms. Salamone’s complete paper is found in Appendix 1.*

There is a growing awareness of the need for redevelopment of underutilized industrial lands in Canada, the United States and in Europe. Many of these former industrial or commercial properties are strategically located for investment and they are often well serviced and close to public transportation systems. However, the real and perceived threats and risks associated with soil and ground water contamination at these properties has contributed to the “investment chill” that has plagued many urban centers.

In response to this need, North American and European jurisdictions have pursued public policy directions over the past decade that have certain unique characteristics as well as a number of features in common. While the public policy

framework continues to change in the different jurisdictions, it is instructive to examine the main trends to identify those features that are contributing to progress.

If we accept that the prime function of the public policy framework is to protect the public interest, we can observe how different jurisdictions integrate objectives associated with economic development, social issues and environmental protection. Public policy should address the barriers to reinvestment as far as possible by helping to establish the conditions that attract capital to brownfields. If you were to measure the success of public policy by the response of the marketplace, then very clearly some jurisdictions have had more success than others. However, we should also remind ourselves that the environmental condition of property is only one part of the risk analyzes that an investor undertakes when considering redevelopment. There may be several non-environmental obstacles to the flow of capital, such as weak market conditions, inconsistent zoning, lack of municipal infrastructure, etc.

### BARRIERS TO REINVESTMENT

While Canada, the United States and European countries have adopted different definitions for “contaminated sites”, all jurisdictions recognize the benefits of redeveloping these properties. Why then, do we observe large areas of vacant, underutilized properties in the hearts of our cities? When listing the barriers to reinvestment in brownfields, the same issues are identified in every jurisdiction:

1. Uncertain liability for historic contamination

and fear of changing standards in the future — who's responsible and when?

2. Unclear, inconsistent clean up criteria, often lacking a firm scientific rationale — how clean is clean enough?
3. Unclear regulatory jurisdiction — who's involved and when?
4. Inconsistent, uncoordinated and slow regulatory decisions — what is required for approval?

The risk of future liability appears to be the issue that is identified as the greatest barrier to brownfield redevelopment in every jurisdiction. Appendix one provides an overview of the different liability policies that have been developed by Canada, United States and Europe. As a general conclusion it is evident that in Europe brownfield redevelopment is still largely dependent upon public programs, grants and/or subsidies. This can be seen as a result of the large amount of property in public ownership (e.g., former military bases, abandoned properties, etc.) and the loss of jobs, local tax base and the flight of private capital from large urban areas. In the United States, redevelopment will occur when market conditions warrant and when there is certainty surrounding environmental liabilities.

In Canada, we observe a somewhat different situation. Given the absence of government designated cleanup funds, direct financial incentives, and prescriptive legislation governing site cleanup and liability, Canadian jurisdictions appear to have moved closer to a situation in which the private sector is willing and able to treat brownfields as they would any other redevelopment initiative. The environmental

condition of the property need not be the overriding concern, provided that other market conditions for investment exist. The key appears to be finding the right balance between certainty and flexibility: clarity with respect to the process and requirements of the regulators and lenders, with some flexibility as to how the objectives are achieved.

#### WHAT WORKS?

Based on a review of the international public policy framework, several features can be identified as beneficial to redevelopment, and many of them are European in origin. First is the concept of regional land use planning as a way of influencing development and land prices and minimizing industrial impacts. In most of the European Union countries, business development is guided either by the local government or a regional planning district. Development typically occurs in accordance with a regional growth plan. This reduces land speculation, widely varying land prices, and inconsistent or inappropriate land use.

The second policy that appears to encourage redevelopment is again a European one, that of government acceptance of future liability. This eliminates fears of reopening sites to unpredictable future costs and encourages redevelopment, provided that the technical assessment and cleanup have been completed and verified as required. The United States has not gone so far as to accept future liability, but some jurisdictions will grant a limited release with a “reopener” clause in case unknown risks are



revealed at a later date. Canadian jurisdictions have to date shown little interest in this policy instrument, partly because the need is not as evident as in other jurisdictions. However, in both Canada and the United States one now observes the availability of market-based insurance products that can effectively shift and manage residual risk over the longer term

The third policy that encourages redevelopment is the co-operation of all interested parties in redevelopment decisions. By far, the overriding success stories in the United States' Brownfield Program have turned on the ability of the parties to engage all appropriate decision-makers and for all decision-makers to have a common goal of redevelopment using flexible decision-making authority. This co-operative approach, very consistent with the Canadian style of decision-making, will likely be proven to be the key to the success of brownfield redevelopment in any jurisdiction. Co-operation is not something that can or should be strictly regulated. Instead it emerges from a new way of thinking; an integrated, strategic approach that defines the issues and the opportunities, builds consensus, and effectively manages risk.

#### WHERE DO WE GO FROM HERE?

Market-based insurance products and other means of managing the residual risks associated with brownfield redevelopment have opened new possibilities. The areas where public policy efforts are still focused include: streamlining the decision-making process, integrating the site remediation process with the development

approval process at the local level, and providing flexibility in clean up requirements while still protecting health and safety.

What appears to be the trend in Canada, the United States and Europe is provision of generic clean-up standards for smaller, less complicated sites (quickly turning them to new uses), and site specific risk assessment for the larger, more complicated properties. To realize the full benefits of this more flexible approach, we will need to continue to advance the science and the art of assessing and managing human and ecological risk. A co-ordinated international scientific effort would enhance this effort.

Finally, the one thing that will improve the chance of successful redevelopment is the availability of financial incentives. This is a relatively new effort by the federal and state governments in the United States. Typical financial incentives include tax and lending incentives and provided they are awarded to a viable project, they can be expected to reap significant economic rewards, particularly in those communities where the flight of private capital must be reversed.

There is no doubt that a project must make good economic sense if it is to make its way through the planning, design, approvals and construction phases. Throughout the process the key is to add value — and if the public policy framework contributes to that goal while protecting the public interest, it surely has done its job.

## Implementing Ontario's New Guideline

KEITH WEST

DIRECTOR, WASTE REDUCTION BRANCH,  
ONTARIO MINISTRY OF THE ENVIRONMENT

*In June 1996, the Ontario Ministry of the Environment published the Guideline for Use at Contaminated Sites in Ontario. This Guideline charts a new course for restoring contaminated sites in Ontario and seeks to strike a new balance between certainty and flexibility in providing consistent environmental protection. Keith West provides an overview of Ontario's new public policy framework for contaminated site restoration.*

I want to talk this morning about the Ontario context. It's a real pleasure to be here and I bring the regrets of Carl Griffith, the Assistant Deputy Minister, who was unable to attend. I was very interested this morning in the concept of the stepping stone. At the Ministry of Environment in Ontario, it's sometimes hard to be a stepping stone. I do believe from a brownfield perspective that we laid out our policy around brownfields to be a stepping stone and I think it is really important to do so.

I want to talk about the Ontario context to bring to your attention our approach, and to note that we have had a number of important partners in carrying this out.

There are basically six key components in Ontario to having an effective brownfields strategy:

1. The first one is a strong policy framework.
2. The second element is that this framework must establish contaminant concentration limits based on human health and

environmental protection. I think we have done a good job respecting this in Ontario.

3. The third element of the policy framework is to provide clarity on how to assess and clean up contaminated sites, and what do you do with those soils that have been excavated that are no longer going to be staying at the site. The Guideline for Use at Contaminated Sites in Ontario, which was released in 1996 provides clear criteria and guidance on how to assess and clean up contaminated sites. We need to complement this Guideline with a clear policy on how to manage excess soils generated during site clean-ups.
4. The fourth component we are continuing to work on with stakeholders is how you integrate the site restoration process into the local land use planning process. I think that is an area where we can still make progress to improve consistency.
5. There is also a need to limit government involvement in actual site remediations. Setting a strong policy and regulatory framework should be government's priority, to ensure environmental protection. In my discussions with the Council of Great Lakes Governors they are very much interested in finding out how they can decrease that regulatory framework in terms of encouraging brownfields development. From an Ontario perspective, this is what we are trying to facilitate and I think we've had some success.
6. Lastly, we need to identify non-governmental champions for the whole brownfield restoration and reuse issue. It has been a



pleasure to work with the Waterfront Regeneration Trust to make sure that we build those bridges and get this information out there through the kinds of documents that are necessary to provide appropriate guidance. I want to compliment the Waterfront Regeneration Trust in that regard because they are making some headway with some important initiatives. Having champions in other places facilitates our job and I congratulate the Trust and municipalities like the City of Toronto that are taking a leadership issue in this area.

I would like to discuss our 1996 Guideline, which most of you who are from Ontario will be aware of, in some detail. The Guideline, based on the Massachusetts approach, sets out criteria using chemical criteria for both soil and ground water. These criteria, as you know are based on both human health and environmental protection considerations. In our Guideline, there are 117 soil and ground water criteria compared to 22 in our original 1989 Guideline. Both inorganic and organic chemicals are included in those criteria. In the Guideline, we also have separate criteria for surface and subsurface soils (1.5m). There are also less stringent criteria when ground water is not used as a source of drinking water.

There are three basic clean-up options that are established through the 1996 Guideline:

- The first one is clean-up to background levels;
- The second clean-up option is the generic clean-up criteria that have both surface and subsurface soil criteria and potable and non-potable ground water criteria; and
- The third approach is site specific clean-up

criteria where MOE approval is required.

Many of you are also familiar with the four-step process that the Guideline sets out:

1. Planning and assessment;
2. Site assessment and sampling;
3. Develop and implement clean-up plan; and
4. Notify MOE upon completion.

The Guideline sets out the essential criteria in sets of tables within the document. In the Guideline, we're also trying to define a new process which gives some flexibility to those who are choosing the different criteria. We did that consciously to try to facilitate brownfield redevelopment.

Within the Guideline you will see a number of background documents; we have tried to provide very clear guidance in terms of sampling and analytical methods, and guidance on risk assessment.

Is the Guideline working? I meet with a lot of developers and lawyers to talk about the Guideline, and by and large we are hearing that, yes, it is working. There are some positive things that people like: they like the flexibility; they like the idea that it is a guideline approach rather than a regulatory approach; they like the idea that the Ministry is not reviewing every document associated with clean-ups.

We have developed a process that is very different from the Ministry's traditional role. We have tried to put out a guidance document that is based primarily on self assessment. We are now coming up to the two-year mark of its release and we are completing our internal review; we've also been talking with other stakeholders about the document and following up on some of the issues

that need to be addressed. We want make sure we talk to those who are actually working with it to give us some advice on things that we need to update or change.

For those who had been involved with the document, one of the issues that requires further work is the issue of the Record of Site Condition (RSC). I can say to you that with some of the short-term work that we have accomplished with some of our stakeholders, we will be in a position to set out what I hope is a consensus on this issue. I hope to see the RSC issues tackled and I believe we will see a revised version released shortly.

We have also heard from the development industry on the issue of the Certificate of Prohibition. We plan to change the term and are developing a new, more effective name for this instrument that might pertain to a contaminated property.

The issue of MOE involvement in providing advice, initiating audits, etc., has also come up on occasion, and we have had concerns expressed about inconsistent advice given by Ministry staff. We are taking steps to correct this and make sure that consistent advice is being given. We are also doing some work in terms of the timing of reviews.

Part of our work with the Council of Great Lakes Governors is a brownfield web site. We hope that this web site will integrate all of the Great Lakes brownfield sites in Quebec and Ontario.

I want to talk a little bit about the Materials Management Policy. As I mentioned earlier, this policy will complement the requirements in the Guideline. I expect that you will soon see a draft

policy for public review through the Environmental Bill of Rights registry. It is one of the links in the chain where it is important for us to set up very clear criteria. You will see consistency with the criteria that we have used, you will see consistency with the land uses that we have used — and I should say that it will probably still be a regulatory approach. However, it will be a self-regulating approach if we can work out the implementation steps.

I also want to mention the integration of our site restoration program in the land use planning process. The Ministry is working with the Regional Planning Commissioners group to try to come to a conclusion on giving co-ordinated guidance to municipalities as they work with site re-use through the municipal planning process. We are also working with the Waterfront Regeneration Trust to prepare a document that the Ministry can endorse dealing with the integration of environmental approvals and land-use planning.

I am hoping that the work of the Regional Planning Commissioners, the Ministry and other stakeholders will also help us with the whole question of public consultation. I think an important question to ask is: How do you bring the public in to make sure that they are a part your process as you develop a clean-up plan? We have got all sorts of experience in public consultation from the land-use planning process perspective and I think we need to draw more on that to make sure we do it right in Ontario.

The final thing I want to talk about, and this is probably the area where stakeholders are most concerned, is the issue of liability. The Ministry of



the Environment continues to work in this area and we are very interested in what is occurring in other jurisdictions. The Ministry has been doing some work with the Council of Great Lakes Governors, and this has been very fruitful — we are hearing in this forum that governments need to set a very clear, regulatory policy framework and they need to choose very carefully where they want to continue to be involved, but should step away as much as possible to make sure that people are doing the right thing and get out of the way for that to happen. The reason I mentioned the United States is because they have a far greater regulatory approach than we do here in Ontario.

Some of you have been involved in the Liability Working Group with the Ministry and are aware with the 1995 document that made recommendations regarding lender liability. We moved forward with some steps in the global lending agreement that was mentioned earlier to give some clarity to both lenders and municipalities. We are increasingly being asked to put that into a regulatory approach to further improve certainty within existing legislation and regulations. I think it is a very important issue and it is one that the Ministry will continue to work on in the future.

## Financial Services: A Fresh Perspective on Managing Risk

GEORGE BOIRE

MANAGER, ENVIRONMENTAL AND CORPORATE RISK MANAGEMENT,  
CANADIAN IMPERIAL BANK OF  
COMMERCE, TORONTO

*George Boire, trained as a hydrogeologist and now working for one of Canada's premier chartered banks, offers a fresh perspective on managing brownfield financial risk.*

The issue for us as banks is that most of these contaminated sites, if they are to be developed, have to be projects that are viable in their own right. The emphasis isn't that they are "environmental disasters", but that the potential is there for them to be viable developments. In addition the restoration of environmental health that comes from brownfield redevelopment adds value to society in general, and specifically to municipalities and the people who live near the sites.

I applaud the work of many American banks who are advertising that they are open for business on brownfields — that a brownfield is just another development project with the added component of environmental issues. I think if we define brownfields as sites that have residual value, these sites have a chance for capital to flow into them. It's a context issue, often a difference between perception and reality.

To us, the key liability issue is the "direct liability" issue. There has been some relief in that area. The lender liability agreement with the Province of Ontario has given some measure of

relief from direct liability — but there’s still some way to go.

The main thing is that just giving banks relief isn’t enough. I suggest that going further would be helpful, because our clients still have some liability, and with that liability they may be at risk of not being able to pay back their loans. If you give the clients some relief it increases their ability to get capital and to actually follow through with these projects. This usually requires a legislative amendment, and may not be a priority for all Canadian provinces, but it is not something that should be put on the back burner.

If there’s a fear of lending against these properties — a fear that you would never be able to recoup on the security that you’ve taken against these properties — then that is going to cause a “chill” in terms of capital flow. All of the provinces have taken specific policy or legislative action to address this concern since the earlier part of the 1990s, and should be applauded. It is important for each of us to continue to look for concrete steps to optimize conditions for investment.

## WENDY SAULESLEJA

UNDERWRITER, AIG ENVIRONMENTAL CANADA

*AIG Environmental Canada is a division of the American International Companies and is one of the financial services sector leaders in brownfield redevelopment in North America. Their management of commercial and environmental insurance programs includes programs which handle risk assessment, loss*

*control engineering and risk management expertise.*

*Wendy Saulesleja reviews some of the insurance options now available for brownfield redevelopment projects.*

**A**IG Environmental has several different types of environmental coverage. Some of these coverages apply to Brownfield redevelopment and we have categorized them into three different types of risk.

### SITES WITH KNOWN CONTAMINATION

Our Clean Up Cost Cap policy provides coverage for the cost overruns of remediation. It can be purchased by the current owner of the site, the future owner, or the lead remediation contractor. This policy can help companies address such questions as: What if the contamination is greater than expected? What if during the course of remediation additional contamination is discovered? What if this contamination goes off my site and contaminates my neighbour? These risks are covered by the policy. This policy does not cover the unknown contamination outside of the remedial action plan, which is covered by other programs. The limit of insurance available is \$70 million dollars. It is worth noting that the expected cost of clean up can be included and also that multi-site and multi-year programs are available

### FIXED FACILITIES

We also have developed a product that we call our Pollution Legal Liability Select Policy (PLL Select), where you can choose and pay for only



the coverages that you want. This policy can provide clean-up, bodily injury and property damage coverage for areas on/within/under your site, or for contamination emanating from your site. It can be designed for property transactions, in that some of the coverages are for pre-existing conditions and others are for new conditions. This product is ideal for portfolios and can be done in conjunction with remediation or post-remediation.

#### CONTRACTORS AND CONSULTANTS

We have several products for contractors and consultants, but I will concentrate on only one. Our Owner Controlled Insurance Program (OCIP) is designed for the owner of the site to ensure that the remediation of his or her site is properly insured. This coverage covers all consultants that come on the property to remediate it.

AIG Environmental can help you with any aspect of your remediation: before contamination occurs, during remediation, and after remediation.

## A Municipal Planning Perspective

PAUL BEDFORD

DIRECTOR & CHIEF PLANNER, CITY PLANNING, URBAN PLANNING & DEVELOPMENT SERVICES, CITY OF TORONTO

*Paul Bedford focuses on three principles that guide the City's work on brownfield redevelopment: a) brownfields are a municipal concern; b) a city should develop strategies to capture new investment; and c) it is important to demystify the development approval process.*

## REDEVELOPMENT OF BROWNFIELDS IS A MUNICIPAL RESPONSIBILITY

Municipal government is the jurisdiction that is closest to the citizens. Taking care of our built and natural environment is our job. We're in the business of facilitating economic revitalization and environmental health. So in Toronto, we see developing brownfields as building and repairing missing pieces of the city fabric; about connecting streets and blocks and open spaces with the industrial parts of the city.

Brownfield redevelopment is not new to Toronto, but there are strategic opportunities to do more. And to do that we need to embrace several things that make for a good city; diversity, street vitality and vibrancy are important. So is mixed use, and good housing. A pedestrian environment is what we want. Why shouldn't it be possible to live your entire life — from birth to death — without owning a car, and not feel deprived? Cities should be people places, in a vibrant, attractive public realm.

## CREATE STRATEGIES TO CAPTURE NEW INVESTMENT

In Toronto and many other North American cities, there is unprecedented interest in downtowns as being the heart of the city — people know that if you want to have a healthy city you've got to have a healthy heart. People are rediscovering the heart of the city and that is a wave of opportunity that Toronto is catching.

