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LONDON'S BROWNFIELD RESOURCE PILOT PROJECT: THE WANDLE VALLEY

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ABSTRACT

Brownfields are abandoned or under-utilised areas normally within the urban core of a city. These sites are generally areas that have previously been built-on, yet have become derelict or have fallen into disrepair. Some sites may be contaminated.

Typically, when developers and other organisations have an interest in a brownfield site, they must perform an extensive information search to determine its planning and environmental status. An information search of this type could take days, weeks, or even months to compile. With a geographic information system (GIS), this search could take a matter of minutes, and be displayed in an easy to understand graphical or map form.

This project aimed to develop a pilot system for the Wandle Valley, covering the London boroughs of Wandsworth, Merton, Sutton and Croydon. The ArcView GIS was used to assemble, store, manipulate, and display geographically referenced information relating to brownfield sites and their locality, i.e. shopping areas, public transport routes.

This system has been created to encourage more sustainable and environmentally friendly development of brownfield sites. This was done using an iterative development approach supported by a series of four seminars and a public participation workshop.

The main findings of the research relate to the results of the public participation workshop and the success of the system. The results of the workshop show that most people saw the system as of real value to the planning process as it would help make it more iterative. The system was an overall success because it allowed for the integration of different data sets not seen previously in the brownfield debate. Also because a GIS was used updating the system would be efficient. However, some problems were highlighted in regard to public access and updating and accuracy of the information on the system.

1.0 Introduction

1.1 Background to the Project

It is forecast that an increase in 4.4 million homes will be required in the UK by 2016 to meet the growing demands for housing. This has led to a lively political debate concerning where the projected households will live and in particular to increased attention on the development of urban brownfield sites. It was proposed that brownfield redevelopment would provide the space needed for the extra housing.

As a result of talks with the Environment Agency and other organisations involved with urban regeneration in London, it became clear that there was a need to address the brownfield issue. Brownfield sites are an important component of the government's strategy to develop sustainable urban communities. However, the ability of urban communities to accommodate further development is currently under-researched. There is a lack of integrated and comprehensive knowledge on the condition, location and management of brownfield sites throughout the UK, and little attention has been given to the contribution that brownfield sites make to biodiversity, nature conservation and amenity.

This pilot project was funded by the Environment Agency and the Jackson Environment Institute, University College London to address these issues.

1.2 Aims and Objectives

The purpose of this project was to develop a planning tool to help facilitate brownfield site development. The framework of the pilot project for the Wandle Valley, South London, intended to integrate economic, environmental and social data. The aim was to guide brownfield redevelopment strategies in a way to achieve the overall objectives of encouraging more sustainable urban redevelopment by:

- Facilitating investment in urban areas
- Reducing risks from pollution of land, air and water
- Benefiting low income and minority populations by revitalising their neighbourhoods.
- Encouraging participation of public groups in the planning process.
- Balancing the demands of development with the need to protect and enhance the environment.

The pilot project set out to identify urban brownfield sites in the Wandle Valley that have the most redevelopment potential and the greatest economic, environmental and social benefits. Whilst it does not aim to identify the costs and benefits of brownfields redevelopment, It does go part way to identifying the impediments to successful redevelopment from both the community and developer perspectives.

It was predicted that the system developed for the pilot project could be used by planners and decision makers as a tool to set priorities for redevelopment projects, target economic development incentives and programs, and develop strategies for brownfield site redevelopment in the Wandle Valley. Potential users include the Department of Environment, Transport and Regions (DETR), Government Office for London (GoL), Greater London Authority (GLA), English Partnerships and the London Boroughs.

To achieve this aim, the project set out to:

1. Present the Environment Agency data in a user friendly format.

The Environment Agency needs to base its own work on a sound scientific understanding of the state of the environment and how this is responding to the many and varied pressures that are placed upon it. To do this the Agency needs ready access to existing and new scientific data and information as well as making its own information more widely available. It will therefore seek to exchange information and develop new data links.

2. Enable the Environment Agency to work in partnership with others for the purpose of sustainable development.

3. Identify the Brownfield Sites

Relevant datasets were held separately by a number of organisations that have previously carried out related research. These datasets needed to be integrated into a more manageable format.

4. Identify gaps in the current site data

Small sites were being left out of much research because of the difficulty in gathering the relevant data. Other sites may not be found in Unitary Development Plans (UDP) and other statutory documents because they have been held with a ‘hope value’ for a long time, or because provenance

is unclear. More recent policies mean that identification of smaller sites is now becoming increasingly important as the supply of developable land within London decreases.

5. Integrate complex information relating to brownfield sites into a simple, user-friendly format.

It was expected that by integrating diverse data sets relating to brownfield sites, the information would be better presented in a more efficient and easier to understand format. Such an integrated data set can be used to develop partnerships and encourage negotiation by being 'interactive' - by enabling discussion around a definitive set of information. It can also provide a reliable means of describing what the brown land resource can contribute to the strategic development of London. The sources of such data also have to be up-to-date, and easy to update in the light of new evidence.

6. Establish a hierarchy of suitability for redevelopment by discovering which sites are closest to amenities such as shopping areas, public transport and green spaces.

7. Give relevant information on each Brownfield site as well as giving information on other data layers.

Site specific information was collected on each brownfield site, accompanied by a photograph and a site visit in some cases. In addition, policy information was collected for nature conservation areas. This information was made easily accessible on the system by clicking on individual brownfield sites.

7. Produce the system as an iterative process through feedback from the public.

A series of seminars and a public participation day was explored the public opinion to the system.

8. Ultimately to provide this service through an Internet domain by linking the brownfield system to the LEO project.

1.3 Sustainable Development

The main aims of the project for the Environment Agency were to promote closer working relationships and development partnerships. As a statutory consultee, the Agency works hard to make a positive contribution to the planning system and to make sure the interests of the natural environment are fully addressed through the development process. This involves advising on preventing and controlling pollution, minimising flood risk and securing environmental

enhancements, all of which make a positive contribution to sustainable development and improving the quality of the life of Londoners.

As the EA has little or no duties or responsibility in some areas which have a significant impact on sustainable development such as land use planning, it must work in partnership with others such as local authorities and non-government organisations (NGO). This was one of the main aims of the project, as it is important that environmental issues are addressed before plans or development proposals reach an advanced stage.

Through partnership with The Jackson Environment Institute at University College London, the Environment Agency has been able to demonstrate how costs and benefits associated with specific developments can be balanced to achieve environmentally acceptable and economically viable development. This is achieved when environmental mitigation and enhancement works are built in as an integral part of the development process, rather than as a late addition to it.

Sustainable development incorporates economic, social and environmental needs. It is concerned with reconciling economic demands and social needs with the capacity of the environment to cope with pollution and to support human and other life (Environment Agency, 1998).

One of the elemental features of sustainability is the relationship between the environment and the economy, as all economic activity requires the extraction of materials and energy from the environment. Once used, these materials are returned to the environment as waste. The result is the evolution of a system that is adapted to the way in which resources are appropriated and consumed (Schaffer, 1995). In order to be sustainable, a process must consider the three systems associated with ecology, economy, and society, as component parameters (Schaffer, 1995).

The relationship between environment and economy is established in a manner in which the economy, defined by patterns of production, distribution, and consumption, functions as a subsystem of the ecological system. The environment, in turn, supports the economy and, by extension, the social structure through the provision of necessary resources and the acceptance of wastes. Sustainability is defined in the context of this relationship (Schaffer, 1995). In this case the material consumed is land for building purposes.

The need to achieve a consensus among all relevant parties, including the public was stressed in Agenda 21, a global action programme for sustainable development. The Rio Earth Summit (1992) recommended the active participation of citizens along with governments in the implementation of the Rio agreements. Since 1992, some 70 countries have established some form of a multi-stakeholder participatory body, referred as to National Councils for Sustainable Development (NCSD), to promote sustainable development at the national level, assist governments in decision-making and policy formulation, and follow-up the implementation of international processes related to sustainable development. This however, is not easy as it implies the need to adopt new decision making methods that go beyond traditional consultancy frameworks to involve groups and individuals in a partnership approach. This approach emphasises the need to identify a range of issues and concerns and to resolve differences of opinion and conflicts between different interests so that solutions are designed to meet various points of view (Environment Agency, 1998). The implementation of such an iterative approach was tested as part of this project through the four Brownfield Seminars in February and the Public Participation workshop in June.

1.4 The Use of GIS in planning

Land use planning and environmental planning have probably been best explored for GIS applications, although projects for economic development and housing and community planning are now emerging. In recent years there has been particular interest in the increased use of GIS for understanding and informing public policy and social reform at the local and community level (Padgett 1993).

GIS technology has transformed the creation, use and production of maps from a manual process to an automated digital process and revolutionised the manipulation and analysis of spatially referenced data. Better planning is dependant on a better understanding of the physical, political and socio-economic conditions in different areas and the ability to understand and respond to spatial trends, patterns and forecasts (Esnard & MacDougall, 1997).

Planners need to investigate the spatial relationships between natural, physical and socio-economic variables to explore and evaluate different alternative planning scenarios. Therefore, the value of GIS for urban and environmental planners is its ability to integrate diverse datasets under a common spatial theme. The connections between GIS and environmental planing are well documented by McHarg (1969).

The development of GIS for planning purposes started in the 1960s with the Canada GIS (CGIS). The aim of the CGIS was to create a computerised system for land use planning and it became a major repository of various datasets concerning the environment (The Inter-Agency Committee on Geomatics, 1989). During its first years of operation, the CGIS was used as a tool for environmental impact assessment (Griffith, 1980).

By the late 1980s, as the cost of hardware and software come down, planners at national, regional and local levels had started to use GIS for their daily business. Today GIS is used for a diverse number of planning exercises from the identification of development opportunities at the strategic level, to the creation and presentation of maps for public inquiries. As an analytical system, the most common functions include:

- the generation of buffers (zones delimited on either side of a line feature such as a road),
- polygon overlays (combination of different maps to differentiate areas displaying several characteristics),
- network analysis (shortest route from one place to another as determined on the basis of road-length, and
- suitability analysis (Esnard & MacDougall, 1997).

