Design Coding
Testing its use in England
cabe
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Foreword

Creating sustainable communities is not just about providing the homes, jobs, transport and other services that people need. This report shows that it also involves raising the quality of what we build and giving local people more of a say in the way their community develops.

Although there have been good examples of urban design in recent decades, so much of what we’ve built has been disappointing. Of course we needed to plan for roads, but too often the balance tilted and we built for the needs of cars not people. We should build places which are welcoming and walkable – places where people want to live and work.

Centuries ago we knew how to achieve the best in urban design, from Roman Chester to Georgian Bath, but today it’s almost as if we are having to learn how to build communities again.

Fortunately we are now making significant progress. You only need go to places like Newcastle upon Tyne, Manchester or Birmingham to see how quality urban design, with outstanding new architecture, is part of a new civic confidence.

So when I published the £38 billion Sustainable Communities Plan, I wanted to make sure that we developed the skills, partnerships and new ideas needed to create places that would stand the test of time.

I wanted us to learn from the best experts abroad, in particular the American New Urbanists, who have been using design coding to deliver development with better quality design and community involvement.

Design codes bring together the professionals involved in planning, urban design and highways, along with local residents, landowners and developers, design codes can help to create better plans more quickly.

English Partnerships has already shown the merits of this approach at Upton, near Northampton. And last year I asked CABE and English Partnerships to set up seven pilot projects to see how design coding could work in this country.

These pilots have generated widespread interest. A year after they were launched, I am delighted to see the progress they have made, which is described in this report.

With the help and co-operation of everyone involved in the planning process, I believe that coding (along with our other improvements to the planning system) can help a new generation of sustainable communities to be planned, designed and built to standards that will pass the test of time.

John Prescott, Deputy Prime Minister
Executive summary

Introduction

Design codes are not a new idea. They have been used in one form or another since the Renaissance, and possibly earlier. Some of our most cherished developments, from the Georgian period through to Garden Suburbs and New Towns were based on design codes. While much has been said and written about design codes, opinions still vary. Are they an unwanted American import, reflected in developments like Seaside, Florida? Do they stifle creativity? Or can they help secure well-designed neighbourhoods? These are some of the questions addressed in Design Coding: Testing its use in England, a report CABE has produced in partnership with ODPM and English Partnerships, following a year of extensive research and on-the-ground testing of design coding in England.

Other terms commonly used to describe design coding include, urban coding and urban design coding. The research programme adopted the term design code in recognition of the fact that it is a product derived from the consideration of relevant issues at a variety of different scales, ranging from the architecture of individual buildings to the layout of blocks and structure of public spaces. Design coding is focussed at an urban scale on the delivery of good quality and well designed places.

The Government’s – and its agencies’ – commitment to creating new neighbourhoods and places that are well designed, and thereby add to the quality of life of their residents and users, is firmly established. With the publication of Sustainable Communities: Building for the Future (ODPM, 2003), we now have to deliver against this commitment. However, CABE’s recent Housing Audit (CABE, 2004) found that while the majority of house builders have demonstrated they are able to deliver places of quality, actually achieving this is still rare.
This raises the important issue of: how we can, across the board, consistently deliver the quantity and quality of housing that is required, and whether there are tools that we can use to help.

In 2004 the ODPM, in partnership with CABE and English Partnerships, initiated a programme of research into the potential use of design codes in England to see if they could help. This report summarises the interim findings, drawing on a literature review; a postal survey of English practitioners; six case study projects already substantially built using design codes; and seven pilot projects currently in the process of preparing and using design codes. The research has focused on the application of design coding to major housing developments and seeks to answer the following:

- What is a design code and how might it work in the current English context?
- What scope is there for design codes to speed up the planning process and delivery of new development?
- Do design codes improve the quality of development?
- Do design codes deliver more certainty for all parties, from developer through to the local community, by creating greater levels of consensus and buy-in to a development?

Described succinctly, a design code is a set of three-dimensional, site-specific design rules or requirements for development. It is informed by a spatial masterplan or other form of urban design proposals and describes the rules through words and graphics. It is a tool that can be used in the design and planning process, but goes further and is more regulatory than other forms of guidance commonly used in the English planning system.

The process by which a design code is prepared is characterised as engaging a wide range of interested parties who will be involved in the design, scrutiny or delivery of a development – the local planning authority, developers, landowners and other key agencies, eg the Highways Agency or the Environment Agency.

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**Initial research findings**

This report outlines the findings of the early parts of this significant research project into the use and application of design coding in England. It provides insight into precedents for design coding, practitioners’ perceptions of their potential uses and roles, some lessons from existing projects that have used them and early observations from the pilot projects that are testing design coding in the context of current policy, practice and market realities. The report marks an interim point in the research programme and will be followed up with more formal and conclusive findings in late 2005 or early 2006.

The literature review shows that design coding has historical and recent precedents, both in this country and overseas. Despite the numerous definitions used to described design coding, there is a strong consensus that a design code is a distinct tool used to regulate development by setting rules (although these are unlikely to relate to every detail).

The postal survey of 140 practitioners revealed that under a third have used design codes, with a slightly larger number saying they intended to use them in the future. There was some inconsistency in how people defined a design code and related it to other forms of guidance, which reflects the general lack of knowledge about design coding at the time of the survey.

This report provides initial findings based on the case studies and pilot projects, under the four key phases of design coding: deciding to prepare a design code; the drafting and content of a design code; adopting and implementing a design code; and monitoring and managing development against a design code.

The key parties have different motivations for preparing a design code: developers focus on the potential of design codes to deliver a faster and more certain planning process and planning authorities are most interested in achieving better quality development.
However, when all stakeholders support coding from the start many potential 'sticking-points' between them can be resolved, for example establishing appropriate road standards and layouts, and providing clear criteria to all parties as to what will be an acceptable quality of design.

The research confirms that design codes – the process and product – are primarily technical. They are mechanisms to help deliver the vision expressed elsewhere, typically in the masterplan or development framework. Therefore, in an ideal scenario, the decision to prepare a design code would be taken at the outset of a masterplanning process, to help avoid repetitive work.

The technical nature of the coding process means that the best time to engage and gain commitment from the wider community is when setting out the design vision – in preparing the masterplan or development principles for the site – not during the preparation of the coding document. Technical experts who will be involved in the design and delivery of the project then draft the code. A wide range of skills are required for coding and it appears that these are not always immediately available.

While it is clearly possible to code for architectural design/style, design codes can be style-neutral. Coding for residential areas seems to be more successful than for non-residential building, for instance a school.

The code should be clear about aspects that are mandatory and those that are for guidance only. Codes also need to be flexible enough to deal with the changing circumstances of long-term projects, for example market conditions. The degree of control being sought seems to vary in the projects studied. Some of the contextual issues which seem to affect this include the experience of the developers and local authority; the complexity of the project; other leverage the public sector or developer may have; and who leads and funds the process of preparing the design code.

Design codes vary considerably, although all include at least some standards relating to strategic access, movement framework/street hierarchy, parking, open space, building envelopes and architectural design. Some also establish different character areas or quarters, for which individual principles or treatments are specified.

Design code documents are presented in different ways, using words and diagrams. Where illustrations and photographs are used, it is important to make clear where they are illustrative only. The pilot projects are using design workshops to test their design codes, before refining and adopting them.

More work is required to establish how codes could, or should, be dealt with in planning policy and adoption. A variety of mechanisms are being investigated, including options for adopting a design code as policy and dealing with a design
code through planning permissions. The pilot projects are considering giving the codes greater weight by adopting them as supplementary planning documents (SPD) or area action plans under the new planning system. In many of the earlier projects the design code was used as a briefing tool and means of assessing the developers’ designs as well as financial bids, as the sites were in public ownership and disposed of through competition. Generally, these design codes were seen as setting a baseline requirement.

