The Role of the UK Development Industry in Brownfield Regeneration

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Stage 2 Report


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Executive Summary

Overview

This part of the report (which is Volume 1 of a three-volume, Stage 2 report) presents the literature review and conceptual framework for the research. The report also examines the results from the national UK developer interviews (carried out in 2004-2005); National Land Use Database (NLUD) analysis (1998-2003); and residential planning permission analysis for Salford/Manchester and Barking & Dagenham (2000-2004) using Estates Gazette Interactive (EGi) data and published information.

Why is the research important?

Government policy currently places a strong emphasis on the reuse of brownfield land as part of the sustainable development agenda. Stage 1 of this research highlighted the fact that the UK developer industry was coming to terms with brownfield development, although legislative tensions (at a national and EU level) could pose problems for the future.

Stage 2 of the research investigates developer attitudes in more detail towards the barriers to brownfield redevelopment, and towards sustainability in brownfield development. The research also examines NLUD data to determine the key trends emerging nationally and sub-regionally (in Thames Gateway and Greater Manchester) as a prelude to more detailed case study work in these two areas (see Volume 2). Finally, using residential planning permission data, the research in the current volume also examines some of the key characteristics of the development industry in Thames Gateway and Greater Manchester, and at a local authority level in Salford/Manchester and Barking & Dagenham.
Main findings from analysis (Volume 1)

National developer interviews

- **Delivering more homes.** There is a readiness to support the recommendations from the Barker Review in relation to innovation in the construction process, the streamlining of planning procedures, and delivering homes ‘in tune’ with market preference.

- **Drivers and barriers.** The economic and financial framework is a powerful driver for the development of contaminated brownfield land. Developers are frequently dissuaded from developing on contaminated brownfield sites when the degree of uncertainty exceeds what is deemed viable and ‘risk-tolerable’. This can include complying with regulators and technical difficulties. The recent EU Landfill Directive is an additional risk.

- **Sustainability.** Although the development industry is playing an influential role in the ‘sustainability’ agenda, there is a degree of scepticism over an agreed, industry-wide definition, and this may hinder its implementation. Developers seem to be adopting a proactive approach to defining sustainability on their own terms.

- **Simplifying and integrating policy.** For developers the future of brownfield regeneration seems to rest heavily upon the simplification of government policy, such as the Building Regulations, as well as developers responding to bespoke brownfield legislation, namely the EU Landfill Directive and the Waste Acceptance Criteria.


- **Total supply.** In 2003 there were some 65,750 hectares of Previously Developed Land (PDL) in England that was available for development. Of this, almost one-third of the total stock is identified as ‘vacant’.

- **Hardcore sites.** About one-third of PDL in England is not yet allocated for any specific use. Factors such as poor site conditions, site locations in deprived areas, and market perceptions, may contribute to this.

- **Sub-regional PDL and dereliction.** In 2003, there were some 3,600 hectares of PDL stock in Thames Gateway (TG), and 2,625 hectares in Greater Manchester (GM). A significantly higher amount of PDL in GM is derelict/vacant (73%), compared with TG (41%). This is mainly in private ownership, and dereliction is characterised by larger sites in TG (4.8ha) than GM (3.0ha).

- **Sub-regional housing allocation.** The current stock of brownfield land in the case study areas (as at 2003) is suitable to provide an additional 81,346 homes in TG, over half coming from vacant and derelict PDL, and an additional 39,002 homes in GM, over two-thirds coming from vacant and derelict PDL.

Residential planning permission analysis (2000-2004)

- **Top 100 housebuilders.** This group has been important in residential development in both Salford/Manchester (SM) and Barking & Dagenham (BD) from 2000-2004. Key players in SM have included Gleeson, Countryside Properties, George Wimpey and Bellway Homes, and, more recently, Urban Splash; and in BD, Bellway, Persimmon, Higgins Homes and Abbey Developments.

- **Smaller housebuilders.** This group (including Antler and Clarke Lyon) has been especially important in SM and this may be partly due to the nature and size of available land holdings.

- **Other developers.** Locally-based companies have been important players in both areas (for example Ician Development and Ask Properties in Manchester, and Urban Catalyst in Barking and Dagenham), and housing associations have played a more important role in BD than SM. The successful public-private ventures seen in BD may also be gaining in popularity in SM.

- **Size of permissions.** For the period 2000-2004 the average size of permission was larger in SM (88 units) than in BD (61 units).
Conceptual framework

Reviewing the literature in Stage 1 enabled us to provide an overview of a variety of approaches to ‘conceptualising’ the brownfield regeneration process. It is valuable to structure the research being formulated as a ‘conceptual framework’ that describes in narrative, or visual format, the key factors, constructs and variables under study. It is also the aim of the research to test the validity of the relationships outlined.

Figure 1: Conceptual framework (adapted from POST, 1998, and Shephard and Dixon, 2004)

Therefore, as shown in Figure 1, the three components of our research in Stage 2 focus on three themes, or facets, of sustainable development (or sustainability):

1 Market impacts (the ‘economic’ pillar)

For example:
- How is risk defined, assessed and communicated in the development process?
- How is the economic viability of a scheme measured?
- What is the nature of existing market dysfunction or failure in the immediate development locality and how will the development benefit the area?
- What causes such dysfunction/failure in brownfield areas?
- Is stigma an issue and how can it be measured?
2 Stakeholder engagement (the ‘social’ pillar)

For example:
- How do developers engage with other stakeholders (including national, local and regional government, agencies, remediation consultants, the public) during the brownfield regeneration process?
- What are the drivers, tensions, or frictions which may arise during the brownfield development process?
- What are the developers’ responses and cultures to brownfield regeneration?  

3 Technology adoption (the ‘environmental pillar’)

For example:
- What determines the type of remediation technology used?
- How does the development industry view new, innovative clean-up technologies?
- What is the perception of other stakeholders towards such technologies?
- What determines technology ‘lock-in’ and adoption?
- What is the international experience in remediation?

It should be emphasised that our approach is to analyse the perceptions, attitudes and practice of the development industry in relation to sustainable development on brownfield sites. Therefore the project is not measuring sustainable development as such; rather it is examining to what extent developers are engaging with the sustainable development agenda, and what that agenda comprises for them.

We are also interested in the ‘tensions’ that can arise between these three facets of sustainability in the presence of ‘push’ factors (for example policy and contamination issues) and ‘pull’ factors (for example, profitability issues).  

Finally in our framework, we do not make any assumptions about the inter-relationships between the ‘pillars’. Instead we seek to explore how developers and other stakeholders are engaging with the three components of sustainable development.

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1 We are therefore also very interested in understanding developer ‘cultures’.
2 This is an ‘inductive’ approach.
**National developer interviews**

**Delivering more homes on brownfield land**

Housebuilders seemed to accept the recommendations from the Barker Review concerning the development of strategies to tackle barriers in modern construction methods. Also there was a feeling that brownfield development would benefit from simplifying and speeding up the planning application process by introducing two additional routes to gain planning consent; implementing strategies to achieve end products that are actually ‘in tune’ with market preference would benefit brownfields.

In general, developers welcomed the Barker Review in recognising housing supply problems, as well as providing possible measures to overcome them. However, scepticism was expressed amongst developers as to whether the recommendations from the Review could be taken on board. This was fuelled by concerns about the current regulatory framework; the current state of planning authorities, who were observed as ‘overworked and under-resourced’; the practicality of delivering the recommendations through the ‘top-down’ approach from the national strategy level to the local level; and the potential lack of political will for these recommendations to materialise.

**Delivering development on contaminated land**

The interviews suggested that the developers’ approaches to developing on contaminated land were driven by economic and financial frameworks. In acquiring contaminated land as their potential project sites, developers assess the commercial viability of these sites from an assessment of the market prospects, the practicality in delivering the development and, most importantly, the cost of remediation work. Related to this, the interviews also revealed that the availability of government grants should encourage developers to utilise more brownfield land.

Developers are dissuaded from developing contaminated sites when the degree of uncertainty exceeds the risks they are prepared to take on board. These risks relate to insufficient information on site condition, the nature of contaminants leading to expensive remediation options, the liabilities being too onerous, and the level of uncertainty as to how to comply with treating waste disposal. This latter barrier relates to the EU Land Directive and the recent ruling on the *van der Walle* case, in which the Directive encouraged remediation alternatives to ‘dig and dump’. On the other hand, the *van der Walle* ruling, although not yet affecting the industry, is likely to weigh down efforts for on-site remediation. The lack of a clear definition of ‘waste’ related to these EU frameworks has brought developers deeper into the complexity of the UK’s current legal framework on contaminated land. This could hamper their interest in regenerating contaminated sites.

Post-remediation stigma appears to become more apparent during transactions in which purchasers make legal enquiries. In dealing with this issue, developers prepare information packs on the site history and may deal with direct inquiries. However, they do not feel obliged to do so for inquiries in the secondary market. There is a degree of confidence amongst developers that stigma will not affect the marketability or the end value of their end products, particularly since site clean-up is now done under rigorous regulatory standards.
**Innovation**

Brownfield development seems to have had a limited impact on encouraging innovation in both the development process and products used. The introduction of new techniques appears to relate more to the development industry as a whole and is not brownfield-specific. Nonetheless, the utilisation of existing building techniques that are appropriate to developing previously developed land (PDL) is apparent. Cost effectiveness, related to the speed and quality of build, appears to be central to the developers’ rationale for undertaking brownfield redevelopment.

**Sustainability in the development process**

The interviews show that although the development industry is playing its part in the government sustainability agenda by introducing the concepts into their projects, there is a degree of scepticism over the real definition related to the practical approach, and this may hinder its implementation. Developers’ own interpretations subsequently vary. Motivated by their efforts to comply with sustainability requirements for gaining planning applications, developers frequently concentrate on environmental and social objectives, although there is also a keen focus on the economic sustainability of the scheme, often limited to the end product itself rather than the economic vitality of the surrounding area.

**Government recommendations**

The findings from our survey show government policy related to brownfield regeneration to be complex and often overwhelming, and not well understood by developers. Interviewees expressed concern over changing legislation which, at times, goes against existing brownfield policy. For example, amendments made to parts of the Building Regulations can conflict with other sections. Overall, the clarity of legislation related to brownfield development needs to be improved.

The future of brownfield development in the UK is therefore very much dependent upon whether the industry can adapt to changing policy, such as the EU Landfill Directive, and whether UK brownfield legislation can be simplified. The introduction of more advantageous fiscal incentives, greater public–private sector partnerships and more effective modes of construction, given the perceived skills shortage, will perhaps facilitate and maintain the momentum of brownfield regeneration. The UK development industry may also benefit from looking at international practices in order to address some of the existing barriers. These themes will be explored in future research.

**NLUD analysis (1998-2003)**

**Background**

The National Land Use Database (NLUD) is a collection of local authority information on brownfield sites across England. The wider aim of NLUD is to develop a national database of all land parcels, but the first phase (NLUD-PDL) has been to identify vacant PDL and vacant buildings that would be suitable for re-use and/or redevelopment. NLUD-PDL has ultimately been driven by the production of Urban Capacity Studies. These are a requirement of PPG3 and are used to determine how much additional new housing can be accommodated within existing urban areas

**National level.** In 2003 there were some 65,750 hectares of PDL in England that was available for development. Of this, almost one-third of the total stock is identified as ‘vacant’. About one-third of PDL in England is not yet allocated for any specific
use. Factors such as poor site conditions, site locations in deprived areas, and market perceptions, may contribute to this.

Analysis of NLUD shows that the current stock of brownfield land in England provides the opportunity for some 950,000 additional homes, of which over one-third is contributed from PDL identified as vacant and derelict.

However, as most of the ‘best sites’ of the total stock have been taken up since the implementation of the national target of 60% additional homes built on brownfield land, a slower take-up rate is likely to take place in the near future. Unless measures are taken to enhance the ‘problem sites’ left in the stock, dampened interest towards new housing on brownfield land could hamper the Government’s target of housing provision, as stated in the Sustainable Communities Plan.

**Sub-regional PDL and dereliction.** In 2003, there were some 3,600 hectares of PDL stock in Thames Gateway (TG), and 2,625 hectares in Greater Manchester (GM) (Table 1). A significantly higher amount of PDL in GM is derelict/vacant (73%), compared with TG (41%). This is mainly in private ownership in both areas, although a substantial amount of ownership is unknown in GM, and dereliction is characterised by larger sites in TG (4.8ha) than GM (3.0ha).

**Table 1: Comparison of PDL in Thames Gateway and Greater Manchester (NLUD: 2003)**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Thames Gateway</th>
<th>Greater Manchester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount of brownfield (PDL)</td>
<td>3600ha</td>
<td>2625ha</td>
</tr>
<tr>
<td>Average size of PDL site</td>
<td>3.75ha</td>
<td>1.82ha</td>
</tr>
<tr>
<td>PDL in private ownership</td>
<td>76%</td>
<td>53%</td>
</tr>
<tr>
<td>Derelict/vacant PDL</td>
<td>1479ha</td>
<td>1915ha</td>
</tr>
<tr>
<td>Derelict/vacant PDL as % of all PDL</td>
<td>41%</td>
<td>73%</td>
</tr>
<tr>
<td>Derelict/vacant ownership (private as % total)</td>
<td>79% / 76%</td>
<td>50% / 50%</td>
</tr>
<tr>
<td>Derelict/vacant ownership (Unknown ownership as % total)</td>
<td>4% / 3%</td>
<td>26% / 10%</td>
</tr>
<tr>
<td>Derelict PDL as % of all PDL</td>
<td>12%</td>
<td>46%</td>
</tr>
<tr>
<td>Average size of derelict PDL</td>
<td>4.8ha</td>
<td>3.0ha</td>
</tr>
<tr>
<td>Derelict/vacant since 1998 % of all derelict/vacant</td>
<td>33%</td>
<td>40%</td>
</tr>
<tr>
<td>% of new dwellings built on PDL</td>
<td>81%</td>
<td>84%</td>
</tr>
</tbody>
</table>
Figure 2: Brownfield land as proportion of local authority land area (data: NLUD and National Statistics)
Dereliction is also more widespread in GM, where 'medium term' dereliction is also an issue (see Figure 2). In relative land area terms, in GM on average some 1.5% of the total land area is derelict or vacant PDL (1915ha in total); in TG 0.85% of the total land cover is derelict or vacant (1479ha in total). For England as a whole, the proportion is 0.3% (39,710ha). At a local authority level in Dartford, Newham and Barking within TG, and Manchester, Salford and Bolton within GM, dereliction and vacancy are particularly important issues.

**Sub-regional land use allocation.** NLUD-PDL reveals that the current stock of brownfield derelict and vacant land PDL in the case study areas is suitable to accommodate 81,346 additional homes in TG, of which over half come from vacant and derelict PDL. In GM an additional 39,002 homes may be accommodated in the area, of which over two-thirds comes from vacant and derelict PDL. Historically, more new homes on brownfield land with higher densities have been allocated in TG compared with GM.

NLUD-PDL data also shows that TG has utilised a large proportion of its vacant and derelict PDL stock for proposed housing use, suggesting that, in general, land dereliction has not proved a major hindrance to housing provision in the area.

In GM, the amount of vacant or derelict PDL that has planning permission or is allocated for housing development is relatively modest compared to its actual capacity to accommodate additional homes. This may be due to a dampened market interest, but may also be due to the fact that regeneration efforts in the area are mainly focused on wider revitalisation rather than simply meeting the target of housing provision. However, a key problem is the prevalence of persistent vacant and derelict PDL in this area.

Apart from PDL with proposed housing use, the housing provisions in both case study areas may also come from PDL designated for mixed use incorporating housing components. In TG a substantial amount of new housing units may be generated from such PDL. In contrast, PDL in GM designated for mixed use provides much less opportunity for additional new homes. Overall, the number of housing units likely to be delivered through planning permission and allocation are 58,200 homes in TG and 26,937 homes in GM.
Residential planning permission analysis (2000-2004)

Table 2 summarises the key characteristics emerging from the analysis of residential planning permissions for 2000–2004.

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Total number of permissions</td>
<td>136</td>
<td>33</td>
</tr>
<tr>
<td>Average size of permission</td>
<td>85 units</td>
<td>61 units</td>
</tr>
<tr>
<td>Top 12 housebuilders (Examples)</td>
<td>Wimpey, Westbury, Bellway</td>
<td>Bellway, Persimmon</td>
</tr>
<tr>
<td>Top 100 housebuilders (Examples)</td>
<td>Countryside, Gleeson</td>
<td>Higgins Homes, Abbey Developments</td>
</tr>
<tr>
<td>Smaller housebuilders (Examples)</td>
<td>Antler Homes, Clarke Lyon Ltd</td>
<td>Hollybrook Homes, Grovewood Property Development</td>
</tr>
<tr>
<td>Other developers (Examples)</td>
<td>City properties, Ician Developments, Peel Holdings, Ask Properties, Opal Developments</td>
<td>Cityscape Development Ltd, Urban Catalyst</td>
</tr>
</tbody>
</table>

From our analysis, it can be concluded that:

- In relative terms, Barking and Dagenham has shown an increase in residential planning permissions in recent years, reflecting the high level of developer activity in the area.
- The number of Top 100 housebuilders (in this instance including Top 12) operating within Manchester and Salford, however, was three times greater than in Barking and Dagenham (12 companies and 4 companies respectively).
- The Top 100 housebuilder group (including the Top 12) appear to have been influential in both areas. However, their contributions, based on successful planning applications, may be reducing, although our analysis was constrained by the time period for available data. This may be the result of increased competition from small housebuilders and other property developers, such as commercial developers and housing associations, or simply that earlier permissions granted were larger and are phased over time with further applications planned.
- Smaller housebuilders, that is, those producing less than 31 residential units nationally per annum, appear to have played a consistent role in facilitating development across Manchester and Salford, compared to Barking and Dagenham.

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Table 2: Key characteristics of residential planning permissions

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3 Note, however, that our analysis treats these groups separately.
Dagenham (for example, Devine Homes and Antler Homes have been active in the former area). This may be largely due to the ‘infill’ nature of development opportunities operating in the Manchester case study area.

- Other developers (including commercial developers and those related to joint ventures) are playing a significant role in both case study areas. However, of these contributions, locally based companies played a greater role in facilitating residential development opportunities.

- Housing associations operating in the London Borough of Barking and Dagenham assisted in a greater number of residential schemes compared to those in Manchester. This may relate to a variety of factors, including:
  - Social demographics (large proportions of ethnic minorities) and the requirement for more affordable housing in Barking and Dagenham and the South East.
  - A disparity in national funding allocations to regional and local housing associations, currently favouring the South East.

Public sector involvement through organisations such as English Partnerships and the local authority appears to be greater in Barking and Dagenham. However, in Manchester and Salford, local authorities are beginning to facilitate a greater number of development opportunities, through for example successful large-scale land acquisitions and Compulsory Purchase Orders (CPOs).

**About the research**

In Stage 2 of this research, which is contained within the current reports (three volumes), the focus is on a detailed exploration of the issues surrounding brownfield development through:

- Follow-up interviews with national developers (Volume 1);
- Analysis of NLUD data and EGi residential planning permission data to underpin the sub-regional context (Volume 1);
- Scoping of the sub-regional context in Thames Gateway and Greater Manchester (Volume 2); and
- Case studies and related interviews based around six sites, three in Thames Gateway and three in Greater Manchester (Volume 3).

Volumes 1 and 2 are published at The College of Estate Management, Reading, and Volume 3 through Oxford Brookes University, where the project is now based.

**Acknowledgements**

Our thanks are due to the interviewees in our national survey of developers, who for reasons of confidentiality must remain anonymous.

Our thanks are also due to the National Land Use Database (NLUD) team for their help in assembling the NLUD data for analysis.

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### 1 Introduction

#### 1.1 Background to the SUBR:IM research programme

The Sustainable Urban Brownfields Regeneration: Integrated Management (SUBR:IM) research consortium brings together a diverse range of projects which seek to increase understanding of brownfield regeneration. There are a total of 12 projects in progress at 9 different institutions encompassing both the science and social science issues surrounding brownfield development (see [http://www.subrim.org.uk/](http://www.subrim.org.uk/) for more details).

The overall aim of work package B is to critically examine the dynamics and role of residential and commercial property development in relation to the assessment, remediation and reuse of brownfield land (which may or may not be ‘contaminated’) in the UK.

In particular, the proposed research seeks to:

- **Objective 1:** Scope and systematically review the existing research literature, theoretical frameworks of the development process (set within the sustainable land use agenda), and policy initiatives in order to develop a conceptual framework or model that can be applied to the brownfield development process.

- **Objective 2:** Explore international experience (particularly in Europe and the USA) of brownfield land development to develop further opportunities for constructing alternative approaches in the UK.

- **Objective 3:** Examine and assess the relative influence of the main forces that drive and constrain the brownfield development (residential and commercial) process, including the regulatory and policy framework.

- **Objective 4:** Analyse the role of individual stakeholders (developers/investors, local authorities, scientists, government and other statutory agencies and the general public) in the brownfield development process.

- **Objective 5:** Examine the processes by which risk is defined, assessed and communicated in the development process and the way in which remediation technology ‘diffusion’ and ‘lock-in’ may operate in the development process over time.

- **Objective 6:** Investigate the existence of, and reasons for, any ‘dysfunction’ and ‘dereliction’ in local urban property markets (residential and commercial) in the Thames Gateway and Greater Manchester (using available data such as National Land Use Database (NLUD)).

- **Objective 7:** Assess and analyse the relative importance of ‘stigma’ to different actors in local property markets post clean-up.

- **Objective 8:** Develop a decision-making tool kit, based on key Quality of Life Indicators (and linking with the SUBR:IM Metrics work package), which can be used by strategic policy-makers and project co-ordinators to guide the process by which development actors are encouraged and persuaded to undertake brownfield development projects.

#### 1.2 Summary of Stage 1

Stage 1 of the research was completed in November 2004 (Shephard and Dixon, 2004) and included a review of the relevant literature and a nationwide survey of developers to gather contextual data on approach and attitudes towards brownfield development. This explored issues such as how the industry was approaching...
brownfield development; attitudes towards development on contaminated sites; opinion on current policy and legislation; knowledge and use of different remediation treatments; and the integration of sustainability into the development process.

The survey was sent to just under 1,000 commercial and residential developers in June–July 2004. The main findings are summarised in Box 1.1, but see Shephard and Dixon (2004) for a full description of the results. An overall response rate of 16% was achieved, and it was possible to compare the sample of housebuilders who responded against the industry structure as a check on the robustness of the findings. In terms of number of respondents, the survey was unable to obtain a representative response from the housebuilding industry’s smallest operators (those building up to 30 units a year), but achieved good penetration amongst medium and larger-sized housebuilders, who account for the vast majority of the industry’s output in volume terms. In total, the output of the survey respondents accounts for some 28% of annual housing completions in the UK; consequently the survey represents a valuable snapshot of the industry, bearing in mind the caveat relating to smaller operators.

**Box 1.1 Summary of Stage 1 Results**

- Although commercial developers have a long history of developing on brownfield sites, housebuilding on recycled land is no longer the preserve of specialists but is now widespread throughout the industry.

- Government policy and consequently the availability of suitable land have clearly been the main drivers behind the increase in brownfield development. However, there are also ‘pull factors’ at work, with a significant proportion of developers recognising the opportunity for profitable development.

- Attitudes towards developing on contaminated sites appear to have changed as developers have gained more experience of building on brownfield land. The vast majority of developers (94%) were prepared to undertake development on sites requiring remediation, and over 70% had actually done so over the past 12 months.

- The redevelopment of contaminated sites for residential use could, however, be threatened by the impact of the EU Landfill Directive. Its implementation was likely to dissuade over two-fifths of housebuilders (particularly the smaller operators) from undertaking development on land requiring remedial treatment.

- Following the Directive, commercial developers were less likely to be dissuaded from developing on contaminated sites. They typically had a greater awareness of in-situ remediation techniques compared to most housebuilders and were more likely to have experimented with them. Not surprisingly, of the housebuilders, those building over 2,000 units a year had the greatest experience of using alternatives to ‘dig and dump’.

- Although smaller housebuilders appear as ready to undertake brownfield development as the volume builders, they are generally more wary of developing on contaminated sites. They are less likely than larger companies to have the specialist knowledge or resources to carry the additional risks.

- Indeed, whilst access to independent sources of information on remediation techniques was generally not considered to be a problem by most developers, this was more of an issue amongst smaller housebuilders. This implies that there could be a greater role for government agencies in disseminating and publicising the information that is available.

- On balance, developers were generally positive about integrating ‘sustainability’ considerations into site master-planning, but the adoption of specific standards of environmental performance (eg BREEAM) was less widespread and more common amongst commercial developers.
The survey results show that developers are beginning to consider the potential impacts of climate change in relation to property development, although these tend to be given the most weight where there are accompanying regulations.

1.3 Stage 2 and research design

The survey provided a snapshot of how the development industry was responding to government policy. In Stage 2, which is contained within the current report (two volumes), the focus is on a more detailed exploration of the issues surrounding brownfield development through:

- Follow-up interviews with national developers;
- Scoping of the sub-regional context in Thames Gateway and Greater Manchester;
- Analysis of NLUD data and EGi residential planning permission data to underpin the sub-regional context; and
- Case studies and related interviews based around six sites, three in Thames Gateway and three in Greater Manchester.

The overall research design and how the stages of the research are linked are shown in Table 1.1.

Table 1.1: Research design

<table>
<thead>
<tr>
<th>Stage 1</th>
<th>National</th>
<th>Sub-Regional (Thames Gateway(TG) and Greater Manchester (GM))</th>
<th>Local (Thames Gateway And Greater Manchester)</th>
</tr>
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<tbody>
<tr>
<td>2003-2004</td>
<td>Developer Survey</td>
<td>❑ NLUD Analysis ❑ TG and GM context ❑ EGi Planning Permission Analysis ❑ Interviews</td>
<td>❑ Case Studies and Interviews</td>
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<tr>
<th>Stage 2</th>
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<th>❑ NLUD Analysis</th>
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<td>2004-2005</td>
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<th>Stage 3</th>
<th>Interviews</th>
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<tr>
<td>2005-2006</td>
<td>Interviews</td>
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1.4 The conceptual framework for Stages 2 and 3

1.4.1 Overview
Reviewing the literature in Stage 1 enabled us to provide an overview of a variety of approaches to ‘conceptualising’ the brownfield regeneration process. Miles and Huberman (1994) quoted in Gray (2004) suggest that it is very valuable to structure the research being formulated as a ‘conceptual framework’ that describes, in narrative or visual format, the key factors, constructs and variables under study. It is also the aim of the research to test the validity of the relationships outlined.

Figure 1.1: Conceptual framework (adapted from POST, 1998, and Shephard and Dixon, 2004)

1.4.2 Development of the framework
As the Stage 1 report noted (Shephard and Dixon, 2004: 17-20), there are a variety of generic approaches to conceptualising development in general, which include ‘structure and agency’ and ‘institutional models’. Our favoured model is based partly on the conceptualisation developed by POST (1998), which is shown in modified form in Figure 1.1.

The POST model (1998) is essentially a structure model which identifies the drivers, barriers and risks involved in the policy/regulatory framework surrounding brownfield development. This model is described as a ‘three-way dynamic’ highlighting the relationships between the ‘policy push’ of regeneration and sustainability aims, the ‘development frictions’ in the obstacles and uncertainties faced by developers, and the ‘opportunity pull’ of sustainable communities and investment returns (POST,
Development frictions (the obstacles and uncertainties) are presented in the model from the developer’s viewpoint, although the accompanying commentary acknowledges that negative perceptions of brownfield in the development industry can also be regarded as an obstacle (POST, 1998). The extension of the model below attempts to make the link between the attitudes and perceptions of the stakeholders involved in the process, the drivers and barriers of policy, regulation and institutional ‘rules’, and the eventual outcome. Not all brownfield sites are problematic and in some cases the development frictions will be minimal, allowing development to proceed. Sites where the development frictions are not overcome are likely to become or remain derelict until perceptions or market conditions change and/or public sector intervention succeeds in stimulating development.

The POST model does not attempt to define the inter-relationships between different actors in the development process or to identify resource flows between sectors, but rather to provide a structure within which brownfield regeneration can be analysed either in a generic sense or in relation to a specific locality. It could be regarded as an alternative illustration of Healey’s (1992) ‘rules, resources and ideas’, particularly in terms of how conflicting policies can cause development friction and how uncertainty caused by insufficient data and knowledge can hinder the progress of policy aspirations. The policy framework must seek to minimise development ‘frictions’ if the aims of urban regeneration are to be met.

Similarly, we can overlay our structure on a ‘sustainable development’ framework which highlights the three components of environmental, social and economic sustainability, in what is commonly referred to as a ‘triple bottom line’ approach (Elkington, 1997; 2004). For Adams et al (2004), Elkington’s work reinforced the view that corporations were accountable for their impact on sustainability through the ‘triple bottom line’. This builds on the concept of sustainable development which Brundtland (1987) defined as:

‘Development which meets the needs of the present without sacrificing the ability of future generations to meet their needs.’

As Dresner (2002) notes, ‘sustainable development’ has become a meeting point for environmentalists and developers, but is also a ‘contested’ concept (see also Jacobs, 1992). Dresner (2002) also notes that ‘sustainability’ has a more ‘environmental’ focus than the term ‘sustainable development’, although many use the terms interchangeably, and O’Riordan et al (2001) also note that ‘sustainability’ is the merging of economic enterprise, social well-being and environmental integrity.

O’Riordan et al (2001) and Lutzkendorf and Lorenz (2005) outline two alternative models of sustainable development based on the ‘triple bottom line’ approach first developed by Elkington (1994). In the ‘Three Pillars’ model (Figure 1.2) sustainability is seen as the merging of economic enterprise, social well-being and environmental integrity. In the alternative model, often referred to as the ‘Russian Doll’ model, economic capital is placed at the centre as the basis of wealth creation which drives the development engine (O’Riordan et al, 2001), but at the same time is constrained

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4 Other models of implementation exist; examples include ‘The Natural Step’ and the ‘Five Capital Models’ (see Upstream, 2003).

5 Lutzkendorf and Lorenz (2005) argue surprisingly that the construction industry has been strongly focused on environmental considerations rather than economic considerations, and therefore they place environment at the centre with economic capital at the margin. This is used to justify the rationale for their work that the construction and development industry has frequently ignored the impact of sustainability on property values and returns.
by environmental and social considerations (Figure 1.3). McGregor (2003) argues that the Three Pillars model does not implicitly recognise the environmental limits of growth because the basis is a balancing mechanism which effectively trades off economic growth against the two other pillars. In contrast, for McGregor, the Russian Doll model implies that environmental limits are an important constraining influence on economic growth.

In a policy sense, the UK Government has argued that it is important to ensure a better quality of life through fulfilling four sustainable development objectives concurrently (DETR, 1999), and this approach is founded on the ‘triple bottom line’ approach:

- Social progress which recognises the needs of everyone;
- Effective protection of the environment;
- Prudent use of natural resources; and
- Maintenance of high and stable levels of economic growth and employment.
Given that the second and third objectives can be categorised as ‘environmental’ in their focus, it is clear that the ‘triple bottom line’ approach is frequently a common denominator in intellectual and policy-led approaches to sustainability.

Therefore, as shown in Figure 1.1, the three components of our research in Stage 2 will focus on three themes, or facets, of sustainable development (or sustainability):

1 Market impacts (the ‘economic’ pillar)

For example:
- How is risk defined, assessed and communicated in the development process?
- How is the economic viability of a scheme measured?
- What is the nature of existing market dysfunction or failure in the immediate development locality and how will the development benefit the area?
- What causes such dysfunction/failure in brownfield areas?
- Is stigma an issue and how can it be measured?

2 Stakeholder engagement (the ‘social’ pillar)

For example:
- How do developers engage with other stakeholders (including national, local and regional government, agencies, remediation consultants, the public) during the brownfield regeneration process?
- What are the drivers, tensions or frictions that may arise during the brownfield development process?
- What are the developers’ cultures and responses to brownfield regeneration?

3 Technology adoption (the ‘environmental pillar’)

For example:
- What determines the type of remediation technology used?
- How does the development industry view new clean-up technologies?
- What is the perception of other stakeholders towards such technologies?
- What determines technology ‘lock-in’ and adoption?
- What is the international experience in remediation?

It should be emphasised that our approach is to analyse the perceptions, attitudes and practice of the development industry in relation to sustainable development on brownfield sites. Therefore the project is not measuring sustainable development as such; rather it is examining to what extent developers are engaging with the sustainable development agenda, and what that agenda comprises for them.

We are also interested in the ‘tensions’ that can arise between these three facets of sustainability in the presence of ‘push’ factors (for example policy and contamination

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6 We are therefore also very interested in understanding developer ‘cultures’, which have been explored by Guy, Henneberry and Rowley (2002) in previous work.
issues) and ‘pull’ factors (for example, profitability issues) (see Shephard and Dixon, 2004: 21-22). These themes are explored in more detail in Part 1 of this report.

Finally in our framework, we do not make any assumptions about the inter-relationships between the ‘pillars’. Our conceptual framework is therefore neither ‘overlapped’ nor ‘nested’ (compare with Figures 1.2 and 1.3). Instead it seeks to explore how developers and other stakeholders are engaging with the three components of sustainable development.

1.5 Focus of the Stage 2 research and identification of stakeholders

In terms of focus, Stage 1 included both residential and commercial developers. The focus of our study in Stage 2 continues to be these two groups, but with a stronger emphasis on developers (i.e. housebuilders) in the residential sector (and also including mixed use, where appropriate). This provides a clear distinction from Project Ja in SUBR:IM, which is concentrating on the investment industry, with primarily a commercial focus.

Figure 1.4: Brownfield land stakeholders (adapted/modified from CIRIA, 2001)

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7 This ‘inductive’ approach should be contrasted with the ‘deductive’ approach of Dair and Williams (2005) (see also Williams and Dair, 2005), who developed a conceptual model to assess the pre-determined sustainability of five English brownfield case studies and determine how different stakeholders influence the sustainability of completed brownfield developments. Their model was based on an extensive literature review, and sought to address three related questions:

- What elements of sustainability are rejected, or not considered by stakeholders and why?
- What elements are of sustainability are addressed by stakeholders and why?
- Which stakeholder types are more successful than others in realising their sustainability agendas?

For further discussion see section 4 of this report.
In terms of the key stakeholders, Figure 1.4 shows the main groups on which we are focusing in our case studies. This is based on the groupings adopted in CIRIA (2001). Some brownfield sites are, of course, contaminated, and on those sites developers, practitioners and regulators will also have a keen interest.

The conceptual framework therefore allows us to assess the role of the development industry set against the wider context of sustainability and also enables us to link our work with other projects in the SUBR:IM consortium. Examples of the way in which the links operate are as follows:

- Joint Survey Work with WPI on climate change and brownfields;
- Joint Case Study Work with WPC, D and Ja.

Ultimately in Stage 3 our aim is to also provide a ‘toolkit/best practice’ guide for developers and other stakeholders.

1.6 Format of report

This report (Volume I) is structured as follows:

**Part 1: Background and Context to Stage 2 Research**

- *Chapter 2 Brownfield Regeneration and the UK Sustainability Agenda.* This chapter traces the emergence of sustainable development in government policy and the role of brownfield policy. The evolution of the Sustainable Communities Plan is also traced.

- *Chapter 3 Sustainable Brownfield Regeneration: UK Developer Cultures and Responses to the Sustainability Agenda.* This chapter examines the response of the development industry to the sustainable development agenda and the attitudes and cultural responses of developers through previous research.

- *Chapter 4 Brownfield Regeneration: Scoping the Triple Bottom Line Model.* This chapter analyses the ‘triple bottom line’ approach, focusing on how economic, environmental and social sustainability may be defined.

**Part 2: National Developer Interviews**

- *Chapter 5 National Developer Interviews.* This chapter presents the findings from the national developer interviews conducted during late 2004 and early 2005.

**Part 3: Contextual Analysis for Case Studies**

- *Chapter 6 National Land Use Database Analysis (NLUD).* This chapter provides a detailed analysis of brownfield land in England, focusing on the two main case study areas of Thames Gateway and Greater Manchester, using NLUD.

- *Chapter 7 Residential Planning Permission Analysis.* This chapter highlights the main developers operating in the case study areas and analyses residential planning permissions (using Estates Gazette Interactive (EGi) data from 2000-2004) to compare the nature and extent of residential development in both areas.

Volume 2 of the research provides further information on the sub-regional context of Thames Gateway and Greater Manchester and Volume 3 covers the six case studies and highlights the main themes emerging from the interviews.
Part 1: Background and Context to Stage 2 Research
2 Brownfield Regeneration and the UK Sustainability Policy

Agenda

2.1 Introduction
This chapter traces the emergence of sustainable development in government policy and the role of brownfield policy in the UK. The evolution of the Sustainable Communities Plan is also analysed. A brief statistical overview of the brownfield issue in England is provided, together with an overview of the main barriers to brownfield development.

2.2 The emergence of sustainable development in UK government policy

The term ‘sustainability’ has evolved through the powerful lobbying of the environmental movement over the last 30 years, and publications such as Limits to Growth (Meadows, 1972) and the Worldwatch reports raised awareness of sustainability as a concept at a global level (Kearns and Turok, 2003). In turn this led to the 1987 World Commission on Environment and Development (the Brundtland Commission) and the 1992 Rio de Janeiro Earth Summit.