What we want to do is create a positive climate for investment. You've got to demonstrate certainty to developers, and generally show that the city has its act together. For the past four years brownfield development has been at the heart of this opportunity.

In setting the context for what we're trying to do in Canada and Ontario, let me first say what we are not doing. First, there is no bonusing — it is illegal. Also, there are few tax incentives. There are no federal clean-up programs. So that means we must rely on planning and other municipal tools. The way I think of it is: we set the table but we don't cook the dinner. The developers do that.

We have several new approaches and ways of looking at the city. We use “Three Lenses”, or three conceptual approaches which give us different solutions for different parts of the city. First, we have “stable” or “protection areas” — residential areas where we want careful in-fill development, you do lots of consultation, and where you want no surprises or big changes. Traditional zoning ensures stability in this zone. Second, we have designated “re-investment” or “change areas”, which are known for their older industrial warehouse and loft buildings. In these areas, the emphasis is on saving those buildings and re-using them. The third area is the brownfield part of the city.

In the re-investment and brownfield areas we simply abolished zoning as we know it and created a whole new zone called “RA” for “Reinvestment Area”. In this area we said that all land uses were acceptable unless they were obnoxious or environmentally hazardous. We emphasized a built-form approach, where there were height limits, angular planes, set backs, and build-to lines. But within that zoning you could do anything you want, provided it respects urban design and is built to the street line. The basis for this is that people are not concerned about density numbers in an official plan; what really

matters is what a building looks like, how it functions and how it fits into the street.

We also concluded that owners or developers should be allowed to do these kinds of things as-of-right. Basically 85-90% of the projects that have gone forward in those areas have occurred as-of-right. We also developed minimum and maximum parking standards. For example, if you walk past SkyDome you won't find a lot of parking garages because we did not want to attract more car use. So, in fact, we have maximum parking standards which you can not go above; if you do, it becomes a re-zoning and needs an official plan change.

The result of all this has been a great development boom and lots of investment in the city that has positive effects.

#### DEMYSTIFY THE PROCESS

It is important to make the redevelopment process as simple and as understandable as possible. This means building the clean-up process into the development approval process for as-of-right and for situations where the land use is being changed. We are working with the Regional Planning Commissioners of Ontario to develop an approach that works for a variety of municipalities.

In conclusion, let me say that what we need to do is to break open the box. We need to try out new thinking and approaches to city building, and above all to be proactive as we seize the opportunity of brownfield redevelopment. And in all of our work, we need to keep in perspective that, in my opinion as a planner, the biggest health risk facing our cities is chronic unemployment, not environmental concerns.



## Understanding the Real Concerns of Private Sector Landowners and Developers

JOHN MORGAN

VICE PRESIDENT, OCCIDENTAL PETROLEUM,  
LOS ANGELES, CALIFORNIA

*Brownfield site owners go through a lot of difficulties in bringing their sites back to productive use. John Morgan talks about some of these problems, as well as some of the solutions from a private-sector perspective.*

We at Occidental Petroleum have a long-term goal of putting all of our environmentally-challenged, idle sites back into productive use. We believe that this is in the best interest of the local communities and the environment. It is also in the best interest of our business. Further, for many sites, the preferable remediation plan is risk based, and relies heavily on the long-term land use plan. Thus, in many instances, we evaluate long-term land use options in conjunction with the site investigation.

In putting together a transfer of an environmentally-challenged property we regularly have to overcome four primary hurdles:

- fear;
- lack of knowledge of the applicable laws, regulations, and incentives;
- confusion and/or conflict between various state laws and Federal laws, regulations and interpretations; and
- delays from agencies, environmental advocates, plaintiffs and lenders.

Many potential property developers or investors are fearful of environmental stigma, regardless of the contaminant of concern. Often,

the perceived time and effort required to understand the issues and to address them are considered to be too onerous.

If this perceptual problem can be overcome, then the problem of understanding the various laws and regulations must be dealt with. For this very specialized body of law, usually the potential investor must seek advice from attorneys and experts beyond those they usually utilize. This adds additional cost in dealing with concerns about future liability and the possibility of future changes in the law. Often attorneys specializing in environmental law and liability are not familiar with incentive programs offered by the states or municipalities. This often requires yet another set of experts to provide advice.

If the potential investor has interests in multiple jurisdictions, the differences in state laws may add additional confusion to the mix. And, as we all know, many of the U.S. states are currently reviewing and revising their brownfield and risk based remediation laws.

Finally, if a potential purchaser can survive these hurdles, he must deal with what can be lengthy delays in the regulatory community in approving clean-up strategies or providing assurance letters. Unfortunately, the sense of urgency usually found in the private sector with respect to land transfers does not usually carry much weight with regulatory officials.

The good news is that the senior policy making members of the U.S. Environmental Protection Agency and most of the states' environmental agencies are becoming much more supportive of brownfield undertakings. The bad news is that this support has not yet worked its

way to local decision-makers through the agency officials who are responsible for implementing environmental regulations and guidelines.

Where can help be found with these problems? We have found that state and local development agencies can play an important role in assisting us to bring these properties back to productive use. The improved tax base and job creation can be powerful incentives to local communities. These local development agencies can also serve as matchmakers at times, if they are aware of potential new developments being considered.

## A Regional Development Perspective

EVERT VERHAGEN

PROJECT MANAGER, WESTERGASFABRIEK, AMSTERDAM, THE NETHERLANDS

*Near the end of the 19th century, a coal-gas plant was built just outside the old city walls of Amsterdam. A century later, that former industrial site is experiencing rebirth as a centre for recreation and cultural enterprise.*

*Evert Verhagen, the project manager for the Westergasfabriek complex, speaks about some of the regional planning insights gained from this project.*

David Crombie talked about the balance between economy and the environment. Because of the environmental movement, for a very long time industry has been blamed for everything that went wrong. But now there's a different perspective as we look at the positive things that industry gave us. We even like the architecture of the buildings and see the beauty of the iron works. We can use these industrial sites in the hearts of our cities.

Personally, I use the analogy of an illness. When we get seriously ill we want to get rid of what is making us sick, make it go away. This can be a very good solution, but sometimes you try to live with it, to take care of it, to make the best of it. When people look at brownfield sites, the first thing they say is, "Let's demolish them." Then, after a few years, people try to understand how they can maintain them. And then, they move on to re-using them — to make the best of the situation.

Job creation is a very important component of our efforts to regenerate cities and their surrounding regions. Let's look at approaches to city renewal for a moment. The first thing we did in Holland was to demolish buildings. We built new cities and parts of cities and people were moved from one part of the city to another part. The second approach, and this was more difficult, was what we might call maintenance. We left the people and houses there and tried to do something on the side. We took care of the buildings and we took care of the environment.

What we're trying to do now is even more difficult, and we call it "the holistic approach" to regional development.

This approach requires us to talk about the life and the need to instill pride in these areas; and when you talk about those things you are also talking about jobs. People have to have work, something to do and to live for. The same situation can be seen in industrial sites. We look first at what we can do with these properties. Then we look at how we can target resources to create jobs.



In handling the pollution issues, we keep a holistic approach in mind, with something called “the ALARA” principle. This stands for “As Low As is Reasonably Achievable”. This is the way we can do new things at acceptable cost while protecting health and safety. It takes time, but it helps bring life back to our cities. In Holland, we try to solve problems and create opportunity.



# SESSION TWO

## The American Experience

### Beyond Brownfields

WILLIAM "BEAU" MILLS

SPECIAL ASSISTANT TO THE DEPUTY  
ASSISTANT ADMINISTRATOR, UNITED  
STATES ENVIRONMENTAL PROTECTION  
AGENCY, WASHINGTON, DC

*The Environmental Protection Agency (EPA) has been targeting support to municipal and regional brownfield initiatives. This has included financial support through the EPA's granting programs, but also the creation of policies that dovetail with local brownfield initiatives. William Mills talked about the EPA's new emphasis on community driven brownfield redevelopment efforts.*

I would like to begin my comments today by recognizing some of the important initiatives that the Clinton administration and Mr. Gore have undertaken regarding brownfield redevelopment. Brownfields must be considered as part of a broader community empowerment agenda. The Administration's Community Empowerment agenda seeks to provide tools to communities and cities to solve their problems based on how they think they should be solved. The centre of this empowerment agenda is partnerships.

At the federal level we have sought to provide some of the tools to work to revitalize brownfields. To date, the EPA has provided some 120 environmental assessment grants to cities. We've also provided funding to states through the Superfund program. But it's important to note that brownfields fall outside of the Superfund regimen. Clean-up happens under our State Voluntary Clean-Up Programs. The EPA has recognized that these Voluntary Clean-Up Programs are important because they can be

streamlined, and get more sites cleaned up and redeveloped more quickly. With that in mind, we have provided money to these voluntary state programs to build up the local capacity to undertake voluntary clean-up.

We've also offered grants to cities for revolving loan funds. These funds provide low interest loans that make seed money available for clean-up. Another important federal partner is the Housing and Urban Development administration, which concentrates on redevelopment, using loan guarantees and community block grants (which are eligible for clean-up and redevelopment). As well, there is the Showcase Communities program, which has designated some 16 communities that showcase how brownfield redevelopment and other sustainable development projects contribute to building healthier communities.

The stories that you are going to hear today from my American colleagues are about partnerships. Within government, across government lines, with business, and community groups, communities must be at the core of everything that we do.

Lastly, we must look at the importance of private capital. Government funding is not going to clean up and redevelop brownfields alone; it's just a small part of it. We have to find ways to attracting private capital and make that system work for us.

I would like to introduce you to some people who are making many of these things happen at the local level.



## Oregon's Jewel Shows How to Build Sustainable Cities

DON GARDNER,  
DEVELOPMENT SERVICES MANAGER,  
PORTLAND OFFICE OF TRANSPORTATION,  
CITY OF PORTLAND, OREGON

*The Portland, Oregon metropolitan area is growing at a fantastic rate. The City projects approximately 500,000 new residents by the year 2015. Don Gardner talked about how integrating regional transportation planning with brownfield redevelopment assists Portland in realizing its sustainable growth management strategies.*

The State of Oregon has a comprehensive land use goal, and to Portland that means an urban growth boundary that circles the metropolitan area. The approach to dealing with our growth is to create regional centres that typically are the downtowns of the existing communities. This re-emphasizes the role of the central city and nearby town centres.

To make the downtown work we have to re-invest in the heart of our city. So the City of Portland has made a commitment that, of the half million new residents expected over the next twenty years, 15,000 of them, and 75,000 new jobs, will be placed in the central city. The way we will do this is by redeveloping two former commercial/industrial areas, and linking them with transportation infrastructure, a central-city streetcar line.

Some of the problems on the sites involved very impaired transportation access. The property owners came forward with a mixed-use development framework plan, and the City said “We’ll work with you, but you have to figure out a

coherent plan that incorporates the entire district.” The scope of this plan had to include off-site properties, and address city goals for transportation, housing creation, densification, mixed-use, and jobs.

Taking the developer’s vision we sat down with a group of city agencies, social service agencies, other property owners in the area, the neighbourhood business association, and some area residents, and went through a visioning process. Our vision for the entire district was very similar to the owner’s vision for his property: medium-density to high-density housing, a series of retail services, office space, a full range of affordable housing, and, of course, all transit-oriented — all in a former rail yard.

The environmental issues proved to be less significant than anticipated. Transportation access, old infrastructure (specifically, storm and sanitary sewer separation), a lack of new parkland, and other public needs were the bigger challenges. We went ahead with a revised vision plan that included design guidelines, right-of-way standards, a list of public and private projects, a strategic investment plan, and a housing implementation plan. The result is a city region that we believe is better prepared for growth.

## Putting Brownfields Back to Work

LORRIE LOUDER

DIRECTOR OF INDUSTRIAL DEVELOPMENT,  
SAINT PAUL PORT AUTHORITY, SAINT PAUL,  
MINNESOTA

**S**aint Paul has always been a manufacturing centre, and the Saint Paul Port Authority has worked to strengthen that city's industrial heritage. Lorrie Louder describes how their approach works by carefully considering their community's employment needs and economic development goals, and then tying those considerations into the Port Authority's brownfield approach to potential industrial customers.

At the Saint Paul Port Authority, we work with those companies that want to expand, since they've already determined what their site development needs are. Typically they want a developable site within three to six months, and land parcels of at least five acres. But "ready to develop" land is in really short supply, and the redevelopment and soil remediation process can take from one to two years.

Our answer to our customers has been to do very aggressive public sector redevelopment with quick turn around of about 18 months. To do that requires "cobbling together" funding. On most brownfield projects, it has been necessary to consolidate money from at least six different funds. Our funds are matched on at least a 1:1 basis, and in some cases two dollars of private funds to one dollar of public funds. The spin-offs are tremendous when you count in the real estate companies' purchases and the job generation as well.

Once we obtain the funds, we can get going with the necessary remediation. But, as you know, brownfield redevelopment is not all about remediation; it's also about acquisition, demolition, relocation costs, infrastructure, site preparation, customized job training and many other things. That's where our expertise really comes in.

Most other incentives — such as tax credits and revolving loan funds — are interesting, but I'm going to propose to you that they don't work by themselves. We often start with tax increment financing, which involves selling bonds and maximizing the return of repayment of those bonds through using the property taxes that are

*The Saint Paul Port Authority in Minnesota requires certain performance standards from its customers. These standards recognize that the Authority is in business not only to develop brownfields but also to create employment for Saint Paul residents. The Authority requires:*

- 30% building to land coverage
- US \$30 construction value per square foot
- one job per 1,000 square feet of building space (which can include both retained jobs and new jobs)
- that 70% of all new hires must be Saint Paul residents
- liveable wages (at least \$8 per hour, although most manufacturers are paying between \$10 and \$20 dollars per hour)

generated from the redevelopment. But you quickly realize that, after those bonds have been repaid, there won't be much left over to amortize



any additional debt. In fact, what's left over is a gap — a sunk-cost gap. That gap needs grant funds; it doesn't need more debt, because repayment won't happen. So while tax credits may be interesting to provide to businesses, and while revolving loan funds might add some value to the financing package, I've found that grant funds are what is needed in our situation.

For example, in our market redevelopment costs typically run US \$6-\$12 per square foot. The industrial land value, no matter how clean or good the land gets or how many amenities are close by, is typically going to be \$1.50 to maybe \$3.50 per square foot. The remediation costs alone run between \$1 and \$4 per square foot. So you can see that the redevelopment costs, contrasted with the redevelopment return, can create a gap that has to be filled. The indirect returns over time — income and property taxes, job generation, environmental clean-up, welfare reform — all those quantitative and qualitative returns are worth the grants that cover the sunk costs. So we keep looking for grant funds, including looking to our partners at the EPA.

In terms of the issue of “how clean is clean”, another critical partner is the Minnesota Pollution Control Agency (MPCA). They have one of the best voluntary investigation and clean-up programs in the United States. The Port Authority carries out an analysis of what the environmental issues are on a specific site, but we don't proceed with clean-up until the MPCA approves our Response Action Plan. The MPCA also helps us with our lender partners. The lenders need to see a “No Association” letter, which says that neither

they nor their clients (those being the end user manufacturers) are going to be associated with the problems that have occurred on the site. Secondly, they need to see a Certificate of Completion which says they can go ahead and lend on the property with some assurance that it is clean enough to not bounce back at them. That Certificate and the No Association letter are two very important things that we get from the MPCA on behalf of lenders and their clients.

The key to all of this is to focus clearly on production and outcomes, work closely with partners, and line up your funding.

## The South Buffalo Project

KEVIN GREINER

EXECUTIVE VICE PRESIDENT, BUFFALO ENTERPRISE DEVELOPMENT CORPORATION, BUFFALO, NEW YORK

*Kevin Greiner describes the experience of the City of Buffalo, and the benefits that flow from looking at redevelopment from a regional perspective.*

For over thirty years, the City of Buffalo has been redeveloping brownfields — since before they were called brownfields. If you look at some of our key projects you will see an evolution in our city's industrial redevelopment history, from converting landfill sites into passive park and recreation sites and then into active redevelopment.

The Tift Farm Nature Preserve, a former municipal incinerator landfill site, was capped in the 1970s and turned into a nature preserve. The Waterfront Village Properties is 100 acres of converted rail property and is now some of the

most expensive housing in the city's real estate market. North American Park was built over the site of a number of foundries and other industries with heavy metal problems. Finally, after 75 years of waterfront planning, the city will be developing its inner harbour, turning it into an urban entertainment area.

Five key issues define our current approach to brownfield redevelopment:

#### FUNDING

With the availability of public funding programs, remediation money is actually a lot less of an issue today than it was even five years ago. We are now in the interesting position of having brownfield money competing against traditional infrastructure money. We must now recognize that after a brownfield is clean, there is still a need for roads, water services, and sewers in order to spur on redevelopment.

#### LIABILITY

Given the lagging condition of New York State's environmental laws, current property owners assume liability for past environmental risk. This acts as a significant disincentive to reinvestment, so our approach is that where we have a responsible party willing and able to pay, we have to carefully negotiate our liability, structuring it so that both parties manage the long-term liability in an appropriate manner. Where there is no responsible party, or where that party has disappeared, the City may come in and very carefully and creatively assume some environmental risk.

#### GETTING CREATIVE ABOUT CLEAN-UP

In Buffalo, where we have a very slow development horizon, we have to be creative about the phasing and timing of our clean-up initiatives. Again, where we don't have a responsible party to pay for clean-up, we need to consider how we structure the remediation process. We spend less effort on doing one-year full-shot remediation, and spend more time on developing long-term programs and a process that redevelops the site over time as development investment occurs, responding to the realities of the real estate market.

#### CREATING A MORE CERTAIN CLIMATE FOR PRIVATE INVESTMENT

This involves refining our zoning and financing vehicles and clarifying decision-making processes at the local level.

#### REALIZE THAT THERE ARE MANY TYPES OF BROWNFIELDS

Landfills and similar properties have limited redevelopment potential, but the vast majority of brownfield sites have significant inherent value. The first grouping of sites have environmental problems that seek redress; the second grouping of sites have redevelopment problems with environmental hurdles. Redevelopment of brownfields is dependent on the quality of your redevelopment plan, how it responds to market forces, and the needs of the community.

With that background, I will now turn it over to Al Price who will talk about the first project at the northern edge of the South Buffalo Project.



## Buffalo's New Tomato Fields: Greenhouse Crops Lead the Way

ALFRED D. PRICE

ASSOCIATE PROFESSOR, DEPARTMENT OF PLANNING, SCHOOL OF ARCHITECTURE AND PLANNING, STATE UNIVERSITY OF NEW YORK AT BUFFALO, BUFFALO, NEW YORK

*The initiation of a greenhouse crop for food production represents one of the most exciting brownfield redevelopment initiatives in the Buffalo area. Professor Alfred Price discusses the challenges and the opportunities associated with Buffalo's new tomato fields.*

Today, I would like to talk about an exciting redevelopment project on a former brownfield site in Buffalo that has involved the construction of a greenhouse facility by a firm called Village Farms of Buffalo.