For an overview of the use of GIS in urban planning see Yeh (1999).

As a result GIS technology will continue to be made increasingly available to the public. To emphasise the increasing importance of GIS in planning, in April 1999 the Cabinet Office announced in its White Paper 'Modernising Government' that in ten years time the public should be able to conduct all of its transactions with local and central government digitally. This means that, by 2008 people should have access to the Internet to file their own planning applications, comment on other people's, research a property's planning history and comment on development plans (Planning, 1999). For example, users will be able to spatially locate the boundaries of a planning application and its related data within their local area.

1.5 Public Participation

1.5.1 Public participation and planning

Public participation in the planning process first emerged over 30 years ago. The concept began in the 1950s as part of the environmental planning process and continued during the so-called "Environmental Revolution" of the late 1960s. Since then, environmental planning and decision-making has become one of the most active fields in public participation research and practice. As a result, it serves as a test-bed for the development of public participation methodologies and techniques.

In recent times, there has been a trend toward more "open government" and public-inclusion processes in governance (Bloomfield *et al.*, 1998). Central and local governments often encourage the public to play an active part in the planning process. This process promotes a more open discussion with the public about decisions that have an impact on their environment and livelihood.

Examples of past research projects include a demonstration system developed by Dr Steve Carver and others at the School of Geography, University of Leeds. The 'Open Spatial Decision Making on the Internet' system was developed for the location of radioactive waste in Britain. It provides Internet access to a series of maps and enables the user to input his set of preferences. The output of the system is a suitability map of radioactive waste disposal sites.

Another system is part of **ESRC** "Virtual Society?" research initiative run by Dr Carver and his students imitated the "Planning for Real" exercise for the Slaithwaite village. In this project, the participant can log into a web site, click on a map of the village and post notes about future development plans.

One characteristic that these PPGIS share is that they have been developed by a 'top-down' approach. That is, they have been developed by 'experts' and make assumptions about how accessible and practical these systems are to non-expert users. This however is at odds with the bottom-up approach of public participative environmental decision-making advocated in the social sciences. A bottom-up approach to the design of PPGIS could improve both their effectiveness and efficiency as decision support tools. This is the reasoning behind the bottom-up approach advocated for the Wandle Valley project.

In Europe, most citizen participation is limited to commenting on the plan as it approaches final approval. Even if laws were changed, they argue, culture would prevent citizens from doing much more. The European version of PPGIS would simply allow for earlier and more widespread comment.
(Empowerment, Marginalisation And Public Participation GIS, 1999)

1.5.2 Aims and objectives of the public participation workshop

There is a growing academic interest in the use of GIS for public participation exercises, which has evolved mainly in geographical and related disciplines. This field has been named 'public participation GIS' (PPGIS). The concept was sparked by a series of debates and discussion about the relationship between GIS practice and society and as a result PPGIS has emerged as a test-bed for techniques, methodologies, ideas, and discussion about the social implication of GIS technology. For further information consult Openshaw (1991), Taylor and Overton (1991).

To date little attention has been given to how different user knowledge and expectations of PPGIS impact on the efficiency of these systems as decision support tools. The purpose of the workshops was to assess the expectations and knowledge of lay public users of a GIS system designed to inform the public about the future use of brownfield sites.

1.5.3 GIS and public participation

Collectively, the term Public Participation GIS (PPGIS) is used to cover the range of topics raised by the intersection of community interests and GIS technology. This initiative is concerned with the social, political, historical, and technological conditions in which GIS both empowers and marginalises individuals and communities. Generally this includes issues such as:

- changes in local politics and power relationships resulting from the use of GIS in spatial decision making
- providing what community groups need in the way of information and the role GIS plays or could play in meeting this need
- current attempts to use GIS to 'empower' communities for spatial decision making
- the impacts on communities of differential access to hardware, software, data, and expertise in GIS production and use

- the educational, social, political, and economic reasons for lack of access and exemplary ways communities have overcome these barriers
- the implications of map-based representations of information for community groups
- implications of conflicting knowledge and multiple realities for spatial decision making
- the ways in which socially differentiated communities and their local knowledge are or might be represented within GIS
- develop prospective models (economic, organisational, legal, and technological) that might result in increased and more equitable opportunities among the diverse segments of society in accessing geographic information and tools. A specialist meeting will be held to sort through the various research agendas, prioritise them, and write a proposal(s) to fund a limited number of studies that will illuminate the most important issues.
- other tracks at the meeting may attempt to identify new issues, such as collaborative decision-making involving the public. The specialist meeting will involve representatives of the academic community, as well as representatives from government and the non-profit community (Empowerment, Marginalisation And Public Participation GIS, 1999)

2.0 Methods: Development of the System

The development of the GIS was directed by:

- The wishes of the Environment Agency
- The advice of planners from the four London boroughs involved, Wandsworth, Sutton, Merton and Croydon
- Advice from other main interested parties including, Government Office for London (GoL), London Planning and Advisory Committee (LPAC), London Ecology Unit,
- Comments and suggestions made by the participants of the brownfield seminars
- The constraints of data availability

2.1 Structure of the GIS

Hardware:

Dell laptop **(Pentium 233 with 62 Mbytes RAM and 4 Gbytes Hard Drive)**

Software:

Windows NT 4.0 platform,

GIS capability: ESRI ArcView 3.1 and Arc/INFO for processing of data, AutoCAD 14, Dreamweaver web-page design software, Netscape and Internet Explorer web browsers.

2.2 Data

The data used in the Wandle valley project came from many diverse sources and in both digital and analogue formats. A summary of all the data used in the Wandle Valley GIS, together with source and format, can be seen in Appendix A.

The datasets that were placed on the system for the workshop and the reasons for including each dataset in the GIS are discussed below in more detail.

2.2.1 Environment Agency

Most of this data was already in digital format and compliant with ArcView 3.1. The groundwater level data however, was given in analogue format. Its method of integration into the system is discussed below.

The Environment Agency provided the project with the following digital datasets:

Sites of Special Scientific Interest (SSSI)

These cover areas that have been designated by English Nature as being of outstanding value for their flora, fauna or geology under the Wildlife and Countryside Act 1981. It is important that SSSI's are on the system as some brownfield sites may be within or adjacent to them and therefore pose a threat to protected species.

Metropolitan Open Land

This covers predominantly open areas within the built-up area that are a significant environmental resource to London. It is important that these areas are on the system as they are very attractive to developers and are therefore under great pressure to be developed. However, the protection of these sites from development is crucial to maintaining London's wildlife habitats and public amenities.

Rivers in the Wandle Valley

This includes the Thames, Wandle and Beverley Brook. It is the duty of the Environment Agency to promote the conservation and enhancement of the rivers of England and Wales. This can be achieved through incorporating environmental enhancements into flood defence works and through working with local authorities on plans for riverside developments. This coverage is on the system as many stretches of London's rivers have been over developed resulting in the fragmentation and loss of river corridors and an associated decline in nature conservation, recreational and amenity.

In particular The Thames is under pressure and this often threatened by development that encroaches onto the foreshore causing loss of wildlife habitats and channel capacity. Also the value and potential of the Thames as a working river has been reduced by the loss of commercial wharves. For further information consult the Environment Agency document, *'Partnership in Planning: Riverbank design guidance for the Tidal Thames'*. This describes Environment Agency policy in regard to encroachment for developers and aims to promote a closer working relationship wherever new riverside developments are proposed.

River floodplains of the Wandle Valley

The above rivers have associated flood plain areas where water can be stored in times of flood. The limits of the floodplain are defined by the peak water level caused by rainfall of a 1 in 100 year return period. Such a storm has a 1% chance of occurring in any particular year. The Environment Agency has a statutory responsibility for all flood defence matters concerning main rivers Under the Water Resources Act (1991).

In urban areas the use of floodplains has become restricted because of increasing development which has physically altered their appearance. Such development requires protection from flood events and this protection often consists of 'hard' flood defences such as walls and embankments. Sometimes these structures merely shift the flooding problem further downstream. As a result, the Environment Agency has devised policies to secure and restore the effectiveness of floodplains for flood defences in keeping with the principles of sustainable development. A full description of these policies can be found in *'Policy and Practice for the Protection of Floodplains*' which can be viewed on the Agency's website. A link to this is provided as part of the Brownfield system.

2.2.2 Ordnance Survey data

The project uses the Ordnance Survey Meridian dataset as a backdrop. For the purpose of this project, the Meridian dataset is made up of the following geographic features:

- motorways, A roads, B roads and minor roads
- main passenger railway lines

It is important to show the transport network as in its publication '*Planning for sustainable development: towards better practice'* DETR recommends that future development of brownfield sites for housing should be concentrated in areas well served by public transport and that increased density should be encouraged within easy walking distance of urban centres. Furthermore, through a sequential approach the government wants by selecting land for housing, to increase the proportion of people within walking or cycling distance of the services they require (Planning Policy Guidance 3).

The Meridian dataset has sufficient spatial and attribute data to allow network analysis to be carried out. This was an important consideration for the system as the proximity of brownfield sites to transport nodes and other local amenities were calculated (see below).

The dataset was also considered detailed enough to allow users with local knowledge to locate themselves at the street scale.

2.2.3 London Ecology Unit

LEU provided analogue data not previously seen in a GIS format before.

London Ecology Unit is currently funded by the London Borough Councils to provide information and advice to local authorities and other organisations regarding nature conservation and applied ecology. On formation of the new London Assembly in spring 2000 the Unit will become amalgamated into the Greater London Authority.

After discussion with Meg Game and Dave Dawson of London Ecology Unit, the dataset that was suggested as the most useful was the one showing 'Areas of Nature Conservation Importance for London'. These are currently listed in the relevant Ecology Handbook for each Local Authority. The lineage for this dataset was the habitat survey carried out by London Wildlife Trust in 1984-

1985 for the Greater London Council. LEU staff made augmentation and updates, by information collected from the public and by Council officers between 1991 and 1997.

