

Good Practice Guidelines

Participatory Approach to Core Area Development A Guide to Good Practice

DFID Research Project R 6860

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These Fact Sheets set the current urban scene for the specific topic each cover and suggest ways and means within that topic towards achieving sustainable mixed use core area development.

Participatory Site Planning

Purpose

Drawing together the key physical, social and economic factors to define a brief and develop proposals for the development of the site, which will respond to the needs of the stakeholders and which have long-term viability and sustainability.

With mixed use development aiming to integrate a wide variety of different land use and tenures, the preparation and planning phase needs to be thorough to avoid the possibility of having to introduce expensive alterations at a later stage. The use of computer modelling exercises (outlined here) and participatory planning approaches (see Fact Sheet 6 and Fact Sheet 9) during this phase help to assess the financial affordability and cultural acceptance of different development scenarios. This introduces an element of transparency from which trust can begin to develop between stakeholders.

The use of an approach that integrates stakeholders into planning processes also provides the existing community with an opportunity to influence the design layout and use of the site. Whilst participatory approaches may seem time consuming, a development is far more likely to remain sustainable in the long term if stakeholders are allowed to take part in the development of their own living environment.

What is Site Planning?

Site planning is the general term given to the design of layouts for urban areas involving several or many buildings, and including the location of roads, housing, commerce, industry, public spaces and other areas. Frequently in the urban context, site planning involves the redevelopment of a site already in use. Obviously, the nature of the task will change with the context although several principles remain consistent (see box 10.1).

Site planning exercises (and the design process in general) need to balance many issues, a significant number of which may be conflicting. Not only does the physical condition of the site represent a complex problem, there are likely to be

many people with an interest in the process (see box 10.2). Here too there is likely to be conflict. The degree to which various groups and individuals are represented and accommodated in the process will vary as will the local political and legislative framework in which it is located. Much will depend on who is initiating the redevelopment scheme in the first place – a commercial developer, the landowners, the local or development authority, the residents or local businesses or a combination of any one of them. However, in order to achieve development which is appropriate and sustainable in the long term, it is important to utilise participatory approaches to site planning (see Fact Sheet 6). A consistent issue however, is that large development sites often represent a significant capital investment.

Box 10.1: The Primary Factors Influencing the Site Planning Process

Physical constraints:

- Size and dimension.
- Physical condition, topography, water table, ground conditions.
- Location and access: road access and other local urban infrastructures such as public transport and local amenities or services.
- Available services: water, sewerage, power and communications.

Cultural context

- Resident populations.
- Resident tenure and pattern of ownership.
- Development process and political involvement.
- Other stakeholders.

Economic context

- Local economic activity and opportunity.
- Development pressure on the site.
- Resident economic activity (formal and informal).

Legislative framework

- Local town planning and building controls.
- Land ownership and control.
- Tenure and rights of resident populations.

The Design Process

Design is sometimes described as the art of the possible. When dealing with complex problems the design process can appear to be somewhat obscure to outsiders but is less so if broken down into a series of stages.

1. The start of any design process is to determine need - if change takes place in what form is it desirable?
2. The second step is to determine potential - within what range is change possible and practical?
3. The third step is to determine available resources and agents for change - can change be funded, managed and sustained?

The range of stakeholders involved in a major urban site planning exercise is frequently large and diverse. Many are likely to have differing and possibly conflicting aspirations or expectations for the development. For example, existing residents may envisage minimum change and seek to maximise amenity while large corporate landowners may, on the other hand, prefer dramatic change and seek to maximise profit. The resolution of these conflicting demands is likely to have a political component. However, even where there is a large degree of consensus, it may still be difficult to move beyond the realm of fixed assumptions and rigid expectations held by the different stakeholders.

It can be difficult to envisage change and people tend to compare a particular vision of the future with that presented as existing. In this process they are likely to resort to familiar models. Residents may aspire to a home they have seen in another district, whilst developers having had success on one site will look for a similar site for a similar project. Those involved with change, such as land agents or funding bodies, for example, tend to resort to fashionably tried and tested practices. Thus, in order to start the design process it is necessary to question the accepted wisdom and try to have a glimpse of where it will end. This paradox can potentially lead to a situation where expectations become entrenched, however the range of possibilities should be opened up and fully explored.

Box 10.2: Typical Stakeholders

Land owner, or owners.

People with other forms of tenure on the site.

People who live on or near site and their families

People who work on or near the site and their families.

Potential developers.

Potential investors.

Local communities and community leaders.

Local authorities and town planning agencies.

Government funding agencies.

