
Brownfields in the Czech Republic 1989–2009: The long path to integrated land management

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Abstract It has been precisely two decades since the political transition in central Europe, which left post-socialist cities, and the Czech cities in particular, with a massive legacy of brownfields in key urban locations. This paper describes the causes and nature of this urban challenge, the growing awareness of brownfields as a problem, and the gradual emergence of the policies, institutions and understandings that allowed brownfields to begin to be brought back into substantial use. This broad historical picture is supplemented with a more detailed description of two current pressing issues (national level brownfield leadership and inventory). The paper concludes with a discussion of the broader lessons of these two decades for other places and other complex urban issues requiring broad integrative changes.

Keywords: *Brownfields, post-socialist cities, urban planning, land use, strategic planning*

INTRODUCTION

Those working to facilitate the reuse of the various forms of underused, derelict and contaminated land known as brownfields are aware of the daunting complexity of this key aspect of urban regeneration. The recovery of brownfield sites demands an incredible degree of integration: tools and strategies must communicate and cohere across space and time scales, across sectors, across disciplines and across institutions. These challenges are intensified and inflected by the particular development trajectory of

Central European countries. Socialist governance systems, urban forms and planning practices and the process of post-socialist transition left close to 10,000 brownfields in the Czech Republic alone, with over 2,000 of these in the larger size category (over 2 hectares or over 500 square metres of built area), some in prominent urban positions. Post-socialist governments and markets were unable to 'metabolise' these unused properties in the first decade following the political transition in 1989. Indeed, during these years the nature, scope or even existence

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of the brownfield problem was barely recognised in these countries, and it took much of an additional decade for brownfield capacities to emerge in a substantial way. This paper describes the halting path to the management of the brownfield problem and the kinds of integration that were and are needed to overcome barriers to brownfield reuse in the Czech case. These were accompanied by and demanded the emergence of increasingly sophisticated institutional legal, policy and knowledge structures, the growing coordination of multiple actors, and a maturation of the urban land management system more generally. The gradual growth of the ability of Czech cities to coordinate brownfield regeneration holds more broadly applicable lessons for the introduction of the next phase: the introduction of integrated urban regeneration approaches now demanded by all seven European Union (EU) Regional Operational Programmes (ROPs). There is still a considerable way to go, but in comparison with other new members states, with which it shares a similar past, the Czech Republic has managed to make a remarkable transformation in the levels of brownfield awareness and reuse support over the last decade.

BROWNFIELDS IN POST-SOCIALIST CITIES

An atlas of industrial production in the socialist Central Europe would nowadays also serve as a fairly good map of dilapidated and contaminated buildings and polluted soil and water in the region. In addition, many (and in the Czech case, most) brownfields are from a non-industrial origin, eg many agricultural structures that were abandoned, army installations, large institutional buildings and unusable residential buildings (see Figure 1).¹

The Czech Republic alone has an estimated 10,000 brownfield sites, with over 2,000 of these larger than 2 hectares or with a building above 500 square metres.² While the majority of these sites are in smaller rural communities (and thus lack market-driven financing for redevelopment), many are urban — in fact the presence of large brownfields in prime urban locations is a distinctive feature of post-socialist cities.

A key reason for this pattern is that with no real estate or capital markets to speak of under socialism, state companies and institutions did not consider the cost of land or return on investment when making locational, construction or operating decisions. In addition, in command economies, raw goods allocation and production were regulated by long-range plans and quotas whose inflexibility and imprecision spurred production facilities to set aside large areas for the storage of raw materials and finished products, often for extended periods, which they were able to do because they were relatively insensitive to the spatial and financial inefficiencies entailed by such build-ups. Often, the urban positioning of facilities had an ideological component, both in general terms (industrial production was of paramount value, to which cities were harnessed) and more specifically. For example, the steelworks of Nowa Huta, once the largest steel mill in Europe, was built by socialist planners next to Krakow (Poland), in order to dilute the notorious intellectual and religious character of the city, and now includes 700 hectares of mostly brownfield land inside its perimeter.³ Thus, socialist cities had tens of per cent of their land area devoted to industrial uses, in addition to military sites and oversized rail facilities.