The dataset was digitised using Arc/INFO and placed onto the brownfield system. It includes the following sites in Wandsworth, Merton, Croydon and Sutton:

Sites of Metropolitan Importance

These sites have the highest priority for protection and contain the best examples of London's habitats. These sites also contain rare species or assemblages of species or sites that have particular significance within large areas of heavily built-up London.

Sites of Local Importance

These are sites of particular value to nearby residents or schools and are particularly important in areas otherwise deficient in nearby wildlife sites.

Sites of Borough Importance (Grade I & II)

These sites are important in a borough-wide view but have been split into two sub-categories on the basis of their quality. Damage to any of these sites would result in a significant loss to the borough.

2.2.4 Local Authorities Unitary Development Plans (UDP)

Data from the Local authorities of Wandsworth, Croydon, Merton and Sutton was obtained from each authority Unitary Development Plan (UDP). Also Sutton provided a small sample of NLUD data for comparison with the UDP brownfield data.

UDP's are two part documents that set out a statutory framework of policies for each London Borough against which planning and development proposals can be assessed. The reports provide guidance as to how each Borough's natural and built environments should be directed and controlled to meet the needs of its residents. Part One contains strategic policies for the development of the Borough and Part Two provides the detailed planning context, policies and site specific proposals which guide development within the lifetime of the UDP (approx. ten years). Councils are under requirement to produce Unitary Development Plans under the provisions of the Local Government Act 1985 and the Town and Country Planning Act 1990. The following spatial information was digitised from each of the four borough's currently adopted Unitary Development Plans (as of June 1999) and entered onto the system:

Brownfield sites

These are areas designated by each of the four boroughs for redevelopment and range from vacant land to empty shop units.

Archaeological Priority Zones (APZ) & areas of archaeological importance

These are areas known to be of archaeological importance because of past finds, excavations or historical evidence.

Town Centres

These are centres providing a range of facilities for the local population including shops, employment, social and community facilities, transport services, leisure and entertainment.

District Shopping Centres

These are shopping centres catering for the main shopping needs of the local population. In *'Planning for Sustainable Development: Towards Better Practice'* the government recommends that if there are recognisable town centres in an urban area, then the development plan should aim to increase the residential population and mixed use within walking distance of the centre. Therefore the ability of the system to calculate the proximity of Town Centres and District Shopping Centres to brownfield sites was important to help identify those sites that are most suitable for housing and/or mixed use redevelopment schemes. This was done using Arc/View Network Analyst and is documented in more detail below.

London Borough of Merton UDP

Merton Council adopted this in April 1996 after four years of development. This UDP will guide the future use of land and buildings in Merton until 2006.

Schedule 1 Proposals

The following site specific Schedule 1 proposals for certain types of development were placed on the system:

- Housing: Sites 1H to 4H
- Business and Industry: Sites 1W to 10W
- Shopping: Site 1S

- Wimbledon Town Centre: Sites P1 to P18
- Colliers Wood Area of Opportunity: Sites 1CW to 18CW

Wimbledon Town centre and Colliers Wood were singled out by the UDP for special attention. Wimbledon Town Centre is the borough's main shopping centre, office location and an important transport interchange and Colliers Wood has been identified as an 'Area of Opportunity' with complex planning issues but with the potential to provide Merton with a range of new facilities. Detailed planning guidance is provided in the UDP for Colliers Wood so that new development can be co-ordinated with environmental improvement and a new transport service.

Recently the Council has reviewed the UDP policies in Merton. These are published in the UDP Sub-Committee Agenda of 21st June 1999. Policy Review Papers are presented in this report that consider the Business and Industry, and the Housing Site Designations. Changes to site specific proposals and completed developments that have been identified in this report will need to be incorporated into the system during the next phase of development.

London Borough of Wandsworth UDP

Wandsworth adopted this in December 1994. Wandsworth is the only borough in the Wandle Valley that provides planning applications and the current Unitary Development Plan on their web-site. Their system allows the public to access site specific planning applications and decisions through a search tool which requests the site name or an application identifier for a particular site (Figure 3.2). The public can send their comments back to Wandsworth after viewing this information and these comments are then fed back to a single email address, printed and distributed to the relevant case officer.

The Brownfield-GIS was linked to Wandsworths planning application web-page through individual site specific text pages attached to individual brownfield sites. The application identifiers and the site names were also provided on each text page in order that the operator could copy them directly into Wandsworths system (Figure 3.5). This was necessary because:

- Site names in the Unitary Development Plan do not necessarily match the site names required to access the relevant planning applications and decisions.

- The application identifier for each site is a result of the coding of individual planners on receipt of dated planning applications and not intuitive for each site.

London Borough of Croydon UDP

Croydons UDP was adopted in January 1997. The plan contains a proposals map with separate sheets for the North and South of the Borough and an inset map for Central Croydon. Central Croydon is a major regional office location and shopping centre consisting of a Central Business Area, a Central Shopping Area and Old Town. The lifetime for the plan is to the year 2001. Schedule 1 proposals P1 to P46 were all digitised and entered on the system.

London Borough of Sutton UDP

Sutton's UDP was adopted on 6th March 1995. Land Allocated for Housing is identified in Schedule 7 of the UDP. Only one major brownfield site was identified on the UDP proposals map, Royal Marsden Hospital Land. Additional brownfield site information for the Sutton area was provided by the Wandle Valley Development Partnership.

A small sample of National Landuse database (NLUD) data was provided by Sutton Borough Council. This was placed on the Brownfield GIS in point form to be used as a comparison against the UDP information.

2.2.5 Wandle Valley Regeneration Partnership (WVRP)

WVRP provided a comprehensive information on nine key development sites in the Wandle Valley Strategic Employment Corridor. The spatial information was in analogue format and was digitised onto the system using Arc/INFO GIS. The sites are:

- Cane Hill Park, Croydon
- Former CMA site in Morden Road
- Springfield Hospital, Tooting
- Plough Lane Football Ground, Wimbledon
- Beddington/Purley Way Cluster
- Former Beddington Tip Site, Beddington Lane
- Site North of Goat Road
- Beddington Farmlands

- Anchor Business Centre, Beddington Lane

2.2.6 Miscellaneous

Underground and mainline railway stations in and around the Wandle Valley were added onto the system. Identifying a six-figure grid reference for each station point from a 1:20,000 street atlas collected these datasets. Also Socio-economic data was provided through MIDAS.

2.3 Data Input and Analysis

2.3.1 Data Input

As mentioned previously, some of the data provided was already in digital format and compliant with ArcView, such as the Environment Agency datasets and some was in analogue format such as the LEU datasets. Also some of the Ordnance Survey Data was provided in National Transfer Format (NTF).

The digital data was easily added straight onto the GIS, but the analogue data was digitised and georeferenced using Arc/INFO. Also analogue groundwater level data was added to the system by on screen digitising the scanned images and creating ArcView 'worldfiles' to georeference the information.

Thames Polygon

The polygon depicting the river Thames was produced from the Ordnance Survey Meridian data set.

2.3.2 Information pages and Web Links

Web-based pages were designed using Dreamweaver software to provide information on Brownfield sites, ex-brownfield sites and areas of nature conservation (Figure 3.4). Hotlinks were set up from the polygons data themes as a direct link to Internet Explorer. As a result further information on the Internet could be accessed from these information pages.

2.3.3 Network Analysis and Buffering

Network analysis was carried out to show that the system could identify brownfield sites that met a certain criteria. ArcView Network Analyst provides tools that identify service networks and service areas. Service networks identify the accessible streets within a specified distance using the road

network and service areas identify the region that encompasses the accessible streets. Once the service network and service area had been identified ArcView's theme selection capabilities were used to identify which brownfield sites fell inside them (Figure 3.8).

This process could be used to identify which brownfield sites met a certain number of criteria such as less than 1km from a shopping centre, but within 1km of a tube station.

2.3.4 Postcode Locator

Postcode data was placed on the system so it could be used as a locator tool. By typing the first half of the postcode area into the ArcView Locator Tool, the system will zoom to that area (Figure 3.2).

2.3.5 Aerial Photography Data

Some aerial photography data taken from Cities Revealed™ was integrated into the system to cover some of the main brownfield sites (Figure 3.9). Once the zoom tool is used to view the screen closer than 1:10, 000 the on-screen display automatically changes to aerial photography data with the brownfield sites overlain.

2.4 The Brownfield Seminars

In January and February 1999 at the start of the project, a series of four seminars were held at UCL. This was to provide a chance for people with an interest in brownfield development in London to offer their views on the development of the system and to highlight the issues raised by the project. For a list of attendees see Appendix B. The seminars addressed four themes:

What defines a 'brownfield' site?

Assessment Criteria: on what variables should data be gathered?

Site Assembly: How should we manage data to help the process of making sites available to be 'recycled'?

What will the role of the Greater London Authority and the London Development Agency be? What future work needs to be researched and planned?

2.4.1 Investigation of user requirements

The development of the brownfield GIS involved a detailed investigation of user requirements for the system through a series of four seminars. These were designed with the following objectives in mind:

- to provide the Environment Agency and designers of the GIS with sufficient contextual information to give the project and system the best opportunity for success; and
- to provide the academics in UCL with clear pointers as to where future research needs on this topic should arise;

During the pilot project there were many seminars on urban regeneration and the brownfield debate held by different organisations. It was vital that the Wandle Valley Project set of meetings did not repeat what was being said elsewhere; in particular by the Urban Task Force. Therefore, the seminars, were focused on:

- issues relating to data requirements of the GIS system;
- to the specific challenges related to London; and
- on practical responses to the problems addressed.

2.4.2 Process of the Seminars

Participants were invited from a range of organisations; such as central government (e.g. DETR), local government (e.g. London Borough of Sutton), government organisations (e.g. LPAC and GoL), English Partnerships voluntary organisations and developers. It was thought that these organisations represented a variety of different aspects and interests in the 'brownfield debate'.

The structure of the seminars was very open. The Chair set the context for approximately ten minutes and then discussion was opened to the participants seated round the room. They were invited to comment about any aspect of the topic they were interested in, prompted by a series of 'key questions' which were provided at the beginning of each session. The length of discussion was approximately two hours. The following section describes the main topics and key questions that each seminar sought to address, and summarises the points of discussion arising from the seminars.