NGOs and foreign funding agencies.

Local community leaders and political representatives.

Public utility service providers.

Designers are familiar with this problem and use it to advantage. A structured design process will identify a series of differing possible scenarios and assess their relative merits. This process will help define the design problem, the design brief as it is known, as well as establish the limits of potential change. In the light of this experience further scenarios can be proposed and tested refining the acceptable and eliminating the unacceptable. The design process can be seen as a cyclical one in which proposals are refined. This process can offer a range of alternative possibilities between which a final direction for change can be negotiated.

The Stages of a Participatory Design Process

Participatory planning processes are discussed in Fact Sheet 6, however the stages in whichever process is used are likely be as follows:

- 1. Assemble, establish and interpret the existing physical, legal, social and economic constraints and opportunities.** These will include site survey (identify and map land ownership, site boundaries, site structures, physical constraints, road access, and the level of infrastructure and services already on site); legal and statutory parameters and the existing local social and economic contexts. For further information see also Fact Sheets 1,2,3 and 4.
- 2. Establish the broad aspirations of the key stakeholders,** in particular the landowner and the present occupiers of the land. The use of in-depth interviews with key informants might also involve 'mapping' exercises at which stakeholders are asked to indicate what they would like to see from any redevelopment scheme. The mapping exercises could encompass preferred arrangements at the household and neighbourhood levels.
- 3. Establish the basic design parameters,** e.g. how many families are to be housed on the site and what division or tenure arrangements of the land between the landowner and the residents might be acceptable? In relation to the latter, the two sides are likely to have different views on the way in which the land should be divided between them. There are two possible ways to deal with this, first to work on a compromise between the two views and second to look at the two views as the limits within which the scheme has to be made to work. Drawing together and assimilating these first three stages will establish the 'brief' for the development: i.e. what precise factors the development should respond to and in what manner.
- 4. Develop outline proposals** based on the understanding of the stakeholder aspirations developed in Stages 1 and 2. This process could be facilitated by technical support professionals and/or support organisations, and should primarily act as a focus for the participatory process. Ideally, a range of proposals should be developed at this stage with some outline information provided on the financial and management implications of each (see box 10.4). The use of computer modelling and site planning tools (see box 10.8)

to investigate and appraise a range of appropriate options through stakeholder workshops can be an ideal platform in the participatory process, and can ensure that the outcome reflects the needs of all stakeholders involved.

5. **Explore the outline proposals** and develop them as appropriate in a workshop process with representatives of all the main stakeholders. In essence, the aim will be to use the range of outline options developed in Stage 4 as a basis for further refining through the participatory planning process. The involvement of professionals and support organisations to facilitate the process, providing a background of technical information and helping to provide a structure within which the process can operate is important.
6. **Further develop the preferred options and develop the detailed legal and financial framework** necessary to proceed with the scheme. The support organisations and/or technical support professionals will play a key role in this stage, and there should still be an ongoing stakeholder dialogue. The way in which this dialogue, negotiation and feedback could be organised would need to be explored.
7. **Present the preferred options at a second stakeholder workshop**, the aim of which would be to reach wider agreement on the way forward. This stage may not be necessary if the process has already been completely participatory up until this point. However, it will be essential to ensure at this outline stage that the statutory authorities are consulted and their agreement reached in principle before proceeding with detailed design. This would take the form of an application for outline planning permission where this procedure is in force.
8. **Proceed with the detailed design and implementation** of the scheme after outline approval from the planning authorities. At this stage, an environmental impact assessment is advisable (and in some cases mandatory) to enable the extent of the impact of the development on the local and surrounding environment to be assessed (see box 10.5).

Factors to Consider in the Layout and Design of Selected Options

The designing and drawing up of plans that accommodate mixed residential and commercial space will be shaped by existing planning and building legislation but should also identify and consider:

- The level and extent to which commercial space could be developed before it compromises the residential aspect of the site.
- Whether demand exists for the type and scale of commercial development being proposed on the site.
- Whether those proposed commercial developments would generate sufficient capital to cross subsidise low-income accommodation on the same site.

- Whether the proposed design and layout options are financially feasible and affordable to potential or existing commercial and residential occupiers.
- Whether proposed density levels are culturally and statutorily acceptable.
- Reach agreement on the size, density, number and type of tenure arrangements to be developed on site.

Box 10.3: 'Design for Development' Workshop, London, September 2000¹

The principles outlined within this Guide to Good Practice were developed in the DFID-funded Core Area Development and Urban Projects Manual research projects. As a key part of the research, the development approach was tested at a workshop in London, held jointly by the Max Lock Centre at the University of Westminster and Geoffrey Payne Associates. In the workshop, participants worked in teams, using the techniques and tools presented, to explore site development in inner city and peri-urban areas.