After the transition, with many of the original land uses of urban sites no longer viable, several circumstances

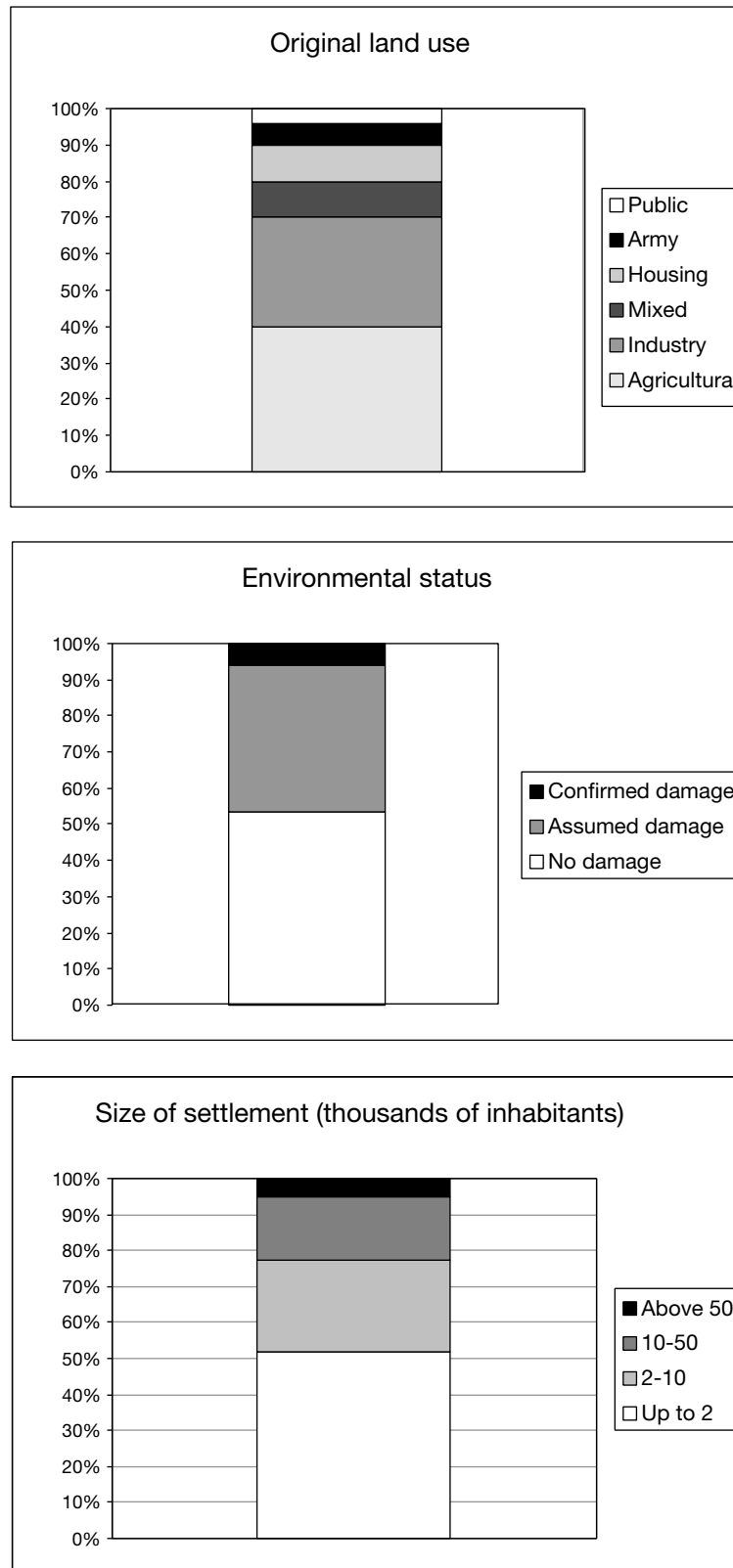


Figure 1: Characteristics of Czech brownfield sites (based on various data from CzechInvest)

conspired to render these properties derelict.⁴ Ownership patterns were fragmented in sites that were re-privatised (privatisation was often just a cover for asset stripping, further degrading the value); re-zoning for non-industrial uses was time consuming and risky; contamination was heavy owing to the older technologies in use in the socialist period; government liability for environmental hazards and clean-up that might be discovered was often unclear or lost in ownership transfers; and building shells were not suited to new uses.

While these factors reduced the availability of centrally located properties, the other side of the dereliction equation was that the ready availability of peri-urban greenfield sites was draining off the development pressures and capital necessary (though far from sufficient) for fuelling brownfield redevelopment. The background to this lay in the widespread allergy to central planning in post-socialist societies in the years following the transition, and a rather drastic delegation of once centralised planning powers to local authorities. For example, Prague was surrounded by a score of such authorities, each now independently authorised to approve planning on their mostly agricultural land, each in competition with the other to attract development, and with frequent opportunities for decision making to be swayed by 'informal' incentives offered by foreign development investors and their local proxies.

