Brownfield Redevelopment and Urban Regeneration with a focus on cities in East and Central Europe: a proposed work program

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What are Brownfields?

Brownfields are sites that:

- have been affected by the former uses of the site and surrounding land;
- are derelict and underused;
- may have real or perceived contamination problems;
- are mainly in developed urban areas;
- and, require intervention to bring them back to beneficial use.

Source: CABERNET (Concerted Action on Brownfield and Economic Regeneration Network)
The Brownfield Challenge:
to **Remediate** and to **Redevelop**

- **Remediation** = challenge of environmental assessment and technological response
- **Redevelopment** (recycling) = challenge of visioning and realizing market opportunities with both public and private benefits
- A **plethora of disciplines** therefore need to be involved and coordinated to tackle brownfield projects: *property owners, lawyers, environmental consultants, real estate brokers and professionals, economic development specialists, insurance representatives, lenders, law makers and regulators*, are all part of the equation.

### Why Recycling Brownfields is Attractive

<table>
<thead>
<tr>
<th>Potential Value / Assets of Brownfield Redevelopment</th>
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<tbody>
<tr>
<td>Situated in or near urbanized areas: pressure on land, high demand for commercial space</td>
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<tr>
<td>Restore economic and fiscal values (currently no revenues due to non-utilization, no tax payment)</td>
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<td>Reduce demand for new “green field” development, promote more sustainable land use planning</td>
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<tr>
<td>Revitalize urban areas and improve amenities, supporting local quality of life</td>
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<td>Take advantage of existing infrastructure: urban roads, public transport corridors, WSS and power</td>
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Why Brownfield Redevelopment (BFR) Can Be Difficult

**Major Challenges of BFR**

- Economy stagnating or even shrinking, low demand for commercial or private land
- Unclear ownership, or site is property of land speculators without (immediate) development interest
- Unclear legal / administrative situation regarding remediation targets and environmental liabilities
- Investment concept: future use has to be matched with demand for, potential and constraints of remediated BF
- Technical aspects: demolition of structures, waste removal, decontamination, ground improvement

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Why Brownfield Redevelopment in Central and Eastern Europe?

1. Following more than 45 years of centralized planning, most Central and East European cities have a large percentage of their land mass dedicated to industrial uses. Much land remains in State hands and underutilized.

![](chart.png)

Example of Brownfields in Urban Areas:

Partial view of Bishkek, Kyrgyz Republic:
City centre in the foreground.
Yellow: new developments
Red: industrial zones with high proportion of deteriorated and dysfunctional installations, or brownfields.
Brownfields and dying industrial zones near city center are putting development pressure on green fields outside the city, contributing to urban sprawl.

Warsaw – Industrial Area

2. Many brownfields, particularly in urban settings, pose significant environmental hazards/threats to human health and degrade quality of life.

Source: www.flickr.com

3. Derelict industrial sites are often situated in prime locations within city boundaries, amidst dynamic real estate markets and cultural heritage centers.

Source: www.flickr.com
Why Brownfield Redevelopment in Central and Eastern Europe?

4. Socialist-era neighborhoods lack conveniently-located space for small businesses and amenities required in a market economy: banks, insurance companies, supermarkets and grocery stores, restaurants, bars and pubs, etc.

Brownfield Extent in Selected European Countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Brownfield Area</th>
<th>Number of Brownfield Sites</th>
<th>Data Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>France</td>
<td>20,000 hectares</td>
<td>200,000 (estimate)</td>
<td>EEA (1999); Ministere de l’Environnement (2001)</td>
</tr>
<tr>
<td>Germany</td>
<td>128,000 hectares</td>
<td>362,000</td>
<td>Umweltbundesamt Berlin (2000)</td>
</tr>
<tr>
<td>Netherlands</td>
<td>9,000 - 11,000 hectares</td>
<td>110,000-120,000 (estimate)</td>
<td>EEA (1999); Environmental Ministry (2000)</td>
</tr>
<tr>
<td>Poland</td>
<td>800,000 hectares</td>
<td>3,230 sites</td>
<td>Ministry of Environment (2002)</td>
</tr>
<tr>
<td>Romania</td>
<td>900,000 hectares</td>
<td>No data</td>
<td>Romanian Ministry of Waters and Environment (MAAP) (2000)</td>
</tr>
</tbody>
</table>

Major Types of Brownfields

‘A’ Sites: Sites that despite contamination and liability problems are economically attractive enough to be redeveloped through a sole private effort.

‘B’ Sites: Sites whose future profitability is uncertain due to a number of unknowns (the severity and extent of contamination, unclear ownership, sluggish or inactive real estate market, etc.). These sites are prime targets for public-private partnerships.

‘C’ Sites: Hardcore cases that can only be redeveloped through a concerted public effort.

