

Managing change: lessons learned in case studies on revitalising old industrial sites in European cities

Tanja TÖTZER and Ute GIGLER

(DI Tanja Tötzer, ARC systems research GmbH, Regional Studies, A-2444 Seibersdorf, tanja.toetzer@arcs.ac.at;

Ute Gigler, MUP, ARC systems research GmbH, Environmental Planning, A-2444 Seibersdorf, ute.gigler@arcs.ac.at)

ABSTRACT

Due to global economic change, European cities have to deal with a transition from ‘centres of production’ to ‘centres of services’. Managing this transition poses an immense challenge to cities and in particular to old industrial cities. This translates to a reconfiguration of the social and physical landscape, because traditional industries disappear leaving unemployment and derelict sites in the midst of cities.

In the course of the EU-project MASURIN (Management of Sustainable Revitalisation of Urban Industrial Sites), our research team conducted six in-depth case studies on former industrial sites in Gothenburg (S), Liverpool (UK), Lisbon (P), Berlin (D), Steyr (A) and Barcelona (ES), collected environmental, social and economic data and analysed the management process in each case. This paper critically analyses the impacts of change and the management of change in two cases studies, namely ‘Am Borsigturm’ in Berlin/Germany and ‘Speke Garston’ in Liverpool/United Kingdom. The two case studies exemplify that revitalisation processes differ from case to case and significantly depend on the political and administrative framework, funding mechanisms and the ability of stakeholders to co-operate effectively. However, even though each city chose a slightly different redevelopment approach, certain key factors and approaches need to be in place that allow cities to react to changes and to redevelop old industrial sites in a successful and sustainable manner.

The second part of the paper deals with lessons learned in all six case studies. The cases illustrate that in complex systems such as cities local circumstances, stakeholders’ views and the types of organisations involved play a major role. Thus, open communication, learning throughout the process, trust, and close coordination among private and public stakeholders are essential factors in a successful revitalisation process. Several stakeholders emphasised the importance of remaining flexible in an ever changing market and adapting to the circumstances as they arise. Following a vision and a concept helps to give the process continuity and orientation, whereas rigid masterplans and over-regulation compromise flexibility and an adaptive response to changes. In the long run, the creation of resilient neighbourhoods and a sustainable urban form are necessary. Remaining flexible and adaptive throughout the redevelopment process and creating mixed use sites that are successful for the long term within a functioning public-private partnership framework are some of the major lessons learned in revitalisation processes and are basic requirements for cities in managing change.

1 INTRODUCTION

Cities are constantly affected by change and need to find effective mechanisms to deal with social, economic and environmental change. More specifically, many old industrial cities in Europe are left with former industrial and now abandoned, derelict and often contaminated urban sites in their midst. Stakeholders in urban areas need to tackle all issues critical on such a site simultaneously in order to improve environmental conditions, attract companies and create jobs. Our research team conducted six in-depth case studies on former industrial inner-city sites in European cities and scrutinized the mechanisms which lead to a successful revitalisation.

The urban system has been profoundly affected by the changes about which all geographers write: the increasing globalization of the world; and the informationalization of the economy, the progressive shift of advanced economies from goods production to information handling, whereby the great majority of the workforce no longer deal with material outputs (Hall 2003). For many European cities with old industrial sites, the transition from ‘centres of production’ to ‘centres of services’ had and in many cases still has a tremendous impact on a city’s image, labour force and the spatial and socio-economic framework. Traditional industries have become obsolete or moved to suburban regions or countries with less expensive labour costs. As is demonstrated by our case studies, cities have to cope with the consequences of those changes such as social decay, joblessness and environmental contamination. Old industrial sites often lie on prime real estate in the core of a city and cities could derive multiple benefits from reusing those sites such as recycling and decontaminating land, reducing greenfield development and offering attractive jobs in city centres (Collaton and Bartsch 1996, Koll-Schretzenmayr 1999, Tomerius 2000). However, revitalising derelict inner city sites represents a major challenge for a city and is afflicted with many uncertainties and unknowns. Thus, a number of important questions arise: how should we deal with uncertainties in planning? Which management approaches and instruments should be chosen and how can sustainable and long-lasting change be achieved in highly complex and long-term redevelopment projects?