2.4.3 Issues posed by the Brownfield Seminars

Seminar One*: Issues of definition, criteria and survey (Thursday 28th January 1999)*

The definition of a 'brownfield' is not clear as it raises the issues of whether 'windfall' sites or derelict buildings should also be included. A working definition is needed in order to build a common source of data, but for other purposes one might ask whether a rigid definition is even helpful.

Once a definition has been decided upon, a data profile should be built up for each site - what planning, legal, ownership, chemical, biological and historical information should, or even could be made publicly available? What simple and cheap site survey technologies can be employed to gather the information? How can this be done without producing an unworkable result?

Seminar Two*: Data, users and site assembly processes (Monday 1st February 1999).*

How can data be best managed to aid in the process of making sites available for redevelopment? How can information be used to promote the drive to use urban brownfield more productively? What are the competing interests over London's brownfield resources, and how can they be reconciled in terms of access to data? What are the various data needs of strategic and local planners, residents, developers, conservationists and inward investors, and can they be met through one database?

Seminar Three: *Public involvement, skills and knowledge (Monday 8th February 1999).*

There is a lot of discussion about the social benefits and needs within the urban policy debate generally. There are widely voiced needs to increase skills and knowledge capacities; and to train, enthuse and involve the general community in the planning and implementation of urban regeneration greening and renovation. Development is seen to be as much about social inclusion as physical renewal. How can the common supply and management of information aid these objectives? What is the scope for future research and development between key agencies and actors?

Seminar Four: *Issues of future government structures (Monday 15th February 1999)*

It was the intention to proceed from this pilot to create a city-wide system of brownfield data as part of a London Environmental Information system. This would happen at the same time that London becomes the first UK City to experience cabinet-style government with a directly elected Mayor. The current drive towards decision- and policy-making on the regional scale epitomised by the

Regional Development Agencies also raises questions concerning the role of these new structures in planning, facilitating and implementing development. What opportunities do these new systems of governance bring to the possibilities of information sharing and exchange? What should the role of the GLA be?

2.4.4 Summary of key points raised at the Seminars

(i) Objectives of the system.

Differing users of the technology will ask different questions of the system and its database. For example, a developer may be concerned with site ownership and assembly issues whilst an ecologist may require information concerning the conservation status of a site. To accommodate all interests some possible suggestions for an approach to the system design were:

- to study either the potential or the capacity of the study area for brownfield development;
- to address supply-side questions such as ownership, site accessibility and current planning applications; or
- to look strategically at issues relevant over the entire study area such as environmental protection and potential uses.

(ii) Data availability and equality of opportunity

Data availability was thought to be a very important issue. It was felt that the system should not attempt to balance or negotiate interests through restrictions on data availability; rather that it should aim to provide data to all. Currently some sectors can obtain brownfield-related datasets much more easily than others and this needs to be addressed.

There was general dissatisfaction amongst urban developers and community group representatives regarding the form and content of currently available information. Because of this, any improvement in the presentation of available information was seen as a real gain. It was suggested that, a major value of the system for the public might be both the improved availability and the accessibility of the information that the system contains. Many groups felt that they currently have to fight to get hold of relevant information.

Participants also voiced concern about the creation of a system designed with the objective of only aiding developers in their search for sites to suit their own purpose.

Some participants argued that the system should aim to predict future brownfield sites by considering factors that are likely to produce new developable sites. However, it was also felt that this may fall outside the remit of the project and that processes such as the UDP are the correct, democratically accountable way of identifying new development sites.

(iii) Datasets that should be included in the system

Representatives from the construction industry identified site ownership as being a critical parameter that should be added to the system. Such data can be helpful for the developer of a site in facilitating both private/public partnership arrangements and for compulsory purchase orders. Site specific ownership data could also aid site assembly, which is commonly complicated by multiple ownership of the target development area. Information about site biodiversity and archaeological data would aid the conservation and environmental agencies in their strategic work; and would also aid developers in identifying possible constraints to development. It was also considered important to include local information on the system to facilitate either development or other changes in the use of land parcels.

Many participants wanted to see contextual as well as site-specific information. This may be physically or policy-based but could enable users to view brownfield development as one element in the regeneration programme of a whole area.

(iv) Updating information

The data maintained in the system may have to be re-cast in the light of policy changes and certain datasets such as those relating to Local Authority Unitary Development Plans will require updating on a regular basis. There should be a mechanism in the system that provides users with the date of the last update of each dataset.

2.5 Public Participation One day Workshop

2.5.1 Recruitment

The workshop was not just a means of exploring issues relating to PPGIS GIS; it was also intended that the participants should learn something about GIS and its uses. Recruitment involved trying to interest people associated with community and other voluntary groups based in Wandsworth.

The reasons for this were:

- local activists would be likely to have a greater interest in learning more about GIS technology and perhaps be aware of its increasing use,
- They were perceived as interested in local community issues.
- People in local voluntary groups are likely to be affected by the increasing use of GIS by, for example, local councils, but will not have been involved in setting up such systems.
- The relationship between many local groups and the statutory sector (in particular the local authority) can be characterised by a certain amount of mistrust, so it would not be appropriate to invite local councillors as public representatives.
- It was important that participants had some knowledge of the geography and environment of Wandsworth.
- participants were needed that represented the full spectrum of computer skills as this would enable us to explore issues of accessing and using the technology.

Fifteen people were recruited from a variety of local groups and encompassing the range of computer skills (see Appendix C).

2.5.2 Organisation and running of the Workshop

The workshop was divided into four parts:

(i) Introduction: this served three purposes:

- As an opening for the workshop: explaining the goals, the research team, and the participants.
- As a short introduction to GIS
- To explain the capabilities of the system and the data it contains.

The introduction was as free from jargon as possible to avoid disinterest and confusion. The aim was to give an overview of the richness of information in the system while subtly demonstrating basic GIS technology such as layering of information, data browsing and data querying.

(ii) Hands-on session

During this session, the participants divided into groups of three so that they might each have an opportunity to use the GIS. A 'GIS expert' who could help with any inquiries about using the package; and an observer supported each group. In case they were uncertain as to where to start,

participants were provided with a list of suggested activities (Appendix D). Tape recorders were used to record the session and Lotus ScreenCam software was used to capture the operations of the computer system.

(iii) Discussion

During the discussion the participants discussed their experiences from the hands-on session and evaluated the GIS.

The discussion groups each had one expert to answer technical questions and to provide any further demonstrations and a moderator to facilitate the discussion.

(iv) Conclusion

This final ten-minute session closed the workshop and provided some more feedback about the workshop by getting the participants to complete a debriefing questionnaire.

2.5.3 Summary of main points raised in discussions

The following sections summarise the issues raised by the participants during the hands-on and group discussions.

2.5.4 Summary of Hands-on Session

A. Orientation / location issues

- At a local level street names would have allowed participants to orientate themselves more quickly.
- At a larger scale users might have found major places of interest to be useful.

B. Data Accuracy and Reliability.

The participants highlighted some data inaccuracy; one group of participants pointed out that some postcodes were located in the river.

C. Physical access to the system

Accessibility, in terms of physical access to the information on the system was discussed by many of the participants who felt that there were large sections of the population that might be excluded if the information was just provided over the Internet. One suggestion for a possible solution was that the Council provide access to the system in local libraries.

Participants were also concerned about the availability of software to run the system and the cost implications to a local group or individuals if they purchased or used such a system. Software compatibility was also discussed.

D. Ease of use.

Some of the participants felt that many people would not have the necessary computer literacy or expertise to use the system as some felt that if they had been left on their own they would not have got very far. This would pose a real problem even if the system were available in libraries, as some people would lack the confidence to ask someone to help them.

E. Additional data

The participants felt that the system would benefit from a range of additional datasets such as proposed parking schemes, traffic densities and flows, schools, cycle routes and landmarks such as local rivers. One group of participants would have liked more information on population density, schools etc. so that they might be able to pro-actively plan the routes of a community bus themselves However, the network analysis, which showed up areas that were not well served by public transport, was seen as valuable..

F. Use of the system as a pro-active tool

Participants felt that the system had some potential for use as a tool to provide them with a means of presenting their cases for local issues to planners and local authorities in a pro-active manner. Participants felt that the use of such a system might allow for a more informed debate between the public and local authority representatives with the public on a more even footing with officials.

2.5.5 Summary of focus groups

The purpose of the groups was to discuss the participants attitudes to and concerns about working with the GIS as a planning tool. The issues raised were the;

- ease with which the GIS could be used - people with only limited computer experience felt able to access material quite easily
- people wanted to be able to add their own information to the GIS so as to ensure that the planning process was not driven entirely by the concerns of ‘experts’

- many people were enthusiastic about the new possibilities for gaining new knowledge about their local area offered by the GIS
- people agreed that although not an alternative to other methods for involving people in the planning process, one of the advantages of these systems is their ability to pursue and demonstrate 'what if?' scenarios of change
- People were not convinced that updating of the system would be done regularly if it were the responsibility of the local authorities. Instead academic institutions were seen as reliable agents who could take responsibility for updating the GIS.

2.5.6 Evaluation of the workshop

A full evaluation of the workshop recordings is still being done at UCL. For further information see UCL Brownfield Research Network Report for the Graduate School, July 1999 by Dr. Kate Heppell.

Participant evaluation

From the results of the questionnaire, it appears that the participants found the workshop both interesting and useful. Eleven of the thirteen said that they would take part in similar workshops if asked again.

The questionnaire identified some further issues that participants felt were not adequately addressed by the system or the workshop:

- A couple of participants felt that the profile of the River Thames and other riparian information in the system should be raised.
- Another participant commented that a data layer should be added that contained public pathways in the study area.
- In terms of the structure of the workshop one participant felt that there wasn't enough time allowed for small group discussion.
- Another commented that using the system was especially complicated if you had no prior computing knowledge.