‘A’ Site Development

➢ ‘A’ sites can usually be redeveloped by the private sector, despite potentially high cleanup and remediation costs.
➢ The location, dynamism of the local real estate market, and demand for building space can outweigh the negatives.

Semanatoarea Plant, Bucharest (Romania)

Source: Google Earth
‘A’ Site Development

**Semanatoarea**

The site occupies a **prime location**, along the banks of the Dambovita river, on the metro line, and next to the Polytechnic University. It offers developable land of over 42 hectares. The first buildings are to be completed by the developer – River Invest - by August 2008.

When finished, Sema Parc will have a **business district** of 364,000 m², a **retail area** spreading over 172,000 m², a 20 story **hotel** and **conference center**, and 1,200 **residential apartments**.

‘C’ Site Development

- ‘C’ sites are usually very polluted, in less attractive locations, and spread over large areas.
- ‘C’ sites can rarely be developed without significant or complete involvement from the public sector.

*Industrial Landscape, Ruhr Region (Germany)*
‘C’ Site Development

Emscher Park in Germany’s Ruhr Valley

A brownfield redevelopment project on an impressive scale.

The State of North Rhine-Westphalia created a regional development corporation - the International Building Exhibition (IBA)

The IBA cooperated with 17 municipalities on several adaptive reuse and redevelopment projects. From 1989, when the project was started, to 1993, $1.5 billion were invested in over 134 projects, with the majority ($1 billion) coming from public sources.

Source: www.flickr.com

‘B’ Site Development

‘B’ site redevelopment is in many respects more complex than the development of ‘A’ and ‘C’ sites.

It almost always involves a public-private partnership (PPP) and presupposes the elaboration of innovative and creative economic, environmental, policy and legal tools.

A successful PPP approach for BFR builds on:

- Specific Legal and Regulatory Frameworks
- Government (central and local) Incentives and Facilitation
- Market Financing Practices
- Neighborhood Groups Involvement

Developed countries have a longer experience in brownfields redevelopment and can offer numerous lessons and examples for the development of appropriate PPP tools in Central and East European countries.
‘B’ Site Development

Legal and Regulatory Frameworks

A legal and regulatory framework that is tailored specifically around brownfields issues is important—all parties need to understand rights and responsibilities.

- In the **US**, the EPA (Environmental Protection Agency) drafts the legislation pertaining to brownfields. In 1992, its Superfund law was amended, allowing for more flexibility in cleanup and liability standards.
- In the **EU**, there is no direct brownfields legislation. According to the *subsidiarity principle*, the task of dealing with derelict industrial sites is left at the discretion of each individual Member Country.
- However, a series of programs (e.g., URBACT, the Real Estate Programme, Sixth Environment Action Programme), legislative measures, and directives directly and indirectly impact brownfields redevelopment.
- Article 88 and Article 87 of the EC Treaty, concerning *state aid and competition*, have restricted the development of creative PPP approaches.

‘B’ Site Development

National Government Incentives and Facilitation

*National* governments play an important role in facilitating and offering incentives for brownfields redevelopment. In Central and Eastern Europe, the State often owns derelict and underutilized industrial sites.

- In the **US**, the EPA is not the only agency involved in brownfield redevelopment—also the Department of Housing and Urban Development (HUD), the Department of Labor, the Economic Development Administration of the Department of Commerce, and the Department of Treasury.
- US Federal financial measures created to aid BFR projects: *tax incentives, financial incentives* (e.g. community development block grants, assessment study grants, revolving loan grants, cleanup grants), and *restrictive measures* (e.g. the Community Reinvestment Act requiring banks to invest in depressed neighborhoods).
- In **Germany**, public company (Treuhand model) created to assume past environmental liabilities and prepare property for resale.
‘B’ Site Development

Local Government Incentives and Facilitation

Local/municipal governments play an equally critical role in BFR in North America and Western European experience:

- In identifying sites and marketing them to potential investors, creating a development agency, convening partners
- Making strategic infrastructure investments to raise the value of a site, and/or reducing anticipated costs
- Offering financial incentives to complement national ones, e.g. tax increment financing, property tax waivers
- Planning tools, e.g. sale of development rights, changes in zoning
- Direct redevelopment for some kinds of uses, e.g. public parks or performance spaces, often in collaboration with NGOs or community groups

‘B’ Site Development

Market Financing Practices

Market financing practices are driven by the perceived future value of a development, by the risks involved, by the expected cleanup and construction costs, as well as by incentives offered by local and national governments.

Lenders will shy away from projects where the liability is unclear.

Example:

- The Cherokee Fund is a global equity investment company that specializes on brownfields redevelopment and that has come up with creative ways of ensuring economic viability for developers, while safeguarding the environment and the public interest.
- The Cherokee Fund acquires brownfield sites, cleans them up, prepares them for development, and assumes full liability for future contamination problems.
- Currently, Cherokee has invested in more than 525 properties worldwide, with more than $2 billion under its management.