As Kearns and Turok (2003) also point out, there was a view that although economic growth was desirable, the continued challenge was also to reconcile economic and ecological objectives. This led to the Brundtland definition of sustainable development being widely used. For Brundtland (Brundtland Commission, 1987) sustainable development was:

'Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.'

In contrast, the World Conservation Union (1991) defined sustainable development as:

'Improving the quality of human life while living within the carrying capacity of supporting ecosystems.'

For Kearns and Turok (2003) these definitions are characterised as ‘anthropocentric’ and ‘ecocentric’ respectively. This has led to challenges by the Green movement as to whether economic growth is compatible with the two other pillars of sustainability.

Planners, economists and others have also tried to identify how cities and urban areas impact in environmental terms, particularly through the use of ecological footprint analysis (Rees, 1992). Similarly, the ‘urban sustainability’ paradigm has emerged in parallel, by overlaying sustainable development principles on the city, its various functions and sub-systems (Camagni et al, 2001).

The Rio Earth Summit is seen by many, therefore, as a watershed in terms of commitments by governments worldwide to the concept of sustainable development. In 1994, the UK became the first government to produce its national strategy, and this was followed in 1999 by the outline of how it would deliver sustainable development, in the report, ‘A Better Quality of Life’ (DETR, 1999). This laid out how the Government envisaged achieving economic, social and environmental outcomes set against a series of headline indicators (HM Government, 2005). Essentially the four central aims of the 1999 strategy were:

- Social progress which recognises the needs of everyone;

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Dresner (2002) points out that the term ‘sustainability’ was first used by the World Council of Churches in 1974.
Effective protection of the environment;
Prudent use of natural resources; and
Maintenance of high and stable levels of economic growth and employment.

However, this has been developed further with recent policy guidance which seeks to set a new framework goal for sustainable development. As the strategy states (HM Government, 2005):

‘The goal of sustainable development is to enable all people throughout the world to satisfy their basic needs and enjoy a better quality of life, without compromising the quality of life of future generations.

For the UK Government and the Devolved Administrations, that goal will be pursued in an integrated way through a sustainable, innovative and productive economy that delivers high levels of employment; and a just society that promotes social inclusion, sustainable communities and personal wellbeing.

This will be done in ways that protect and enhance the physical and natural environment, and use resources and energy as efficiently as possible. Government must promote a clear understanding of, and commitment to, sustainable development so that all people can contribute to the overall goal through their individual decisions.

Similar objectives will inform all our international endeavours, with the UK actively promoting multilateral and sustainable solutions to today’s most pressing environmental, economic and social problems. There is a clear obligation on more prosperous nations both to put their own house in order and to support other countries in the transition towards a more equitable and sustainable world.’

For a policy to be ‘sustainable’ the report suggests that it must respect five ‘shared UK principles’, comprising:

- Living within environmental limits;
- Ensuring a strong, healthy and just society;
- Achieving a sustainable economy;
- Promoting good governance; and
- Using sound science responsibly.

It also suggests that trade-offs should be made in a transparent and explicit way.

Similarly, the Government identifies four main priority areas for immediate action:

- Sustainable consumption and production;
- Climate change and energy;
- Natural resource protection and environmental enhancement; and
- Sustainable communities.

This has also been underpinned by revisions to national planning guidance which seek to strengthen the focus of sustainable development within the UK planning system. A recent example is Planning Policy Statement 1 (PPS1) – Delivering Sustainable Development (ODPM, 2005), which attempts to provide clearer guidance on how to incorporate sustainable development principles within the plan-led system. The implementation of formal environmental assessments (driven by the EU) for regional spatial strategies and local development objectives is also intended to strengthen this process and help ensure that sustainability is included in policies,
proposals and plans through the use of strategic environmental assessments (SEAs) and sustainability appraisals (SAs)\textsuperscript{9}.

### 2.3 The role and place of brownfield regeneration in policy

The generic benefits of achieving sustainable regeneration have been highlighted by the Sustainable Development Commission, the UK Government’s watchdog on sustainable development. As the SDC (2003:6) wrote:

‘Sustainable regeneration is vital to the success of the UK and at the heart of whether we will be able to meet the commitments to reduce carbon emissions, to adapt to climate change and to protect and enhance our environment, as well as to provide safe, comfortable and healthy communities and economic well-being.’

This view is also bolstered by international experience where similar arguments have been deployed to highlight the benefits of brownfield regeneration (Box 2.1). Moreover, the increased focus on brownfields in the UK has also been driven by a need to provide much higher levels of new housebuilding in a sector which has been traditionally unresponsive to demand pressures (Barker, 2003; 2004, and see below).

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**BOX 2.1 The benefits of brownfield regeneration**

As the National Round Table on Environment and Economy (2003) points out, experience from Canada, the USA and Europe suggests that, while specific circumstances vary, the key benefits of brownfield regeneration within a ‘triple bottom line’ model are as follows.

<table>
<thead>
<tr>
<th>Economic</th>
<th>Social</th>
<th>Environmental</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creation and retention of employment opportunities</td>
<td>Improved quality of life in neighbourhoods</td>
<td>Reduced urban sprawl pressures on greenfield sites</td>
</tr>
<tr>
<td>Increased competitiveness for cities</td>
<td>Removal of threats to human health and safety</td>
<td>Restoration of environmental quality</td>
</tr>
<tr>
<td>Increased export potential for clean-up technologies</td>
<td>Access to affordable housing</td>
<td>Improved air quality and reduced greenhouse gas emissions</td>
</tr>
<tr>
<td>Increased tax base</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

RESCUE (2003) also provide a helpful EU-wide definition of ‘sustainable brownfield generation’, which overlays the brownfield issue within a ‘triple bottom line’ framework, as:

‘...the management, rehabilitation and return to beneficial use of brownfields in such a manner as to ensure the attainment and continued satisfaction of human needs for present and future generations in environmentally sensitive, economically viable, institutionally robust and socially acceptable ways within the particular regional context.’

Similarly, Williams and Dair (2005) suggest a sustainable brownfield development is:

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\textsuperscript{9} This will also be a function of Regional Planning Boards charged with regional spatial strategies and of local planning authorities whose responsibilities are the new Local Development Frameworks.
‘A development that has been produced in a sustainable way (e.g. in terms of design, construction and participation processes) and enables people and organisations involved in the end use of the site to act in a sustainable way.’

But Pahlen and Franz (2005) also highlight the fact that sustainability is neither static in time nor implies a fixed spatial perspective, in that it has to balance short and long term effects over generations, and also has political, administrative and functional impacts at a local, regional, national and global level.

Within the UK, the role of brownfield regeneration continues to be important and has been given a new resonance because of the focus of government policy on sustainable communities. Williams and Dair (2005) highlight the evolution of brownfield policy in England. This first found a focus through Planning for the Communities of the Future (DETR, 1998), and was further developed through the Government’s Urban White Paper (DETR, 2000a: 29), which stated that it aimed to:

‘… accommodate the new homes we need … through a strategy that uses the available land, including, in particular, brownfield land and existing buildings in urban areas.’

Brownfields have also found a focus through the Planning Directorate of the Office of the Deputy Prime Minister, which seeks ‘to promote a sustainable pattern of physical development and land and property use in cities, towns and the countryside’ (ODPM, 2001), and includes the following goals for promoting brownfield development:

- Economic and social regeneration of surrounding areas;
- Environmental improvements of the sites themselves; and
- Reduction in development pressures on greenfield sites.

Planning policy guidance has also reinforced the message on brownfield recycling. For example, PPG3 Housing (ODPM, 2000) includes policy and guidance in relation to land for housing; as paragraph 21 states:

‘The Government is committed to promoting more sustainable patterns of development by … making more efficient use of land by maximising the re-use of previously developed land and the conversion and re-use of existing buildings.’

This is also supported by specific Public Service Spending Review Targets. For example, under Objective 3 of the 2002 Spending Review, one of the three performance targets (target 5) set by Government seeks to:

‘Achieve a better balance between housing availability and the demand for housing in all English Regions while protecting valuable countryside around our towns, cities and in the green belt.’

Baseline targets for the above have also been set by the Government. For example, by 2008, 60% of new housing should be provided on previously developed land (PDL) and through the conversion of existing buildings\(^\text{10}\). This forms the basis of the headline indicator (H14) in the 1999 report, A Better Quality of Life, which is known as a ‘Tier 2’ target (English Partnerships, 2003). The new 2005 sustainable

\(^{10}\) The target has been criticised by some (Adams and Watkins, 2002) as being based on an absolute figure of new completions which could therefore meet a percentage target even though the completion rate was falling. Some observers (see EIC, 2004) have suggested raising the percentage target to say 80%, and more recently English Partnerships (2005a) have floated the idea of using a target for other types of PDL (i.e. non-residential).
development framework proposes a revised indicator (H25), which includes the existing measure, but also a further measure of all new development on PDL\textsuperscript{11}.

A further baseline target was developed during the 2002 Spending Review (Tier 3), which provides both annual and time-specific targets for the amount of PDL to be reclaimed by both Regional Development Agencies and English Partnerships. This is currently set at 1400ha per annum by 2006 across all English regions (English Partnerships, 2003).

A recent report from DEFRA (2005) assesses the extent to which decoupling economic growth from environmental degradation and resource use is being achieved. The report notes that decoupling occurs when the growth of environmentally harmful pressure is less than the growth of the economic good over a given period, although it also notes that even if decoupling is occurring, environmental damage may still be increasing. The report suggests that land use decoupling (as an ‘economy-wide’ indicator) can be monitored by examining growth in the number of households in comparison with the use of undeveloped land, in contrast to the PDL basis of the sustainable development strategy indicator. As the proportion of new dwellings built on undeveloped land fell from 46% in 1990 to 33% in 2003 while the number of households rose by 11%, the report suggests there has been an ‘absolute decoupling’. However, as with the existing H14 indicator (and to some extent the emerging H25 indicator), this must be seen in the context of what has been a falling number of total completions, and increasing densities.

However, as Williams and Dair (2005) point out, these targets (which focus on the quantity of land retained) have also been underpinned by giving increasing attention to the quality of brownfield developments. An example is the new PPS1 guidance, which now stresses that all developments must fully address sustainable development principles. On the other hand, as the same authors also suggest, for those wishing to deliver sustainable development, translating policy objectives into practice at a site level can be difficult because:

- Guidance and policy is often imprecise and open to interpretation;
- Sustainability is often not defined in precise terms; and
- It is not always clear which elements of a development need to be sustainable: is it the land remediation process; the planning process, or the buildings, for example?

### 2.4 The Sustainable Communities Plan

The increased attention paid to brownfield redevelopment also lies at the heart of the Government’s plan for sustainable communities. The £22bn Sustainable Communities Plan sets out the strategy to drive forward thriving and sustainable communities. In his foreword to the plan, John Prescott, the Deputy Prime Minister, wrote:

‘A step change is essential to tackle the challenges of a rapidly changing population, the needs of the economy, serious housing shortages in London and the South East and the impact of housing abandonment in places like the North and Midlands.’

The plan identifies four growth areas: the Thames Gateway; Milton-Keynes–South Midlands; London–Stansted–Cambridge–Peterborough; and Ashford. The Plan identifies a number of key themes including:

- Strengthening regional and local economies;

\textsuperscript{11} However, DEFRA (2005) points out that the data need for such an indicator would be partly based on ODPM Land Use Change Statistics, and there are issues over data quality and production times that could cause problems.
- Meeting people’s social needs – promoting better health, housing and access to services and recreation;
- Improving local surroundings: revitalising town centres and tackling poor quality urban environments;
- Reducing crime and fear of crime;
- Addressing poverty and social exclusion issues in deprived areas;
- Promoting community involvement; and
- Co-ordinating policies to bring them together.

In terms of the linkages with sustainable development, ODPM set out in a memorandum to Environmental Audit Committee (HC Environmental Audit Committee, 2005) five strategic priorities which had been adopted with the aim of creating sustainable communities. These comprised:
- Delivering a better balance between housing supply and demand;
- Ensuring people have a decent place to live;
- Tackling disadvantages;
- Delivering better public services; and
- Promoting the development of the English Regions.

The ODPM then went on to state that, ‘as is clear from the strategic priorities, the Office’s aim and objectives clearly encompass the goal of sustainable development, integrating economic, social and environmental factors’. However, as the Environmental Audit Committee (2005) point out, these strategic aims do not give sufficient weight to the environment (see below). There has also been some controversy over what constitutes a sustainable community. The Egan Review (2004) suggested a number of components and sub-components of sustainable communities (Figure 2.1), and in its recent sustainable development strategy the Government defined more closely what is meant by the term ‘sustainable community’ (Box 2.2).

**Figure 2.1: Components of sustainable communities (adapted from Egan Review, 2004)**
BOX 2.2 What makes sustainable communities?

Work by Turner & Townsend (2004) has highlighted the concept of 'sustainable places' and its evolution as part of a wider development of urban regeneration policy in the UK. As an essentially normative assertion, regeneration has increasingly been seen as being about creating 'sustainable places'. Turner & Townsend (2004) see the concept of 'sustainable places', or area-based regeneration, as linking the Sustainable Communities programme with the place-making dimension of the Government's urban design agenda. They see sustainable places as exhibiting five key dimensions: place-making, holism, people and place, self-sufficiency, and temporal (or intergenerational). Kearns and Turok (2003) also provide a valuable analysis of how the concept of 'sustainable communities' has evolved.

According to HM Government (2005) in the 'Securing the Future' report, ‘sustainable communities’ embody the principles of sustainable development. They:

- Balance and integrate the social, economic and environmental components of their community;
- Meet the needs of existing and future generations;
- Respect the needs of other communities in the wider region or internationally also to make their communities sustainable.

Sustainable communities are therefore diverse, reflecting their local circumstances. There is no standard template to fit them all, but they should be:

- Active, inclusive and safe;
- Well run;
- Environmentally sensitive;
- Well designed and built;
- Well connected;
- Thriving;
- Well served; and
- Fair for everyone.

However, the emergence of the Government’s sustainable development agenda has not been without criticism. In particular, the Sustainable Development Commission (SDC) (2005) has suggested that progress towards sustainable development cannot achieve a step change without more efforts to connect the sustainable development agenda to the government modernisation agenda. Moreover (SDC, 2005:4):

‘... sustainable development is not a particularly big deal for this Government. Although it now demands greater attention, it still receives minimal resources and inconsistent leadership. It’s treated as a tick-in-the-box job, rather than a driver of political (let alone electoral) success.’

The Sustainable Communities Plan also comes under scrutiny in the same report with a call for the Government to place greater emphasis on sustainable development principles in the plan, apply more rigorous criteria for success in implementation, and involve local people more using a long-term approach. This mirrors some of the criticisms made in an earlier report (SDC, 2003), which suggested:

- Putting sustainable development at the centre;
The role of the UK development industry in brownfield regeneration: Stage 2, Volume 1

- Valuing nature;
- Fair shares for all;
- Polluter pays;
- Good governance;
- Adopting a precautionary approach.

The same report also highlighted the importance of sustainable regeneration (SDC, 2003) by identifying three core criteria:
- Putting people at the heart of the process;
- Improving the quality of the local environment; and
- Taking an integrated and long-term approach that recognises the linkages between social, economic and environmental factors.

More recently, the SDC (2004), in a report authored by Anne Power of the London School of Economics, has also suggested that various issues remain unresolved in the Sustainable Communities Plan, such as the lack of community involvement, infrastructure requirements, and the differing supply and demand requirements in housing markets throughout the country.

What is clear within the Sustainable Communities Plan, however, is the continuing central tenet of the reuse of brownfield land. The next section explores the nature of such land in this country and how it relates to wider policy issues.

2.5 Brownfield regeneration in England: what do the statistics show?\textsuperscript{12}

2.5.1 A question of definition

As CLARINET (2002) points out, there are no common terms across the EU that define precisely what brownfield sites are, and this makes direct comparison of the problem and of policy initiatives very difficult. There have been a variety of approaches to definition in the UK, Netherlands and France. In the current research, for example, we base our definition of brownfield around the ‘previously developed land’ definition (Shephard and Dixon, 2004):

‘Any land which has been previously developed, including derelict and vacant land, which may or may not be contaminated.’

In France, brownfields are defined (CLARINET, 2002) as ‘... spaces previously developed that are temporarily definitively abandoned following the cessation of activity, and that need to be reclaimed for a future use. They can be partially occupied, derelict or contaminated’. In contrast, in the Netherlands urban brownfield sites are defined as ‘... areas in towns or cities where in the past industrial activity has taken place, but which have since fallen into disuse’ (Ministry of Housing, 1998).

Similarly, definitions of ‘contaminated’ land also vary, and so it is difficult to obtain precise data either on brownfields or on contaminated sites, although recent data from the European Environment Agency (2002) suggest that there may be as many as 2 million contaminated sites across Western and Eastern Europe. Recent research by Oliver et al (2005) has highlighted the linkage between a country’s industrial legacy and population density and its focus on a formal definition of brownfield.

In the USA brownfields are generally considered to be abandoned or underutilised properties (especially industrial and commercial facilities) where redevelopment or

\textsuperscript{12} A more detailed analysis of data is included in Chapter 6 of this report.
expansion may be complicated by possible environmental contamination (real or perceived). However, a brownfield site, as defined by The Small Business Liability Relief and Brownfields Revitalization Act of January 11, 2002, is any ‘real property, the expansion, redevelopment or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant’. In Canada brownfields are defined as ‘abandoned, idle or underutilised commercial or industrial properties where past actions have caused known or suspected environmental contamination, but where there is an active potential for redevelopment’.

2.5.2 Brownfields in the context of housing undersupply

The brownfield ‘problem’ must also be set against the backdrop of some of the lowest levels of housebuilding since the immediate post-war period in the UK. Barker (2004) highlighted the key reasons for falling housing completions as an inelastic supply causing constraints on land availability, exacerbated by inefficiencies in the planning system13. As Vigor and Robinson (2005) point out, housing in the UK faces the same set of issues as any other area of public policy in terms of competing objectives set against resource constraints. They go on to list eight separate objectives which have had important implications for resources since 1997:

1. Improving existing housing stock standards, particularly social housing stock;
2. Reducing homelessness;
3. Increasing the rate of social housebuilding;
4. Increasing the availability of low-cost home ownership;
5. Addressing low housing demand in the ‘North’;
6. Addressing housing shortages in the ‘South’;
7. Reforming housing benefit; and
8. Improving affordability.

Barker (2003; 2004) and ODPM (2005a) both suggest that there are four main reasons why housing completions have been falling since the 1960s:

- Inadequate land supply due to planning constraints;
- Lack of infrastructure investment to support housing;
- Complexities of development sites; and
- Falling completions of new social housing.

As Vigor and Robinson (2005) suggest, the Government argues that there is a shortage of homes in the right places in England. This is at the heart of the Government’s housing targets in the Sustainable Communities Plan. For example, the plan suggests that an extra 200,000 homes14 are needed between 2003 and 2031 in the four main growth areas (Thames Gateway, Ashford, Milton-Keynes–South Midlands and London–Stansted–Cambridge). For Vigor and Robinson (2005) the Barker review was an ‘affordability-led’ analysis, which suggested (Barker, 2004) that, for affordability to improve across England, annual housing completions would

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13 There is also the relationship between new completions and the PDL target to bear in mind (see Chapter 6).
14 The report from the House of Commons Environmental Audit Committee (2005a) confirmed a figure of an extra 200,000 homes, which would translate into building rates of 180,000 per annum (Environment Audit Committee, 2005b: Q221).
need to double. Taken together, the SCP and Barker emphasise the importance of the Government’s belief that there should be a ‘step change’ in housing provision. However, others such as Huhne (2004, referenced in Vigor and Robinson, 2005) have criticised Barker for repeating the mistakes of earlier policies, particularly in relation to the idea of a ‘planning gain supplement’, which he argues focuses on newly developed land and could lead to land being withheld until a more benign environment is created.

Current statistics (English Partnerships, 2003) show that the brownfield land total is about 66,000ha in England, with some 16,500ha comprising ‘hardcore’ sites. The Government’s national target is that, by 2008, 60% of new dwellings should be provided on PDL and through conversion of existing buildings. In 2003 provisional estimates suggested that 70% of new dwellings were built on PDL including conversions (the same percentage as 2002), compared with 56% in 1993. As Figure 2.2 shows, the total number of dwellings completed on brownfield sites was relatively stable between 1997 and 2001, although the absolute total appears to have increased more recently, with a relative bottoming out of ‘greenfield’ completions.

Against this backdrop, redeveloping and recycling brownfield land is seen as a key government target (Bramley et al, 2005), with an increased emphasis on getting more housing built on PDL and in increasing densities on sustainability and urban regeneration/vitality grounds. In total area terms, the 66,000ha of land is substantial, equating to roughly the area of the West Midlands urban conurbation (Environment Agency, 2004).

Figure 2.2: Dwelling completions in England: 1993–2004 (source: ODPM data)

15 Because the housing data in this chart is based on completions of new dwellings, the completions on brownfield land exclude conversions. Therefore 68% is the figure for 2004 rather than 70% (see ODPM).
Regionally, the trend towards brownfield recycling has seen fluctuations, but with an upward trend. Data from ODPM (2004a; ODPM, 2005c), for example, shows that all regions have shown increases in recycling rates for the period 1996–1999 to 2000–2003, with South West and East Midlands increasing by 13 percentage points or more. The smallest increases (of 3% or less) are in East England, the North East and London. However, as Figure 2.3 shows, for those regions where Regional Planning targets are available the average recycling rate (excluding conversions) often falls short of these targets, although the target figures do include conversions.

Figure 2.4: Density of dwellings built, by PDL (Government office regions 2000–2004 and 1995–1999 averages) (source: adapted from ODPM, 2005c16)

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16 ODPM have recently updated the 2004 figures (see ODPM, 2005e).
Densities of development are also important to appreciate, and have also varied regionally on brownfield land. As Figure 2.4 shows, comparing the two periods, 2000–2004 and 1995–1999, for both previous land uses, there have generally been relatively small increases in density. However, many argue (Sustainable Development Commission, 2004) that densities are still not high enough. Figures from the Sustainable Development Commission (2004) suggest that:

- at 30 homes per hectare (the minimum allowed but too low to support a local bus or school) = 2 million homes;
- at 40 homes per hectare (the density of new towns and, given the much smaller household size, still too low) = 2.6 million homes;
- at 50 homes per hectare (the minimum density for viable shops, schools, public transport and other services, but currently the Government’s guideline limit) = 3.3 million homes;
- at 60 homes per hectare (one third the density of Islington) = 4 million homes;
- at 100 homes per hectare (still far below gentrified Georgian areas) = 6.6 million homes.

### 2.6 Emerging brownfield policy issues

English Partnerships (EP) is currently charged with developing the Government’s National Brownfield Strategy (English Partnerships, 2003) and has highlighted the fact that a key issue of policy must be to ensure a predictable supply of brownfield land to support policy aspirations as well as ameliorating the worst symptoms of so-called ‘hardcore’ sites. Long-term dereliction and vacancy are major problems nationally and regionally. Research by Roger Tym and Partners (2003) for English Partnerships suggests that there are some 17,000ha of ‘hardcore’ land. A hardcore site is defined as a previously developed site of 2ha or more which is vacant or derelict in 2002 and was already in that condition on or about 1 April 1993 (the date of the Derelict Land Survey). Smaller sites forming part of the clusters (a group of sites located within 25m of each other totalling 2ha or more) which collectively fit these criteria are also hardcore sites.

About half of the total of hardcore sites is located in two regions: the North West (4,300ha) and Yorkshire and Humberside (3,200ha). At the other end of the scale Greater London has 400ha, due to its poor NLUD coverage and geographical extent.

However, to normalise the data for geographical extent the research examined the proportion of total land area which is hardcore land (Table 2.1). The highest amount of hardcore is in the North West, where there is proportionately twice as much as in England as a whole, and the lowest is in the Eastern region, where there is less than half as much, showing (with the exception of London) a North–South divide.

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17 See previous footnote.
Table 2.1: Incidence of hardcore land (based on geographical area) (adapted from Roger Tym and Partners, 2003)

<table>
<thead>
<tr>
<th>Region</th>
<th>Index England = 100</th>
<th>Rank (hardcore land ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>North West</td>
<td>233</td>
<td>1 (4321)</td>
</tr>
<tr>
<td>Greater London</td>
<td>195</td>
<td>2 (403)</td>
</tr>
<tr>
<td>Yorks and Humber</td>
<td>157</td>
<td>3 (3174)</td>
</tr>
<tr>
<td>North East</td>
<td>145</td>
<td>4 (1640)</td>
</tr>
<tr>
<td>West Midlands</td>
<td>92</td>
<td>5 (1577)</td>
</tr>
<tr>
<td>East Midlands</td>
<td>76</td>
<td>6 (1546)</td>
</tr>
<tr>
<td>South East</td>
<td>63</td>
<td>7 (1572)</td>
</tr>
<tr>
<td>South West</td>
<td>56</td>
<td>8 (1757)</td>
</tr>
<tr>
<td>Eastern</td>
<td>45</td>
<td>9 (1123)</td>
</tr>
<tr>
<td>England</td>
<td>100</td>
<td>10 (17,113)</td>
</tr>
</tbody>
</table>

The study reveals that more than half of the land in vacant and derelict larger sites and clusters has been in this condition since 1993 or before. The problem is not therefore a transitory one. Other key issues identified in the research are:

- **Previous use and dereliction.** The largest uses of hardcore land in England are industrial/commercial and minerals/landfill, each accounting for around 30% of the total. Defence and transport comprise 15% each. The majority of the hardcore land is also derelict: 75% in the North West and 57% in Greater London, for example. Again, general industrial dereliction is the largest category, followed by defence dereliction.

- **Ownership.** In England as whole the majority of hardcore land is in private ownership, 15% owned by local authorities and 21% by the public sector.

- **Regeneration prospects.** Local authorities were asked in the research to select which constraints were most important. Nationally the most important constraint was ground conditions, applying to 39% of hardcore land. Each of the remaining specific factors (access/services, ownership, lack of market interest, planning) has similar frequency, roughly 20–30%, but regionally there are variations, with the North West experiencing a higher incidence of all constraints except planning. Nationally the most common proposed uses of hardcore land are employment (31%) and none (33%). Another way of looking at this nationally is that 66% of hardcore land has planning permission or has been allocated in the development plan, with 33% having no planning status. This supports the view that much hardcore land has fallen out of the recycling process altogether. Moreover, much of the land proposed for employment may have poor prospects because of supply constraints or locational problems. Finally, only 6% of hardcore land is proposed nationally for greening.

In conclusion, the study of hardcore land shows that in England as a whole:

- An estimated 17,100 hectares of PDL in sites and clusters of over 2 hectares have lain vacant or derelict for about nine years or longer.
- For every 100 hectares in larger sites and clusters which are currently vacant or derelict, more than 60 hectares have been in this condition for some nine years or longer.
- 65% of hardcore land is derelict, in the sense of being so damaged by previous development that it is incapable of beneficial use without treatment.
High proportions of hardcore land are handicapped by supply-side constraints, adverse market conditions, or both.

One third has no proposed use and one third has no planning status.

Greening, the traditional solution for sites with poor development prospects, is only proposed for a tiny minority of hardcore land.

This suggests that a high proportion of hardcore land has dropped out of the cycle of renewal in which old uses are replaced by new. Without radical change in market conditions, public policy or both, the research suggests that long-term vacancy and dereliction will remain a large problem.

More recently, English Partnerships have announced the scoping of 12 pilot areas. These are Easington, Barrow-in-Furness, Manchester, Sheffield, Mansfield, Dudley, Milton Keynes, Ipswich, Tower Hamlets, Barking and Dagenham, Bristol, and Kerrier (Cornwall). As a result of the programme it is hoped that at least one hardcore site in each area will be developed either for commercial or recreational use, with funding being acquired through private sector investment (English Partnerships, 2005a).

2.7 Brownfield barriers and the policy response

The barriers to brownfield development have been relatively well researched. Syms (2004), for example, summarises the main barriers to brownfield development as:

- Fear of the unknown – ranging from the types of contaminant that may be present in the soil to the level of clean-up required;

- Regulatory controls – which may encompass further uncertainty over which statutory regulator is involved;

- Delays and increased costs – perhaps arising from uncertainties over Part IIA liabilities; and

- Stigma – or the post-remediation diminution in value that may result from uncertainty over clean-up.

More recently, further issues have been raised by the emergence of a complex set of cross-cutting policy themes which interact with brownfield-related issues, as the Government seeks to renew and expand its housing programme alongside the Sustainable Communities Plan, all of which are being carried out within the context of the sustainable development agenda. Broadly, these issues can be identified as (Dixon, 2005):

- Infrastructure. In the Thames Gateway (Power et al, 2005) and elsewhere there has been much debate over the lack of infrastructure and how it is stifling development in brownfield and other areas. Although the recent announcement of the Cross Rail link has brought much relief to hard-pressed local authorities in the Thames Gateway trying to attract inward investment, the timeline for implementation is a long one.

- Sustainable construction. Two recent reports (Entec, 2004; Environmental Audit Committee, 2005a) highlight the severe environmental impacts, particularly in the South East, of the Sustainable Communities Plan. For example, the Entec study found that by far the biggest environmental impact from increasing housing supply was the significant increase in CO₂ emissions that resulted from their construction and use. The external costs from such emissions outweighed the costs of any other damage by a factor of ten. In the worst case scenario, some £8.3bn worth of environmental damage was caused. In addition, the study found that the use of higher environmental standards in construction would significantly lower the environmental impacts of housing over 30 years.
• **Affordability.** The current average price/earnings ratio of houses is nearly 5, and, according to Halifax, 90% of postcodes in the UK are unaffordable (Halifax, 2005). Calls for low-cost homes are seen by ODPM as providing part of the answer (ODPM, 2005), but a key question is how brownfield sites can be brought back into use with a fully inclusive social mix.

• **Densities.** Although evidence shows that densities have recently risen to around 33/ha in England as whole (see section 2.5 above), this is still not high enough in the view of a number of commentators (Sustainable Development Commission, 2004; Hall, 2005). There are important regional differences with densities lower than 33 dwellings per ha in a number of regions (see section 2.5). The Sustainable Development Commission (2004) suggests that the Sustainable Communities Plan should be building to at least 40 or even 50 dwellings per ha (equivalent to the density of new towns).

• **Flood risk.** Much of the land earmarked for development in the sustainable communities plan in South East England is prone to flooding. As an illustration of this, a recent report from the Association of British Insurers (ABI) (ABI, 2005) critically examined the Government’s plans for an extra 200,000 homes in the South East by 2016 in terms of the increasing risks from flooding and climate change. The research showed that:
  - One-third of the new developments across the growth areas are located in the floodplain;
  - These new homes could increase annual costs of flooding in these areas by 74%, adding £55 million to the annual flood bill;
  - Up to 10,000 new properties could potentially be located in areas at significant risk of flooding without proper planning.

• **Tensions in the ‘triple bottom line’.** Recent reports from the SDC (2003, 2004 and 2005) and research commissioned by DEFRA (Entec, 2005) as well as the cross-party Select Committee (Environmental Audit Committee, 2005a) show the increasing policy tensions between government departments. This is symptomatic of the policy tensions that can exist between the three pillars of sustainability (Shephard and Dixon, 2004).

Clearly, the housebuilding industry has not emerged unscathed form such debates. For example, the Barker review took a fairly critical view of the housebuilding industry’s attitude towards brownfield development. With housing completions at a low ebb, as Barker (2004) states:

‘Developers do not undertake sufficient brownfield development from the point of view of social costs and benefits. This is not caused by risk, but it may be exacerbated by it. Building on brownfield land has clear external benefits; it aids in regeneration of cities in particular, and reduces the need to use additional greenfield land, reducing the environmental impact of development. These positive externalities are not signalled to housebuilders or landowners, as their profits from brownfield developments will not reflect them. This suggests that there is a possible market failure in the provision of brownfield land for development.’

In Barker’s view, which adopts very much a ‘behavioural’ approach to understanding housebuilder strategies in relation to brownfields (Dixon et al, 2005), the fundamental problem was the low value of brownfield land resulting from relatively high development costs, coupled with high existing use values which may militate against redevelopment. In turn this was often exacerbated by contamination issues and other mitigation works which reduced land value and might even result in a negative value. In short, both market and site-specific risk could increase ‘housebuilders’ aversion to brownfield development’.
Work by the Environment Industries Commission (EIC) (2005) highlights the main obstacles to redevelopment of brownfield land as uncertainty (perceived or real) in both time and cost to realise developments on brownfield land. Such uncertainty can be related to the following factors:

- **Planning regime.** Complex and conflicting planning issues, delays and under-ambitious recycling targets (the EIC calls for a raised target of 80% recycling on brownfield land) can cause problems, as can inconsistency between contaminated land planning conditions and Statutory Consultee requirements.

- **Funding.** There are perceived discrepancies between the Partnership Investment Programme and European Commission rules. Although funding through the Brownfield Land Redevelopment grant system is available through the European Regional Development Programme, and linked through Gap Funding (administered by the Regional Development Agencies and English Partnerships), there are problems in terms of delays and a lack of a standard approach to assistance. This is compounded by poor communication on the availability of funding/tax relief and a complex application process (see Chapter 4).

- **Up-front risk.** Up-front expenditure can be relatively high and can result in losses if schemes are subsequently not implemented (for example, planning permissions are not received, extensive contamination is found or environmental issues prove insurmountable). The EIC calls for government intervention to reduce up-front fees by helping defray the costs of geotechnical surveys, planning studies or environmental studies.

- **Risk management.** Although cost–value relationships are important in property development, risk and timelines are equally important. Risk can comprise loss of up-front fees, lack of planning permission, project or schedule overruns, and low Net Present Values resulting from too long a timescale, and liabilities may be uncertain, thereby leading to increased risk. Government could potentially provide greater certainty by making planning and environmental policy determinations and establishing clean-up objectives. Similarly, clearer guidance on the implications of policy issues and their cost impact is required.

- **Regulation.** In the EIC’s view the multiplicity of EU directives is confusing; a number apply to brownfield land and there is often ‘overlap and confusion’ in the market mainly due to the definition of hazardous waste, requirements for mobile plant licences and conditions attached to waste management licences (Box 2.3). There is also confusion over what ‘waste’ comprises and uncertainty over signing off remediated sites. The EU Landfill Directive is also likely to have a substantial impact (see below). The proposed Directive on Environmental Liability (published in 2002) will also establish a liability regime for environmental damage, whereby strict liability will apply for specific environmental damage, including biodiversity damage. Multiple licensing can also cause delays and may include waste management licences; mobile plant licences; site licences and authorisations for offsite treatment.

- **Remediation.** Licensing remediation technologies incur high costs and may involve multiple licences, and, without formal protocols or codes of practice, risks and costs may rise. The EIC report proposes the definition and implementation of a remediation code of practice for the UK. This builds on the recommendations made by the Kirby Report in 2002 (‘Remediation Permit – Towards a Regeneration Licence’). More recently the Cabinet Office and DEFRA have set up a Remediation Licensing Taskforce to develop proposals for a single remediation permit.
BOX 2.3 EU Directives

The EIC (2005) produces a helpful list of the most important EU Directives relating to brownfield land and remediation:

- Hazardous Waste List (94/904/EC).

In addition to these concerns, the effectiveness of Part IIA of the EPA 1990 has also been challenged. Recent statistics show that progress has been relatively slow (Table 2.2). Walker (2005) suggests that resource constraints have hampered local authorities perhaps with a degree of fear of the consequences if a polluter cannot be found once a site is identified. Also, according to Part IIA, each individual property has to be served with its own notice even if it is part of a wider scheme. Thus two schemes, one in Manchester and one in Stratford, London, comprise a high proportion of the total determinations. However, PPS23 states that Part IIA is to be used to support the planning system in this respect, and the current research (see Chapter 5) is designed to examine how s.106 agreements or planning conditions are being used in cleaning up sites alongside Part IIA.

Finally, there have also been calls to integrate the planning and remediation permit systems more closely to enable speedier and more effective clean-up. Also there is the impact of the Water Framework Directive (WFD), the most substantial piece of EC water legislation to date. It requires all inland and coastal waters to reach ‘good status’ by 2015. It will do this by establishing a river basin district structure within which demanding environmental objectives will be set, including ecological targets for surface waters, and will have important implications for standards on contaminated land where the impacts on water bodies will be felt.