2.5.7 Discussion

Many of the participants felt that the workshop was a learning opportunity for themselves as well as an opportunity for the researchers to gain feedback about the system. However, it might be

important in future workshops to establish more of a sense of equal expertise so that the workshop does not become an IT training exercise. This could be achieved by inviting the same group of people back for a further workshop as they are now familiar with the system and have an idea of the type of information they would like to see on it. If this were the case it would be important to gain permission from the appropriate data holders to run the system over the Internet so that the local groups could freely access the system after the workshop.

3.0 The System Design

3.1 The Brownfield GIS System

System Description

The Brownfield system allows the integration of diverse environmental, social and economic datasets relating to brownfield sites such as urban areas, areas of nature conservation, archaeology and transport networks. These different 'layers' of information concerning brownfield development were integrated with an Ordnance Survey Meridian backdrop (Figure 3.1).

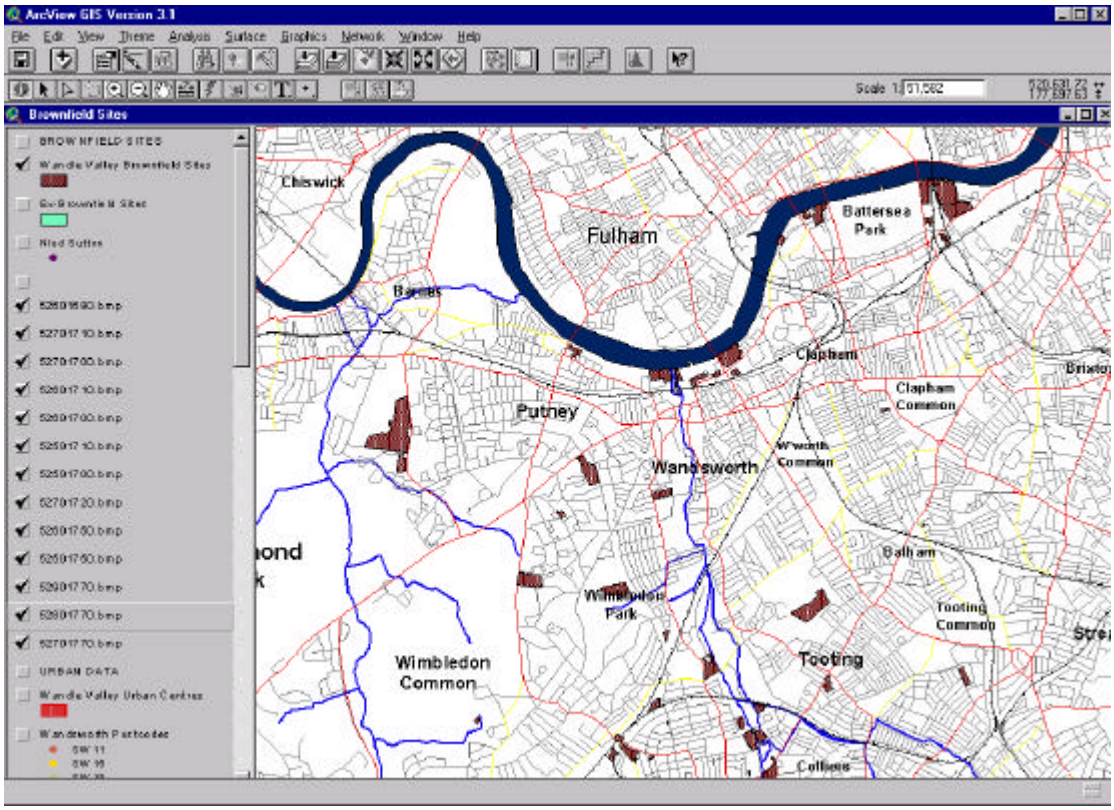

Figure 3.1: View showing the Ordnance Survey Meridian data set.

Relevant brownfield data has existed for some time, but has been difficult to access and understand. The Brownfield system integrates these disparate data sets.

System Capabilities

The system has a diverse range of capabilities including:

- Quick and easy to use location tool dependant on the first three digits of the postcode (Figure 3.2).

Figure 3.2: Location tool

- Brownfield sites proximity to floodplains and environmentally sensitive areas can be quickly and easily identified because of the way ArcView can 'layer' information (Figure 3.3).

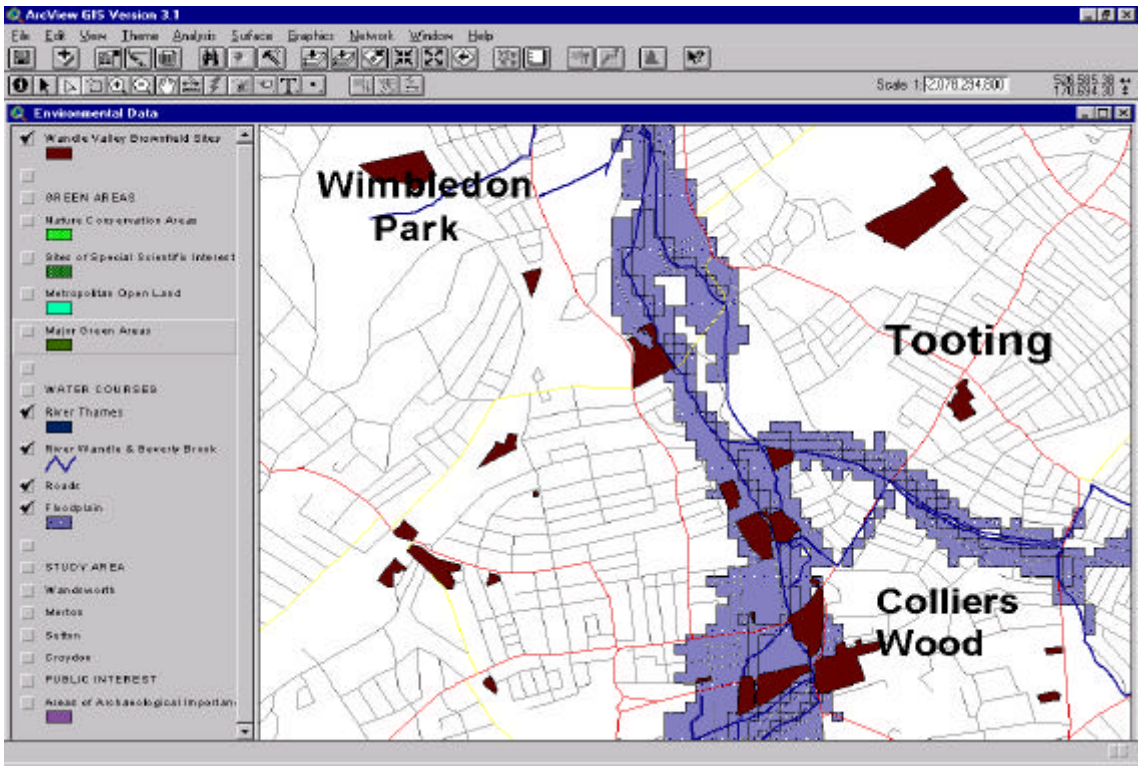

Figure 3.3: Demonstration of how ArcView can 'layer' information.

- Site-specific information and photographs of certain sites can be accessed using a web-interface by ‘clicking’ on the individual Brownfield site (Figure 3.4).

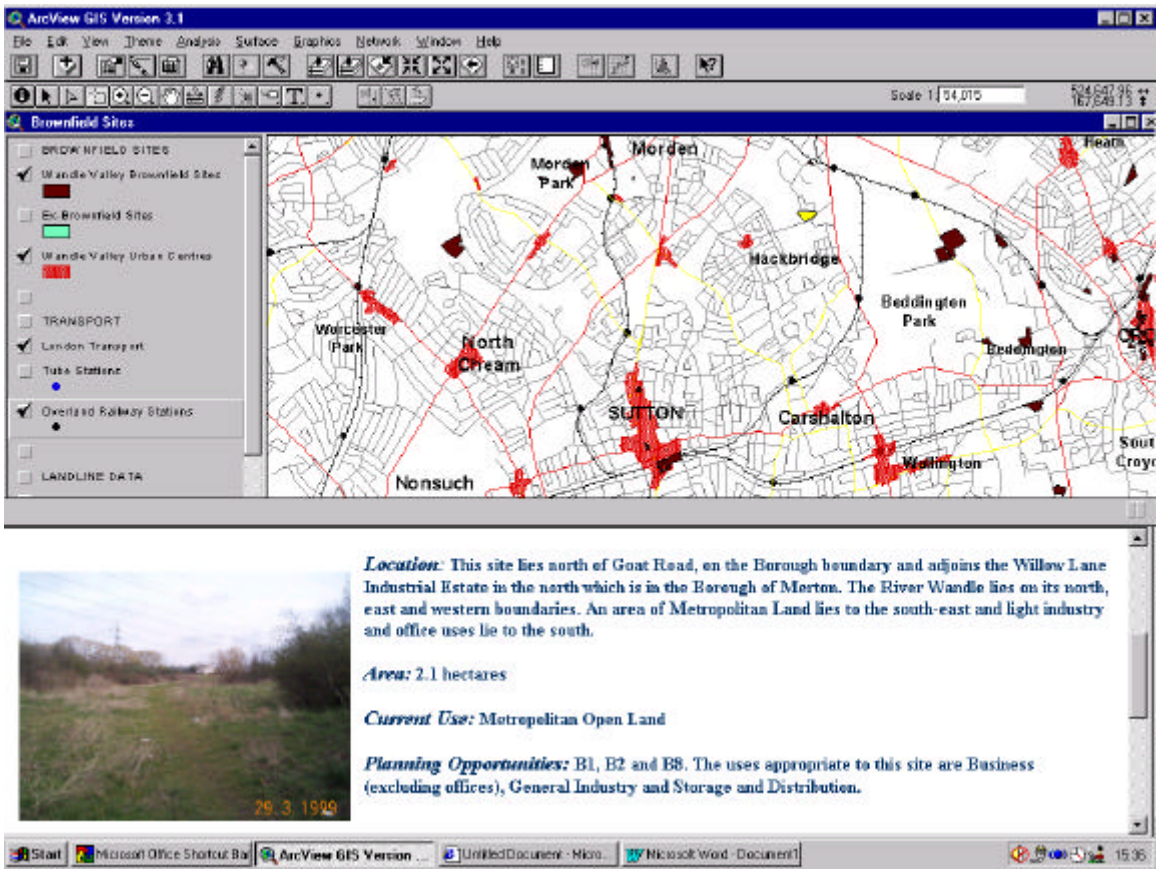

Figure 3.4: Site specific information links for each brownfield site in a web-interface

- Easy to understand graphics as they are based on familiar, well-labelled Ordnance survey data (Figure 3.1).
- From individual brownfield site web pages, other hypertext links have been established such as to the Local authority pages, Wandsworth Planning Register and independent community groups (Figure 3.5).