Brownfield Insurance markets also exist to provide liability and clean-up coverage.
‘B’ Site Development

Involvement of Community Groups

Working closely with neighbourhood groups is key in ensuring project acceptance and receiving feedback and inputs from people living in the area.

- ‘C’ site projects would only be developed by government but still require upfront public awareness, consultation and transparency to ensure best public benefits.
- ‘B’ site project has to be economically viable to attract private involvement – thus, there is usually some to-and-fro between public interest and market goals.
- Involving neighbourhood groups early in the process will give local people a sense of ownership in the project, generate ideas and ultimately make the project more successful.
- An on-going conversation with the local population ensures a smooth integration of the proposed project into the existent urban fabric, as residents know best what makes their neighbourhood special.

‘B’ Site Development

Skoda Plzen Rehabilitation

Skoda Plzen is a brownfield redevelopment project implemented with the support of CzechInvest, the Czech government, and private investors.

It involves the rehabilitation of the 180 ha old Skoda Plant.

Space opened up for public uses, and land reclaimed for the extension of the nearby Borska Pole Industrial Park.

Source: www.flickr.com

Skoda Plzen

Source: ukr.plzen.eu/dokumenty/Invest_in_the_Pilsen_Region_1-2007.pdf

Borska Pole Industrial Park
‘B’ Site Development

The Glud am Marstrand Development

One of the most dilapidated industrial areas in Copenhagen (Denmark), it was targeted for redevelopment, under a partnership between a private developer, local residents, and the neighborhood regeneration project.

End product of the redevelopment was a new park (that the residents wanted), and new housing (that the Sotoftegaard developing company preferred).

Total development costs were split between the private partner (69%) and the public partner (31%). The total costs of the public element were €1,600,000. The time schedule for the project was 2002-2006.

Questions to Address in Planning Brownfield Remediation and Redevelopment

1. **Initial risk assessment:** how likely is the existence of significant contaminations due to site history?
2. **Investigation programme:** verify suspected contaminations, identify the involved contaminants and quantify their volume / extent; establish engineering properties of ground on site.
3. **Development concept:** define potential future utilization scenarios and their requirements regarding site conditions; identify stakeholders
4. **Cleanup concept and feasibility study:** which remedial actions have to be taken for development of the site? Which additional measures to mitigate acute risks for environment, public health and safety?
5. **Economic analysis:** under the proposed re-utilization scenarios, is the remediation economically viable? Which are the major financial risks, are there financing gaps, are funds / subsidies available?
6. **Legal / administrative framework:** what are the legal requirements regarding remediation targets, residual MACs*, waste classification and permissible emissions from the site? Who shares liability for cleanup?

(*Maximum Allowed Contaminants)
Feasibility of BFR: A “Simple” Equation

Remediation costs (investigation and cleanup)  Prospective value of redeveloped property

Technical & economical feasibility

Ownership situation and legal covenants

...but there are risks of shifting the balance...

Causes: e.g. unforeseen scale of contamination, technical difficulties, volatile market for waste disposal, contaminations reaching beyond site (damage to third parties)

Technical & economic feasibility

Ownership situation and legal covenants

Risk Scenario 1: Runaway remediation costs
Risk Scenario 2: Wrong estimate of resulting property value

Causes: e.g. slowing economy, lack of demand, restrictions on property market

Risk Scenario 3: Change of market situation

Causes: e.g. change of land use plan or urban development scheme, tampering with MACs and remediation goals, unreliable performance of regulators ("changing the goalposts")
Graph showing actual remediation costs per m² for a sample of 570 sites in Bavaria, Germany. The cost can range from virtually nothing to >1,000 EUR/m². This demonstrates the inherent financial risk of developing a brownfield site, and the crucial importance of timely and thorough site investigations and feasibility studies.

Generating Added Value by BFR: Potential disproportional value increase due to removal of marketability obstacles.
Conclusions

- BFR can involve high risks—but many sites have less contamination than perceived and many projects are possible at reasonable remediation cost
- BFR can also have high benefits—economic, fiscal, environmental, and social
- The timing of costs and of benefit flows requires creative financing
- Transparency is critical to public acceptance
- Partnerships and visionary leadership are also key to success
- Demonstration projects, even small, can help generate interest and support
- The World Bank could provide assistance through knowledge sharing, technical assistance, and financing of related public investment.

Prospective FY09/10 AAA work program for ECA:

- Case studies of about 3 city/country cases to examine a possible BFR site and identify constraints and opportunities with local experts and stakeholders
- PPIAF grant application to fund toolkit preparation, using case studies and good practices from other regions