The original site —historically used by the company, Republic Steel/LTV — was 400 acres, of which our subject three acres was a parking lot and a “laydown storage area” for finished steel products. The City of Buffalo acquired the site to use as a storage/disposal area for decommissioned utility and service vehicles. It was after acquisition that the City discovered that there were a number of environmental problems with the site.

Recently there were a number of conditions in place which began to attract new development in this area. Village Farms decided that the conditions were right to be in Buffalo, and they requested a 30 acre (minimum) site for redevelopment. The City of Buffalo was very

enthusiastic about this development due to the employment prospects, and the LTV site was one of the few sites of this size that existed within the City boundaries.



As a condition of providing financing, lenders insisted on Phase 1 site investigations. Soil sampling resulted in an estimated \$1,000,000 clean-up and this almost killed the deal. The main environmental problems were caused by two above-ground storage tanks that had been used to store petroleum. Over time, the tank bottoms had rusted and petroleum had leaked into the soil.

In terms of how liability was managed, it is important to note that no Voluntary Clean-Up Agreement was used in this project, the usual mechanism through which most brownfield redevelopments are accomplished. Negotiations were initiated, but agreement was shelved when financing considerations slowed the project down. When the project was revived, they could not wait

the usual time required to complete a VCA. Accordingly, there was no public participation phase.

The developer entered into a legal consent order agreement in which the City retained title to the property, leasing it back over the long-term to the developer. The State regulatory agency stipulated the acceptable level of clean-up in view of specific end-use, and agreed to place the site on the “Inactive Hazardous Sites List”, implying therefore that there was no concern over the migration of contaminants affecting groundwater, adjacent sites etc. In total 17,000 cubic yards of soil was removed, treated, and returned. No “capping” of the site was required, as hydroponic gardening is all above grade and encased in permeable plastic.

Project financing included \$250,000 from Buffalo Development Corporation, plus \$550,000 supplied by the court-ordered escrow fund established in the Republic Steel/LTV bankruptcy case. This financed the actual \$800,000 of up-front clean-up costs. Approximately \$14 million of private equity and conventional commercial debt financing was used to build the project, and as start-up working capital for the Village Farms enterprise. Of that sum, 40% was reported as equity.

The most important features of this development include the number of jobs created, the taxes generated, and the partnerships achieved. The project created approximately 75 short-term construction jobs. Once fully operational, it is predicted that the operation will provide 70 to 100 permanent jobs (presently 65 persons are employed). A substantial fraction of

the permanent jobs are available to relatively unskilled persons who are typically drawn from the working class neighborhood surrounding the project. It is estimated that the project also generates \$774,000 in local property taxes.

It is also important to note that in this project there was an extremely high leverage ratio between public and private dollars. Lastly, there is also reportedly favorable economic productivity from the developers perspective, who have estimated that the yields are \$3 to \$4 per square foot per year.



# SESSION THREE

## The European Experience: A Post Industrial Model

### The Expo 2000 Project

SABINE BRUSTMANN

PROJECT MANAGER, EXPO 2000 SACHSEN  
ANHALT, GERMANY

*Hannover's Expo 2000 is being used as a lever to accelerate the lasting ecological and economic renewal of the European industrial triangle of Bitterfeld-Dessau-Wittenberg (located in Germany's Saxony-Anhalt region, approximately 100 km east of Berlin). Sabine Brustmann presents the approaches being followed by Sachsen-Anhalt Limited, a public corporation formed to co-ordinate projects that will draw World's Fair visitors. In effect, as the Sachsen-Anhalt brochure indicates, they are creating "the region as an exhibit".*

Our area is part of the Halle-Leipzig industrial area that, from 1900 to 1938, developed into one of the most developed industrial centres in Europe. The chemical industry thrived in this region thanks to plentiful supplies of coal, water and salt (on which the industry is based). The presence of "brown coal" also led to the development of power plants, many of which we can still see today. We also had the first aluminum plant, the first chlorine plant, and produced some of the world's first colour-movie film. This, coupled with the fact that our area was also home to the Bauhaus architectural movement, translates into a distinguished industrial heritage.

With the reunification of the two Germanys, virtually overnight we saw the breakdown of traditional industrial markets and manufacturing processes. In our area, the transformation from a planned economy, coupled with the privatization of large-scale public enterprises, led to high unemployment — the people of our region went from 0% unemployment in 1989 to 40% in the next year. This speed of transformation was

unparalleled in Western Europe, and it left us with a totally obsolete industrial structure that operated under the standards and practices of the 1930s. Other aspects of reunification were the new laws, administration policies, planning and management structures that we were required to address.

For the purposes of this brownfield discussion, consider that after reunification, we were faced with 150 square kilometres of open pit mining and 1,200 hectares of unused chemical industry (which had employed 32,000 people). There were also pollution problems. One year, they pulled out 10,700 metric tonnes of sulphur dioxide. We also found a variety of heavy metals in the ground water, which has resulted in about 200,000 litres of undrinkable water. It is no surprise that our region became known as one of the dirtiest areas in Germany.

With the treaty of reunification, and the environmental legislation transferred from the Federal Republic of Germany, the power plants in the region were shut down. Then the great task became the redevelopment of the environment, the treatment of dangerous wastes, and the reconstruction of old industrial plants.

Our task is to use the inspiration of Expo 2000 as an impetus to accelerate the economic and ecological renewal of this former industrial region. Our projects will be split into four categories:

- economically oriented projects;
- urban planning projects;
- environmental and landscape development; and
- cultural projects.

## INTEGRATING CULTURAL HERITAGE INTO BROWNFIELD REDEVELOPMENT

Sabine Brustmann,

Expo 2000 Sachsen-Anhalt: Ferropolis, Germany

One particularly interesting Expo 2000-led project is “Ferropolis”, a walk-in museum, cum artistic-industrial monument created out of a former brown-coal mining site in what used to be East Germany. This is an excerpt from the Ferropolis brochure:

Looking at the depleted North Golpa mines and their rugged, mostly unkept, and barely passable terrain near Gräfenhainichen, the impression is of mountain ranges formed by time. The enormous and fascinating machines, the excavators and the conveyors, have levelled the area over the years, in the pursuance of coal and have left behind a mixed trail of the earth's history...

Beneath this depressing vision of the landscape, under closer inspection, remnants of history can be found amongst the debris. Deciding on a perspective in the electronic age of Information Technology has to include an analysis of its scarred heritage and its historical potential. It is a metaphysical site in which man is the only thing left which is natural, since everything else was either manufactured or cultivated. The network of rail tracks, cables and machines will remain as remnants of an operation which meant the depletion of resources and loss of habitat, but on the other hand provided work and money for generations of miners.

Five excavators and conveyors have been taken from their respective work stations and brought together in the former quarry to become Ferropolis. The quarry is to be flooded, creating a lake which will be designated as a nature reserve. The quarry slopes, island and peninsula will be covered with grass and forests, which will be inaccessible to the public.

Thanks to its sculptured character, Ferropolis will be a widely visible landmark: a city of steel, a witness of history, a new landscape with potential as a museum and for cultural events.

Each project is defined by three guiding principles:

1. Our aim is to create projects with a meaningful and long-term perspective, not just done for the sake of the world's fair. An idea of beauty and “aesthetic quality” is fundamental and will ensure the projects' longevity.
2. The development and realization of these projects are to be applicable to Saxony-Anhalt and other regions.
3. The projects should be defined by the experiences of other places. This ensures that the projects have the necessary scope and vision.

## Reconnecting Ecology, Economy and Community

PABLO UBIETA

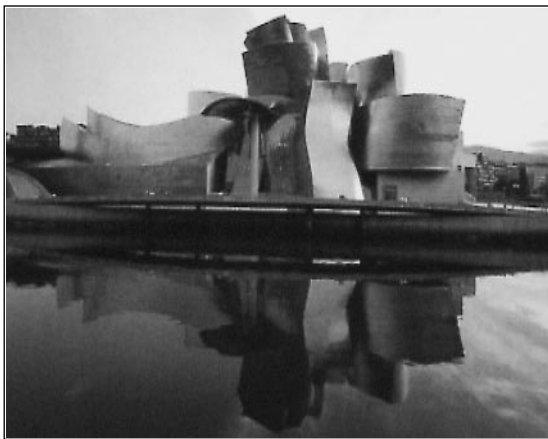
DIRECTOR GENERAL, RIA 2000, BILBAO, SPAIN

*World-wide industrial change has affected northern Spain's Bilbao region as much as anywhere else. Bilbao RIA 2000 is a public corporation set up to transform Bilbao into a cultural and economic hub of the three autonomous Basque provinces. Pablo Ubieta tells the conference that Bilbao RIA 2000's strategic plan involves public transport, infrastructure, environmental recovery and cultural affairs projects — all designed to revitalize the Bilbao region and turn it into a new, more modern, more balanced metropolitan area.*

**W**hat are our problems? First, unemployment, like everyone. The average is 25% unemployment, and in the industrial areas it goes



up to 30%. We also have some environmental contamination problems. The industry in Bilbao has always been situated near the river, and that means right in the centre of our metropolitan area. Those industries included steel companies, shipyards, coal mining — and so our riverfront is also the venue for most of our brownfields. I should add that most of our brownfields are also publicly owned. Until the Bilbao Guggenheim Museum opened last year, Bilbao was never a strong tourist destination.



Bilbao RIA 2000 was set up in 1992 in order to transform and recover these industrial sites for urban use. This public corporation involves national, regional, provincial and municipal authorities, and features a blending of town planning, transportation and environmental issues, which takes advantage of the synergies that make for sustainable development. We have no legal powers, and we have no money, which means we work via consensus.

To recover our waterfront area we needed new economic activities and jobs and to take a global perspective. Our strategic plan put the emphasis on environment, infrastructure, culture

and employment. The idea was to start with significant public investment so that we would be able to present a new Bilbao to private investors. We also set up a regional agency to deal with the soil and groundwater contamination.

I am proud of what we are doing, but I am also proud of the way we are doing things. This is a strange thing for Spain, but the federal, regional and local administrations are all working together. We are also putting a lot of emphasis on the quality of the projects. For instance, we have developed a new underground railway and new harbour, which frees up a great deal of land along our riverfront. We also have the Bilbao Guggenheim Museum and a new opera house, both located along the water.

Bilbao RIA 2000 is also working in the municipality of Barakaldo, on the industrial periphery of metropolitan Bilbao. Our work here is in two parts: 1) an urban program, jointly financed by the European Union, which aims to regenerate this deteriorated area through town planning, economic promotion, and purely social measures; and 2) development of the area between the city centre of Barakaldo and the river bank to connect the town to the river by providing new green areas, open spaces and leisure amenities.

I hope you will come to Bilbao and see for yourself what has been accomplished.

## Planning for a Revitalized Bagnoli: A Former Coastal Industrial Area

GIOVANNI DISPOTO

CITY ARCHITECT, NAPLES, ITALY

*Giovanni Dispoto talks about some of the work that is going on in Naples to redevelop the Bagnoli coastal industrial area. What is especially interesting to hear is the manner in which the City of Naples is trying to fill a void in regional planning.*

There is a contradiction in town planning in Naples in that planning should be at the metropolitan level, but there is no government which has specific powers over such planning. Still, the city council has given town planning a role of primary importance in its strategy for the revitalization of Naples.

The general town planning scheme consists of five urban zones that, taken together, cover the entire area of the city. They are:

1. The preservation area, for the preservation and enhancement of some 3,500 hectares of still untouched parkland areas;
2. The Western Zone area, which aims to restore the original heritage of natural properties along the Bagnoli coastline;
3. The Eastern Zone area, which includes Naples' other large industrial areas;
4. The area for the historical centre; and
5. The area for the North-West Zone.

Procedure demands that every modification to the town plan must first be drawn up as a proposal, which gives rise to a great deal of debate in the city. For instance, the Western Zone variant was adopted in January 1996, but only after three months of discussion in the City

Council and after eight months of debates and assemblies throughout Naples. Each sector of the community and the citizen body at large is involved in the process.

Planning policy is based on three principles:

- Aim for quality as an essential requirement for the development of the economy and employment, and for international competition that is based on a direct comparison between cities. Quality also means restoring normal conditions, making services sufficient, and fostering urban decorum.
- Give priority to interventions concerned with redevelopment rather than to interventions concerned with expansion. Existing green areas must be conserved in order to restore a territory's physical integrity and cultural identity.
- Restore legality to town planning by making the City Council responsible again for the approval of town planning measures.



## The Westergasfabriek in Amsterdam: A Park for the 21st Century

DR. EVERT VERHAGEN

PROJECT MANAGER, WESTERGASFABRIEK,  
AMSTERDAM, THE NETHERLANDS

*The importance of realizing new possibilities by looking to the future, and the need to integrate cultural enterprise into the redevelopment of former industrial sites are central themes in Evert Verhagen's presentation on Amsterdam's Westergasfabriek project. Dr. Verhagen's complete presentation is found in Appendix 2.*

As project manager of the Westergasfactory in Amsterdam it is a great pleasure to be able to speak to you today in Toronto. I will try to give you some insights into the strategies that we followed to get our project to its present stage. I shall introduce you to the two main buildings. I will elaborate on the strategies we have developed to reach our goals. I will go into the problems we have with the polluted soil. Then I will give you some insight into how we want to use the buildings in the future and what we think cultural enterprise can do for this place.

It took two years to build the entire Westergasfabriek. From 1885 to 1967, the factory supplied gas to the City of Amsterdam. This was quite a feat considering that this included more than fifteen buildings, among them a water tower, an ammonia factory, three gasholders, and a huge gas cleaning house. One of the most impressive buildings is the Zuiveringsgebouw (the Gas cleaning house), parallel to the canal. This building occupies two massive cleaning halls. North of the Zuiveringsgebouw, two smaller

buildings are situated: the Machine building and the Kettle house.

To give new life to this derelict contaminated site proved to be essential to give the public a reason to visit the site once again and to make it accessible. Designing the plan around the core idea of space and time made it possible to reinforce and preserve the nature of the landscape and the idea of the urban periphery. Cultural enterprise will give the 13 historic buildings on the site a new and dynamic use.



In the new Westergasfactory, some of the important themes that play a role in our time can be distinguished. This time theme is fascinating because we are in a period of change from the industrial to the information age. This falls together with the turn of the century, even with the new millennium. In a lot of former industrial areas in Europe and America, beautiful buildings become derelict. Signals of new communication, new media, and new forms of art will find their place here. These premises with the new park will give an answer to the need for a new place to

meet people, a new agora. Could you think of a bigger challenge than to make this possible?

We should all feel responsible for the reuse of this industrial heritage. The Westergasfabriek could be the project in the Netherlands to give meaning to this change in time and space. Culture of the new time in the buildings of the old time. Change and innovation are the key words in developing the site further. Although certain goals have been set, there is no final target. It is the direction that is important, not only the final destination. The journey is the thing, then, the symbol of motion, of life itself. Arrival is static, the end, death. Revitalization and change drive the process. Cultural enterprise is the new source of energy powering the gas factory. Anyone visiting the new Westergasfabriek with this in mind will be making a journey. And why undertake this journey, why visit other countries or other places, if not to discover what is possible.



# DAY TWO

## OPENING REMARKS

DR. STUART SMITH

CHAIR, NATIONAL ROUNDTABLE ON THE ENVIRONMENT AND ECONOMY, CANADA

*Canada's National Roundtable on Environment and Economy has been looking at a variety of issues related to brownfield redevelopment. Dr. Smith remarks on a number of issues examined by the Roundtable's Task Force on Brownfield Redevelopment.*

In Canada, when you are talking about brownfields, you are for the most part talking about redevelopment projects in the cities of Montreal, Toronto and Vancouver. What the National Roundtable on the Environment and Economy did was take all the sites that were in areas where development had occurred around them and calculated what the forgone tax revenue is that the city would have received had the sites reached their appropriate use for which the area was zoned.

We came up with the result that Toronto is forgoing \$50 million a year in tax revenues that would otherwise accrue to the city, if those sites had reached their appropriate best use. Let us remember as well all of the indirect benefits that come from developing these sites, such as the jobs created and the taxes paid by the people who are employed within these places. Our calculations also did not include the environmental benefits gained from the reduction of urban sprawl by utilizing the land that is in the core of the city as opposed to increasing the roads, sewers and other infrastructure required to service outlying areas.

At the Round Table, we often deal with issues where the goal is to get people to pay the price economically for an environmental benefit. The

market system is, in a sense, working against you because there may not be a high enough value placed on the environment by the market. You are therefore trying to get people to pay for values when the difficulty in the market economy is figuring out what the environment is worth.

In the case of brownfields, it is exactly the opposite because the market signals demand redevelopment of these sites. Market forces push in the direction of cleaning up these sites and reusing them. It's the only area I know of in the environment versus economy debate.

What is happening is that something is impeding normal market forces from proceeding to do what they normally do, which is bring that land to the point of cleanliness and to the point of best use. So the focus here is why isn't the market working? We came up with a few answers that will not surprise you and with which you have likely had more personal experience than I. You will not be surprised that the main issues that we found in our research were the barriers created by liability and the issue of uncertainty.

What is needed, of course, are objective, science-based standards, and standards that are based on the use to which the site is being put. Canadian jurisdictions have made great strides in this area and over the past five years, but we are still plagued by a lack of consistent approaches. There has to be a serious effort to produce a list of science-based standards and clarity in law that says, "If you do meet those standards and are certified to have done so, unless you can show demonstrable negligence you should be free of further recourse by governments or economic

institutions who claim that you have a liability.”

Finally, we come to the key issue, the one that is really holding things up. That of course is the lender liability issue. Here I am talking about ordinary situations which is the worry that the lender, merely by the act of lending, will find himself on the hook, should the developer be out of money and should there be problems later, for example, perhaps for some reason it is determined that the land has not met the standard at the time. It seems to us at the Round Table that the first thing that is required are some new insurance products.

We also think we can make some progress by working with the federal and provincial governments more effectively. We have got to solve this problem. It simply has to be dealt with. Municipalities cannot do it alone, it must be done with the senior levels of government.



# SESSION FOUR

## The Canadian Experience: Bringing People, Ideas, and Resources Together

### Mobilizing Reinvestment in the Port Area through Strategic Environmental Management

ERKKI PUKONNEN

CHIEF EXECUTIVE OFFICER, CITY OF TORONTO ECONOMIC DEVELOPMENT CORPORATION (TEDCO)

*Toronto's Port Area is a central focus for brownfield redevelopment in the Greater Toronto Area. Erkki Pukonnen, CEO of TEDCO, reviews some of the challenges and opportunities for this area in transition.*

I would like to discuss today the role of TEDCO in Toronto's Port Area and the progress we have made in light of the challenges of brownfield redevelopment in the Toronto port. Firstly, the Port Area is truly an area in transition. It is a strategic place for investment. It is close to downtown Toronto, one of the largest business centres of the country, with excellent road, marine and rail access.