In such a context, chaotic retail then commercial then residential development soon followed one another on greenfield sites, usually adjacent to inter-urban roads and actual or anticipated ring roads. The foreign investors who began investing in Central Europe in the 1990s were familiar with such sprawling land-use patterns, and the advantages of the

centrality of urban sites could not outweigh the risk associated with their bureaucratic entanglements and the allure of more rapid and less risky development of greenfield exurban ones. Within a decade, many of the remarkably compact socialist cities surrounded by agricultural areas, and well served by public transport, began to evidence the sprawling car-dependent and leapfrogged development patterns familiar from Western Europe and the US.

REGENERATION OF BROWNFIELDS, 1989–2009

Beginnings

In the first decade after the transition from socialism, there was almost no recognition of brownfields as a phenomenon of importance in its own right — that a dilapidated railway siding here, an abandoned Soviet army barracks there, and a contaminated factory in a third place, all constituted a single kind of issue, indeed a serious one. Besides anything else, derelict properties seemed a side issue compared with the massive challenges and opportunities in the wake of a political revolution, which were engaging society at large, as well as the planning and academic communities, the governmental sectors and the private sector (which, anyway, had other, simpler, options open for development and investment).

Even as the awareness of the notion of brownfields arose, there were no clear-cut definitions of underused land, no conceptual taxonomy of the various kinds and parameters of such sites, and no central registry or mapping of them. Thus, it took years simply for a name for the problem to emerge, its contours to be known even in the roughest terms, and for the ongoing urban costs of leaving the problem unresolved to be grasped.⁵

Enough awareness had arisen by the end of the 1990s for the first major workshop on 'recycling urban land' to be convened in April 2001, with the cooperation of the City of Prague and representatives of many major stakeholders present.⁶ Even here, part of the strategy of the organisers was to ask representatives of various ministries to discuss their ministries' stance on the topic, knowing that in some cases this was non-existent, and that baffled delegates would spur internal queries about the brownfields problem, and whether and how this intersected with their ministries' mandates. Barriers identified then included lack of a unified registry, lack of tools and principles for prioritising site selection, inflexible planning tools and clean-up procedures, and the willingness of the government to, essentially, subsidise greenfield development by extending infrastructures to new areas. Recommendations included specific policies for removing these barriers, as well as a call for the emergence of brownfield institutional leadership, pilot projects, strategic consideration of the ends towards which brownfields would be brought into use (ie brownfield reuse as part of a more strategic whole), and greater communication across agency and disciplinary boundaries (Ref. 4, pp. 31–33).

The second post-transition decade: Emerging leadership and the recovery of integration

In many ways, the socialist regime provided a fairly sophisticated and integrated approach to land management, in that spatial planning was well developed and harnessed to the public good, institutional support was effective, a strong level of regional planning mediated the national and local levels,

and, whatever one might say about its content, strong strategic guidance was provided by the centrally planned economy. The national planning law of 1976, for example, was at its time a modern high-quality document.

Rapid fragmentation followed the political transition of 1989. Initially, the regional level of governance and planning was stripped out (to reappear only a decade later), local authorities (over 6,000 of them) gained planning powers to approve projects (though were under no obligation to produce local planning documents), and the main drive for development and specification of the what and where of this came from the private sector, which was guided by profitable locational opportunities as it saw them. Brownfield reuse, which requires high levels of integration even in a stable system, fell out of this chaotic picture during the first decade after transition.

One can view the second decade after the transition as the halting rebuilding of new forms of integration: between various levels of governance (local, a reconstituted regional level, and national level, as well as the increasingly important EU-wide links in the accession process); between spatial planning and strategic planning, now revolving around EU-spurred strategic priorities; and between a shifting constellation of old and new government ministries and agencies. The gradually increasing capacity of Czech cities to support reuse of their brownfields reflects this regained coherence.