The workshop examined the role of urban development briefs and flexible urban development guidelines as an alternative to more traditional regulatory frameworks, dependent on rigid masterplans and zoning approaches. The workshop involved team-based design exercises producing development options for a core area site, currently occupied by a squatter settlement of 15,000 people in central Delhi and a large, open peri-urban site in Ismailia, Egypt. Team members assumed the roles of different development-related specialists or stakeholder groups and explored mixed use development proposals combining housing for different income groups and commercial building uses.

A prototype computer-modelling programme (which was developed as part of the research, see box 10.8) was used by the workshop teams to explore different redevelopment options for the core area site. The model was used to explore different redevelopment options for the core area site. Many issues were raised in the workshop session; some of the conflicts and discussions that arose in the role-play exercise suggested that this type of stakeholder workshop would be appropriate where conducted over an extended period to allow some of the complexities of developing a partnership approach (and a sustainable development outcome) at the local level to be explored in greater depth.

¹ Text adapted from 'Focus: Guide to Good Practice in Core Area Development Report', Urbanisation, Issue 12 May 2001, pp4-5.

Exploring Options

An important aspect of any design process is the ability to explore options and evaluate them so they may be eliminated or developed within the design cycle. The complexity of the design task makes this process difficult in the site planning stage. In order to develop site planning scenarios, complex spatial arrangements need to be developed and their financial implications calculated. Alongside this, cultural aspects such as social implications of building uses and tenure or the quality of design need to be assessed.

Box 10.4: Financial Costing/Options

Whilst costs of any proposed mixed use development can only be estimated, approximate values should be drawn wherever possible from the average costing of similar types and sizes of development locally.

Identifying funding sources likely to support a mixed use development may be difficult since, by the strict definitions of accountancy, it will not give a maximum return on capital although with careful planning a reasonable return should be possible. Assessing the extent of commercial, industrial or high value residential use to cross subsidise the introduction of low-income accommodation on the same site will be a key element to be taken into account in the final costing of the project. Other kinds of financial support, including the availability of government subsidy, tax incentives or external finance should also be explored.

While the techniques of site planning are well established within the design professions (architects, town planners, building economists and commercial developers), they tend to work on various stages in isolation. The complexity of the design process makes it more difficult to include a broad section of the stakeholders especially those with little understanding of the development process.

Where conflicting interests have divergent needs the ability to compare proposals and to reach compromise may also require the evaluation of various scenarios. Again the financial, spatial and social implications of each scenario need to be explored in order to achieve consensus. Due to the time, skills and resources required to develop and understand development options, this can lead to the exclusion of vulnerable groups (e.g. the local community).

Box 10.5: Environmental Impact Assessment

An environmental impact assessment that assesses the extent to which a development will effect local and surrounding environment is advisable and is often a necessary legal requirement before development is allowed to proceed. In California, for instance, *least cost planning* techniques are being used to ensure that developers are only allowed to develop if they are able to reduce demand for water in adjacent developments by the same level at which the new development will increase demand for water².

The Basic Components Needed for a Site Planning Tool to Explore Options

If the urban poor are to be included in the process, rapid cost-effective tools need to be developed which they can use to explore options favourable to them. These groups have little access to the expert advice needed to evaluate site development proposals and little experience in interpreting the typical outputs of development appraisals. To do this effectively, rapid scenario building should be undertaken within an inclusive process. Design tools can enable the production and evaluation of a number of development scenarios within an inclusive workshop setting, and can enable disadvantaged stakeholders to gain a level of understanding within the process.

The core component within a site planning tool (such as the prototype computer modelling programme³ developed as part of DFID-funded research) is the assumption that much of the building stock in the urban environment can be described as a series of typical models relating to building use, size and costs. The notion of combining building form and use is also common and is the basis of much of the literature on urban development. In this instance, building types are thought of as being associated with a particular mode of living or occupation. Examples include block of flats, an office tower, a row of town houses or a street of shop houses. While the size and construction may differ from place to place it is frequently remarkably consistent within any one particular city. This constancy is the result of local building materials, labour costs, climatic needs and cultural practice.

It is commonplace in the development industry to equate building cost to use. Building costs are calculated by the square metre. Office buildings cost will cost 'x' per square metre while houses will cost 'y' and shops 'z'. This calculation is

² UNCHS (1996) 'Settlements Planning and Management' in An Urbanising World Global Report on Human Settlements, United Nations Centre for Human Settlements (HABITAT), Oxford University Press.