18 Of the 353 Part IIA authorities in England, 352 have formally adopted a strategy, and one has published a draft (data from DEFRA website: www.defra.gov.uk).
19 The impact of Part IIA may be to focus the mind and effort of site owners to the redevelopment/voluntary route to avoid perceived blight associated with sites being determined as ‘contaminated land’. (In the period to 04/05 the Environment Agency reports that they had been consulted and contributed to the remediation of 1300ha of land which posed a risk of pollution to controlled waters either as a result of voluntary action or through the planning process.)
### Table 2.2: Number of sites determined as ‘contaminated land’ under Part IIA

<table>
<thead>
<tr>
<th></th>
<th>LA determinations³</th>
<th>Special sites⁴</th>
<th>Remediation statements⁵</th>
<th>Remediation notices⁶</th>
<th>Remediation declarations⁷</th>
<th>Special site inspections⁸</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000/01</td>
<td>13</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>2001/02</td>
<td>21</td>
<td>11</td>
<td>9</td>
<td>2</td>
<td>0</td>
<td>22</td>
</tr>
<tr>
<td>2002/03</td>
<td>39</td>
<td>2</td>
<td>13 (9 special)</td>
<td>1</td>
<td>0</td>
<td>28</td>
</tr>
<tr>
<td>2003/04</td>
<td>9</td>
<td>5</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>42</td>
</tr>
<tr>
<td>2004/05</td>
<td>220</td>
<td>1</td>
<td>17 (3 special)</td>
<td>0</td>
<td>1</td>
<td>25</td>
</tr>
<tr>
<td>2005/06³</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Totals</td>
<td>304</td>
<td>22</td>
<td>41 (12 special)</td>
<td>4 (0 special)</td>
<td>1 (0 special)</td>
<td>124</td>
</tr>
</tbody>
</table>

1. Note that land is also investigated and remediated without the formal application of Part IIA.
2. Figures may change from time to time to reflect new or updated information from local authorities provided to the Environment Agency. They may also be amended by a formal quality assurance exercise by the Agency when compiling the next State of Contaminated Land Report in 2007.
3. Formal determinations of particular land as ‘contaminated land’ under Part IIA, following detailed investigation. A case may involve a number of determinations of separate plots or parcels of land. A single determination may result in a multiplicity of notices, statements and declarations.
4. Special sites are ‘contaminated land’ for which the Environment Agency, not the local authority, is the enforcing authority. This is therefore a subset of the sites determined by LAs.
5. ‘Contaminated land’ for which appropriate remediation has been formally secured by the LA or the Agency under Part IIA, without service of a remediation notice. Bracketed numbers indicate how many of the main figure concern special sites.
6. Notices served by the enforcing authority requiring remediation. Bracketed numbers indicate how many of the main figure concern special sites.
7. Declaration by the enforcing authority recording actions precluded from inclusion in any remediation notice. Bracketed numbers indicate how many concern special sites.
8. Cases where the Environment Agency has agreed to inspect on behalf of the LA, with a view to possible determination of the site as ‘contaminated land’ and designation as a special site.

### 2.8 Summary

This Chapter has shown that there are clear policy issues emerging in relation to the sustainable development and brownfield agendas in the UK. In particular there are key barriers to implementing brownfield policies, especially in relation to uncertainty and risk. The next part of the background and context section examines the role of the development industry in relation to the sustainable development and brownfield policy agendas.
3 Sustainable Brownfield Regeneration: UK Developer Cultures and Responses to the Sustainability Agenda

3.1 Introduction
This chapter examines the response of the development industry to the sustainable development agenda and the attitudes and cultural responses of developers through previous research. Issues of Corporate Social Responsibility (CSR) are addressed, and a preliminary examination of measuring ‘sustainability’ of brownfield projects is provided.

3.2 The response of the development industry to the sustainable development agenda

3.2.1 Sustainable development and the development industry
Property is bought and sold widely and so it plays a dual role in the economy, not only as a means of production and physical regeneration, but also as a means of wealth ownership (BPF, 2004). There is a substantial amount of capital tied up in residential and non-residential property in the UK (for example, some 34% of the UK’s commercial capital stock comprises commercial property). The UK property development sector, comprising financial institutions such as pension funds, insurance companies and property companies (including investor/developers and housebuilding companies), therefore has the power and capacity to influence patterns of economic activity, as well as affect wealth and income distribution through engagement in urban regeneration.

However, it is a widely held view that the property and construction industry has been slow to react to the challenges of sustainability. A workshop for the DTI (Davis Langdon Consultancy, 2003) highlighted key findings from the Sustainable Construction Taskforce (2001) Report. Although much work had been done in highlighting the social and environmental benefits of sustainability, not enough had been done to demonstrate the economic benefits, especially from the property investment point of view. Moreover, many initiatives had focused on ‘pushing through’ sustainable development, although the ‘pull through’ by property investors is currently limited. This was highlighted as a ‘circle of blame’, whereby investors claim they would fund more sustainable developments if the market asked for them (Figure 3.1).

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20 If we include residential housing in our measure of the capital stock, then total property amounts to £3.62 trillion, or 76% of total productive capital (BPF, 2004).
Despite this, emerging research (Upstream, 2003; Pett et al, 2004; and Sayce et al, 2004) suggests that there is an increasing focus on trying to prove the ‘business case’ for SD in property investment and development. In terms of key actors in the development process, Upstream (2003) suggests that it is developers, investors and occupiers and those who create markets through a financial imperative that have a key role to play in implementing sustainable development (SD) concepts, although agents, consultants and other advisors such as architects also have an important role. The same research also suggests that sustainability attributes are most effectively taken into account at key points in the development process, which include evaluation and acquisition, design and costing, obtaining planning permission, construction, and the final occupation and management of the building.

A key issue in implementing SD concepts in the context of the built environment has been the significance of existing commercial stock. In the UK the building turnover rate (or new build) is only 2% of commercial building stock, which means 98% of building stock comprises ‘legacy’ buildings. Nonetheless, legislative change, through, for example, the Climate Change Levy, Part L of the Building Regulations (directed at increasing the energy efficiency of buildings and services) and the EU Energy Performance Directive, have sharpened the focus of the development industry on SD (Roaf et al, 2004). Moreover, the UK Strategy for More Sustainable Construction suggested (DTI, 2000a) 10 key themes for action from the construction industry which would encourage more sustainable construction practices:

- Design for minimum waste;
- ‘Lean’ construction;
- Minimising energy in construction and use;
- Preventing pollution;
- Preserving/enhancing biodiversity;
- Conservation of water resources;
- Respecting people/environment; and
- Setting targets (monitor and report to benchmark performance).

To some extent, campaign pressures from NGOs such as Greenpeace, Friends of the Earth and the World Wildlife Fund have also driven a change in perception (Upstream, 2003). This has been underpinned by the growing importance of the

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21 Figure quoted by Upstream (2003) from Property Market Analysis Ltd.
wider Corporate Social Responsibility (CSR) agenda and an important sub-set of this, Socially Responsible Investment (SRI). CSR is defined by the European Commission (2004) as:

‘...a concept whereby companies integrate social and environmental concerns in their business operations and in their interactions with their stakeholders on a voluntary basis’.

In contrast, SRI is defined as (Mansley, 2000):

‘Investment where social, environmental or ethical considerations are taken into account in the selection, retention and realisation of investment, and the responsible use of rights (such as voting rights) attaching to investments.’

Therefore CSR addresses corporate practice, as opposed to SRI, which addresses financial investment practice.

The housebuilding industry is of course an important part of the development and construction sector in the UK, and the majority of new and existing housing in the UK has significant environmental impact (World Wildlife Fund, 2003; Environmental Audit Committee, 2005a). Housing also contributes about 27% of carbon dioxide emissions in the UK and has a significant impact on the consumption of timber (70% of timber construction) and water (World Wildlife Fund, 2003; Entec, 2004). But how has the industry been coming to terms with SD issues?

A report by the World Wildlife Fund (2003) highlighted a number of deficiencies in policy which were hampering moves towards mainstreaming SD concepts in housebuilding. One fundamental issue was the lack of a clear definition that could be understood in planning terms. The report suggested (2003:34) that sustainable housing was:

‘= Sustainable location
+ Sustainable layout
+ Sustainable landscape
+ Sustainable design and construction’.

More recent research by World Wildlife Fund (2004), carried out by Upstream, investigated 13 of the UK’s largest listed housebuilders and assessed their impact on environment/society and their governance, strategies and risk management. Although many companies continue to lag the sector as a whole, two companies in particular (Countryside Properties and Berkeley) were seen as ‘leading the pack’. In the report, mainstreaming SD was seen as a linear trajectory driven by legislation and shareholder value (or reputation management) drivers (Figure 3.2). Market differentiation was also seen as a growing feature to help companies set themselves apart, through the growing number of CSR/SRI indices such as FTSE4Good and the Dow Jones Global Sustainability Index.
The research also suggested that:

- Public disclosure by housebuilders on sustainability issues is often lacking;
- Housebuilders are interpreting the concept of SD differently: some are focusing on environmental issues, others on their relationships with stakeholders;
- Innovation in housebuilding design which minimised environmental impact was low;
- Housebuilders had not yet grasped how social capital could be built in the communities in which they operate.

The research went on to highlight six main barriers that were holding back opportunities to bring sustainability into the mainstream of UK housebuilding:

- Insufficient fiscal incentives for developers and consumers;
- Planning and Building Regulations that did not facilitate the development of sustainable homes;
- Prohibitive cost/price for sustainable homes;
- Lack of investor interest;
- Absence of consensus over the term ‘sustainable home’; and
- No perceived demand for sustainable homes.

Further research by CABE (2004) also highlighted the poor quality of design in many new housebuilding schemes, through its Design Quality Initiative. This comes after a critical review of the housebuilding industry in the Barker reports (2003; 2004), where it was suggested that the housebuilding industry had been slow to innovate and adopt alternative manufacturing techniques (modern methods of construction, or MMC), such as offsite manufacture and timber and steel frame construction. This was mainly because of risk aversion, uncertainty caused by planning delays, and the

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22 Recent evidence from BRE to Environment Audit Committee (2005b) has suggested that there has been little research carried out as to whether MMC is better in environmental terms than conventional techniques in the long term.
overall attitudes of consumers, lenders and warranty providers. As Barker (2004) noted, there was a low level of investment in capital-intensive technologies, innovation, and the skills of the workforce, who are frequently employed on a subcontract basis. The recommendations in both reports fell short, however, of anything more than a ‘voluntaristic’ approach, in contrast to the major changes proposed for the planning system (Environment Audit Committee, 2005a).

A much more scathing view of the construction industry as a whole is taken by Woudhuysen and Abley (2004):

‘Construction is backward. It is atomized in industrial structure, poorly managed in practice, and endlessly weighed down by regulations…. while some products of the construction industry are innovatory, property developers routinely bemoan the antediluvian processes and forms of organization that surround their industry.’

In relation to sustainability and the role played by the housebuilding industry’s professional body, the House Builders Federation23, this criticism was echoed by the Environment Audit Committee (2005: 153):

‘The apparent reluctance within the House Builders Federation (HBF) to acknowledge the need drastically to improve the environmental performance of the building process and of new houses is a matter of serious concern. It is particularly worrying that the current political drive for a significant increase in house building coincides with a shortage of skills in the industry. In the absence of commercial pressure to raise the industry’s environmental performance we believe that the Government has a duty to intervene to ensure adequate environmental standards’;

and (Environment Audit Committee 2005a: 57):

‘While we are encouraged by the attitude of some house building companies, the majority are nowhere near achieving the kind of record with regard to environmental performance we would consider acceptable’.

Other critics have highlighted the lack of legal/statutory frameworks to help create more sustainable new housing. For example, the Environment Audit Committee (2005a) suggested that other than the energy and water efficiency requirements of the Building Regulations, there are no obligations for housebuilders to meet minimal environmental standards. The possible exception is the Building Research Establishment’s (BRE) EcoHomes standard which was introduced in 2000 as an independent but voluntary measure of environmental impact based on the existing BREEAM standard for commercial buildings. This standard examines issues related to energy, transport, pollution, materials, water, land use and ecology, health and well-being, and gives a weighted score based on a Pass, Good, Very Good or Excellent rating24. Moreover, there was evidence of a shortfall between requirements and compliance: local authorities seemed to lack the will and resources to carry out inspections, especially in relation to Part L of the Building Regulations.

23 The HBF did state in evidence to Environmental Audit Committee (2005b) that it planned to introduce a new ‘Sect oral Sustainability Strategy’, but the committee remained sceptical.

24 More recently other initiatives backed by Government have sought to strengthen standards. These include the Sustainable Buildings Task Force’s proposed Code for Sustainable Buildings, and the Sustainable and Secure Buildings Act 2004. The Task Force proposes a non-statutory code based on BRE’s BREEAM and EcoHomes standards and tightening Building Regulations, and the Act extends the Secretary of State’s power to make Building Regulations which impact on the environment and SD.
3.3 Development cultures and attitudes/approaches towards urban regeneration

Elkington (2004), the originator of the term ‘triple bottom line’, suggests that a sustainable global economy will emerge through an era of intense technological, economic, social and political metamorphosis. These pressures will also drive company (and government) response, which Elkington (2004) characterises in terms of company or ‘value webs’ along the evolution of a ‘chrysalis’ economy: namely corporate locusts, caterpillars, butterflies and honeybees (Figure 3.3).

![Figure 3.3: Corporate characteristics (adapted from Elkington, 2004)](chart)

The key characteristics of each are as follows:
- **Locusts**: destructive, unsustainable companies;
- **Caterpillars**: localized and destructive but have the potential for transformation;
- **Butterflies**: conspicuous and anchored in SD principles but operating in ‘pulses’; and
- **Honeybees**: sustainable, innovative and working in ‘swarms’.

This model offers an interesting view of how cultures can differ in relation to SD in a generic sense. In the property development/investment industry, no work has so far sought to characterise the cultures of developers/investors towards SD (but see WWF, 2004 above). There have, however, been attempts to characterise and distinguish attitudes and cultures in the wider arena of urban regeneration. Guy et al (2002), for example, distinguish ‘institutional’ investors from ‘independent’ investors. The former are interested only in ‘institutional’-grade property and therefore tend to avoid the higher risk, inner city areas of investment populated by niche, independent investors or developers such as Urban Splash. The differences in characteristics are shown in Table 3.1.
Table 3.1: Models of urban development: ideal types (after Guy et al, 2002)

<table>
<thead>
<tr>
<th>Feature</th>
<th>Institutional</th>
<th>Independent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>Core</td>
<td>Fringe</td>
</tr>
<tr>
<td></td>
<td>Large</td>
<td>Small/Medium</td>
</tr>
<tr>
<td>Tenancy</td>
<td>Single</td>
<td>Multiple</td>
</tr>
<tr>
<td>Use</td>
<td>Fixed</td>
<td>Mixed</td>
</tr>
<tr>
<td>Lease</td>
<td>Rigid</td>
<td>Flexible</td>
</tr>
<tr>
<td>Image</td>
<td>Universal</td>
<td>Vernacular</td>
</tr>
<tr>
<td>Design</td>
<td>Blind</td>
<td>Sensitive</td>
</tr>
<tr>
<td>Knowledge</td>
<td>National/global</td>
<td>Local/regional</td>
</tr>
<tr>
<td>Risk</td>
<td>Averse</td>
<td>Positive</td>
</tr>
<tr>
<td>Vision</td>
<td>Retrospective</td>
<td>Future</td>
</tr>
<tr>
<td>Profession</td>
<td>Insiders</td>
<td>Outsiders</td>
</tr>
<tr>
<td>Value</td>
<td>Economic</td>
<td>Socioeconomic</td>
</tr>
</tbody>
</table>

For Guy et al (2002), independents thus tend to focus on fringe locations, engaging closely with a locality and adding value through distinctive design, whereas institutions focus on ‘safe’ locations to maximize returns and minimise risk.25

But what are the responses/cultures of developers in relation to brownfield development? In terms of developer attitudes to brownfields, our Stage 1 research was unable to identify any significant differences in response due to company size because of the structure of responses in our final sample, but it was clear that, simply from a headline indicator point of view, housebuilders were exceeding PDL targets (Shephard and Dixon, 2004).

Figure 3.4 shows an updated version of our work from Stage 1. As can be seen, 10 of the 14 housebuilders shown (who are Top 100 ranked) were exceeding the 60% target in 2003.

25 Recent research (RICS, 2003; English Partnerships, 2005b) has highlighted that property returns in poorer locations in urban regeneration can exceed those in less risky locations.
Work by Dair and Williams (2005) has sought to investigate the sustainability of five English brownfield case studies where development was complete, from the perspective of key stakeholders, including developers. Through an extensive literature review six stakeholder groups were identified:

- Group 1: regulators, statutory consultees;
- Group 2: non-statutory consultees, interest groups and individuals;
- Group 3: property developers and developer interests;
- Group 4: professional advisors; and
- Group 5: end users.

Their research, which was based on assessing whether key sustainability objectives (Table 3.2) had been met on completed brownfield schemes, identified several key reasons for variations in sustainability between their case studies:

- Some stakeholder groups may be excluded from the development process;
- The timing of stakeholder engagement can vary;
- Lack of stakeholder power;
- Variations in attitude towards use of sustainable technologies and materials; and
- Variations in stakeholder knowledge.
Table 3.2: Sustainability objectives to be met in brownfield developments (adapted from Dair and Williams, 2005)

<table>
<thead>
<tr>
<th>Sustainability Objectives</th>
<th>Examples of how these can be met in brownfield developments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Economic (6 objectives)</strong></td>
<td>• Provide transport infrastructure to meet business needs</td>
</tr>
<tr>
<td>• To enable businesses to be efficient and competitive</td>
<td>• Provide high densities to enhance commercial viability</td>
</tr>
<tr>
<td>• To support local economic diversity</td>
<td></td>
</tr>
<tr>
<td><strong>Social (5 objectives)</strong></td>
<td>• Provide open space for community benefit</td>
</tr>
<tr>
<td>• To provide adequate local services and facilities</td>
<td>• Develop a mix of housing types and tenures</td>
</tr>
<tr>
<td>• To provide housing to meet needs</td>
<td></td>
</tr>
<tr>
<td><strong>Environmental (3 objectives)</strong></td>
<td>• Use renewable materials in construction</td>
</tr>
<tr>
<td>• To minimise use of resources</td>
<td>• RemEDIATE contaminated land</td>
</tr>
<tr>
<td>• To minimise pollution</td>
<td></td>
</tr>
</tbody>
</table>

3.4 Summary

In conclusion, little or no research has been carried out into developers’ attitudes (certainly as a primary focus) to sustainable development in brownfield regeneration. This second phase of our study seeks to address these issues by examining the interaction of developers with other stakeholders in key case study sites through the lens of sustainable development, characterised by the ‘triple bottom line’ model. Our approach differs from that of Dair and Williams (2005) in a number of key respects:

- The primary focus of our research is on the development industry and its engagement with other stakeholders in the brownfield regeneration process;
- The main focus of our research in the environmental pillar is on remediation, clean-up and associated issues;
- Our study is a qualitative assessment of key sustainability issues from a variety of schemes which are at different stages of the development lifecycle (i.e. not only completed schemes); and
- We did not seek to predetermine objectives within our framework for stakeholder interviews, in order to elicit more open-ended views on developer perceptions and those of other stakeholders relating to the three pillars of sustainability.

The components of our conceptual model have already been identified in Chapter 1 of this report (Figure 1.1). The next Chapter scopes the background and context of the three pillars in the ‘triple bottom line’ model in relation to brownfield regeneration, and highlights key themes which are subsequently translated into the interview schedules for our case study research (see Volume 2 of this report for further information).
4 Brownfield Regeneration: Scoping the ‘Triple Bottom Line’ Model

4.1 Introduction
The following section, which comprises the final section of the literature review, seeks to summarise some of the key features of the three pillars in relation to brownfield development, which also form the subject of our research in Stage 2 of this study. It is not intended to be a fully comprehensive discussion of the ‘triple bottom line’ approach, but rather seeks to highlight the key issues within each of the three pillars that need to be addressed by further research in relation to brownfield regeneration. The three pillars are now discussed:

- Economic;
- Environmental;
- Social.

4.2 Economic sustainability

4.2.1 Definitions
For Williams and Dair (2005) economic sustainability is a contested concept and difficult to relate to a specific spatial scale. The UK Government has tended to equate economic sustainability with the maintenance of high and stable levels of economic growth and employment. This is a key focus in the new PPS1 on Delivering Sustainable Development (ODPM, 2005d), in which the Government calls on planning authorities not only to recognise that economic development can deliver environmental and social benefits but also to ensure that such growth is sustainable. It is an important driver in assessing the success of government interventions in regeneration and renewal projects. As ODPM (2004b) points out, economic sustainability means:

‘Achieving self-sustaining local economic development consistent with regional and national economic prosperity, leading to sustainable improvements in the economic performance of all regions.’

For Williams and Dair (2005), economic sustainability is about enabling businesses to be efficient and competitive in the design, development and construction process, through the provision of good transport and infrastructure (a point also noted in PPS1) and in supporting local economic diversity and job opportunities.

However, there is also a need from the developer’s point of view for the brownfield scheme to be economically sustainable in an internalised sense. In profit terms, this is about the economic viability and profitability of a scheme, given the barriers and risks that are often encountered in brownfield development.

4.2.2 Market failure
For many actors in the development process, brownfield land and property markets have been characterised as ‘dysfunctional’ or suffering from ‘market failure’. In their report on the National Brownfield Strategy for Canada, the National Round Table on Environment and the Economy (2003:29) points out:

‘Markets, the free exchange of goods and services, do not always work well. When they fail, or are imperfect, actions that increase the collective national wealth may not take place. This is the case for brownfields. There are a number of significant market failures that prevent redevelopment of land…’

55
The same report categorises market failures as those causing developers to:

- Undervalue commercial benefits – for example, developers may not take into account the positive impacts of redevelopment on the ability of other firms and assets in an area to produce wealth, or developers choosing between greenfields and brownfields may not recognise the cost savings from compact developments;

- Overvalue costs – for example, when buyers of land know more than sellers about the environmental risks of land, problems of adverse selection are introduced and some exchanges of land may not occur; and

- Exclude social and environmental benefits – for example, private markets may fail to capture collective benefits such as environmental benefits, improved neighbourhoods and health impacts.

Similar arguments are posited in the UK. For example, in a response to a select committee report on the need for a new regeneration framework, the Government (ODPM, 2002)\(^\text{26}\) suggested that:

\textit{Market failure occurs when resources are inefficiently allocated due to imperfections in the working of the market mechanism. Four examples of market failures which can affect the economic, social and physical regeneration of deprived communities are:}

- Externalities;

- Informational deficiencies;

- Scale economies; and

- Bounded rationality.’

These can best be summarised as follows:

- Externalities occur, for example, where prices and profits do not reflect the wider costs and benefits to society of different economic uses. This equates to the Canadian example of undervaluing commercial benefits, where the benefits of improvements to the physical environment or contamination removal, whilst generating wider societal benefits, do not create the same benefits for developers.

- Informational asymmetries reflect the high and uncertain risks attributed to brownfield land in depressed or unproven locations by developers and investors. Recent research (ODPM, 2002; RICS, 2003) has, however, shown that perceptions of investment performance in urban regeneration areas may be too negative. For example, systematic under-pricing of regeneration markets has often been caused by a lack of information and, in fact, investment property in regeneration areas can out-perform national and local benchmarks.

- Bounded rationality also interacts with asymmetries to limit the overall amount of information to undertake rational decisions. Some development locations may be avoided therefore because of lack of information.

- The lack of scale economies or indivisibilities in property markets may also mean that, for example, assembling sites which are disaggregated may not make the development worthwhile.

The cycle of market failure in an area may also be reinforced. For example, the so-called ‘broken window’ effect (ODPM, 2002) means that, as a site becomes derelict,
the negative impact it has on the local environment may lead investors to have lower perceptions of the area, which can in turn depress the local property market, increase dereliction and hinder regeneration. A recent report (RICS, 2005) identifies the signs that a neighbourhood is in danger of being abandoned. Key indicators of such decline include economic decline, empty properties, low property prices, environmental quality, declining local shops, voter apathy, and high crime rates.

ODPM (2004b) makes a distinction between:
- Market failures which have a specific spatial dimension (i.e. they arise because of conditions in a specific area); and
- Market failures whose presence is not dependent upon location but whose impact (also the impact of removal) is exacerbated by specific local conditions.

The former (which are also referred to as ‘micro-spatial market failures’) will generally constitute the rationale for 3R (regeneration, renewal and regional development) interventions. The latter will typically be market failures that are addressed by mainstream programmes. Removal of a micro-spatial market failure may improve economic efficiency in a specific area, but will not necessarily lead to improvements in national economic efficiency.

Interestingly, work by Pryce (2003) on the impact of asymmetric information on credit markets for residential construction in relation to brownfields suggests that intervention in markets, triggered by market failure, can actually heighten the problem of perceived risk by developers on such sites. He suggests that although demand and supply side factors (see for example, Adams et al 2001) can partly explain developers’ aversion to brownfields, State failure in market intervention is also important. Building on work by, for example, Cheshire and Sheppard (1997) and Evans (1996), he suggests that planners also suffer from information asymmetries and that this problem is compounded by inelasticities in land supply (caused by uncertainties over public policy), both of which diminish the impact of fiscal incentives. Moreover, fiscal incentives can, for Pryce, actually increase credit rationing from lenders for such sites because they inflate the relative returns on such sites, and it gives developers a greater incentive not to reveal to lenders their true knowledge of development risk.

4.2.3 Market intervention – national and regional examples

Nonetheless, governments in both the UK and overseas have introduced an array of policy instruments and incentives to make brownfield redevelopment more attractive, and to correct perceived deficiencies in market failure. The Green Book (HM Treasury, 2003), for example, sets out the rationale for government intervention. It makes a clear distinction between the two most common rationales (ODPM 3Rs):
- The achievement of economic objectives by addressing inefficiencies in the operation of markets and institutions; and
- The achievement of an equity objective such as local or regional regeneration.

A strong link exists between these two rationales and the three pillars of sustainable development already discussed; the resolution of market and institutional failures, or the achievement of a social objective, may contribute in many and varied ways to increased quality of life in economic, social or environmental terms (ODPM, 2004b).

A prime example of recent intervention through mainstream policy is the UK Government’s Housing Market Renewal (HMR) Pathfinder scheme\(^\text{27}\). The HMR is a

\(^{27}\) Housing Gap Funding is one of several initiatives intertwined with the Pathfinder scheme. It is designed to assist in the redevelopment of areas that face particular challenges, such as
government policy designed primarily to increase the housing supply in the north of England. The principal objective is to improve market conditions alongside the environment and economy, and it is also hoped that local partnerships will be promoted and will subsequently be more responsive to local drivers. Other key issues to be tackled include social exclusion and decline. According to the ODPM (2004c), house prices in the North rose by 60% between 1996 and 2002, and in 2003 rose by a further 20%. House prices in the HMR areas rose 45% during the same period (1996–2002). However, negative equity rates are high at 18% and owner occupation is low. To tackle these problems the Government has identified the following as key issues:

- Low demand and low prices are relevant to housing but wider issues such as employment, education and local environment that can bring economic confidence for investors are also important;
- Empowering local stakeholders needs to put in place; and
- Effective interrelationship of stakeholders needs to be provided.

Nationally, in excess of one million homes, about 5% of England’s housing stock, are affected by low demand, and the Government intends that the Pathfinder initiative should reduce the stigma associated with dereliction and abandonment in the housing stock.

The Government is encouraging demolition in order to remove the negative image of these areas, and it argues that this is the best way to attract inward investment and stimulate development activity. Each Pathfinder area is suffering different housing problems, with Manchester and Salford aiming to maximise competition in the market and highlighting the lack of choice, poor environment and high crime as key issues (ODPM, 2004c). In contrast, Oldham and Rochdale within the Greater Manchester catchment have ‘a dysfunctional housing market … oversupply of small, poor quality terraces … and severe overcrowding’ (ODPM, 2004c).

However, the Pathfinder initiative has been met with some degree of scepticism. Recent research by RICS (2004), for example, has shown that private developer interest in these areas is lacking, in addition to there being ambiguous objectives. Also evidence is building which suggests that there is a danger that properties in some areas are demolished and replaced unnecessarily, or that historic heritage is lost (CPRE, 2004a; English Heritage, 2005). In the North West, for example, it is likely that large-scale demolition of high-density terraced housing will be required (Girling, 2004). Similarly, the emphasis on new build has important ramifications for energy consumption and waste generation within the sustainable development agenda. As yet the initiative is in its early stages, with many groups still unsure of its current direction, and there is the potential scenario of pricing out the very groups it was designed to assist.

At a regional level South East England Development Agency (SEEDA) has worked with the Housing Corporation and others to develop the Brownfield Land Assembly Trust, which is designed to identify and acquire small derelict sites in urban regeneration areas for recycling into the housing land market (SEEDA, 2004). These sites have specific development cost constraints, which means that they are not to be delivered by Housing Associations or developers by conventional methods. This land assembly model goes some way to meeting the land ownership barriers identified in previous research (see, for example, Adams et al, 2001), and the model is seen as providing key advantages by SEEDA:

<table>
<thead>
<tr>
<th>advantage</th>
</tr>
</thead>
<tbody>
<tr>
<td>land contamination or high vacancy rates, and is there to help those areas where the housing market has collapsed.</td>
</tr>
</tbody>
</table>
• Generates economies of scale by assembling clusters of sites in priority areas of housing needs;
• Increases the pace of supply of affordable housing;
• Contributes to design quality locally; and
• Operates as a partnership with local authorities and development design experts.

4.3 Environmental sustainability

4.3.1 Definition

For the UK Government, as we have already seen, environmental sustainability requires prudent use of natural resources and maintaining effective protection of the environment (DETR, 1999; HM Government, 2005). Williams and Dair (2005) suggest that environmental sustainability is the easiest element to define in site-specific terms for brownfield sites: for example, there are guides to environmentally sustainable development dealing with land remediation, construction, sustainable urban design and planning, and building use, and there a number of sustainable development checklists for prescribing action at a site level. They characterise environmental sustainability objectives around three main headings in site-specific terms:

• Minimising the use of resources;
• Minimising pollution; and
• Protecting biodiversity and the natural environment28.

However, the sustainability of particular remediation technologies is also an important issue to consider where brownfield sites are contaminated. As Harbottle et al (2005) point out, a number of documents dealing with the sustainability of remediation have been produced by the EU network CLARINET (see, for example, Vegter et al, 2002). These seek to promote the concept of risk-based land management (RBLM) in relation to brownfield land suffering contamination. RBLM is primarily a framework for integrating two key decisions for remediating contaminated land:

• The time frame of the clean-up, which requires risk assessment and prioritization, but also a longer term consideration of the longer term consequences of particular choices;
• The choice of solution which requires an assessment of overall benefits, costs and environmental side effects, the value and conditions surrounding the land itself, community views and other issues.

These two decisions have to take place at both an individual level and a site level, and Vegter et al (2002) argue that there is a need to consider ‘fitness for use’, ‘protection of the environment’, and ‘long term care’ in the application of remediation technologies. Similarly, Nathanail and Bardos (2004) argue that remediation activities also have environmental, social and economic impacts and that the selection of particular remediation technologies should be on the basis of ‘core’ and ‘non-core’ objectives. The core objectives are those fixed by the primary technical drivers and constraints in a project, whilst non-core objectives are related to the wider environmental, economic and social impacts of the particular remediation technique used. The type of technique used will dictate the precise balance of these objectives.

28 Other possible objectives under this heading could also be added, such as protection of the heritage and cultural environment, although to some extent this objective overlaps with social sustainability principles.
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The remainder of this section on environmental sustainability focuses on remediation technologies as an important part of this process.

4.3.2 Classification of techniques

As Nathanail and Bardos (2004) also point out, remediation of contaminated land employs one or more of the following techniques:

- Excavation and removal of materials off-site (to landfill or off-site treatment);
- Containment methods intended to prevent or limit migration of contaminants left in place or confined to a specific storage area; and
- Treatment-based approaches to destroy, remove or detoxify contaminants in the polluted material.

### Table 4.1: Remediation treatment options (adapted from DTI, 2000b)

<table>
<thead>
<tr>
<th>Process</th>
<th>Appropriate application areas and contaminants</th>
<th>Limitations</th>
<th>Comparative UK cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Containment options</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Land filling</td>
<td>Organics and inorganics</td>
<td>May not meet regulatory requirements</td>
<td>Low/medium (depending on location and type of contaminant)</td>
</tr>
<tr>
<td>Barrier/encapsulation</td>
<td>Organics and inorganics</td>
<td>Waste is not treated</td>
<td>Medium</td>
</tr>
<tr>
<td>Vitrification</td>
<td>Organics and inorganics</td>
<td>Limited volume application</td>
<td>High</td>
</tr>
<tr>
<td>Stabilisation/solidification</td>
<td>Organics and inorganics</td>
<td>Not effective with waste containing mostly organic compounds; may break down in the long-term</td>
<td>Low</td>
</tr>
<tr>
<td>Separation and concentration tech</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pump and treat</td>
<td>Permeable geology with mobile contaminants</td>
<td>Long time-scales to address absorbed contamination</td>
<td>Low/medium</td>
</tr>
<tr>
<td>Soil washing</td>
<td>Contaminant-specific organic or inorganic waste</td>
<td>Wash solution must be treated; contaminated soil preparation still required</td>
<td>Medium</td>
</tr>
<tr>
<td>Soil venting</td>
<td>VOCs</td>
<td>Reliant upon good in-situ ground permeability</td>
<td>Medium</td>
</tr>
<tr>
<td>Steam stripping</td>
<td>VOCs</td>
<td>Condensate must be treated</td>
<td>Medium</td>
</tr>
<tr>
<td>Low temperature</td>
<td>VOCs</td>
<td>Limited volume application</td>
<td>Medium/high</td>
</tr>
<tr>
<td>Destruction techniques</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incineration</td>
<td>Broad range of organic compounds, VOCs, PCBs and petroleum-based waste</td>
<td>Concentrates inorganic contaminants; low-volume process; destroys soil</td>
<td>High</td>
</tr>
<tr>
<td>Chemical destruction</td>
<td>Specific organics contaminants (eg PCBs and chlorinated benzenes)</td>
<td>Detrimental effect on soil</td>
<td>Medium</td>
</tr>
<tr>
<td>Bioremediation</td>
<td>Organic compounds</td>
<td>Contaminant-specific; can take longer than alternatives</td>
<td>Low/medium</td>
</tr>
</tbody>
</table>

Similarly, remediation work can be categorised as ‘on-site’ or ‘off-site’, which characterises its location, and the techniques themselves can be described as ‘in-situ’ or ‘ex-situ’. ‘Ex-situ’ approaches are applied to excavated soil and/or extracted groundwater, and ‘in-situ’ approaches are applied to unexcavated soil, which remains relatively undisturbed. Whilst it is difficult to characterise all remediation technologies as exclusively in-situ or ex-situ, ‘dig and dump’ is clearly an ex-situ technology and bioremediation is an ‘in-situ’ technology. Table 4.1 provides further information on typical technologies and their characteristics.
There is a growing awareness of in-situ techniques as holding key advantages over ex-situ methods, in terms of (Bardos et al, 2002):

- Less energy and resources required;
- Less waste and fewer emissions;
- Less nuisance; and
- A similar or lower financial cost.

Harbottle et al (2005) suggest that a ‘sustainable remediation treatment’ is one which satisfies the following criteria:

- Future benefits outweigh costs of remediation;
- Environmental impact of the implementation process is less than the impact of leaving the land untreated;
- Environmental impact of the remediation technique is minimal and measurable;
- The time-scale during which the environmental consequences occur, and hence the associated risk, is part of the decision-making process; and
- The decision-making process includes an appropriate level of engagement with all stakeholders.

On smaller sites it may well not be feasible to set up individual site treatment facilities because the volume of soil and development pressures make it uneconomic to set up the site-based treatment facility. One way of potentially solving the problem of the uneconomic nature of smaller sites is to link them through what Entec (2004) have called the CLUSTER concept. This involves feeding a soil treatment centre or ‘hub’ with contaminated soils from a number of smaller sites. Treated material can then be returned to the same site or another site for reclamation or may be sold on the open market as a fill or aggregate.

In many respects the socio-economic implications of remediation process selection have often been ignored. For Nathanail and Bardos (2004) some stakeholders are at the core of the decision-making process, including the site-owner/developer and/or polluter, together with the service provider (remediation expert) and regulator and planner. But it is important to consider including other stakeholders: site users, financial community, site neighbours, local pressure groups, and other technical specialists. The most appropriate remediation will offer a balance between meeting as many of their needs as possible without unfairly disadvantaging any single group.

The importance of sustainable development in remediation selection is also highlighted by Bardos et al (2002). Project drivers are clearly important and may include a need to protect health and environment, to enable redevelopment or to limit potential future liabilities; but other factors are also important, including risk management, technical feasibility and suitability, and the cost effectiveness of a particular technique.

A variety of tools are used for evaluating remediation technologies (see, for example, Bardos et al, 2002; and Mansfield and Moohan, 2002)\(^{29}\). A summary of the most commonly used tools is given in Table 4.2. It is often difficult to express non-market goods in terms of financial costs, although techniques such as contingent valuation can help, and an added complication is incorporating the variety of stakeholders involved.

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\(^{29}\) Mansfield and Moohan (2002) distinguish between ‘analysis’, which is seen as an estimation of what will happen if an alternative is selected, and ‘evaluation’, which deals with estimation of the relative desirability of what is expected to happen.
Table 4.2: Analytical tools used for evaluating remediation technologies
(adapted from Mansfield and Moohan, 2002, and Bardos et al, 2002)

<table>
<thead>
<tr>
<th>Analytical tool</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial analysis</td>
<td>Remediation considered purely in terms of financial costs and profit, with no attempt to consider other factors</td>
</tr>
<tr>
<td>Cost-benefit analysis</td>
<td>Attempts to maximize social efficiency by expressing all impacts in terms of net present value</td>
</tr>
<tr>
<td>Cost-effectiveness analysis</td>
<td>Attempts to analyse in terms of least cost option of attaining a pre-defined target</td>
</tr>
<tr>
<td>Risk assessment</td>
<td>A systematic approach which allows both present and future health and environmental risks to be identified, evaluated, quantified and managed</td>
</tr>
<tr>
<td>Environmental impact assessment</td>
<td>Considers the environmental, social and economic impacts of proposed developments in non-technical terms</td>
</tr>
<tr>
<td>Multi-criteria analysis</td>
<td>A structured system for ranking alternatives and making selections based on size of effect and importance</td>
</tr>
<tr>
<td>Life cycle analysis</td>
<td>Attempts to incorporate all environmental impacts over a project life cycle</td>
</tr>
</tbody>
</table>

However, technology adoption by users of particular techniques frequently suffers from 'lock-in', because untried and untested technologies may not yet be cost-effective or are unproven in other ways, or because shared familiarity with particular techniques prevents innovation (Perkins, 2003). For example, technology trajectories are driven by several factors:

- The cognitive frameworks of actors, or what Dosi (1982) describes as technological paradigms, which fix the view about particular problems and their technical solutions;
- Increasing returns to adoption, where positive feedback mechanisms act to increase the attractiveness of adopting a particular technology the more it is adopted;
- Network externalities or benefits from adopting a technology which then promote technical, economic and institutional relationships and structures that enable existing technologies to work together.

