

Department for
**Communities and
Local Government**

Green and Public
Space Research:
Mapping and
Priorities

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*Green and Public Space Research:
Mapping and Priorities*

June 2006

Simon Bell, Alicia Montarzino
and Penny Travlou
OPENspace Research Centre
Edinburgh College of Art/
Heriot Watt University
Department for Communities and Local Government

Department for Communities and Local Government
Eland House
Bressenden Place
London SW1E 5DU
Telephone: 020 7944 4400
Web site: www.communities.gov.uk

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Summary

This project aimed to map existing and future research into public and green space, to identify gaps in order to help set priorities for future research, and to develop a freely accessible and searchable database of all research. The project was carried out by OPENspace, the Research Centre for Inclusive Access to Outdoor Environments based at Edinburgh College of Art.

The mapping was structured around two axes. The first axis was of research themes based on *The Value of Public Space*¹ but developed further and broken down into sub-themes. The second axis was a typology of green and public space based around Planning Policy Guidance 17: Planning for open space, sport and recreation (PPG17) with elaboration from *Green Spaces; Better Places*².

Research going back 10 years was collected together with information on recently completed, ongoing and planned UK research. Only research meeting specific quality criteria was included. Some information was also collected at a seminar where attendees from a range of organisations were invited to offer their perspectives on where research priorities should be directed. All the material was analysed and the following main trends can be discerned.

There are 3 key cross-cutting themes that are common to much of the research and affect the value of any research or its ability to be widely applied. These are the general lack of baseline surveys against which to assess progress over time; methodological issues, especially the need to standardise data collection methods and techniques; the classification of social groups, currently considered to be too crude.

In relation to the research themes, the following picture emerged from the mapping and the seminar. Most research has been undertaken on physical aspects, such as planning and on biodiversity. Economic values have also been a focus, but on a smaller scale. Social research is quite well covered but very patchy. Management is better covered than maintenance. By far the weakest area represented in the research is health and well-being, both in terms of social groups and types of green space.

The priorities for research into green and public space suggested by the exercise are as follows:

Economic values:

- Funding mechanisms for green space.
- The value of economic regeneration.
- Quantification in monetary terms of health benefits (of exercise etc) eg. savings to the health budget.
- Costs of crime and vandalism.
- The value of local employment provided by green space.

1 CABE Space 2004

2 Urban Green Spaces Task Force 2002

Health and well-being:

- Benefits in relation to key target groups, especially children, older people and disabled people.
- Longitudinal studies to test and validate health benefits over time.
- Barriers to the use of green space for health and well-being.
- The effects of risk aversion on levels of use of green space for health and well-being.

Social and community:

- The availability of nearby green space for children's play.
- Intergenerational studies into play and the use of green space, as affected by, constrained or encouraged by parents or grandparents.
- The effects of fear and feeling unsafe as barriers to using spaces of different types by different social groups.
- The difference between actual and perceived levels of crime in different spaces.
- The social setting of crime.
- Planting for safety.
- The use of lighting to increase levels of use and to reduce fear.

Environmental quality and biodiversity:

- Climate change effects on streets (storm water drainage), pollution, wind climate and plant selection and management.

Physical aspects

- Accessibility to green spaces "from the front door" in order to reduce the need to use transport.

Management and maintenance

- Maintenance of informal green spaces used a lot for play.
- The skills needed by staff to prepare for current and future demands of management and maintenance.
- Methods of communication and information provision to the wide range of user groups in different spaces as a means of helping to raise awareness, build confidence and manage risk and fear.

1. Introduction

- 1.1 This report presents the findings of a project to map existing and future research into public and green space (with an emphasis on green space), to identify gaps in research in order to help set priorities for research (although the fact that some areas of the research map are virtually empty does not necessarily mean that they automatically become priorities for research) and to develop a searchable database where all available research can be accessed and examined freely and interactively.
- 1.2 The project was carried out by staff at the OPENSspace Research Centre based at Edinburgh College of Art and Heriot Watt University on behalf of the then Office of the Deputy Prime Minister (ODPM).
- 1.3 The background to the project lies in the recent policy and other developments in regard to public and green space in towns and cities that have taken place over the last few years. In particular *Living Places; Cleaner, Safer, Greener* (ODPM 2002) set out the Government's commitment to the creation of networks of accessible, high quality parks and diverse green spaces in all towns and cities. To help the government meet this commitment led to the need for a better awareness and understanding of research on public and green space to provide a sound evidence-base for future funding and action.
- 1.4 As well as *Living Places; Cleaner, Safer, Greener*, the work of the Urban Green Spaces Taskforce's report *Green Spaces, Better Places* (ODPM 2002) and associated working papers made recommendations to help improve parks, play areas and green spaces. As a result, a new unit was established within the Commission for Architecture and the Built Environment, CABA Space, which carries out research on green space as part of its remit. One of the key outputs of CABA Space so far is the *Value of Public Space* publication (CABA Space 2004), which identified a number of themes in relation to the value of public space. In addition, the typology of green space developed by the Urban Green Spaces Taskforce was used as the basis for Planning Policy Guidance 17: Planning for open space, sport and recreation (PPG17). These two elements, the themes and the typology were used as the basis for the mapping exercise and the structure of the database, which therefore grounds the output of the project described in the report firmly in current policy and practice, enabling the database to be as useful as possible for a wide range of people in central and local government, academia and practice.
- 1.5 One of the key reasons why this mapping project was undertaken is that whilst ODPM has lead responsibility for green spaces, other organisations, whether government departments, agencies or NGOs also have a strong interest. This includes the Department of Culture, Media and Sport, DEFRA, CABA Space, English Heritage, Sport England, Greenspace, the Housing Corporation, English Nature, the Forestry Commission, English Heritage, the Heritage Lottery Fund, the Joseph Rowntree Foundation and Groundwork. Research is also funded by research councils and boards, such as the Economic and Social Research Council (ESRC), the Engineering and Physical Sciences Research Council (EPSRC) or the Arts and Humanities Research Board (AHRB). As a result, research relevant to the public and green space agenda is being commissioned and carried out by many different groups.