The Port Area was at one time a major marsh at the mouth of the Don River. In 1911, the Harbour Commission began its mandate of infilling this area, and almost 1,000 acres were lakefilled by the end of the 1920s. This area was initially very marine-oriented and was the focus of rapid industrial development during the first part of the century. There was a wide range of uses, including coal storage, steel and munitions manufacturing, and bulk fuel storage.

TEDCO is an arm's length agency and a business corporation, led by a board of directors appointed by the City of Toronto. Our one shareholder is the City of Toronto. We are a for-profit corporation and, by legislation, all of our revenues are turned back into our operations in

business development, real estate development, and the number of business incubators that we are running.

Broadly stated, our mandate is to generate economic development in the city, attract and retain industry, and create new jobs. The aim for TEDCO is not to act as a competitor with the private sector, but to act as a catalyst to bring economic development back to Toronto's Port Area through new development and strategic environmental management. We aim through our work to position brownfield sites on a level playing field with greenfield sites for reinvestment. An excellent example that demonstrates the type of brownfield redevelopment we are undertaking in the Port is reflected in the example of the Toronto Hydro Service Centre redevelopment on Commissioners Street.



A key to our current approach has been the establishment of an Area-Wide Soil and Ground Water Management Plan. TEDCO's first brownfield redevelopment project was initiated in 1992. In preparing the clean-up plan for this

#### CASE STUDY: Toronto Hydro Service Centre

For sixty years, Shell Canada operated a 12-acre blending plant, fuel storage facility, and distribution centre in the Port Area on land now owned by TEDCO. By 1992, Shell's lease on the land had come to an end, and Shell was looking to leave the site. Initial site assessment indicated that the principal contaminants were fuels, lube oils, pesticides, and traces of arsenic and other heavy metals. Initial estimates indicated that approximately 63,000 cubic metres of soil needed to be removed to meet Provincial clean-up criteria for industrial/commercial use. The cost of this full-depth generic restoration program was estimated at more than \$10 million.

At the same time, Toronto Hydro expressed interest in this property for a new Service Centre, a facility that would be required to open in 1997. This provided an incentive for implementing a fast-tracked site restoration and construction approach. Following consultation with the Ministry of the Environment, TEDCO agreed to allow Shell to undertake a site-specific risk assessment for the site, with Shell retaining responsibility for any future clean-up requirements. This allowed the cost of the site restoration program to come into line with the next land use without compromising health and safety standards.

Almost 55,000 tons of soil were removed. About 20% was treated off-site using low temperature thermal desorption, and returned to the site. The rest of the soil containing arsenic and pesticides was disposed off-site at a licensed land fill. A Waterloo Barrier System was installed to prevent off-site migration of contaminants, and a gas collection system was installed under the building to collect and dissipate potentially combustible gases. A monitoring system has also been put into place.

This project was an early demonstration of the use of risk-based restoration as set out in the Guideline for Use at Contaminated Sites in Ontario. The costs of site restoration decreased by almost 50% using this approach without compromising health or safety. The technical and administrative aspects of the remedial plan were formalized in agreements between the responsible parties. This ensured that roles and responsibilities for long-term monitoring were established and that the use and design of the facilities on the site may not change without the prior approval of TEDCO, the municipality, and the Ministry of the Environment.

project, it was recognized that it would not be possible to effectively address the condition of the ground water on a site-by-site basis. With the agreement of the municipality and the Ministry of Environment, TEDCO embarked with the Waterfront Regeneration Trust on the preparation of an area-wide soil and ground water management plan. Another important element of the revitalization process has been to also use an area-wide green infrastructure system as a framework for redevelopment.

Over the past six years, TEDCO has completed five major redevelopment projects. While much remains to be done, the results of the early initiatives demonstrate significant environmental, economic, and community benefits:

- Area restored to productive use: 61.5 acres
- Area of new built space: 710,000 square feet
- New jobs on brownfield sites: 1,377
- Construction jobs created: 720
- Value of new construction: \$60 million
- New property tax assessment (1997): \$2.71 million

## Bringing People back to the Waterfront

JAMES HOFFMAN

PRESIDENT, COBOURG HARBOUR  
DEVELOPMENT CORPORATION

*The work of James Hoffman, a private developer, together with Wayne DeVeau, Director of Community Services for the Town of Cobourg, show that partnerships are the key to successful redevelopment of waterfront*



*brownfield sites. The Cobourg example demonstrates the benefits of co-operation between landowners, developers, and municipalities.*

I would like to take this opportunity to thank the Waterfront Regeneration Trust for the support that they have provided our community and our development project over the past eight years. I live and work in Cobourg, Ontario. While educated as an engineer, I am by choice a developer and builder on brownfields in Cobourg's harbour. Cobourg is located one hour east of Toronto along the shores of Lake Ontario.

The history of Cobourg and its harbourfront is typical of most communities founded along the shores of the Great Lakes. In the 1800s and 1900s, Cobourg prospered from industrial land uses along its harbourfront and the connection to the Great Lakes transportation corridors. By the late 1900s, most industrial land users along the shores of the great lakes had vacated these sites. Once the source of economic stimulus for lakeshore communities, harbourfront lands became an eyesore of abandoned industrial buildings with residual railway tracks, oil storage tanks, coal fields, and, of course, contaminated lands. Today, on these same lands, these brownfields, we are selling premium-priced residential condominiums.

With 99% of Cobourg's harbourfront remediated, these brownfields now represent \$200 million worth of renewed economic development opportunity for our community of 15,000 people. Similar to other Great Lakes communities, Cobourg today is literally returning to its waterfront for renewed economic stimulus but now in the form of residential and

commercial development and an emerging tourism industry. Cobourg residents now enjoy enhanced quality of life and our community has a distinct competitive edge in attracting commerce as a result of these improvements.

With working partnerships established with the Waterfront Regeneration Trust and the Town of Cobourg, I embarked on an objective to create renewed economic opportunity on what was viewed as a permanent industrial wasteland in Cobourg's harbour.

As the ultimate end user of these lands, it was my responsibility to make sure these lands were remediated in a thorough and cost-effective manner prior to building. This morning, I will give you a brief overview of five of the more critical steps involved in the reclamation of our harbourfront lands.



The first step initiative was to assemble a meeting with the various stakeholders and industrial landowners. The purpose of the meeting was to discuss the environmental state of the lands and initiate discussions on a concerted environmental clean-up strategy.

The second step was to consolidate support from the landowners and prepare for the public disclosure and education on the nature of the environmental conditions. Public education was the most critical component to not only the ultimate resolution of the environmental problems, but also prevented what otherwise could have become a marketing disaster for our residential development on these brownfields.

The third step was our land acquisition program, which ultimately totalled approximately 14 acres of land in Cobourg's harbour. Included in this activity was extensive and expensive legal representation dealing with the cost, the responsibility, and the liability of the environmental issues.

These first three initiatives were the most difficult, the most time consuming, and the most expensive. The fourth step, and surprisingly the least difficult, was the actual environmental clean-up. The method that turned out to be the most effective, the most cost-efficient and the most expedient was a farming technique that my company refined over several years. In the summer of 1997, I remediated two acres of lands with hydrocarbon contamination exceeding 14,000 parts per million. In 60 days, these lands were reduced to 100 parts per million using our farming technique.

The fifth and final step, and in some respects one of the more difficult, was getting the support of a banker for our development, given the history of the land uses, the perceived liability, and the depressed economic times prevailing in the mid-1990s. I am pleased to say that we found such a bank with the Bank of Montreal and

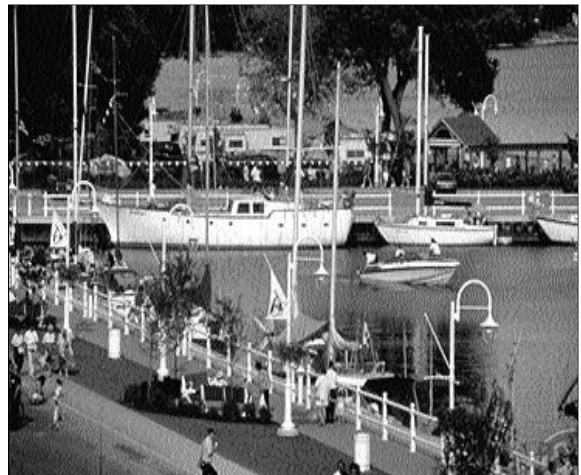
during the past four years they have supported us with millions of dollars of lending assistance. The future of these former brownfields now holds great economic promise for our community.

The partnership established between my firm and the Town of Cobourg was key to the success of the project. Wayne DeVeau will now give you the Town's perspective.

## WAYNE DEVEAU

DIRECTOR OF COMMUNITY SERVICES,  
TOWN OF COBOURG

Cobourg's waterfront is now a major destination for residents and visitors. The waterfront has also become a catalyst for downtown revitalization in ways that build value and ensure a high quality of life for the whole community. The new marina is a case in point. It is estimated that the marina development in Cobourg will generate about \$3.1 million annually for the community by the year 2008. In just three years, the number of boats coming to the Cobourg harbour has risen from 1,200 to 4,600.



The improved parks and trail amenities offer important environmental and economic benefits. For example, the annual Waterfront Festival now attracts 80,000 people over three days and generates about \$3.6 million in revenue.

In Cobourg the waterfront is really our greatest asset and the greatest opportunity we have and our success will depend on our ability to develop and maintain partnerships.

## Begin with the End in Sight

MARK CONWAY

HEAD OF STRATEGIC SERVICES, DILLON CONSULTING LIMITED, TORONTO

*How do you actually move through the brownfield redevelopment process? Here are three lessons that Mark Conway has learned, as well as his model for making brownfield land transactions work.*

1. THE BEST SOLUTIONS IN BROWNFIELD DEVELOPMENT ARE FOUND WHEN ALL THE PLANNING ISSUES ARE DEALT WITH IN UNISON

Traditional planners don't always have the skills to do this properly; they usually bringing all the skill sets together: architects, engineers, landscape architects. But when environmental issues come in, planners aren't always sure how those issues fit into planning policy or development strategy. By the same token, to use the "big tent" analogy, inside the tent there are a lot of people working together that really understand development, but outside the tent is an environmental community that isn't always

working with everyone else. The answer: begin with the end in sight. Effective clean-ups occur when there is a good understanding of what the next land uses might be.

2. THOSE WHO UNDERSTAND RISK AND CAN MEASURE IT IN THEIR OWN TERMS ARE LIKELY TO YIELD THE GREATEST REWARDS

Public organizations don't always have a choice about liability, which isn't necessarily a bad thing. It forces them to do something. It forces them to do the science they need to do to understand their situation. Some developers understand this; they are those who can understand risk of a contaminated site in the same way they understand risk about building a building or taking on an unusual design.

3. NONE OF THIS WORKS UNLESS YOU HAVE A CREATIVE THINKING OWNER, AGENCY OR LOCAL COUNCIL THAT IS COMMITTED TO MAKING SOMETHING HAPPEN ON BROWNFIELDS

Developers, owners and municipal councils must look at how they can marshal their tools. For example, maybe they can hold back some of the liability to make the properties saleable. Developers and municipalities who understand this, even in absence of lender liability, are the ones who will successfully redevelop their brownfields.

4. A MODEL FOR MAKING BROWNFIELD TRANSACTIONS WORK

A useful model needs to add value. It should allow owners and other stakeholders to begin with the end in sight. Find the markets that exist,

A MODEL FOR  
MAKING BROWNFIELD TRANSACTIONS WORK



examine all the issues that affect the property, and then feed that into a real estate strategy.

Undertake pre-development strategies to deal with zoning issues, and then work at creating leasing strategies. Finally, know what your deal-breakers are; what your limits are. It's easy to get dragged down the wrong road unless you're aware of what might lie ahead.

## Breathing New Life into Heritage Sites

DON LOUCKS

PRINCIPAL, HOTSON BAKKER ARCHITECTS,  
TORONTO

*Don Loucks selected two case studies to illustrate how heritage buildings can form the basis of innovative*

*brownfield redevelopment that makes good economic sense.*

Five years ago, at such a gathering, I would have talked about how buildings and heritage sites are saved. At that time, there seemed to be only two ways for this to happen. This first method was divine intervention. This is when a “higher power” selects the buildings to be saved. This is also known as “friends in high places”. The second process, I called “survival of the cutest”. This is when everyone finds a building so irresistible that it is preserved, for better or worse.

It's different today. Buildings are being re-used because it is seen, more and more, as a “good investment”. We deal with the downstream implications of the jurisdictional, legislative and legal aspects of re-developing brownfields. I will focus my remarks on two projects that demonstrate innovative design of buildings and open spaces.



Granville Island is a 42-acre piece of sand and river sludge contained within a perimeter of sheet piles in Vancouver's harbour. These piles were driven into place in 1916 to create Vancouver's first industrial park, which was immediately successful as a waterfront industrial site. By the end of the Second World War, this island was a dirty and noisy site churning out wire rope, barrels, chairs and drums. Twenty years later, shifting demographics and technological change meant that Granville Island was obsolete and desolate. A serious fire in 1965 left the property in ruins.

In 1976, Granville Island was taken over by the Canadian Mortgage and Housing Corporation (CMHC), who secured \$20 million dollars to transform the island into an urban park. The remaining leases were purchased and consultants, Norm Hotson and Joost Bakker, were retained to develop the island's master plan, and design guidelines for reuse of the timber and steel sheds.

Part of the Granville Island success story is that it is completely self-supporting. It is the most successful urban renewal, re-investment, and intensification area project ever undertaken by the Canadian federal government. When the project costs totalled less than \$16 million, CMHC took the unheard-of step of returning \$5.5 million to the Federal Treasury Board.

Granville Island is a social and community success as well, demonstrated by the fact that 66% of all visitors to Granville Island are drawn from a 40-block radius and over half of these local visitors shop more than once a week at the Public Market. The Market, extending over 45,000 square feet, is a series of renovated steel and

timber sheds and is the most popular fresh food market in North America. It generates revenues that exceed the highest retail categories. For example, in 1996, the market generated an annual gross revenue of \$1,800 per leaseable square foot. The Island is home to the Emily Carr Art School of Art, a hotel, a brewery, book store, boat works, and Ocean Cement, and provides berths for hundreds of recreational boats in marinas around the island. Granville Island is easy to get to by transit, car, and also by a fleet of water taxis.

The second project that I would like to mention is the Forks, North Portage Partnership, in Winnipeg, Manitoba. The Forks is an area located in the north end of the city of Winnipeg at the junction of the Red and Assiniboine Rivers. The 56-acre site was originally developed in the late 1800s as a rail terminus and marshalling yard. The substantial brick train sheds, stables and warehouses declined as rail declined and freight and passenger traffic shifted to road and air.

In 1987, a tri-level Core Area Initiative was set up called the Forks Renewal Corporation. After extensive hearings a plan was developed that identified the Forks as a "Meeting Place", that in the words of their charter was "a special and distinct all-season gathering and recreational place, to be developed through a mixed-use approach, which includes historical, cultural, recreational, residential, institutional and supportive commercial use."

Our firm was retained in 1998 to develop the detailed plan for the first phase of the initiative and lead the project on behalf of the Forks Renewal Corporation. The work centred on the

refurbishing of two former stable buildings to house a year round fresh food market. Now home to more than 50 businesses, the market is the premier attraction on the site. Of the 13 million annual visitors to the Forks area, most spend some time shopping for specialty foods, books, crafts, toys and antiques, or enjoying one of the several restaurants and bars.

Successive projects have extended the mix of activities at the Forks, including a market plaza with antique rail cars, a rail bridge to carry pedestrians across the Assiniboine River, a public Archaeological Program, the Manitoba Children's Museum, the redevelopment of the steam plant into studios for the Manitoba Television Network, and the construction of the \$4.6 million Manitoba Theatre for Young People.

Recently, the Forks has developed a partnership with the North Portage Development Corporation that effectively develops the physical size of the area, increases employment from 1,000 to 4,000 people, and starts to reconnect the Forks through the North Portage neighborhood to the Downtown.

These two projects have in many ways redefined re-investment in brownfield sites in North America. These projects worked because they:

- were located in the centres of two of Canada's largest cities;
- began as a collaborative effort with strong leaders;
- were developed with clear and consistent plans; and
- were developed as a complex mix of authentic activities that are supported by the

community and that recognize tourism as a fundamental component of the economic revitalization strategy.



# SUMMARY AND DISCUSSION

## Lessons from Our “Different Conversation”

CHARLES BARTSCH  
SENIOR POLICY ANALYST, NORTHEAST-  
MIDWEST INSTITUTE, WASHINGTON, DC

*The brownfield case studies presented over the course of the Symposium suggest some key lessons that can be passed on to other potential site developers. Charles Bartsch, Senior Policy Analyst at the Northeast Midwest Institute, summarizes the lessons.*

*Additional factors contributing to successful brownfield redevelopment were identified during the final group discussion and are included on page 49.*

We can't afford “disposable cities” anymore. Resources are too scarce to disregard existing infrastructure investments. We all know there is an inherent vibrancy in most community areas that can be nurtured with creative re-use strategies. If we are going to get the maximum return on these investments then we must aggressively promote the redevelopment of our existing central cities and their neighborhoods and we've got to do this at sites that have been used before. We can creatively use old sites so that there are viable alternatives to urban sprawl.

What has been discovered in the case studies that we have examined at the Northeast Midwest Institute (See Edith Pepper, *Lessons from the Field: Unlocking Economic Potential with an Environmental Key*, Northeast-Midwest Institute, Washington, D.C., 1997), reflects David Crombie's pragmatic optimism on this issue. The main lesson that has emerged from our work and from what we've heard at this forum is that you can succeed: you can redevelop brownfields in a way that is

environmentally responsible and makes economic sense.

I would like to summarize the lessons that I think have emerged from our discussions:

### 1. THERE'S NO SINGLE COOKIE-CUTTER APPROACH

The “best practices” for brownfield redevelopment are not so much a list of directions or a prescription as much as a new way of thinking, a collection of ideas. Each project reflects its unique characteristics, redevelopment concept, types and levels of contamination, as well as financial need. The best redevelopment approach will relate to a site's competitive advantage: its marketability, potential end use, and location. It is important, therefore, not to look for a magic solution or panacea; we must think laterally, “outside the box”, if we want to create the Buffalo tomato factories of tomorrow.