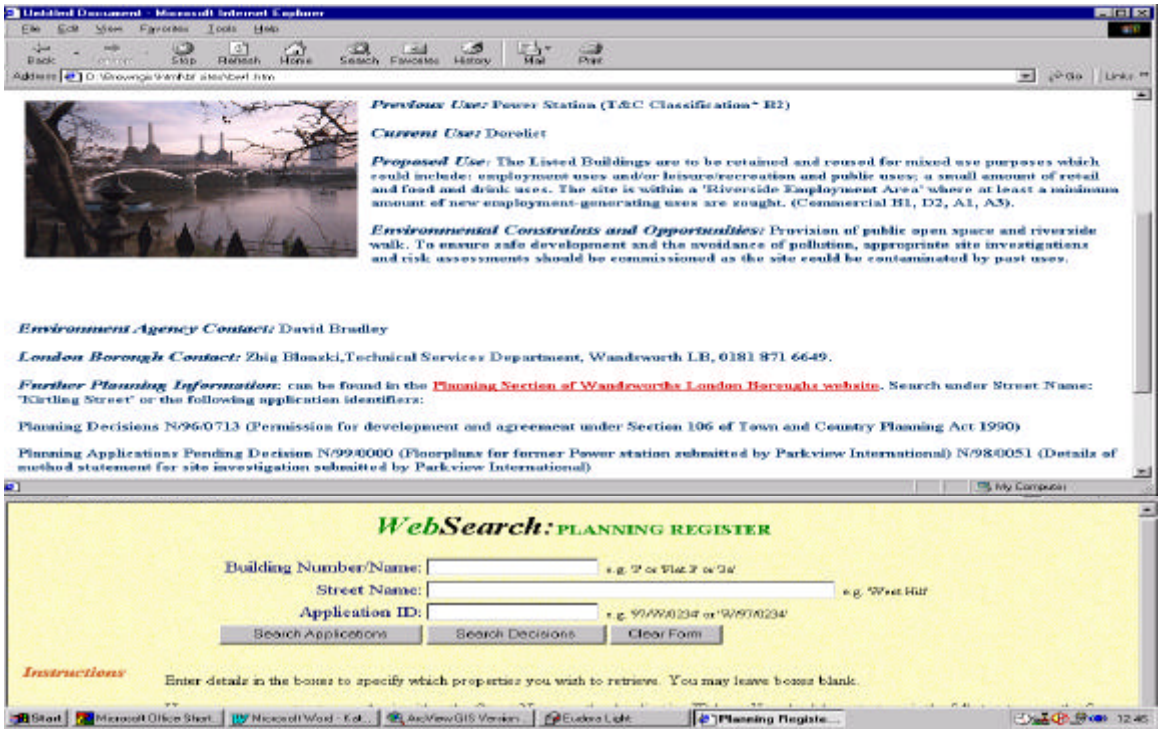

Figure 3.5: Demonstration of how the system uses web-based hypertext links to provide information on brownfield sites.

- Information can be accessed for the river flood plains by links to the Environment Agency policy page on floodplain development and from the areas of nature conservation (Figures 3.6 & 3.7).

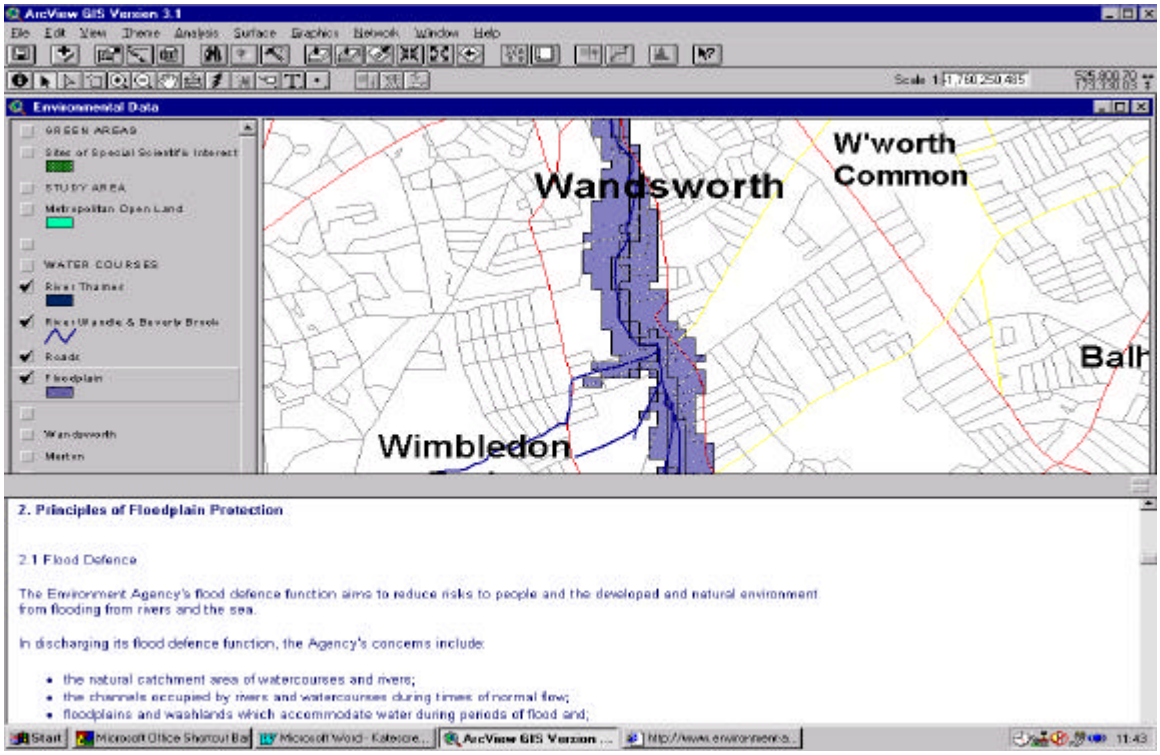

Figure 3.6: Links between the river floodplains and Environment Agency web pages on floodplain development.

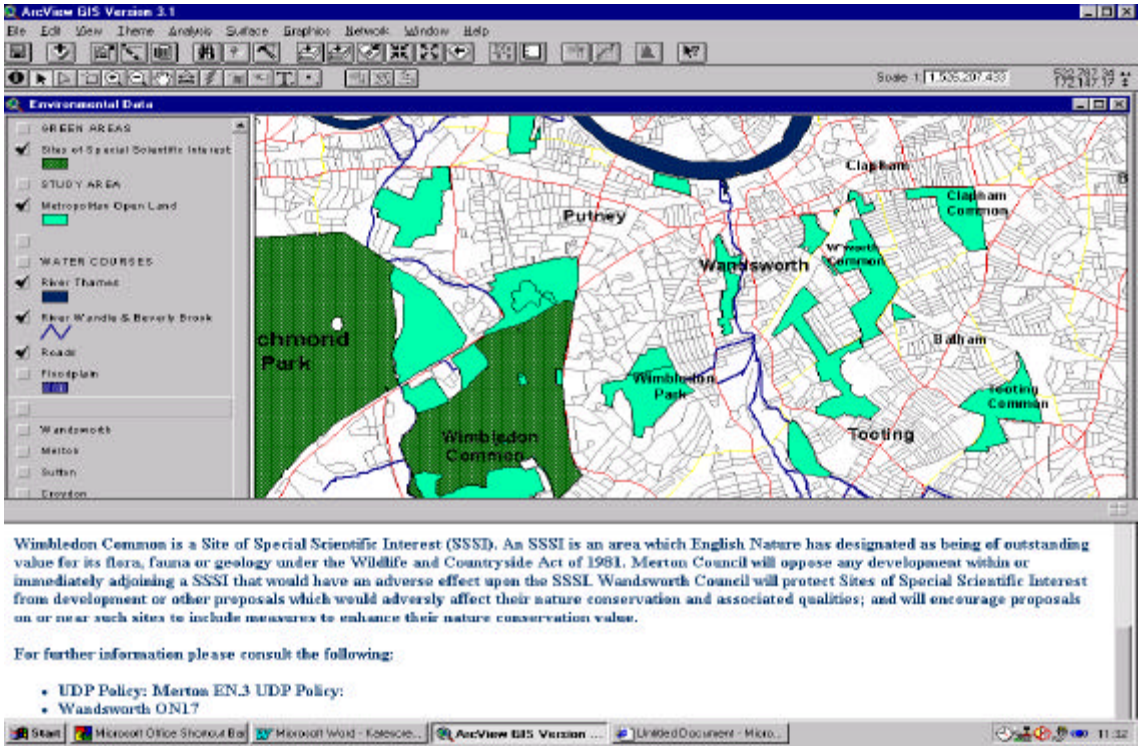

Figure 3.7: Links between environmentally sensitive areas and web-based site-specific information.

- Sites can be identified that meet certain criteria through network analysis, such as within 1km of an underground station or shopping area, within 400m of a green area, but not in the predicted flood zone (Figure 3.8).