At the time of writing (2009), it is two decades after the transition, and a good moment to take stock of this process (see Table 1). A new spatial planning law (198/2006 sb.) has been in place since 2007, the most demanding phases of the EU accession process are over, a dozen publicly funded brownfield

Table 1: Czech brownfield timeline

1997	Impacts of brownfields begin to be sensed in a piecemeal manner
1999	Technical assistance to the Czech investment promotion agency identifies need to also ready and offer brownfield sites (rather than promoting only greenfield sites)
2001	Realisation of brownfield issue as widespread, and as a named category of problem
2002	First brownfield projects attempted
2002	First analytical report on brownfield situation, barriers, policies
2003	Pre-accession EU funding of know-how transfer projects
2003	Launch of industrial brownfield remediation programme
2003	First Czech web source
2003	First Czech handbook
2003	National development plan priorities for Structural Funds (SF) 2004–2006
2004	First assessment of scope of problem
2004	Commencement of first major brownfield development
2004	SF priorities make brownfields visible and spur private sector interest in finding eligible sites
2005	Research programmes
2005	Programme for communities dealing with army brownfields
2005	Regional data inventories tool available
2006	First attempt towards a national inventory (CzechInvest)
2006	First handbook and course materials for construction professionals
2006	National strategic reference framework priorities for SF 2007–2013
2007	New Planning and Construction Law requires inventory of already urbanised land with reuse potential
2007	SF and their programmes promote brownfield priorities
2007	Private sector boom in regional property including brownfields
2007	Administrative changes in CzechInvest reduce organisation's brownfield expertise
2008	PPP partnership forming
2008	National brownfield strategy fails to obtain support
2008	SF 2007–2013 financed brownfield projects commence
2008	Brownfields incorporated in national scale planning support GIS layers
2009	Recession effects most of commercial brownfield projects
2009	JESSICA contract signed between EIB and Ostrava region
2009	Regional and local authorities forecast serious budget shortfalls, which would limit their ability to support public brownfield projects
2009	Czech administrative regions show interest in compiling and analysing brownfield data on smaller brownfields as a step towards impact mitigation efforts

PPP, public-private partnership; GIS, Geographic Information Systems; JESSICA, Joint European Support for Sustainable Investment in City Areas; EIB, European Investment Bank

research projects have been completed, and brownfields now play a highly visible role, after having been supported first by national programmes (Table 2) and later by the first (see Table 3), and finally the present, wave of structural funds.⁷ Most importantly, after years of discussion, policy making, and aspirations, brownfields are now becoming a significant element in the development of the Czech real estate market, with sites totalling an estimated 600 hectares being regenerated, with a total built-up volume of six million square metres.

Some of the changes emerging over this decade are summarised in Table 4, which compares a diagnosis at its

beginning with the current situation. The brownfield issue is now strongly (though often only formally) embedded in national, regional and local policies and strategies, and, also, at last in the new planning law, which places the issue in spatial terms. In prime locations, substantial amounts of brownfield land are now available for planning by private developers and investors while, in non-prime locations, industrial and non-industrial brownfield reuse is financeable through the current wave of structural funding. While the 2008 recession has dampened development across the board, and especially brownfield projects, which tend to be riskier, the projects supported by structural funds still

Table 2: National programme titles and priorities available for brownfield regeneration during the period 2003–2006

	Responsible institution	Programme description	Programme duration	Programme value/ co-financing (€000)	What was financed
1	National Property Fund until 2005, Ministry of Finance thereafter	Removal of environmental pollution under the privatisation law 92/1991, government degree 51/2001 and ad hoc government degrees	1997 onwards, continuing in residual form until the present	Government issued an environmental guarantee up to the value of purchased enterprise. Ceiling of €5bn, no co-financing required	Environmental assessment; clearance; monitoring (Programme under 51/2001 does not cover assessment)
2	Regional governments in cooperation with Ministry of Environment	Removal of environmental pollution to water	2001 onwards	~€300,000/year/region; no co-financing	Removal of critical spills and pollution hazards to water sources
3	Ministry of Regional Development	Planning and change of use planning on ex-army property	2005	~€50,000/year; co-financing required	Preparation of change of use plans
4	Ministry of Regional Development	Programme supporting development in the ex army areas	2006	~€70,000, co-financing required	Site infrastructure amendments
5	Ministry of Culture	Various cultural monument and conservation programmes		Ongoing programme of varying amounts annually (~€200,000); co-financing required	Urban conservation areas programme; conservation of monuments; roofing programme
6	Ministry of Industry	Various programmes removing damage due to mining activities	Long-term programmes continuing from 2003	€1bn ongoing programme; no co-financing required	Regeneration of land after mining activities
7	Ministry of Regional Development	Various housing remediation programmes		Co-financing required	Regeneration of panel housing blocks
8	Ministry of Environment	Various urban and rural landscape care programmes		Co-financing required	Enables planting on brownfields
9	Ministry of Industry	Support of industrial strategic zones on brownfields		€600,000; co-financing required	Projects of 10ha minimum; 75% industrial reuse

continue. All publicly sponsored projects, however, are likely to face difficulties in 2010, with diminished national tax revenues due to the recession.