In the earlier case studies, monitoring and enforcement is carried out through requirements set by the landowner. When the pilot projects reach this stage, it is generally envisaged that the local authorities will be responsible for monitoring and enforcement. Legal means to ensure compliance are also being explored, including through development agreements, land covenants, Local Development Orders and Section 106 agreements.

Interim conclusions

**Speed of delivery**: clearly preparing a design code takes time – within the context of the pilot programme it has taken between three to five months to prepare a code, plus time for adoption. However, initial evidence shows that this early investment brings dividends during the planning process, with compliant planning applications often determined more quickly. Circumstances that have assisted this include: the presence of a dedicated development control officer, in some instances funded by the developer; a fast-track process through a development control sub-committee; and the planning officers being familiar with the code.

**Quality of final development**: the advanced case studies suggest that although quality can be influenced by many factors, development produced with design codes is of notably higher quality. Importantly the case studies show that the projects where coding has been successful are also characterised by a strong commitment to design from the outset and strong leadership with a clear sense of purpose and vision.

**Consensus and buy-in to development**: coding involves a high degree of professional and technical collaboration and most participants feel that it led to improved outcomes for the project. However, achieving this spirit of partnership and co-operation between the various parties takes time and effort.

Next steps

This research programme will track the progress of the pilots and the experience of key stakeholders, reporting back in 2006. While the potential of design coding as a useful tool has been demonstrated, the research will continue to evaluate whether, through a process that gains the support and buy-in of key stakeholders, it can deliver better quality housing development, at greater speed.
1 Introduction
1 Introduction

1.1 The issues

The Government’s – and its agencies’ – commitment to creating new neighbourhoods and places that are well designed, and thereby add to the quality of life of their residents and users, is firmly established. With the publication of the Government’s plans for meeting the housing and regeneration needs of England’s towns and cities, outlined in Sustainable Communities: Building for the Future (ODPM, 2003), we now have to deliver against this commitment.

The scale of the challenge is particularly pressing in the housing growth areas, such as London and the South East where there are plans to build over a million new homes by 2016. While new housing needs to be delivered speedily, clearly this must not be detrimental to the delivery of sustainable communities. A number of agencies at local, regional and national level have been examining how to ensure that this quantity of new housing can be delivered at speed without compromising – indeed improving on – the quality of the homes and neighbourhoods developed over preceding decades.

This drive for quality is now embedded in policy and thinking, as outlined in documents such as Towards an Urban Renaissance, Urban Design Compendium, By Design, Better Places to Live and PPS1. But it now has to be acted upon, urgently. The industry’s ability of seeing policy through into practice and delivering well designed buildings, places and spaces will be under severe scrutiny. This is most pressing given the results of CABE’s Housing Audit (CABE, 2004): of 100 recently completed housing projects in London and the South East, the majority were considered to be average or below average when evaluated against the standards established jointly with the House Builders’ Federation and the Civic Trust (the Building for Life Standard, CABE, 2003). Put simply, they were not as well designed and built as they could, or should, be. The audit found that certain aspects of design are consistently inadequately addressed and poorly handled. Promisingly, each house builder had demonstrated that they could deliver a scheme of good or very good quality in terms of the character of the neighbourhood that was being created, how the streets met the needs of pedestrians and cars, the design and construction of the homes, the quality of the public space and the integration of the new housing with the surrounding area. However, such schemes are often the exception to the rule, and developers failed to consistently deliver development that reproduces the quality of their best schemes.
There is increasing pressure to deliver sustainable communities, both in the Growth Areas and the Housing Market Renewal Areas. Large and complex schemes require significant effort from all parties to reach agreement as to what constitutes acceptable development. Despite the efforts of all involved, development can be subject to significant delays due to disagreements between stakeholders relatively late in the planning process. The issue is whether design coding can facilitate an upfront agreement on design quality, thereby providing a degree of certainty for all parties.

1.2 The key questions

Two issues need to be tackled urgently if we are to deliver new homes and neighbourhoods in the quantities required, which are attractive, of lasting quality and contribute to the quality of life of their residents:

- How can we avoid repeating the common mistakes in how we design new housing?

- How can we encourage all those involved in design and development to design and deliver quality consistently?

This raises one key question which this report addresses:

- What tools can we develop that could help us deliver the quantity of housing we need, while meeting our objective of having well designed homes and neighbourhoods, that are good quality, attractive, built to last and use resources efficiently?

This question was behind the Deputy Prime Minister’s announcement in November 2003 that the ODPM would be exploring how ‘design coding’ might be developed as a tool to produce “attractive, well planned environments quickly and efficiently”.

In response to this announcement, CABE published Building Sustainable Communities: The Use of Urban Design Codes (CABE, 2003). This was a “scene setting paper with the intention of exposing some of the key questions about codes” relating to their potential benefits, their relationship to the planning system and land ownership, what should be included in a code and how prescriptive should they be. The paper concluded that “the Government should commit to a significant programme of research and pilot schemes to test the use of different forms of codes in different UK contexts.”
1.3 The design coding research programme

In May 2004, ODPM launched a programme of seven pilot projects. CABE and English Partnerships are facilitating the programme and overseeing an accompanying programme of research. Consultants appointed by ODPM are undertaking a monitoring and evaluation exercise and will report at the end of the pilot programme. In addition ODPM has set up a Design Coding Advisory Group, the remit of which is to provide advice to the ODPM on the conduct, progress and results of the design coding project.

This report presents the first outputs from the significant research that the ODPM commissioned to undertake into the potential use and application of design codes in England.

It summarises the results of:
• a literature review – see section 2.1
• a survey into the current use and perceptions of design codes – see section 2.2
• an analysis of five housing projects designed and built using design codes – see sections 1.5 and 3
• the interim findings from seven pilot projects based on real situations, sites and clients in the process of writing, adopting and implementing design codes – see sections 1.5 and 3
• the interim findings from research to monitor and evaluate the outputs and outcomes of the pilot projects, as well as a series of more advanced case studies.

The research questions

• What is a design code and how might it work in the current English context?

• What scope is there for design codes to speed up the planning process and delivery of new development?

• Do design codes improve the quality of development?

• Do design codes deliver more certainty for all parties, from developer through to the local community, by creating greater levels of consensus and buy-in to a development?
1.4 What is a design code?

Described succinctly, a design code is a document that sets rules for the design of a new development. It is a tool that can be used in the design and planning process, but goes further and is more regulatory than other forms of guidance commonly used in the English planning system over recent decades. It can be thought of as a process and document – and therefore a mechanism – which operationalises design guidelines or standards which have been established through a masterplan process. This has been neatly summed up as follows: “The masterplan or framework is the vision. It should be accompanied by a design rationale that explains why, followed by a code that gives instructions to the appropriate degree or precision and that is operational” (Murrain, 2002).

In this way a design code may be a tool which helps ensure that the aspirations for quality and quantity for housing developments, particularly for large-scale projects, sought by the Government and other agencies are actually realised in the final schemes. It has the potential to deliver the consistency in quality exposed as lacking by CABE’s Housing Audit (2004).

The recent use of design codes in the UK has been relatively ad hoc. A working definition which would relate to the English planning and development systems was therefore established at the outset of the research programme (see Box 1). The definition aims to give clarity to the organisations taking part in the pilot programme. In addition, a working methodology for writing, adopting and implementing a code and a guide to the potential contents were also developed. The definition and methodology are being used as references during the pilot projects.