In this paper, we critically analyse and describe two case studies of Berlin ‘Am Borsigturm’, Germany and Liverpool ‘Speke Garston’, United Kingdom highlighting the impacts of a changing economy on labour markets and its socio-economic, political and environmental consequences. We then analyse how the cities dealt with uncertainties and change emphasising successful management approaches, the role of partnerships in a multi-stakeholder setting and the need to involve the public and the private sector. Lessons learned in the section that follows draw attention to key similarities and success factors found in all six case studies such as flexibility, adaptability and the capacity to co-operate which enables cities to create long-lasting and positive change.

2 METHODOLOGY

The research team chose the case study analysis, because it enabled the team to conduct an in-depth comparative analysis of six different revitalisation examples. The case study method applied provided a scientific approach for integrating quantitative and qualitative knowledge (Scholz and Tietje 2002). Case study research does not primarily aim to discover a universal, generalisable truth, but to explore, understand and describe complex, contemporary phenomena such as revitalisation processes on inner-city sites. The initiation and the process of a revitalisation project strongly depend on setting and context. A case study allows an investigation

of a phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident (Yin 2002). Even though universal rules cannot be derived from case studies, contextual analyses, extensive data collecting and interviews allow a systematic way of looking at each case and enable researchers to learn about mechanisms which may be valid under similar circumstances. In order to achieve valuable and reliable results, certain principles have to be regarded.

At the beginning of the analysis, the most important steps were to determine research questions and to select suitable and representative cases. A list of criteria was generated, which allowed the research team to separate relevant cases from those that were not suitable. In this initial screening phase, most cases could not be accepted for further analysis, because one criterion required some industrial reuse of the site. However, typical production-oriented industrial uses are rare and usually make up only a small fraction of all uses on a given site. Once the cases were selected, appropriate contact persons who also had time and resources to share information with the research team had to be found. The research team then developed a standardised ‘data needs’ sheet, which is particularly essential in analyses of multiple case studies. The data needs sheet fulfilled a two-fold function: first, it served as a guiding document for the interview process and was sent to interview partners prior to the interviews. Secondly, it presented a necessary framework to organise the evaluation, analysis and description of the cases.

In order to improve validity and reliability of case studies, Yin (1994) proposes to use multiple sources of evidence, to establish a chain of evidence, and to have a draft case study report reviewed by key informants (cited in: Tellis 1997). The research team conducted literature searches, collected data from various sources and conducted on site-visits and interviews with different key individuals (from the private and public sector). The most valuable source of information were the interviews with 3-7 individuals per case study, which made a total of 30 interviewed persons. Interviewees included project managers at developer firms, a director and planners and engineers at city administrations, managers of regional and local agencies and organisations, a public relations manager and researchers. Each interview was recorded on tape and conducted by two researchers. This allowed researchers to jointly review interview results and thus enhanced reliability and robustness of the conclusions drawn from the case studies.

Multiple cases strengthen results and increase confidence in the robustness of the theory (Tellis 1997). Conducting six different case studies helped researchers derive certain similarities and patterns as to how cities deal with change exemplified through revitalisation projects. Studying and comparing different cases provided the research team with in-depth knowledge about revitalisation processes, best practices and lessons learned. At the end of the case study analysis all interviewees were asked to review and comment on the draft version of the research results. This feedback helped improve the quality and reliability of the study.

3 TWO CASE STUDIES

3.1 Case study ‘Am Borsigturm’ in Berlin/Germany

3.1.1 Impact of change

The 15 ha site ‘Am Borsigturm’ lies in the North-western part of Berlin/Germany in the district Reinickendorf (see figure 1). Since the 1830s, this site has been used for industrial production such as locomotives produced by the famous entrepreneur family Borsig. 100 years ago, the Borsig company was a symbol for economic growth in Berlin. More than 14,000 locomotives were produced in the factories on the site and exported to the whole world (Birk and Engel 2000). In the early 1920s the first high-rise building of Berlin was erected and named the “Borsigturm”. To this day, it remained the landmark of the site.