However, ‘disruptors’ such as policy changes can affect the balance of particular technologies, as the recent EU landfill directive has shown.

4.3.3 Impact of policy on technology adoption: the case of the EU Landfill Directive

Both the European Union and the UK Government are committed to reducing waste and ensuring the sustainable consumption of scarce resources. This involves policies which therefore seek to (Entec 2004):

- Minimise waste generation;
- Recover and recycle materials including contaminated soils;
- Minimise the disposal of waste to landfill to conserve capacity;
Minimise transport and energy use; and
Minimise the use of new aggregates.

The EIC (2005) outline some eight main directives which are pertinent to brownfield land and remediation. The EU Landfill Directive, which came into force in July 2004, effectively ends the co-disposal of hazardous and non-hazardous waste and requires hazardous waste to be treated prior to landfill. Recent European case law has also created possible issues (Box 4.1). As ODPM (2004d) points out, the EU Landfill Directive will almost certainly result in a reduction in the available capacity to dispose of contaminated soil from cleaning up contaminated sites.

Current methods of clean-up rely on ‘dig and dump’ or ex-situ methods. However, from July 2004, under the provisions of the Landfill Directive (LFD), all hazardous waste material being taken to landfill must be pre-treated unless this is not technically feasible or does not reduce the quantity or hazard to human health or environment. Disposal of hazardous waste to landfill will be allowed only on classified hazardous waste sites, although ‘stable, non-reactive’ materials (including some contaminated soils) can be disposed of in separate ‘cells’ in non-hazardous sites. The new Waste Acceptance Criteria which support the LFD are also designed to restrict the types of hazardous waste that can be accepted.

Currently there are some 200 landfills in England and Wales classified for the disposal of hazardous waste (ODPM, 2004d), and these comprise both commercially available and ‘in-house’ uses. Some 37 sites have stated their intention to be dedicated hazardous waste sites, but the majority of these are ‘in-house’, with only 9 to 13 sites available for commercial use, and limited capacity available in South East, South West and Wales. Figure sources by DEFRA and the private sector put the production of hazardous waste from brownfield at somewhere between 1.3mn and 4mn tonnes, but this is sensitive to such factors as using in-situ methods of clean-up more extensively, faster progress with Part IIA claims, and more stringent criteria for pre-treatment.

**BOX 4.1 Van der Walle**

A further complication has been added by the Van der Valle case (ECJ C-1/03). This case confirmed that pollutants seeping into land as well as the soils contaminated by pollutants constitute waste within the meaning of the EU Waste Directive. The implications of this case are still being debated within the UK and elsewhere, but the ruling effectively means, if interpreted strictly, that treating contaminated soils on-site will require compliance with the waste-permitting regime (contained within EPA 1990 and the Waste Management Regulations 1994 with related guidance (Shergold (2005))). Therefore developers will need to obtain a site licence or mobile plant licence to comply. Alternatively, instead of on-site treatment, developers may prefer to remove contaminated soil to a specialist treatment centre to enable reuse of soils, although any soil returned to site is still to be treated as waste.

On-site treatment requires a waste management licence, which is usually a mobile plant licence, but ODPM (2004d) suggests that there may well be capacity problems, particularly where alternative remediation techniques are constrained by factors such as the nature of the material on site, the mix of contaminants, and uncertainty over untested techniques.

As yet, the cost implications for developers are relatively un-researched, but several studies provide an indication of costs of the LFD.
▪ **English Partnerships (EP) (coalfield and other programmes).** ODPM (2004d) reports on an EP study from 2003 which found that, for small sites, future costs could rise from 113% to 183% of initial remediation budgets (equivalent to between £11,000/ha increase for small volume to area ratio sites and £500,000/ha for large volume to area ratio sites, with an average increase of £130,000/ha). For large sites, the increases might range from 107% to 174% with an average increase of £50,000/ha. According to EP, the additional costs to the National Coalfield’s Programme could be at least £40mn, resulting from higher gate prices, increased transport costs and increased pre-treatment costs.

▪ **Housing development.** ODPM (2004d) also sources data from the Housebuilders’ Federation on the impact of the LFD on brownfield development ‘windfall sites’ in the North West, which represent about 71% of potential development sites in that region. Generally these sites are small, with an average size of 1.5ha. The analysis found that 80% of the sites require remediation or clearance, that each site produces 75 tonnes of waste, that alternative forms of treatment are not used, and that in the worst case scenario (doubling the disposal costs) the additional housing costs could range from £551/plot (non-hazardous) to £3000/plot (hazardous), assuming 40 dwellings/ha. If it is assumed that there is an average increase in cost of £2000/plot, this represents £132mn in total development costs. Crowcroft (2004) in a study for ERM estimates that the LFD adds the equivalent of £250–£500 per sq m to development costs, and that if the soil treated is 2m deep on site, land values could be wiped out if disposal prices are much less than £2.5mn/ha.

▪ **Commercial development.** A study by Secondsite (which owns some 350 former gasworks and other sites in its portfolio) estimates the impact of the LFD on its continued remediation programme (ODPM, 2004d). Assuming waste disposal costs account for 50% of project values, and with the full panoply of available tax breaks, the predicted impact is an overall 20% decrease in the number of viable development sites, with the number of marginal sites also increasing, and a rise in negative value sites. Crowcroft (2004) in the previously mentioned analysis for ERM finds that for commercial/industrial land selling at between £250,000/ha and £2.5mn/ha, the equivalent cost increase is between £25 and £250 per sq m.

Interestingly, the LFD does not appear to have caused the same impact in the rest of Europe as in the UK. ODPM (2004d) suggests this is due to three reasons:

▪ There has been a greater emphasis on regeneration-led housing in the UK;

▪ In Europe there has been less emphasis on co-disposal of hazardous waste in landfill and hence less change to current practice;

▪ The situation regarding waste in Europe is simplified. In France, Flanders and Italy, for example, companies do not need to worry about whether material on-site is waste: a site permit controls clean-up through a dedicated permit system. In fact Entec (2004) used such evidence to argue strongly for the removal of waste licensing permits and their replacement with a single remediation permit to avoid the blight and stigma associated with waste in the UK.

In overall terms, such evidence does indicate that the financial viability of schemes may be compromised in the UK, not only in terms of direct costs but also as a secondary impact through, for example, delivering planning obligations. However, there are various tax incentives which may help offset the negative implications of the LFD. These comprise:

▪ **Contaminated Landtax Credit (CLC).** Introduced under the Finance Act 2001, this enables companies to offset 150% of the cost of dealing with contaminated land against Corporation Tax Liability for redevelopment of the site. Effectively
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...this helps increase investment yield (Entec, 2004). The Act includes provisions that enable companies to claim tax relief on capital and revenue expenditure on the ‘remediation of contaminated land’ in the UK. Part 1 of the Act enables a company to elect for capital expenditure incurred on remediation of land acquired for use in its trade, or for its Schedule A business to be allowed as a deduction in profits. Parts 2 and 3 enable relief of 150% of qualifying revenue expenditure on remediation, which is applied to the Part 1 capital expenditure (Box 4.2). Land remediation is strictly defined and the expenditure must be on land that was in a contaminated state when it was purchased (Entec, 2004).

CPRE (2004b) provides a useful critique of the CLC as part of a wider study on the taxation of property. Although CLC encourages the use of brownfield sites, it can potentially have negative consequences. For example, some developments that would take place anyway without the tax credit are subsidised, and there is a danger that developers lose the incentive to keep land clean because they know they do not need to pay for the cost of clean-up. This has led Barker (2004) to suggest that the CLC should be focused on long-term derelict land, and the CPRE report suggests that the credit rate should be linked with the length of time the land has lain derelict, perhaps with availability over a limited 5-year period.

**BOX 4.2 Contaminated Land Tax Credit**

London Development Agency (2005) shows how companies can benefit from the CLT Credit. For example:

Company A is paying tax on its profits at 30%. Relief is claimed on remediation work.

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of remediation work</td>
<td>£100,000</td>
</tr>
<tr>
<td>Super-deduction</td>
<td>£150,000</td>
</tr>
<tr>
<td>Tax benefit of super-deduction</td>
<td>£45,000</td>
</tr>
<tr>
<td>Tax benefit without super-deduction</td>
<td>£30,000</td>
</tr>
</tbody>
</table>

Company B is loss-making and is not due to make a taxable profit in the near future. It can surrender the loss created by the super-deduction to the Inland Revenue and obtain cash back.

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of remediation work</td>
<td>£100,000</td>
</tr>
<tr>
<td>Potential cash reclaim</td>
<td>£24,000</td>
</tr>
</tbody>
</table>

- **Landfill Tax Exemption.** Sections 43A and 43B of the Finance Act 1996 (as amended by the Landfill Tax (Contaminated Land) Order 1996 (SI 1996 No 1529)) exempt the disposal to landfill of waste resulting from the reclamation of contaminated land (Entec, 2004). A certificate of exemption must be applied for from HM Customs & Excise. Although the standard rate of tax increased from £15/tonne to £18/tonne in the 2005 Budget, the lower rate remains unchanged at £2/tonne for inactive waste. Exemptions for contaminated land waste continue to apply, but of course must be interpreted in parallel with the new LFD.
4.4 Social sustainability

4.4.1 Definition

The Government’s sustainable development strategy (HM Government, 2005) highlights the importance of ensuring a strong, healthy and just society, through:

‘Meeting the diverse needs of all people in existing and future communities, promoting personal wellbeing, social cohesion and inclusion and creating equal opportunity for all.’

The Government’s recent ‘Community Action 2020 – Together We Can’ programme is also designed to increase community engagement in solving public problems and improving quality of life. In planning terms, the social sustainability pillar has also been highlighted as an important element within the new PPS1 statement (ODPM, 2005). Plan policies should therefore (ODPM, 2005):

- ensure that the impact of development on the social fabric of communities is considered and taken into account;
- seek to reduce social inequalities;
- address accessibility (in terms of both location and physical access) for all members of the community to jobs, health, housing, education, shops, leisure and community facilities;
- take into account the needs of all the community, including particular requirements relating to age, sex, ethnic background, religion, disability and income;
- deliver safe, healthy and attractive places to live; and
- support the promotion of health and well-being by making provision for physical activity.

Williams and Dair (2005) suggest that there are two distinct elements to social sustainability in relation to land reuse in a broad sense. These comprise:

- Elements affecting individuals and human well-being (e.g. health, shelter education and mobility); and
- Collective social capital associated with social interaction.

In turn, they argue that this can be translated into a number of related objectives for brownfields, including:

- Adhering to ethical standards during development, through supply chain management, providing a healthy and safe environment, and promoting social inclusion;
- Providing adequate local services and facilities, including open space, shops, schools and healthcare facilities;
- Providing housing to meet the needs of communities where changing demographics are impacting;
- Integrating the development within the locality in terms of transport and related infrastructure;
- Providing high quality developments which promote liveability and community participation; and
- Conserving local culture and heritage.

From a development industry perspective, this raises two important issues for the current research:
How are developers engaging with communities and other stakeholders in brownfield development before, during and after development? and

To what extent are communities becoming polarised through the process of brownfield development?

4.4.2 Community engagement

As Pennington (2000) points out, critics of property-driven urban regeneration and those advocating collaborative planning have often complained about the continuing failure of successive UK urban redevelopment programmes to address broader social and economic concerns. Often attempts to include wider community interests have been dismissed as tokenism, and there are continued calls for extending community participation to provide more balanced decision-making (see, for example, Brownhill, 1990, and Healey, 1992).

A plethora of area-based regeneration initiatives have been implemented by successive governments in the UK during the 1980s and 1990s (ODPM, 2003a). The early programmes were aimed at overcoming land and property market failure, but during the 1990s ‘holistic’ regeneration initiatives developed, the City Challenge scheme being one of the first of these schemes. In 1994 the Single Regeneration Budget was launched which shifted the emphasis more towards local partnerships.

Further attempts were also made by the current Government to promote community engagement. The New Deal for the Communities, for example, which sought to provide proposals for regenerating deprived communities, originated within the Cabinet Office Social Exclusion Unit and was focused on the most deprived areas in the UK, measured by poor job prospects, crime, poor education and poor health (Ward, 2004). This was developed further with the Neighbourhood Renewal Fund in 2000; more recently, the Local Development Frameworks (and accompanying area action plans) and the Sustainable Communities Plan were launched to underpin these earlier initiatives.

A report by ODPM (Housing, Planning, Local Government and the Regions Committee) (2003b) was critical of the social provision within the Sustainable Communities Plan, however. The report suggested that two principal factors needed to be considered:

- The involvement of the local community in designing the new neighbourhoods;
- Creating a mixed community by providing a mix of housing for sale and subsidised housing.

However, little research has, so far, been carried out into the role of community participation in relation to brownfields in the UK, although in the USA there is a well-developed literature (see, for example, Putnam, 1996, and Greenberg, 1998). In the USA, Greenberg and Lewis (2000) showed that in a Hispanic area of New Jersey the residents were more concerned about recreation, cultural and community facilities than about industry and business on their brownfield development. Moreover, those who were most interested in participation tended to be optimistic, less trusting of authority, distressed by brownfields and focused on youth opportunities. Raco and Henderson (2005) offer a critical view of policy-driven brownfield development in the UK, which they argue has failed to appreciate the subtler local differences in existing communities and their attitudes towards development. In particular, they argue that for brownfield development to be effective it must be underpinned by a range of social and infrastructure programmes and must provide for local training, childcare and affordable housing which are more community- or people-focused. Whilst the Local Government Act 2000 requires local authorities to produce Community
Strategies and to establish sustainability planning programmes, there remain doubts over how these may be met at a local level.

The way in which communities perceive risk from contaminated sites is also an issue in relation to brownfield land. Wehrmeyer et al (2004) show how definitions of risk differ, in ways ranging from technical through economic to psychological and sociological or cultural risk. Again, different stakeholders in the brownfield development process will view risk differently: professional or expert people may favour an evidential basis, for example, over a lay, experiential basis.

In relation to contamination, the stigma element should also be considered, as part of the wider perception of risk by both professionals and lay people. Campanella (1984) refers to the ‘chilling effect’ of stigma30 as:

‘Loss in value because of past negative publicity, the reduction of local commercial activity, the prospect of future negative impacts due to additional contamination, negative publicity and inconvenience.’ (Greenhalgh and Shaw, 2003)

This ‘chilling effect’ was the equivalent of ‘stigma’ to which Patchin (1988) referred some years later. He noted that physical clean-up does not necessarily remove all value loss due to contamination, and the shortfall is stigma. As Patchin (1988) points out, properties that are seriously contaminated may be unmarketable and others less seriously affected may be subject to reduced marketability (i.e. they are ‘stigmatised’). Market value loss can therefore vary according to the nature of the contamination and may be characterised by:

- Costs of clean-up;
- Liability to the public; and
- Stigma after clean-up.

Patchin (1991) therefore developed his definition of stigma in a later paper, defining it as:

‘A negative intangible … caused by one or a combination of six factors.’

These comprised:

- Fear of hidden clean-up cost;
- Trouble factors associated with clean-up;
- Fear of public liability;
- Lack of mortgageability;
- Different market reaction to contamination of residential versus commercial premises; and
- The issue as to which standards should be applied in respect of contamination.

This concept was later built on by other research. Mundy (1992), for example, characterised the presence of stigma over time, with the greatest loss in value occurring when the contamination is discovered, which can result in the property becoming unmarketable until the problem is investigated and the severity of the contamination is understood. This can then lead to a reduction in risk and increased value once the property is remediated. Colangelo and Millar (1995) also point out that ‘proximity stigma’ can exist where negative impact is suffered by neighbouring properties, in addition to stigma on the site being cleaned up.

30 For a comprehensive review of the stigma literature relating to real estate, see Richards (1997).
4.4.3 Polarisation in communities

Many argue that community engagement can promote more democratic methods of interaction or engagement with key stakeholders in the development process, but stigma and risk perceptions perhaps also represent forms of ‘dysfunction’ when public trust and confidence in the development process are eroded. Moreover, in the UK and USA there has been an increasing focus on how polarisation in communities is occurring and being reinforced by developments which lack a balance of housing to meet a variety of needs (Minton, 2002; 2004). Minton (2002; 2004) argues that, in the USA, rising social polarisation is manifested by the growth of ‘gated’ communities and ghettos, while in the UK a patchwork of ‘hotspots’ (areas characterised by acute affordability problems) and ‘cold spots’ (often in neighbouring areas which are vulnerable to market collapse and social exclusion) is increasingly common. This has not been helped by a lack of precision over what constitutes ‘affordable’ housing in policy. According to ODPM (2005b):

‘Affordable housing is housing of an adequate standard which is cheaper than that which is generally available in the local housing market. This can comprise a combination of subsidised rented housing, subsidised low cost home ownership including shared ownership, and in some market situations cheap housing for sale. Local planning policies can provide for the provision of appropriate quantities of affordable housing in this sense.’

However, local authorities identify a lack of clarity in government policy as the greatest single constraint on their capacity to use planning powers to secure affordable housing, according to research commissioned by the Joseph Rowntree Foundation (Crook et al, 2002, and Whitehead, 2000). But there are also big differences between local authorities in the way that ‘affordable housing’ is defined and in the number of low-cost homes they have been able to achieve through Section 106 agreements with developers. In the meantime, the sale of council houses and lack of new build of social housing by local authorities have reduced the size of the public housing sector, the main component of affordable housing. The Barker review (2004) suggested that at least 17,000 additional affordable houses are required each year to keep pace with demographic trends, and addressing the backlog of housing need would raise this figure to 23,000 per annum. But developers seek to maximise profits and deliver shareholder value; under these circumstances the temptation is often to minimise the affordable housing element. The concept of corporate social responsibility (CSR) is growing, however, and an increasing number of developers are realising that strengthening community links by building schemes that are sustainable and integrated within the local area can provide ‘first mover’ advantage (Dixon and Marston, 2003). However, the additional risks from brownfields can also deter developers from promoting affordable housing, as ODPM Housing, Planning Local Government and the Regions (2003b:21) pointed out:

‘In the past, planning gain contributions have helped to create mixed tenure developments by providing the sites for affordable homes, but significant public grants were still required to build the homes. Whilst the private sector contribution can be increased, the extent is limited on brownfield sites that require costly remediation and new infrastructure.’

4.5 Summary

The literature review in relation to sustainability has highlighted the fact that concepts of sustainability are often poorly scoped and identified in relation to brownfield regeneration. The conceptual framework that has been developed in Stage 2 of this research is designed to analyse and examine how developers and other key stakeholders are engaging with the concept of sustainability in brownfield regeneration. For example:
• **Market impacts (the ‘economic’ pillar)**

For example:
- How is risk defined, assessed and communicated in the development process?
- How is the economic viability of a scheme measured?
- What is the nature of existing market dysfunction or failure in the immediate development locality, and how will the development benefit the area?
- What causes such dysfunction/failure in brownfield areas?
- Is stigma an issue, and how can it be measured?

• **Stakeholder engagement (the ‘social’ pillar)**

For example:
- How do developers engage with other stakeholders (including national, local and regional government, agencies, remediation consultants, the public) during the brownfield regeneration process?
- What are the drivers, tensions or frictions which may arise during the brownfield development process?
- What are the developers' cultures and responses to brownfield regeneration?  

• **Technology adoption (the ‘environmental pillar’)**

For example:
- What determines the type of remediation technology used?
- How does the development industry view new, innovative clean-up technologies?
- What is the perception of other stakeholders towards such technologies?
- What determines technology ‘lock-in’ and adoption?
- What is the international experience in remediation?

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31 We are therefore also very interested in understanding developer ‘cultures’, which have been explored by Guy, Henneberry and Rowley (2002) in previous work.
Part 2: National Developer Interviews
5 National Developer Interviews

5.1 Overview
This section of the report presents our findings from the national developer survey. The overall aim of the research is to critically examine the development industry undertaking brownfield regeneration projects in the UK, focusing on the role of the residential property developer in relation to land remediation, innovations in the construction process and perceptions/attitudes towards concepts of sustainability. The report also considers a number of government recommendations on the reuse of brownfield land in the UK. These interviews were also conducted as a prelude to extract further themes for investigation in the case studies (see Volume 2 of this report).

5.2 Main findings

- There appears to be a readiness to support the recommendations from the Barker Review in relation to innovation in the construction process, the streamlining of planning procedures, and delivering homes ‘in tune’ with market preference. However, in practice, the prospect for an industry-wide implementation of these recommendations is an area of concern.

- The economic and financial framework is a powerful driver for the development of contaminated brownfield land. It was apparent from the interviews that developers are frequently dissuaded from developing on contaminated brownfield sites when the degree of uncertainty exceeds what is deemed viable and ‘risk-tolerable’. Insufficient information related to site conditions, complying with regulators, and technical difficulties, were common obstacles.

- The recent EU Landfill Directive is seen as placing an additional cost on brownfield development projects in relation to the disposal of ‘hazardous waste’. This has also prompted developers to investigate on-site remediation methods as an alternative – particularly capping and bio-remediation.

- The perceived risks associated with brownfield projects (namely escalating costs and unexpected liabilities) are often mitigated through the use of warranties and fixed term contracts.

- Innovations introduced as a consequence of increased emphasis on brownfield development were lacking. However, the development industry is clearly adapting existing techniques to fit the ‘economies of scale’ of brownfield projects.

- Although the development industry is playing an influential role in the ‘sustainable development’ agenda, there is a degree of scepticism over an agreed industry-wide definition, and this may hinder its implementation.

- Developers seem to be adopting a proactive approach to defining sustainability on their own terms. To establish ‘sustainable’ end products developers are starting to employ energy-efficient design and waste solutions. However, recent changes to parts of the Building Regulations have challenged developers to meet these standards whilst achieving financial gain.

- Despite incorporating community consultation within the development process, there is a general concern over how community participation can be undertaken without being counter-productive or jeopardising a project’s proceedings.

- Planning reforms and an industry-wide call for increasing the availability of development land could stimulate brownfield development in the UK. Many developers felt that regulatory bodies such as Regional Development Agencies
and English Partnerships have a greater role to play in order to facilitate these provisions.

- From a developer's perspective the future of brownfield regeneration seems to rest heavily upon the simplification of government policy such as the Building Regulations, as well as developers’ responses to bespoke brownfield legislation, namely the EU Landfill Directive and the Waste Acceptance Criteria.

### 5.3 Background and research questions

This section discusses the results of the follow-up interviews conducted to complement the findings of the Stage 1 report, published in 2004\(^{32}\). The purpose of this survey was to provide an update on developers’ opinions on new legislation and explore the Stage 1 findings in more detail. Stage 1 concluded that there was a clear intention by the development industry to utilise more brownfield land.

Our findings from the Stage 1 report, together with existing literature, suggests that some of the outstanding questions and issues to be addressed are:

- What are the principal constraints on achieving brownfield development?
- To what extent has brownfield development encouraged innovation in the development process and the systems and products used?
- What are the barriers to introducing more innovative methods of construction and remediation?
- To what extent are developers considering ‘sustainability’ in the development process, and how well understood is it as a concept or paradigm?
- At what stage in the brownfield development process do developers engage with other stakeholders, including the local community, local authorities, environmental consultants/engineers, and other statutory bodies? Can this interaction be improved?
- How do developers manage the risk associated to brownfield development?
- What impact does post-remediation stigma have on marketing times and end values? To what extent, if at all, is the site history communicated to purchasers?

The interviews also presented the opportunity to build on the opinions expressed by developers on recent policy reviews and legislation, and to explore such issues as:

- How will the EU Landfill Directive impact upon developers’ behaviour?
- What are housebuilders’ opinions on the likely effectiveness of the Barker Review recommendations for increasing housing supply?
- What improvements in government policy does the development industry feel would further facilitate the shift towards developing brownfield land?

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5.4 Methodology

The survey invited twenty developers to participate in a follow-up interview, selected from the previous Stage 1 results based on their willingness to participate, size, and proportion of brownfield completions. Table 1 summarises the final survey respondents, of which nine were top housebuilders and two commercial specialists. This figure represents approximately 1% of the original sample (taken as the first phase questionnaire sample size of 987). Although our sample considers a small proportion of the development industry, it must be stressed that the objective of this survey was to obtain an in-depth examination of the themes from our Stage 1 results, to build on developers’ responses, and to offer an opportunity to update the survey to fit current legislation and policies. The project will examine the opinions of smaller housebuilders through local-level interviews and case study work in subsequent phases of this study (see Volume 2).

Table 5.1: Summary of follow-up interviewees

<table>
<thead>
<tr>
<th>Development sector</th>
<th>Size of company(^1)</th>
<th>% brownfield completions</th>
<th>Interviewee(s) (company position)</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial</td>
<td>n/a</td>
<td>100</td>
<td>Director</td>
<td>London</td>
</tr>
<tr>
<td>Commercial</td>
<td>n/a</td>
<td>85</td>
<td>Development Manager</td>
<td>South East</td>
</tr>
<tr>
<td>Residential</td>
<td>Large</td>
<td>90</td>
<td>Environmental Manager</td>
<td>South East</td>
</tr>
<tr>
<td>Residential</td>
<td>Large</td>
<td>70</td>
<td>1) Finance Director</td>
<td>South East</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2) Land Manager</td>
<td>North West</td>
</tr>
<tr>
<td>Residential</td>
<td>Large</td>
<td>70</td>
<td>Land Director</td>
<td>South East</td>
</tr>
<tr>
<td>Residential</td>
<td>Large</td>
<td>95</td>
<td>Director of Innovation</td>
<td>South East</td>
</tr>
<tr>
<td>Residential</td>
<td>Large</td>
<td>50</td>
<td>Planning Director</td>
<td>South West</td>
</tr>
<tr>
<td>Residential</td>
<td>Medium</td>
<td>70</td>
<td>Development Director</td>
<td>North</td>
</tr>
<tr>
<td>Residential</td>
<td>Large</td>
<td>55</td>
<td>Managing Director</td>
<td>North</td>
</tr>
<tr>
<td>Residential</td>
<td>Small–Medium</td>
<td>70</td>
<td>Managing Director</td>
<td>South East</td>
</tr>
<tr>
<td>Residential</td>
<td>Medium</td>
<td>95</td>
<td>Managing Director</td>
<td>North West</td>
</tr>
</tbody>
</table>

\(^1\) Size of company based on data provided in Private Housebuilding Annual 2004. Size determined by number of units completed (Large = >500, Medium = 100 – 500, Small = <100). This is based on breakpoints in the data included in the Annual, and so differs slightly from the groupings adopted in the Stage 1 report and the later EGi analysis in this report, where Small =<31 and Medium/large = >31).

The interviews were conducted face-to-face, and took place between October 2004 and January 2005. Reminder letters and telephone correspondence were issued after a reasonable length of time in an attempt to increase the response rate of the survey.

5.4.1 Research questions

The interview questions were based on the results obtained in the Stage 1 report (i.e. those areas that required further investigation), recent literature and current themes of specific government policy importance, such as fiscal incentives for brownfield development, recommendations of the Barker Review, emphasis upon the provision of affordable homes, and applying modern methods of construction. The survey was separated into five principal subject areas:
Developers’ responses to the Barker Review recommendations. Developers were asked to comment on these recommendations in terms of their effectiveness in increasing housing supply.

Developers’ approach to contaminated land. This explored the developers’ perceptions of the main difficulties in developing on contaminated sites, the extent of fiscal incentives used in assisting remediation and developing on contaminated land, factors driving the application of innovative remediation technologies, and the impact of the EU Landfill Directive and other legal issues related to brownfield redevelopment, such as the European Court of Justice’s van de Walle case.

Innovations occurring within the development industry. This section examined the perception of innovation in the construction process as a consequence of the focus on brownfield development, together with developers’ comments regarding perceived barriers to innovation.

Sustainability incorporated into development projects. Developers were asked to give their definition of sustainability in relation to development projects, and to comment on how they were trying to improve the sustainability of development projects. Other issues raised in this section included the extent to which the Building Regulations were creating more sustainable development, and the importance of consultation with local communities involved in the development process.

Developers’ recommendations on government policy. Interviewees were given the opportunity to provide opinions and recommendations on current government policy related to brownfield development in order to highlight some of the ‘inefficiencies’ operating at present across the industry.

5.5 Interview results

5.5.1 Delivering more homes on brownfield sites

The findings from the Barker Review (Barker 2004a and 2004b) included constraining factors on the housebuilding industry as one of the main grounds for lack of responsiveness to increasing housing demand. The current mechanism of delivering more brownfield land on to the market and the regulatory framework dealing with brownfield regeneration, have also hampered some developers from continuing to develop brownfield land, particularly contaminated sites.

2.1.1 The developers’ views

In the context of the above factors, opinions were generated regarding several proposed changes, based on the recommendations from the Barker Review. Issues emerging from the Stage 1 survey, which were intended to investigate some of the outstanding barriers faced by developers, were also explored.

Of the 11 developers interviewed (commercial developers and housebuilders), 8 returned their responses in a pre-completed matrix prior to formal interview. Table 5.2 summarises their views, with figures in the column representing the number of responses given.
Table 5.2: Views on proposed changes to deliver more homes on brownfield land*

<table>
<thead>
<tr>
<th>Proposed changes</th>
<th>Very Important</th>
<th>Important</th>
<th>Neutral</th>
<th>Not Important</th>
<th>No Views</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Contaminated land:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A more transparent system of grants for non-viable sites</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Streamlining contaminated land regulation (e.g. Single Remediation Permit)</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Greater provision of remediated land by public sector or other intermediaries</td>
<td>1</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Government-backed insurance against contamination risk</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>The extension of the contaminated land tax credit to derelict brownfield sites</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Innovation in construction:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Greater use of off-site manufacturing techniques</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>More investment by the construction industry in training</td>
<td>5</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Planning application process:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reducing delays in the planning process</td>
<td>6</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Greater certainty in and faster resolution of s.106 agreement</td>
<td>5</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Delivery mechanism:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Greater use of compulsory purchase powers to aid site assembly</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Greater use of delivery mechanism such as Urban Development Corporations</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Tax on greenfield development</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Based on 8 returned responses from developers

The results above show that not all recommendations for changes were considered important by the developers interviewed, suggesting that some development barriers require greater urgency to be resolved than others.

In terms of delivering homes on contaminated land, it was felt there should be greater emphasis on the provision of remediated land by the public sector. This might relate to developers’ reluctance to deal with the complex nature of developing on contaminated land, particularly in view of the inherent risks. The extension of Contaminated Land Tax Credit to derelict brownfield sites (which were not necessarily contaminated) was also considered important for increasing the supply of brownfield land.
In relation to developers’ land banks, one major housebuilder felt that, due to changing market conditions, less land is being tied up, and investments or acquisitions 10–15 years prior are now being released in what they saw as a ‘have your cake and eat it’ development market. The developer went on to emphasise the reduction in speculative developments as a consequence of the shift from greenfield to brownfield schemes.

Responding to the ongoing problem of insufficient supply of skilled labourers in the construction industry, developers also recognised the importance of more investment for training in this sector to support the housebuilding industry.

Turning to the interviews themselves: in terms of the planning system, developers strongly felt that reducing delays in the planning application process and greater certainty as well as faster resolution of s.106 agreements\(^{33}\) would play an important part in delivering more housing in brownfield land. However, one housebuilder believed that reducing delays in the planning process was a mere ‘timing’ issue that might help bring forward units faster but would not necessarily encourage more developers to enter the market.

In delivering brownfield land, it was important for developers that local authority or public bodies implemented a greater use of compulsory purchase to aid site assembly. This could be seen as a means to assist development in areas of low demand where a market needed to be created, as mentioned in the Stage 1 survey (Shephard and Dixon, 2004), and one commercial developer admitted that gaining site assembly could be ‘a long tortuous process, underpinned by the planning risk and the degree of uncertainty that exists in the system’.

One developer expressed his views on the use of compulsory purchase powers and delivery mechanisms such as Urban Development Corporations to deliver more brownfield land. He stated:

‘We do not see them as a delivery mechanism; we see them as being a barrier. It is just another body that you have got to talk to; whereas the land was out there, we could go out, buy and build on it; but when it is done through development corporations, it is more of a complication.’

5.5.2 The housebuilders’ views

Another set of questions was presented to housebuilders to capture their views on some of direct recommendations from the Barker Review (Table 5.3). Rating each recommendation from ‘strongly agree’ to ‘strongly disagree’, their responses provide an indication of the readiness to support the implementation of these recommendations. Of the 9 housebuilders interviewed, 7 sent back their responses.

\(^{33}\) Section 106 (England) of Town and Country Planning Act 1990 and Section 75 of Town and Country Planning Act (Scotland) 1997 are planning agreements that allow local authorities to seek cash or contribution from developers to mitigate the impact of developments.
Table 5.3: Housebuilders’ views on Barker’s recommendations**

<table>
<thead>
<tr>
<th>Barker’s recommendations</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Not Agree</th>
<th>Strongly Disagree</th>
<th>No Views</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Innovation in construction</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The development of a strategy by NHBC/HBF to address barriers to modern methods of construction</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Planning application process</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scaling back s.106 agreement and partially replacing with the Planning Gain Supplement</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Introduction of two additional routes (outline only and design code) for gaining planning consent</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Local authorities agreeing build-out rates on large sites with the developer as a condition of planning permission</td>
<td>2</td>
<td>4</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Delivery mechanism</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>English Partnership to take lead role in developing complex sites in partnership with private sector</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>The implementation of a strategy to increase levels of customer satisfaction amongst new home buyers by 2007</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Based on 7 returned responses from housebuilders

Those housebuilders interviewed expressed their strong agreement for the need for housing institutions (NHBC/HBF, for example) to develop strategies to tackle barriers in modern construction methods, such as economic restrictions, to delivering more housing.

Introducing two additional routes to planning consent was welcomed, and it was felt that the two routes – online only and design only – could potentially speed up and simplify the planning application process. On the other hand, a particularly critical view was also expressed regarding the agreement between developer and local authority on the build-out rates on large sites as part of conditions for planning permission. Developers felt that they needed to be free to decide the best time to release their units in order to deliver an acceptable return. What was considered more pressing concerning the planning process was ‘to increase the understanding of planning authorities of just how complicated the processes are to bring about a development’ and ‘the streamlining of planning regulations to make it easier’.

Still within the context of the planning application process: regarding the recommendation on scaling back the s.106 agreement and partially replacing it with the Planning Gain Supplement, although a fairly low resistance was apparent from the responses, one housebuilder who chose the ‘neutral’ view expressed their concern:
Planning gain supplement could be seen as a double-edged sword. In some respects it could be positive in a way that you know what your payments are up front. The concern I have is that there could be an element of “double counting”, that money could just be creamed off to fund other services that the Local Authority provide and the developer would still provide the infrastructure that the development requires.’

With reference to housing provision, housebuilders agreed on implementing strategies to increase customer satisfaction, suggesting willingness to achieve end products that can actually meet the market demand.

In general, developers believe that the Barker Review is ‘broadly right’ in terms of analysing the problems of housing supply and the measures needed to improve it. One developer referred to it as an ‘encouraging’ document:

[The Barker Review] gets to the heart of issues from developers’ perspectives, that constraint on the supply of land is the limiting factor, and if could get more land we would develop more.’

However, scepticism was expressed amongst the developers as to whether the recommendations from the Review could be taken on board. Some were concerned that government policies or regulations are not yet sufficiently joined up to deliver the implementation of the recommendations, in addition to the fact that in practice the planning authorities have already been ‘overworked and under-resourced’. One developer looked at the delivery of the recommendations from the political aspect:

‘Sadly, the political area of planning permission does not win votes, so I think there is not the political will to carry through the recommendations of Barker.’

Another concern was raised in terms of delivering the practical implementations of the recommendation from the national strategy to the regional and then local level.

5.5.3 Concluding comments

Overall, the above responses suggest that developers and housebuilders welcome the recommendations for change that Barker made to tackle the main barriers related to housing provision. From the housebuilders’ responses, there is a degree of readiness to accept the implementation of Barker recommendations concerning improvement to the planning application process, addressing barriers in the construction industry, and implementing strategies for their end products to be more ‘in tune’ with the market preference. Nevertheless, there was also some degree of scepticism expressed within the limited number of interviews conducted as to whether Government could really deliver.

5.6 Delivering development on contaminated land

Following up the findings of the previous survey (Stage 1), this research endeavoured to gain further understanding of how developers approach development on contaminated land in relation to remediation methods, the issues surrounding the efficiency and effectiveness of the current regulatory framework, and the management of risk and stigma.