Recent literature and commentary has used several terms: design code, urban code or urban design code. The coding being considered in the research focuses on large scale developments with the codes themselves dealing with design issues at a range of scales, down to an individual building or public space. This illustrates that coding has the potential to address both urban design (the block, vista, urban structure) and architecture (building elevation or materials). For the purposes of this document the term design code or code has been used.
1.4.1 Working definition and methodology for a design code

Boxes 1 and 2 provide the working definitions and methodology established at the outset of the research.

It is important to note that the research made some important assumptions.

- Firstly, that while design coding may have the potential to be used for all forms of development, the research focused on its application and potential relating to major housing developments.

- Secondly, to understand design coding it should be related to other tools used to define aspirations for development. Design coding is distinct from commonly used tools such as design briefs or design guides, as it sets down hard and fast requirements or rules, rather than guidelines. It is therefore being considered as something which goes beyond these forms of guidance, eg where elements of a masterplan need to be given more weight than they would normally have.

- Thirdly, ideally a design code – the content of the code itself – will be thought about and drafted as part of, or as a consequence of, a thorough masterplanning or urban design process. Developing the contents of the code should therefore be a relatively efficient process, as many of the issues will already have been considered during the early design thinking.

1.4.2 The contents of a design code

A key milestone in the process is obviously the publication of the design code itself. The working methodology established for the pilots suggests that this document should:

- be well structured, coherent and succinct, establishing the rules and requirements for development and for the consideration of planning permissions

- explain the relationship between the masterplan or development principles that have been established for the project and the rules set down in the design code. This may often mean that the design code is included within the masterplanning documents, or that the masterplanning documents are clearly referenced in the design code

- provide a set of definite instructions, rather than general guidance or advice

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Box 1: Working definition of a design code

A design code is a set of specific rules or requirements to guide the physical development of a site or place. The aim of design coding is to provide clarity as to what constitutes acceptable design quality and thereby a level of certainty for developers and the local community alike that can help to accelerate the delivery of good quality new development.

The design code builds on the aspirations of the masterplan/development framework and provides a vision, a rationale and a set of requirements (the codes themselves) as to how to achieve the aspirations. These can extend from urban design principles aimed at delivering better quality places and include requirements for streets, blocks, massing and so on, or may be focused more on architectural or building performance, for example aiming to increase energy efficiency.

The level of detail defined and required by a code will vary depending upon the circumstances of development. However, the code should always be drawn up in consultation with a range of local stakeholders and, in order to provide certainty of outcome, it should carry some weight in terms of its role in the planning process or through developer agreements. Future improvements will always be beneficial and therefore aspects of the code might be subject to review over time.
Decision to prepare a design code
Project partners decide, having considered the scale of, and context for, development, that a design code should be prepared to set rules and requirements for proposed development.

Initial development
Initial issues and contents of the design code are ideally considered in conjunction with, or at least subsequently to, the preparation of a visioning exercise expressed through a masterplan or detailed framework.

Drafting
Rules or requirements (codes) to guide the physical development of a site or place are determined. Issues and potential requirements will be considered in collaboration with key stakeholders, eg the developer, local planning authority, highways department, local councillors and landowners.

Adopting the design code
The design code is given formal status through the planning system, either by adoption or conditioned to a planning permission. It could also be formalised by the landowner stipulating adherence to the design code as a condition of sale or development.

Implementation
The detailed design of the development is progressed in accordance with the design code. This will normally be in multiple phases.

Monitoring a development against a design code
The local planning authority, and in some instances the landowner, assesses compliance with the design code during the detailed planning or reserved matters application. The design code may need revision, to keep pace with changes in the development context or improvements in standards. This is only likely where the development will take place over a number of years.

Using a design code to manage a development after completion
Some design codes will include requirements relating to the ongoing management and maintenance of the development, for example upkeep of landscaped areas, or design of house extensions. This may place obligations on the ultimate owners of the development and, in some cases, on the management company that maintains the development post completion.
• include both written rules and visual information such as diagrams explaining key design requirements, eg street widths or the scale of buildings

• explain why the rules are required, so that users respond creatively rather than perceiving them as dry technical standards

• explain how a design code will be used to assess a set of proposals and what documentation will be required to enable this assessment to take place.

By Design (CABE & DTLR, 2000) sets the standards for the elements of urban design that can create successful place: character, continuity and enclosure, quality of public realm, ease of movement, legibility, adaptability and diversity. This list provides a useful starting point for considering what should be addressed in a masterplan and what should then be specified as requirements in a design code. It therefore follows that requirements can be set for a range of issues as listed in Box 3. It is important to note, however, that the research does not assume that this content has to be addressed comprehensively.

Box 3: Potential contents of a design code – THE PRODUCT

• The character of the area, as created by the quality of the layout, architecture and landscape within a neighbourhood.

• The shape, dimensions, location and orientation of buildings and streets.

• The design and layout of streets and how they accommodate people, cars, public transport, utilities, trees, etc.

• How the open spaces and public realm, including parks, squares and streets, can be designed and maintained to a high standard and for safe use, as well as the layout of private and shared gardens.

• The mix of land uses, particularly focusing on the density of development and location of community facilities.

• The quality and key principles of the design of individual buildings or blocks, including architectural principles, the use of certain materials in the buildings and public spaces and more detailed design requirements relating to individual components, eg dimension of windows and materials to be used.

• Requirements relating to sustainability, including adherence to standards of energy efficiency or the use of materials and methods of construction.

12 Greenwich Millennium Village, London
1.5 **The case studies and pilot projects**

The research programme draws heavily on the use to which design codes have previously and are currently being put in England. One of the first steps was to evaluate six projects that have been almost all the way through the process. These case studies are at, or nearing, completion, some having had a development programme of 10 years to date – the design codes for the earliest case study were prepared in 1992, over 12 years ago. These projects provide useful insights into the latter stages of the design coding process, particularly the impact of codes on the final quality of development.

There have been significant advancements and changes in policy and development context since some of these projects completed their design codes. Most particularly the introduction of the Government’s Housing Growth and Housing Market Renewal programmes, the ongoing changes in the planning system, such as the publication of *PPG3: Housing* and the Planning and Compulsory Purchase Act 2004 and the recommendations of the *Barker Review of Housing Supply*. Researching the use of design codes in the context of these changes was therefore considered essential. With this in mind, seven current pilot projects were selected to test design coding.

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**Fig 1** Case study and pilot locations

**Fig 2** Case study and pilot locations and capacities

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13 Homes for Change, Hulme, Manchester
CABE and English Partnerships, assisted by a team of consultants (referred to as CABE Enablers), have been providing advice and support to these projects since Spring 2004. The pilot programme is due for completion in Autumn 2005. During these 18 months, the pilot projects are preparing, adopting and using design codes to guide the form of their development. At the time of writing, each pilot is at a different stage of the process, but none has progressed beyond writing a design code. Some were already working on masterplans and/or draft codes at the start of the pilot programme, whilst others were just beginning their overall project.

The pilot projects, together with the case studies as shown in Figures 1 and 2 and briefly described in Appendix 1, represent a good range of contexts within which major housing schemes are likely to occur and circumstances where design coding might be appropriate.

- **Location** – from sites in the South East to the North of England, and from those within urban centres to settlement extensions and new settlements

- **Site characteristics** – including greenfield and brownfield sites, ranging in size from 7 ha to 309 ha, with an estimated capacity for between 200 and 4,500 dwellings

- **Ownership** – ranging from single to multiple interests, in public or private ownership or a combination of both

- **Development/regeneration context** – including sites in areas where the property market is weak and those where it is buoyant

- **Planning status** – sites which have outline planning consent and where codes are being prepared to discharge a condition, and those where there may be no allocation or planning history for residential development

- **Delivery** – some sites are being promoted by landowners, others by developers or the local authority, using a range of development/procurement mechanisms.
2 Findings of the literature review and survey
Despite there being numerous definitions and several different terms used to describe design coding, there is a strong consensus that design codes are distinct tools used to regulate development by setting rules.