³ A prototype computer-modelling tool was developed as part of the DFID-funded research into Good Practice in Core Area Development undertaken 1997-2001. The prototype model is still in development and is not currently available for practical application. For further information see box 10.8.

adjusted to account for the standard of accommodation and can be further adjusted to suit local building economies.

Site planning methods and tools adapt and combine these two principles (see box 10.8). The process commences with a range of building types. These range in size, use and income level. Each building type is assigned a construction and rental value, which can be used to calculate costs and income. This set of standard components is then used to build various options. This process is similar to that commonly used by speculative developers who will assume a range of unit types and building types when developing a particular site.

Box 10.6: Site Planning Methods

Site planning methods and tools seek to transform particular sets of factors (or variables) into material (tangible) elements that comprise a development option or site layout. Each of the material outcomes represents a complex relationship between many different social, physical and economic factors, but in general terms there are some primary relationships:

Factors>>>Material elements

Target populations >>> Building types

Economic activity >>> Building mix

Module sizes >>> Building and urban block sizes

Circulation >>> Road layout

Maximise value >>> Type distribution

Niche and pockets of similar development >>> Densities

Underpinning the above relationships are the issues of amenity and quality. Social amenity arises (in part) out of the diversity that is achieved through appropriate, quality, mixed use development and public/informal space. Sustainable neighbourhoods and livelihoods require a wide range of informal social and economic activities to be supported within its urban fabric (see also Fact Sheet 11).

Typical Building Modules and Types

To enable flexibility in the site planning process, typical building modules are taken as a basis, rather than whole buildings. These modules can be combined in a variety of ways to form hybrid buildings or blocks. For example, one housing module can be defined as a basic component of a block of flats and might consist of one or several residential units, which can then be combined to form blocks of flats of various sizes and heights, each being a multiple of the standard module. The same module could be combined with a retail-use module to form a mixed use building with housing over ground floor retail. Again the units could

be combined in a row to form larger blocks. Each module may contain one or several units and is given a size, shape, and cost.

The development industry tends to create a range of typical buildings. Be they constructed for the speculative market or for a particular client group, there are compelling reasons to standardise building types. It is cheaper to design a single building and produce many copies of it. Standard units can be sold or rented at a standard price and give more or less equivalent accommodation. Frequently a standard module is developed which is repeated to form buildings of differing lengths. In this case (see box 10.7) two single-storey housing units above a commercial/retail unit (facing the street) form a three-storey building. Using the site-planning tool (see box 10.8 and 10.9) this has been approximated to a simplified building with a standard section (a rectangular box). It is assumed that internal circulation is included within the gross area of the module. This building would be three modules high and three modules long. The plan area is determined by the module size and the height is defined as a simple multiple of storey numbers.

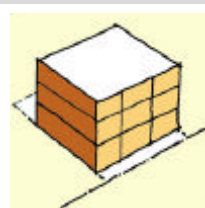
Box 10.7: Example of Building Type



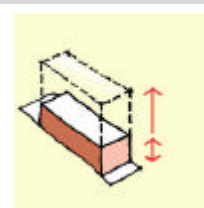
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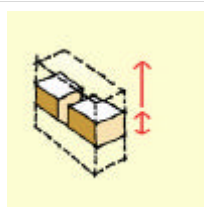
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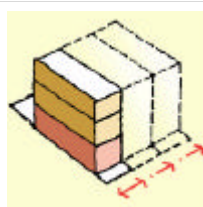
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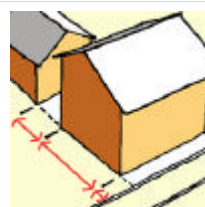
Module



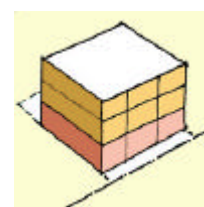
Floors



Size



Depth



Use

Local planning regulations frequently define building envelopes. In particular these prescribe minimum setbacks and maximum heights. 'Building module' definitions should include minimum setbacks where appropriate. Modules of differing types can be stacked, providing they have the same dimensions. This can be used to describe mixed use building such as the shop/house type illustrated above.