5.6.1 Approach to contaminated land

The previous survey findings showed that all the developers being interviewed undertook development on contaminated land (Shephard and Dixon, 2004). This section examines their approach to contaminated land, which in the context of the development process impacts during the site identification stage (prior to land
acquisition), the gaining of planning consent stage, and the site preparation stage when remediation action takes place.

In deciding whether to acquire contaminated land as their potential development site, the developers interviewed stressed the importance of making sure that the site would be commercially viable to provide satisfactory profit, taking into account the following principal factors:

1. **Supply factors.** The relative shortage of prospective greenfield sites has forced developers to shift their focus to riskier brownfield sites, although one housebuilder stated that:
   
   ‘At the end of the day, the profit itself does not necessarily reflect whether it is brownfield or greenfield…’

2. **Site-related factors.** This includes the market prospects offered by site location, the quality of the site for housing development, and the possibility of containing the risks associated with contamination. Developers were also attracted to sites that already had planning permissions attached.

3. **Cost-related factors.** Remediation cost was clearly the most important, as it affected the financial viability of a development. This was followed by other considerations such as the costs entailed in s.106 agreements and infrastructure provision.

A housebuilder expressed the following views on remediation cost related to the approach to brownfield development in the industry:

‘If the remediation cost was lowered that would promote brownfield development throughout the industry. More brownfield land would come on to the market if the people selling it could command a higher price for it, so consequently if the remediation cost is cheaper they will get more of the land.’

Related to the remediation cost, some interviewees found that existing government fiscal incentives to date made little difference to their development on contaminated sites. If more beneficial grants were available, it was felt that this would encourage developers to have more confidence in developing on contaminated land. It was suggested that, all things considered, the 150% tax relief on remediation ‘does not amount to much’ compared with the landfill tax credit.

As to why these are considered important, a South East-based housebuilder explained:

‘Contrary to what people think … especially Mr. Prescott and key ministers … developers do not make huge profits on a development … but it only takes something minor that can be unforeseen, and there is a lot of unforeseen elements in development within the ground that could cost a couple hundred pounds or couple of hundred thousand to rectify … that could be … three-quarters of your profit gone.’

On the other hand, some developers saw the importance of fiscal incentives, such as tax reliefs received when remediating land; one representative stated: ‘…when appraising a site it can be quite a significant benefit’. However, there was a consensus amongst several interviewees that increased clarity and awareness of these bespoke financial incentives would be beneficial. One developer dealing with both commercial and residential property development stated: ‘I don’t know of any other fiscal incentives available to the private sector… there’s no grants I can get for building private houses … but we get grants for our commercial projects, if it’s not viable.’ This perhaps raises awareness of the lack of understanding of financial incentives in the housebuilding industry. Regulatory bodies must improve the
communication of these in order to keep the momentum of brownfield development moving forward.

Our interviews showed that developers and housebuilders became discouraged and walked away from contaminated sites in which they initially had interest for the following reasons:

1. **There was insufficient information on site conditions**, due to situations where proper site investigations could not be undertaken because of there being existing structures on site. This could potentially lead to developers discovering that the soil needed remediation after demolition of old structures on sites, or that the extent of the contamination was more than actually advised. For developers, these circumstances could impose cost uncertainties in terms of setting aside sufficient funds to deal with the site problems, and consequently might lead to difficulty in securing loans from lenders who would require more certainty in costs. Then again, one housebuilder was optimistic that this uncertainty could be mitigated by spending more during site investigation. He said:

   ‘[Our] philosophy is you are better off spending 10% or 20% more [of the cost] on your site investigation to end up having a clearer picture that enables you to have the confidence to buy the land, knowing it is going to cost you X amount of money. If you know about it from day one, the remediation cost will come off the land value.’

2. **It was not economically viable to deal with the contaminants**, where implementing the technical solution to remediate the site was estimated to offset the potential revenue from the end product.

3. **The nature of the contamination was beyond their accepted liability**, which might include heavy contaminants (e.g. heavy metals, asbestos etc) that led to raising concerns of future leakage to the adjacent sites or nearby watercourses. For one housebuilder, however, the type of contamination was not the big issue:

   ‘The types of contamination do not give us a problem, [the discouraging factor] is the landfill tax credits. We were used to doing it, but that is now gone because [the Government] now will not give you the landfill tax on one big scheme.’

4. **There was increasing uncertainty due to conflicting regulations**, exemplified by the EU Landfill Directive and the recent European Court of Justice’s ruling on the *van der Walle* case in Belgium. The first regulation ‘encouraged’ developers to conduct on-site remediation, and the latter could classify cleaned, remediated land as a ‘hazardous waste’ site that would require a waste management licence. Again, this led to uncertainties regarding disposal cost.

5. **High site-specific risk was too much to take on board**, such as when the landowner would not accept the contamination liabilities the developer was prepared to take; when it was too difficult to satisfy insurance companies on behalf of potential purchasers or tenants related to how they had dealt with the contaminated site; or, in one case, when a s.106 agreement required a developer to conduct 25 years of monitoring due to the site being adjacent to a gassing landfill.

When applying for planning permission, most of the developers/housebuilders reached their formal decision to deal with contaminated sites through consultation with the local planning authority and Environment Agency as well as with the Environmental Health officers. The consultation might result in planning conditions where site clean-up was regarded as part of the preparatory work of the development; it also might lead to s.106 or s.75 agreements requiring developers to
remediate the sites. Otherwise in some cases developers might deal with their contaminated sites under the Part IIA framework.

However, there were mixed views amongst interviewees as to whether (i) s.106 agreements, (ii) planning conditions (s.72 of Town and Country Planning Act 1990) or (iii) Part IIA was the best way of dealing with contamination problems. A s.106 agreement could in certain circumstances then be attached to the site in perpetuity, which would not conform to a typical housebuilder’s short-term investment cycle, whilst Part IIA would raise concerns of public perception of post-remediation stigma once the site was served a notice under the Act and posted on the public register. On the other hand, planning conditions could be easily discharged once the agreement had been reached with the appropriate regulators, provided that the conditions were attainable and that the matters about which the planning authority required attention from the developer could be legally addressed through the same conditions. Section 106 agreements are therefore resorted to when the issues cannot be dealt with through conditions, and, from a commercial perspective, this holds more merit for developers.

The following are typical difficulties developers perceived when developing contaminated sites:

1. **Dealing with risk of ‘the unknown’** during the site identification stage. When a proper site investigation could not be made and the exact contaminants hidden in the soil were unknown, the challenge would be to deal with the cost uncertainty of potential remediation. Developers found it difficult to pass this risk to purchasers through the price of their end product. One of their attempts to manage the risks was to build up contingencies to anticipate future remediation costs.

2. **Dealing with the regulators** when applying for planning consent. Some developers recalled difficulties in trying to convey their strategies and secure approvals from NHBC, Environment Agency and Environmental Health Officer. In terms of the remediation strategy, the approval could sometimes take longer to get, due to disagreement in prescribing the methods. As one housebuilder pointed out:

   ‘The issue that causes us most problems is dealing with the regulators who do not understand … Environmental Health officers are difficult. They will prescribe a method of remediation and that is all they want to see, even though there are alternative solutions, better solutions. Overcoming them is always an issue.’

   There was also the issue of ‘who is the regulator?’ i.e. clarifying who actually holds the regulatory control between the environmental officers, as stated by the following interviewees:

   ‘One authority will have one method of remediation, another authority will say, “change the guidelines”… Standardisation and understanding the issues across the country would help the situation.’

   ‘…The Environment Agency likes to get involved, they have obviously set themselves up as an overall expert, but do not necessarily have regulatory control so it is unclear.’

   Beyond the regulators, some concerns were expressed regarding the difficulties imposed by the regulation system itself. The changes in circumstances and regimes covering the development of contaminated sites, both from the UK

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34 Through Part IIA of Environmental Protection Act 1990 which deals with contaminated land, the local authority serves a notice to owners of contaminated sites requiring them to undertake remediation action.
Government and the European Union, have given developers difficulties in knowing which of their successful ‘tried and tested’ remediation methods would be acceptable in the future, or what kind of new liabilities awaited them following all regulations being fully enforced.

3. **Dealing with technical difficulties** when progressing to site preparation stage. This ranged from carrying out site investigations to defining remediation strategies, and dealing with lenders and investors who have been increasingly knowledgeable and consequently looking for a satisfactory standard of site clean-up to avoid stigma-related problems. Moreover, the recent EU Landfill Directive has made it difficult for developers to find licensed landfill tips close enough to their sites whilst attempting to control their cost.

Although the factors mentioned were generated from individual experiences, overall the responses drawn from interviews reflected the risk-averse attitude of developers towards the cost implications of providing solutions to contaminated land problems. However, one housebuilder viewed the whole matter more positively:

‘The key factor in buying a piece of land is understanding it. As long as you understand what the problems are, then you can assess the land value. Generally speaking, there is a solution. It is the solution that will be affecting the land buyer. There is not anything that has frightened [us] off; we are prepared to look at it and deal with it.’

5.6.2 **Taking up the remediation**

Adopting the development process model (POST, 1998), the remediation action is likely to take place during the site preparation stage after gaining planning consent. The findings from the previous survey showed that, in dealing with contamination, ‘dig and dump’\(^{35}\) was the most frequently used method. When opting for on-site remediation, developers commonly used the containment\(^{36}\) method. The previous survey also showed that when it came to experimenting with alternatives to these two methods, commercial developers were generally more aware of the different technologies available. However, in terms of accessing independent sources of information on remediation methods, most developers did consider this to be a problem (Shephard and Dixon, 2004).

The interviews identified factors that developers consider in deciding which clean-up methods to use, which can be summarised as: deliverability, cost, and timescale of the methods implemented.

To maximise the success of their chosen remediation method, in general developers relied on their environmental consultants to devise the most effective methods to clean up their sites. From there, they made a final decision by taking into account cost as the primary factor. There were mixed opinions, however, as to which of the two methods, ‘dig and dump’ or on-site remediation, was more costly. Some developers were inclined to go for the ‘dig and dump’ option as the best method to ensure a thorough clean-up. Furthermore, on-site remediation techniques were sometimes considered not economically viable, as revealed by one housebuilder:

‘Generally, we take a conservative approach which gives certainty, which is “dig and dump”. Most brownfield sites are not heavily contaminated so to use sort of in-situ techniques is not necessarily economically viable.’

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\(^{35}\) A developer excavates the contaminated soil then disposes of it to landfill.

\(^{36}\) Definition: ‘enclosing or containing hazardous substances in a structure to prevent the migration of contaminants into the environment’ (taken from www.cadetco.com).
On the other hand, there were also developers who had to endure bigger cost implications than others as a consequence of the EU Landfill Directive:

‘... if possible we do NOT dig and dump because dumping is off-site ... then it is a cost factor’.

These were often developers whose prime area of operation was at a relatively long distance from the licensed landfill tips now available in the UK.

Timescale was also cited as an important consideration, as developers strived to balance this with cost considerations to reach the most effective solution. This means that they would have to choose between quicker remediation methods that were more expensive to run, and a slower option that was cheaper. However, sometimes paying more for mitigating the contaminants could entail further savings for the other financial components of the development, as indicated by one housebuilder:

‘... if you bought a site for X million pounds and you are paying interest on that site, if you can speed up the process by paying more for your mitigation [of contaminants], then you would do so’.

The precise timing for implementing remediation methods was also considered important, such as when the acquired site had the potential to migrate its contaminant rapidly. In this case, remediation work would be undertaken before planning permission was granted while keeping the local authority informed.

Concerning the involvement of external environmental consultants in dealing with their contaminated sites, all developers in the interviews stated that consultants were brought in at the earliest stage, at the point of considering site purchase, whether just a desktop research to start with, or a more intrusive site investigation. Some of the developers relied heavily on their external consultants, whilst others combined this expert outsourcing with use of their in-house environmental specialist and development engineers.

This means that in terms of obtaining independent information related to contaminated sites and solutions, developers left much to their consultants, apart from conducting their own investigations. Although some turned to the local authority as their source of information for site history during the preliminary desktop research, not many developers used local authorities for information related to solutions to the contaminated sites, for the following reason:

‘We do not deal with [local authority] because they are not as clued up. It is very rare that the local authority environmental officers can advise us and come up with suggestions more than our consultants can.’

After developers proceeded with the site acquisition, the consultants would then be engaged to develop the remediation strategy with the regulators during the planning application process. The role of external consultants was also incorporated into the site development stage, as their findings on the ground conditions would determine the type of foundations required for the new structure.

The results from the previous survey showed that, in terms of remediation technology, most of the developers surveyed noted that there were recent advances leading to a greater choice of methods (Shephard and Dixon, 2004). Following up this finding, developers were questioned about the drivers behind innovation in remediation technologies. The majority stated that it was the need to reduce cost.

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37 Of the 12 permitted landfill sites currently operating to receive hazardous waste available in the UK, only one was located in South East whilst the rest were spread across the South West and North of England (www.hazardouswaste.org.uk).
barriers and increase the deliverability of the methods used. Nevertheless, despite acknowledging these immediate needs, most developers were not investing in ad-hoc research and development in remediation technology, as they tended to lean on their external consultants to keep tabs on the different methods available in the industry.

From that point, developers would then look at what might be their options, by costing up and reviewing the practicalities of introducing them, probably by testing them on sites. In relation to reviewing the remediation methods, one housebuilder suggested that overseas practice was important:

‘I think we should look at other countries, the way things are being done there, I do not know how far advanced we are in front of other countries in terms of remediation technologies.’

To summarise these findings, the developers’ approach to remediation methods generally depended heavily on their assessment of the costs associated with getting the sites cleaned up, whilst trusting their external environmental consultants to generate the best options or methods. This cost-driven approach also determined their decision whether to implement the traditional ‘dig and dump’ or one of the on-site remediation methods, particularly as some developers were more vulnerable to the implication of the EU Landfill Directive than others.

5.6.3 Impacts of the recent EU regulatory framework

The previous survey showed that the EU Landfill Directive had created some concerns amongst those developers who adopted ‘dig and dump’ as their most frequently used method to deal with contamination (Shephard and Dixon, 2004). Following this finding, developers were asked how the Directive had impacted on their developments in progress. Whilst some developers had already dealt with the consequent rise of costs to haul material a very long distance for disposal, the rest of the developers interviewed acknowledged that the Directive had not yet affected their projects by causing major problems or delays. Significantly, one developer pointed out that the Directive had posed different impacts in the various regions of England:

‘The location has a factor on it; if we were building in Doncaster then the nearest licensed tip would be North Lincolnshire, something in the region of maybe 40 miles away. If you are building in the South East down on the coast, then obviously Swindon is the nearest one and therefore you will have further to go. So there is less of an impact in the North.’

The same company also reflected on the impact of the Directive in the context of brownfield development in the country:

‘The Government wants us to develop on brownfield sites, which we [developers] have taken on board, but then they have taken some of the tools away to enable us to do it … to actually have only 738 sites across the country. They should be looking strategically as to where these sites are, have them around the [development area], encourage the landfill operators; find ways that they can actually take the waste by grants or whatever….. We are expected to build on brownfield, but legislation is making it so difficult.’

In response to the Directive, most developers interviewed highlighted uncertainty as a major source of concern. In the interviews, developers described the uncertainties they confronted:

38 At the time of the survey.
1. **How to anticipate the cost**, which at the end of the day would be reflected in the land price. For some developers who have not yet carried out ‘dig and dump’ before the Directive was put in effect, there has been a fair degree of uncertainty over what the costs would be when they actually do carry it out.

2. **How to comply with the Directive through agreed standards**, as suggested by one housebuilder:

   ‘… What does not appear to be out there in the market place is [the standard for the contaminant]: what is the acceptable level that we will have for leaving [the contaminant] on site; the level to go to your “normal tip”; the level that you have to take it to special licensed tips. That would be useful for us …’.

3. **How to anticipate scenarios of solutions for their sites** particularly related to the ‘Waste Acceptance Criteria’ (WAC) following the Directive that will be published in July 2005, which may increase the volumes of contaminant material being classified as hazardous. One housebuilder summarised uncertainty as follows:

   ‘We do not know what will happen:
   - Whether the [number of] tips that can take certain material will be reduced down to half – consequently prices will go up; or
   - If every contaminated site has to be classed as a waste licence – and so unlikely it will be accepted by the mortgage lender; or
   - You might have to take even more material off than you would normally do – the cost [implication].’

To deal with this kind of uncertainty, preventive measures that developers had taken included the removal of as many materials as they could to the landfill tips and exploration of numbers of pre-treatment options to ensure that they could comply with the standards when the WAC was being enforced. However, there was also contemplation of ‘shying away’ from sites that could have high disposal cost elements until they gained more clarity.

Asked about their opinions on what ways the EU Landfill Directive might change remediation technology employed, the responses simply suggested that more on-site remediation would be taken, as opposed to the ‘dig and dump’ method. Although they would leave the matter to their external environment consultants, the interviews revealed that bio-remediation seemed to be the latest option they have been looking at, in addition to the capping method.

It seems that the concern facing developers in relation to the EU Directive system is split between the fact that the number of licensed tips have been greatly reduced, and the degree of uncertainty of possible new liabilities when the latest Waste Acceptance Criteria are announced. Developers were concerned that these recent circumstances would not only increase their development costs but could also take them further away from the idea of dealing with contaminated sites in a more simplified manner.

Concerning the recent European Court of Justice’s ruling on the van der Walle case, despite the apprehension raised, developers had not yet seen its impact on the existing UK regulatory framework, and were still trying to clarify to what extent this would affect their projects in the future. To date, there have been no established standards in the UK for remediated soil to be withdrawn from the ‘waste’ category.

To comply with these EU frameworks developers need to employ safety measures that have brought them deeper into the complexity of UK’s current legal framework on contaminated land. One housebuilder indicated that:
‘It is difficult for us to satisfy certain regulators and local authorities because there are a whole host of values against contamination that have not yet been determined, so it is very difficult in knowing exactly what will or will not be acceptable.’

One of Government’s current attempts to overcome this complex regulatory framework is to streamline the remediation process through a proposed ‘Single Remediation Permit’. This attempt has been well appreciated by some developers who were already familiar with the idea, as it would simplify the process of arranging permits (which currently involves several regulatory authorities) as well as speeding up the whole permit procedure, which could help minimise the risks associated with the development timescale. Yet in the interviews a concern was expressed that the Permit could be quite ‘unwieldy if it is not focused specifically based on a [clear, legal] definition of waste.’

5.6.4 Risk and stigma

Developers seemed to appreciate fully the risk associated with brownfield development. Responses from the interviews identified developers’ perceived risks in developing on contaminated land, which were risks leading to increasing costs of development and risks leading to unexpected liabilities. However, levels of uncertainty were still apparent. One housebuilder felt: ‘… you can never be sure with contaminated sites or brownfield sites what you might find.’

Findings from the previous survey indicated that, in order to control the remediation cost, the developers interviewed were using contractors’ warranties/indemnities and fixed price remediation contracts. Environmental insurance to protect them against unknown contamination and third party claims, such as Environmental Impairment Liability, and new products allowing bespoke outsourcing of liability, were much less used to control unexpected liabilities (Shephard and Dixon, 2004).

The limited use of environmental insurance was considered surprising, because hypothetically this would appear the most effective way to protect developers from unexpected liabilities. However, the interviews showed that developers found that the insurance could be quite limiting in terms of the timescale offered and the extent to which it could satisfy potential purchasers; also one stated that: ‘if you know how you manage your risk … you do not need to insure yourself against it.’

Rather than relying on environmental insurance, what was important for developers was to demonstrate to potential purchasers the results of a good site investigation and clean-up, particularly since there had been an increasing number of cases in which insurance was considered unacceptable. To achieve this, developers would prefer to choose the environment consultants and remediation contractors they believed could come up with the best possible advice and would have an understanding of what was required from the sites. To ensure this, they also control the development costs and shift their liabilities to these experts by making sure warranties and fixed contracts are being taken on board.

Upon completion of the development, another issue surrounding the contaminated site was post-remediation stigma. The previous Stage 1 survey showed that the developers surveyed considered stigma to be ‘significant’ or ‘very significant’ amongst owner-occupier home purchasers, residential valuers and mortgage lenders groups. Stigma was considered less significant amongst tenants and investors who bought housing units for future lease.

Following these findings, developers acknowledged during the interviews that there was a small percentage of people that would not buy a house on a contaminated site. However, some of them claimed that this had never affected the end price of the
house. Only one developer mentioned that they had been faced with a decision to reduce sale prices in some instances.

The development process stage where stigma became apparent was during completion and/or when transactions were taking place, and when purchasers or investors were making legal enquiries through their solicitors, who would be seeking confirmation that the site had been cleaned up to an appropriate standard. The interviews revealed that developers were willing to provide site information for their first purchasers. However, they did not feel obliged to respond to inquiries from the secondary market. To facilitate this, developers prepared their in-house sales people with information packs on the site history and the measures employed to clean up the site. Another approach was to have the company’s solicitors prepare the information pack to be forwarded to the purchasers or investors through legal enquiries.

However, despite their ‘open’ policy, when it came to informing purchasers of the site history most developers tended to make sure that they did not highlight the contamination issues, so as not to ‘frighten potential buyers away with too much detail’, and some developers did not even take specific measures to anticipate enquiries from potential purchasers and dealt with them instead on a case-by-case basis. An upfront statement was captured during the interview:

“We take the view that is what we have done [in cleaning up the site], so there is nothing there to have a stigma about. [The contaminants] have been taken away, they have been dealt with [then tested], so why should we put a level of fear in somebody’s mind that does not exist? Why should we say to you if you are buying a house, “Now remember, this [site] was full of arsenic…”?”

5.6.5 Concluding comments

The interviews showed that, on the whole, a sound economic and financial framework is the main driver to developers’ decisions in dealing with contaminated sites. The general approach here is to manage the risks associated with contamination that could lead to increasing costs of development and unexpected liabilities. Being used to this cost-driven approach, developers are uneasy about facing the ambiguity of recent EU regulatory framework, as it does not create certainty of interpretation of the standards with which they have to comply. The fact that there remains a lack of clear definition of ‘waste’ from the UK regulators related to the EU Landfill Directive, together with the van der Walle case, means this barrier could hamper developers’ investment interest in contaminated sites. On a positive front, new legislation such as the EU Landfill Directive appears to be initiating greater research and development into new techniques and construction methods. The drive to utilise brownfield land seems to be finding cheaper, quicker, easier and more effective modes of construction, and this ultimately relates to creating more financially viable development projects.

In relation to post-remediation stigma, it seems that a degree of confidence is expressed amongst the developers that this will not threaten the marketability of their end products, as site clean-ups are subjected to rigorous regulatory standards.

5.7 Innovation in brownfield regeneration

This section describes the nature of innovation occurring across the development industry and covers the following points:

- The extent of innovation encouraged as a consequence of brownfield development.
• The frequency of techniques from the commercial sector being employed by the housebuilding industry.

• An examination of the barriers to innovation in the construction process and materials used.

5.7.1 Innovation in the development industry

From those interviewed, 'innovation' was not specific to brownfield development, and many felt that advances in construction techniques and materials employed were a consequence of more common, industry-wide initiatives, such as changes to the Building Regulations and planning policies.

Only one of the 12 respondents felt that the shift towards brownfield development had stimulated innovation in the construction process. Innovation was associated with using more economically viable building techniques, and several developers commented on changes to the foundations when building homes on brownfield land. As one developer stated:

‘Using a different foundation solution can solve the problems of trench excavations … and piling reduces the need to move large amounts of contaminated soils offsite.’

Techniques such as piling may reduce the risk of mobilising contaminants in previously developed land (PDL) and therefore does illustrate that developers are adapting to technologies that suit brownfield projects. Lightweight construction was also considered an important innovation. Developers who applied such techniques felt ‘a lighter load’ was beneficial, creating less dependence upon setting wide foundations that could promote mobilisation of contaminants.

In general, greater innovation and acceptance of the risk associated with brownfield development was more apparent in those developers founded solely for undertaking regeneration projects on PDL. One housebuilder stated:

‘… the fact that we set out to do it and it isn't just something that we felt we were forced into doing … we embrace it … it gives us the opportunity to develop sites which other developers wouldn’t even look at’.

However, this competitive advantage was perceived to be declining because of the greater involvement of other players in brownfield regeneration, perhaps partly driven by government policy.

5.7.2 Potential for innovation

A number of developers (5 of the 12) felt innovation was opportunistic, and although innovation was occurring, there was scope to increase its potential. A number of developers appreciated the potential ‘openings’ for innovation with a limited opportunity to use those techniques employed in the commercial sector. Many companies seem to be placing greater emphasis on research and development, and this shows a willingness to innovate. The principal barrier to implementing research and development is the cost effectiveness of these new techniques and their ability to create a ‘secure’ market. In addition, adequate training must support these initiatives.

However, many developers (6 of 12) saw innovation as being industry-wide and not necessarily a consequence of the emphasis on brownfield development. There was a general consensus amongst the developers interviewed that the shift towards brownfield development had not in itself stimulated innovation in the construction process. Instead, other factors were seemingly more influential. In order of importance, these include:

• **Cost, speed and quality** – related to the development proposal.
Nature of site and size of development – certain sites were seen as more suitable for the implementation of new techniques. For example, bioremediation was feasible for a low level of contamination; however, on larger sites ‘dig and dump’ appeared to remain more economic.

Change to Building Regulations – these were seen as a generic control of building design and construction, suitable for enforcing an industry-wide change in technologies.

Innovation driven by commercial factors – including the use of modern methods of construction.

Shortage of skilled labour (‘deskilling’) – developers were attempting to ‘deskill’ the construction process and introduce standardised techniques. These introductions illustrate the development industry adapting to current market conditions.

Most innovation is occurring as a result of developers seeking more economically viable techniques, in terms of cost, quality and speed. Cost was related to the reductions made to the duration of the development process, and the use of off-site manufacturing is seen as having beneficial time savings. Quality control is easier to monitor through a factory-based manufacturing process, and there is the possibility of a higher standard end product by implementing these procedures. Therefore, developers felt that the application of modern methods of construction could improve the standard of housing.

Changes to the Building Regulations and the nature of the site and the size of the development are also important. As one housebuilder stated:

‘Most innovation is a result of changes to building regulations … the noise transmission and insulation regulations are constantly being upgraded, leading to changes in building techniques. We use a lot more timber frame construction now – due to the thermal qualities and speed of build … and that’s been driven by the building regulations.’

The nature of the site and the size of the development often dictated the use of innovations such as prefabrication and timber and steel frame construction, and these were also related to brownfield development in terms of the smaller plots and the requirement to build at higher densities. As one developer stated:

‘… there is less space for on-site working on brownfield … the more you can do off-site the better.’

The regulatory process is also a main driver, according to the survey. The recent introduction of the ‘EcoHomes’ standard, a method of assessment that considers the environmental impact of house building and renovation, is going some way to driving innovation and the sustainability agenda forward. This ratings tool is clearly a step in the right direction towards improving the UK housing stock, covering areas such as energy efficiency, materials and transport infrastructure. It also appears to have important implications for the acceptance of planning proposals, with local government placing greater emphasis upon high standard developments. As one developer stated:

‘Many planning authorities now insist on eco-homes ratings that are good or excellent, so that in turn stimulates the use of new materials and new techniques.’

From these results it is apparent that there are a number of drivers of innovation, and the shift in brownfield development, although not the sole factor, is seemingly playing a part in stimulating the use of new construction methods. In summary, the main innovations occurring within the industry, stated in order of importance, are:
Prefabrication;
Timber frame construction;
Modular construction;
Improving energy efficiency; and
Investigating different foundation solutions.

The results therefore show the emphasis placed upon creating alternative construction techniques, and this relates back to the industry’s drive to increasing the supply of new homes.

5.7.3 Alternative production techniques and modern methods of construction

There was a general consensus that the techniques used in the commercial sector would increasingly be taken up in the housebuilding industry. The main drivers implementing this shift were associated with the ‘shortage of skilled craftsmen’ and ‘a government push imposed through the planning system’. It was felt that innovation was coming from the commercial sector but was also taking place independently in housebuilding. This may be because developers are trying to initiate bespoke design solutions and ultimately to meet the criteria set out in the Government’s sustainability plans.

Several developers expressed the opinion that modern methods of construction set up in accordance with a ‘Fordist’-type manufacturing process will ‘drive down the costs of construction’. The benefits of applying modern methods of construction are summarised in a working example, based on an operational factory of a large volume housebuilder (Box 5.1).

**BOX 5.1: Case Example: Modern Methods of Construction (Westbury Homes – ‘Space 4’) (source: http://www.westbury.plc.uk/Company/Space4/)**

£20m cost to set up production line (off-site manufacturing factory)
Production capacity of 5,000 dwellings per annum
Web-enabled supply chain management facilitates just-in-time production
Timber frame = quicker build but costs inflated
Benefits of accelerating process > addition build cost
Total build time reduced from 16–20 weeks to 6–8 weeks (bricklaying is taken off the critical path so internal fitting-out can progress in parallel)

However, the economic restrictions involved in the application of modern methods of construction (MMC) are well known. There was an appreciation of the fact that MMC are only cost-effective in volume. One developer suggested that:

‘Modern methods of construction will come down to volume and how much that production line can cope with … the greater the volume the greater reduction in cost.’

A medium volume housebuilder felt that the regulation of supply and demand would be complicated if a developer became reliant upon MMCs, and expressed concern that the overall control of supply and demand was reduced with off-site manufacturing. The same housebuilder stated:

‘I don't want to build more than I can sell. If you have got the volume quota it is fine, but in the general market I don't think I could predict that. Housing market sales have
taken a big dip this year – why would I want an order of 200 houses in a factory to come to me. What am I going to do with them?"

5.7.4 Barriers to innovation

Despite the occurrence of innovation across the development industry, the interviews revealed a number of perceived barriers to the implementation of innovation. The results show that the ‘structure of the industry’ and the overall ‘skills shortage’ are the principal constraints. The latter will be discussed in the following section. The barriers to innovation can be summarised as follows:

- Structure of the industry – e.g. the use of contractors and sub-contractors;
- Lack of appropriate skilled workforce and training throughout the development industry;
- Uncertainty of innovation amongst developers (‘risk-averse’); and
- Implementation costs.

The ‘traditional’ nature of the construction industry in the UK was shown to be an influential barrier to innovation. As one housebuilder put it:

‘The building industry is very archaic … construction has not changed a great deal over time. We are still laying blocks, we are still laying bricks.’

Public perception of these new techniques is also important. The conservative view of opposition to change and the consumer opinion that ‘bricks are solid foundations, they are safe’ need to be tackled by the industry if progress is going to be made towards implementing MMC. The negative perception of MMC, especially timber-frame construction in the 1980s, was also considered a constraint on progression. Several housebuilders felt that increasing public awareness of the benefits of these new techniques should be an industry-wide objective.

Other points emerged from the interviews. For example, the development industry was seen as:

- Lacking an appropriately skilled workforce;
- Having a disjointed contractual environment, and greater effort should be made to involve sub-contractors in the early stages of a development project;
- Lacking a higher skills base (more graduate employment, for example); and
- Lacking positive acceptance of new methods of construction.

Furthermore, the use of MMC is a relatively new government- and industry-led initiative. The investment of capital and time in implementing these new techniques was therefore seen as a barrier, alongside the associated risk. One developer stated:

‘There is a time lag, a learning curve that is going to cost us money, and it is a risk where you implement a new technique … things may go wrong.’

The greatest constraint is the lack of skills in the industry to implement innovation. The survey highlighted an overall awareness of the fact that the supply of a new workforce was not forthcoming. There was also agreement amongst developers that young people are no longer interested in employment in the construction sector. A lack of training programmes to encourage employment and new apprentices is apparent.

As a consequence, the drive towards using prefabrication and other new construction techniques is associated with an industry-wide initiative to ‘deskil the process’. As one developer stated:
'... it’s just extremely difficult to get the labour. If you wanted an extra 20,000 homes I don’t think we could provide it … well, other than by coming from a factory and being stacked up.'

Nonetheless, MMC are being seen as a suitable alternative to traditional methods of production amidst ever-increasing labour and construction costs. In summary, the interview results show:

- Innovation in the development sector is industry-wide and not specific to brownfield regeneration. Adaptations of existing building techniques, such as piling that looks at reducing soil movement (and potential contaminants), may have been stimulated by the focus on brownfield development.
- Some techniques used in the commercial sector are seemingly being taken up by the housebuilding industry. However, at present this process is limited.
- At the present time there are several constraints on innovation in the development industry, and the skills shortage is perhaps of greatest concern.

5.8 Sustainability in the development process

Part of the interview with each respondent attempted to investigate further to what degree developers were considering the ‘sustainability’ concept in the development process and their end products.

5.8.1 Understanding the term ‘sustainability’

When asked to define the term ‘sustainability’ in relation to their brownfield development projects, developers gave very varied responses, and a degree of scepticism was noticed during the interview concerning the vagueness of the sustainability concept put forward by the Government. One housebuilder remarked: ‘... the problem is that there is no one definition of sustainability’, whilst another developer saw this concept as a mere ‘political wish list’. However, in keeping with pressures from government policies and initiatives, developers have made attempts to devise their own interpretation of the sustainability concept, which can be drawn into the following main themes:

**Environmental**

Sustainability related to the ecological impacts of the development project, which could mean either trying to impose as little environmental damage as possible during the course of development, or not leaving a long-term legacy of detrimental impact on the environment after completion.

Sustainability of the end products, translated as developing properties that are energy-efficient and made of sustainable materials; also conveying longevity to ‘meet and exceed their planned life expectancy’ as well as recognising the importance of the design that could actually address the real needs of the users.

**Economic**

Sustainability of the development project. As one commercial developer stated: ‘... for our business to be sustainable, it has to operate within (the) financial framework’. This included looking at ways of developing in the most cost-effective way possible, and highlights the importance of the economic pillar in the ‘triple bottom line’ approach.

**Social**

Sustainability related to the site conditions, such as location of development projects with high proximity to public transport links, schools and health service.
Sustainability related to the community in the development area, as implied by several housebuilders. As one suggested: ‘keeping all the employment, keeping schools open, ensuring transports links all in place’.

Some developers interviewed provided extensive statements on their websites about sustainability, most of which emphasise the environmental and social aspects. One of the statements posted by a commercial developer summarised sustainable development as: ‘balancing the needs of the environment, society and the economy’. As one of them admitted, publishing their concept of sustainability was important for their products and image, particularly since many investors and occupiers have developed their own sustainability objectives in response to the Government’s social responsibility agenda. However, for the housebuilders things have not been as straightforward:

‘The part that can be played by housing development in the UK is negligible really in terms of overall sustainability … we try and play a part by trying to ensure that the properties we build are energy efficient … have local facilities within walking distance … taking site specific measures [in each of our projects].’

This is likely to be due to the nature of housebuilders’ end products, particularly housing units that are built for sale. Compared to those commercial developers who develop units for letting, housebuilders’ involvement in their end products usually comes to an end once all units are sold. This type of ‘short-term investment cycle’ tends to limit their ‘buy-in’ to the sustainability concept, especially with regard to the economic sustainability of the surrounding development area in the longer term. As one housebuilder stated:

‘How do we justify the sustainability concept in our project … it is quite difficult to answer, but we do use certain materials which we know are being sustainable.’

The responses above reveal that, responding to the perceived lack of clear definition of the sustainability concept, developers have been trying to find their own interpretation to incorporate the concept into their company policies. Whilst developers appear to recognise the importance of the environmental and social pillars of sustainability, there is also a keen focus on the economic sustainability of the scheme itself (see above). As one housebuilder put it:

‘We have got to look at building a house in as cost effective way as possible … there is a finite amount of money that we have got to play with in terms of building it.’

5.8.2 Improving the sustainability

The developers interviewed emphasised their efforts to incorporate and/or improve the sustainability of their developments in different ways, which fall into different stages of the development process: development concept, design, construction, and after completion of the project.

During the development concept of the planning stage, developers employed sustainability assessments by making sure that their sites were close to existing services, ensuring that the site plan would not generate unnecessary traffic movements, considering green issues in the development, and protecting the local landscape. One developer used the technique of ‘community planning’ by gathering inputs from the community on what was needed in their area and the problems in developing housing units there. These practices might also include their early efforts to gain planning approvals, as one housebuilder had done, by conducting a sustainability assessment of their land bank, and then using a sustainability ‘check-list’ to promote it to the local authority when submitting a planning application as ‘a site that is suitable under the sustainability criteria’. Another housebuilder ‘tailored’ the sustainability aspects to be incorporated in their developments:
'It all depends on the scheme and whether it is something that is introduced as part of the [Government] brief … we get schemes that probably were granted by EP and therefore one of the questions will be, “How are you going to deal with it for sustainability’.

During the design stage, efforts to incorporate sustainability into the development included using the BREEAM framework or the EcoHomes standards for housing projects. Despite designing their units according to these standards, only about half of developers interviewed actually applied for BREEAM or EcoHomes accreditation due to the high cost involved. Those who were accredited managed to achieve the 100% passing rate with ease, suggesting that the prevailing standards may have been too low.

Although sustainability indicators such as the SAP ratings and EcoHomes are seemingly increasing in popularity across the housebuilding industry, it was suggested in a number of interviews that an increase in public awareness of BREEAM standards, for example, would encourage their implementation throughout the industry. However, at present most developers agreed that ‘it is difficult to make the EcoHomes rating a strong selling point’. Work needs to be done industry-wide to promote the use of these indicators if sustainability targets are to be met.