- 1.6 To help with the identification of research that is not yet published (recently completed, in progress or planned) and to focus on the perceived priorities for further research a seminar was convened so that those who commission and fund research (from the range of organisations listed above) and those who carry it out, mainly from academic institutions, could look at the range of issues and jointly assess the current situation, identify gaps and suggest priorities.
- 1.7 The starting point for the mapping element of the project was a review of literature prepared by Sheffield University³.
- 1.8 The project was limited in terms of the time that could be devoted to identifying, evaluating and categorising the research. It is appropriate therefore to consider this as an ongoing project, so that research identified now as being underway will be eventually completed and published and as this takes place the database will be updated.

³ Improving Urban Parks, Play Areas and Green Spaces, DETR 2002

2. The Research Mapping Process

- 2.1 The key element of this project, upon which the identification of gaps and priorities is founded as well as the searchable database and the stakeholder seminar, is the process of mapping research. The starting point for this is the question “What is research?” clearly, there are many activities that can be generally classed as research, ranging from simple searches on the internet to collect data about a subject, through a number of simple surveys and opinion polls to activities that require complex analysis, whether of numerical data using statistical techniques, or of qualitative data where special methods need to be applied.
- 2.2 The brief for the project issued by the ODPM stated that the research collected and assessed should be robust. As it was not possible within the time and budget to scrutinise the quality of each individual piece of research, the approach adopted was to ensure that it met specific criteria. The criteria adopted are as follows:
1. Any peer-reviewed papers published in reputable international academic journals.
 2. Any research report that has undergone a rigorous quality control process by the originating institution, which may or may not include assessment by independent assessors.
 3. For other research, an assessment of the following aspects:
 - Are the research aims clear?
 - Is there a clear methodology and is it justified?
 - Is the analysis clear?
 - Are the key conclusions well-founded in the results of the analysis?
 - Are the conclusions well related to the relevant literature?
 - If there is a qualitative element to the research: is there an appropriate conceptual/theoretical framework and is the analytical approach appropriate to the type of data?
 - If there is a quantitative element to the research: is the sample size adequate for confident statistical analysis and is the statistical validity adequate?
- 2.3 Applying these criteria inevitably means that a lot of work that falls under the wider definition of research has not been included. This does not devalue it because much is useful in limited places or was carried out for local purposes, for example surveys of users that are not statistically reliable according to the criteria but which are extremely valuable to the managers of a particular park. There is also a lot of case-study type research that is also valuable but because there are no baseline surveys or post-project evaluations available, the wider application of the results beyond the project is not reliable. At the seminar of researchers and research commissioners there was a lot of discussion about this so-called “grey research” and it was concluded that it is important and valuable and needed to be mapped, but the current project was not the place to do it and so it has been excluded.
- 2.4 The research mapping looked at research in the following categories:
- Published research (up to 10 years old) in the form of academic papers, reports or other documents;
 - Unpublished but publicly available research reports (mainly carried out by government departments or agencies) or academic theses;
 - Research completed but not yet published;
 - Ongoing research;
 - Planned research.

- 2.5 The research collected was in English, although it may have been carried out elsewhere. Research in the form of academic journal papers or certain published reports could have been carried out anywhere in the world and then written up for publication in English. The unpublished, completed, ongoing and planned research was primarily of UK origin.
- 2.6 The academic journal paper research was obtained through keyword searches in the Web of Science and Science Direct, online systems for researchers. This yielded almost 1000 items of direct relevance to the subject area published in the last 10 years. Information on the research was entered into a reference management software called Endnote. This became the means by which the searchable database was developed (see below).
- 2.7 The search for the other categories of research: unpublished, completed, ongoing and planned, was undertaken by contacting all the relevant organisations and asking them to submit information. This resulted in over 300 items being identified that satisfied the criteria for inclusion in the database.
- 2.8 The massive body of research that was collected had to be organised and mapped so that a pattern could be perceived of what areas of interest were covered and, therefore, where gaps were present. Thus each item of research was categorised against two dimensions: the thematic area and the public and green space typology.

The thematic areas

- 2.9 This was initially based on the seven themes identified in *The Value of Public Space*. These themes are as follows:

- Economic values
- Social values
- Children and young people
- Safety and reducing crime
- Health and well-being
- Biodiversity
- Movement between spaces