2 Findings of the literature review and survey

Much was said and written about design coding during 2004 and views vary greatly. Is it an unwanted American import, or are the British rediscovering their roots and learning how to create great neighbourhoods by applying the same rigour as our Georgian forebears? Or do we use design codes already, but know them by another name?

These were some of the early questions that the research addressed through a literature review, which considered the historic and contemporary origins of design coding, and a survey of English practitioners which aimed to establish people’s current usage and understanding.

2.1 What the literature tells us

The thorough literature review shows that design coding has historical and recent precedents, both in this country and overseas. Also, despite there being numerous definitions and several different terms used to describe design coding, there is a strong consensus that design codes are distinct tools used to regulate development by setting rules.

2.1.1 Historic examples of the use of design coding

There are a number of examples of the use of design codes in England and overseas. One of the earliest uses was by the Romans, who set standards for streets (Southworth and Ben Joseph, 2003). The Ten Books of Architecture, written by Vitruvius, covers such items as the layout of cities, public and private buildings and the use of building materials (Rowland and Howe, 1999). Other international precedents exist in the Laws of the Indies, which were used in newly-founded settlements in Spanish America, and in Islamic design where social traditions in Arabian society became codified in the internal layouts of housing (Morris, 1994).

Perhaps the clearest precedent in England is the rebuilding of London after the Great Fire of 1666 (Hebberd, 1998). The Act for the Rebuilding of the City of London (1667) established a typology of streets and matching buildings. It led to straightened, paved streets with buildings of uniform height and cornice lines and it prohibited buildings with jutting projections and the timber framed construction of the past.
The Act also prescribed building materials, ceiling heights, wall thicknesses and structural requirements, which became the system of building control that regulated the great expansions of the following centuries (Hebberd, 1998).

The relevance of the Act to today’s use of design codes is that it can be considered to have been:

- pragmatic and robust over time
- contemporary rather than backward looking
- an effective tool that achieved the rebuilding of the City of London with speed and magnificence.

The Georgian developments of London, Bath, Brighton and Edinburgh, and the creation of Regency terraces, have also been linked to the use of codes (Gardiner, 2004). Many of these developments were the urban extensions of their day. In the case of Edinburgh, in addition to laying out the street grid (McKean, 1996), it regulated building heights, roof line and roof pitch.
More recently, while there are many examples of urban villages in the UK (for example 46 were identified by Biddulph et al, 2003), few are the products of design coding and there is little written about them (for example West Silvertown, which is perhaps the earliest example). Poundbury is the best-known and most reported. Hulme’s code-like guidance is referred to in the literature (Rouse, 2003) and Upton (Gardiner, 2004), Ashford (New Urban Futures, 2004) and Llandarcy (New Urban Futures, 2004) are also quoted as examples.

The literature review shows that design coding in the UK is seen as fitting with the emerging planning and design agenda that emphasises the importance of urban design, as outlined in documents such as *Towards an Urban Renaissance* (Urban Task Force, 1999), the *Urban Design Compendium* (Llewelyn-Davies, 2000) and *By Design* (DETR, 2000). It is also significant because it can be more than just another part of the planning/design toolkit – it can change the nature of the planning process itself (Rouse, 2003).

Recent interest in design coding in England is influenced mainly by two schools of thought: new urbanism, originating in the United States, and the European tradition of typomorphology. Typomorphology employs urban design techniques to analyse the character of a place, the results of which are used as the starting point for subsequent design proposals. For the purposes of clarity, typomorphology is referred to as character analysis in the brief background to the two approaches provided below.

**New urbanism**

New urbanism is one of the most significant movements to address the relationship between urban planning, urban design and architecture in the US. It merits specific attention here as it is at the forefront of the re-emergence of design coding as an alternative to conventional planning in the US, which is often based on zoning and consequently leads to mono-use environments and sprawl. Coding is used by the New Urbanists to overcome or reinvent existing regulations or ordinance codes, helping to promote the creation of traditional neighbourhood developments (Frieger and Lennertz, 1991; Katz, 1994; Leccese and McCormick eds, 2000) which might otherwise be prevented from being built under existing planning and design regulations. Recently, the methodology has extended to defining different requirements relating to whether a development is located in an inner city area, and therefore relatively dense, or whether it is on the edge of an urban area. This cross-section of different urban locations is referred to as a transect and the rules that relate to each one are know as a SmartCode.
New Urbanism has had a specific influence in the UK, in particular on the work of the Prince’s Foundation and the urban village movement, although new urbanist ideas, including coding, have been applied in many parts of the world, for example the Western Australia Community Design Code (Western Australia, 1997).

**Character analysis**
The European tradition of typomorphology or character analysis has influenced certain strands of thought in urban planning and design through geography and morphology. The approach has many historic precedents, particularly in France (Vernez Moudon and Kropf, 1994), and its modern interpretation can be described as the process of identifying specific elements that characterise a place, which may then be used as a basis for design, for example the quality and character of local architecture, landscapes or building materials, along with an in-depth analysis of the current topography, layout and urban form of a place. This approach is consistent with the development of design codes, as any code should emanate from a well-considered masterplan which includes a thorough urban design analysis. Some of the elements identified through this character analysis may also inform the contents of the code, for example the use of certain materials.

2.1.2 **What is a design code, according to the literature?**
The literature review, which also considered some design codes, shows that there is no clear simple definition of a design code: at least 14 different definitions were found. However, from these it is possible to map out the attributes of design codes considered to be essential and typical. These findings confirmed the working methodology and process outlined at the outset of the research project. For example:

**Essential**
- The people who write the codes do not go on to design the buildings and spaces – these are distinct roles.
- Codes can relate to different scales of development: a building, a neighbourhood or a town.
- Codes proactively set out what is permissible or required, rather than stating what can’t be done.
- Requirements generally relate to the design of development in relation to three-dimensional design but not the land use.
- The requirements in a code are communicated through words and graphics.
Typical
• Codes are used for larger developments, are often implemented through some legal measure and include aspects relating to the ongoing management of a development after construction and occupation.
• Codes focus on setting out requirements not guidelines. They generally include specific requirements about some aspects of architecture.

Although the highest profile examples of coding referred to in the literature are Seaside, Florida, and Poundbury, Dorset, the review shows that coding need not necessarily imply neo-traditional style – or indeed any particular style. The level of prescription included in codes is not necessarily consistent and therefore they vary in terms of how they lay down requirements about design at different scales – from building components to the whole urban area.

This leads to the conclusion that although a design code may prescribe different elements that make up a place – the building, street, block – and how these relate to each other, it does not necessarily prescribe the overall outcome. The design code is often one part of the documentation outlining how a place is to be developed. Therefore, to get a full understanding of how a place is to be designed, it often has to interrelate to a masterplan, development framework, or whatever documents outline the parameters for development.
2.1.3 **Current perceptions of design coding found in literature**

Codes are reported as having a variety of strengths and weaknesses, both in terms of the end product, the code itself, and of the means by which the code is prepared, the coding process. In general, more strengths than weaknesses are identified and weaknesses tend to relate to the process rather than to the code.

The observations reinforce the comments made by CABE that the concept of a code “starts from the proposition that the design of a new development can be planned and regulated to achieve a higher quality outcome… (but that) a code as a process is only a means, not an end. What matters is the contents of the code. Ultimately, a code can only be as good as those who write it and those who implement it” (CABE, 2003).

**Perceived positive features**
Design codes are perceived as being mechanisms which can create harmony in a development’s design, generally through the application of strong urban design principles, but also by facilitating a diverse design or architectural response. Design codes can help create greater levels of certainty or more predictable outcomes.