Developers also looked at the energy efficiency of buildings involving thermal solutions, and considered sustainable drainage solutions. These attempts could be interpreted as a practical response from the development industry as higher environmental standards, both in building and site design, become a necessity rather than an option and have increasingly been subject to regulation (Shephard and Dixon, 2004).

When undertaking construction, some developers try to improve the sustainability of their projects by minimising waste, using timber framing as sustainable material and making sure that it comes from sustainable sources, as summarised by a commercial developer:

‘On the construction side, waste is a big target … we are looking to minimise waste, and looking further down the supply chain trying to look at timber procurement, making sure that is sustainable from sustainable sources.’

One housebuilder believed that timber-frame houses gave better heat efficiency and greater adaptability to occupiers in terms of altering and extending the housing unit to suit their future needs; the same company also imported timber and replanted forests on a two-trees-to-every-one-felled ratio. Another initiative highlighted in the interviews was the recycling of waste or materials from demolished buildings prior to construction. These practices adopted by developers during the construction stage were generally undertaken as a further expansion of their formal environmental policies.

Following development completion, one commercial developer conducted an induction programme to users or owners on how the building should best be operated and managed as a way to sustain its longevity.

To summarise the responses above: developers often give extensive consideration to sustainability in the development process, due mostly to the pressure of meeting...
requirements of the local authorities enforcing the Government’s sustainability agenda. Related to this, some developers interviewed noted that, in trying to win planning approvals, there were two factors that really helped bring sustainability about: the land type and the virtue of the location. Their experience suggested that, of two proposed housing developments with identical design, the one that was located on brownfield land with high accessibility to public transport and local facilities would score far higher than the one that was located neither on brownfield land nor in a strategic location. This sort of approach from local authorities could overcome developers’ hesitation in developing on brownfield land.

5.8.3 Building Regulations (Part L)

In relation to the increasing necessity for developers to develop sustainable end products, the interviews sought their opinions on the latest revision of the Building Regulations related to energy performance of buildings, comprising Part L (Conservation of Fuel and Power), designed to improve thermal performance of buildings to reduce CO₂ emissions. One housebuilder thought that the Regulation ‘is going to make the developments more sustainable because they will not be drawing as much gas or electric to heat the properties’.

On the whole, the view was that they would have to abide by the Regulation when it came into effect in early 2006; moreover, there was not much they could do in relation to its anticipated impact of increasing construction cost. Cost was also affected by the latest revision of Part E of the Building Regulations (Resistance to Passage of Sounds):

‘At the moment the biggest impact on housebuilders has been Part E, but I would not say that necessarily has made the properties more sustainable because you have to use your normal cavity walls but you are actually putting in more material… [Because of that] the building costs have gone up and I really still do not believe that it has achieved what it set out to achieve.’

Consequently, changes to Part L and other parts of the Building Regulations were not generally welcomed. The changes were considered as being ‘introduced very quickly without any thought going into some of them’. One housebuilder remarked that the recent changes had altered their method of construction:

‘The recent Regulation change means that now we no longer can develop a rafter foundation on a pair of semis, and it is just about the most cost effective and efficient method of dealing with Brownfield sites.’

One housebuilder interviewed did not consider that Part L had played a significant part in sustainable development:

‘Parts H and L of the Building Regulations are having an effect, albeit in our experience to date not a significant one, in promoting sustainable development.’

Another opinion drawn from the interviews reveals that changes in Part L were not well linked with changes in other parts of the Building Regulations:

‘The building regulations have become overcomplicated recently. The introduction of Part E is totally out of sync with the earlier Part L, and now Part L is coming in without much reference to Part E and Part A [Structure], which has just changed as well. It is hard to keep up with it and you really do think that it needs to have a bit of what they like to call “joined up thinking” in government on this, and not confuse us too much.’

For developers, the ‘hasty introduction’ of the Building Regulation changes, including Part L, has imposed difficulties in terms of trying to meet the requirements of a
sustainable development whilst at the same time trying to overcome costly and inefficient solutions as the result of the changes, as well as finding alternative ways to comply with all of the changes. One housebuilder suggested that, to make the most of the situation, enforcing specified construction designs, such as the current Robust Detail\textsuperscript{41}, that would comply with the Building Regulation standards could allow developers to make the most of their construction cost through clear construction guidance and achieve better quality end products.

Building Regulations can therefore assist in creating more sustainable developments, for example through policies related to energy efficiency. Nonetheless, many housebuilders appreciated that such policies related only to new properties, and overall this is a very small proportion of the UK housing stock.

5.8.4 Consulting the local community

Results from the previous Stage 1 survey reveal that almost all developers interviewed regarded consulting the local community during the development process as ‘important’ or ‘very important’. Despite this, the interviews showed that in the effort to incorporate sustainability into their development projects, only one respondent directly mentioned community participation, which is implicit in the Government’s social pillar of sustainability. Often the decision to consult the local community depends on the circumstances of each development site, such as when the development involves partnership with the local authority, when it was required by the local authority, or when it started to create controversies amongst the locals, and developers need to ‘win their hearts and minds’.

Developers conducted local community consultation through workshops or meeting forums with the community, where the development plan was shown and discussed. This method, however, could backfire, as suggested by a housebuilder:

‘It is very important to strike the right balance. If you do not do enough [consultation], the local community would be critical; however sometimes you have to be careful not to overdo it as well. I think there is a “consultation fatigue” where people just get fed up with being consulted.’

In undertaking the consultation, the same housebuilder preferred to conduct discussion in small groups to ensure effective dialogue, as public meetings ‘could end up with people just ranting and raving’. Other ways of carrying out the consultation included trying to establish public awareness of new developments in the area through introductory programmes at local schools, sending mail shots to people potentially affected by the development to gather opinion that would be submitted as part of planning application, adopting ‘community planning’ by working together with the councillors in the area, or even establishing a 24-hour hotline on large-scale developments to deal with rising concerns.

The interviews also suggested that, although community consultation had been largely taken into account, some developers remained sceptical as to how this could be necessarily productive; also it might raise subjective opinions, especially that in the end ‘you cannot please everybody’. One housebuilder who did not consider community consultation as important saw it as something that could intervene in the process of the development:

\textsuperscript{41} In order to comply with Part E, housebuilders had to test the level of sound insulation of a sample of completed dwellings as building progressed. Robust Details, specific designs developed by the construction industry, are alternative methods of showing compliance. An organisation called Robust Details Limited manages the use of this scheme in the housebuilding industry.
[Community consultation] is the current buzzword … let us agree codes with the community and that will ease the planning system. It is a nice idea … [but] if the neighbours come and tell us what we should build or have their way in what we will build, we will never build anything for sure.’

5.8.5 Concluding comments
The responses show that although the development industry has paid ‘lip service’ to sustainability, responding to the pressures of the Government agenda, there is a degree of scepticism over the practical implementation. Developers’ interpretations thus vary. Motivated by gaining planning consents, the developers’ approach to incorporating sustainability into their projects is mostly through sustainable end products that meet regulatory standards such as incorporating BREEAM standards, as well as innovative energy and waste solutions. However, with ongoing changes in the Building Regulations, it has become more difficult for developers to achieve sustainability standards without jeopardising the financial sustainability of the projects themselves.

Following pressure to meet the Government’s social pillar of sustainability, community participation is being taken on board in the development process. However, developers are also sceptical as to how this step can effectively contribute to sustainable development.

5.9 Recommendations on government policy
This section examines the developers’ perspectives on current government policy associated with brownfield regeneration. Interviewees were asked to suggest improvements to policy that would increase the use of brownfield sites for development projects. From our results there were six main recommendations. In order of importance, these were:

- Planning reforms;
- Increasing the supply of development land;
- Improving the clarity of legislation related to brownfield development;
- Making brownfield more attractive to developers;
- Greater efficiency between regulatory bodies; and
- Raising standards of education amongst the regulatory bodies, such as local authorities.

These results are now explained in more detail.

5.9.1 Planning reforms
Developers felt that there was both a great need and the potential to improve current planning policies. The interviewees felt there was a need to reduce the risk associated with planning, along with depoliticising the planning process and making the procedure simpler and more effective in order to speed up the supply of new homes. The consensus was for local government to be more ‘accepting’ of planning proposals made on brownfield land. One developer stated: ‘… It is absolutely diabolical at the moment, you can do absolutely everything that’s asked of you by the planning department, you can get a recommendation for approval and schemes can be dismissed for the most spurious reasons.’
The greatest concern was associated with the time developers had to invest in 'satisfying' local government, and the same developer felt there was a need to 'free up the planning system'. He went on to say:

‘… so much time and money is wasted by having battles with the planning department … money that could be better used on sustainable aspects.’

A large volume housebuilder identified the need for planning reform, predominantly by granting planning permissions more quickly. However, a lack of confidence in the Government’s ability to identify and put in place policies that are ‘developer-friendly’ and subsequently promote the supply of new homes was also expressed.

5.9.2 Increasing the supply of development land

This was a key recommendation from interviewees and, in particular, making land more readily available for developers. The two principal points made were:

- Increase the number of sites being ‘cleaned up’ by regulatory bodies such as English Partnerships, to facilitate the development of brownfield land; and
- Planning authorities need to be less restrictive on development proposals made outside areas of government-led initiatives, such as the Housing Market Renewal Pathfinder.

Two developers expressed a view on the latter, and a medium housebuilder said:

‘We’ve got brownfield land that we are not allowed to build on because it is not a Pathfinder area … for the last 18 months there has been a moratorium outside these government initiative areas … you can’t have any consent.’

From the interviews, there is a desire for the development industry to satisfy the Government’s 60% target on brownfield. Nonetheless, developers felt that the Government was not facilitating the right conditions for developers to provide effective solutions. Another large housebuilder commented generally on land availability:

‘… you’ve got to get more land available, more quickly and then you will get developers providing the extra housing that is required … the planning system is the main bugbear.’

5.9.3 Improve clarity of legislation related to brownfield development

Developers appear to require both a review and a standardisation of legislation and policies associated with brownfield regeneration. The level of contradiction across the industry seemingly frustrated one housebuilder:

‘… it’s a nightmare, there’s too many regulations … keeping up to date … and there doesn’t seem to be any sort of catching your breath period’.

The same housebuilder gave the examples of recommendations for capping layer thickness and acceptable levels of contaminants, both of which were seen as areas requiring greater unity and clarity. Suggestions made to review legislation were largely related to the waste regulations associated with the EU Landfill Directive (see section 2.2.3), and another developer felt the nature of these had the potential ‘just to stop everything’. Reviewing the locations and possibly increasing the number of licensing tips was suggested, with a specific focus on the South East, which one housebuilder says ‘is still … the biggest growth area’ and therefore fully justifies a number of additional licensed waste disposal sites.

Several developers felt the biggest barrier to increasing brownfield development was the ‘outdated’ guidelines followed by regulatory bodies such as the Highway Authorities. For example:
‘You may end up being in danger of a perverse situation where you have a high density development, but you are designing roads and infrastructure that is not suitable.’

Such examples were seen to be contradictory and against the design philosophies set up by planning authorities and the Government. In essence, more flexibility is required when evaluating development proposals, and the developers surveyed felt that authorities should avoid being strict and set on ‘textbook guidance’. The opinion of the developers was that, due to the large number of stakeholders involved, there is a degree of contradiction in planning objectives.

Furthermore, some developers felt that, because of a general lack of understanding of new legislation, there should be a regulatory body that assisted standardisation and ‘pulls all the legislation together’. Developers expressed concern over the lack of flexibility in approach and complications within the regulations.

5.9.4 Making brownfield more attractive to developers

The emphasis in the interviews was on increasing the levels of investment in infrastructure. Development proposals have to be financially viable, and this group of entrepreneur cannot afford, and will not participate in, projects of likely loss. The provision of improved infrastructure will increase the number of viable projects that developers can undertake. These results suggest that a developer will be more accepting of projects in areas that have been facilitated by public sector investment. Brownfield development requires risk-taking and initiative through ‘abnormal’ site preparation costs, remediation, multiple land ownership and strict legislation (EU Landfill Directive). Consequently, development appraisals become more uncertain. The creation of confidence and risk reduction by government initiatives are critical to attracting private sector investment.

The survey found that some developers wanted government policy to create more demand for such sites. Ultimately, housebuilders will only develop brownfield sites if there is an adequate demand and they can create reasonable returns. Without the initial demand, housebuilders will not undertake a development proposal. Demand is created by many factors within the economic, social, political and technological framework. One interviewee stated:

‘Currently most brownfield sites that require regeneration are in areas of low demand, they are unattractive places to live and work … these areas need to be made more attractive by investment in infrastructure. These are the measures the Government should be looking at.’

Therefore, the success of utilising derelict land and creating continued regional development will depend on the types of risk reduction and confidence measures introduced by government bodies and tend not to rest solely on entrepreneurship by developers. The latter becomes more crucial once these groundings have been established. The provision of financial incentives such as tax breaks was also suggested as an initiative that would complement government policy and promote the utilisation of brownfield land.

5.9.5 Greater efficiency within and between regulatory bodies

This was discussed in relation to central government, local authorities and the Environment Agency. Two developers from the 11 surveyed felt there should be less contradiction between regulatory groups, as this is seemingly increasing the level of uncertainty amongst developers. One housebuilder gave the example of the inconsistency of decision-making between the highway authorities, planning authorities and central government:
‘… you have each authority saying “we want this different type of design”… the ideas don’t fit together. Some authorities need to be more flexible in their approach.’

This idea of inefficiency between authorities was supported by another housebuilder:
‘… local authorities must do what the Government says … if John Prescott wants us to go and build on brownfield let us … or make the Local Authorities let us!’

Therefore, it seems that developers feel that the regulatory bodies should all make a greater effort to ‘sing from the same song sheet’. There is conflict between what these stakeholders want to see implemented, which is increasing the level of uncertainty amongst developers predominantly in the early stages of a development proposal, escalating both the time and cost.

5.9.6 Raise standards of education

Several developers felt that the level of education in some sectors of the industry, namely those associated with local government, could be improved, and raising standards would facilitate greater efficiency in the decision-making processes. As one developer stated:
‘There are sites that are difficult because certain Authorities aren’t qualified enough to understand technical issues…. Environmental Officers are scratching their head so they don’t deal with it or come up with realistic, flexible solutions … they read guidelines and say “right, that’s what I want doing”.’

The developers appreciated the nature of these problems but felt that many representatives in these organisations did not understand the underlying issues, and it was subsequently very difficult for developers to communicate with them, due to their lack of relevant knowledge.

Clearly, the development industry is working towards the guidance set by both central and local government, but it is apparent from the results in our survey that there are a number of key inefficiencies operating at present. By far the greatest concerns surrounded policies associated with planning. Simplification of the planning process, and reducing risk and timescales, were the principal recommendations. This reform would work alongside making development land more readily available for housebuilders.

5.10 The future of brownfield development?

Interviewees were asked to comment on the future of brownfield development and assess, in a seemingly ever-changing development environment, the prospects of housebuilders and commercial developers utilising and unlocking the UK brownfield land resource.

From these results it was apparent that several developers felt that the high number of regulations could impact upon the opportunity of brownfield development. One housebuilder thought that the Building Regulations have become ‘over complicated’ and non-complementary of one another in recent years, using the examples of Parts A, E and L. Furthermore, the same developer saw changes to these regulations as being difficult to integrate fully into company policy, as they are ever changing and ‘hard to keep up with’.

It is clear that there needs to be some level of standardisation, simplification and ‘joined-up thinking’ in order to ensure that the introduction of new legislation does not hinder progress towards both successful brownfield redevelopment and the creation of sustainable communities.
Several developers placed strong emphasis upon the importance of suitable planning policies as an ‘overriding factor’ in creating a suitable development environment for brownfield regeneration. One housebuilder stated:

‘I really can’t emphasise that enough, I mean planning is just horrendous, it’s just unbelievably complicated. All you can do is just try and cover all the bases and hope that they approve it, but they so often don’t and appeals take forever.’

Some interviewees felt that local government must appreciate the current complications within planning policies and make a conscious effort to disseminate proactive solutions or advice that would ensure that a greater number of suitable development proposals were accepted (and within a realistic timeframe).

A further consideration of the interviewees was the effect of regulation on construction costs, which were seen as potentially impacting on the viability of development projects. One housebuilder stated:

‘... if they carry on the way they are doing, there is that much cost in the grounds, the regulatory procedures and adapting to changing building regulations – then the landowner will say “why should I sell it, it’s not worth it”.’

Another housebuilder stated the importance of efficient costing and argued that additional costs, such as those associated with land remediation, would be taken from the land value. The developer felt therefore that the increased costs of brownfield development would not jeopardise brownfield activity in the wider sense. However, the same developer appreciated the costing problems that could be associated with ‘marginal’ sites. He went to say:

‘It is certainly going to have an effect at the margins ... those sites where the existing use value is slightly below ... if the land value falls because of the increasing building costs the landowner won’t see financial benefit.’

This implies that the land will not be released and that costing must be realistic in order to increase the provision of development land in the UK.

It is evident from our survey that developers were concerned over both the availability of land and ‘unlocking’ land for development. This was more apparent for those sites that were marginal in economic terms. Government policies and legislation must not impede the economic feasibility of projects, and initiatives must ultimately ensure a balance between the three pillars of sustainability.

Other themes that emerged from our survey include:

- Government emphasis is on supplying homes of a sufficient range and diversity, and a big part of this vision is the provision of affordable homes in order to create a ‘balanced’ housing market. Results from our Stage 1 survey suggest the provision of affordable homes ranged between 20% and 30%.
- Interviewees seemed to appreciate that higher densities were now required to meet housing demand, and this was dictated predominantly through PPG3 planning demands.
- Some developers saw Compulsory Purchase Orders and similar planning acts as crucial to the regeneration of urban areas and felt that more emphasis should be placed upon implementing these.
- Public and private sector partnerships are becoming increasingly important in creating sustainable communities. These collaborations may also be unlocking under-utilised brownfield land. One housebuilder stated: ‘We expect that more than 50% of our land will come through partnerships.’
- Increased sampling, the associated threat of gassing, groundwater contamination, creating more amenities for existing communities, community
planning, and the complexity of stakeholder interrelationships, are some of the issues developers are facing in brownfield regeneration projects. Innovative solutions to tackle these problems, although evident from our survey, may become more apparent in the coming years.

- Flood-plain developments, such as in the Thames Gateway, were also given consideration. One housebuilder highlighted ‘the conflict between flood plain sites and brownfield sites’, and emphasised the complexities of gaining consent from regulatory bodies regarding both types of development.

### 5.11 Conclusions

The results presented in this section of the report aim to give a representative view of some of the issues surrounding the development industry in relation to brownfield regeneration. The main themes from our survey are summarised below.

#### 5.11.1 Delivering more homes on brownfield land

During the interviews, opinions were offered regarding several recommendations from the Barker Review (and related issues from the Stage 1 survey) that are intended to address a number of barriers to delivering more homes on brownfield land. The responses revealed that not all recommendations for changes put forward in the interviews were considered important by developers, suggesting that some development barriers require greater urgency to be resolved.

Developers welcomed recommendations that would tackle the main barriers directly. This would then allow them to minimise the economic risks associated with developing contaminated land, increase the marketability of their end products through the construction industry, go through a quicker and more streamlined planning application process, and gain access to more brownfield land with the assistance of local authorities and public bodies.

There was also a degree of readiness on the part of the housebuilders to accept the recommendations from the Barker Review concerning the development of strategies to tackle barriers in modern construction methods, by simplifying and speeding up the planning application process by introducing two additional routes to gain planning consent, and by implementing strategies to achieve end products that are actually ‘in tune’ with market preference.

In general, developers welcomed the Barker Review as recognising their problems relating to housing supply as well as recommending measures to overcome them. However, scepticism was expressed amongst the developers as to whether the recommendations from the Review could be taken on board. This was fuelled by concerns about the current regulatory framework, the current state of planning authorities, which were observed as ‘overworked and under-resourced’, the practicality of delivering the recommendations through the ‘top-down’ approach from the national strategy level to the local level, and the potential lack of political will for these recommendations to materialise.

#### 5.11.2 Delivering development on contaminated land

The interviews suggested that developers’ approaches to developing on contaminated land were driven by economic and financial frameworks. In acquiring contaminated land as their potential project sites, developers assessed the commercial viability of these sites based on market prospects, the practicality of delivering the development, and, most importantly, the cost of remediation work.
Related to this, the interviews also revealed that the availability of government grants should encourage developers to utilise more brownfield land.

Developers were dissuaded from developing contaminated sites when the degree of uncertainty exceeded the risks they were prepared to take on board. These risks related to insufficient information on site condition, the nature of contaminants leading to expensive remediation options, the liabilities being too onerous, and the level of uncertainty as to how to comply with treating waste disposal. The latter barrier relates to the EU Land Directive and the recent ruling on the van der Walle case. The Directive encourages remediation alternatives to ‘dig and dump’. On the other hand, the van der Walle ruling, although not yet affecting the industry, is likely to weigh down efforts for on-site remediation. The lack of a clear definition of ‘waste’ related to these EU frameworks has brought developers deeper into the complexity of the UK’s current legal framework on contaminated land. This could hamper their interest in regenerating contaminated sites.

Developers reach their formal decision to deal with contaminated sites through the planning application process, in which consultation with local authorities and public bodies takes place. During consultation, developers tend to reach agreement through the planning system route with only limited application of Part IIA of the 1990 Act.

When undertaking the development of contaminated sites, typical practical difficulties that developers encounter are associated with insufficient information on site conditions, complying with the regulators, and technical difficulties related to the nature of contaminated sites. Related to site remediation, the developers’ general approach is to minimise these risks and uncertainties in order to control the cost and timescale of the project, as well as making sure that the remediation methods to clean up the sites actually deliver. This involves hiring external consultants from the site identification stage, when developers tend to rely on them for site information and advice on innovative remediation methods available in the industry.

The EU Landfill Directive has affected some developers by the consequent rise of costs to haul material for disposal to landfill. Responding to this, more developers have started to look at on-site remediation methods, particularly capping and bio-remediation. The interviews also highlight concerns amongst developers that the greatly reduced number of licensed tips would lead to increased costs. There is also a degree of uncertainty regarding the potential of increasing liabilities when the Waste Acceptance Criteria, following the Directive, are announced.

The interviews identified developers’ perceived risks in developing on contaminated land, often associated with increasing costs of development and unexpected liabilities. In managing these risks, developers tend to focus on getting ‘the right people’, from the earliest stage of development process, who they believe will be able to get the job done. Developers control the remediation costs and shift those liabilities associated with contamination to these experts, by making sure warranties and fixed contracts are being taken on board.

Post-remediation stigma appears to emerge during transactions when purchasers make legal enquiries. In dealing with this issue, developers prepare information packs on the site history and may deal with direct inquiries. However, they do not feel obliged to do so for inquiries in the secondary market. There is a degree of confidence amongst developers that stigma will not affect the marketability or the end value of their end products, particularly since site clean-up is now done under rigorous regulatory standards.
5.11.3 Innovation
Brownfield development seems to have had a limited impact on encouraging innovation in both the development process and products used. The introduction of new techniques appears to relate more to the development industry as a whole and is not brownfield-specific. Nonetheless, the utilisation of existing building techniques that are appropriate to developing PDL is evident. Cost effectiveness, related to the speed and quality of build, appears to be central to the developers’ rationale for undertaking brownfield redevelopment. Similarly, the application of modern methods of construction is cost-related, and some interviewees see the benefits of employing these new techniques. The principal advantage was stated as being the lowering of construction costs. Despite this, there is still progress to be made. The survey respondents highlighted a number of barriers to the introduction of more innovative methods of construction, the skills shortage being perhaps of greatest concern.

5.12 Sustainability in the development process
The interviews show that, although the development industry is playing its part in the government sustainability agenda by introducing the concepts into their projects, there is a degree of scepticism over real meaning of sustainability, and this may hinder its implementation. Developers’ own interpretations subsequently vary. Motivated by their efforts to comply with sustainability requirements for gaining planning applications, developers frequently concentrate on environmental and social objectives, although there is also a keen focus on the economic sustainability of the scheme, often limited to the end product itself, rather than the economic vitality of the surrounding area.

In their various attempts to incorporate sustainability into their development process, the interviews reveal that extensive measures are taken mainly to establish sustainable end products. Apart from incorporating the BREEAM standards, developers are also endeavouring to incorporate more innovative energy and waste solution into their projects, but changes in the Building Regulations have challenged developers to seek ways of achieving sustainability standards without threatening the financial sustainability of the projects themselves.

Responding to the pressure to satisfy the Government’s social pillar of sustainability, developers have involved community participation in their development process. Nevertheless, there is scepticism as to how community consultation can be carried out without being counter-productive or even jeopardising the proceedings of the development projects.

5.13 Government recommendations
The findings from our survey show government policy related to brownfield regeneration to be complex and often not well understood by developers. Interviewees expressed concern over changing legislation which, at times, goes against existing brownfield policy. For example, amendments made to parts of the Building Regulations can conflict with other sections. Overall, the clarity of legislation related to brownfield development needs to be improved.

Planning policy and satisfying local government’s development plan were perhaps the greatest barriers to brownfield development. Simplification of the planning process and reducing the risk and development timescales were the principal recommendations in our survey. Developers also felt greater efforts by regulatory bodies, for example local government and English Partnerships, should be made in order to make development land more readily available.
Brownfield regeneration projects are clearly well accepted, and it is hoped that as more knowledge and best practice are disseminated throughout the industry, greater innovation and risk tolerance will become apparent. Developers and other stakeholders, such as local and central government, must work more closely with one another to ensure that brownfield regeneration becomes a standardised development process – a process that is free from contradiction and inefficiencies.

The future of brownfield development in the UK is therefore very much dependent upon whether the industry can adapt to changing policy such as the EU Landfill Directive and simplify UK brownfield legislation. The introduction of more advantageous fiscal incentives, greater public–private sector partnerships and more effective modes of construction, given the perceived skills shortage, may perhaps facilitate and maintain the momentum of brownfield regeneration. The UK development industry may also benefit from looking at international practices in order to address some of the existing barriers. These themes will be explored in future research.
Part 3: Contextual Analysis for Case Studies
6 National Land Use Data Analysis

6.1 Summary and Overview
This Chapter provides a detailed analysis of brownfield land in England and within the two main case study areas of Thames Gateway and Greater Manchester. It analyses the extent of brownfield land, also known as previously developed land (PDL), based on the National Land Use Database (NLUD).

The Chapter provides a detailed analysis of:
- The supply of brownfield land in terms of stock, type of land, proposed use and suitability for housing; and
- The extent of dereliction and vacancy relating to the potential supply of housing.

The Chapter begins with a summary of the main findings from this analysis.

6.2 Main findings

6.2.1 PDL supply
- In 2003 there were some 65,750 hectares of PDL in England that was available for development. Of this figure, almost one-thirds of the total stock was identified as ‘vacant’.
- Approximately one-third of PDL in England is not yet allocated for any specific use. Factors such as poor site conditions, site locations in deprived areas, and market perception towards areas characterised by dereliction, may contribute to this; furthermore, the existence of ‘hardcore’ sites may hinder efforts to recycle brownfield land.
- As at 2003 there were some 3,600 hectares of PDL stock in Thames Gateway and 2,625 hectares in Greater Manchester. The NLUD-PDL figures imply that there are different trajectories of regeneration occurring between these two case study areas.
- Thames Gateway is the prime focus for national regeneration efforts. This has translated into practice with a significant portion of PDL stock having planning allocation and permission, reflecting the extensive scale of redevelopment schemes in the short to medium term.
- Greater Manchester is one of the country’s Housing Renewal Market Pathfinder areas, but as at 2003 almost two-thirds of its total PDL stock had not yet been utilised or redeveloped. The significant concentration of ‘medium-term’ dereliction appears to be a barrier for regeneration efforts, as it is likely to influence negative perception of the area by investors and end users.

6.2.2 Housing opportunity on PDL
- The current stock of brownfield land in England provides the capacity for 950,000 additional homes with over one-third comprising PDL identified as vacant and derelict.
- However, a slower development rate is likely to take place in the near future as most of the ‘best sites’ from the total stock have been utilised, following the focus on the 60% headline (H14) target for new homes built on brownfield land. Measures need to be taken to tackle the ‘problem sites’ left, to avoid dampened interest in reusing brownfield land.
In Thames Gateway, the current PDL stock is suitable to accommodate 81,300 additional homes, with over half comprising vacant and derelict PDL. Most of the vacant and derelict PDL stock has already been utilised to generate housing, suggesting that, in general, land dereliction has not been a major barrier in the area.

In Greater Manchester, the current PDL stock is suitable to accommodate 39,000 additional homes, with over two-thirds comprising vacant and derelict PDL. Despite this, the extent of vacant and derelict PDL allocated for housing is relatively modest. This is due to current low market interest; moreover, the regeneration efforts in the area are focused on the revitalisation of existing residential areas as opposed to increasing the provision of new housing.

Housing provision in both case study areas may also flow from PDL with proposed mixed uses that incorporate a housing component.

6.3 Background and context

This section provides an analysis of PDL in England, with reference to the current government initiatives to encourage the provision of new homes on brownfield land. The purpose of this overview is to provide background and context for this research. The focus of this section is on both the national picture and the sub-regional picture. In terms of the latter, Thames Gateway and Greater Manchester are part of the Government’s Sustainable Communities Plan, where the principal focus is on the provision of new homes and improving the existing supply, as well as tackling social and economic problems faced by deprived communities (Shephard, 2003).

According to the Plan, the Thames Gateway is one of the UK’s four priority areas for development of new residential communities and is designed to address the housing supply shortage in South East England. The Gateway covers 20 local authorities in the South East, East of England and London.

Greater Manchester (North West), on the other hand, has areas that have been selected as Market Renewal Pathfinders, which are those being recognised as having sufficient housing supply but as being in abandonment and thus attracting low demand and being in need of revitalisation. There are 10 local authorities included in the analysis of Greater Manchester.

There is now a growing body of quantitative data that can be used to monitor and model the brownfield redevelopment targets set by Government. Two national datasets in particular enable the tracking of past changes in land use and the amount of available brownfield land that is suitable for redevelopment. These are Land Use Change Statistics (LUCS) and the National Land Use Database (NLUD). LUCS record data retrospectively and detail actual land use changes, while NLUD records the potential for future land use changes by detailing sites suitable for redevelopment (Dixon and Shephard, 2003).

This part of the report focuses on NLUD data kindly supplied to us by ODPM, and will build on our earlier work reported in Shephard and Dixon (2004) and Dixon and Shephard (2004).
The analysis was based on the sources identified in Table 6.1.

### Table 6.1: Data sources used in analysis

<table>
<thead>
<tr>
<th>Source:</th>
<th>Used for:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reports published for, or by, ODPM(^{42}), which break down the national NLUD data at a regional level</td>
<td>Illustrating the extent of PDL at national and regional level</td>
</tr>
<tr>
<td>Table S1: ‘PDL that is unused or may be available for redevelopment by land type and planning authority’ (published annually from the NLUD website(^{43}))</td>
<td>Illustrating the extent of PDL at national and regional level</td>
</tr>
<tr>
<td>NLUD-PDL ‘raw’ data from ODPM, a more detailed breakdown of PDL at the local authority level</td>
<td>Illustrating the extent of PDL in case study areas Thames Gateway and Greater Manchester</td>
</tr>
</tbody>
</table>

Due to data quality issues, there are some minor differences in totals between sub-regional figures for ODPM/Table S1 data and NLUD-PDL ‘raw’ data. The NLUD-PDL ‘raw’ data, which provides information at site level, excludes the PDL ‘with redevelopment potential that have not yet being allocated for planning’\(^{44}\). This is because of local authorities’ concerns about the possibility of some sites being commercially sensitive, and the publication of this data may affect the land values.

All the NLUD data in this paper relates to areas outside National Parks.

This section therefore describes the extent of brownfield land in England, covering England and its regions, Thames Gateway and Greater Manchester, and highlighting the following:

- The extent of PDL in terms of stock, type of land, proposed use and suitability for housing;
- The extent of land dereliction related to the potential supply of land to deliver more housing.

### 6.4 Data and definitions

The National Land Use Database is a collection of local authority information on brownfield sites across England. The wider aim of NLUD is to develop a national database of all land parcels, but the first phase (NLUD-PDL) has been to identify vacant PDL and vacant buildings that would be suitable for reuse and/or redevelopment (Myers and Wyatt, 2003). NLUD-PDL has ultimately been driven by the production of Urban Capacity Studies. These are a requirement of PPG3 and are used to determine how much additional new housing can be accommodated within existing urban areas (Adams and Watkins, 2002).

\(^{42}\) The paper uses the following reports for reference:
*Land Use Change in England: Residential Development to 2003* (ODPM, 2004e);
*Previously Developed Land that may be available for Development in 2003* (ODPM, 2004f) and *Towards a National Brownfield Strategy: Research Findings for the Deputy Prime Minister* (English Partnerships, 2003).

\(^{43}\) www.nlud.org.uk

\(^{44}\) The ODPM/Table S2 shows that the PDL stock in England was recorded at 65,800 hectares, whilst the NLUD-PDL ‘raw’ data recorded a lower figure of 50,800 hectares.
Data in the NLUD-PDL database is collected by individual local authorities using a specification and data entry monitoring tool created by the NLUD Partnership. This is to safeguard against variation in recording practice between local authorities, and enables simple collation of data for the whole country (NLUD, 2000). Despite this, some local authorities have not as yet supplied data to NLUD.

The first data output for NLUD was in 1998, the exercise being repeated in 2001, 2002 and 2003, and so, as a dataset, it is still in the early stages of development. NLUD is an ambitious exercise and, given the scale of the task, it is not surprising that problems have been identified in the data collection strategy and in the data itself (Dühr et al, 2002); (Myers and Wyatt, 2003). Most importantly, NLUD should not be regarded as a comprehensive list of all brownfield land that is available for development. Moreover, not all local authorities submit data to NLUD, and although the final results are statistically ‘grossed up’ to account for this, it does limit the potential for detailed analysis of the data at a local level. Even where local authorities do provide data, the sources they rely on will vary, and consequently the depth and range of coverage will fluctuate between authorities.

The broad definition for PDL used by NLUD is that which appears in Planning Policy Guidance Note 3 (PPG3) from 2000 as (ODPM, 2000):

‘... that which is or was occupied by permanent structure (excluding agricultural or forestry buildings), and associated fixed surface infrastructure. The definition covers the curtilage of the development …’.

For NLUD-PDL a particular subset of PDL is recorded: that which is vacant or derelict or, if in current use, has a planning status for redevelopment (NLUD, 2002). For all the sites recorded in the database information about its location, the land type, land use, owner (public or private) and planning status are given. No information is recorded concerning potential or known contamination, although in some cases this might be deduced from the previous land use (Environment Agency, 2002).

NLUD divides the PDL into these categories:

- Previously developed land now vacant;
- Vacant land and buildings ready for development;
- Derelict land and buildings requiring treatment before development;
- Land and buildings in use and allocated in local plan or with planning permissions; and
- Land and buildings currently in use with redevelopment potential.

Recently another category has been included to record land or buildings known to have been redeveloped, or which during the time of survey were currently under construction. The NLUD-PDL 2003 ‘raw’ data obtained from ODPM has reflected this additional category.

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45 Myers and Wyatt (2003) have commented in some detail on the problems associated with the NLUD-PDL data collection strategy. The principal difficulty is associated with co-ordinating the collection of detailed land use data from all English local authorities. Despite the writing of a detailed data specification (NLUD, 2000), research has shown that there are inconsistencies within the data (Dühr et al, 2002).

46 This was mentioned in English Partnership’s report ‘Towards a National Brownfield Strategy’ (2003:6).
6.5 Supply of brownfield land

6.5.1 Supply of previously developed land

England

Recent data shows that in 2003 an estimated 65,800 hectares of PDL in England were available for development. Figure 6.1 shows that historically the North West (11,400 hectares) and South East (10,850 hectares) regions hold the largest concentration of PDL available for development in England, at 17 per cent and 16 per cent respectively.