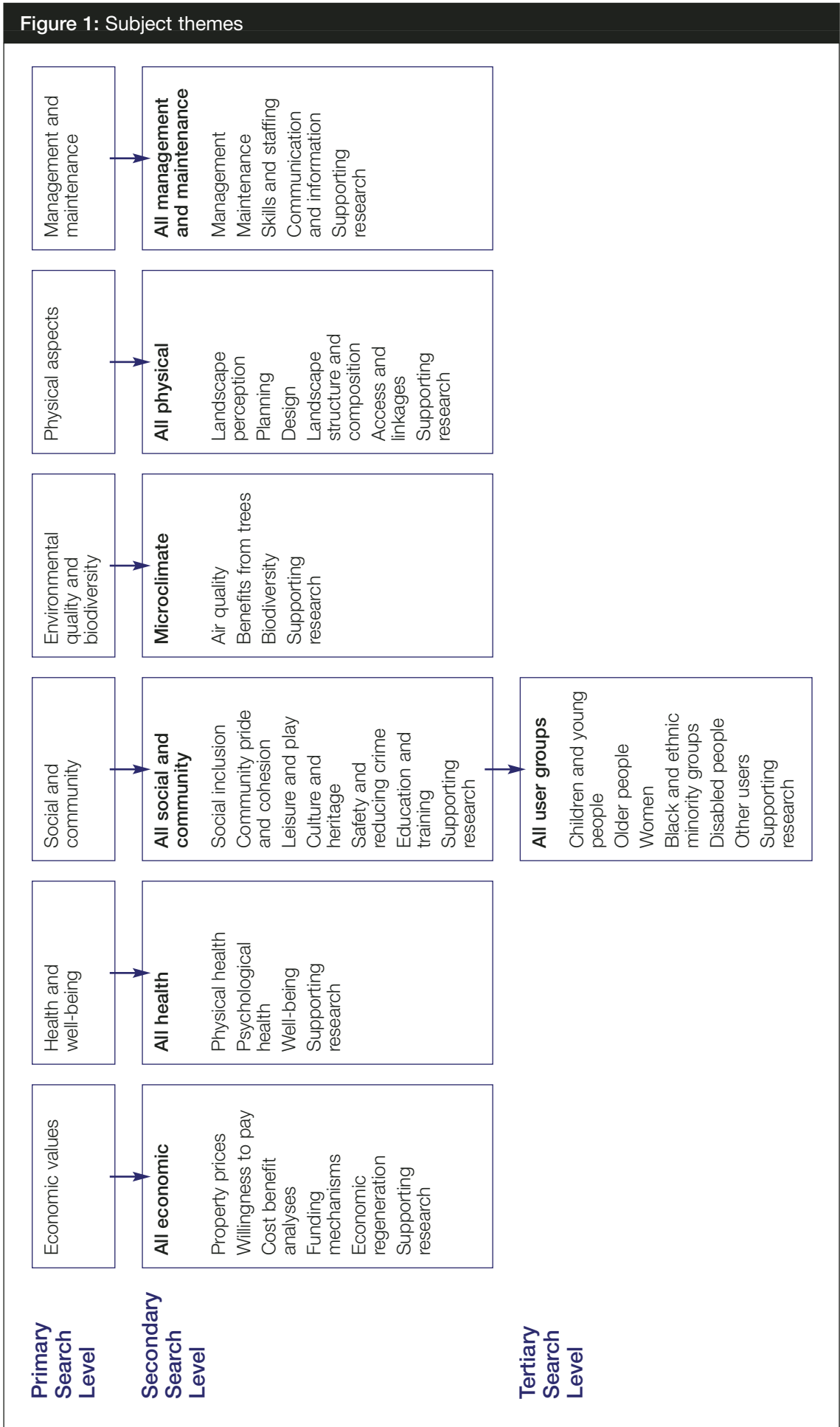
(The themes also formed the basis of the workshop discussions at the seminar – see below)

- 2.10 However, as the categorisation progressed it became obvious that these themes needed to be augmented with others and also sub-divided into primary and secondary levels.

The final list of themes is as follows:

1. Economic values
2. Health and well-being
3. Social and community
4. Environmental quality and biodiversity
5. Physical aspects
6. Management and maintenance

The detailed structure of these themes is illustrated at Figure 1.



2.11 Each piece of research could either relate to one sub-theme or to several. There is also a substantial amount of material that is not directly related to a sub-theme but which may nevertheless be highly relevant to the broad theme. This was classified as “supporting research”. An example of this is research on microclimate that is not directly related to green space but which presented a valuable methodology likely to be of interest.

The public and green space typology

2.12 The second dimension against which the material was classified is the public and green space typology. In the Urban Green Spaces Task Force’s report *Green Spaces, Better Places* a detailed typology was offered which broke down a number of basic categories into several sub-categories. In PPG17 the main types from the report have been taken and classified, together with a category of civic space, as constituent elements of what is referred to as “open space”. For the purpose of the research mapping a hybrid typology was developed, based initially on the types from PPG17 elaborated to include sub-types related to many of those in *Green Spaces, Better Places*. In addition a series of sub-types of public space was developed, covering the civic spaces of PPG17 but adding further types in order to make the mapping process easier. This complication partly arises because some of the green space categories include private spaces, so not all are public, and partly because non-green public spaces include more than the civic spaces described in PPG17.

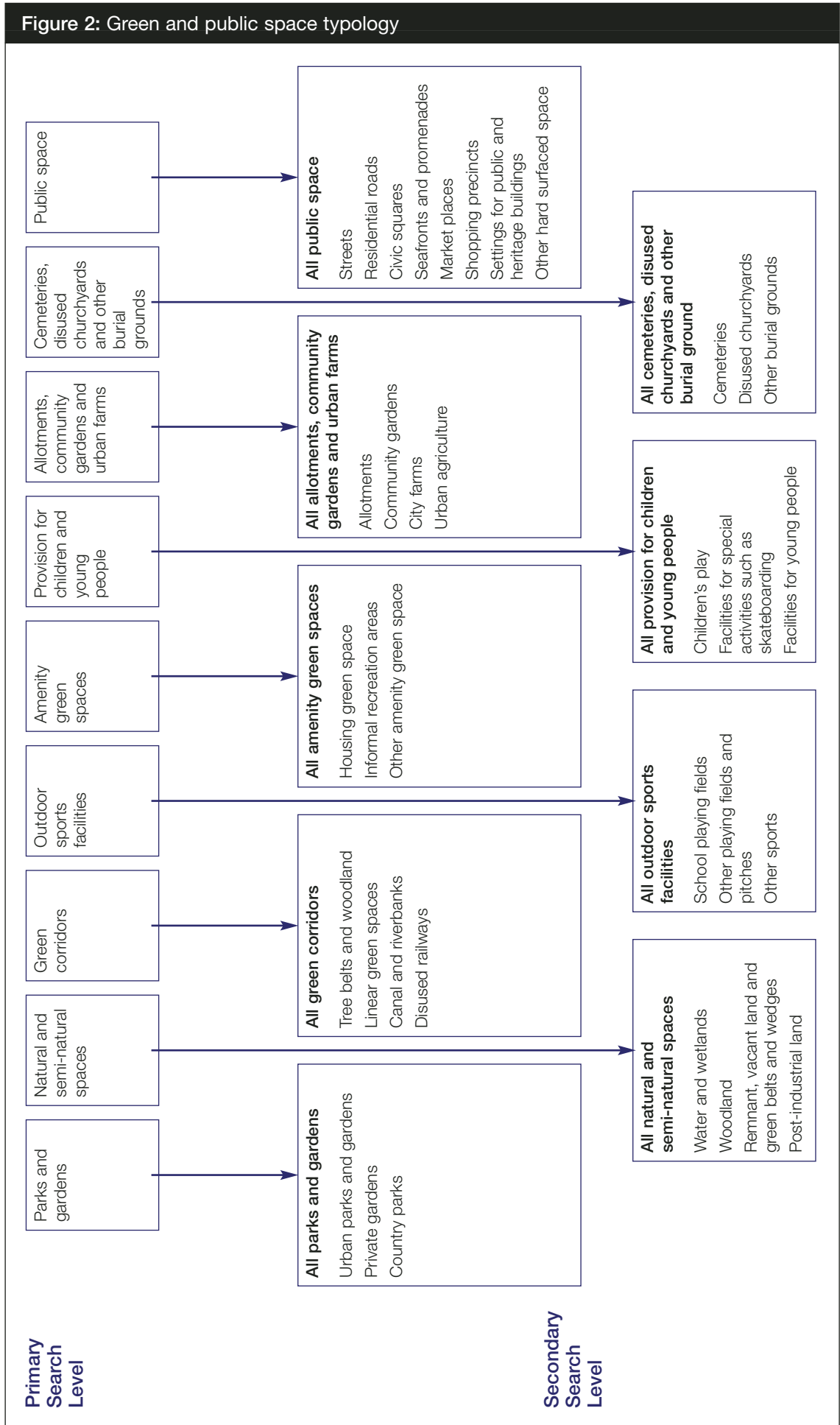
2.13 The typology finally adopted is as follows:

1. Parks and gardens
2. Natural and semi-natural spaces
3. Green corridors
4. Outdoor sports facilities
5. Amenity green spaces
6. Provision for children and young people
7. Allotments, community gardens and urban farms
8. Cemeteries, disused churchyards and other burial grounds
9. Public space

The detailed structure of this typology is illustrated at Figure 2.

As for the thematic areas, pieces of research could cover one or more types or sub-types.

2.14 The result of plotting the numbers of pieces of research that fall into the intersection of each dimension is a large matrix, that maps out the pattern of where research has been concentrated over the last 10 years and where current and planned research is focused.



3. Results of the Mapping Exercise

- 3.1 What is immediately apparent from the mapping exercise as presented in the tables is the fact that some thematic areas and space types have been the focus of significant amounts of research while others have been almost entirely neglected. This reflects a number of factors, such as the policy priorities of governments (eg. social inclusion), issues that have resulted from public concern (eg. crime and safety) or the perceived importance of certain types of green space (eg. city centre parks). The pattern of research by theme and type gives only a partial picture in that it is not possible to discern the details of the precise focus of each item of research, the methodologies adopted or the direction that the body of research is leading. There was not the time available to do this, although the searchable database will enable anyone to perform their own, more detailed analysis of a particular area.
- 3.2 The following sections provide an overview of the pattern revealed by the mapping for each theme and sub-theme. While the overall picture provided by the published academic research is both global and longitudinal, the information about unpublished, ongoing and planned research in the UK gives a more current snapshot that reflects the recent priorities of the different funding agencies and of the government (see later section).

Economic values

- 3.3 There is a substantial body of research on economic values, mainly international in origin. The main areas covered by this are as follows:
- General economic work that covers all areas: concentrated on parks and gardens, natural and semi-natural areas and public space.
 - Impacts on property prices: for parks and gardens and amenity green space.
 - Willingness to pay: for parks and gardens and amenity green spaces.
 - Cost benefit analysis: a few studies on parks and post-industrial land.
 - Funding mechanisms: parks and gardens, remnant and post-industrial land and allotments and community gardens.
 - Economic regeneration: a small amount concentrates on parks, post-industrial land and housing green space.
 - Supporting research: mainly on general topics with some on parks and woodland.

Health and well-being

- 3.4 This thematic area is perhaps surprisingly weak in research. The work has been mapped by dividing it into aspects related to different social groups (children and young people, older people, women, black and ethnic minorities and disabled people). The main areas covered are as follows:
- Health in general: sparsely covered.
 - Physical health: quite a lot of research related to parks and gardens, natural areas, outdoor sport facilities, amenity green space, allotments, community gardens and urban farms and, the majority of the research by far, into children's play. There is very little related to other social groups.
 - Pollution and its effect on health, especially of children, in relation to streets is also well-researched.
 - Psychological health: a dozen or so items related to green space in general and a little on parks and gardens.

- Well-being: a number of items of general interest, some focused on parks and gardens and others on amenity green space, some on children and young people is related to green corridors and there is a small body of work about women and green space in general.

Social and community

3.5 There is a large amount of research associated with this subject theme. It has also been broken down into the different social groups.

- General social research: concentrated on natural areas, green corridors, outdoor sports facilities, amenity green spaces, provision for children and young people and allotments, community gardens and urban farms. Women and ethnic minorities are specifically covered.
- Social inclusion: some work covering general green space with each social group represented, although the most by far is associated with disabled people. Children and young people quite well covered while there is a small amount on older people and amenity green space. There is work on women and outdoor sport facilities and black and ethnic minorities and parks, green corridors and amenity green spaces. Disabled people are covered by work on trees and woods, outdoor sports facilities and amenity green space in relation to both their use and interaction with green space.
- Community pride and cohesion: a weak area for research in terms of the overall amount that is available. There is a small amount related to parks and gardens, natural areas, amenity green spaces and provision for children and young people. The only social group represented specifically is women.
- Leisure and play: well-represented in relation to children and young people and provision for them with a small amount also associated with black and ethnic minorities, mainly concerning provision for children and young people.
- Culture and heritage: little related to specific social groups, although a couple of items on women and disabled people. Most work related to parks and gardens, amenity green space and cemeteries.
- Safety and fear of crime: a large body of research, mainly rather general in coverage and concentrated on sports and children's play (safety). The group most covered by research into crime and fear is women, with some work associated with streets, parks and gardens, woods and so on. Older people and black and ethnic minorities are much less well covered by research.
- Education and training: almost no research, whether education of children or training of staff.

Environmental quality and biodiversity

3.6 This has been a very fertile area of research as follows:

- General environmental quality: well covered in general and also work related to parks and gardens, natural and semi-natural areas, green corridors and amenity green space.
- Microclimate: also well represented in general with streets, parks and gardens and natural areas, especially woods being covered.
- There is a lot of research covering pollution and streets, linked to health effects.
- Benefits from trees: a large amount of work featuring parks and gardens, natural and semi-natural areas and green corridors. Woods are very well researched compared to the rest of the types.