Indeed, there may have even been some overshoot in awareness raising regarding brownfields in the Czech Republic, in that the success indicators for ROPs in structural funds include a brownfields dimension (square metres of regenerated buildings or hectares of regenerated brownfields), spurring beneficiaries to search for such opportunities or even to redescribe other development in these terms. At the same time, however, for the badly located brownfields (the majority in numeric terms), which are mostly in small communities, and often endangering

public health, there is neither market motivation nor any public assistance yet available even for sites posing direct risks to the public.

With brownfields a visible issue, and a new Planning and Construction Law in place, more mature horizons open up. Perhaps the greatest overall challenge at this stage is to phase and embed the brownfield topic into a larger context of coherent urban regeneration and broader regional land management perspectives and policies. During the first half of this decade, the state's attention and funding was absorbed in fulfilling the 30 chapters on which EU membership was conditioned, and on incorporating a large number of EU regulations into their national laws. These contained little by

Table 3: EU programme titles and priorities available for brownfield regeneration during the period 2000–2006

	Programme name	Priority	No. of projects	Value of programme (€000)
1	PHARE 2001	Border regions assistance – best practices	More than one	?
2	ISPA	Reuse of agricultural brownfield property	More than one	?
3	Cohesion fund	Remediation of environmental damage	1	?
4	OP Industry	Industrial premises (brownfield: ~30%)	46	~60,000
5	OP Infrastructure	Removing environmental damage	0 (programme not used)	?
6	OP SROP (joint regional operation programme)	Urban regeneration	12 projects	~30,000
7	OP Development of Human Resources	Regionally based education (included support for training and promotional activities on brownfields)	More than 2	?
8	JPD2 Prague	Measure 1.2: Regeneration of damaged and unsuitably used areas	~35	~70,000

Note: PHARE, one of the three pre-accession instruments financed by the European Union to assist the applicant countries of Central and Eastern Europe in their preparations for joining the European Union; ISPA (Instrument for Structural Policies for Pre-Accession) and SAPARD (Special Accession Programme for Agriculture and Rural Development), the other two; SROP (*Sdružený Regionální Operační Program* (Joint Regional Operational Programme)), the predecessor of the Czech 7 ROPs; JPD2 (Joined Programme Prague, objective 2), a Structural Funds Operational Programme in the period 2004–2006, which was an Objective 2 programme. Objective 2 finance enabled the investment projects in selected districts of Prague.

way of urban or land use requirements, and the challenge now is to catch up and build the skills and knowledge in these areas.

SOME CURRENT BROWNFIELD TOPICS AND TENSIONS

The foregoing sections have given the ‘big picture’ and timeline of how the Czech system has gradually increased its capacities for regenerating brownfields. The following sections discuss some of the current challenges, which are of a more particular and concrete nature.

National level leadership

A current dilemma regarding brownfields and, in particular, the transition from a brownfield agenda into a broader agenda of sustainable urban policies, is that of the re-emergence of the question of the locus of institutional support for brownfield regeneration.

At the beginning of the second decade

after transition, it was unclear which of several stakeholders would become a locus of responsibility, leadership and coordination on the issue. For example, the National Property Fund (a state agency responsible for the privatisation process) instituted Environmental Clearance Contracts to reassure prospective purchasers in the second round of privatisation regarding the sometimes crippling liabilities associated with potentially and actually contaminated state-owned properties privatised in the ‘first wave’ of privatisation after the political transition in the late 1980s. And because many Ministry of Finance departments touched on issues that related to brownfields, because the ministry often exerted considerable coordinating capacity, and because of its ability to recognise strategically and act on the long-term costs of deferred problems, this ministry might have become a key locus for taking leadership on the brownfields issue. The Ministry of Environment was