### 2. A DIVERSE SET OF PLAYERS IS NEEDED

Every brownfield redevelopment success has benefited from inter-agency co-ordination. Equally there is a need for local project champions; those people who bring their passion, know-how and drive to the redevelopment project. Getting a broad range of players involved ultimately saves time, money and effort.

### 3. INNOVATIVE AND PROACTIVE LOCAL AGENCIES CAN JUMP-START THE PROCESS

Each locality knows best what is needed to get things going on brownfield site redevelopment. The local spark may come either from the public

sector (a city department, agency or, in many cases, the office of the mayor) or the non-profit sector (a local economic or community development corporation).

These local actors move the redevelopment process through its critical early phases. This might include assembling several disparate sites into one developable property, site preparation and initial clean-up, lining up the key players, or some initial marketing. The most critical factor in jump-starting the local brownfield process is how creatively the area or players respond to the redevelopment challenges.

#### 4. PARTNERSHIPS ENHANCE PROJECT VIABILITY

Every brownfield redevelopment requires partnerships to make it work. Sometimes these partnerships will be simple clean-up agreements between state and local agencies; more often it requires sophisticated land re-use alliances among the city and the public, private, financial and non-profit sectors.

#### 5. EFFECTIVE COMMUNICATION IS ESSENTIAL

Broadening the scope of the discussion leads to better understanding and better decisions. Effective communication should be seen as a priority task for all members of the project team.

Our visions are always determined by our own experiences. Unless we develop a better mechanism to communicate these experiences to a broader range of people, we're going to be unable to engage the community or stimulate better ideas.

— Ronald Shiffman

#### 6. PUBLIC SECTOR FINANCIAL ASSISTANCE IS OFTEN NEEDED TO GET BROWN-FIELDS REDEVELOPMENT OFF THE GROUND

It has been said that brownfield redevelopments are real estate deals with an environmental twist. In the United States, public sector financial assistance is often key to get these “deals” up and running. This may take the form of publicly sanctioned mechanisms (e.g., State voluntary clean-ups) that will help lever the private money and take the project through the full redevelopment cycle. In other cases, public assistance will involve direct financial assistance, including site clean up funds. In this case, brownfield sites could become a publicly funded demonstration of local or national innovation in environmental remediation.

Brownfield development could also be linked into other public infrastructure planning and projects. For example, some Oregon brownfield projects were made feasible by targeting federal highway projects toward brownfield areas in need of both clean-up and transportation infrastructure. Regardless of the type or degree of financial assistance, these public investments are typically recoverable through the life of the project.

#### 7. THE PUBLIC SECTOR CANNOT TACKLE ALL BROWNFIELD PROJECT NEEDS ON ITS OWN

The public sector (especially local government) plays a crucial role in fostering the redevelopment process, but the private sector is an equally important part of the brownfield



equation. The private sector — particularly larger development companies that can distribute risk among different projects — offers money, expertise and market-driven perspective to the redevelopment process. In many cases the private sector can finance initiatives on their own without the involvement of banks, sometimes allowing the developer to take on projects of greater risk.

This kind of partnership is not limited to publicly owned sites. On privately owned sites local government can work with private developers by pointing out how working together can remove a site's stigma as well as linking the site into the area's land use plan.

### **Additional Points that Emerged from Group Discussion:**

#### 8. INTEGRATING LAND USE PLANNING AND SITE RESTORATION PROCESSES SAVES TIME AND MONEY

Integrating the site restoration process with the aspirations and strategic plans of the involved community(s), and focusing on the site's end use, allows brownfield redevelopment to proceed with more certainty and efficiency.

#### 9. BROADENING THE SCOPE OF THE BROWNFIELD DISCUSSION LEADS TO BETTER UNDERSTANDING AND BETTER DECISIONS

By widening the economic dimensions of brownfield redevelopment discussions to include the concepts of healthy cities and sustainable development, we can better understand the larger

societal context of the brownfield issue. This is particularly important in dealing with urban sprawl and prioritizing resources to help ensure that market conditions favour reinvestment in brownfields.

#### 10. PUBLIC EDUCATION BUILDING COMMUNITY CAPACITY IS A SHARED RESPONSIBILITY

By clarifying the essential issues in a more accessible way, educators, academics, public health specialists and community leaders can help local communities participate in brownfield redevelopment discussions in more meaningful ways.

At the same time, researchers can encourage and enable communities to become actively involved in the monitoring of their sites to quantify and evaluate the economic and social benefits from brownfield redevelopment. This type of information is needed to further involve communities in creating and building success stories about their projects.

When we speak of education around the issue of brownfields, the discussion has traditionally been focused on public education. The question of education and learning must be more comprehensive and should include all stakeholders, such as risk-assessors, lenders, landowners, purchasers, and developers.

#### 11. THE ONLY CONSTANT IS CHANGE

Environmental standards are always going to change. It's how we react to those changing standards that matters, whether through land use planning, standards of practice, better risk analysis or actions like conferring indemnities on

property developers or financiers.

#### 12. PROJECTS MUST BE SUSTAINED BY INNOVATIVE LEADERSHIP

Cultivating leadership in all sectors helps to clarify the planning process, articulate vision, establish clear priorities, and provide more certainty.

#### 13. THINK GLOBALLY TO ACT LOCALLY

We can take counsel from the exchange of international experience and expertise, and a growing network of practitioners. Let's work together to identify what works, and refine methods and approaches until we've got it right for our own communities. And then let's share our stories and celebrate the renewal of the hearts of our cities and towns.



# APPENDIX ONE

## Setting the Scene for Investment in Brownfields: The International Public Policy Context

TERESA SALAMONE, J.D.  
ENVIRONMENTAL CONSULTANT

*The full text of Ms. Salomone's presentation:*

### INTRODUCTION

The need for redevelopment has been an important topic in Europe, Canada, and the United States with varying degrees of interest and intensity since the first World War. In Europe, the need to reconstruct cities and infrastructure after the wars and the later change in governments for the Eastern Block can be said to provide the greatest impetus to rebuilding in Europe. In Canada and the United States, the change in the economies after the great wars and a general shift in industrial technologies had an equally strong impact on the redevelopment of the inner cities.

The historical trends and influences on redevelopment is a fascinating tale but one that is unfortunately beyond the scope of this analysis. This paper will focus instead on the current attitudes, incentives, and mechanisms for redevelopment in the three jurisdictions. It is also important to note at the outset that while it is the goal in the simplest terms to compare and contrast the European, Canadian and American experience, it is difficult to generalize among even the simplest of the jurisdictions because of the complexity of their parts. For example, while it would be fair to describe the efforts of the European Union to encourage and enhance redevelopment possibilities among its member states, it would be missing the richness of the current trends in Europe to ignore some of the details in the individual countries. At the same time, it would be unnecessary to make a country-by-country comparison. In the same way, Canadian policy lends itself to some general federal observations, but the majority of the policy making and decisions are made on the provincial and even the local level so to ignore those subjurisdictions would be to ignore the whole story. Therefore this paper will attempt to draw attention to the major trends in each of the jurisdictions at whatever level of government they appear and to draw broad conclusions for each jurisdiction based on those trends.

The paper will consider the definition of brownfields, the number and nature of those sites that have been identified in each jurisdiction, and the mechanisms and policies that have been created to facilitate redevelopment. The paper will conclude with an analysis and summary of the overall policies that in combination, regardless of jurisdiction, enhance the opportunities for redevelopment.

### DEFINING BROWNFIELDS

In the course of comparing the jurisdictions, the first realization is that the European Union or its member states do not have a common term or understanding of how to describe the “brownfield” site. European definitions tend to describe contaminated sites in terms of the level of impact on the site. For example, in the United Kingdom an industrial site may be “derelict” or it may be “contaminated”, the former meaning not in use, the latter meaning impacted whether in use or not. Germany has similarly legislated two categories of impacted lands, one referring to the existing operating facilities, one referring to out-of-service or abandoned industrial facilities (which are presumed to be more contaminated.). Clean up requirements vary depending on the classification of the property. There is no name or category for sites that are to be redeveloped since almost all contaminated lands in Europe can be said to be in this category. Generally, however, it may be said that the European countries do recognize the need for redevelopment of previously used industrial properties and have been addressing these categories of sites in an organized way for some time. The Soil Clean Up Plan adopted in Germany in 1985 states that “the philosophy is to use land sparingly and efficiently. Abandoned hazardous sites, that have previously been used for industrial and commercial purposes will have to be reclaimed for further industrial use. Any remaining undistributed land will be protected.”

Canada and the United States have followed a similar pathway toward addressing brownfields, adopting a similar language, and both have a definition of “Brownfields” that reflects one general theme: Brownfields are underutilized lands with some level of contamination that can be returned to profitable use.

Recognizing that each jurisdiction has a general acceptance of the need for redeveloping a certain category of sites, it is interesting to compare the kinds of sites that might fall into that category. In Europe, in the beginning of this century and later, there were many areas in Europe devastated by wars that were recognized as needing reconstruction. These might include industrial complexes, transportation systems, harbors, or other areas seen as appropriate targets during a war. In later years, with the change in political structures, other industrial areas developed under the former communist system of government were also targeted for remediation and redevelopment. Sadly, this newest category includes some of the most polluted areas on earth as the communist emphasis on production and advancement at any cost is reflected in the environmental conditions left behind both at industrial sites as well as military bases. (For example, it is estimated that remediation of the military bases in Estonia could cost as much as \$4.3 billion U.S.) There is of course, also the category of sites that include historical contamination relating to obsolete

technologies such as manufactured gas plants that may be present in any community. An interesting factor to note in the description of the European brownfields sites are that a large percentage of the sites will be either currently or formerly owned or developed by government-owned industries.

In Canada, the category of brownfield sites may generally be said to follow the pattern of development of the country. In the beginning, cities and industry were developed around transportation nodes and natural resources, meaning that many of the abandoned sites will appear in the inner cities around water and rail yards or in lesser developed areas closest to the point of origin of the resource. Other brownfield sites will be in the inner cities, either remnants of earlier industries made obsolete by new technologies, or natural resource related industries that wax and wane with the changing markets such as the change in the forestry, agriculture and fishing markets. Some sites will be government owned, such as mining sites that have reverted to governments, but a larger percentage of the sites in Canada will be privately held. Brownfield sites in the United States may also be traced to the trends in industrial development. The basis for site conditions may be similar to Canada, but the increase in the number of sites is most likely related to the extra 100 years of development and the trend toward urban sprawl in the United States. Most of the sites in the United States, even more so than in Canada, will be privately held.

Although the jurisdictions may have a different definition for contaminated sites, all jurisdictions recognize the benefits of redevelopment. Why then, in all jurisdictions, is there a general avoidance of brownfield sites? When listing the barriers to redevelopment, it is interesting to note that generally, each jurisdiction will have the same list: 1) uncertainties surrounding the liability for environmental remediation; 2) unclear, sometimes inconsistent clean up criteria; 3) Unclear regulatory jurisdiction; and 4) inconsistent, uncoordinated, and slow regulatory decisions. It is more interesting to see that although each jurisdiction has the same expressed concerns, those concerns are being addressed very differently, depending on the existing regulatory framework and environmental policies.

#### WHAT IS THE POTENTIAL LIABILITY?

The risk of liability is the concern that is identified as the greatest barrier in every jurisdiction. In the United States at least theoretically, this concern is real as there are a range of possible environmental liabilities associated with a site. First, is the liability that is usually mentioned, the retroactive, strict, joint and several liability of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) or Superfund. This statute generally holds any owner, operator, or contributor responsible for the entire costs of site remediation except under certain conditions specified in the statute. Although intended to be a simple system, the extensive litigation spawned by the liability portions of this statute have generated great concern among potential purchasers. Second, liability may fall to the buyer of property under the Resource Conservation and Recovery Act (RCRA). That is, if the

Buyer intends to treat, store, or dispose certain industrial wastes on the property, the permitting of this activity (or the failure of a previous operator to effectively close out any prior waste management activity) will trigger clean up of the entire site under what is referred to as the RCRA Corrective Action program. The last category of potential environmental liability, and truly the sleeping giant of environmental liability in the United States, is potential liability for natural resource damages caused by site conditions. A Buyer may get brought into a Natural Resource Damage action for ongoing site conditions that continue to pose a threat to natural resources. In one case, a subsequent purchaser has been sued for \$750 million in natural resource damages, a figure that does not include costs of remediation.

In Canada, the risks of liability are not as clear. Although all of the provinces have some form of strict, joint and several liability in laws, these laws are not always enforced. This inconsistency, and litigation surrounding the issue of joint and several liability, has created sufficient uncertainty to have a chilling effect on redevelopment in many jurisdictions in Canada.

In Europe, there is the same general fear of liability, in many cases strict liability. It is impossible to generalize, but there are some prevalent policies. According to one report, Denmark, France, and Germany all have some form of strict liability. The Netherlands, although not going so far as strict liability, will make buyers demonstrate that they were not the cause of the contamination. Germany, at the time of the report, limited past liability to 160,000 DM. Other jurisdictions have also passed strict liability frameworks. The UK, on the other hand, argues against retroactive liability, and has recent case law that would support the premise that only current owners are liable for contamination. The general difference between this imposition of strict liability and that of the United States is that the EU generally argues for a "fault-based" system, meaning that only those responsible for the contamination will pay. This as opposed to the "joint and several" liability of the United States where any one of many potentially responsible parties could be liable for the entire clean up, regardless of the extent of their individual contribution.

#### WHO ENFORCES THE RULES?

While the nature of liability may be similar for the three jurisdictions, the framework set up to enforce that liability varies widely. In Europe, this jurisdiction must be examined on two levels, the level of the European Union, and the level of the individual member-states. Since 1991 (and the Maastricht Treaty) correctly referred to as the European Union, the EU is a group of 15 member states that generally have agreed to form a common governing body both economically and environmentally. This body has codified, in the Maastricht Treaty, the premise that the polluter should pay and that "environmental protection requirements must be integrated into the definition and implementation of other Community policies." The treaty also recognized another concept, that of "subsidiarity", which means that decisions should be taken at the most local level of government appropriate to the issue in question. In the overall debate about the



role of the EU in setting and enforcing environmental policy, the member states with one exception are leaning toward an EU role. The UK is the single exception arguing for individual member regulation.

The EU has issued a variety of directives relating to environmental matters and is expected to take a greater role in the future. At this time, however, there are no specific directives on the issue of soils remediation and the primary enforcement entities will be the member states.

The individual countries generally provide regulation and enforcement on a federal level. In Germany for example, the federal government will set clean up criteria. The German states are allowed to adopt their own criteria only in the absence of federal standards and several of the states have taken advantage of gaps to promulgate their own lists. The states may then choose from among the various lists. In the Netherlands, which is generally credited with the most well developed and stringent soils clean up policy, the federal government is responsible for the general policy on soil protection and soil clean up. Federal agencies establish soil clean up criteria, and monitor the excavation and clean up of soils. Some provinces have implemented voluntary clean up programs and in those cases, the provinces will approve the clean up plans. The Netherlands emphasizes the “multifunctionality approach”, meaning that all soils will be returned to their broadest use and that clean up of risk sites is considered a high priority. In a country where land is relatively scarce, long-term risk assessments and years of wrangling over site conditions is not considered the most efficient method for returning sites to productive use.

In Canada, with a few exceptions for federal lands, “Crown corporation” lands, and international resources such as fisheries and certain mining activities, decisions relating to clean up are left to the provinces and in many cases, to the municipalities. There have been attempts made to develop general federal guidance, but there is no requirement that the general guidance be adopted. For example, in 1993 the Canadian Council of Ministers of the Environment (CCME) met and developed 13 principles for a consistent approach to contaminated site liability. The goal was to have these principles incorporated into the contaminated sites programs in each province. As of the date of this paper, the principles have not been comprehensively adopted. In 1997, the CCME also issued guidance on the management of contaminated sites and recommended soil quality guidelines. Although some provinces have adopted the recommendations, there is far from a uniform standard for site clean ups in Canada. Instead, each province has developed a different system for site identification, liability, and clean up. These range from the relatively new and comprehensive Act 26 in British Columbia, to the well developed Contaminated Sites Cleanup program in Ontario. It is also important to note the role that municipalities play in the clean up process. In most provinces, the municipality will be responsible for issuing land use permits for building or redevelopment. This means, in cities like Toronto, the municipality and specifically the Medical Officer of the City of Toronto, will make the final decision on “how clean is clean” for a new development. The cities typically rely on provincial guidance for these decisions.

In the United States, decisions relating to contaminated sites are made on a federal and state level. The first thing to realize about clean ups in the United States is that every action falls under some regulatory program and there are specific program regulations and guidelines that must be followed for each program. The second thing to understand is that clean up criteria have been generally established under federal law. States may either meet or exceed these standards but are not allowed to make site-specific decisions that are less stringent. States may be delegated to implement federal programs, but must follow federal guidance in their implementation. Under the CERCLA program, the federal government is responsible for identifying the sites that pose the greatest risk to human health and the environment and for managing the response to those sites. The federal government must follow its own guidance, but must also apply any “applicable, relevant or appropriate” state laws (generally referred to as ARARs) when approving a remedy for the site. There has been a recent trend for states to adopt Voluntary Clean Up programs or State Superfund programs, state-funded programs that are not tied to federal delegation. The goal of these programs is to create a more streamlined mechanism for addressing sites that don’t qualify under either RCRA or CERCLA and many redevelopment projects fall into this category. In no case, however, may a state establish clean up criteria under any program that are less stringent than federal guidelines. Recognizing that some flexibility would be an improvement to the existing system of liability, the United States Congress has been considering comprehensive amendments to CERCLA, RCRA, and the Clean Water Act for several years. Stalled by partisan gridlock, there have been no legislative fixes and the federal and state agencies are attempting to relieve some of the burden through administrative actions described later in this paper. This rigid system of remediation programs and the failure of Congress to provide legislative relief are the impetus for the “brownfields” concept as we know it in the United States.

## HOW CLEAN IS CLEAN?

The issues surrounding clean up levels are very similar in each jurisdiction. Generally, the jurisdiction either relies on the future land use to determine the appropriate level of clean up, or has made the policy decision that all soils must be cleaned to a certain level, regardless of future use. In those jurisdictions that consider future land use, the site specific risk assessment plays a critical role in defining clean up levels. In Europe many countries have adopted the concept of “multifunctionality” of soils. This concept, adopted by a majority of the EU member states, recognizes that soils have a broad variety of uses and that remediation should result in the multifunctional use of soils rather than one specific use. To discuss redevelopment in Europe, therefore, we should keep in mind the three Operational Principles of the Council of Europe:

1. The surface to be assigned to a particular use should be weighted according to the criteria of multifunctionality and reversibility. The more a soil use enables the soil to perform its functions and the more reversible the soil changes resulting from

this use, the greater the surface which may be assigned to it. Conversely, the less the multifunctionality and reversibility of use can be guaranteed, the smaller the surface it should be allowed to occupy.