The issues discussed when preparing codes are very particular and applied, eg the width of a street or where to locate trees. This makes it easy for stakeholders to relate to, and participate in, negotiating and drafting the design code.

**Perceived limitations**
There is nervousness that design coding will bring a level of prescription that will stifle design creativity. Also it appears that some codes have resulted in disappointingly standardised designs. There are concerns about the limited skills available to prepare codes, particularly as the code writers will become more powerful than the designers, as traditional professional roles are challenged.

Another issue is that coding is seen as having been developed largely in the US, where the planning system is more highly regularised and based on zoning. Therefore applying a system of coding is a complementary extension to the way development is regulated. However, the British planning system is based on common law and allows more discretion in decision-making. It therefore follows that the compatibility of a more highly regulated system of coding needs to be proved (Samuels and Pattacini, 1997).
2.2 Results of the survey into current use

In Spring 2004 the experience and views of the key players (local authorities, regional development agencies, house builders, housing associations and English Partnerships) were elicited through a national postal survey. 140 responses were received and they provide a useful insight into the perceptions of design coding. Key findings were that:

• under a third claimed to have used design codes, with a slightly larger number saying they intended to use them in the future

• there was a lack of consistency in how people defined a design code and a lack of clarity about how they relate to other forms of guidance

• those preparing codes were doing so because of the scale and sensitivity of the developments, or to fill a gap in current planning policy for projects

• there was agreement with the research questions that design coding could help deliver better quality, speed up the process and get better buy-in from stakeholders – in particular its potential to reduce the incidence of appeals during the development control process.

Importantly, the survey revealed that in order to encourage the up-take of design coding, the potential resistance among developers would first need to be overcome and the issues of releasing staff time and improving skills would have to be addressed. Also, it highlighted the need to demonstrate that design coding can engage key stakeholders more effectively, that the time taken to prepare them reduces the time spent in the planning process and that they can accommodate appropriate design responses.
3 Initial research findings
3 Initial research findings

3.1 Introduction to the research findings

This section summarises the initial findings about the process and content of design codes, based on feedback from the key players involved in the case studies and pilot projects. It primarily addresses the first of the research questions, “What is a design code and how might it work in the English context of 2005?”, and gives some early observations relating to the potential of design codes to deliver speed, quality and certainty in major housing schemes.

It is important to note that the case studies are well advanced – design codes have been prepared and used to guide proposals – and developments are underway on site. However, the pilot projects are still in the process of developing or adopting their codes. The findings are therefore neither comprehensive nor conclusive, but give some useful pointers as to the potential of design coding.

This section sets out observations relating to the stages of the design coding process under the following headings:

1. Deciding to prepare a design code
2. The drafting and content of a design code
3. Adopting and implementing a design code
4. Monitoring and managing development against a design code

3.2 Deciding to prepare a design code

3.2.1 What motivates people to prepare a design code?

The research shows that different players are motivated by different objectives when deciding to prepare a design code. Developers focus largely on their potential to deliver a faster and more certain planning process, particularly by reducing inconsistencies in advice from local planning authorities. In contrast, planning authorities are most interested in the potential for codes to achieve better quality development by providing certainty about the quality delivered over successive phases.

Codes are also widely supported for their potential to achieve a process built on consensus rather than conflict. Developers and local planning authorities share the aspirations that design codes will establish quality thresholds for developments in an area and, where there are a number of different phases and developers, help deliver an integrated project of consistent quality.
In the earlier projects the design codes were often prepared to address a gap in planning policy or guidance within an area. They also proved to be a useful way of gaining feedback on, and refining, district-wide policy, particularly highways standards. In some instances they were prepared in direct response to policies in the development plan or conditions to outline planning approvals.

3.2.2 Understanding the process
At the outset it is important that all the main players understand the design coding process and how the design code relates to other processes and documents, in particular to the masterplan and planning process.

The projects studied have shown that, in an ideal scenario, the decision to prepare a design code would be taken at the outset of a masterplanning process. This then provides the opportunity for the main elements of the design code to be considered during – and therefore flow directly from – the masterplanning process. This helps avoid repetitive work and allows design issues to be considered at the right time and at the appropriate level of detail. This is supported by the fact that the coding processes are mainly linear, although the sequence of key stages varies from project to project.

3.2.3 Engaging the right people
The pilots suggest that all stakeholders must support coding from the start if its potential is to be realised and genuine partnership and commitment are to be achieved. Community planning events that focus on establishing a broad physical vision (ie a masterplan) also seem to be particularly valuable in building a consensus and in gathering momentum. This is illustrated by the fact that some of the earlier codes are still in use and enjoy broad support some ten years on.

It is notable in the case studies that a key individual’s commitment to design could make all the difference, with this individual acting as the design champion for the project. This suggests that it is vitally important to establish leadership roles early on.

The pilot projects use a variety of formal and informal steering groups to drive them forward. In this respect, coding can help foster genuine working partnerships. Addressing potential tensions between regulatory, design and development roles and responsibilities within local authorities at the early stages of the engagement process, including how to engage effectively with council members, appears crucial. Bringing together decision-makers in one place at key junctures also seems critical to maintaining momentum.
The importance of persuading highways authorities to abandon tried and tested 'suburban' road standards and layouts is apparent. The pilots suggest that the early involvement of highways authorities helps overcome this problem, so long as decisions made during coding are respected over the long-term.

3.2.4 Making the right skills and resources available

It is apparent that many potential 'sticking-points' between developers, designers and local planning authorities that often emerge only during the formal development control process are being resolved during the preparation of the design code. This means that subsequent applications have a greater potential to be right first time, and may enjoy a smoother and speedier journey through the formal planning process. However, preparing the code is time-consuming and relatively resource-intensive for all involved. All parties must therefore be prepared to commit resources to the process from the start.

A wide range of generic, disciplinary and specialist skill and knowledge-sets are required for coding, but have not always been available. The limited availability of urban design skills within local authorities is of particular concern, while lack of knowledge and understanding of local property markets, procurement processes and how to address sustainability through design codes are also issues. In some more advanced projects, the shortage of skills has led local authorities to rely heavily on the technical expertise of the consultants preparing the design code on behalf of the developer.

Box 4: Skills that input into the design coding process

**Generic skills**: leadership, vision, consensus-building, collaborative working and co-ordination, negotiation and diplomacy, visualisation and presentation, communication and creativity.

**Disciplinary skill sets**: planning, urban design, highways, landscape, development, marketing and cost/project management.

**Specialist knowledge**: sustainability and consultation approaches.
3.3 The drafting and content of a design code

Three important findings relate to the technical nature of codes, how they address architectural style and where they are successful in establishing requirements:

- The research confirms that design codes are primarily technical. They are not seen as vision-making documents, but rather as mechanisms to help deliver the vision expressed elsewhere, typically in the masterplan or development framework.

- While it is clearly possible to code for architectural design/style, design codes can be style-neutral. This is proving to be a matter for local consideration, as coding for architectural design in the pilots was extensive and usually based on an analysis of the local architectural context. The coding was usually advisory rather than mandatory, with the character of areas defined by urban design controls rather than by architectural design.

- Coding for residential uses seems to be more successful than for non-residential areas, for instance town centres. Areas seen as problematic for coding include those with existing housing, one-off community buildings and areas with sustainability dimensions.

3.3.1 How flexible or controlling should design codes be?

One of the major issues is how prescriptive a code should be, and when and how it should remain flexible. The housing industry in the UK relies heavily on standard layouts and there is a question as to how the functional requirements established in these standards could be delivered through a design code. The degree of control being sought through the preparation and adoption of a design code seems to vary, depending on the context of the individual projects. Some of the issues observed include:

- the track record of the developers and their designers in delivering quality

- the track record of the local planning authority, its members and officers, in recognising and supporting quality and making consistent decisions, and their experience of dealing with major housing projects

- the complexity or sensitivity of the project in terms of design, heritage or community support
Codes also need to be flexible enough to deal with the changing circumstances of long-term projects, for example changes in market conditions or lifestyles.