For economic reasons, production of locomotives in Tegel stopped in 1930, but other industrial activities on the site continued. Due to economic change, production on the site declined little by little. Only a few new companies moved there and by that time large parts of the site had already deteriorated. After the fall of the Berlin Wall, rapid structural changes took place. Berlin had been an enclave in the middle of the GDR (German Democratic Republic). This meant protection and support for companies which were willing to stay in West-Berlin, but it also restricted the potential for further development. After reunification, companies and investors were expecting a booming market in Berlin. Although the site ‘Am Borsigturm’ was a contaminated industrial brownfield at the beginning of the 1990s (see figure 2), it also was a site with high development potential: it was a famous, well-known site embedded into the urban fabric with an excellent location next to highways, railways and underground transportation.

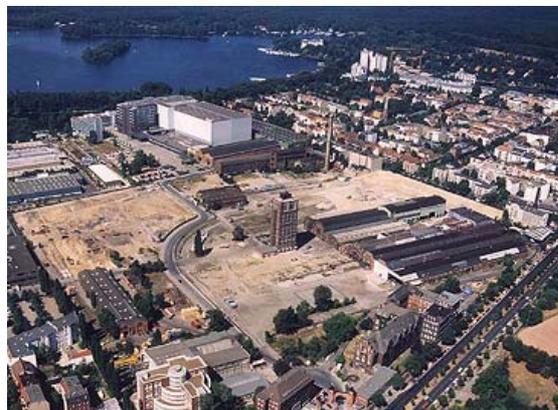
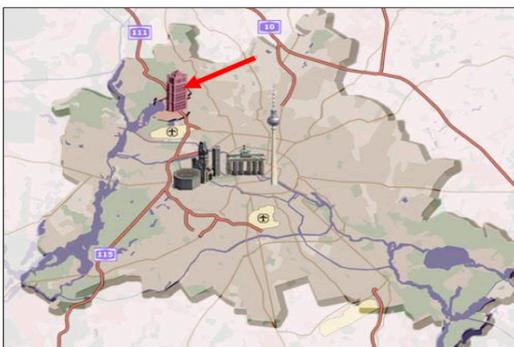


Figure 1: Location of the site ‘Am Borsigturm’,

Figure 2: Site ‘Am Borsigturm’ in 1992, Birk and Engel, 2000

<http://www.am-borsigturm.de>

The impact of change was dramatic. In the span of a few years, industry had to adapt to completely new market conditions. Due to speculation, land prices rose rapidly which forced industries and residents to leave the city and move to the suburban region. Derelict sites remained, and large investors and companies failed to appear.

Physical/Environmental impact

The site 'Am Borsigturm' is situated in an excellent location: near the Tegeler Lake and with direct access to highway, railway and metro. As a derelict site, it had negative effects on neighbouring areas. The site was not accessible for residents and was an eyesore for the whole district. Due to its former industrial use, the site was partly contaminated and represented a long-term environmental risk.

Impact on image

The loss of companies and population also means a loss of image for the city. After the city's borders were opened, industries and residents moved from the city to the suburban region of Berlin. Between 1993 and 2000 Berlin lost 93,000 of its residents. Now the population stabilised. Image is an important factor in the severe competition on a global market. International investors can choose between several cities, which have the image to be "global cities" (Sassen 1996). If sites deteriorate and companies and residents move away, cities become unattractive for global players on the market. For Berlin as the new capital of a reunited Germany, the image of the city was crucial for attracting investors and new companies.

3.1.2 How did the city deal with change?

In 1992, Herlitz AG succeeded in the competition for the site 'Am Borsigturm' and bought the site expecting a high profit. It founded Herlitz Falkenhöh AG (later RSE Projektmanagement AG) as a subsidiary to develop the site. Due to rising prices on the land market, the Berlin Senate decided to develop a concept, which was supposed to help stabilise land prices for industrial land and thus maintain industry within city borders. In November 1992, the site became part of this initiative called ISK (Industrieflächensicherungskonzept), which meant a restriction to industrial use only. Further barriers for the developer RSE were: preservation of historic buildings, uncertainty in the degree of contamination afflicting the site, environmental requirements, zoning, integration into neighbouring uses and the general economic situation in Berlin. RSE embarked on a strategy to develop the site in intensive co-operation with the City of Berlin, which was essential for successfully implementing the revitalisation concept. The transformation of the derelict site into a modern attractive location was only possible with the approval and support of the public administration. Additionally, neighbouring areas which had to be considered in a holistic concept for transformation belonged to the city of Berlin. Thus, an intensive public-private-partnership between RSE and the city of Berlin was a crucial precondition for a successful revitalisation.