- Biodiversity: the most heavily researched area of this theme with most work on parks and gardens, natural and semi-natural areas, green corridors and housing green space with some on allotments, community gardens and urban farms.

Physical aspects

- 3.7 This is the single most heavily researched thematic area and the one where most types of green space are also covered:
- Landscape perception: very strongly researched, especially in relation to parks and gardens, natural and semi-natural areas, especially woodlands, but with most other types also represented apart from cemeteries, disused churchyards and burial grounds.
 - Planning: the sub-theme with most research in the entire mapping exercise. All areas are well covered, especially streets and urban morphology, parks and gardens, woodlands, remnant and vacant land, green corridors and housing green space. The weakest coverage is on outdoor sports facilities, provision for children and young people and cemeteries, disused churchyards and other burial grounds.
 - Design: all areas are well covered, though not in the quantities for planning research. Less well represented areas are green corridors, outdoor sports facilities, provision for children and young people, allotments, community gardens and urban farms and cemeteries, disused churchyards and other burial grounds.
 - Landscape structure and composition: relatively weakly researched by comparison with other sub-themes in this category. Most coverage relates to natural and semi-natural areas, green corridors and amenity open space.
 - Access and linkages: very little research.
 - Supporting research: quite well covered across most of the range.

Management and maintenance

- 3.8 The management sub-theme is well covered but most other areas are weak:
- Management: quite a lot of general application, most related to parks, woodlands and housing green space, with a smaller amount covering other areas apart from outdoor sports facilities.
 - Maintenance: some general items and a small amount on parks and gardens.
 - Skills and staffing: a few items.
 - Communication and information: a few items.

Summary of mapping exercise

- 3.9 The fact that some areas of the research map are virtually empty does not mean that they automatically become priorities for further research. It is likely that some intersections of theme and type rarely occur, for example between “benefits from trees” and “seafronts and promenades”, while “social inclusion” and “urban parks and gardens” are always likely to be a significant intersection requiring continual research.
- 3.10 How does this analysis compare with the views of many of the people involved in commissioning or carrying out research into green space? This is explored in the next section.

4. The Research Mapping Seminar

4.1 The seminar took place on the 14th of July 2004 in London and involved over 40 people from a range of government departments, agencies, academic institutions and other organisations. The seminar was structured around a series of seven workshops that were based on the themes in the *The Value of Public Space*. Each workshop was held twice, so that people could attend different ones. They were led by a facilitator with a rapporteur being present to take notes of the discussions. Although this approach meant that the focus of the event was on research gaps, participants also forwarded information on completed, ongoing and planned research for inclusion in the mapping project. The emphasis of the day was on green space.

4.2 Each workshop group was given the same set of questions upon which to focus, applied to the relevant theme. These questions were as follows:

“If you want to see planning, design, management and maintenance of urban green space improved over the next 10 years, what would be the information you would need, specifically:

- What needs to be done?
- What are the gaps?
- How should it be done (research types, methods etc)?”

4.3 The results of the discussions were analysed and the main gaps and priorities suggested by the participants were identified. It is interesting that many of the groups identified similar gaps and priorities, so it is possible to state some common areas that need to be considered regardless of theme, though they tend to relate to certain public and green space types, particularly parks. These areas can be regarded as being more concerned with establishing the basic requirements for much of the more detailed research needs in relation to the themes themselves, that focus on exploring different research problems but which need good data in order to do so. These also act as constraints on infilling the research gaps

Cross-cutting themes

Baseline data

4.4 There is a lack of baseline data on people’s use of parks and other green spaces. This is the kind of basic research upon which much else can be founded. It includes who does and does not use green space, categorised by social group, age group, ethnic group and what are the patterns of use over time and in relation to age/life stage. It needs to include a longitudinal component so that changing patterns can be assessed, in part to see how demographic changes impact green space policies and provision but also to see how policy and practice affect green space use. The same lack of baseline data exists in relation to biodiversity – what is present in green spaces in terms of biodiversity values and monitoring over time to see what changes occur. Linked to this is the perceived need to make more effective use of census information. The use of secondary data was also criticised but has to be used because there is little primary data available.

Methodological issues

- 4.5 Related to the perceived lack of baseline data described above is a methodological/ analytical need for standardisation of data collection methods and techniques, especially between different organisations, so that better comparisons can be made. This includes sampling systems and protocols as well as spatial units and resolutions.

Classification of social groups

- 4.6 The final area of widespread concern is the classification or division of the population into social groups. It was considered by some groups that the commonly used divisions can be too crude for useful research, for example “children and young people”, where research needs to look at sub-divisions among different age groups of children and where policies fail because provision for “children” is far too broad brush and misses some age or gender groups.

Priorities and gaps

- 4.7 In this section each of the priorities and gaps identified during each discussion are presented and compared with what is known about recently completed, ongoing or planned research in relation to each theme. These may not be perfect matches for the gaps but may cover part of the questions raised. The following tables show this picture. The ordering of the items in the tables reflects part of the process used at the seminar, where the participants were able to “vote” for what they perceived as their priorities. These do not necessarily reflect the priorities of the Government.

Table 1: Gaps, priorities and research into economic value

| Priorities and gaps identified in the workshops | Recently completed, in progress or planned research |
|--|--|
| There is a lack of primary UK source data on the effect of green spaces on house prices. Research suggesting a link is from countries with different property market structures. Rental values or rentability also need to be included to cover areas where the rented sector is significant. Measures such as the speed of sale of properties could also be explored. | In progress: NUFU, The effects of street trees on domestic property prices. Planned research: CABE Space, Green space and property values, to include impact on social housing and commercial properties/rents. |
| There is a need to develop methods of measuring the differences on property values/rents of the presence/absence of green spaces and also their type and quality (especially the level of investment made in a park). | In progress: NUFU, The effects of street trees on domestic property prices. |
| The effect of Section 106 agreements that may be seen as a cost or “tax” by developers but which produce green space that adds value to the development – how to get the balance right. | |
| Little is known about the effect of green space on the value of commercial property (including rentability), and what elements of green space add value. | Planned research: CABE Space, Green space and property values, to include impact on social housing and commercial properties/rents. |
| Research is needed on the values associated with new businesses brought to an area as a result of improvements to the environment and image of an area. | In progress: CABE Space, Economic value of green spaces. |