Table 4: Removing barriers to brownfield development: 2002–2009

2002 assessment	2009 assessment
<p>Leadership at national, regional and local level 2002</p> <ul style="list-style-type: none"> • Need for brownfield leadership that can coordinate the many measures, policies and administrative linkages necessary to get more urban brownfield properties 'unstuck', and into productive use 	<p>Leadership at national, regional and local level 2009</p> <ul style="list-style-type: none"> • Brownfields issue included in majority of national policies and strategies and in titles for Structural Funding • Brownfields issue considered in a broader integrated urban development context • Initial attempt to formulate a National Brownfields Strategy superseded by call for broader National Urban Strategy – this is still lacking • After period of leadership by CzechInvest, leadership is still lacking at national level, as well as at regional level and local levels
<p>Know-how, coordination, motivation 2002</p> <ul style="list-style-type: none"> • Inadequate understanding of the scope of the brownfield problem • Inadequate understanding of broad financial and social implications of brownfield problem • Low levels of political commitment to brownfield reuse in all levels • Absence of an overall brownfield strategy mainly at national level, but also in the lower levels • Inadequate cooperation and knowledge-transfer among institutions, and departments within institutions • Inadequate cooperation and knowledge-transfer among disciplines • Inadequate know-how across the full range of potential brownfield stakeholders, including private investors, local authorities, regions and ministries 	<p>Know-how, coordination, motivation 2009</p> <ul style="list-style-type: none"> • GIS based brownfield data collection required by the planning law (regional databanks) However: <ul style="list-style-type: none"> – Problems remain with stigmatisation of listed properties, standardisation and definitions, etc. – Profiles on regional basis not yet available • Understanding of financial and social implications has improved, though is not yet reflected much in local policy • Political commitment has improved, especially with the promise of SF financing possibilities • Brownfields Strategy delivered, but inadequate and not adopted; more integrated strategic approaches are being introduced • Country has a number of development related policies and strategies • Goals of cooperation and knowledge transfer issue are being slowly absorbed into individual regional development policies • After becoming part of SF priorities, there is no separate national funding for brownfields, so currently the only agencies with an interest in the topic are CzechInvest and the Regional Development Agency of Ostrava • Improving slowly • Know-how has improved overall, but still substantially lacking in the public domain and among property owners; some real estate developers have begun to develop expertise, however, through learning-by-doing on brownfield redevelopment projects
<p>Tools and policies 2002</p> <ul style="list-style-type: none"> • Lack of clear cut policies and strategies • Insufficient transparency and enforcement in the legal system in several areas that impinge on brownfield planning, purchase and use • Lack of means to insure or cap exposure to environmental liabilities • Inadequate tools for land assembly 	<p>Tools and policies 2009</p> <ul style="list-style-type: none"> • Majority of component development and environment related policies are in place, though an overall urban policy is lacking • Increased savvy in real estate community and adoption of protective contracts that work around legal insufficiencies • Difficulties in enforcement continue • Continues • Improved slightly by the new Planning and Construction Law 186/2006 sb. but the right tool is still missing

Table 4: Removing barriers to brownfield development: 2002–2009 (continued)

2002 assessment	2009 assessment
Tools and policies 2002 <ul style="list-style-type: none"> • Inflexible planning tools • Insufficient fiscal instruments and incentives • Lack of a unified registry of sites and their critical parameters • Lack of analytic tools and principles for prioritising site investment • Lack of benchmarking of technical and other costs and procedures against international best practices 	Tools and policies 2009 <ul style="list-style-type: none"> • Continues despite the new law, but some new tools are available • SF programmes provide breadth of fiscal instruments in an organised manner • Planning law now requires identification of brownfields, while some districts and cities have their own local registries • Analytical tools and abilities still missing, though some analytic and prioritising techniques are contained in the SF programmes • Still missing
Broader market milieu 2002 <ul style="list-style-type: none"> • A vibrant expanding market • Local public sector finance (for the less prime and heavily damaged sites, to match private sector or EU funding) • Greater restrictions needed on the ready availability of greenfield sites 	Broader market milieu 2009 <ul style="list-style-type: none"> • Current international economic crisis hampers uptake of brownfields, but SF provides assistance • Czech communities co-finance structural funds projects as low as only 7.5%, an additional 7.5% co-financing comes from the Czech state, and the remaining 85% from the EU grant • Projects generating an income or having a non-allowable expenditure are co-financed by different principles; the majority of Czech communities have no problem with co-financing SF projects • Some restrictions to greenfield development are contained in the new planning law and mainly in the new National Spatial Policy, though greenfield development still presents a powerful substitute for brownfield redevelopment

a useful technical consultant and supervisor for site clean-up, and a first point of recourse for sites posing a substantial environmental risk. The Ministry of Regional Development, traditionally charged with the formation of national-level planning, with the re-formation of a regional level of administration, and with links to the technical training of local administration, was well positioned to be concerned with a national strategy on brownfields, or with the training of local authorities to inventory and assess their brownfield holdings. The Ministry of Trade and Industry itself, which had long been responsible for the environmental rehabilitation of depleted mineral extraction sites, was also a repository of

important experience and initiative. CzechInvest, the government investment promotion agency under the responsibility of the Ministry of Trade and Industry, was at that point charged with developing and promoting sites, primarily for foreign investors. Recurring questions from these investors regarding urban sites prompted CzechInvest to develop brownfield awareness and skills.