Besides the need for co-ordination with the public administration, RSE was highly dependent on the market and the demands of potential investors. To fulfil the needs of the market and of the city, a mixed use concept was chosen. In the meantime, the ISK-concept was revised and the restriction to exclusive industrial use was lifted: uses were broadened to include production-oriented services. The concept at one time had been successful in stabilising land prices for industrial land, but it also became evident, that it did not take into account actual market needs and thus was no longer appropriate to satisfy current needs. The city of Berlin realised that it made no sense to conserve the prior conditions and adapted its strategies and plans to the changes. The changed economic situation was also an important issue in the discussions and negotiations between RSE and the city. The central question for the city was: How does manufacturing change in the city and how should the city react to economic changes (Birk and Engel 2000)? The revitalisation concept was adapted to modern requirements of light industry and production-oriented services.

To realise the vision of a mixed use site, the area had to be opened to the population. The site was to be reintegrated into the urban fabric, but without neglecting its industrial history. Refurbished historic buildings became the brand of the site (see figure 3). The revitalisation of the site was a process, where the direction was clear but the approach as to how to realise the vision was uncertain. Many sceptics also doubted whether the process would be successful. Shop-owners of neighbouring streets were afraid of the competition with large shopping facilities on the revitalised site. Thus, surveys, demand analyses and architectural competitions were conducted before deciding on the ultimate mix of uses on the site. In the end, the following uses were realised: residential (206 flats), shopping ("Hallen am Borsigturm"), a health care centre, recreational and leisure facilities, restaurants etc. The high quality architecture substantially improved the image of the site and was honoured with special awards for excellent refurbishment.



Figure 3: Aerial view of the site 'Am Borsigturm' during revitalisation process, Birk and Engel, 2000

In 2003, the revitalisation process was approximately 80% complete. The site was cleaned-up, the quality of open space has improved, and historic buildings were preserved and adapted to new needs. 'Am Borsigturm' became a truly mixed use site and a new economic centre of north-western Berlin.

3.2 Case study of 'Speke Garston', Liverpool, United Kingdom

3.2.1 Impact of change

The city of Liverpool had several run-down and derelict neighbourhoods with high unemployment rates and a lack of job opportunities. Speke Garston, the case study site, was one of the hardest hit areas situated in the south of Liverpool with poverty, unemployment around 23% and few opportunities for locals to obtain jobs (<http://www.sgp.org.uk/sgp.htm> 2004). The site has a population of 23,400 and encompasses industrial, residential and commercial areas as well as green space, sports and leisure facilities. Accessibility to the site is excellent; several bus lines, rail lines, and national motorways connect the site with the rest of the city and surrounding areas (see figure 4). The Port of Garston is nearby and the Liverpool Airport is also located adjacent to the site.



Figure 4: Speke Garston the Liverpool Region, Speke Garston Development Company, 2002a

Brief historical background

Conditions in Speke Garston are the result of major ups and downs in the economy over a span of decades despite a long succession of attempts to regenerate derelict neighbourhoods in Liverpool (Meegan 2004, Ireland, oral comm., 2003). The city has a long history of having to deal with substantial economic and social change. At the turn of the 20th century, the city was known as a regional and national port and trading city and was at the peak of its economic power. As global trade closed down during the inter-war years, the city's economic stronghold began to crumble because global trade came to a halt (Misselwitz 2004). A recession with high unemployment followed that was counteracted by land purchase programmes to enable industrial development on the outskirts of the city. Housing relocation programmes to new towns such as Speke Garston at the periphery were supposed to clear slum housing and improve housing conditions after the Second World War (Misselwitz 2004). Neither of these measures succeeded in helping Liverpool achieve its former economic glory. In the 1960s, a national relocation programme for national and multi-national corporations moved a lot of companies to Liverpool, created jobs and helped alleviate poverty (Misselwitz 2004). However, this second wind only lasted a decade when the social and housing problems created through relocation to the outskirts and a major die-out of local businesses in the city centre combined with a general economic downturn in Britain initiated the next major wave of decline. The city of Liverpool lost half of its population since the 1930s. Between 1978 and 1991, 37% of jobs disappeared in Liverpool despite numerous urban policy initiatives to reverse the decline (Meegan 2004).