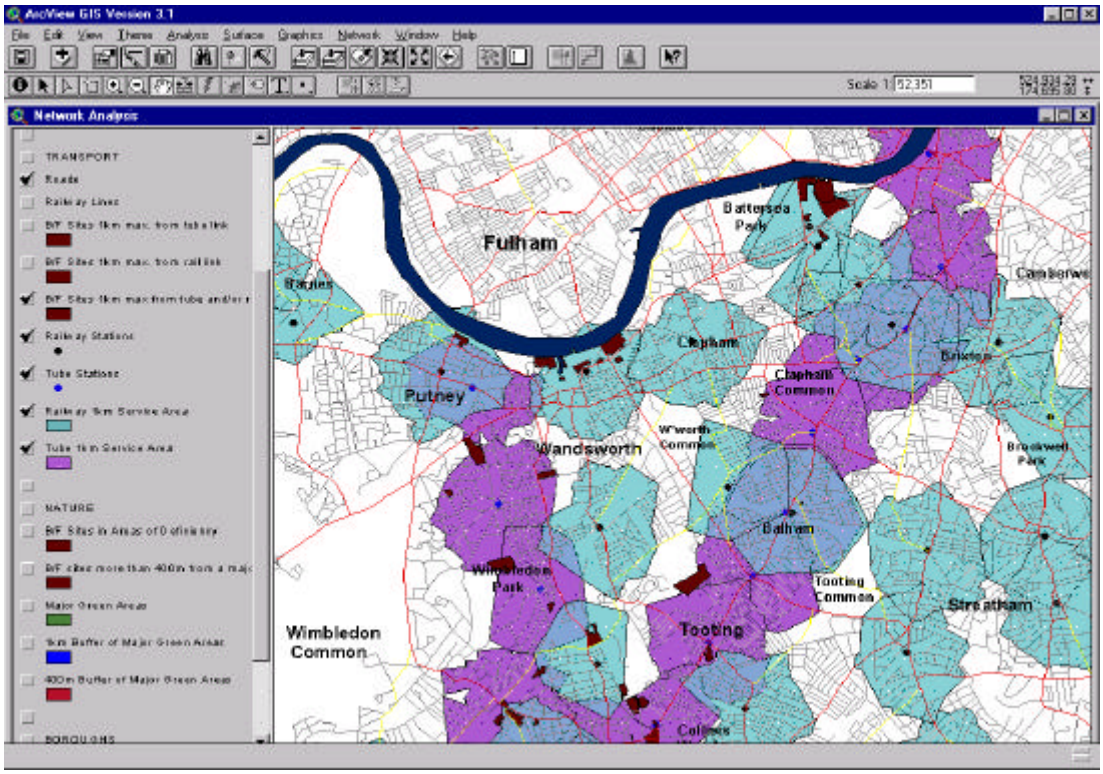

Figure 3.8: Network analysis showing 1km 'service areas' around tube and overland rail services in Wandsworth.

- By zooming into certain ‘high priority’ areas such as Colliers Wood and the land around Battersea Power station, the display of the system changes from Ordnance Survey map data to 50 x 50cm resolution aerial photography (Figure 3.9). This is useful as it allows the development potential of brownfield sites to be put into a greater local context.

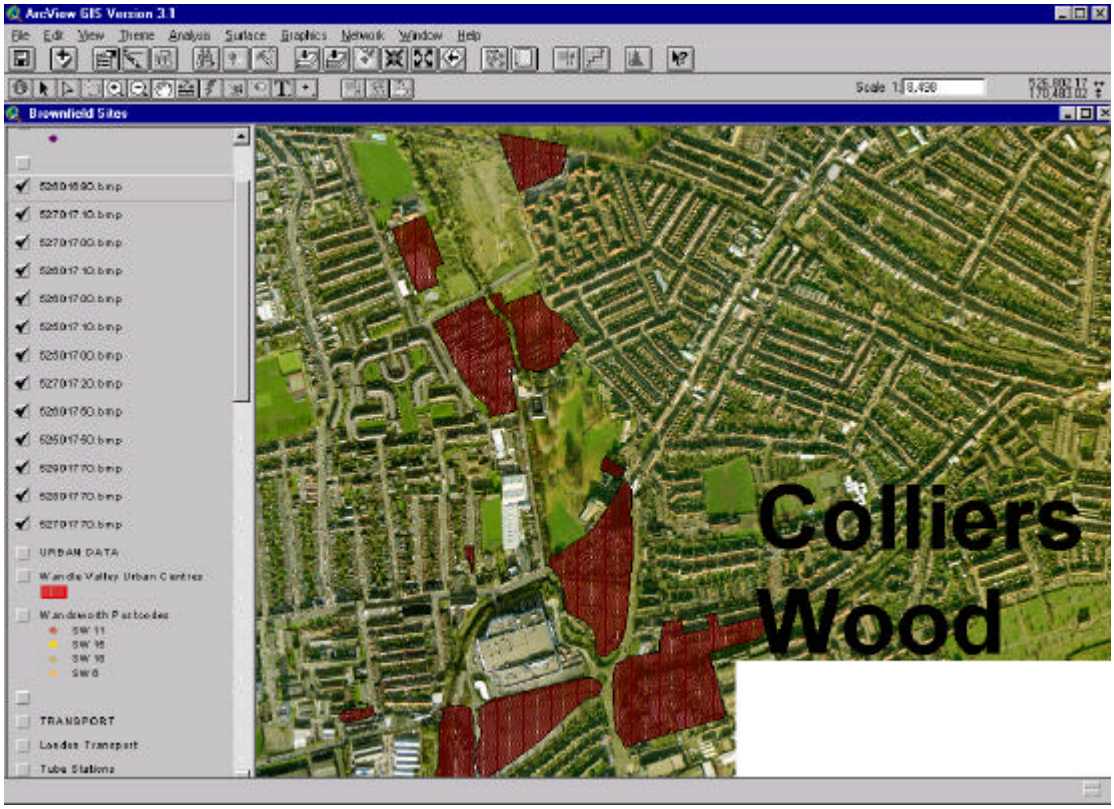

Figure 3.9: Aerial photography with overlain digitised brownfield sites.

4.0 Discussion and Conclusion

The system was put together within the time limit specified and most of the objectives were achieved. The completed system provides a useful tool that demonstrates the advantages that GIS has over more traditional mapping methods; its ease of integrating diverse datasets, updating and Internet links to name a few. However, throughout it’s development many issues were raised:

- By it very nature, a GIS is data-driven, and its success is dependant on the availability of data. At the start of the project it was hoped that we would be able to use National Landuse Database data (NLUD), but after consultation with DETR it became obvious that this would not be possible. Instead brownfield site locations were obtained from the UDP’s for each local authority as discussed above.

- Furthermore, data problems also occurred because of the Ordnance Survey data being used as part of the project and the associated copyright laws. This meant we were unable to make the system as freely available over the Internet as would have been useful from a public participation point of view. The OS did however support the project by providing approximately 100 thousand pounds worth of data as part of an agreement set up between the Jackson Environment Institute and the OS.

- Because much of the data on the system was digitised, it's accuracy and precision could be questionable. Some inaccuracy does occur in the digitising and georeferencing process, and as a result some of the datasets did not correspond to each other very well. However, it is stressed that the system was not intended to be used by surveyors for pin-point accuracy, but more as an information tool to try and encourage more public interest in the planning process and highlight the need for more sustainable development.

- At the moment the brownfield site polygons on the system are not very current, as they have been taken from each local authority UDP. This was because we were unable to acquire NLUD data at the beginning of the project, although Sutton local authority did provide us with a small sample of NLUD data for comparison purposes. Despite the age of the data however, it was still very useful to use as a prototype so that the potential of the system could be demonstrated. Furthermore, the system could be used as an alternative to the NLUD data or to complement the NLUD dataset. The NLUD data has been collected in an Access database but unlike the brownfield polygons represented on the Brownfield GIS, each site is in point data form. Because of this the NLUD data at the moment has no means of representing each brownfield site, as an area on screen and so is not as visually useful as the brownfield GIS developed here.

- As well as the problem with lack of current brownfield data, other issues such as data accuracy need to be addressed in the long term if this is to be a working system. Who would monitor the accuracy and precision of the information on the system and who would be liable for any errors?

- As highlighted in the public participation workshop and the Brownfield seminar series, there could be a problem with up-dating the information in the long-term. This highlights a number

of issues such as; who would physically update the system?, where would the data come from?, who would monitor the accuracy of the information provided in the system in the long-term.

- Despite the success and interest raised by the public participation workshop and the seminar series, there are currently very few successful on-line examples. People should be aware that empowerment through electronic media is still a real challenge.

- Some participants in the workshop felt that the system should aim to predict the brownfield sites of tomorrow by considering sectors that are likely to produce new sites. However, such information can be politically sensitive and their inclusion or exclusion is very subjective. Also, comprehensive capacity studies demand the inclusion of sites such as cemeteries, playing fields and allotments that are not currently available for development. Predicting future availability of sites lies outside the remit of the project and processes such as the UDP are the correct way of identifying new development sites or areas.

Despite these issues, there are many advantages of the Brownfield GIS over more traditional forms of data capture:

- This system allows the easy integration of different data sets so comparisons can quickly be made between brownfield sites and floodplains for example.
- Additional information such as ownership, size of the site and environmental and transport data can quickly and easily be accessed for each brownfield site in a web environment.
- A hierarchy of development suitability can be established by comparing brownfield proximity to public amenities such as town centres and public transport.
- It's development helped involve the public in planning issues

Despite the drawbacks to the system, the finished product has been well received by both the local authorities and the public. It is hoped that this project will demonstrate what GIS can achieve for the brownfield debate and furthermore how important it is for the development process to be iterative.

5.0 Future Work

5.1 The possible value of the system for the future governance of London

By summer 2000 development policy objectives for London will be led by the Greater London Authority and the board of the London Development Agency. They will need to understand and address the development trends within London because of the estimated housing shortage of 4.4 million homes. To achieve this they will require long-term, rolling and well-maintained data. With these factors in mind, the Brownfield GIS could be of use to the GLA for a number of reasons:

Easing the development of 'difficult' sites

The Brownfield system could help the GLA search for 'quick-wins' and take a pro-active approach to the development process. It could be used to help develop a GLA land bank. One drawback is that this would require comprehensive up-to-date information on a site-by-site basis.

Provision of public access to information concerning land development.

The public is unlikely to readily accept the Mayors decisions so any system that can demonstrate that different options have been given due attention will be useful. The system may also be of value in assisting the GLA in disseminating wider messages to the general public such as nullifying the myth that the vast majority of brownfield land parcels are dangerously contaminated sites.