Figure 6.1: Previously developed land, England (source: ODPM, 2004f)

The breakdown of land type in England (Table 6.2 and Figure 6.2) reveals that:

- PDL in England comprises relatively equal proportions of vacant land and building (29 per cent), derelict land and buildings (31 per cent), and PDL already allocated for redevelopment (27 per cent). The remaining is classified as PDL with ‘known potential’ (13 per cent).
- The North West has the largest proportion of vacant land (18 per cent) and is the second largest region in terms of vacant buildings (17 per cent), emphasising the extent of redevelopment potential in region.
- The North West also has the largest proportion of derelict land and buildings (29 per cent) followed by Yorkshire and Humber (15 per cent).
- The South East has the largest proportion of PDL currently in use but with planning application or permission attached (29 per cent), followed by the East of England (14 per cent), which indicates a relatively intensive utilisation of brownfield land in these regions.
Table 6.2: Previously developed land by type (hectares), England 2003 (source: ODPM, 2004f)

<table>
<thead>
<tr>
<th>Region</th>
<th>Previously developed vacant land</th>
<th>Derelict land and buildings</th>
<th>Vacant buildings</th>
<th>Currently in use with planning allocation or permission</th>
<th>Other with known potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>North East</td>
<td>1,570</td>
<td>1,520</td>
<td>220</td>
<td>490</td>
<td>560</td>
</tr>
<tr>
<td>North West</td>
<td>2,570</td>
<td>5,700</td>
<td>770</td>
<td>1,480</td>
<td>880</td>
</tr>
<tr>
<td>Yorkshire and the Humber</td>
<td>2,170</td>
<td>3,160</td>
<td>820</td>
<td>880</td>
<td>1,040</td>
</tr>
<tr>
<td>East Midlands</td>
<td>920</td>
<td>1,950</td>
<td>560</td>
<td>1,190</td>
<td>1,250</td>
</tr>
<tr>
<td>West Midlands</td>
<td>1,620</td>
<td>1,730</td>
<td>340</td>
<td>1,990</td>
<td>750</td>
</tr>
<tr>
<td>East of England</td>
<td>1,500</td>
<td>2,420</td>
<td>340</td>
<td>2,450</td>
<td>1,220</td>
</tr>
<tr>
<td>London</td>
<td>410</td>
<td>370</td>
<td>330</td>
<td>1,990</td>
<td>330</td>
</tr>
<tr>
<td>South East</td>
<td>2,480</td>
<td>1,440</td>
<td>600</td>
<td>5,180</td>
<td>1,150</td>
</tr>
<tr>
<td>South West</td>
<td>1,370</td>
<td>2,250</td>
<td>580</td>
<td>1,940</td>
<td>1,280</td>
</tr>
<tr>
<td>England</td>
<td>14,610</td>
<td>20,540</td>
<td>4,560</td>
<td>17,590</td>
<td>8,460</td>
</tr>
</tbody>
</table>

Figure 6.2: Previously developed land by type, England 2003 (source: ODPM, 2004f)

Breaking down the data for the proposed use of the PDL in England (Table 6.3 and Figure 6.3) reveals that:

- The largest proportion of PDL in England is land that is still not yet allocated for any use (32 per cent). Other proposed uses include PDL allocated for employment (24 per cent), mixed use (19 per cent), housing (16 per cent), other use (6 per cent), open space (3 per cent) and retail (1 per cent).
- The largest areas of PDL proposed for housing use are located in the East of England and South East (both account for 17 per cent each).
- The North West and South East have the largest proportion of proposed employment use at 22 per cent and 16 per cent respectively.
- The amount of land designated for retail use, which accounts for the smallest part of the total proposed use in England, is mainly located in North West (27 per cent) and West Midlands (19 per cent).
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Proposed mixed-use developments are mainly concentrated in the South East (28 per cent) and East of England (20 per cent). Data from NLUD-PDL suggests that most of these proposed developments also incorporate housing components.

Table 6.3: Previously developed land by proposed use (hectares), England 2003 (source: ODPM, 2004f)

<table>
<thead>
<tr>
<th>Region</th>
<th>Housing</th>
<th>Employment</th>
<th>Retail</th>
<th>Mixed Use</th>
<th>Open Space</th>
<th>Other</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td>North East</td>
<td>500</td>
<td>1,870</td>
<td>30</td>
<td>570</td>
<td>150</td>
<td>180</td>
<td>1,060</td>
</tr>
<tr>
<td>North West</td>
<td>1,590</td>
<td>3,520</td>
<td>170</td>
<td>890</td>
<td>790</td>
<td>790</td>
<td>3,860</td>
</tr>
<tr>
<td>Yorkshire and the Humber</td>
<td>790</td>
<td>2,320</td>
<td>90</td>
<td>630</td>
<td>140</td>
<td>620</td>
<td>3,470</td>
</tr>
<tr>
<td>East Midlands</td>
<td>820</td>
<td>1,400</td>
<td>20</td>
<td>680</td>
<td>130</td>
<td>190</td>
<td>2,630</td>
</tr>
<tr>
<td>West Midlands</td>
<td>1,650</td>
<td>1,590</td>
<td>120</td>
<td>640</td>
<td>150</td>
<td>290</td>
<td>2,080</td>
</tr>
<tr>
<td>East of England</td>
<td>1,820</td>
<td>1,020</td>
<td>70</td>
<td>2,480</td>
<td>60</td>
<td>510</td>
<td>1,970</td>
</tr>
<tr>
<td>London</td>
<td>510</td>
<td>640</td>
<td>50</td>
<td>1,430</td>
<td>20</td>
<td>200</td>
<td>570</td>
</tr>
<tr>
<td>South East</td>
<td>1,750</td>
<td>2,490</td>
<td>60</td>
<td>3,450</td>
<td>190</td>
<td>850</td>
<td>2,070</td>
</tr>
<tr>
<td>South West</td>
<td>1,190</td>
<td>1,010</td>
<td>30</td>
<td>1,450</td>
<td>60</td>
<td>250</td>
<td>3,430</td>
</tr>
<tr>
<td>England</td>
<td>10,520</td>
<td>15,860</td>
<td>640</td>
<td>12,220</td>
<td>1,690</td>
<td>3,880</td>
<td>20,940</td>
</tr>
</tbody>
</table>

Figure 6.3: Previously developed land by proposed use, England 2003 (source: ODPM, 2004f)

Thames Gateway and Greater Manchester

Analysis of the PDL data in the case studies areas of Thames Gateway and Greater Manchester shows that there were an estimated 3,600 hectares of PDL in the Thames Gateway in 2003, which represents a 10 per cent increase from the figure of previous year (Table 6.4 and Figure 6.4). In Greater Manchester, there were an estimated 2,625 hectares of PDL in 2003, an increase by 38 per cent compared to the 2002 stock.
Table 6.4: Summary of Greater Manchester and Thames Gateway

<table>
<thead>
<tr>
<th></th>
<th>Number of PDL sites</th>
<th>Area covered by PDL sites (ha)</th>
<th>Number of PDL sites</th>
<th>Area covered by PDL sites (ha)</th>
<th>% dwellings built on brownfield sites 1996-1999**</th>
<th>% dwellings built on brownfield sites 2000-2003**</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Greater Manchester</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bury</td>
<td>216</td>
<td>436</td>
<td>150</td>
<td>431</td>
<td>59%</td>
<td>87%</td>
</tr>
<tr>
<td>Bolton</td>
<td>138</td>
<td>270</td>
<td>154</td>
<td>307</td>
<td>54%</td>
<td>77%</td>
</tr>
<tr>
<td>Manchester</td>
<td>380</td>
<td>418</td>
<td>323</td>
<td>541</td>
<td>75%</td>
<td>90%</td>
</tr>
<tr>
<td>Oldham (outside NP)</td>
<td>34</td>
<td>55</td>
<td>35</td>
<td>118</td>
<td>77%</td>
<td>78%</td>
</tr>
<tr>
<td>Rochdale</td>
<td>103</td>
<td>67</td>
<td>109</td>
<td>115</td>
<td>64%</td>
<td>74%</td>
</tr>
<tr>
<td>Salford</td>
<td>322</td>
<td>516</td>
<td>158</td>
<td>396</td>
<td>68%</td>
<td>89%</td>
</tr>
<tr>
<td>Stockport</td>
<td>...</td>
<td>...</td>
<td>96</td>
<td>216</td>
<td>71%</td>
<td>88%</td>
</tr>
<tr>
<td>Tameside</td>
<td>...</td>
<td>...</td>
<td>205</td>
<td>239</td>
<td>87%</td>
<td>82%</td>
</tr>
<tr>
<td>Trafford***</td>
<td>45</td>
<td>140</td>
<td>45</td>
<td>140</td>
<td>87%</td>
<td>89%</td>
</tr>
<tr>
<td>Wigan</td>
<td>...</td>
<td>...</td>
<td>170</td>
<td>123</td>
<td>46%</td>
<td>85%</td>
</tr>
<tr>
<td><strong>Totals/average</strong></td>
<td>1,238</td>
<td>1,901</td>
<td>1,445</td>
<td>2,625</td>
<td>69%</td>
<td>84%</td>
</tr>
</tbody>
</table>

| **Thames Gateway**   |                     |                               |                     |                               |                                               |                                               |
| Barking and Dagenham*| 28                  | 250                           | 28                  | 250                           | 71%                                           | 85%                                           |
| Bexley               | 31                  | 34                            | 43                  | 51                            | 57%                                           | 84%                                           |
| City of London       | ...                 | ...                           | 23                  | 15                            | 100%                                          | 100%                                          |
| Greenwich            | 59                  | 241                           | 62                  | 200                           | 85%                                           | 91%                                           |
| Hackney              | 15                  | 13                            | 18                  | 14                            | 91%                                           | 99%                                           |
| Havering             | 23                  | 100                           | 21                  | 135                           | 93%                                           | 84%                                           |
| Lewisham             | 31                  | 57                            | 31                  | 57                            | 94%                                           | 98%                                           |
| Newham***            | 51                  | 264                           | 51                  | 264                           | 78%                                           | 81%                                           |
| Redbridge            | 51                  | 208                           | 48                  | 174                           | 91%                                           | 84%                                           |
| Tower Hamlets***     | 47                  | 58                            | 47                  | 58                            | 89%                                           | 97%                                           |
| Waltham Forest       | 51                  | 25                            | 45                  | 37                            | 92%                                           | 86%                                           |
| Dartford             | 25                  | 748                           | 22                  | 723                           | 60%                                           | 74%                                           |
| Thurrock UA          | ...                 | ...                           | 88                  | 318                           | 88%                                           | 95%                                           |
| Gravesend            | 32                  | 120                           | 35                  | 150                           | 51%                                           | 78%                                           |
| Swale                | 188                 | 90                            | 292                 | 108                           | 71%                                           | 49%                                           |
| Medway Towns UA      | 82                  | 988                           | 22                  | 734                           | 85%                                           | 80%                                           |
| Southend on Sea UA   | 18                  | 90                            | 20                  | 91                            | 87%                                           | 90%                                           |
| Castle Point         | ...                 | ...                           | 26                  | 108                           | 33%                                           | 65%                                           |
| Rochford             | 15                  | 19                            | 11                  | 19                            | 48%                                           | 54%                                           |
| Basildon             | ...                 | ...                           | 27                  | 92                            | 48%                                           | 48%                                           |
| **Totals/average**   | 747                 | 3,305                         | 960                 | 3,600                         | 76%                                           | 81%                                           |

Source: *NLUD-PDL ‘raw’ Data (NLUD, 2004) , **LUCS (ODPM, 2005f) *** local authorities’ 2002 returns

47 The definition used in this report for ‘Thames Gateway’ matches the one used by the London Thames Gateway Partnership, comprising 20 local authorities.
Figure 6.4: Previously developed land (hectares), case study areas 1998–2003 (source: NLUD-PDL ‘raw’ data; NLUD, 2004)

Comparing the land type between both areas, figures derived from the NLUD-PDL (Table 6.5 and Figure 6.5) show that:

- PDL in Thames Gateway is dominated by land currently in use with planning allocation and permission (50 per cent), perhaps reflecting the start of market-led regeneration schemes in the area. About 41 per cent of PDL has not yet been utilised, categorised by vacant and derelict.

- Greater Manchester has a significant amount of derelict land and buildings in its PDL stock (46 per cent). This figure accounts for a significant proportion of vacant and derelict PDL in the area that has not yet been utilised (73 per cent).

Table 6.5: Previously developed land by land type (hectares), case study area 2003 (source: NLUD-PDL ‘raw’ data; NLUD, 2004)

<table>
<thead>
<tr>
<th>Region</th>
<th>Previously developed vacant land</th>
<th>Derelict land and buildings</th>
<th>Vacant buildings</th>
<th>Currently in use with planning allocation or permission</th>
<th>Have been redeveloped or is under construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thames Gateway</td>
<td>949</td>
<td>437</td>
<td>94</td>
<td>1,816</td>
<td>305</td>
</tr>
<tr>
<td>Greater Manchester</td>
<td>598</td>
<td>1,219</td>
<td>98</td>
<td>493</td>
<td>217</td>
</tr>
</tbody>
</table>
Figure 6.5: Previously developed land by land type (hectares), 2003 (source: NLUD-PDL ‘raw’ data; NLUD, 2004)

<table>
<thead>
<tr>
<th>Sector</th>
<th>Mixed Use</th>
<th>Open Space</th>
<th>Other</th>
<th>Retail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thames Gateway</td>
<td>1,544</td>
<td>400</td>
<td>5</td>
<td>101</td>
</tr>
<tr>
<td>Greater Manchester</td>
<td>275</td>
<td>628</td>
<td>216</td>
<td>391</td>
</tr>
</tbody>
</table>
Figure 6.6: Previously developed land by proposed use (hectares), 2003  
(source: NLUD-PDL ‘raw’ data; NLUD, 2004)

Mixed use and housing dominates the proposed use of PDL in Thames Gateway, whilst Greater Manchester is focused on employment use.

The breakdown of PDL by land ownership (Figure 6.7 and Table 6.7) shows that:

- Although private sector ownership seems to dominate the total PDL stock in Greater Manchester (53 per cent), there is quite a substantial amount of the stock which falls into the ‘unknown’ category (18 per cent). This may hinder regeneration efforts in the area, particularly in dealing with vacant and derelict land.

- The PDL stock in Thames Gateway is also dominated by private sector ownership (76 per cent).

Table 6.7: Previously developed land by ownership (hectares), 2003 (source: NLUD-PDL ‘raw’ data; NLUD, 2004)

<table>
<thead>
<tr>
<th>Region</th>
<th>Private</th>
<th>Local Authority</th>
<th>Other Public</th>
<th>Not Known</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thames Gateway</td>
<td>2,746</td>
<td>166</td>
<td>445</td>
<td>243</td>
</tr>
<tr>
<td>Greater Manchester</td>
<td>1,399</td>
<td>550</td>
<td>193</td>
<td>483</td>
</tr>
</tbody>
</table>
6.5.2 Land dereliction

In redeveloping brownfield land, problems may arise from the existence of under-utilised vacant or derelict sites. Based on NLUD-PDL typology, derelict land is defined as ‘land so damaged by previous industrial or other development that it is incapable of beneficial use without treatment ... includes abandoned and unoccupied buildings ... in advanced state of disrepair i.e. with unsound roof(s)’ (ODPM, 2004f).

There are several ways of identifying the extent of PDL dereliction. The Environment Agency categorises PDL sites that have been vacant or derelict for at least five years as ‘suffering from medium-term dereliction’, whilst English Partnerships categorises longer term derelict sites as ‘hardcore’ sites.

The existence of hardcore sites can pose significant problems for efficient and effective regeneration (English Partnerships, 2003). Attempts to deal with land dereliction for regeneration purposes have been made by some local authorities by exercising their power according to s.215 of the Town and Country Planning Act 1990. Under this section, local authorities have discretionary power to require landowners to clean up ‘land adversely affecting the amenity of the neighbourhood’, as well as undertaking the clean-up works themselves and then recovering the costs from the landowners. Research commissioned by DETR in 1999 on the effectiveness of this legislation suggests that, in general, s.125 powers are effective as a regeneration tool (DETR, 2000b).

England

In England, an estimated 39,700 hectares of PDL falls into the vacant and derelict category. Of this figure, an estimated 20,540 hectares (51 per cent) are identified as ‘derelict’ (refer to Table 6.2 and Figure 6.2).

About a third of registered PDL in England is currently identified as derelict

48 Excludes land damaged by development which has been or is being restored for agriculture, forestry, woodland or other open countryside use; also excludes land damaged by a previous development where the remains of any structure or activity have blended into the landscape in the process of time (to the extent that it can reasonably be considered as part of the natural surroundings), and where there is a clear reason that could outweigh the re-use of the site – such as its contribution to nature conservation – or it has subsequently been put to an amenity use and cannot be regarded as requiring redevelopment.
The most recent data available on ‘hardcore’ land is in a study commissioned by English Partnerships (English Partnerships, 2003). The study identified persistently under-utilised sites that had been vacant or derelict for nine or more years, comprising individual sites or clusters that were in excess of 2 hectares (Figure 6.8). The results reveal that overall there were 16,500 hectares of ‘hardcore land’ identified in the study. The regional distribution of this type of land was uneven, with the North West region holding a significant proportion of the total land (26 per cent), followed by Yorkshire and Humber (18 per cent).

**Figure 6.8: ‘Hardcore’ land, England 2001 (source: English Partnerships, 2003)**

A recent initiative at a national level comes from the national regeneration agency, English Partnerships and ODPM, which in February 2005 launched a jointly-led pilot programme to tackle long-term derelict land in 12 local authority areas. A press release from English Partnerships (English Partnerships, 2005) stated that a major output from the programme was that ‘at least one hardcore site in each area will be developed either for commercial or recreational use, with funding being acquired through private investment’.

**Thames Gateway and Greater Manchester**

Focusing on the case study areas, an estimated 41 per cent of the PDL stock in Thames Gateway is categorised as vacant and derelict. Greater Manchester has an estimated 73 per cent of vacant and derelict land and buildings, of which a sizeable amount (64 per cent, or 1,219 hectares) falls into the derelict category (Figure 6.9 and Table 6.8).

---

49 The 12 pilot areas comprise Easington, Barrow-in-Furness, Manchester, Sheffield, Mansfield, Dudley, Milton Keynes, Ipswich, Tower Hamlets, Barking & Dagenham.

50 Taken from website [www.englishpartnership.co.uk](http://www.englishpartnership.co.uk)
Figure 6.9: PDL vacant and derelict (hectares), 2003 (source: NLUD-PDL ‘raw’ data; NLUD, 2004)

Table 6.8: PDL vacant and derelict (hectares), 2003 (source: NLUD-PDL ‘raw’ data; NLUD, 2004)

<table>
<thead>
<tr>
<th>Region</th>
<th>Vacant land</th>
<th>Vacant building</th>
<th>Derelict land and building</th>
<th>Sub Total</th>
<th>Total PDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thames Gateway</td>
<td>949</td>
<td>94</td>
<td>437</td>
<td>1,479</td>
<td>3,600</td>
</tr>
<tr>
<td>Greater Manchester</td>
<td>598</td>
<td>98</td>
<td>1,219</td>
<td>1,915</td>
<td>2,625</td>
</tr>
</tbody>
</table>

Table 6.9 and Figure 6.10 illustrate that, in general, private ownership dominates the vacant and derelict PDL in both case study areas. A relatively high proportion of vacant and derelict PDL in Greater Manchester falls under ‘unknown’ ownership (26 per cent), which may heighten the barriers in tackling this type of PDL. The average size of derelict sites in the area (3 hectares) is bigger than the average size of sites that currently are likely to be developed (1.8 hectares).

Of the derelict PDL stock in Thames Gateway, the average size of site at 4.8 hectares is comparable to the average size of sites currently allocated for redevelopment.
Table 6.9: PDL vacant and derelict by ownership (percentage), by ownership 2003 (source: NLUD-PDL ‘raw’ data; NLUD, 2004)

<table>
<thead>
<tr>
<th>Ownership</th>
<th>Thames Gateway</th>
<th>Greater Manchester</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Derelict PDL</td>
<td>Vacant PDL</td>
</tr>
<tr>
<td>Not Known</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Local Authority</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>Other Public</td>
<td>11</td>
<td>13</td>
</tr>
<tr>
<td>Private</td>
<td>79</td>
<td>76</td>
</tr>
<tr>
<td>Average Size</td>
<td>4.8</td>
<td>3.8</td>
</tr>
</tbody>
</table>

Figure 6.10: PDL vacant and derelict by ownership (percentage), 2003 (source: NLUD-PDL ‘raw’ data; NLUD, 2004)

In attempting to identify the likely ‘hardcore’ sites in Thames Gateway and Greater Manchester, we can compare the ‘raw’ historical NLUD-PDL data. However, as the available comparable data are between 1998 and 2003, these sites have been categorised as ‘medium-term dereliction’. The results (Table 6.10 and Figure 6.11) show that:

- There are an estimated 495 hectares of PDL in Thames Gateway that have been derelict and vacant since 1998 (‘medium term’ dereliction), which constitute about 33 per cent of the total registered vacant and derelict land and about 14 per cent of the total PDL stock in the area.
- In Greater Manchester there are an estimated 775 hectares in the same category, which account for about 40 per cent of the total registered vacant and derelict land in the area and about 30% of the total PDL stock.

---

51 Some local authority areas in both Thames Gateway (Tower Hamlets and Barking & Dagenham) and Greater Manchester (Manchester) have been selected for English Partnership’s pilot project.

<table>
<thead>
<tr>
<th>Region</th>
<th>Derelict since 1998</th>
<th>Vacant since 1998</th>
<th>Medium-term dereliction</th>
<th>Total Derelict and Vacant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thames Gateway</td>
<td>240</td>
<td>255</td>
<td>495</td>
<td>1,479</td>
</tr>
<tr>
<td>Greater Manchester</td>
<td>490</td>
<td>284</td>
<td>775</td>
<td>1,915</td>
</tr>
</tbody>
</table>

Figure 6.11: PDL vacant and derelict 1998–2003 (hectares) (source: NLUD-PDL ‘raw’ data; NLUD, 2004)

Historical figures reveal the existence of ‘medium-term’ dereliction in both case studies areas, with Greater Manchester holding a significant amount.

The ownership of ‘medium-term’ derelict PDL in both case studies is dominated by the private sector (Table 6.11 and Figure 6.12), suggesting the availability of strong resources to carry out regeneration activities. However, what may be lacking here is the confidence that drives their decision to redevelop their sites. In some cases this may even be the result of negative market perceptions towards some hardcore land, where interest in the area is consequently low. For the Thames Gateway area, efforts to increase market confidence to tackle hardcore land may potentially be easier, particularly in its current position as the main focus for national regeneration agenda, but this may be more difficult for Greater Manchester area.
Table 6.11: PDL vacant and derelict 1998–2003 by ownership (percentage)
(source: NLUD-PDL ‘raw’ data; NLUD, 2004)

<table>
<thead>
<tr>
<th>Ownership</th>
<th>Derelict PDL</th>
<th>Vacant PDL</th>
<th>Derelict PDL</th>
<th>Vacant PDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Known</td>
<td>1</td>
<td>7</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>Local Authority</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>34</td>
</tr>
<tr>
<td>Other Public</td>
<td>2</td>
<td>17</td>
<td>22</td>
<td>7</td>
</tr>
<tr>
<td>Private</td>
<td>93</td>
<td>72</td>
<td>61</td>
<td>50</td>
</tr>
<tr>
<td>Average Size</td>
<td>4.7</td>
<td>3.5</td>
<td>3.7</td>
<td>1.3</td>
</tr>
</tbody>
</table>

![Percentage of PDL in Thames Gateway and Greater Manchester](chart1.png)

Figure 6.12: PDL vacant and derelict 1998–2003 by ownership (source: NLUD-PDL ‘raw’ data; NLUD, 2004)

6.5.3 Concluding comments

Of the total stock of PDL in England registered in the NLUD-PDL database, the amount of the total stock identified as ‘vacant’ (29 per cent) suggests an urgent need and opportunity to reutilise brownfield land. However, this seemingly clear-cut opportunity may not be easy to achieve, because an equivalent proportion of PDL in England is not yet allocated for any specific use (32 per cent of total PDL stock). Factors such as poor site conditions, site locations in deprived areas and the market perception towards areas characterised by dereliction may contribute to this, and with the increasing emphasis on recycling brownfield land, current barriers such as the existence of hardcore sites may hinder regeneration efforts.

Subject to the data quality issues we highlighted at the beginning of this section, the NLUD-PDL figures imply that there are different trajectories of regeneration occurring within the case study areas of Thames Gateway and Greater Manchester. Targeted as one of the growth areas for housing provision, Thames Gateway is currently a primary focus for regeneration efforts. This has apparently already partly contributed to a significant portion of PDL stock holding planning allocation and permission,
reflecting the extensive scale of redevelopment schemes in the short to medium term.

In Greater Manchester, on the other hand, almost 75 per cent of its total PDL stock has still not yet been utilised. The significant concentration of ‘medium-term’ dereliction in this area appears to be a barrier to regeneration efforts, as it is likely to contribute towards negative market perceptions in the area, affecting the interest of both developers/investors and potential end users. Many of these sites are also in private ownership. Another issue is the extent of unknown ownerships in this area, which may make it more difficult for local authorities to deal with persistently vacant and derelict land.

### 6.6 Brownfield land for housing

The Government is placing a strong emphasis on reusing brownfield land by including a key measure in the 15 headline indicators of sustainable development in the UK’s Sustainable Development Strategy (DETR, 1999). The headline indicator H14 states the key objective on land use as follows: ‘Re-use previously developed land in order to protect the countryside and encourage urban regeneration’. The basis of this current indicator is the percentage of new homes built on PDL\(^{52}\), in line with the housing target stated in PPG3: ‘The national target is that, by 2008, 60% of additional housing should be provided on previously developed land and through the conversions of existing buildings’ (ODPM, 2000). The monitoring is implemented through Land Use Change Statistics (LUCS).

#### 6.6.1 Housing completions on brownfield land

As Chapter 2 of this report has noted, the 60% target for homes built on brownfield land has already been met in 2002. However, the ‘best’ sites may well have already been developed, and the likely remaining ‘problematic sites’ in the stock of brownfield land may result in a slower rate of new housebuilding in the medium to long term (Shephard, 2003). This is also indicated by the latest data from LUCS (ODPM, 2005f) which, together with NLUD analysis, reveal that:

- After a steady increase of housing provision on PDL since 1994, the 2003 figure of new homes built on PDL in England has reached the same level as the previous year at 67 per cent. A higher rate was projected for 2004 to a provisional figure of 70 per cent (Figure 6.13).

- Of the total PDL stock in England, the percentage of land changing to residential use is projected to a provisional figure of 59 per cent in 2004 (Figure 6.13).

- Overall, for the period 2000–2004, brownfield land has accommodated higher densities of new housing units per hectare compared with greenfield land (Figure 6.14).

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\(^{52}\) A new Sustainable Development Strategy was recently launched in March 2005. With this, the emphasis on sustainability strategies is moving towards new purposes and priorities, which has led to a total of 68 headline indicators. However, the monitoring of the 1999 indicators still takes place ([http://www.sustainable-development.gov.uk/indicators/index.htm](http://www.sustainable-development.gov.uk/indicators/index.htm))
Brownfield land changing to residential use has exceeded half of the total PDL stock in the country, with a higher density on brownfield compared to greenfield.

Figure 6.13: Percentage of new homes and residential use on PDL, England (source: ODPM, 2005a)

Figure 6.14: Density of new homes (units per hectare), England 2000–2004 (source: ODPM, 2005c)
Apart from the figures above, there are no other available data to indicate the breakdown of the number of housing units completed either on brownfield or greenfield land.

The regional breakdown of new homes built on PDL in England (Figure 6.15) indicates that:

- Within the regions shown below, the rate of housing provision on PDL between 2002 and 2003 in the London area has increased by 3 percent, whilst the South East experienced a decrease by the same amount. However, the provisional figures in 2004 indicate a different trend, where the South East experienced significant annual increase by 8 per cent, followed by the North West at 5 percent.

- All regions have exceeded the national 60% target of new housing completion on brownfield land except the East of England region (58 per cent).

**Figure 6.15: Percentage of new homes on PDL, selected regions (source: ODPM, 2005a)**

The proportion of brownfield land changing into residential use in the selected regions where the case study areas are located has also shown the same trend during the period 2002–2003 (Figure 6.16).
The role of the UK development industry in brownfield regeneration: Stage 2, Volume 1

Figure 6.16: Percentage of PDL change to residential use, selected regions (source: ODPM, 2004e)

The change of brownfield land into residential use has been relatively stable (2001-2002) in the selected regions.

Annual figures on new homes built on brownfield land are available only at the regional level. No similar data is available for the local authorities. For the case study areas, the only available indicators are the average percentage homes and density figures for 1996–1999 and 2000–2003 (Table 6.12).

Table 6.12: New homes built on previously developed land, case study area (Source: ODPM, 2005b)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Average percentage of homes built on PDL</td>
<td>Average density (unit per hectare)</td>
<td>Average percentage of homes built on PDL</td>
<td>Average density (unit per hectare)</td>
</tr>
<tr>
<td>Thames Gateway</td>
<td>76</td>
<td>44</td>
<td>81</td>
<td>59</td>
</tr>
<tr>
<td>Greater Manchester</td>
<td>69</td>
<td>27</td>
<td>84</td>
<td>37</td>
</tr>
</tbody>
</table>

6.6.2 Opportunities for housing provision on brownfield land

England

In identifying the potential of brownfield land for the provision of new homes, local authorities identify parcels of lands in their PDL stock that are suitable for housing. From the latest NLUD-PDL figures, it is estimated that:

- Approximately 29,500 hectares of PDL in England (45 per cent) were considered suitable for housing, with an estimated capacity to accommodate 949,900 additional homes, and with the South East having the largest capacity of 151,400 homes (Figure 6.17).
- An estimated 10,520 hectares of PDL are planned for housing use (Figure 6.18), but no indicative figures of additional housing capacity can be generated.

Table 6.13 summarises the results.

53 However, as Shephard and Dixon (2004) point out, NLUD is not an effective tool for estimating the potential housing capacity of brownfield given that the dataset is incomplete.
Table 6.13: Previously developed land for housing (hectares), England 2003
(source: ODPM 2004f)

<table>
<thead>
<tr>
<th>Region</th>
<th>PDL</th>
<th>Suitable for housing</th>
<th>Capacity (units)</th>
<th>Planned for housing</th>
</tr>
</thead>
<tbody>
<tr>
<td>North East</td>
<td>4,360</td>
<td>1,760</td>
<td>45,300</td>
<td>500</td>
</tr>
<tr>
<td>North West</td>
<td>11,390</td>
<td>3,910</td>
<td>144,400</td>
<td>1,590</td>
</tr>
<tr>
<td>Yorkshire and the Humber</td>
<td>8,070</td>
<td>2,520</td>
<td>101,200</td>
<td>790</td>
</tr>
<tr>
<td>East Midlands</td>
<td>5,870</td>
<td>2,180</td>
<td>67,000</td>
<td>820</td>
</tr>
<tr>
<td>West Midlands</td>
<td>6,420</td>
<td>2,970</td>
<td>79,400</td>
<td>1,550</td>
</tr>
<tr>
<td>East of England</td>
<td>7,930</td>
<td>5,120</td>
<td>111,100</td>
<td>1,820</td>
</tr>
<tr>
<td>London</td>
<td>3,430</td>
<td>1,890</td>
<td>114,500</td>
<td>510</td>
</tr>
<tr>
<td>South East</td>
<td>10,860</td>
<td>5,410</td>
<td>151,400</td>
<td>1,750</td>
</tr>
<tr>
<td>South West</td>
<td>7,420</td>
<td>3,720</td>
<td>135,600</td>
<td>1,190</td>
</tr>
<tr>
<td>England</td>
<td>65,750</td>
<td>29,480</td>
<td>949,900</td>
<td>10,520</td>
</tr>
</tbody>
</table>

Almost half of the PDL stock in England is suitable for housing and capable of accommodating 950,000 additional homes.

Figure 6.17: PDL suitable for housing, England 2003 (source: ODPM 2004f)

The South East holds the largest PDL capacity to accommodate new homes.
Of the PDL stock in England that is categorised as vacant and derelict, an estimated 15,040 hectares (38 per cent) have been identified as suitable for housing, with the potential to accommodate an additional 478,700 new homes (Table 6.14 and Figure 6.19). Of this figure, about 5,210 hectares already have planning allocation for housing. Due to data constraints, we cannot estimate the proportion of hardcore land in England that is suitable for housing.

### Table 6.14: PDL vacant and derelict for housing, England 2003 (source: ODPM, 2004f)

<table>
<thead>
<tr>
<th>Region</th>
<th>PDL Vacant and Derelict</th>
<th>Suitable for Housing</th>
<th>Housing Capacity (units)</th>
<th>Proposed for Housing</th>
</tr>
</thead>
<tbody>
<tr>
<td>North East</td>
<td>3,310</td>
<td>1,010</td>
<td>24,400</td>
<td>380</td>
</tr>
<tr>
<td>North West</td>
<td>9,040</td>
<td>2,600</td>
<td>96,900</td>
<td>1,070</td>
</tr>
<tr>
<td>Yorkshire and the Humber</td>
<td>6,150</td>
<td>1,690</td>
<td>65,900</td>
<td>540</td>
</tr>
<tr>
<td>East Midlands</td>
<td>3,430</td>
<td>970</td>
<td>30,500</td>
<td>390</td>
</tr>
<tr>
<td>West Midlands</td>
<td>3,690</td>
<td>1,790</td>
<td>45,500</td>
<td>870</td>
</tr>
<tr>
<td>East of England</td>
<td>4,260</td>
<td>2,640</td>
<td>49,000</td>
<td>550</td>
</tr>
<tr>
<td>London</td>
<td>1,110</td>
<td>560</td>
<td>39,200</td>
<td>80</td>
</tr>
<tr>
<td>South East</td>
<td>4,520</td>
<td>2,140</td>
<td>66,800</td>
<td>760</td>
</tr>
<tr>
<td>South West</td>
<td>4,200</td>
<td>1,640</td>
<td>60,500</td>
<td>570</td>
</tr>
<tr>
<td>England</td>
<td>39,710</td>
<td>15,040</td>
<td>478,700</td>
<td>5,210</td>
</tr>
</tbody>
</table>

Land identified as vacant and derelict in England has the potential to accommodate the provision of 478,700 new homes.
Figure 6.19: PDL vacant and derelict suitable for housing, England 2003
(source: ODPM, 2004f)

Thames Gateway and Greater Manchester

Of the PDL stock in the case study areas, the figures from the ‘raw’ data obtained from NLUD (ODPM) reveal that (Table 6.15):

- An estimated 1,938 hectares of PDL in Thames Gateway is considered suitable for housing, with a potential housing capacity of 81,300 homes (Figure 6.20).
- About 880 hectares of total PDL in Greater Manchester is suitable for housing, potentially accommodating additional homes of 39,002 homes.
- About 471 hectares in Thames Gateway are already planned for housing use, potentially accommodating 15,592 additional homes (Figure 6.21).
- An estimated 442 hectares in Greater Manchester are currently allocated for the same purpose, potentially accommodating an additional 17,855 homes.
- Additional homes in the area can also be contributed from the PDL designated for mixed use that incorporate housing developments. In Thames Gateway, this type of PDL can contribute some 42,608 additional homes, with the potential to deliver 58,200 homes in total through planning allocation and permission.
- For Greater Manchester, PDL designated for mixed use incorporating housing provides a total capacity of about 9,082 new homes, which means there is a potential for delivering 26,937 homes in the area (Table 6.15 and Figure 6.21).

Table 6.15: Previously developed land proposed for housing, 2003 (source: NLUD ‘raw’ data; NLUD, 2004)

<table>
<thead>
<tr>
<th>Region</th>
<th>PDL</th>
<th>Area</th>
<th>Capacity</th>
<th>Additional housing capacity from proposed mix-use with housing component</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Area</td>
<td></td>
<td>units</td>
<td></td>
</tr>
<tr>
<td>Thames Gateway</td>
<td>3,600</td>
<td>1,938</td>
<td>81,346</td>
<td>42,608</td>
</tr>
<tr>
<td>Greater Manchester</td>
<td>2,825</td>
<td>877</td>
<td>39,002</td>
<td>9,082</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Region</th>
<th>Proposed housing</th>
<th>Capacity</th>
<th>Additional housing capacity from proposed mix-use with housing component</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Capacity (units)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thames Gateway</td>
<td>471</td>
<td>15,592</td>
<td></td>
</tr>
<tr>
<td>Greater Manchester</td>
<td>442</td>
<td>17,855</td>
<td></td>
</tr>
</tbody>
</table>
Figure 6.20: PDL suitable for housing, case study area 2003 (source: NLUD ‘raw’ data; NLUD, 2004)

Figure 6.21: PDL proposed for housing, 2003 (source: NLUD ‘raw’ data; NLUD 2004)

Of the PDL stock in the case study areas that are categorised as vacant and derelict (Table 6.16 and Figure 6.22):

- Land identified as suitable for housing use for Thames Gateway is estimated at 1,104 hectares, generating a potential for an additional 43,239 homes.
- There are some 607 hectares of vacant and derelict PDL in Greater Manchester with a capacity of 29,092 additional homes, which account for 75 per cent of the total housing capacity from the PDL stock in the area.
- For Thames Gateway the amount of vacant and derelict PDL that is already planned for housing is recorded at some 153 hectares, which can accommodate approximately 10,653 new homes.
For Greater Manchester, some 275 hectares of PDL are planned for housing, with the capacity to accommodate 11,791 additional homes (Table 6.16 and Figure 3.11).

In both case study areas, the extent of vacant and derelict PDL designated for mixed use incorporating housing components could allow further delivery of 25,816 homes in Thames Gateway and 5,507 in Greater Manchester (Table 3.5 and Figure 6.23).

Table 6.16: PDL vacant and derelict for housing (hectares), 2003 (source: NLUD ‘raw’ data; NLUD, 2004)

<table>
<thead>
<tr>
<th>Region</th>
<th>PDL vacant and derelict</th>
<th>Suitable for housing</th>
<th>Proposed housing</th>
<th>Additional housing capacity from proposed mix-use with housing component (units)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Area (hectares)</td>
<td>Capacity (units)</td>
<td>Area (hectares)</td>
<td>Capacity (units)</td>
</tr>
<tr>
<td>Thames Gateway</td>
<td>1,479</td>
<td>1,104</td>
<td>43,239</td>
<td>153</td>
</tr>
<tr>
<td>Greater Manchester</td>
<td>1,915</td>
<td>607</td>
<td>29,092</td>
<td>275</td>
</tr>
</tbody>
</table>

Figure 6.22: PDL vacant and derelict suitable for housing, 2003 (source: NLUD ‘raw’ data; NLUD, 2004)
Figure 6.23: PDL vacant and derelict proposed for housing, 2003 (source: NLUD ‘raw’ data; NLUD, 2004)

Thames Gateway utilises less vacant and derelict PDL for housing compared to Greater Manchester; however its current proposed use of housing and mixed-use will allow more delivery of new homes in the area.