Socio-economic impacts

The general economic downturn in Liverpool also affected Speke Garston, because many companies abandoned the site and moved operations overseas or elsewhere in the region. New firms could not be attracted because of the area's poor image and lack of job skills in the local population. Without a major upgrade of the Liverpool airport, companies exhibited no interest in locating in Speke Garston (Green, oral comm., 2003). Extremely high unemployment rates and high crime coupled with a work force that to a large extent either had no skills at all or needed to be retrained represented an insurmountable hurdle to agencies responsible (Spencer, oral comm., 2003).

Physical and environmental impacts

High unemployment rates in the local population over decades also affected the area physically. Neither the city nor owners of houses or apartments were capable of investing in upgrading the housing stock or keeping the area from deteriorating further. The city was unable to invest in infrastructure improvements, maintaining green space or offering good public transport to the local population. Clean-up of contaminated sites from industry (e.g. tanning operations) that had left the site was equally impossible due to lack of funds.

3.2.2 How did the city deal with change?

The above brief chronology of how change affected Liverpool exemplifies what the city and its population has had to endure in the last century. It also illustrates that numerous attempts made up until the early 1990s to respond to change such that neighbourhoods

and the city as a whole can regain their former economic power proved fruitless in the long run (Meegan 2004). In 1993 Liverpool received Objective 1 status as one of the poorest areas in the European Union with only 75% of average EU GDP. At that point, the City of Liverpool together with a national agency called English Partnership, responsible for promoting regeneration projects across England submitted a successful bid for UK and EU Objective 1 funding to support the establishment of a regeneration agency called Speke Garston Development Company (SGDC) in 1993 (Ireland, oral comm., 2003).

Holistic management approach

This influx of money enabled the subsequent establishment of a joint venture developer firm, limited by shares that would be responsible for upgrading the physical environment including infrastructure, road corridors and other common areas. That in turn would allow the company to engage in its second major task which was to promote Speke Garston's strategic sites to attract large-scale investments to Liverpool (Speke Garston Development Company 2002a). The new regeneration developer company and its partner agencies knew that simply attempting to redevelop the site without simultaneously tackling high unemployment rates and poor housing conditions in the area would prove as insufficient as all other one-dimensional approaches in the past. This time, they wanted to design a holistic approach capable of creating long-term positive change for the area that would attract companies to Speke Garston, reduce unemployment through training and empowerment initiatives and improve the housing stock (Speke Garston Development Company 2002a).

Therefore, a consortium of project promoters including the City of Liverpool helped establish two additional organisations, the Speke Garston Partnership (1995) and South Liverpool Housing (1999) funded through EU Objective 1 money and EU and national funds respectively. The Speke Garston Partnership (SGP) is in charge of establishing training and education programmes. They also address issues such as community safety, childcare and health thereby empowering the local population (<http://www.sgp.org.uk/sgp.htm>, 2004). South Liverpool Housing (SLH) is responsible for managing and upgrading 3,700 homes and for creating a safe and people-friendly environment (<http://www.slhgroup.co.uk/>).

Revitalisation Status

All three organisations in charge emphasised that this holistic and integrative management approach proved to be the right combination to create real and long-lasting change for the better. SGDC attracted large pharmaceutical and automotive companies such as a Jaguar production plant, numerous SMEs including suppliers and retail firms to the New Mersey Shopping Park (see figure 5) (Speke Garston Development Company 2002b). They also restored several historic buildings and created e.g. a business village out of the former Bryant & May match factory. The airport of Liverpool was privatised and Objective 1 funding helped convert and rebuild it. Liverpool is moving up the league table of U.K. airports and today is one of the fastest growing in Europe (http://www.liverpooljohnlennonairport.com/about_us/index.html?history). In total, the company improved 192 hectares of land (Speke Garston Development Company 2002a) and planned to create 278,000 m² of new industrial and commercial accommodation and 9,300 full-time jobs. The Speke Garston Partnership created two very successful education and training programmes to enhance employability of locals and reduce unemployment figures. The two programmes called JET (Jobs, Education, Training) and Partnership for Learning helped 4,000 people find jobs and trained 16,000 individuals through a diverse range of courses (<http://www.sgp.org.uk/sgp.htm> 2004). SLH has become a very successful and respected housing association that fulfilled all its major objectives such as refurbishing homes and establishing several youth and community initiatives in the first 5 years of the programme.