- the availability of other potential forms of control or leverage the public sector or developer may have available through which quality and certainty can be achieved, particularly land ownership or funding
- who leads and funds the process of preparing the design code – this can be the local authority, regeneration agency, developer or landowner
- the strength of the local housing market or need to set a new standard in the quality of housing delivered
- the relevance or appropriateness of existing planning policy relating to the project.

Enough detail must be given to provide clarity and certainty. The code should therefore be clear about aspects that are mandatory and those included as guidance only. The pilots suggest that a greater level of control is desirable for highways and the public realm than for building design matters. Process issues can also be coded, including submission and presentation requirements for reserved matters applications.

Codes also need to be flexible enough to deal with the changing circumstances of long-term projects, for example changes in market conditions or lifestyles. One way that this is achieved in some of the codes is by identifying different character areas or precincts. How and when the design code will be reviewed should also be established at the outset, to address the issue of change during the delivery of the project. While a review might take place when a code becomes outdated, it may also be appropriate to review the code immediately after it is first used, based on feedback from those who have, in effect, tested it.

3.3.2 What is set as a requirement in design codes
An analysis of completed design code documents shows that the range of matters covered by the codes varies considerably, although all include at least some standards relating to strategic access, movement framework/street hierarchy, parking, open space, building envelopes and architectural design. Generally codes systematically break down the built environment into elements. Some also establish different character areas or quarters for which individual principles or treatments are specified.
**Box 5: How issues are addressed in design codes**

- **Built form and townscape**: built form and block layout is commonly coded in considerable detail and always covers such matters as: density and maximum floor area; height controls on buildings and/or individual floors (especially the ground floor), block sizes; building line and other plot setbacks, frontage continuity and requirements for perimeter blocks; and regulation of building types (detached, terrace, etc). Controls on building line and height are often quite detailed, for example in relation to canopies, porches, arcades and colonnades.

- **Streets and enclosure**: streets are generally coded as a series of hierarchical types, specifying different elements relating to surfacing, pavement width, speed limits, radii, gradient, sightlines, kerb details, street lighting, street trees and traffic calming; cycle lanes and street furniture (less frequently); and pedestrian crossings and shared surfaces (infrequently). Some codes also illustrate Homezones.

- **Parking**: private (off-street) parking is generally covered in a separate section, as it relates to land use, mix and density. Some codes require or encourage garages and parking to be in specific locations.

- **Open space and landscape**: open space and the public realm receive detailed attention in most codes. Much of this relates to either street design (see above) or boundary treatments and the dimensions and design of front and rear gardens, which are all closely linked to other aspects of building type and massing. Open spaces are usually coded on the basis of specific spaces identified in the masterplan. Requirements for structural landscaping are also common in the codes. The design requirements for streets and open spaces are typically coded according to a range of classifications using criteria such as scale, use, and/or whether they are soft or hard surfaced.

- **Architectural design**: aspirations for the coding of architectural design are typically extensive. Most codes regulate scale and massing and either restrict or ban outbuildings. All the well-developed codes have detailed aesthetic principles based on analysis of the local architectural context.

- **Land use mix**: issues of mix of uses are rarely coded, but are established largely through masterplanning. However, one design code did code for a mixed-use block.

- **Sustainability**: there is widespread use of sustainability criteria in the various codes, addressing issues such as the provision of public transport, storm water retention, mixing uses and passive solar gain. However, there is a need to explore further the treatment of sustainability within design coding.
3.3.3  **How the codes are described and illustrated in documents**

Design code documents are presented in different ways. Clarity depends on the length of the document, the position of the coded information in it and the written commentary. Sometimes the requirements, or codes, are included within a larger masterplan document together with general guidance and principles, while in others they form part of a suite of documents. During the preparation and drafting of the code it is important that existing guidance and policy documents are reviewed to establish their relevance and also to avoid abortive work and repetitive contents in the code document.
Making codes user-friendly is an important objective. This makes it preferable to use diagrams rather than words to describe requirements. Where illustrations and photographs are used, it is important to make clear where they are illustrative only.

### 3.3.4 Engaging interested parties

Preparing a design code is seen as primarily a technical process. The projects suggest that there are two types of interested parties and that they should be engaged at different times.

- It would appear that the best time to engage and gain commitment from the wider community is considered to be when preparing the masterplan or development principles for the site. It might therefore be beneficial to gain engagement with the communities before preparing the code, with formal public consultation taking place during adoption.

- Drafting the code requires the technical expertise and commitment of the individuals and organisations who will be key to the design and delivery phases of the project. These include the local planning authority (including council members), highways authority, local service providers (e.g., the health and education authorities), leisure and amenity departments in the local authority, statutory bodies (e.g., English Heritage, Environment Agency, etc.) the developer (if known), the landowner, the masterplanner and code writer.

There have been instances when issues that code designers had considered resolved recurred during detailed planning negotiations or formal adoption. This is clearly not ideal and highlights the need to gain commitment and buy-in from all during the drafting stage.

### 3.3.5 Testing the design code before adoption

In order to check whether a code will actually help deliver a better designed product, the pilot projects have established a process by which a design code is tested. This testing takes place during a day-long workshop attended by people who have not been closely involved in the coding process. Designers are asked to design against the code and to attempt to unpick it. This can help reveal where the code needs refinement or clarification.
3.4 Adopting and implementing design codes

3.4.1 Adoption in the planning system
In the more advanced projects the design codes were adopted/endorsed either for development control purposes or to satisfy a condition on an outline planning consent. Landowner-led codes were enforced primarily through the land sales and developer procurement processes. Although half the codes have no status in planning terms, stakeholders feel that having such status would have helped the development process.

As the pilot projects are all at relatively early stages, more work is required to establish how codes could, or should, be adopted. The pilots generally wish to give them greater weight by adopting them as supplementary planning documents (SPD) or action plans under the new planning process. It is expected that such an approach will also enable codes to be applied to sites not owned by those directly involved in their drafting, a particular issue in complex projects which involve a number of developers who may get involved at a later stage. Where a local authority is also the landowner, legal agreements during land disposal are also being used to give the code the appropriate weight.

The pilots believe that reference to government guidance and analytical, consultative and other policy/guidance work helps legitimise codes. Their experiences suggest that the hierarchy of policy and guidance needs clarifying in order to establish where and when codes take precedence, which is an issue that will be examined as the pilots progress. Section 4.2 considers these options in more detail.

Local planning authorities recognise that more weight was placed on pre-application negotiations and there were faster decisions on reserved matters applications. They see the need to address the time, resources, commitment and technical skills required from officers and that, once they are used to using them, codes are helpful tools.

3.4.2 Designing and developing using a design code
Findings relating to the later stages of the design coding process are drawn from the early case studies only. In many of these projects the land was owned by the public sector and therefore involved a competition to select a developer, during which the design code was used as a briefing tool and means of assessing the developers' designs as well as financial bids. The evaluation of the tenders and the pre-planning negotiations
As the projects are built, codes are likely to play an important role in ensuring the delivery of high quality design during construction, and thereafter in helping to maintain it.

with the preferred bidder had a significant influence on the quality of the end results. In some instances, where the land was being disposed of in phases, parcel-specific development briefs or codes set the requirements for potential developers.

Generally, these designs codes were interpreted as setting baseline requirements. The design champion was then able to use other processes, such as the developer selection and pre-planning application discussions, to try to exceed the mandatory requirements of the code.