Site Planning Tools

To enable rapid scenario building within an inclusive process, the need exists for a tool that can facilitate the evaluation of options at the early stages of the design cycle and assist in shaping the broad direction of design development. Furthermore, as most large sites will include a mix of buildings and building uses, such a tool can help to identify the implication of subtle variations in the proposed mix of uses. There are several basic requirements for a site planning tool appropriate for a participatory approach - that it:

- can develop physical arrangements of buildings and open spaces.
- can include an indication of building uses and costs based on known prototypes, which people will recognise.
- is capable of estimating financial implications of design scenarios.
- can illustrate design layouts in an accessible format.
- can be used to generate a variety of scenarios in a similar and comparable format.

Having established the broad parameters of the design approach, a more detailed study can then be undertaken with greater care and with less risk of abortive work. The need to manipulate large amounts of data and allow a high degree of interaction at various stages suggests that computerised methods will be essential in developing such tools that are useful to the layperson.

Conclusions

The design process needs to balance many complex and sometimes conflicting factors. Meaningful participation in the design process by all stakeholders is important if the completed development is to remain sustainable in the long term. An inclusive site planning process can enable the production and evaluation of alternative development proposals. This can be facilitated through the use of different site planning tools and techniques, some of which are appropriate to be used within stakeholder workshop sessions.

Box 10.8: Example of building types and computer modelling for Karet Tengsin, Jakarta

MODULE-SIZES-BY-USE								
	A	B	C	D	E	F	G	H
1	ModType	Wide	Deep	PlotW	Ft-SB	Lt-SB	Jnits/Module	Notes if needed
2	Low inc	house						
3	A	4.50	12.00	4.50	2.50	2.50	2.00	min 3 mods
4	Mid inc	house						
5	B	4.50	5.00	4.50	2.50	2.50	0.33	must be 3 stories
6	Mid inc	mixed						
7	C	4.50	12.00	4.50	2.50	2.50	1.00	min 2 modules
8	High Inc	house						
9	D	30.00	30.00	40.00	5.00	5.00	6.00	
10	Mixed	Office						
11	E	35.00	35.00	55.00	10.00	10.00	1.00	tower blocks
12	prime	Office						
13	F	35.00	35.00	55.00	10.00	10.00	1.00	
14	low rent	retail						
15	G	4.50	12.00	4.50	2.50	2.50	1.00	needs to go with a or c
16	mid rent	retail						
17	H	4.50	12.00	4.50	2.50	2.50	1.00	go with c
18	prime	retail						
19	J	35.00	35.00	55.00	10.00	10.00	10.00	go with f
20	hotel							
21	K							
22	community	build						
23	L	20.00	20.00	30.00	5.00	5.00	1.00	
24	Religious	build						
25	M	20.00	20.00	30.00	5.00	5.00	1.00	
26	Low rent	indust						
27	N	4.50	12.00	4.50	2.50	2.50	1.00	goes with a
28	mid rent	indust						
29								

Building type modules



Layout

Box 10.9: The Use of Computer Modelling and Site Planning Tools

The prototype site-planning tool (illustrated below) has been developed as a series of specialised models, which run within generic commercial software. The tool splits the process into several stages that build upon each other to produce a distinct set of outputs for each development scenario. The specialised models within the tool comprise:

1. A user interface to define basic building types based on building uses.
2. A site layout tool to develop spatial arrangements (plans) showing building footprints, building uses, road layout, open spaces etc.
3. A three-dimensional visualisation (model) indicating building volume.
4. A financial appraisal tool enabling assessment of viability and showing building/unit numbers, building costs, indicative populations and site value.

The local inputs (context-specific variables) required for the prototype computer-modelling tool include:

- Site plan as digital map.
- Local building typologies, their typical layout, construction and use. The model can use up to 20 types based on modules that can be aggregated together.
- Construction costs (cost per square metre of net area) for all of the different types of buildings included within the feasibility study.
- Finance elements, including: the finance rate (borrowing cost as a %); construction period for the development; developers' profit (% of capital value); fees and contingency (% of construction cost); discounted site value (the site value minus the borrowing cost as a %).
- Valuation elements, including: 'yield' of different building types (the annual financial return as a % of investment value); rent per annum (per square foot of gross area).
- Relocation costs, including: relocation costs incurred by the developer; relocation costs incurred by the squatters.

The prototype computer-modelling tool is still in development and is currently not available for practical/commercial application, however the variables addressed and processed by the model (above) reflect those that are required in traditional site planning techniques, where each stage of the process is undertaken as a 'manual' desk-top study. Potentially, the benefits of using computer-based methods would enable a higher level of participation by the different stakeholder groups. The production and evaluation of a greater number of development alternatives could then be rapidly undertaken within a workshop setting (see box 10.3) compared to using traditional site planning methods and evaluation techniques, which by their nature are complex and time-consuming.