As it turned out, the institution that did assume brownfield leadership over much of the decade was CzechInvest, in large part because it was positioned to receive comprehensive technical assistance in English at a critical juncture. Initially, CzechInvest seemed a workable, even natural leader for brownfield work, as it was assumed that most brownfields

were of industrial origins and destined for industrial futures. However, it became clear (in part, ironically, through an inventory assembled by CzechInvest consultants) that most brownfields are not of industrial origin, and that much of the challenge of these lay not in retooling these properties for continued industrial use, but in rethinking their use in broader spatial, social and often urban contexts. Indeed, in urban properties, the challenge lies primarily in changing obsolete industrial zoning to match new emerging societal needs. In addition, CzechInvest's ambition of becoming a national brownfield support agency, which would acquire and remediate land which is then offered back to the market, impinges on a role jealously guarded by increasingly powerful regional authorities and some of the larger cities (a role that ROPs would or could allow them).

These conflicts in mandate and authority have stalemated progress over the last four years. Operating in a leadership vacuum, various ministries and agencies at the national and regional level have been able to 'do their own thing' and to approve various initiatives using structural funds to implement them. For example, the Ministry of Environment (MZP) began to form and obtain EU funding for its own 'greening brownfields' programmes as early as 2005, reflecting its own competencies: removal of environmental damages; protection of nature and the countryside; and urban landscaping.

Symptomatically, the National Brownfields Strategy — a document long cultivated by CzechInvest — was not approved by the government. While this proposed strategy was strong on monitoring, education and support of brownfield owners, it was produced without broad stakeholder input, did not consider broader spatial and urban issues,

and ignored the growing independence of Czech communities and regions. Its narrow focus emphasised the sensibilities of a single institution and an earlier stage of brownfield thinking, rather than a widening range of actors and the growing awareness that what was needed was a broader national Urban Strategy, integrating brownfields regeneration into a larger conception of urban regeneration. Clearly, changing times and a broader framing of the brownfield issue has reopened the question of national brownfield leadership, this time framed within the larger task of coordinating spatial and urban strategies.

National level inventories

Another intriguing set of challenges revolves around the inventorying of brownfields as an input into spatial and strategic planning. An initial survey estimated the existence of about 10,000 ($\pm 2,500$) sites nationally, and a subsequent survey by CzechInvest and 13 Czech regions focused on the larger sites (above 2 hectares or including a building over 500 square metres), yielding data on just over 2,000 sites, which were the basis of the structural funds sponsored programme 'Brownfields 3000', designed to set up frameworks and systems to accelerate industrial brownfield reuse by the market. In addition, some of the regions and larger cities began to compile their own more detailed inventories which went beyond that of CzechInvest, though these lacked competent national coordination and a common methodology, making the data incompatible. It is the Czech regional authorities who are most in need of brownfield data for preparing their development strategies, for compiling planning documents and policies, and to be able to use the brownfield priorities in structural funding properly.

As initial inventories began to emerge, so did a new set of problems surrounding the release and use of the data. In particular, listing in such an inventory might stigmatise a property, raising the questions of who might authorise such listings, and on what basis and to whom the data would be accessible. For example, initially the owners of only 130 properties in the large and costly CzechInvest survey agreed to publish details regarding their sites.

The new (2006) Planning and Construction Law requires the identification of brownfields (under the less damning terminology of 'land suitable for reuse') as one item (Item 4) of the 120 land use data items in the compilation of GIS layers for a new nationwide planning support system. The fact that this listing is a legal requirement may help to overcome the reluctance to list a property as a brownfield. The requirement for brownfield data collection falls on the Czech local authorities (6,260 in number), to be done by a qualified planner. Selected local authorities are also required to identify and map all 'development problems' and publish these on the Internet, to enable public access. 'Item 4' is one of the elements that can trigger the publicly available listing of brownfields as a development problem.

Various improvements are still needed on this inventorying as part of the new Planning Law. The category of 'land suitable for reuse' needs to be differentiated into categories, since it lumps brownfield with other kinds of properties, and a workable definition of brownfields needs to be given, including the minimal size that is considered for inclusion. Ideally, qualitative information can be added to the sheer listing in the GIS record, eg a photo, an assessment of the owner's ability to improve the property, and a rough evaluation of the

likelihood for market uptake of an improved property. Special training on these criteria and additional attributes needs to be provided to the planners who certify the brownfield category, to avoid subjectivity and inconsistency in classification and get the most out of the survey process. Finally, a way must be found to ensure the timeliness of data, as the two year review that the law currently requires appears to be a very costly process.