Table 1: Gaps, priorities and research into economic value *contd.*

| Priorities and gaps identified in the workshops | Recently completed, in progress or planned research |
|--|---|
| There is a gap in knowledge of the level of income and character of the income stream generated as a result of space in parks being rented out to commercial events. | |
| What is the effect on the cost of managing crime and vandalism (repairs, policing) of adding improvements to parks specifically aimed at young people? | |
| What is the effect of introducing charges for some green space access and services on the pattern of use by different social groups? | |
| Best value as a tool is underdeveloped and underused but could be improved in terms of the means of calculating values. | |
| The role of parks and other green spaces as providers of employment (employed staff, contractors, providers of goods and services and secondary effects) and thus of income to an area. This could also be a management tool. | |
| There are many topics for research in terms of quantifying the benefits and savings to health budgets. This was claimed to be a very underdeveloped area that also needs baseline data and longitudinal studies related to different health issues and to different aspects of green space provision (such as proximity, accessibility, levels of use). | |
| What is the true value of trees in streets, parks and other places. The costs of planting and managing trees may be relatively well known but the sum total of the benefits (primarily those for which monetary values can be calculated, such as thermal effects, shelter, storm water melioration, pollution interception) is not known. | |
| Methodological issues: the use of different approaches for calculating non-market benefits needs to be refined and developed, for example comparing the usefulness of willingness-to-pay (WTP) methods versus hedonic pricing. The former could be used more widely for valuing benefits that are free at the point of use, such as applying the travel cost method to visiting parks (related to the size, quality or amenities available). WTP by businesses to fund the management of parks could be explored. Hedonic pricing is more useful for exploring aspects such as paying for added value elements over and above the basic green space provision. | |

Table 2: Gaps, priorities and research into social and community value

| Priorities and gaps identified in the workshops | Recently completed, in progress or planned research |
|---|---|
| A research tool is needed to be able to identify the kind and amount of social benefits provided by high quality public and green space. | <p>Recently completed 2004: English Nature, Nature for people: the importance of green spaces to East Midlands communities.</p> <p>Recently completed 2004: CCW, Who are we?</p> <p>In progress: Greenspace, The contribution of urban green space to quality of life.</p> <p>In progress: JRF, Public space and social relations in East London; Mono-cultural to multi-cultural; Social interactions in public spaces.</p> <p>In progress: Greenspace, Park quality and behaviour.</p> <p>In progress: Rutherford, Value of public parks.</p> <p>Planned: Ferguson, Characterising green space and its public benefit.</p> <p>Planned: Irving, Attitudes, perception and use of green space.</p> <p>Planned: SNH, Communities Scotland and NHS Scotland, Demonstrating the links – green space and quality of life.</p> |
| More is needed on the needs of users of green and public space, especially how this changes over (quite short periods) of time. | <p>Recently completed 2004: CCW, Who are we?</p> <p>In progress: JRF, Public space and social relations in East London</p> <p>Planned: Irving, Attitudes, perception and use of green space.</p> |
| Methodologically, better results could be obtained by carrying out more observation and fewer questionnaires because of the problem of people saying one thing and doing another. This field needs to be developed. | JRF projects on public space. |
| More work is needed to develop tools to evaluate outcomes of policies and projects. | |

Table 3: Gaps, priorities and research into children and young people

| Priorities and gaps identified in the workshops | Recently completed, in progress or planned research |
|---|---|
| Research is needed to compare the effects of segregating space between different user groups or between different groups of children and using space in an integrated way do that different social and user groups mix. | Recently completed: Groundwork, Urban green spaces taskforce survey of young people's views and needs in relation to local spaces. In progress: JRF, Social interactions in urban public spaces (specifically aimed at children) |
| More research is needed on inclusive design for children and young people. | Recently completed: University of Sheffield, Towards an understanding of disabled and non-disabled children's play in the primary school playground. |
| Informal green space is used a lot by children and young people but its management is poorly covered by research. | |
| More data is needed on the amount of green space of different types available for use by children and young people, at local and national levels. | |
| Intergenerational research into the ways in which use of green space by children and young people is affected by, constrained or facilitated by parents and grandparents is needed. | |
| There are some methodological shortcomings that need to be overcome in order to be able to conduct better research. | |

Table 4: Gaps, priorities and research into safety and reducing crime

| Priorities and gaps identified in the workshops | Recently completed, in progress or planned research |
|--|--|
| Not enough is known about the effect of fear and feelings of safety as a barrier to undertaking exercise in green space. | |
| There needs to be better information on the differences between actual and perceived levels of crime in different types of green space, starting with a benchmarking survey so as to be able to track changes over time. | |
| What is the impact of different interventions in relation to fear and safety on different social groups? | |
| More research is needed on the social setting of crime, especially the different views of victims and perpetrators. | |
| Insufficient research has been carried out on ways of managing space in relation to perceived anti-social behaviours, especially how to manage the displacement of people and conflicting uses. | JRF research on contested spaces |
| More needs to be known about the contribution of the fear or risk of crime to the reasons why people do or do not use green space. | |

Table 4: Gaps, priorities and research into safety and reducing crime *contd.*

| Priorities and gaps identified in the workshops | Recently completed, in progress or planned research |
|--|--|
| Can green space improvement act as a catalyst for a general turnaround in a community – can the creation of environmental capital spur on the development of community capital? | |
| What is the effect of installing lighting into a park on actual or perceived safety? | |
| What would be the effect of 24 hour opening of parks on the pattern of use and abuse? | |
| More research is needed on planting design for safety, for example using “safe” vegetation to permit sight lines and to prevent graffiti. | |
| Given the increase in litigation in respect of safety, more needs to be known about the ways in which people (especially children and young people) assess and take risks in green space. What are the effects of unwillingness to take risk and the increasing tendency to litigate on the management of sites on society as a whole? | |
| What is the true cost of vandalism, misuse and crime on green space compared with streets? | |
| Little is known on the true picture of injuries claims affecting landowners and therefore the true picture of risk. | |
| There are methodological issues related to the interpretation of attitudinal surveys: what people say they do versus what they actually do and whether the results of some surveys therefore distort the picture of risk avoidant behaviour. | Planned: CABA Space, Addressing risk in the public realm |
| What is the impact of designing for safety on biodiversity? | |