2. All soil or land use should enable the soil to perform several functions in turn. Soil's full potential should be preserved so as to leave future generations a choice of uses. It is necessary to provide for spatial harmonization in land use in order to preserve the diversity of soil function, in particular ecological ones. Integrated planning is indispensable here.
3. Land use should only cause reversible changes in soil.

The Netherlands, with its limited land base, has historically adopted the multifunctionality approach, not insisting on return to background levels, but a return to a condition appropriate for any potential future use. Germany has followed this approach. The UK, on the other hand, is the best example of a European country that has adopted the land use approach. Adopting many of the American policies toward future land use, the UK believes in expending only the resources necessary to make the property suitable for its next use. This difference in opinion will form the basis for one of the most significant debates in the EU: whether the subsidiarity principle should apply to allow each member country decide its clean up preference, or whether the EU should establish a general clean up policy for all members. The argument in favor of an EU policy, of course, is to first protect the fragile European environment with its heavy reliance on ground water, but second to maintain the level economic playing field for all members that would be impacted by varying clean up policies. It should be noted that although many European countries favor the multifunctionality approach, many member states, including the Netherlands, are considering the use of site-specific risk assessments for larger industrial properties.

In Canada, the decision on how clean is clean is made by the individual province and as noted, is enforced by the province or the municipality making a land use decision. The CCME issued recommended clean up criteria that are among the most stringent of the jurisdictions. These clean up criteria have been adopted by some of the provinces such as Manitoba and are being considered for adoption by others. In the meantime, the provinces have all indicated a willingness to consider site specific risk assessments although the expertise to approve these assessments does not exist in every province. Some provinces, such as Ontario have adopted an approach very similar to one being adopted in many American states. Ontario has issued a guidance document that provides specific clean up levels and expressly acknowledges the right to use a site-specific risk assessment.

In the United States, the clean up criteria are generally health based drinking water, water quality criteria, and health based criteria for soils. The United States also adopts the risk assessment approach and many states have now adopted their own or the federal guidance for such procedures. The trend in the

individual states is towards establishing a three tiered system for clean ups. The first tier sets out clean up standards below which no further action is required, typically acknowledged as "background" concentrations. The second tier sets out specific clean up criteria that are reached using a specific risk analysis. The third tier sets out the process for conducting a site specific risk assessment. This tiered system is acceptable because it is presumed that any of the tiers will result in clean ups within the acceptable federal limits.

The interesting thing to note is that in all jurisdictions, while there is growing acceptance of the risk-based approach, there is also a growing discomfort with the level of information available on which to make risk-based decisions. While the formulas for analyzing risk are generally accepted, the science of assigning risk of harm to certain chemicals, the risks posed by combinations of chemicals, and an incomplete understanding of the fate of chemicals in the environment continue to create uncertainties in the full acceptance of a risk approach.

#### WHO PAYS FOR CLEAN UPS?

The funding of clean ups perhaps more than any other issue defines the differences in the three jurisdictions. First, the similarities. In every jurisdiction there is a strong bias in favor of the "polluter pays" approach. That is, the person causing the contamination should be responsible for cleaning it up. Paths diverge, however, in the case where the "polluter" cannot be identified or has insufficient funds to pay for the response. In some cases, the polluter may also be a local, state or federal government, raising additional questions of financial liability.

In the United States, there is a strong policy, codified in CERCLA, that the polluter pays no matter what. From this springs the notion of strict, joint, several and retroactive liability, the ability for one responsible party to sue another to recover costs, and the ability of the government to recover triple its costs from recalcitrant parties. When there is no responsible party, the government will pay the costs from a fund, created through an environmental tax on certain industry sectors (hence the nickname for this program, the "Superfund.") Some states have created similar state funds to deal with orphan sites that do not qualify for the federal fund. Federal agencies and other local governments are not exempt from liability and are expected to pay their share of clean ups. Moreover, even after an agreement has been struck on the nature of the clean up, the government maintains the ability to "reopen" the deal in the event that a new or greater risk is discovered at the site at a later date. This hardnose approach to liability reflects the American independent approach to business and is the primary risk for potential purchasers and the primary barrier to redevelopment in the United States.

In Canada, the concept of "polluter pays" is adopted by all the provinces. The differences in the jurisdictions begin to emerge, however, when it appears that there is no federal fund for addressing orphan shares. Each of the provinces therefore struggles with this issue individually. No province has established a



comprehensive system for addressing orphan shares. In Alberta for example, the petroleum industry has voluntarily established a fund for addressing leaking underground storage tanks and other provinces are considering similar sector funds. There appears to be a general belief in Canada however, that the public shares in the benefits from abandoned site remediation and therefore there is a greater willingness for the provincial governments to share some of the burden of orphan site remediation. The provinces will also insert “futures” clauses in clean up agreements, clauses that allow the government to require additional clean up based on new information on risks or levels of contamination. As in the United States, the uncertainty created by these “futures” clauses and the source of funding to deal with future issues, create a significant barrier toward redevelopment.

Europe also shares the ideal of the “polluter pays.” At this point, the concept of who pays varies the greatest from the American point of view for many reasons. First the policy: the general view in the EU is that the polluter should pay for the costs of remediation. If the polluter cannot be found, the government will pay and in fact, many countries have established funds specifically for redevelopment projects. In cases where there is risk that the site may have to be “reopened”, the government will bear those costs. This is a very different approach than the Americans have taken but is reflective of many differences in history and land use. First, European sites that are targeted for redevelopment have a very different history than American industrial sites. These European sites may include areas that were devastated by war, sites operated by government industries during the war or after, or sites that were operated by other government-run industry before the unification or end to communist rule. Second, the European governments generally take a different approach to industry. While many governments sponsor or support industrial development, that has not been the case in the anti-trust fearing United States where the government takes a more “hands off” approach to the affairs of industry. This difference is again highlighted by the fault-based approach that the Europeans have adopted as opposed to the joint and several approach of the United States. Overall, the European approach, which has the government bearing many of the risks associated with clean up, increases the chances of redevelopment.

## THE ROLE OF THE LENDING AND INSURANCE INDUSTRIES

When considering Brownfields, there is a tendency to focus on the environmental aspects of the process. While the issues associated with remediation are important, it is the financial sector that must bring home the truth of the program: if there is no economic incentive to redevelop, the property will not be redeveloped.

Real estate development, irrespective of the brownfield issues, and regardless of whether the players are in the private or the public sector, must make sound economic sense if it is to be viable over the long term. Thus, the most fundamental determinant of the success or failure of a brownfield redevelopment is the economic climate in general, and the real estate market

in particular, which surrounds it.

In Canada the financial sector is regulated on a federal and provincial basis. Banks are regulated by the federal government under the Bank Act. Trust and insurance companies may be incorporated either federally or provincially and therefore may be regulated under either jurisdiction. Credit unions, caisses populaires, and securities are regulated provincially. There are six publicly owned banks and approximately fifty-five privately owned ones and approximately 125 trust companies. All are likely to be involved with real estate development loans. There is generally little guidance in the area of environmental liability for lending institutions provided by either federal or provincial bank statutes or regulations. The insurance industry can be divided into the life and health insurance industry and the property and casualty insurers. The former provides significant funding for real estate development but the latter provides the mechanisms for transferring risk of environmental liability.

Between 1991-1993, Canadian banks reported unprecedented losses in real estate lending. Insurance companies invested in real estate suffered similar heavy losses. This was related to an overall slump in the real estate market, but had a long-term chilling effect on real estate financing. This was especially true in the area of brownfields financing, which is perceived as risky and unpredictable. Other issues that have been identified in Canada as impacting brownfields lending is the fiduciary duty of banks to respond to shareholders, expectation of protected investments by other bank customers, the lack of environmental expertise in the lending industry, and the unwillingness of employees, rewarded for success in lending, to take risks on environmentally sensitive properties.

Some provinces are acting to try to remove the unpredictability by enacting statutes with express provisions for lender liability in environmental cases. Ontario banks have taken this a step further and historically entered into express agreements with the government before acting on a site with potential environmental issues. Today, the banks have global agreements that cover lending activities at all sites. Under these agreements, the banks may take control of a site and manage necessary environmental activities to protect the value of the asset without risk of triggering more extensive liability requirements.

The insurance industry has also been reluctant to provide products to ensure environmental risk. Policies that were available were considered too expensive for common use such as in a brownfields transaction. This reluctance is gradually being reduced as some of the larger insurance companies have begun to offer pollution liability insurance to cover both the buyer and the seller. For example, AIG Environmental, a division of American International Companies specializes in insurance that covers environmental exposures. AIG now offers asbestos policies, pollution legal liability that includes clean up costs, insurance for storage tank liability, contractors’ pollution occurrence, environmental surety, errors and omissions, lead abatement contractors insurance, clean up cost insurance for covering remediation expenses that exceed a predicted cap, environmental and general

liability exposures, products pollution coverage, and others that can be tailored to a specific need. These new products are a reflection of what many in the environmental remediation business have been saying: clean up costs are no longer unpredictable. The technology is available at a reasonable cost to address most environmental concerns and the risks of previously unknown costs are not as great as in the past.

In the United States, the risk of environmental liability has affected the lending market in several ways. This includes the risk that the collateral will be devalued, that the costs of clean up will impact the borrower's ability to repay the loan, and the risk that the bank will somehow be brought into the web of liability through its relationship with the lender. These fears were somewhat alleviated by statutory amendments creating a defense for properties that had been diligently investigated prior to purchase. This however, added a cost of \$2,000 - \$5,000 to the price of the loan as banks demanded careful investigation prior to purchase. In 1990, a federal court decided that a lending institution could be considered a potentially responsible party due to actions that bank had taken to protect the value of collateral. This ruling had an immediate affect on lending, making banks even more cautious about lending to environmentally questionable sites. The Congress finally addressed this fear by passing amendments to clarify the liability of lending institutions, but the pattern of risk investigation prior to a transaction and the general fear of environmental liability is now firmly in place.

In contrast to the Canadian system, the Federal Deposit Insurance Corporation, the Office of the Comptroller of the Currency, the Federal Reserve Banks system, and the Office of Thrift Supervision have all issued guidelines for dealing with environmental risk. Regulated banks are required to have environmental risk management programs in place including employee training, environmental policy development, environmental risk analysis procedures, structured environment risk assessment, loan documentation language to safeguard against environmental liability, loan monitoring procedures, involvement in borrower's operations, and foreclosure policies that take environmental risk into account.

One other action taken in the United States that was designed to encourage bank lending in the area of redevelopment deserves mention. The Community Reinvestment Act, enacted in 1977, requires banks to provide credit to local communities. This lending record is monitored by the office of the Comptroller. In 1995, the regulations were revised to include a brownfields provision. Regulated institutions could now meet their lending obligations by demonstrating loans for the clean up and revitalization of brownfields. The loans may be used to fund clean up but must also lead to economic redevelopment.

In the area of insurance, there are three categories of risk: 1) remediation-based risks; 2) property value impairment risks; and 3) personal injury risks. In the past ten years, the newest area of environmental litigation involves claims against insurance policies for past environmental impacts. In 1996, the USEPA did a survey to determine what insurance products were

available in the environmental market and to seek suggestions on policy changes that could improve the market. The survey found:

- All respondents indicated that insurance is available and is being purchased
- All respondents indicated that risks listed encompassed all known risks encountered at potentially contaminated sites
- Five of the eight respondents cover all of the risk under existing insurance products; the remaining respondents cover all but property value impairment risks.
- Minimum coverage ranged from \$1 million to \$100,000 per policy.
- Maximum coverage generally ranged from \$10 million to \$40 million per policy.
- Typical coverage ranged from \$2 million to \$10 million per policy.
- Typical premium costs were approximately \$5,000 per \$1 million in coverage.
- Five respondents noted increased demand for environmental insurance policies in those states that have active Brownfields programs or state voluntary clean up programs.

Common suggestion for USEPA involvement included clarification of liability issues, more consistent implementation of risk-based corrective action standards, and education about the availability of risk transfer insurance products.

The report concluded that there are many policies available in the US to cover remediation, value impairment, and bodily injury at insured properties. Interestingly, however, the report also found that while available, the insurance products may not be sufficient to boost brownfields redevelopment because the relative cost of an insurance policy will increase as the policy limits decline, meaning smaller projects may not be able to add even affordable insurance to the price of the transaction. In addition, the survey indicated that even with the availability of these products, owners of brownfields property are still unwilling to risk the uncertainties of environmental liability. Finally, the survey revealed a belief that some brownfields deals will still be held up by the inability to obtain financing from skittish financial institutions, unwilling to bear the risk of uncertain environmental liability.

The lending and insurance climate are generally different in Europe. For example, research does not reveal any instances of insurance litigation in Europe over past environmental impacts such as there is in the US. Moreover, while European banks exhibit generally more conservative lending practices, these practices are balanced by government acceptance of future environmental liability. The UK is the exception to this rule, however, with a more American policy of leaving the polluter responsible for future risks. Another difference between the European markets are the relatively smaller geographic limits, compared to the US where development can move easily from one state to another. This limit on land available for



development combined with the European tendency to conduct regional land use planning, directly contrasts with the American competition between cities and states for development and the reliance on real property taxation to fund local government.

## INCENTIVES FOR REDEVELOPMENT

Given the existing policies and programs to guide site remediation and the risks inherent in those policies, it is interesting to examine how the various jurisdictions have attempted to encourage redevelopment. In the United States, as noted above, the primary perceived barrier to redevelopment is the risk of liability. Attempts to address this barrier have been made repeatedly but have failed as a partisan Congress remains unable to reach agreement on critical policy issues. Failing to find a legislative solution, the current Administration can be said to have done two things: 1) enlisted the aid of United States Environmental Protection Agency (USEPA) to begin creating administrative relief; and 2) passed legislation creating separate financial incentives to redevelopment. The list of administrative policies is long, but includes actions to give more comfort to potential purchasers by providing the purchaser with more information about the site and the agency's intentions toward the site, Potential Purchaser Agreements, establishing the specific duties and obligations of the buyer toward the site up front, and other clarification of liability of some categories of innocent landowners. This innocent landowner relief comes in the form of guidance on the status of owners or purchasers of property that has been contaminated by an off site or adjacent source, and the status of property that has been recovered involuntarily, such as that recovered by a local government in a tax action. The USEPA has also issued additional guidance intended to clarify clean up policies such as more detailed risk assessment guidance and an express policy of considering future industrial land use. A complete list of this guidance is included in the Reference List attached to this paper.

In the area of legislation, the Congress has passed laws to clarify the extent of lender liability both in the area of underground storage tanks and generally for activities relating to site management after foreclosure. Congress has also passed a tax incentive law that allows redevelopers of certain qualified brownfield sites to deduct certain environmental remediation expenditures in the year paid or incurred, rather than charge them to a capital account and amortize them over many years. The deduction is available until the year 2001 and is expected to be worth up to \$1.5 billion and return 14,000 sites to productive use.

In Canada, it can be said that very little has been done in the way of financial incentives or other mechanisms to encourage redevelopment. British Columbia and Ontario have recently enacted legislation that will work to make clean ups more predictable, but neither of those programs include financial incentives. The Ontario Guideline for Use at Contaminated Sites (revised 1997) deserves additional mention however, because of its specific attempts at facilitating redevelopment.

The new guideline, while it does not have the force of law is intended to: [provide] advice and information

to property owners and consultants to use when assessing the environmental condition of a property, when determining whether or not restoration is required, and in determining the kind of restoration needed to allow continued use or reuse of the site. The ministry [of Environment and Energy] has provided the guideline, ...to assist landowners in making decisions on soil and/or ground water quality for proposed or existing property uses.

The guidelines provide three clean up options: background, generic clean up criteria based on agricultural, residential/parkland, and industrial/commercial land use, and a site specific risk assessment. Significantly for purposes of this discussion, the Minister takes the position that if a site is cleaned up pursuant to these guidelines, the site will not be reopened for a change in clean up criteria. What has changed by this new guideline is that the Minister will no longer issue a sign-off letter but will simply acknowledge that notice was received of site conditions at the end of the remediation effort. The significance of this guidance is that it provides very clean guidance for potential purchasers on the process that must be filed to assess the condition of land and more importantly, on the clean up levels or process that must be followed to identify clean up levels. This should provide some level of certainty for redevelopments not available in other Canadian provinces that do not have such clear guidance.

The European member states have historically provided funding for redevelopment. The UK created "derelict land grants" in 1966, which were designed to provide for a portion of clean up costs for both local governments and private parties. Funds would be refunded from the profits realized from reuse of the remediated properties. In 1980, Germany created a special fund for the Ruhr region, which allowed the government to take title to lands and partially fund cleanup and in 1989 a separate association that was able to fund up to 90 percent of clean up efforts on certain lands. The EU has also created similar funds, but the full extent of EU participation in redevelopment will turn on future decisions relating to its role in defining environmental policy for the member states.

## IDENTIFYING THE OUTSTANDING ISSUES

It can be said that for all jurisdictions, the issues of consistency, predictability, and funding head the list of future concerns. The future of redevelopment in the United States rests on the ability of the Congress to reach agreement on comprehensive revisions to CERCLA, RCRA and some of the other major environmental statutes. This failure to reach agreement has resulted in more than 28 special interest brownfields bills that attempt to deal with brownfields liability outside the bitterly divided policies of CERCLA. Another issues that is critical to the redevelopment market in the United States is the emerging battle between the federal government and the individual states over clean up jurisdiction and policy making. The USEPA has been working with the states for more than two years to develop a policy that would allow state governments to have full authority for approval of clean ups at certain contaminated sites. The USEPA infuriated state governments by issuing a policy that

appeared to directly contradict the nature of the agreement that the states believed had been reached and the EPA was forced to withdraw their policy. This leaves the battle lines drawn, with the states, more so than ever before, demanding more control over clean up decisions within their jurisdictions. Another emerging issue in the United States that will have some bearing on decisions relating to brownfields redevelopment is the issue of "environmental justice." A policy issue that so far is unique to the United States among the jurisdictions, this issue frames the debate over where certain industrial sites should be located and how clean is clean in areas with primarily minority residents. Although not clearly outlined in the context of the brownfields debate, this issue will come up when making future land use decisions on properties that are felt to impact mostly minority populations.

In Canada, the issues will revolve around harmonizing federal and provincial requirements and policies. Strongly individual, it is likely that the provinces will not easily or quickly follow a path that calls for adoption of the CCME principles or clean up standards. Canada must also struggle with the issue of orphan funding and decide who will pay for site remediation. On a local level, the issue is how municipal and other local governments will make land use decisions that are based on sophisticated risk assessment techniques and other scientific principles. Local governments, traditionally in the land use planning business, do not necessarily have the resources necessary to make these decisions, and in some cases may not want to accept the risk of liability for land use decisions involving risks to human health.