3.4.3 Assessing projects using a design code
Generally, the case studies show that design codes delivered faster planning decisions on reserved matters than might otherwise have been expected. Circumstances that were thought to have assisted in speeding things up were:

- the presence of a dedicated development control officer, in some instances funded by the developer
- a fast-track process through a development control sub-committee
- the planning officers being familiar with the code.

As the pilots progress, it will be possible to consider: how codes are used within development control; the skills required by development control officers to use codes; how to make the codes user-friendly; and how they relate to other regulatory processes such as highways adoption.

3.5 Monitoring and managing development against a design code

As the projects are built, codes are likely to play an important role in ensuring the delivery of high quality design during construction, and thereafter in helping to maintain it. This should result from the process by which the developers or designers have been selected and are being regulated through the application of the design code. But it is anticipated that further monitoring, enforcement, evaluation and aftercare may also be required to ensure that the aspirations of the design code are delivered.
In the advanced case studies, monitoring and enforcement of the design code is carried out primarily through the requirements placed by the landowner through a developer agreement with the purchaser/developer, rather than through the planning system. Local authority officers acknowledge that there has been informal reliance on these processes. Stakeholders recognise the need for regular monitoring to identify breaches promptly, before development progresses too far.

Although the pilot projects have not yet reached this stage, it is generally envisaged that the local authorities will be responsible for monitoring and enforcing compliance through normal planning and highways adoption processes. Some elements can be coded in a way that facilitates easy monitoring, for example by using tick-boxes. However, the pilots suggest that training and additional resources will be required to ensure the effective implementation, monitoring and compliance. Legal means to ensure compliance are also being explored by some pilots, including through development agreements, land covenants, Local Development Orders and Section 106 agreements.

3.5.1 Management codes
Design codes have been used in the UK (outside the pilot programme) to control the quality of management and maintenance of a development. In such instances developers have set up a management company to look after the landscape and public areas of a development, sometimes including private front gardens. The management company is funded through a charge on residents, occasionally with an initial endowment from the developer.

In these instances, as well as specifying the quality of the initial development, the design code also sets out rules and requirements relating to what residents can do to the exterior of their house. Issues addressed often include the location of satellite dishes or roof extensions. There are advantages in this approach, as it addresses the aftercare of the public realm on a development, and also gives certainty to residents about the ongoing management of a project. In the US some codes go much further, restricting minor changes, eg the colour of the front door. This issue of the ongoing application of design codes will be explored in more detail as the pilot projects progress.
4 Interim conclusions and next steps
4 Interim conclusions and next steps

4.1 Speed, quality and buy-in

This final section returns to the principle research questions and provides some interim conclusions based on the preceding analysis. It considers the issues of speed, quality and buy-in:

• Can design codes speed up the planning and delivery of development?

• Do design codes provide a mechanism for the delivery of better quality development?

• Do design codes deliver more certainty for all parties, from developer through to community, by creating greater levels of consensus and buy-in to development and more predictable outcomes?

4.1.1 Speed of delivery

Clearly preparing a design code takes time. However, initial evidence shows that this early investment of time and resources brings dividends during the planning process – planning applications compliant with a code are often determined more quickly.

The pilot programme shows that, given the right incentives and tight timetabling, coding can be relatively speedy – three to five months for preparation, plus time for adoption. The pilots also illustrate the importance of all parties being clear and realistic about the timetable for coding. Momentum is best maintained when a clear programme sets out the sequence in which the issues will be considered, and how decisions will be made and signed-off. This is particularly important for highways issues. The process should also give proper time for receiving comments and making revisions.

The process could potentially be further streamlined by having professional project management, dedicated local authority personnel, multi-disciplinary project teams, a project champion and regular meetings for key decision-makers.
4.1.2 **Quality of final development**

The advanced case studies suggest that although quality is influenced by many factors, development produced with design codes is of notably high quality.

The case studies are characterised by a strong commitment to design from the outset and by strong leadership with a clear sense of purpose and vision. Most include developer selection processes that promote design. In all cases, the mandatory requirements of the code acted as a baseline, with the quality of development often exceeding this as a result of procurement or planning negotiations.

4.1.3 **Consensus and buy-in to development**

Coding involves a high degree of professional and technical collaboration and most parties feel that they benefited from using it. However, achieving this spirit of partnership and cooperation between parties takes time and effort. This applies both to technical stakeholders and the wider community.

Preparing a design code is a technical stage of the design process, focusing on more detailed considerations surrounding the highways, open spaces, drainage and so on, which are mainly technical in nature. Getting buy-in and long-term commitment to the requirements set in the code is vital and must be maintained throughout the adoption, implementation and monitoring processes.

The aspiration that design coding might help gain the buy-in of wider/community interests seems to be less relevant. As the pilot projects are showing, the design coding process is really a technical application of the principles established in a masterplan: it is generally more appropriate and fruitful to gain wider community engagement when drawing up the masterplan.

More insight into the issues relating to consensus and buy-in of the key players can be gained from comments below relating to the case studies which have progressed through to implementation.
4.2 Relationship of design codes to the planning system

A critical issue that the pilot programme will consider is how design coding can help speed up the time it takes for projects to be considered by a local planning authority, receive planning permissions and be developed. The research programme is therefore investigating how the use of design coding might be supported in the English planning system.

As the pilot projects demonstrate, design coding could be beneficial in a wide range of circumstances which may require a number of differing planning solutions. While no preferred solution is being put forward at this stage, a range of mechanisms are being investigated, including options for adopting a design code as policy and dealing with a design code through planning permissions. Some of these currently exist, some will commence shortly (as the various provisions under the Planning and Compulsory Purchase Act 2004 are being implemented incrementally since its enactment in May 2004) and others would need to be developed. The options are described briefly in Box 6.

The ongoing research will focus on a number of questions, including:

- Could design coding be supported in national policy?

- What might be an appropriate level of support and weighting in national and local planning policy?

- Do the benefits of a design code warrant the effort of producing it?

- Should the level of support and weighting be commensurate with the effort of producing the code?

- How will the need for certainty be balanced with the desire for design flexibility?
**Next steps**

This research programme will continue to track the progress of the pilots and the experience of key stakeholders over the coming months. While the potential of design coding as a useful tool has been demonstrated through these early findings, the research will continue to evaluate whether design coding can deliver better quality housing development, at greater speed, through a process that gains the support and buy-in of key stakeholders. At this early stage there are, inevitably, still some important challenges to overcome and questions to answer, as listed overleaf.

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**Box 6: Potential planning mechanisms for design coding**

**Supplementary Planning Document** (currently available): a design code could be adopted as a Supplementary Planning Document (SPD) within the Local Development Framework. As a SPD, the code would be a 'material consideration' with considerable weight, used to determine planning permissions and reserved matters. A SPD must be reviewed regularly and its adoption process is identical to that for preparing or reviewing a Development Plan Document. However, there is no requirement for an independent examination.

**Local Development Order** (available mid 2005): a design code could be a requirement of, or a condition for, a Local Development Order (LDO). A LDO establishes permitted development rights for an area and, where linked with a design code, could provide permitted development rights where a proposed development complies with the code. A LDO will most likely only be suitable for minor alterations to a development, eg extensions and loft conversions, rather than for initial design and development principles, where there is a need to maintain a suitable level of control.

**Development Order** (specific to design coding): the Planning Act allows for the Secretary of State to create an order which would set out a specific process for making a planning determination. For example, an order would specify the process of preparing a design code and what that code should cover. With such a design code in place, the order could then allow for a fast-track assessment of applications that comply with the code.

**Planning Permission**: a condition could be attached to a planning decision notice requiring proposed development to be in accordance with a design code. This must satisfy the various tests of validity for the use of conditions. A section 106 agreement could also require that proposed development be in accordance with a design code. The ability to review the code would need to be included within a condition or requirement.
The role of design coding

1. As a starting point, how can we make sure that the value of design is recognised by all involved in the process, resulting in a willingness and commitment to invest time in up-front design thinking (including the preparation of a masterplan and design code) and, ultimately, in the quality of the finished development?