Promotion of best practice and new ideas.

The system could become a tool to promote new ideas developed by the GLA and LDA concerning development strategies for London by incorporating examples of 'best practice' in urban regeneration and well researched information,.

As mentioned above future work could include uptake of the system design to complement the NLUD initiative and/or the new Greater London Authority. The system could also be used as a tool to:

- identify which public data policies have positive influences on small neighbourhood businesses and which are negative
- add weight to the growing drive for public involvement in the planning and redevelopment process.

Recently the Council has reviewed the UDP policies in Merton. These are published in the UDP Sub-Committee Agenda of 21st June 1999. Policy Review Papers are presented in this report that consider the Business and Industry, and the Housing Site Designations. Changes to site specific proposals and completed developments that have been identified in this report will need to be incorporated into the system during the next phase of development.

It is hoped that this project has at least demonstrated what GIS can achieve for the brownfield debate and sustainability issues and furthermore how important it is for the development process to be iterative.

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Appendix A: Data List

- **Brownfield Data**

1. All Brownfield sites in the Wandle Valley from the 4 UDP's
2. Sutton's NLUD collection (as point data)
3. Centroids of all Brownfield Sites
4. Ex-Brownfield Sites

- **Urban Data**

1. Town Centres
2. District shopping centres
3. Centroids of all centres of urban importance

- **Green Data**

1. Main green areas/parks
2. Main Green Area Centroids
3. Nature conservation areas, inc. areas of local, metropolitan and borough importance 1 & 2
4. Metropolitan Open Land
5. Sites of Specific Scientific Interest

- **Transport**

1. *Meridian Data*:
   - A roads
   - B roads
   - Rail-links
   - Motorways
   - Residential roads
   - Tube Stations

2. *Landline Data*:
   - Individual land parcels
   - Roads
   - Overland Railway Stations

- **Water Courses**

1. River Thames (polygon)
2. River Wandle & Beverly Brook
3. River Thames (line)
4. Floodplains of River Wandle & Beverly Brook

- **Study Area**

1. Four Local Borough Boundaries
2. Beddington and Mitcham Area of Opportunity Boundary
3. Wandle Valley Regeneration Boundary

- **Socio-Economic Data**

1. Population Density per Enumeration district
2. Population
3. Enumeration Districts

- **Public Interest**

1. Archaeology Priority Zones and sites of special interest
2. Pathways

- **Network Analysis**

Urban Data

1. Urban Service Area (500m–100m)
2. B/F sites 1000m max from urban areas
3. Urban Service Network

Transport

1. Tube Station 1000m Service Area
2. Tube Station 1000m Service Network
3. B/F sites <= 1000m from tube/rail
4. Railway Station 1000m Service Area
5. Railway Station 1000m Service Area

Green Data

1. 400m buffers round main green areas
2. B/F sites > 400m from a major green area.
3. 1000m buffers round main green areas
4. B/F sites >1000m from a major green area

Appendix B: Attendance Lists for Seminars

Seminar One: Thursday 28th January 1999

Name	***Organisation***
David Fitzpatrick	*British Urban Regeneration Association*
Richard Bourn	*Council for the Protection of Rural England*
Jonathon Langham	*DTZ Chartered Surveyors*
Ken Whittaker	*English Heritage*
Ann Symonds	*Environment Agency*
Alex Hamel	*Environment Agency*
Detlef Golletz	*Government Office for London*
Jeremy Peter	*House Builders Federation*
Adrian Moran	*Housing Corporation*
Max Dixon	*London Research Centre*
Mathew Frith	*London Wildlife Trust*
Meg Game	*London Ecology Unit*
Lucy Gillie	*National Food Alliance*
Mark Daniels	*Town and Country Planning Association*
Mario Wolf	*Sutton Borough Council*
Charlie Fulford	*Urban Task Force*
Michelle Foster	*University of Westminster*
Peter Hall	*Bartlett, University College London*
Alex Aurigi	*CASA, University College London*
Mike Batty	*CASA, University College London*
Muki Haklay	*CASA, University College London*
John Murlis	*JEI, University College London*
Kate Heppell	*JEI, University College London*
Rebekah Boott	*JEI, University College London*
Dan Bloomfield	*Dept. of Geography, University College London*
Carolyn Harrison	*Dept. of Geography, University College London*
Richard Munton	*Dept. of Geography, University College London*

Seminar Two: Monday 1st February 1999

Name	***Organisation***
Diana Morris	*SERPLAN*
Christian Wright	*Civic Trust*
Ken Whittaker	*English Heritage*
Ann Symonds	*Environment Agency*
Alex Hamel	*Environment Agency*
Detlef Golletz	*Government Office for London*
Jeremy Peter	*House Builders Federation*
Chris Watts	*Housing Corporation*
Jan Lewis	*Wardell Armstrong*
John Box	*Wardell Armstrong*
Michelle Foster	*University of Westminster*
Lynda Addison	*Town and Country Planning Association*
Sue Batty	*The Bartlett, University College London*
Mike Batty	*CASA, University College London*
Muki Haklay	*CASA, University College London*
John Murlis	*JEI, University College London*
Rebekah Boott	*JEI, University College London*
Dan Bloomfield	*Dept. of Geography, University College London*
Carolyn Harrison	*Dept. of Geography, University College London*
Richard Munton	*Dept. of Geography, University College London*
Kate Heppell	*JEI, University College London*

Seminar Three: Monday 8th February 1999

Name	***Organisation***
Nicole Crockett	*Architecture Foundation*
Ken Whittaker	*English Heritage*
Adrian Moran	*Housing Corporation*
Eric Sorenson	*London Development Partnership*

Michelle Bailleux	*London Development Partnership*
Detlef Golletz	*Government Office for London*
Jenny Bates	*Greenwich Sustainable Millennium Network*
Lynda Addison	*Town and Country Planning Association*
Michelle Foster	*University of Westminster*
Alex Hamel	*Environment Agency*
Ann Symonds	*Environment Agency*
Miffa Salter	*Urban Task Force*
Alex Aurigi	*CASA, University College London*
Mike Batty	*CASA, University College London*
Muki Haklay	*CASA, University College London*
John Murlis	*JEI, University College London*
Steve Evans	*JEI, University College London*
Rebekah Boott	*JEI, University College London*
Dan Bloomfield	*Dept. of Geography, University College London*
Carolyn Harrison	*Dept. of Geography, University College London*
Richard Munton	*Dept. of Geography, University College London*

Seminar Four: Monday 15th February 1999

Name	***Organisation***
Michael Gwilliam	*Civic Trust*
Ken Whittaker	*English Heritage*
Adrian Moran	*Housing Corporation*
Eric Sorenson	*London Development Partnership*
Michelle Bailleux	*London Development Partnership*
David Hutchinson	*London Research Centre*
Tim Wacher	*Royal Institute of Chartered Surveyors*
Lynda Addison	*Town and Country Planning Association*
Michelle Foster	*University of Westminster*
Alex Hamel	*Environment Agency*
Ann Symonds	*Environment Agency*

Mike Batty	*CASA, University College London*
John Murlis	*JEI, University College London*
Steve Evans	*JEI, University College London*
Rebekah Boott	*JEI, University College London*
Dan Bloomfield	*Dept. of Geography, University College London*
Carolyn Harrison	*Dept. of Geography, University College London*
Richard Munton	*Dept. of Geography, University College London*

Appendix C: Workshop Participants

Gender	Age group	Education (highest)	Occupation	Interests and affiliations	Computer literacy			
					PC	e-mail	Internet	GIS
M	55-64	O	freelance environmental consultant	• planning in relation to cyclists and pedestrians • member of amenity society; • member of special interest group	E	E	N	X
M	35-44	PG	freelance architect	• development pressures along river front; • community interface with planners and accessibility of planning system • member of pressure group; • member of amenity society	E	E	E	X
M*	35-44	PG	writer/ producer	• walking, cycling, water recreation; • ways of getting an overview • member of amenity society	E	N	N	X
M	45-54	PG	volunteer	• participatory processes in land use	N	X	X	X

			community/ environmental projects	and development • member of pressure group; • member of special interest group				
M	55-64	PG	architect	• role of property industry in planning process; • local community involvement in planning • residents association; • member of special interest group	N	X	N	X
F	45-54	PG	lecturer	• role of amenity societies; • member of amenity society	E	E	N	X
M	55-64	O		• rambling and walking; • computerisation of rights of way records • special interest groups	E	E	N	X
M	45-54	PG	artist	• has been involved in community planning for 25 years • member of pressure groups	E	E	E	X

				• member of residents association				
F	45-54	A	administration director	• local traffic and library planning • residents association	E	E	E	X
F	45-54	PG	unemployed	• open space and environmental issues • member of amenity societies	E	E	E	N
M	55-64	PG	retired	• planning especially property development and development control • member of amenity society	X	X	X	X
F	55-64	F	retired	• cartography • member of amenity society	X	X	X	X
M	45-54	G	self-employed community planner	• community and participatory planning; community development/regeneration • member of pressure groups; • member of amenity societies	N	X	X	X
F	25-34	G	administrator	• local resident	E	E	E	X
F	25-34		lecturer	• contaminated land • ex local resident	E	E	E	X

Key

Education: O = O-level; A = A-level; F = further education; G = graduate; PG = postgraduate

Computer literacy: E= experienced; N = novice; X = no experience

Affiliations: Amenity society eg Wandsworth Society

Pressure group; eg Gargoyle Wharf Community Action Group

Special interest group eg cycling , walking

- Did not attend workshop

Appendix D: Activity List for the Public Participation workshop

Tools for Planners - Tools for People?

A Workshop for Local Community Groups

'Hands On' Session

Below are some ideas for activities that might help you explore the system. These are **only suggestions** so please feel free to explore any aspect of the Geographical Information System you wish.

- Locate your street/home on the system.
- Locate and view photographs of proposed development sites in Wandsworth.
- Explore and overlay the different layers of information on the system and the text or photographs that are linked to these.
- Explore the links to the Internet through the system.
- Investigate how to ask questions of the information in the system.