In Europe, as in other countries, there is a cry for better science to allow decision makers to be more certain about future land use decisions. The primary issue in Europe, however, will relate primarily to how future environmental policy decisions will be made. It is interesting that as the EU faces these decisions, the UK is taking its turn as President of the EU Environment Council. At the first meeting of the Council in March 1998, the ministers were able to reach agreement on four directives, which will be enforceable throughout the EU, but were unable to reach agreement on revisions to the regulations governing the common European Environment Agency. The ministers did agree to focus on freshwater and industry at the Sixth Session of the UN Commission on Sustainable Development in April 1998. Another interesting development to watch in Europe will be the rise of the Green party, an environmental party with no equivalent in the United States or Canada. This party has been effective in guiding environmental policies in many countries in which it has been elected to government and is represented in the European Parliament.

## IDENTIFYING WHAT WORKS

Based on a review of the various development policies, several elements of those policies can be identified as beneficial to redevelopment, many of them of European origin. First is the concept of regional land use planning as a way of controlling land prices and industrial impacts. In most of the EU countries, business development is guided either by the local government or a regional planning district. In

most cases, development occurs in accordance with a regional growth plan. This eliminates land speculation, widely varying land prices, and inconsistent or inappropriate land use. The second policy that appears to encourage redevelopment is again a European one, that of government acceptance of future liability. This eliminates fears of reopening sites to unpredictable future costs and encourages redevelopment. The third policy that would encourage redevelopment is the cooperation of all interested parties in redevelopment decisions. By far, the overriding success stories in the United States Brownfields program have turned on the ability of the parties to engage all appropriate decision makers and for all decision makers to have a common goal of redevelopment using flexible decision making authority. This cooperative approach, very consistent with the Canadian style of regulation, will be the key to the success of redevelopment in any jurisdiction.

Another policy that would streamline decision making is some consistency in clean up standards. What appears to be the trend in the three jurisdictions is a standard clean up criteria for smaller, less complicated sites, quickly returning them to multifunctional use, and site specific risk assessment for the larger, more complicated industrial sites. This will require advancement of the science in human and ecological risk impacts, and a coordinated scientific effort would enhance this effort.

Finally, the one thing that will always improve the chances of redevelopment is an increase in financial incentives. This is a new effort in the United States, including tax incentives, lending incentives, and other program benefits, but one that is expected to reap huge economic rewards. For Canada this will be a new option, but one that should not be considered inconsistent with current economic policies.

## CONCLUSIONS

There is a growing awareness of the need for redevelopment of underused industrial lands in Canada, the United States and Europe. The trends in policy are developing rapidly and in some cases differently in the three jurisdictions and there are lessons to be learned from each.

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COMPARING POLICY ISSUES FOR REDEVELOPMENT  
IN CANADA, THE UNITED STATES, AND EUROPE

ISSUE	UNITED STATES	CANADA	EUROPEAN COMMUNITY
Real/Perceived Barriers to Redevelopment	<p>Seller, lender, buyer liability (third party and environmental)                      No regulatory flexibility.                      Unclear regulatory jurisdiction                      Unclear clean up standards                      Inconsistent decisions                      Delays in remediation decision-making</p>	<p>Seller, Lender, Buyer liability                      "Futures" clauses                      Unrealistic risk goals                      Overspending on low risk sites                      No funding for orphan shares                      No financial incentives for redevelopment.                      Lack of hazardous waste disposal sites                      Inconsistent regulatory decisions                      Need for certification of qualified assessors                      Slow regulatory approval                      No predictable clean up goals                      Information gap between technical experts and the public                      Inability to get funding or insurance on contaminated sites.</p>	<p>Lack of scientific basis for establishing health and ecologically based clean up levels.                      Lack of international forum for sharing scientific research on risk assessment in a timely manner.                      Ambiguities about the legal position of developers and their financiers in the different member-states.                      Uncertainties in land and property markets.</p>
Definition of Brownfields/ Derelict lands <sup>1</sup>	<p>"Many areas across the country that were once used for industrial and commercial purposes have been abandoned — some are contaminated. Lenders, investors, and developers are afraid that involvement with these sites may result in environmental cleanup liability for contamination they did not create. They are therefore more attracted to sites in pristine areas — called "greenfields." This can result in blighted areas, rife with abandoned industrial facilities that create safety and health risks for residents, drive unemployment up, and foster a sense of hopelessness — these areas are called brownfields." <sup>2</sup></p>	<p>"Abandoned or under-used properties where past actions have caused real or suspected environmental contamination. Although they are classified as a subset of contaminated sites, they offer good potential for other uses and usually provide economically viable business opportunities. They are located primarily in established urban areas where existing municipal services are readily available or along transportation corridors..."</p>	<p>Contaminated industrial properties referred to as "derelict" properties in some European literature.                      Rule for economic land use: "The surface to be assigned to a particular use should be weighted according to the criteria of multifunctionality and reversibility. The more a soil use enables the soil to perform its functions and the more reversible the soil changes resulting from this use, the greater the surface which may be assigned to it. Conversely, the less the multifunctionality and reversibility of use can be guaranteed, the smaller the surface it should be allowed to occupy." <sup>3</sup></p>

ISSUE	UNITED STATES	CANADA	EUROPEAN COMMUNITY
<b>Estimated Number of Sites/Estimated Costs of Remediation</b> <sup>4</sup>	450,000 sites with a clean up cost of \$650 billion	2,900 sites, \$3 billion clean up costs (not including radioactive cleanups.)	Denmark 1,500 sites France 75,000 square kilometers <sup>5</sup> Germany 144,000 sites (657 identified sites in East Germany) The Netherlands 110,000 sites United Kingdom 50,000-100,000 sites
<b>Activities Resulting in Brownfield Sites</b>	Tradition of urban sprawl, change in industrial focus, change in traditional inner city land use, upgrades in technology, formerly remote locations subject to development, attempts to provide infrastructure to growing populations (e.g., landfills, harbor dredging)	Movement away from transportation nodes, change in traditional inner city land use, change in exploitation of natural resources, upgrades in technology, formerly remote locations subject to development, attempts to provide infrastructure to growing populations (e.g., landfills, harbor dredging)	Many sites directly related to communist industrial policies, also related to long history of development, unification and elimination of inefficient and duplicative operations, some historical war-related damage.
<b>Scope of Perceived Liability</b>	Retroactive, strict, joint, and several liability. Liability for Corrective Action at RCRA sites. Natural Resource Damage Liability	Absolute, joint and several liability in most provinces although not strictly enforced.	Some form of strict liability in Denmark, France, the Netherlands, and Germany. (Germany sets a cap of 160 million DM liability.) Italy and Portugal impose strict liability for current activities. UK generally holds current owners liable and is protesting EU consideration of strict, joint and several.
<b>Information on Environmental Condition of Land</b>	National Priorities List Comprehensive Environmental Response, Compensation and Liability Information System RCRIS State Superfund Lists	Some provincial contaminated site lists (e.g., British Columbia, Alberta, New Brunswick). National Contaminated Sites Remediation Program 1989-1995 attempted to establish national registry but unsuccessful in obtaining information from provinces and federal departments.	No organization in place to establish list for EU. Information collected on even numbers of sites varies widely from year to year. UK did enact legislation in 1990 to create public registers of contaminated land by local planning authorities but hotly contested and stopped in 1993.

ISSUE	UNITED STATES	CANADA	EUROPEAN COMMUNITY
Jurisdiction	<p>Primarily Federal oversight and restrictions.                      State implementation where delegated Tribal where appropriate                      Municipalities involved for zoning</p>	<p>Primarily Provincial and Municipal.                      Significant authority to approve clean up rests with municipal land use powers. Limited federal role.                      CCME issued Environmental Principles and Clean Up Criteria but not widely adopted by the provinces.</p>	<p>Generally national legislation although some German states enforce individual standards. European Community government has issued directive that prohibits certain contaminants from reaching groundwater. Member states implement EC directives individually. One council directive also requires each Member State to assess the direct and indirect effects of a project on human health, ecology, and cultural heritage. <sup>6</sup> There is a European Environmental Agency that gathers information on environmental science for the European Commission to use when developing legislation. <sup>7</sup></p>
Expressed Policy for Encouraging Redevelopment	<p>Reverse urban decay and provide economic opportunity for nearby residents. Minimize use of Greenfields.</p>	<p>Reduction of urban sprawl, address health impacts of unemployment</p>	<p>In Britain, Urban Development Corporations have land use planning powers.                       Reuse of land, economic revitalization, protect ground water</p>

ISSUE	UNITED STATES	CANADA	EUROPEAN COMMUNITY
Financial Incentives to Redevelopment	Community Reinvestment Act Taxpayer Relief Act of 1997 <sup>8</sup> \$200,000 grants for communities Zoning/Redevelopment benefits through HUD and EDA Proposed Legislation <sup>9</sup>	None although under consideration in some jurisdictions.	Germany created "Ruhr Site Fund" in 1980 to temporarily take title to lands by offering owners book value and accepting state responsibility for any remaining liability for contamination. "Waste and Contaminated Ground Disposal Association" was formed in 1989 to provide 70-90 percent of finance needed to clean up sites.
			UK has Derelict Land Grants, providing 100 percent of eligible public costs repayable from any profits made on sale of cleaned land. Private firms eligible for 80 percent grant with stricter repayment conditions. No protection for future contamination.
			The Netherlands takes responsibility for returning industrial land to public use. Poland and Greece will put a percentage of purchase price into a fund for cleanup of state owned property.
Clean Up Criteria	Generally established by Federal government, may be more stringent on State-by-State basis. Risk-based, considering future land use, although not consistently applied. Treatment preferred remedy under Superfund.	Generally, clean up criteria established by the provinces, enforced by municipalities through land use permitting. Federal guidelines adopted by Canadian Council of Ministers of the Environment (CCME) not adopted by every province. Risk assessment authorized in most provinces although agencies not all qualified to review.	Two distinct frameworks in Europe: 1) all soils cleaned up to specified health based criteria regardless of future land use (Denmark, Switzerland, the Netherlands) and 2) soils cleaned to a certain level as defined by future land use (Germany, Finland, United Kingdom) <sup>10</sup> though all jurisdictions moving to accept other framework in certain cases.

ISSUE	UNITED STATES	CANADA	EUROPEAN COMMUNITY
Funding for Orphan Shares	The Superfund was created through an industry environmental tax. This tax was allowed to lapse during the 104th Congress. Some state Superfunds based on sector taxes.	Currently no existing federal or provincial orphan funds. Some sectors have voluntarily created funds in some provinces. <sup>11</sup>	Currently no European Union cleanup fund although one is being considered. France considered landfill disposal tax but industrial sector volunteered to create fund for orphan sites. UK has derelict land grants, the Netherlands and Denmark have state-financed clean up with cost recovery provisions, Sweden funds cleanups but taxes all environmental permits.
Other Mechanisms for Encouraging Redevelopment	<p>“Comfort/Status” Letters</p> <p>Removing sites from CERCLIS</p> <p>Lender Liability amendments</p> <p>Guidance on Off-Site contamination</p> <p>Prospective Purchaser Agreements</p> <p>Covenants Not to Sue</p> <p>De minimis/De micromis settlements</p> <p>Future Land Use as Clean Up Target</p> <p>Small Business Compliance Assistance</p> <p>Jobs Creation</p> <p>Cooperation with Office of Housing and Urban Development</p> <p>Municipal acquisition liability guidance</p> <p>Job training</p> <p>State Voluntary Clean-Up Programs</p>	<p>Global lender agreements</p> <p>Ontario Contaminated Sites Guidance</p> <p>British Columbia Specific Contaminated Sites Legislation</p>	<p>The Council of Europe Convention of civil Liability for Damage resulting from Activities Dangerous to the Environment - (the Lugano Convention)</p> <p>European Community, Green Paper on Remedying Environmental Damage (1993)</p> <p>Note: Neither was adopted by the United Kingdom, which developed its own policies.</p>
Other Policy Issues	<p>On-going grid lock in amending major environmental laws including Superfund.</p> <p>Tension between Federal EPA and implementing State agencies over role of EPA in State clean ups.</p> <p>Environmental Justice must be considered.</p>	<p>Will develop laws as necessary to deal with specific issues. <sup>12</sup></p> <p>General bias toward protection of the public. <sup>13</sup></p> <p>Environmental groups have obligation to educate the public about true risks and benefits of redevelopment.</p>	<p>Subsidiarity - whether environmental laws should be passed on the EU level, or left to the member states. UK supports member states level of regulation, majority recognize benefits of EU regulations.</p>

ISSUE	UNITED STATES	CANADA	EUROPEAN COMMUNITY
<b>Government Role in Addressing Federal Contaminated Sites</b>	Federal laws require Department of Defense, Department of Energy, other jurisdictions (municipalities) <sup>14</sup> to bear costs of remediation.	No current effort by federal government to comprehensively address federal lands. Growing consensus that government should take leadership role to address these sites. (Estimated to be \$2 billion without included radioactive sites.) No goal to have federal control of clean up criteria, but some sense that criteria should be harmonized across the country based on CCME principles and soils criteria.	France, The Netherlands, and Germany have control over large percentage of industries and industrial sites. Belgium and the United Kingdom have less federal control of industry. Germany taking full responsibility for cleaning up sites in former GDR. The Netherlands expected to provide industrial lands.
<b>First Nations' Role</b>	Encouraged to participate in Brownfield Pilot projects, recognized as stakeholders in redevelopment decisions where tribal land is involved. Unclear judicial guidance on governance role of Tribes in environmental area.	First Nations encouraged to implement the "polluter pays" principle on tribal lands and to begin to address contaminated sites consistently with federal, provincial and municipal jurisdictions.	N/A
<b>Role of Lenders/ Insurers</b>	Traditionally small or individual banks, historical sudden and accidental insurance policies held to cover gradual releases. New environmental insurance products being offered.	Large banks <sup>15</sup> , some companies now offering environmental coverage	Large central banks, in UK mostly sudden and accidental liability policies, in Germany still gradual as well as sudden and accidental but less litigation over coverage than in US.

ISSUE	UNITED STATES	CANADA	EUROPEAN COMMUNITY
<p><b>Directions/ Recommendations<sup>16</sup></b></p>	<p>Codify Brownfields Initiative Approve State Voluntary Programs as alternative to Superfund. Provide clearer guidance on State/Federal roles and the circumstances under which the EPA will intervene. Clarify use of Risk-Based approach Use ISTEA funding to create transportation infrastructure to serve brownfield areas. EPA should prepare catalog of federal funding assistance. EPA coordinate Brownfields Clearinghouse of information EPA should educate federal funding agencies on importance of brownfields EPA/States/Municipalities should create process for expedited clean up approvals.</p>	<p>No more joint and several liability, except as last resort. No retroactive laws. Recommend all provinces adopt CCME 13 Principles and harmonize contaminated site laws. Create mechanism for orphan funding Need Government “sign-off” for remediation No unfunded mandates to municipalities Need insurance for municipalities making land use decisions. Give municipalities more land use planning powers. Educate the public and potential stakeholders of benefits from redevelopment.</p>	<p>EC and European Council emphasizing research on environmental and health risks. Member States gradually developing soils clean up policies and clean up criteria. OECD is offering to serve as mechanism for supporting sustainable development in member countries through research and policy development that could be widely adopted. OECD also encourages an end to subsidies that reward waste of resources, taxes on use of natural resources, and “eco-efficiency” in global markets.<sup>17</sup></p>

The risk of liability in the United States stems primarily from the 1980 Comprehensive Environmental Response, Compensation and Liability Act (CERCLA or Superfund.) The two biggest issues are the law’s requirement that all Applicable, Relevant or Appropriate Requirements (ARARs) be met at every site and the law’s preference for a treatment remedy, both of which are perceived to add significantly to the cost of remediation and to be inappropriate for brownfield sites. Of course, it has also been argued that the US pattern of urban sprawl was established long before 1980, and therefore CERCLA liability has little or nothing to do with the trend toward US greenfield development.

<sup>1</sup> In a report entitled *The Financial Services Sector and Brownfield Redevelopment*, the authors defined brownfield redevelopment as “development on an underutilized site that exhibits economically remediable contamination of its soils and groundwater and is located in a setting where existing municipal services are readily available.”

<sup>2</sup> Another, less melodramatic U.S. definition: “A brownfield is a site, or portion thereof, that has actual or perceived contamination, as well as an active potential for redevelopment or reuse.” It is interesting to note that identification of a brownfield site in the U.S. can be seen as a good thing while in Canada and the UK there has been some concern expressed about the stigma associated with labeling a site a brownfield site.

<sup>3</sup> This one of the three operational principles of the Council of Europe (1990.) The two other principles are 1) All soil or land use should enable the soil to perform several functions in turn. Soil’s full potential should be preserved so as to leave future generations a choice of uses. It is necessary to provide for spatial

harmonization in land use I order to preserve the diversity of soil functions, in particular ecological ones. Integrated planning is indispensable here.” and 2) “Landuse should only cause reversible changes in soil.”