2. How should design codes relate to other local policy, guidance and standards documents, and can the coding process help improve policy and guidance?

3. How do design codes relate to the wider procurement, design and development process, including the initial vision or masterplan?

4. How can, or perhaps should, design codes relate to the use of standard house types and internal layouts by volume housing developers (without compromising quality and distinctiveness)?

The resources and skills required

5. What skills and resources are required, among local authorities, developers and landowners, to deliver a good design code and ensure its successful implementation?

6. What impact does involvement in the design coding process have on individuals' skills and organisations' capabilities in respect of, and commitment to, design quality?

7. What good practice guidance on design coding is required if it is to be implemented as a tool?

The design coding process and content

8. Is it possible to define a design coding process and product that can be adapted and refined to meet the diverse contexts of projects? And how do different contexts relate to the different levels of prescription set in codes and with what effect?

9. What different roles should key stakeholders play in the design coding process to safeguard a positive outcome, and does it make a difference which key stakeholder initiates, funds and leads the design coding process?
10. How can the engagement process bring in key decisions-makers effectively, to achieve long-lasting commitment to the design code?

11. What content should be represented graphically, and what should be written?

**The adoption and implementation of design codes**

12. What are the appropriate and effective methods for adopting design codes, both as legal documents and within the planning system, including monitoring, enforcement and revision? And how can codes be reviewed and revised over time?

13. What is the role of design codes in establishing management and maintenance standards for the aftercare of development?

4.4 **And finally, for now...**

While it would be inappropriate to make hard and fast conclusions at this stage, the case studies and pilot projects show some real promise in helping deliver major housing schemes of lasting quality. Through the engagement of the key players (the local authority, local councillors, landowners, developers, consultants and local community) in the masterplanning, design coding and the design process generally, careful attention is being paid to how we create sustainable communities. This early and, potentially, lasting commitment to developing neighbourhoods and homes of enduring and desirable quality is very likely to bring positive end results.

The pilot programme so far has provided a valuable insight into the world of design practice and the planning and development system, through the expertise and experience of a wide range of players. The lessons learned and skills shared between those involved have already increased the potential for quality design. Design coding has been the process around which people have applied their skills and energy, often finding common ground, dealing with potentially contentious issues before they become a real problem, establishing how to approach design, and setting joint aspirations for what the new neighbourhood will feel, function and look like.

Over the coming months we will be seeing how design coding might be developed as a reliable and replicable mechanism for wider application.
## Appendix 1: Description of case studies and pilot projects

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<th>Case studies (completed projects)</th>
<th>Brief description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fairfield Park, Letchworth</td>
<td>800 new homes in the grounds of a listed Victorian hospital building, with a site area of 27.7 ha. The masterplan and design code were produced to satisfy a planning condition and Section 106 clause relating to outline planning consent granted by council.</td>
</tr>
<tr>
<td>Fairford Leys, Aylesbury</td>
<td>This is an urban extension of 1,900 mixed-use (including commercial) dwellings and a town centre. The landowner, a trust, was committed to achieving a quality development and a masterplan and design code were produced in 1992. Although the design code had no planning status it was enforced by the landowner through a vendor consent regime as part of the development agreement.</td>
</tr>
<tr>
<td>Greenwich Millennium Village, London</td>
<td>Greenwich Millennium Village, the first Millennium Community, includes more than 1,000 dwellings, together with a school, medical centre and other employment uses on a brownfield site of 121 ha on the Greenwich Peninsula. Following a developer competition, the masterplanners were appointed to design the first phase of development. Design codes were prepared for the remainder of the development to ensure that the masterplan vision was realised. The codes have status through the legal agreement between the landowner and master developer.</td>
</tr>
<tr>
<td>Hulme, Manchester</td>
<td>Through City Challenge, a public/private joint venture was set up to regenerate Hulme, a 100 ha, 1960s’ housing estate on the edge of Manchester city centre. The Hulme Guide was formulated in parallel with the design of much of the replacement housing. It was used by the Council to control the quality of development through the procurement process and adopted for development control purposes. A fast-track development control process was established.</td>
</tr>
<tr>
<td>Newhall, Harlow</td>
<td>Newhall is the first phase (17.4 ha) of a proposed urban extension of 2,800 homes and supporting amenities. The development is promoted by the landowner. Design codes have been prepared for each parcel of land that is marketed and form part of the brief to potential developers.</td>
</tr>
<tr>
<td>Upton, Northampton</td>
<td>English Partnerships, the landowner, has used Upton as an examplar for the use of design codes. A mixed-use development of up to 1,200 homes and 1,000 sq m of commercial floor space will be built on the 43 ha site. Enquiry-by-design processes were used and design codes produced and endorsed by the local authority. The first phase of development is now underway.</td>
</tr>
<tr>
<td>Pilot projects (ongoing)</td>
<td>Brief description</td>
</tr>
<tr>
<td>-----------------------------------------</td>
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</tr>
<tr>
<td>Aldershot Military Estate, Aldershot</td>
<td>4,500 homes, as well as jobs, schools, local shops and community facilities are proposed on this 137.5 ha former Defence Estates land. The site has a historic landscape and buildings and the vision is for an urban quarter that forms part of Aldershot, extending from the nearby town centre.</td>
</tr>
<tr>
<td>Ashford Barracks, Ashford</td>
<td>1,500 dwellings, together with a school, employment, retail and community uses, are proposed on a site of 48.6 ha. One of the challenges is to re-connect the site, a former barracks with a railway line through the centre, to Ashford. The developer consortium leads the project and, with the first phase of development complete, the design code aims to improve the quality and speed of delivery for the next phases.</td>
</tr>
<tr>
<td>Kingshill, Cirencester</td>
<td>200-400 dwellings are proposed on two sites which total 7.2 ha. A small amount of mixed use is proposed. The project is an urban extension to an historic town in the Cotswolds. One aim is for the design code to set a precedent for all proposed development in the area.</td>
</tr>
<tr>
<td>Ore Valley, Hastings</td>
<td>The Ore Valley sites form part of the Hastings Millennium Community and 700 dwellings, together with commercial uses, are proposed. The design code will have to address English Partnerships' Millennium Communities Standards.</td>
</tr>
<tr>
<td>Walker Riverside, Newcastle upon Tyne</td>
<td>The pilot lies within the 5 sq km of Walker, which forms part of the Newcastle/Gateshead Housing Market Renewal Area. The masterplan proposes the renewal of existing houses plus 2,500 new dwellings, together with improved links, public transport, local employment opportunities, open spaces and community safety.</td>
</tr>
<tr>
<td>Don River Corridor, Rotherham</td>
<td>The pilot relates to a series of brownfield sites adjacent to Rotherham town centre and river corridor. The aim is to increase the population living within or adjacent to the town centre. 60 dwellings, together with retail and commercial uses, are proposed on a 12 ha site.</td>
</tr>
<tr>
<td>Southern Development Areas, Swindon</td>
<td>This is a large-scale urban extension on a 309 ha site, bounded by the M4 and mainline railway. 4,500 homes, a high street, schools and employment are proposed. The developer is leading the preparation of codes, in collaboration with the local authority.</td>
</tr>
</tbody>
</table>
Appendix 2: References


CABE (2003) *The Use of Urban Design Codes. Building Sustainable Communities*, CABE


ODPM (2003) *Sustainable Communities: Building for the Future*, ODPM


Western Australia (1997) *Liveable Neighbourhoods. Community Design Code*, Perth, Western Australia
Acknowledgements

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