CONCLUSIONS AND LESSONS

The 'long view' offered above of the Czech brownfield experience over the 20 years since the transition began in 1989 allows one to discern the contours of the myriad changes, large and small, which must occur in order for cities to take on a major integrative urban issue such as brownfield reuse. These contours may have lessons for other countries (especially transitional countries) that are earlier in the brownfield awareness and management spectrum.

For example, the Baltic states are only now moving beyond the 'labelling' stage of contending with the brownfields issue, and are drawing on lateral transfer of Czech expertise in creating brownfields training and handbooks as part of the EU-funded Brownfields in the Baltic States (BRIBAST) project.⁸ Hopefully, the process there and elsewhere can be accelerated somewhat by exposure to the experience of others, though some institutional shifts take time, no matter what.

The lessons and dynamic of the brownfields experience may also map onto other complex integrative urban questions. The Czech case saw a move from non-recognition to labelling of the issue, and then a gradual maturation of conceptions, institutional capacities, policies, legal frameworks and financing

instruments. The latter phase took a full decade. The conceptions shifted from regarding brownfields as an issue of industrial contamination to realising the complex socio-economic and strategic planning challenge involved with engaging a broad coalition of sectoral actors at the national level as well as the local communities and the owners. All are needed in order to mobilise a property from dereliction to renewed functioning in an urban fabric. Thus, there was an unfolding realisation that pollution is only a small though important aspect of brownfields and, then, that brownfields are only a small but important part of sustainable spatial and urban development.

The maturation of brownfield thinking took place in the context of a maturing real estate market. Early development met the short-term needs of the market, was mostly mono-functional and privately led, largely on greenfield land, and poorly conceptualised as part of the larger urban context. The situation now is different: municipalities have become more demanding in what they encourage and approve; competition has led to a more thoughtful approach; public-private partnerships are growing in scale and sophistication; and, since short term needs have been met, investors are thinking about a more mature suite of projects. At the same time (and barring the deepened effects of the recession), attention has shifted from prime to non-prime sites and, as Prague real estate yields drop, regional towns are becoming investable. Still, hazardous rural sites remain which the market is unlikely to take up for a very long time, and other specialised forms of assistance need to be directed there.

Foreign technical assistance played a constant and critical role throughout, and across a range of skills. The UK Know-How Fund provided initial

strategic planning knowledge to the City of Prague in 1994. The Food and Agriculture Organisation offered expertise related to land ownership and land consolidation techniques in 1996. Technical assistance from the EU further supported cadastral digitalisation, the implementation of land consolidation and the management of unused agricultural land. In 1996, the US Environmental Protection Agency offered expertise that resulted in a national methodology for dealing with land-related pollution and its removal. The American Rockefeller Brothers Foundation sponsored a cross-cutting 'smart growth' project which included an explicit brownfields component, as did the Lincoln Institute, while the Dutch Agora group gave expertise related to public participation in planning. An EU adviser was seconded to the Czech Ministry of Regional Development, as well as similar arrangements with other ministries, while CzechInvest received exceptionally extensive technical assistance. And, of course, Czech academics began to be immersed in some state-of-the-art planning issues through participation in EU research projects.

While not always familiar with the intricacies and local sophistications of the Czech planning legacy, this constant and renewed trickle of expertise and support was critical, leveraging conceptual shifts as well as supporting local change agents. In addition to technical support, the financial support of the structural funds was critical in mobilising change, and even the prospect of small amounts of external support galvanised the cooperation of brownfield property owners. Thus, there is a place for financing soft measures in the early stages of support of an issue, and for very carefully focused 'hard' measures later.

For the government sector, the lessons

relate to the importance and difficulty of achieving vertical and lateral integration; of clarity regarding who leads and who does what at the national level; and of an issue becoming visible on the overcrowded national ‘priority list’ in order for things to really move. Private sector engagement and the state of the real estate market are also critical, as brownfields will not move if there is no market to absorb them. And without know-how and sophistication on the part of all actors — owners, developers, government officials at local, regional and national levels — and the ability to form partnerships among them, brownfield projects will falter. Here there is a great challenge in overcoming language barriers which prevent the transfer of international expertise to more peripheral locations, and of building up the next generation of expertise linking brownfields to a spectrum of land management issues.

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Notes and References

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