Table 5: Gaps, priorities and research into health and well-being

| Priorities and gaps identified in the workshops | Recently completed, in progress or planned research |
|--|---|
| There needs to be more basic work on the area of preventative health, to see if green space actually makes a difference and if so on what and how effective is it? | <p>Recently completed: Forestry Commission, West Midlands woodlands and health pilot evaluation.</p> <p>In progress: Forestry Commission, Chopwell Wood health project evaluation.</p> <p>In progress: Sempik, Growing together: promoting social inclusion, health and well-being for vulnerable adults through the use of horticultural therapy.</p> <p>In progress: BHFR Grants, Environmental and physical activity study programme.</p> <p>Planned: CABA Space, Health value of urban green spaces.</p> <p>Planned: Townshend, Obesity and urban form.</p> |
| There needs to be longitudinal research to measure the long-term impact of interventions and its value (possibly using social capital models). | |

Table 5: Gaps, priorities and research into health and well-being *contd.*

| Priorities and gaps identified in the workshops | Recently completed, in progress or planned research |
|---|--|
| Intergenerational research is needed to see how patterns of healthy activity are transmitted from one generation to another. | |
| Research is needed to compare the benefits of exercising outdoors in green spaces compared with indoors in a gym, to see if there are additional social and psychological benefits associated with green space. | |
| What is the value of green space for health apart from the physical exercise element? | <p>Recently completed: University of Essex, Green exercise, complementary roles of nature, exercise, diet and emotional wellbeing and implications for public health.</p> <p>Planned: CABI Space, Health value of urban green spaces.</p> |
| What are the impacts of green space on the health of different social groups? | <p>Planned: CABI Space, Health value of urban green spaces.</p> <p>Planned: Townshend, Obesity and urban form.</p> <p>In progress: Forestry Commission, Chopwell Wood health project evaluation.</p> |
| How do different types of green space affect health? | <p>Recently completed: Forestry Commission, West Midlands woodlands and health pilot evaluation.</p> <p>In progress: Environment Agency: Health benefits of environmental improvements</p> <p>Planned: Greenspace Scotland, Health impact assessment for green space development</p> <p>Planned: Townshend, Obesity and urban form</p> |
| What is the impact of green space on overall levels of activity and what are the qualities of different green spaces that encourage or discourage people to become more active? | <p>In progress: Health Development Agency, Evidence review – effectiveness of environmental interventions in promoting physical activity.</p> <p>In progress: BHFR Grants, Environmental and physical activity study programme.</p> <p>In progress: Forestry Commission, Chopwell Wood health project evaluation.</p> |
| What effect is the litigation/risk-averse culture affecting participation in outdoor activity (especially children)? | |
| What barriers continue to affect the levels of activity by members of different social groups? | |
| How is it possible to motivate people to follow recommendations to participate in activities recommended to improve their health? | <p>Recently completed: Knight, Walking for health – the first randomised control trial.</p> <p>In progress: Health Development Agency, Evidence review – effectiveness of environmental interventions in promoting physical activity.</p> <p>In progress: BHFR Grants, Environmental and physical activity study programme.</p> |

Table 6: Gaps, priorities and research into biodiversity

| Priorities and gaps identified in the workshops | Recently completed, in progress or planned research |
|---|--|
| There needs to be more known about the potential effects of climate change on green space, which may affect plant species choice, pests and diseases and the incidence of weather events such as storms and floods. | |
| There needs to be better knowledge on the ecological functions carried out by different categories of green space, especially private space. | Recently completed: University of Sheffield, Urban domestic gardens and creative conservation In progress: GLA, Ecological survey of garden squares and similar historic gardens. |
| It would be valuable to explore in greater detail the interaction between nature and culture and between natural and social systems. | Recently completed: ESRC, Habitable cities: ecological practices and civic spaces |
| Practical tools and best practice examples of management for biodiversity need to be developed. | Recently completed: NERC, Non-indigenous species and urban biodiversity In progress: Dunnett, Sustainable urban planting. |
| Improvements are needed in the ways that ecologists and landscape architects provide expertise or how their expertise is used most effectively. | Planned: GLA, Audit of London parks management for biodiversity |

Table 7: Gaps, priorities and research into movement between spaces

| Priorities and gaps identified in the workshops | Recently completed, in progress or planned research |
|--|--|
| More work is needed on establishing the importance of developing linkages between green/ public spaces and on how to implement this. | In progress: JRF, Mono-cultural to inter-cultural: the networked public domain |
| The use of mobility models should be developed and used more widely. | |
| More research into how to achieve better localism, avoiding the need to travel to get to green space is needed. | |
| How can inclusive principles be better applied to movement between spaces? | In progress: ECA, I'DGO project: inclusive design for getting outdoors |
| Studies of movement need to start at the front door of peoples' homes. | In progress: ECA, I'DGO project: inclusive design for getting outdoors |
| Research should be carried out through partnerships between academics and practitioners. | |

- 4.8 The identification of gaps only related to the seven themes used at the workshop. The complete theme list includes many other aspects for which there are probably gaps and the compilation of the research data, in particular that of recently completed, in progress or planned UK research, demonstrated a lot of work that cannot be matched to either the themes or the gaps within each theme. Moreover, the research that has been identified and matched to the gaps presented in Tables 1-7 may not provide a complete match. Furthermore, it is not certain that a complete picture of recently completed, ongoing or planned research has been obtained because there was not a comprehensive set of responses from the people who were consulted. Finally, there is work on surveys and other types of project which may aim to cover some of the gaps but which, because it did not satisfy the criteria for inclusion in the database, is not included in the analysis.
- 4.9 Having said that, a clear pattern has emerged. There are plenty of gaps in the broad range of research into green space and relatively few of these are expected to be filled by research that is recently completed, in progress or planned. The subject themes where most work is in progress or planned are social values (including children and young people) and health and well-being. These reflect the current policy priorities.