Tracking the medium-term PDL dereliction in Thames Gateway and Greater Manchester, figures from NLUD-PDL reveal (Table 6.17 and Figure 6.24):

- In Thames Gateway, over half of the medium-term derelict PDL is suitable for housing use (295 hectares), offering the opportunity to accommodate 12,634 new homes.

- In Greater Manchester, only 29 per cent of the medium-term derelict PDL is considered as suitable for housing, which may bring an additional 8,135 homes.

- In Thames Gateway, about one-fifth of the medium-term derelict PDL suitable for housing has actually been planned for housing, with a substantial capacity of 3,436 homes, indicating the allowance for higher density development on those sites (Figure 6.24).

- In Greater Manchester, over half of the medium-term derelict PDL suitable for housing has planning permission or is allocated for housing, with a capacity of 4,161 homes.

- In Thames Gateway, medium-term derelict PDL, designated for mixed-use incorporating residential could potentially accommodate a total of 10,157 new homes (Figure 6.25).

- In Greater Manchester, medium-term derelict PDL designated for mixed use incorporating residential could potentially add only 4,549 new homes (Figure 6.25).
Table 6.17: PDL vacant and derelict 1998–2003 suitable for housing (hectares)  
(source: NLUD ‘raw’ data; NLUD, 2004)

<table>
<thead>
<tr>
<th>Region</th>
<th>PDL derelict + vacant since 1998</th>
<th>Suitable for housing</th>
<th>Proposed for housing</th>
<th>Additional housing capacity from proposed mix-use with housing component (units)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Area (hectares)</td>
<td>Capacity (units)</td>
<td>Area (hectares)</td>
<td>Capacity (units)</td>
</tr>
<tr>
<td>Thames Gateway</td>
<td>497</td>
<td>295</td>
<td>12,634</td>
<td>67</td>
</tr>
<tr>
<td>Greater Manchester</td>
<td>775</td>
<td>223</td>
<td>8,135</td>
<td>115</td>
</tr>
</tbody>
</table>

**Figure 6.24: PDL vacant and derelict 1998–2003 suitable for housing (hectares)**  
(source: NLUD-PDL ‘raw’ data; NLUD 2004)

- **PDL derelict + vacant since 1998 (LHS)**
- **Suitable for Housing (LHS)**
- **Housing capacity of suitable area (RHS)**

Medium-term derelict PDL in Thames Gateway offers relatively more opportunities for housing provision.
6.6.3 Concluding comments

Subject to the caveats regarding data and capacity calculations covered earlier, the current stock of brownfield land in England provides the opportunity for 949,900 additional homes (ODPM, 2004f), of which over one-third come from PDL identified as vacant and derelict.

However, as most of the ‘best sites’ of the total stock have been taken up since the implementation of the national target of 60% additional homes to be built on brownfield land, the take-up rate is likely to be slower in the near future. Unless measures are taken to enhance the ‘problem sites’ left in the stock, dampened interest towards new housing on brownfield land could hamper the Government’s target of housing provision, as stated in the Sustainable Communities Plan (ODPM, 2003).

NLUD-PDL reveals that the current stock of brownfield land in the case study areas is suitable to provide for 81,346 additional homes in Thames Gateway, over half coming from vacant and derelict PDL. In Greater Manchester, an additional 39,002 homes may be accommodated in the area, over two-thirds coming from vacant and derelict PDL. Historically, more new homes on brownfield land with higher densities have been allocated in Thames Gateway than in Greater Manchester.

NLUD-PDL data also shows that Thames Gateway has utilised a large proportion of its vacant and derelict PDL stock for proposed housing use, suggesting that, in general, land dereliction has not proved a major obstacle for housing provision in the area.

In Greater Manchester, the amount of vacant or derelict PDL that has planning permission or is allocated for housing development is relatively modest compared to its actual capacity to accommodate additional homes. This may be due to a dampened market interest, but may also be due to the fact that regeneration efforts in the area are mainly focused on wider revitalisation rather than simply meeting the target of housing provision. However, a key problem is the prevalence of persistent vacant and derelict PDL in this area.

Apart from PDL with proposed housing use, the housing provisions in both case study areas may also come from PDL designated for mixed use incorporating...
housing components. In Thames Gateway, a substantial amount of new homes may be generated from such PDL. In contrast, PDL in Greater Manchester designated for mixed use provides much less opportunity for additional new homes. Overall, the number of homes likely to be delivered through planning permission and allocation are 58,200 homes in Thames Gateway and 26,937 homes in Greater Manchester.
7 Residential Planning Permission Analysis

7.1 Aim
The purpose of this analysis is to highlight the principal housebuilders and developers (see Appendix 1) operating within the two local case study areas based around the SUBR:IM portfolio sites of London Borough of Barking and Dagenham (LBBD), representing part of the Thames Gateway, and the administrative boundaries of Manchester and Salford. The analysis was also undertaken to provide an indication of local residential development activity from both large and medium/small developers.

7.2 Methodology
The data was supplied by the Estates Gazette Planning ‘Sitefinder’ search facility and comprised residential planning applications granted between 2000 and 200454. The EGi ‘Sitefinder’ search facility was used to examine residential planning applications made to each of the relevant local authorities. The raw datasets were then separated into the following categories:

- **Planning permissions granted (PPGs)**, including outline permissions, permissions granted, and development projects under construction and completed. The data was always taken from the year in which the initial planning permission had been granted, regardless of the stage in the development process.
- **Planning applications pending**. These were applications in which a final decision had not been made and excluded applications that were either withdrawn or refused.

Once the planning applications were categorised based on the above, a comparative table across the two study areas was constructed (see Appendix 2). The purpose of this table was to compare the number and type of units granted in each area and sought to give a broad indication of the residential development activity in LBBD and Manchester and Salford. More specific analyses were conducted to establish the annual trends between 2000 and 2004 and to show the key developers and housebuilders operating in the case study areas. These outputs are summarised in the following sections.

7.3 Limitations
There were a number of limitations related to the EGi dataset. These included:

- Small-scale developments, those less than 10 residential units, were not available in the EGi dataset, and this may account for an under-representation of small housebuilders (see Table 7.1) operating within both areas.
- The sampling period (2000–2004) covers only a relatively short period. In the light of recent land banking strategies and extended planning decision processes in some instances, there may be an under-representation of some key housebuilders or property developers whose applications were not granted within our sample timeframe. For example, Urban Splash55 has been a key driving force behind urban regeneration across Manchester and Salford, but had few entries in this survey. This may also be due to planning permissions being granted prior to

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54 The final data set was collected and taken as final as at start of January 2005.
55 Urban Splash’s Annual Report (2003/04) reports the completion of 478 residential units in Manchester.
our sample start date (2000). At present, Urban Splash have well over 1,200 residential units still pending, as well as consent for the majority of the 1,400 homes to be built as part of the New Islington development. Similar omissions or misrepresentations may be linked to other housebuilders within both sample areas.

- The data did not consistently supply information on the proposed area of the residential developments granted, and therefore density calculations that would have been highly beneficial could not be made. It must also be appreciated that the administrative areas of the two local authorities differ greatly, the sample area of Manchester and Salford being some seven times greater in total area (refer to Appendix for comparative figures).

- Residential consents, if not specifically stating the developer, were associated with the planning applicant, and therefore may not be a true representation of either the developers or housebuilders operating in each area.

Despite these limitations, every effort was made to link planning consents and outstanding applications to the most relevant developer or housebuilder, and the classification of these were made through various publications and search facilities (see Table 7.1). The principal classification tool for housebuilders was the Private Housebuilding Annual 2004 together with UK housebuilding publications supplied by the Building Centre Research Services (2004). Table 7.1 shows a summary of these groups and their classification.

Table 7.1: Classification of developers and UK housebuilders

<table>
<thead>
<tr>
<th>Development sector</th>
<th>Means of classification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Housebuilders</strong></td>
<td></td>
</tr>
<tr>
<td>Top 12</td>
<td>Ranked in accordance with the Private Housebuilding Annual 2004 (based on national completions).</td>
</tr>
<tr>
<td>Top 100</td>
<td>Excludes Top 12. Ranked in accordance with the Private Housebuilding Annual 2004 (based on national completions).</td>
</tr>
<tr>
<td>Small housebuilders</td>
<td>Housebuilders not stated in the Top 100(^56). Predominantly those housebuilders who built &lt;31 residential units per year.</td>
</tr>
<tr>
<td>Other developers</td>
<td></td>
</tr>
<tr>
<td>Commercial or other developers (COD)</td>
<td>Developers whose main business activity was not housebuilding. This group was separated further into: National: UK operational area Local: Regional/local operational area</td>
</tr>
<tr>
<td>Housing Associations</td>
<td>Registered housing associations in UK</td>
</tr>
<tr>
<td>Private Individuals</td>
<td>Applications submitted by persons not associated to a business or financial organisation.</td>
</tr>
</tbody>
</table>

7.4 Results

7.4.1 Comparison of residential planning units granted (2000–2004)

Figure 7.1 summarises the number of residential planning permissions granted (in terms of total units granted per year) between 2000 and 2004. Clearly, in absolute terms, Manchester and Salford received a greater number of planning consents for residential units throughout this sample period. However, the annual trends show that the numbers of units granted in LBBD have also dramatically increased over recent years, and this may be a consequence of the emphasis placed upon LBBD as a new residential ‘growth area’ within Thames Gateway by local and national government.

At this point, one must also be aware that planning policies in the North of England are promoting development in areas such as Manchester and Salford due to their Housing Market Renewal (HMR) status (awarded in 2003), and this may be a key reason for the high number of planning permissions granted in recent years.

Figure 7.1: Total residential units granted permission

7.4.2 Comparison of the size of developments

Figure 7.2 shows the average size of residential planning permissions granted in both case study areas. The graph shows that between 2000 and 2004 Manchester and Salford had a greater number of residential units granted per application. However, the number of successful applications has remained fairly constant in Manchester, whereas in LBBD it is steadily increasing.

In terms of density, both areas were approximately equal. According to the ODPM (2003) the average densities for both Manchester and Salford and LBBD were 42.5 and 43 units per hectare respectively.
7.4.3 Future planning permissions?

Figure 7.2 also shows a projection for residential planning permissions in 2005. The graph shows a dramatic increase in the potential number of residential units to be granted in LBBD, with each outstanding application from the sample bringing on average 565 residential units. In contrast, we expect Manchester and Salford to maintain a high frequency of small-scale developments. Applications made in this area between 2000 and 2004 that have received no formal planning decision could bring, on average, 65 residential units per application.

By examining those applications that have yet to be decided from our sample, it can be anticipated that there will be a larger provision of residential units in LBBD, with major schemes such as Barking Riverside potentially bringing as many as 10,800 units to the area. Although major proposals in Manchester are not to the same scale, there are a number of developments, including the New Islington project led by Urban Splash, that will, with other major projects, bring a substantial increase to the planning units granted. In this instance the New Islington project is expected to bring an additional 1,400 new residential units to the area. Other major redevelopment sites in Manchester and Salford include Plymouth Grove as well as projects based in Hulme and Beswick. Therefore, after considering these outstanding applications, we can expect a much greater number of residential units to be built within LBBD than in Manchester and Salford.

From these results, it appears that there are substantial opportunities in the future for small to medium-sized residential developments (<500 units) in Manchester and Salford, whilst in LBBD the emphasis seems to be very much on large-scale residential developments. These trends may be as a consequence of:

- Land acquisitions for large development schemes being facilitated by development agencies such as English Partnerships in LBBD.
Multiple land ownerships of small land holdings\textsuperscript{57} in Manchester and Salford, which do make large-scale projects like those occurring in the Thames Gateway difficult to establish.

### 7.5 Manchester and Salford

#### 7.5.1 Overview

Figure 7.3 summarises the number of units granted permission within Manchester and Salford. Manchester and Salford are clearly fast-growing areas with a total of 11,624 units granted permission between 2000 and 2004, of which 15% are now under construction or completed.

**Figure 7.3: Numbers of residential units granted planning permission in Manchester and Salford (2000–2004)**

![Bar chart showing numbers of units granted permission in Manchester and Salford (2000–2004)]

#### 7.5.2 Emerging patterns in developer activity

Our analysis shows that the emphasis of redevelopment in Manchester and Salford seems to have been on the ‘regional core’. This area incorporates Manchester’s city centre and Central Salford. The trend towards city centre development is not a recent one; historic data supplied by Manchester City Council suggests that strong emphasis has been placed on city-centre renewal since its emergence as a regional economic core during the 20th century.

Prior to 1994, 1,351 new residential units were completed in the centre, with George Wimpey being responsible for the greatest number (32%) (Manchester City Council, 2003\textsuperscript{58}). Based on the most recent 2004 data from EGi, 1,485 of the 2,419 units granted planning permission in Manchester were also within the city centre, representing over 60% of total units.

\textsuperscript{57} This is partly supported by the NLUD analysis in Chapter 6.
\textsuperscript{58} Planning report.
7.5.3 The role of UK development industry in Manchester and Salford

The data reveals a number of key trends:

- The Top UK housebuilders' role has been important, but is now reducing.
- Over the last five years these large volume housebuilders have been responsible for the provision of large proportions of new units, ranging from 30% to 64% of total units granted permission. However, more recently their overall share of total units in development schemes (i.e. successful applications for planning consent) has reduced.
- Most recently, the contribution made by the top UK housebuilders reduced from 64% in 2002 to 40% in 2004.
- In 2004, commercial developers and other developers, including those through joint ventures, facilitated a large proportion of the units permitted, with approximately 50%. The Top 12 housebuilders contributed 27% and the Top 100 (excluding the Top 12) were responsible for a further 13%.

Therefore, in total, over 40% of the planning permissions granted across Manchester and Salford in 2004 were granted to the top UK housebuilders. This was second to the contributions made by other development companies (including commercial developers). In order of importance, the remaining units given consent were from applications made by small housebuilders, private individuals and housing associations (see Figure 7.4). The influence of small housebuilders has been moderate, based on the frequency of small-scale ‘infill’ residential development opportunities.

7.5.4 Key developers in 2000 and 2004

Figure 7.4 shows a more detailed breakdown of the groups responsible for planning consents in 2000 and 2004.

Figure 7.4: Manchester and Salford: residential units granted permission (by type of developer) in 2000 and 2004

To include ‘Top 12’ and ‘Top 100’
In 2000 the contributions of the UK housebuilding industry (including small housebuilders) accounted for nearly 70% of all residential units granted. Other local and national commercial or other developers (CODs) accounted for a significant proportion of the remaining gains, and a small proportion of units were related to planning permissions granted to housing associations. In 2004 the contributions made by housebuilders reduced to 50%. National and local CODs gained a larger proportion of consents and are seemingly becoming influential in creating successful residential development opportunities. Therefore, from these snapshots, housebuilders and other developers (CODs) appear to be facilitating the majority of residential planning consents. A detailed breakdown of the specific organisations and the frequency of successful applications is summarised in Table 7.2.

7.5.5 The role of the UK housebuilders

Table 7.2 shows that the contributions made by specific housebuilders have fluctuated over the sample period, with Westbury Homes making significant contributions in 2000, Gleeson in 2002, Countryside Properties in 2003 and, most recently, George Wimpey in 2004, with consent for 735 residential units. The data also shows Bellway Homes to be a strong player, with consistent contributions made every year, ranging from 36 to 363 units granted per annum. A significant proportion of these units were gained as a result of this housebuilder’s involvement in the Hulme regeneration project that is now near completion.

Annually, some 8% to 16% of planning units granted were awarded to small housebuilders such as Clarke Lyon Ltd. This trend may represent a large number of ‘infill’ development opportunities in the area.

7.5.6 The role of other developers

Other developers (CODs) were also awarded consent for a large proportion of residential units with over 40% in recent years. Of these, locally based CODs seem to be facilitating a greater number of these planning consents, and this trend was largely consistent throughout our sample period.

Private individuals and housing associations accounted for small proportions of residential planning units granted, representing between 1% and 3% of permissions.

7.5.7 Summary

In general:
- Volume housebuilders are gaining consent for larger development sites.
- Permissions for the Top 100 housebuilders (including Top 12) were generally for a larger number of units (see Table 7.2).
- Amongst these housebuilders, Gleeson and Urban Splash have recently gained consent for two large planning proposals, averaging 582 and 700 residential units per granted application respectively.
- Permissions provided for small housebuilders and other local developers (local CODs) have tended to have a lower number of housing units per permission.

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60 Except in 2003 where no data was available for this group.
61 These applications are associated with Plymouth Grove and New Islington.
Table 7.2(a): No. of units granted permission to the top UK housebuilders in 2000 to 2004 and (b) Proportion of units by sector (%)

<table>
<thead>
<tr>
<th>Top UK Housebuilder</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005 (projected)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top 12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wimpey</td>
<td>735</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>735 (2)</td>
</tr>
<tr>
<td>Taylor Woodrow</td>
<td></td>
<td>144</td>
<td></td>
<td></td>
<td></td>
<td>144 (1)</td>
</tr>
<tr>
<td>Bellway</td>
<td>115</td>
<td>363</td>
<td>70</td>
<td>36</td>
<td>211</td>
<td>211 (2)</td>
</tr>
<tr>
<td>Westbury</td>
<td>757</td>
<td></td>
<td>36</td>
<td></td>
<td></td>
<td>36 (1)</td>
</tr>
<tr>
<td>Crosby Homes (Berkeley Group)</td>
<td>115</td>
<td>66</td>
<td>114</td>
<td></td>
<td></td>
<td>114 (1)</td>
</tr>
<tr>
<td>Top 100 (excluding Top 12)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seddon</td>
<td>20</td>
<td>77</td>
<td></td>
<td></td>
<td>154</td>
<td>154 (2)</td>
</tr>
<tr>
<td>Country &amp; Metropolitan</td>
<td>45</td>
<td>264</td>
<td></td>
<td></td>
<td></td>
<td>264 (1)</td>
</tr>
<tr>
<td>Countryside Properties</td>
<td>372</td>
<td>343</td>
<td></td>
<td></td>
<td></td>
<td>343 (2)</td>
</tr>
<tr>
<td>Gleeson</td>
<td>1163</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1163 (2)</td>
</tr>
<tr>
<td>David McLean</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>287 (1)</td>
</tr>
<tr>
<td>Linden Homes</td>
<td>32</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>32 (1)</td>
</tr>
<tr>
<td>Crest Nicholson</td>
<td>237</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1400 (2)</td>
</tr>
<tr>
<td>Urban Splash</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Proportion of units, % (by sector)

<table>
<thead>
<tr>
<th>Top 12</th>
<th>44</th>
<th>29</th>
<th>7</th>
<th>12</th>
<th>27</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top 100 (exc. Top 12)</td>
<td>11</td>
<td></td>
<td>57</td>
<td>39</td>
<td>13</td>
</tr>
<tr>
<td>Sub total</td>
<td>55</td>
<td>29</td>
<td>64</td>
<td>51</td>
<td>40</td>
</tr>
<tr>
<td>Small Housebuilders</td>
<td>16</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>COD Local*</td>
<td>16</td>
<td>34</td>
<td>25</td>
<td>14</td>
<td>20</td>
</tr>
<tr>
<td>COD National*</td>
<td>13</td>
<td>25</td>
<td>36</td>
<td>26</td>
<td>26</td>
</tr>
<tr>
<td>Housing Associations</td>
<td>0.8</td>
<td>1.3</td>
<td>0.8</td>
<td>0.8</td>
<td>0.8</td>
</tr>
<tr>
<td>Private Individuals</td>
<td>0.8</td>
<td>2.6</td>
<td>0.7</td>
<td>2.6</td>
<td>2.6</td>
</tr>
<tr>
<td>Total (may vary due to rounding)</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Commercial developers/other developers (including joint ventures). Numbers shown in brackets indicate separate planning applications granted.
Despite this, these groups have in recent years been key players, measured by the relative increase in the number of applications granted permission.

### 7.6 London Borough of Barking and Dagenham

#### 7.6.1 Overview

Although Barking and Dagenham has not received the same quantity of units compared to Manchester and Salford, it is apparent that the area is now becoming one of great residential interest and Figure 7.5 shows a steady increase in the number of residential units granted across LBBD over the sample period.

**Figure 7.5: Numbers of residential units granted planning permission in Barking and Dagenham (2000–2004)**

Across the sample period, permission was granted for 2,003 residential units with over one third being given planning consent in 2004. The increased attention received by the administrative boundary as a new growth area is clearly a main driver behind this increase in the number of residential units granted, which appears from Figure 2.5 to have occurred since 2003.

#### 7.6.2 The role of UK development industry in LBBD

From our analyses the following trends emerged:

- In contrast to the data supplied for the North West (Manchester and Salford), the stakeholders responsible for gaining planning consent for residential units in LBBD were more varied, with no single group consistently contributing to granted planning permissions over the last five years.

- The top UK housebuilders (‘Top 12’ and ‘Top 100’) have been significant players throughout the majority of the analysis period.

- Over the last five years, this group has been responsible for between 43% and 89% of the total residential units given planning permission. However, due to the
low number of overall planning applications granted in the area, these percentages represent a small number of residential units.

- Across the sample period, housing associations played a key role and in recent years this group has facilitated over one third of all residential units given planning permission.

7.6.3 Key developers in 2000 and 2004

From the 2004 data, development activity was much greater and there was an increase in the number of units permitted. In comparison with the data in 2000, 2004 saw the total number of residential units with planning permission rise by 1140%. These substantial increases may have been largely due to the increasing government attention on LBBD as a new residential growth area within the Thames Gateway.

Figure 7.6 shows a summary of the sectors of the development industry responsible for residential planning permissions granted and compares the annual values for 2000 and 2004.

Figure 7.6: Barking and Dagenham: residential units granted permission (by type of developer) in 2000 and 2004

In 2000, housing associations contributed greatly to what appears to have been a ‘low-level’ private sector development market. Only a small proportion of planning units granted in 2000 (83 units) were provided by the Top 12 UK housebuilders, accounting for just over 40%. This was through a single application made by Bellway Homes. Although residential applications granted in 2000 were very sparse (and this may be related to the industrial (commercial) history of the area), the data suggests that from 2003/04 there has been a shift towards a greater number of residential developments (aimed to satisfy the demand for housing in the Thames Gateway).

In 2004, the proportion of units granted associated with each sector of the development industry remained similar to those five years prior (Table 7.2). However, in 2004 it was the Top 100 UK housebuilders that were providing 46% of successful applications. During 2004, the data suggests that the Top 12 UK housebuilders made
no contribution to residential development in LBBD, perhaps reflecting the substantial permissions already granted to them. In addition, private individuals appeared to be more important players.

7.6.4 The role of UK housebuilders

Table 7.3 summarises the influence of various sectors of the development industry over the last five years.

With regard to the UK housebuilders, the following trends are apparent in LBBD:

- The Top 12 UK housebuilders are playing an important role in residential development. Their greatest contribution was made in 2002.
- Of the Top 12 UK housebuilders, Bellway Homes have been a major driving force behind residential development in LBBD, with an average of 61 units granted per successful application. Furthermore, Barking Riverside will make substantial contributions to the existing residential stock. This also highlights the significance of Bellway Homes as a major player in UK brownfield regeneration.
- Other large developers ('Top 100'), such as Higgins Homes and Abbey Developments, both dominant housebuilders operating in the South East, have also shown great interest in the area in recent years. Together these two housebuilders have been granted permission for some 617 residential units (on average 102 units granted per application).

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62 Between 2000 and 2004, Bellway had four successful residential planning applications, totalling 242 units.
Table 7.3 (a): No of units granted permission to the top UK housebuilders in 2000 to 2004 (b) Proportion of units by sector (%)

<table>
<thead>
<tr>
<th>Top UK Housebuilder</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Top 12</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bellway</td>
<td>36 (1)</td>
<td></td>
<td>144 (2)</td>
<td>62 (1)</td>
<td></td>
<td>10,800?</td>
</tr>
<tr>
<td>Persimmon Homes</td>
<td>50 (1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Top 100 (excluding Top 12)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Higgins Homes</td>
<td></td>
<td>108(1)</td>
<td>353 (3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abbey Devts</td>
<td></td>
<td>34 (1)</td>
<td>122 (1)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Proportion of units, % (by sector)

<table>
<thead>
<tr>
<th>Top 12</th>
<th>43</th>
<th>89</th>
<th>13</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top 100 (exc. Top 12)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sub-total</td>
<td>43</td>
<td>89</td>
<td>43</td>
</tr>
<tr>
<td>COD Local*</td>
<td>19 (1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>COD National*</td>
<td></td>
<td></td>
<td>16 (2)</td>
</tr>
<tr>
<td>Public Sector</td>
<td></td>
<td></td>
<td>12 (4)</td>
</tr>
<tr>
<td>Small Housebuilders</td>
<td>46 (1)</td>
<td>1(1)</td>
<td></td>
</tr>
<tr>
<td>Housing Associations</td>
<td>37 (1)</td>
<td>32 (1)</td>
<td>11 (1)</td>
</tr>
<tr>
<td>Private Individuals</td>
<td>22(1)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total (may vary due to rounding) | 100 | 100 | 100 | 100 | 100 | 100 |

*Commercial developers/other developers (including joint ventures). The numbers shown in brackets indicate separate planning applications granted.
The influence of small housebuilders has been lacking, with the exception of the units granted in 2001, when this group of the UK housebuilding industry was given under half of the annual permissions.

In summary, the influence of all UK housebuilders\(^{63}\) over recent years has remained consistent, comprising approximately 45% of the total units granted permission annually for the last five years.

### 7.6.5 The role of other developers

Housing associations have also played a strong role in gaining residential planning consent in Barking and Dagenham. For instance:

- Annually, these organisations gained planning consent for over 30% of all residential units granted (with the exception of 2002).
- However, the number of units granted per application tended to be lower compared to those made by volume housebuilders.
- In 2004, housing associations successfully gained permissions for 338 residential units on five separate applications, averaging approximately 68 units per application.

More recently, public sector organisations such as English Partnerships and the local authority have played an important role in regeneration activity. This can be attributed to guidance in Unitary Development Plan as well as Government intentions to increase the provision of residential units within its administrative boundary. Although these public bodies have only facilitated a number of small-scale developments (contributing 12% – see Table 7.3) with each application providing between 9 and 25 residential units, they are set to become more influential.

In general:

- Volume housebuilders and housing associations are gaining consent for larger development sites.
- Forthcoming consents, such as those at Barking Riverside and Chequers Lane, South Dagenham, suggest the Top 12 UK housebuilders will be playing a much greater role in residential development across Barking and Dagenham in the future.
- Private individuals and other developers have only contributed sporadically to the residential units granted over recent years.

### 7.7 Conclusion

From the analysis of planning data for residential units, it can be concluded that:

- In relative terms, LBBD has shown an increase in residential planning permissions in recent years, reflecting the high level of developer activity in the area.
- The number of Top 100 housebuilders (in this instance, including Top 12\(^{64}\)) operating within Manchester and Salford was three times greater (12 housebuilders) than in LBBD (4 housebuilders).
- The Top 100 housebuilder group (including the Top 12) appears to have been influential in both areas. However, their contributions, based on successful planning applications, may be reducing, although our analysis was constrained by

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\(^{63}\) Top 12, Top 100 and small housebuilders.

\(^{64}\) Note, however, that our analysis treats these groups separately.
the time period for available data. This may be the result of increased competition from small housebuilders and other property developers such as commercial developers and housing associations, or simply that earlier permissions granted were larger and phased over time with further applications planned.

- Smaller housebuilders, that is, those producing less than 31 residential units nationally per annum, appear to have played a more consistent role in facilitating development across Manchester and Salford compared to LBBD (for example, Devine Homes and Antler Homes have been active in the former area). This may be largely due to the ‘in fill’ nature of development opportunities operating in the Manchester case study area (see Table 7.4 for a summary of the average size of planning permission for this group in comparison with larger housebuilders).

### Table 7.4: Comparison of size of planning permission (2000–2004)

<table>
<thead>
<tr>
<th></th>
<th>Salford/Manchester</th>
<th>Barking and Dagenham</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top 12</td>
<td>162</td>
<td>58</td>
</tr>
<tr>
<td>Top 100</td>
<td>23</td>
<td>103</td>
</tr>
<tr>
<td>Small</td>
<td>83</td>
<td>47</td>
</tr>
</tbody>
</table>

- Other developers (including commercial developers and those related to joint ventures) are playing a significant role in both case study areas. In Salford and Manchester these include Ship Canal Enterprise Ltd, Ician and Ask. In LBBD these include BHB Community Healthcare and Urban Catalyst. However, of these contributions, locally based companies played a greater role in facilitating residential development opportunities.

- Housing associations operating in LBBD assisted in a greater number of residential schemes compared to those in Manchester and Salford. This may relate to a variety of factors, including:
  - Social demographics (large proportions of ethnic minorities) and the requirement for more affordable housing in LBBD and the South East.
  - A disparity in national funding allocations to regional and local housing associations, currently favouring the South East.

- Public sector involvement through organisations such as English Partnerships and the local authority appears to be greater in LBBD. However, in Manchester and Salford local authorities are beginning to facilitate a greater number of development opportunities, through for example successful large-scale land acquisitions and Compulsory Purchase Orders (CPOs).
Appendices

Appendix 1: The UK Housebuilding Industry

The aim of this brief review is to introduce the role of the Top 100 UK housebuilders nationally. The majority of the information contained in this report has been sourced in the Private Housebuilding Annual 2004.

The volume housebuilders

According to the UK Housebuilding Market Report (2004), the industry contributes some £15 billion to the UK economy and the private sector is still making significant contributions despite inflated house prices and low interest rates.

It is estimated that in 2004 the largest financially quoted housebuilders completed over 84,000 residential units. Between 2000 and 2004 there was a growth of 45% in the number of residential completions. The annual completions during this period are shown in Figure A1. However, as reported in the Private Housebuilding Annual 2004, during this period there were a number of acquisitions of medium housebuilders that totalled 25,640 units. Therefore, it seems that the volume quoted housebuilders have not had any ‘natural’ growth and the main driver for the increases in residential completions between 2000 and 2004 has been the acquisitions of small and medium housebuilders.

Figure A1: Number of residential completions (units) by the top (largest) publicly quoted housebuilders (source: summarised from Private Housebuilding Annual 2004)

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65 Pre-tax profit of £2969m (Private Housebuilding Annual 2004, p.30).
The role of the UK development industry in brownfield regeneration: Stage 2, Volume 1

**Key players**

The Top 100 UK housebuilders were responsible for the completion of 113,348 residential units in 2003, which represents 65% of the total units completed in 2003. Data supplied in the Private Housebuilding Annual 2004 has shown that Barratt Homes is the largest housebuilder. Barratt Homes completed 13,304 residential units in 2003 and are building over 400 developments across the UK, with pre-tax profits in excess of £280m. Wimpey and Permission are also major contributors in terms of residential units completed. These three companies have an estimated market share of 22% (by volume).

**The expanding medium-sized housebuilders**

Outside the Top 20 there is a number of expanding medium-sized firms of which Linden Homes, Country & Metropolitan and Morris Homes are good examples. A description of these companies is given below.

*Linden Homes* are active on around 30 developments at any one time, providing a mix of one- to five-bedroom homes, and the majority of their schemes have less than 30 homes. Over the last ten years, their annual completions have increased from 192 units to 1048 units, representing a growth of 445%, and now reach pre-tax profits in the region of £25.4m.

*Country & Metropolitan* is a specialist company in the redevelopment of brownfield sites. Following its merger with NorthCountry Homes Group Ltd, Country & Metropolitan is currently listed in the Top 25 housebuilders in the UK. The company’s annual completions have fluctuated over the last five years, with on average 179 units completed per annum.

*Morris Homes* are one of the UK’s largest independent housebuilders and have a strong emphasis on energy-efficient design, being one of the first to comply with the SAP 80+ rating. Over the last ten years the residential completions by Morris Homes have increased by over 300% and now appear to meet a completions target of 1100 units per annum.

**Social housing contributions: The Top 10**

Social housing contributions and the provision of affordable homes are receiving an increasing amount of government attention, as illustrated by the publication of ODPM Sustainable Communities Plans, ‘Homes for All’ and ‘Building for the Future’, in 2005.

In terms of the Top 10 UK housebuilders, Bellway provided the greatest number of social units (as a proportion of their annual total) and Westbury the least (see Table A1).

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66 Based on 2003 total of 173,500 (Housebuilding Market – UK 2004).
67 As stated on each company’s webpage.
68 NorthCountry Homes is skilled in the development and production of lower cost new homes aimed at the first-time buyer.
Table A1: Top 10 housebuilders and their social housing contributions (2003)

<table>
<thead>
<tr>
<th>Top 10 housebuilders</th>
<th>Social</th>
<th>Private</th>
<th>Proportion of social units (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barratt</td>
<td>1139</td>
<td>12165</td>
<td>9.4</td>
</tr>
<tr>
<td>Wimpey</td>
<td>706</td>
<td>12203</td>
<td>5.8</td>
</tr>
<tr>
<td>Persimmon</td>
<td>1003</td>
<td>11160</td>
<td>9.0</td>
</tr>
<tr>
<td>Taylor Woodrow/Bryant</td>
<td>400</td>
<td>7290</td>
<td>5.5</td>
</tr>
<tr>
<td>Bellway</td>
<td>629</td>
<td>5649</td>
<td>11.1</td>
</tr>
<tr>
<td>David Wilson</td>
<td>332</td>
<td>4705</td>
<td>7.1</td>
</tr>
<tr>
<td>Westbury</td>
<td>132</td>
<td>4406</td>
<td>3.0</td>
</tr>
<tr>
<td>Berkeley</td>
<td>200</td>
<td>3981</td>
<td>5.0</td>
</tr>
<tr>
<td>Redrow</td>
<td>376</td>
<td>3655</td>
<td>10.3</td>
</tr>
<tr>
<td>Miller</td>
<td>117</td>
<td>2754</td>
<td>4.2</td>
</tr>
</tbody>
</table>
Appendix 2: Residential permissions granted in Manchester & Salford and London Borough of Barking & Dagenham (total units per year)

<table>
<thead>
<tr>
<th>Year of permission granted</th>
<th>Manchester &amp; Salford</th>
<th>Barking &amp; Dagenham</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>2252</td>
<td>83</td>
</tr>
<tr>
<td>2001</td>
<td>1600</td>
<td>194</td>
</tr>
<tr>
<td></td>
<td>(-29%)*</td>
<td>(+134%)</td>
</tr>
<tr>
<td>2002</td>
<td>3852</td>
<td>218</td>
</tr>
<tr>
<td></td>
<td>(+141%)</td>
<td>(+12%)</td>
</tr>
<tr>
<td>2003</td>
<td>1759</td>
<td>478</td>
</tr>
<tr>
<td></td>
<td>(-54%)</td>
<td>(+119%)</td>
</tr>
<tr>
<td>2004</td>
<td>3208</td>
<td>1030</td>
</tr>
<tr>
<td></td>
<td>(+182%)</td>
<td>(+115%)</td>
</tr>
<tr>
<td><strong>Sub-total (A)</strong></td>
<td><strong>11624</strong></td>
<td><strong>2003</strong></td>
</tr>
</tbody>
</table>

Applications not yet granted

<table>
<thead>
<tr>
<th>'Major' proposed development (&gt;500 units per site)</th>
<th>Manchester &amp; Salford</th>
<th>Barking &amp; Dagenham</th>
</tr>
</thead>
<tbody>
<tr>
<td>3471 (5)</td>
<td>14800 (4)</td>
<td></td>
</tr>
<tr>
<td>'Medium' size (50-500)</td>
<td>18366 (130)</td>
<td>533 (6)</td>
</tr>
<tr>
<td>'Small' developments (&lt;50)</td>
<td>6408 (301)</td>
<td>414 (21)</td>
</tr>
<tr>
<td>Overall units pending (B)</td>
<td>28,245</td>
<td>15,747</td>
</tr>
</tbody>
</table>

**PROJECTED TOTAL (A + B)** 39,869 17,750

<table>
<thead>
<tr>
<th>Total Area (ha)</th>
<th>Manchester &amp; Salford</th>
<th>Barking &amp; Dagenham</th>
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<tbody>
<tr>
<td>21.284</td>
<td>3,400</td>
<td></td>
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<table>
<thead>
<tr>
<th>Units/ha (Local authority area)</th>
<th>Manchester &amp; Salford</th>
<th>Barking &amp; Dagenham</th>
</tr>
</thead>
<tbody>
<tr>
<td>42.570</td>
<td></td>
<td>43</td>
</tr>
</tbody>
</table>

* Year on year % increase
(N = number of units pending (number of separate applications))

---

69 Based on the area sizes supplied in the 2001 Census.
70 This value is based on an average across Manchester (55 units/ha) and Salford (30 units/ha).
References


ODPM (2005a) *Sustainable Communities: Homes for All- A Five Year Plan from the Office of the Deputy Prime Minister*, ODPM, London.