Figure 5: Speke Garston regeneration area, Speke Garston Development Company, 2002a

In 2003, the revitalisation process is still on-going and will continue for many years to come, although Objective 1 funding will likely end in 2007. According to company officials, they created change through this partnership approach. Unlike project promoters in the past, it was crucial that new partners recognised that successful regeneration takes years to develop and understood that provisions need to be put in place that ensure a successful continuation of a regeneration process so that programmes initiated are finalised or

supported until they are self-sustaining or no longer necessary. Speke Garston is thus well on its way of once again becoming an attractive business location and living environment.

4 MANAGING CHANGE – LESSONS LEARNED

As the description of the two selected case studies demonstrates, a universal recipe for a successful revitalisation process does not exist. History, site conditions, funding mechanisms and regulatory framework fundamentally influence options for redevelopment. However, similarities and principles can be derived from six European case studies.

Although the cases researched turned out to be good practice examples, they revealed risks, pitfalls and challenges that often occur in the course of a revitalisation process:

Financial aspects:

- high costs for clean-up, refurbishment, preservation of historic buildings etc.
- liability issues regarding contamination
- high dependence on funding: on very derelict sites initial funding is essential for starting revitalisation processes.

Concepts and instruments:

- misbelief that “one concept fits all”: instead a concept has to fit to the conditions and framework given in each specific case.
- insufficient integration into the existing urban fabric
- short-sighted and inflexible planning and instruments

Conflicts between public and private interests:

- excessive and rigid zoning and environmental requirements
- bureaucracy
- private profit maximisation neglecting long term sustainable development

Partly, our case studies were also afflicted with some of the risks, pitfalls and challenges mentioned above. But in the course of the revitalisation process that lasted decades the cities and developers managed to overcome those obstacles. Interviewees from different case studies emphasized similar principles, which have to be in place for a successful revitalisation. The following section reports major lessons learned in our study of revitalisation processes in six European cities.

4.1 Vision and leadership

In many cases, revitalisation is a long term process with many ups and downs. For implementation, a vision and a visionary are needed.

First, having a clear vision of the desired goal, which is also communicated to and in the ideal case shared by all stakeholders, is a necessary ingredient to move change in a particular direction (Senge 1990, Wiesbord 1992, Wiesbord and Janoff 1995 in: Costanza 2000). Following a vision does not mean that the process will not be adapted to new circumstances and market conditions, but it helps giving it continuity and orientation. Holding on to a vision makes it easier to communicate a concept and a strategy to different stakeholders and to make them believe in the project. Strong values and a vision are essential components in the sense-making process for management of complex systems (Olsson et al. 2003).

Secondly, visionaries or key leaders are needed who believe in a project’s future success and are willing to move through the cycles of the process (Swiss Federal Office for Spatial Planning 1999). In most of our case studies, developer companies assumed the role of leaders.

In the case of Berlin, the vision of a mixed use site steered the whole revitalisation process. The details of the concept were adapted throughout the process, but the vision remained and was implemented successfully. The developer RSE can be seen as visionary in this case and was supported by other stakeholders such as the city of Berlin. RSE took the risk and believed in a prosperous future of the site ‘Am Borsigturm’. RSE was the key leader of the whole revitalisation process and was fully responsible for the outcome.

4.2 Co-operation and trust

A revitalisation process is also a social process, where stakeholders from the public and private sector with very different interests are involved. Inevitably, conflicts and misunderstandings arise throughout the process when different stakeholders are not satisfied with any part of the revitalisation. The best way to harmonise conflicts between public and private interests and finding a common solution is frequent and open communication and co-operation among all stakeholders. Successful co-operation can also result in public-private partnerships through e.g. clustering of companies and educational institutions on the same site to encourage and foster collaboration.

Balancing varying interests through intensive coordination and collaboration is essential for reaching an accepted and robust outcome and let “win-win-situations” become more likely (Barton 2000). Therefore, trust among the stakeholders involved is a necessary precondition. Trust can develop in situations where all stakeholders openly communicate issues, can rely on each other, share a common vision, and most importantly participate in decision-making. Lack of trust between people on the other hand has proven to be a barrier to the emergence of collaborative arrangements (Baland and Platteau 1998 in: Olsson et al. 2003).