5. Synthesis of the results

- 5.1 The results of the two strands of the mapping and the seminar can be synthesised to find an overall picture to help guide policy makers and research commissioners. Although the thematic structure of the mapping exercise and the seminar discussions were not identical, it is nevertheless possible to make some comparisons between them and to generate some overall conclusions. The following table (Table 8) makes this comparison clear.
- 5.2 From the summary analysis presented below in Table 8 it is also possible to identify the major gaps in research that could form the basis for a set of priorities over the next few years. It is not the role of this analysis and report to set the priorities, although the gaps identified by both the mapping exercise and the stakeholder seminar certainly point in some key directions. The column “remaining gaps” summarises the major gaps recommended for attention.

Table 8: Summary of gaps

| Theme | Mapping exercise | Stakeholder seminar | Remaining gaps |
|-----------------------|--|--|--|
| Economic values | Substantial research carried out in many aspects but not all applicable to the UK and those sub-themes of most interest are not so well represented (funding mechanisms, economic regeneration). | Many gaps identified, some being filled, eg. work on property prices. Quantifying health benefits, costs of crime and vandalism and the value of employment provided by green space are gaps yet to be filled. | Funding mechanisms for green space. The value of economic regeneration. Quantification in monetary terms of health benefits (of exercise etc) in green space eg. savings to the health budget. Costs of crime and vandalism in green spaces. The value of local employment provided by green space. |
| Health and well-being | Weak in the amount of existing research, with most on physical health. There is some general research on green spaces and health. | Preventative health is receiving some attention at the moment and there is work examining different types of green space and health. Some is targeted at key social/health groups. Gaps include longitudinal research, barriers to use and the effects of risk averse behaviour. | Benefits in relation to key target groups, especially children, older people and disabled people. Longitudinal studies to test and validate health benefits over time. Barriers to the use of green space for health and well-being. The effects of risk aversion on levels of use of green space for health and well-being. |
| Social and community | Much research available but very patchy in its coverage. Some is more general in nature and there is much on social exclusion, though more on some groups than others. Safety in play is well covered but fear of crime not so well covered. Education and training has little research. | Work on social values of green space has recently been a focus and also some on the needs of users. Children and young people are only receiving a small amount of current attention. Gaps in research include data on the availability of green spaces for play and intergenerational research. Safety and reducing crime has many gaps. One concerns the picture of risk and safety, another the costs of vandalism and crime, a third the comparison of actual versus perceived crime levels and the fourth the social setting of crime. | The availability of nearby green space for children's play. Intergenerational studies into play and the use of green space, as affected by, constrained or encouraged by parents or grandparents. The effects of fear and feeling unsafe as barriers to using green spaces of different types by different social groups. The difference between actual and perceived levels of crime in different green spaces. The social setting of crime in green spaces. Planting for safety. The use of lighting to increase levels of use and to reduce fear. |

Table 8: Summary of gaps *contd.*

| Theme | Mapping exercise | Stakeholder seminar | Remaining gaps |
|------------------------------|--|---|---|
| Environment and biodiversity | There is lots of research on general environmental quality, microclimate, the benefits of trees and biodiversity (the most heavily researched area). | There are several projects in the pipeline that fill gaps, but the main one remaining is climate change. | Climate change effects on streets (storm water drainage), pollution, wind climate and plant selection and management. |
| Physical aspects | Planning represents the most heavily researched area of all. Design and landscape perception is also well covered. Linkages and movement between green spaces is poorly covered in the amount of research. | Access to green space is receiving attention. The major gap is about the need to use transport to gain access to green space. | Accessibility to green spaces “from the front door” in order to reduce the need to use transport. |
| Management and maintenance | There is a lot on management, much less on maintenance. Skills and staffing and communication and information have very little research available. | Maintenance of informal green spaces needs more attention. Skills needed by staff to meet current and future demands is a gap in knowledge. Improved methods of communication need to be developed. | Maintenance of informal green spaces used a lot for play. What skills are needed by staff to prepare for current and future demands of management and maintenance. Methods of communication and information provision to the wide range of user groups in different green spaces as a means of helping to raise awareness, build confidence and manage risk and fear. |

6. Conclusions

- 6.1 This green and public space mapping exercise has demonstrated that there is a huge body of robust research available, from a variety of sources. This research has concentrated on some important thematic areas and covered key types of green and public space, mainly those used by most people most of the time, such as streets and parks.
- 6.2 The past research reflects the policy concerns that have been high on the agenda over the last 10 years around the world. As UK government policy on green space evolves over time it is inevitable that the focus of research effort will need to move in order to reflect the emerging priorities. The collection of information on recently completed, ongoing and planned research, while not guaranteed to be comprehensive due to limitations on the data collection and the cooperation of some organisations, shows where this shift in focus is currently moving. The use of the stakeholder seminar, while limited in its scope and the time available, served a valuable function in identifying a number of gaps in the existing body of research, some of which are being wholly or partly filled by ongoing work. The remaining gaps have been identified and from them the tentative research programme outlined in section 5 above has been suggested.
- 6.3 This report and the accompanying database provide a useful snapshot of the research situation in 2004 albeit limited for the reasons outlined above. The report should be used as a starting point for debate and no doubt once it has been disseminated to a wide audience the picture it presents will be found by some people to be incomplete. This is to be expected and welcomed but we hope that any extra information is made available to the ODPM to help flesh out the information contained in the report even further.
- 6.4 The accompanying database, once launched online, should also provide a valuable tool for a wide range of people and, if kept up to date, help inform the wider green and public space community about what has been carried out and what is in progress. This should be of use in formulating policy, in proposing further research and in informing planners and managers of green space of the results so as to help them in their work. Ultimately this exercise will have been successful if, in 10 years' time, there is a visible and positive difference to be seen in the state of Britain's green and public spaces.

References

CABE Space (2004) Value of Public Space

DLTR (2002) Improving Urban Parks, Play Areas And Green Spaces, Interim Literature Review

ODPM (2002) Green Spaces, Better Places

ODPM (2002) Living Places; Cleaner, Safer, Greener

ODPM (2003) Planning Policy Guidance 17: Planning for open space, sport and recreation.