- 4 It is estimated that brownfields clean up in the United States will result in the leveraging of up to \$28 billion in private investment, supporting 196,000 jobs, protecting up to 34,000 acres of greenfields, and improving the quality of life for as many as 18 million Americans living near brownfields. In Canada, the estimate of the number of brownfield sites ranges from 3,000 to 30,000.
- 5 France, until recently, did not have a federal inventory of contaminated sites. It has also been noted that the European identification of sites is primarily by area, recognizing regional land use issues and a more general public need and responsibility. The North American habit is to identify individual sites, recognizing the policy of the individual “polluter pays.” It is difficult to find estimates for the European Union as a whole, but one study done on the number of hectares impacted by mining and the steel industry estimated that the United Kingdom, France, Spain, Belgium, and Germany (excluding open pit mines) had more than 52,000 hectares of land impacted by these industries.
- 6 “Council Directive of 27 June 1985 on the assessment of the effects of certain public and private projects on the environment” (85/337/EEC) (Official Journal L 275, 05.07.1985). The members of the EU are France, Germany, Italy, the United Kingdom, Spain, Belgium, Greece, The Netherlands, Portugal, Denmark, Ireland, Austria, Finland, Sweden, and Luxembourg. The EC Fifth Environmental Action Programme, which is another mechanism used by the EC to establish environmental policy, “Towards Sustainability” agreed that priority should be given to sustainable management of natural resources, integrated pollution control, the prevention and control of waste, improvement of the urban environment, and energy reduction. The programme sets performance targets or results to be achieved regarding sustainable development in industry, energy, transport, agriculture and forestry, and tourism.
- 7 There is a principle in the EU referred to a “subsidiarity.” This means that action should take place at the appropriate level of government, whether that is at the local, regional, national or supra-national level. Interpretation of this is a matter for individual member-states.
- 8 This new tax law allows redevelopers of certain, qualified brownfield properties to deduct certain environmental remediation expenditures in the year paid or incurred, rather than charge them to a capital account and amortize them over many years. The deduction is available until the year 2001 and is estimated to be worth up to \$1.5 billion and is expected to leverage about \$6 billion in private investment, to return an estimated 14,000 brownfields sites back to productive use.
- 9 There are currently 28 bills pending in the U.S. Congress that address some aspect of Brownfields. Two of those bills, S. 8 and S.18, would create up to \$15 million in annual federal grants to identify and characterize contamination at brownfields sites, \$25 million federal grants to remediate brownfield sites, and \$25 million for States to create or improve voluntary clean-up programs. Many of these stand-alone bills are the result of gridlock in the Congress over the comprehensive reauthorization of the Superfund law.
- 10 This is a very general comparison due to the complexities of the various European State frameworks. The accepted level of human and environmental risk differs considerably between countries. Policies on soil pollution include either a protection of the full potential of the soil (multifunctionality), or remediation of soil conditions to make the land fit for a planned use without delay and the cost of returning it to full land use capacity. A comparison has been made between the approach to clean up in the U.S. and the Netherlands. In the U.S., industrial contaminated sites are not inhabited and there is more concern about local impacts from the site than an urgency to return the site to productive use. This results in more concern for health impacts of the site than an expedient clean up. In the Netherlands where land is a limited resource and at least 50% of contaminated sites are less than 2 hectares, there is a greater need to return the property to use as soon as possible. Moreover, given the scarcity of additional land, there is a feeling that the land should be returned to fully functional use. This is again a generalization as the U.S. is in some jurisdictions moving toward the option of generic clean up criteria (e.g., Texas, Indiana, Pennsylvania) and the Netherlands is considering site-specific risk assessment for larger industrial sites.
- 11 For example, the petroleum industry in Alberta has created a fund for cleaning up underground petroleum storage tanks. In 1997, Montreal and Quebec announced a contribution of \$30 million each to be used for redevelopment. The issue of apportioning the public’s share of contaminated site remediation is debated widely throughout Canada with varying degrees of benefit attributed to the public.
- 12 For example, New Brunswick relies on ground water for much of its drinking water. Underground storage tanks are therefore very strictly regulated in that jurisdiction. In other jurisdictions, such as Saskatchewan or British Columbia where ground water is not a primary drinking water resource, the underground storage tank regulations will not be as well developed.

- 13 There is a comparison that is made in Canada between the rights generally ascribed to the U.S. (Life, Liberty, and the Pursuit of Happiness) and those ascribed to Canada (Peace, Order, and Good Government.) Some have pointed out that the Canadian approach to the protection of the environment reflects this concern for conservatism and protection of the rights of others and following the rules, which is why the determination of clean up standards are biased towards protection of health and the environment.
- 14 There has been an ongoing effort to limit the contribution of municipalities for costs associated with clean up of historical municipal landfills that accepted municipal and industrial waste. This cap on liability for municipalities is gaining support and is likely to be included in any amendments to the Superfund law.
- 15 The Canadian financial sector has developed its own definition of brownfields: "...development on an underutilized site that exhibits economically remediable contamination of its soils and ground water and is located in a setting where existing municipal services are readily available. A brownfield redevelopment would, except for the contamination issue, as far as planning and land use reasons are concerned, represent a desirable location for revitalization of the urban core at the same or higher land uses than presently exist on the site." The Financial Services Sector and Brownfield Redevelopment, M.M. Dillon, Ltd. (September 1996)
- 16 The Report of the Greater Toronto Area Task Force, January 1996 made four recommendations: 1) The Ontario Ministry of Environment and Energy Should establish standards appropriate for intended use in the clean up of brownfield sites; 2) The province (and the federal government) should enact legislation to address the issues of liability of lenders, receivers, and trustees regarding brownfield site redevelopment; 3) The Greater Toronto council should establish a strategic, comprehensive regeneration program to redevelop brown fields sites; 4) Information on industrial and formerly industrial lands within the region should be collected in a Greater Toronto site registry to facilitate brownfield site redevelopment.
- 17 The OECD is the Organisation for Economic Co-operation and Development, which was created in 1961 to among other things, promote policies designed to support sustainable economic growth and employment among its members. "Eco-efficiency" as defined by the OECD is the addition of more value to goods and services, using fewer resources and emitting less pollution.

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# APPENDIX TWO

## The Westergasfabriek in Amsterdam: A Park for the 21st Century

DR. EVERT VERHAGEN

PROJECT MANAGER, WESTERGASFABRIEK,  
AMSTERDAM, THE NETHERLANDS

*The full text of Dr. Verhagen's presentation:*

As project manager of the Westergasfactory in Amsterdam it is a great pleasure to be able to speak to you today in Toronto. I will try to give you some insights into strategies we followed to get to our project as far as we are right now. I shall introduce you to the two main buildings. I will elaborate on the strategies we have developed to reach our goals. I will go into the problems we have with the polluted soil. Then I will give you some insight into how we want to use the buildings in the future and what we think cultural enterprise can do for this place.

In 1833 the British Imperial Continental Gas Association received a new concession for the production and sale of coal-gas. The gas was mainly used for street lighting. The site to build the gasfabriek was just outside the old city walls. The setting was pastoral but the boundaries were urban and useful to the factory. Almost immediately the ICGA started to build the Westergasfabriek. From 1885 to 1967 the factory supplied the city of Amsterdam with gas. The southern boundary of the factory site was formed by a straight ship canal dating from 1630, the northern boundary was embraced by a bend in the railway track. The canal once was a vital traffic line in the Netherlands. In the 17th century boats were sailing every hour between the important cities of Amsterdam and Haarlem. The first railroad in the Netherlands was also built between the same two places in 1839. The first railway station was situated outside the city wall, next to the canal. When the defensive walls burst and the old city flooded the pastoral landscape the canal turned into a green dividing line in the new urban field. Between the city and the factory a small landscape park was laid out. Residential areas were developed south of the canal . . . and north of the railway line, among them the famous Amsterdam school building of Michel de Clerc.

When the gasfactory was finished, industries were developed further west. Between houses and industries, a clustering of green areas remained.

The buildings were designed by the Dutch architect Isaac Gosschalk in the eclectic style of the "fin du siecle" as rational and modern constructions. All buildings have architectural features in common. Predominant are long lines of layers of different colored bricks that make the buildings an ensemble. All

of the buildings on the complex are on the national monuments list. On the site between the railway and the canal two huge cookeries were erected. In order to bring the coal to these buildings an intricate web of rails was laid out.

It took two years to build the entire Westergasfabriek. This was quite a feat considering that this included more than 15 buildings, among them a water tower, an ammonia factory, three gasholders, and a huge gas cleaning house. One of the most impressive buildings is the Zuiveringsgebouw (the Gas cleaning house) parallel to the canal. This building occupies two massive cleaning halls. North of the Zuiveringsgebouw, two smaller buildings are situated: the Machine building and the Kettle house.

Soon after the factory was finished more space was needed to store the gas. A big Gasholder was built, one of the largest in Europe. With the railway yard on the site it was decided to have the basement of the Gasholder raised 15 metres above ground level. Trains had to be able to cross under the arches. In this way the most spectacular and immense space was created.

After the termination of the coal gas manufacture in 1967 the Gasholder was used temporarily to shore the new gas ovens. What remained were a number of difficult to use, but visually charming, buildings. A village of congenially designed volumes for forgotten purposes, standing on heavily polluted soil. It became a landscape in waiting. A landscape we all know so well here in Canada and the United States. Back there in Europe we also have plenty of it.

Close enough to the city centre to receive kind and special attention, peripheral enough not to be wasted to gross money making, with the special features to attract special people that incite special events. They have the size, form and position between infrastructure that prevent them from being cut up into smaller lots. Beautiful examples of the happy fringe are the Estacio do Nord in Barcelona, park Duisberg Nord and Zeche Zollverein in Germany and the Royal Arsenal in London. As a second use municipal car workshops and storage were housed on the site. The first of December 1993 the City gasworks left the buildings. We, the district council of Westerpark, became the rightful owners of the site and the monuments on it.

The first thing we did was to think about a new, permanent use of the abandoned buildings. To cover the period between the moment that the empty buildings became ours and the moment we would be able to find a definite destination, we decided upon a temporary use. We had a notion that in Amsterdam this type of buildings would be much in demand. The temporary use had a flying start because the Holland Festival wanted to stage the premiere of a new opera



Antigone in the gasholder. This production by the Dutch composer Ton de Leeuw went live on Dutch and German radio. We did not have the staff that could oversee a constantly changing situation. We needed some solid contracts. The Transformatorhuis has been leased to the Amsterdam Theatrical Company for four years now. DasArts, part of the Amsterdam drama school, is located in three smaller buildings on the west side of the site.

One of the two purification halls is occupied by a film studio, Studio Wenck, which occasionally employs surrounding workshops for the stage scenery and the costumes. *Allegria the Movie* by Cirque du Soleil was filmed there.

Let's talk for a moment about strategies we followed in order to reach our goals. The first and most important thing was to put the project on the map. Due to its relative isolation, the fact that the site had been closed off from the city for so long nobody seemed to know the place and everybody seemed to think that it was far away. . . . So we had to be sure as many people as possible had to have a positive feeling about our site or at least have the idea: this is a place where new things can happen.

The most important thing of course is combination. Not only to make the project known to people but also to listen. There cannot be a project if the neighborhood is not proud of what's happening there. The people who live there are the first users. But also all the people who have to make decisions to give you money or the benefit of the doubt must have the feeling that there is at least something in it for them. Especially in a complex project as this it is vitally important to bring the right people together.

If the buildings are put to fruitful use, the ground we inherited proved to be a mixed blessing. Because of the gasfactory, the soil was heavily polluted. The factory was built on what was a peat-moor. The pollution has seeped through the topsoil and is polluting the underground water layers. It would be virtually impossible and incredibly expensive to actually clean up all the pollution. That's why we will have the pollution isolated. Since the ministry of environment will have to provide the funds for this project the ministry is regularly consulted. The total costs will easily exceed 10 million guilders. Less stringent measures are favorable for our project as we are now working to combine the monuments with a beautiful park. The latest plan is that the pollution will only be isolated with a waterproof steel dam reaching a depth of twelve metres. The topsoil will be covered with earth, but only where needed. The latest estimates set the costs of the top soil isolation at only 5 million guilders. Compared to the 500 million guilders we started with five years ago and the 60 million guilders of two years ago this could be called a big success!

This brings up the next subject: the park. The compound of the former Westergasfabriek is part of the future Westerpark. This Westerpark will be an answer to the demands of neighbors for more space and trees in these densely populated areas. The old Westerpark, east of the office building is now a hundred years old. It was laid-out in English-garden style and this five hectares has become a vital green spot for the surrounding neighborhoods.

We want the Westergasfabriek to be the centre of a new larger park. This large park will measure some 50 acres. The new park and the buildings with their cultural functions will have to supplement each other, bringing life to the area. This will be a park of the 21st century, a park laid out on the top of isolated polluted soil. To select a landscape architect we asked 12 bureaus to answer the questions: What is a park? and What will a park be like in the 21st century? We then organized a competition between the five architects whose answers we liked best. The competition was won by an American landscape architect, Mrs. Kathryn Gustafson. The plan that she created for the park deals with time and space. A central axis representing time organizes spaces and activities. From east to west you will travel from old to new. The east symbolized tradition, the west renewal. The office building will be set in a field of flowers. The heart of the park will be an exhibition grounds. It is situated in the upper right corner of the park and calls to mind the horn of plenty; it seems like culture is spilling out of it filling the park with activities. Water plays an important role in the park, and is particularly important in the ecology of the park. Another important structure is given by a swell, a wave of ground, that's used to store polluted soil under it. On top of it is a path, named Broadway: a festival of lights linking cultural activities. The park will make large-scale fairs and events possible such as pop concerts and theatrical performances. There will be a market square and a field to display art.

To give new life to a derelict contaminated sites it proved to be essential to give the public a reason to visit the site. Designing the plan around the core of space and time makes it possible to reinforce and preserve the nature of the landscape and the idea of the urban periphery. Cultural enterprise will give the 13 historic buildings on the site a new and dynamic use.

In the new Westergasfactory some of the important themes that play a role in our time can be distinguished. This time is fascinating because we are in a period of change from the industrial to the information period. This falls together with the turn of the century, even with the new millennium. In a lot of former industrial areas in Europe and America beautiful buildings become derelict. Signals of new communication, new media, and new forms of art will find their place here. These premises with the new park will give an answer to the need for a new place to meet people, a new agora. Could you think of a bigger challenge than to make this possible?

We should all feel responsible for the reuse of this industrial heritage. The Westergasfabriek could be the project in the Netherlands to give a meaning to this change in time and space. Culture of the new time in the buildings of the old time. Change and innovation are the key words in developing the site further. Although certain goals have been set, there is no final target. It is the direction that is important, not the final destination. The journey is the thing, then, the symbol of motion, of life itself. Arrival is static, the end, death. Revitalization and change drive the process. Cultural enterprise is the new source of energy powering the gasfactory. Anyone visiting the new Westergasfabriek with this in mind will be making a journey. And why undertake this journey, why visit other countries or other places, if not to discover what is possible.


# APPENDIX THREE

## Symposium Participants

Greg Alexander	City of Thunder Bay	Michael Hough	Hough Woodland Naylor Dance Limited
Carol Ancheta	Environment Canada	Robert Howald	City of Toronto Economic Development Corporation
David Anselmi	PMA Landscape Architects	Brian Howieson	Ontario Ministry of Environment
Sophie Baj	U.S. Army Corps of Engineers	Kenneth J. Hoyle	Harrington and Hoyle
Paul Beck	Duke Engineering & Services	Dennis Johnson	Thunder Bay Harbour Commission
Kyle Benham	City of Toronto	Allen Jones	Ontario Ministry of Environment
Kirk Benson	St. Lawrence Starch Co. Ltd.	Stephen Kaiser	Urban Development Institute
Ronald Bidulka	Arthur Andersen & Company	John Kanen	
Dr. Philip Byer	University of Toronto	Harry Kim	Central Projects Group (CPG)
Roger Bywater	Devon Estates Limited	Myrna Knight	Urban Development Institute (UDI)
Mark Cairns	Inland Corporation	Louise Knox	Environment Canada
Stewart Chisholm	Volunteer	Bryan Kozman	Ontario Ministry of Municipal Affairs & Housing
Cara Clairman	Tory Tory DesLauriers & Binnington	Jeff Kratky	Urban Development Institute
Jane Clohecy	City of North York	Robert Krauel	Environment Canada
Joanna Cook	E2 Management Corporation	Steve Langlois	Urban Development Institute (UDI)
David Crocker	Blaney, McMurtry, Stapells and Friedman	Ian Lord	Weir & Foulds
Roy Cullen	Etobicoke North	Ian MacEachern	Frontline Corporate Communications
Prof. Gene Desfor	York University	Rodger Martin	Canada Lands Company
Chris DeSousa	University of Toronto	Shannon Matthews	Canadian Bankers Association
Dr. David DuBois	Golder Associates Limited	Jacque Maund	Ontario Ministry of Environment
Christine Duch	Weston Consulting Group Inc.	Bruce McConnell	Conestoga-Rovers & Associates
Mark Emery	Weston Consulting Group Inc.	Ron McKee	O'Connor Associates Environmental Inc.
John J. Fahey	Beak International	Catherine McVitty	Lever Brothers
Dean Gowen	Deleuw Cather & Co. of New York, Inc.	Glenn Miller	Canadian Urban Institute
Carole Goyette		Paul Mudrock	Environment Canada
Ian Graham	Urban Intelligence Inc.	Eha Mai Naylor	Hough Woodland Naylor Dance
Ian Gray	St. Lawrence Starch Limited	Paul Nieweglowski	Ontario Ministry of Environment
Sylvie Grenier	Regional Municipality of Ottawa-Carleton	Ian Orchard	Environment Canada
Devyani Guha	Pratt Institute Center for Community & Environmental		
Ron Guido	US Army Corps of Engineers		
Nora Gurland	Ontario Ministry of Environment		
Kimberly Hanna	AIG Environmental		



Anna Pace	City of Toronto
Charles Parmelee	Toronto Harbour Commissioners
Ron Pearson	Barenco Inc.
Lynne Peterson	Ontario Ministry of Municipal Affairs & Housing
Jim Phimister	Barenco Inc.
Adrien Pilon	Biotechnology Research Institute
Donald M. Pirie	Proctor & Redfern Limited
Emmanuel Pressmann	Stikeman, Elliott
Tony Reuvers	Canadian Imperial Bank of Commerce
George Rocoski	Ministry of the Environment
Uwe Roeper	Radian International Canada Inc.
Debbi Rogers	Weir & Foulds
Patricia Roset	Volunteer
Roger Santiago	Environment Canada
Joe Schilling	ICMA
Ronald Shiffman	Pratt Institute Center for Community & Environmental Development
Dalton C. Shipway	Watersheds United
Prof. Mark Sproule-Jones	McMaster University
Liz Stanley	Ontario Ministry of Environment
George Stockton	Moriyama Teshima Architects
Vida Stripinis	Shell Canada Products Ltd.
Eugene Todd	Town of Port Hope
Mark Tytko	DeLeuw, Cather & Co. of New York, Inc.
Dennis Unites	GEI/Atlantic
Eric Veska	Jacques Whitford Environmental Limited
Steve Webster	G.M. Sernas & Associates Limited
Geoff Westerby	Gartner Lee Ltd.
John Whincup	Conor Pacific Environmental Technologies Inc.
Paul Wilson	CH2M Gore & Storrie
Ina Wygodny	Ontario Ministry of Environment
Jo-Anne Young	O & Y Properties Inc.



On April 7 and 8, 1998, one hundred people gathered in Toronto for a different conversation about the redevelopment of former industrial properties (often referred to as “brownfields”). Participants represented Canada, the United States, the Netherlands, Germany, Spain, and Italy, and included landowners, investors, bankers, regulators and community development specialists.

This diverse group shared a belief that the technical challenges and financial risks so long associated with brownfields can now be seen in a different way — as opportunities for economic and environmental revitalization. Long dormant sites are being revitalized as owners, investors and regulators find new ways to regenerate old industrial areas. The result is a new “can-do” attitude that is improving the investment climate and establishing the partnerships needed to ensure the environmental and economic health of cities around the world.

Our “Different Conversation” allowed participants to relate their experiences, and in doing so, describe ways to unlock the environmental, economic and social potential of brownfield sites. These proceedings summarize the presentations and the key points that emerged during the plenary sessions. The case studies presented over the course of the Symposium suggested several important lessons that can be passed on to others engaged in brownfield redevelopment and these lessons are described in the proceedings.



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