All our case studies illustrate that communication, co-operation and trust between public and private stakeholders are essential for an efficient revitalisation process and a sustainable outcome. In Berlin, all interviewees emphasised that good communication between city authorities and developers was instrumental in implementing the revitalisation successfully. Due to the rapid changes that occurred in Berlin in 1989, a close co-operation between the private and public sector was particularly important and helped all involved adapt to new circumstances more quickly.

4.3 Developer companies

In many cases, developer firms or agencies are in charge of revitalising derelict old industrial sites. Even though the initiative to begin with the revitalisation process often comes from the public sector, executing the actual mandate to revitalise is often placed in the hands of developer firms. Public administrations derive multiple benefits from putting developers in charge of redeveloping sites. In many cases researched the public sector is represented on the board of the developer company. In this role, authorities can exercise control over how the site is to be developed. Developers have to assume full fiscal responsibility for their actions which forces them to be profitable. Some are financed through a mix of public and private funding, others have to finance themselves primarily through the private market. Developers thus find themselves in a challenging role also because they have to strike a balance between public and private interests. Therefore, private developers have to respond to market conditions and work a lot more efficiently and with less bureaucracy than would be the case if e.g. city administrations were in charge of revitalising sites. Because of their position between the private market and public requirements, developers are forced to closely co-operate and collaborate with the public sector as well as many other stakeholders such as companies or investors. Thus, developers often represent the functional link between organisational levels and stimulate the interplay between different stakeholders.

The Speke Garston Development Company in Liverpool represented the centrepiece of the management approach followed in Liverpool. The holistic partnership approach between the developer company (SGDC), an organisation responsible for creating job training initiatives (SGP) and a housing association (SLH) proved to be crucial in the ultimate success of the project (see figure 6). Even though each partner had a clear and well-defined role and needed to implement its separate objectives and report to its respective board of directors, they closely co-operated, exchanged information and relied on each other throughout the process. The developer also cooperated with numerous other important stakeholders such as public agencies at the local, regional and national level in support of the revitalisation process.



Figure 6: Coming Together Sculpture, Speke Garston, Liverpool,
<http://www.leighspaints.co.uk/news/MerseysideSculpture.asp>

4.4 Flexibility in complex processes

Revitalising old industrial sites in the middle of urban areas is a highly complex issue and confronts those responsible with major challenges (Tomerius 2000, Koll-Schretzenmay 1999, Stahl et al. 2001). Additionally, revitalisation is afflicted with many uncertainties, because it is impossible to accurately predict market developments such as the success of particular industries, or housing needs for the long term. The case study of Berlin illustrated the high level of uncertainty the city faced regarding its social and economic future.

Traditional instruments, such as blueprints and command-and-control approaches, have proved to be inappropriate for managing change, because they do not address the complexity and inherent uncertainties of the process (Folke et al. 2002, Adger 2003). Traditional instruments such as masterplans without provisions for modifications attempt to control change and are based on beliefs in linear processes and complete knowledge. *In contrast to a command-and-control approach, management that accepts uncertainty and seeks to build resilience can sustain social-ecological systems, especially during periods of transformation following disturbance* (Folke et al. 2002). As our case studies demonstrate, changes like the shift from production-oriented industries to services have a dramatic impact on cities and cause major disturbances in the previously fairly stable social, economic and spatial patterns. Such periods of change are perceived as crises, but they can also be seen as starting points for renewal. The best way to deal with or even benefit from sudden changes and uncertainties is to remain flexible and adaptive (Carpenter et al. 2001). Thus, policies and tools which try to steer such processes must also be flexible and adaptable. Continuous, feedback-driven reassessment of measures and actions and a comparison of current developments to the vision aimed at are essential.

The Liverpool case study illustrates how a regeneration process can be initiated and implemented successfully despite high uncertainties as to how the market would respond or whether training programmes for locals really would yield skilled workers. The Speke Garston Development Company wrote a very short masterplan that included e.g. clear guidelines of how to handle infrastructure upgrades that would occur at the very beginning of the process. However, it only very roughly specified planned developments for different areas of Speke Garston and left a lot of room for later modifications and detailed planning. They thus acknowledged that years later in the planning process, changes in plans would almost certainly be required in order to achieve the objectives set out at the start of the revitalisation process.

Adaptive management is a very promising approach for managing uncertainties. The instrument was conceived and first applied in the areas of environmental assessment and resource management to develop more effective and more resilient policies (Holling 1978). Gunderson (2000) states that *most policies are really questions masquerading as answers. Since policies are questions, then management actions become treatments in the experimental sense.* This view encapsulates part of the essence of adaptive management. The basis for this approach lies in the recognition that in natural and socio-economic systems as in urban systems, we often face incomplete information, uncertainty, unknowns, and unexpected events (Holling 1978). Nevertheless, we need to deal with uncertainty which requires the use of experiments allowing those involved in the experiments to assess successful and failing approaches (Walters and Holling 1990).

Adaptive management is a feedback-driven learning process (see figure 7) involving diverse stakeholders from different levels. If all stakeholders in a redevelopment process including the public sector demonstrate a level of flexibility and adaptability, the likelihood for succeeding in a very competitive regional and global market increases.



Figure 7: Adaptive Management Cycle
Source: <http://www.fsl.orst.edu/ncama/intro.htm>

Adaptive management is also a useful tool to build resilience in systems facing uncertainty (Folke et al. 2002). The term “resilience” was introduced by C.S. Holling in 1973 to better understand non-linear dynamics of ecosystems (Holling 1973). Today, the concept of resilience is also applied to socio-ecological systems. Resilience of social-ecological systems is determined by the magnitude of perturbations that they can absorb and still retain their overall function; the degree to which the system is capable of self-organisation; and the degree to which capacity can be built for learning and adaptation (www.resalliance.org). More resilient systems are able to cope with a higher level of disturbance and have the capacity necessary to re-organise when change is unavoidable (Quinlan 2003, p.4). Thus, managing for resilience can be an answer to the question of how to deal with change. If resilience and adaptive capacity are improved, vulnerability to change decreases.

5 CONCLUSIONS

Revitalising old, partially or fully abandoned and often derelict and contaminated industrial sites that are located in the middle of urban areas is and will remain an important topic for decades to come. Drivers of change in cities include changes in the global economy, a shift toward more service-oriented industry and a die-out of industrial sectors that have become obsolete. Cities with a high proportion of industrial sites in their midst are thus confronted with having to find ways and means to revitalise those areas, respond to changes and attract a diverse mix of uses to the site.

The two case studies of Berlin and Liverpool amply illustrate the challenges cities face when embarking on regenerating a derelict and contaminated site that also has a very poor image. The developer in close co-operation with the city of Berlin began to restore the site ‘Am Borsigturm’ in Berlin during a very turbulent period just after former East-Berlin was opened to the West. They simultaneously struggled with and benefited from the social and economic changes after the fall of the wall. A loss of jobs in the city in combination with residents moving to suburban areas to seek better opportunities contributed to worsening the situation. On the other hand, Berlin became a prime area for international, national and regional investment as it advanced to become the capital of Germany. The developer thus managed to realise a mixed use concept in only 10 years that resulted in new jobs, a balance of industry and SMEs and an attractive and more resilient neighbourhood popular with many Berlin residents.

The site ‘Speke Garston’ in Liverpool was in desperate condition after decades of economic struggles, high unemployment, high crime rates and numerous failed attempts to improve the situation. The influx of Objective 1 and national funding was the basis for the holistic approach embarked upon in the early 1990s. A developer company handling physical upgrades of the area and attracting new companies, an organisation responsible for establishing job training initiatives for locals and a housing association in charge of improving the housing stock were created to assume primary responsibility in regenerating Speke Garston. In less than 10 years, the three organisations were instrumental in creating long-lasting change. They created thousands of jobs, attracted companies such as

Jaguar and SMEs to the site and substantially improved the physical appearance of the area. The process of adaptive change and regeneration is on-going and will continue for many decades and Speke Garston is bound to become an even more attractive working and living environment in the region.

All six case studies researched demonstrated the risks, uncertainties and challenges of each revitalisation project that need to be overcome and yielded numerous lessons learned in how to manage change in revitalisation processes. Visions and visionaries proved to be essential in guiding long-term revitalisation processes. In any successful regeneration project, stakeholders need to collaborate, co-operate and openly share information and participate in decision-making processes. Flexible and adaptive approaches were shown to yield resilient, diverse and mixed use urban neighbourhoods. Creating effective and long-lasting change is very much a long-term and highly complex process that requires many experts from a variety of organisations to work together collaboratively and in close partnership.

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