

THE FABRIC OF VISIONS

A reflection on the democratic potential of physical capital



And like the baseless fabric of this vision,
The cloud-capped towers, the gorgeous palaces,
The solemn temples, the great globe itself,
Yea, all which it inherit shall dissolve;
And, like this insubstantial pageant faded,
Leave not a rack behind. We are such stuff
As dreams are made on...

Shakespeare, *The Tempest*, IV.i

A paper for CAFE by

François Matarasso

August 2004

THE FABRIC OF VISIONS

1	INTRODUCTION	1
2	WHAT IS PHYSICAL CAPITAL?	1
2.1	The meaning of capital	1
2.2	Broadening the concept of capital	2
2.3	Defining physical capital	2
2.4	Capital and ownership	3
2.5	The boundaries of physical capital	4
3	ELEMENTS OF PHYSICAL CAPITAL	4
3.1	Use value: functionality and the built environment	5
3.2	Cultural value: perception and the built environment	5
3.3	Shaping values and conduct through the built environment	6
3.4	Physical capital and design	7
4	PHYSICAL CAPITAL, QUALITY AND MEASUREMENT	8
4.1	How coherent is the concept of physical capital?	8
4.2	A working definition of physical capital	8
4.3	The quality of physical capital	9
4.4	A physical capital audit	10
4.5	Physical capital and time	11
5	A CABE APPROACH TO PHYSICAL CAPITAL	12
	ILLUSTRATIONS	13

1 INTRODUCTION

This paper has been written at the invitation of the Commission for Architecture and the Built Environment (CABE) to inform its thinking about the concept of physical capital. The paper begins by considering the concept of capital itself and the various meanings of the term 'physical capital'. It highlights some of the difficulties in applying it to the built environment, including problems of ownership, boundaries and, above all, the meanings that different people or cultures may invest in it.

The paper goes on to propose a working definition of physical capital (in CABE's field of concern), and to consider approaches to assessing and contrasting its level. It proposes three distinct aspects of the quality of physical capital: its intrinsic value, its use value and its cultural value.

It concludes by outlining the potential of the built environment (expressed as physical capital) not as a stable component of an economic assessment like cost benefit analysis, but as a focus to engage people in democratic debate about the places where they live, the uses they serve and the values they represent.

2 WHAT IS PHYSICAL CAPITAL?

2.1 The meaning of capital

The concept of capital has been so widely appropriated in recent years that it is easy to forget that it belongs to economics, where it has a very specific meaning. In classical economics, capital has three fundamental characteristics. First, the term is applied to resources that enable the production of other goods. Secondly, it is the result of human creation, not a natural resource like land. Thirdly, unlike raw materials like coal or cotton, capital is not consumed in the process of production.



The term applied originally to wealth, since money enables the purchase of resources such as materials and labour; but it was subsequently applied by economists to other assets which shared its characteristics. Ideas about the nature and use of capital developed as different concepts were advanced from different economic, political and philosophical perspectives. Among the less contested of these was the term 'physical capital', which has long been used to refer to machinery, buildings and equipment used in the production process – what, in 1945, the Soviet army shipped wholesale out of Germany in guise of war reparations.

2.2 Broadening the concept of capital

The idea of capital has been central to understanding economic processes and their impact on society. But the idea of a human-made resource, which enables the creation of further value and is not exhausted in the process, has proved useful in other fields. So we have seen the emergence of human capital, intellectual capital, natural capital, infrastructural capital, social capital and cultural capital among others.¹



This extension is a relatively recent phenomenon: as recently as 1983, in a book about the vocabulary of society and culture, Raymond Williams included capital only in its conventional sense.² But it is also an increasingly fashionable phenomenon: one analysis of social capital identifies its earliest definition in 1920, six more up to 1990, and 21 in the next nine years.³ Social capital now has widespread currency in academic and political circles.

One factor in this evolving definition of capital may be the growth of economics that recognise quality of life and other human values, as in the work of Amartya Sen. A broader idea of capital makes it possible to consider all the available resources through which people can improve their situations – but only if the production of goods is taken to include aspects of human, social and environmental value.

In this sense, a broad understanding of capital has the potential to enrich and diversify individual, social and political approaches to development. It has also the potential to foster empowerment by extending not just the definition of resources (and thereby who has them), but also the idea that their use is widely available.

2.3 Defining physical capital

If the concept of capital as an enabling, human and renewable resource is accepted as helpful in understanding human society and development, we can consider what the sub-division of 'physical capital' might describe. The most widely accepted definition is probably along the lines of that given by the free content encyclopaedia, Wikipedia:

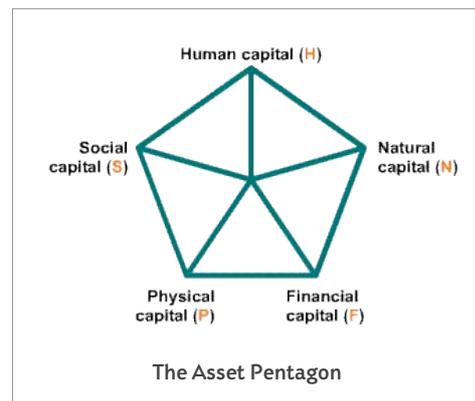
In general physical capital refers to any non-human asset made by humans and then used in production. Often, it refers to economic capital in some ambiguous combination of infrastructural capital and natural capital.⁴

This conventional idea of physical capital has been seen as the counterpart of human capital, and has certainly contributed to the asinine division between 'hard' and 'soft' investments which continues to hobble policy. In the post-war decades, development thinking focused heavily on physical capital (infrastructure), seeing 'spending on health and education as a drain on the accumulation of "productive" assets'.⁵

Fortunately, development theory and practice have evolved since the 1950s, and physical capital is now understood more broadly. Thus the Andhra Pradesh Rural Livelihoods Project, following guidance from the UK Department for International Development (DFID), sees it in the context of welfare economics:

Physical capital comprises the basic infrastructure and producer goods needed to support livelihoods. Infrastructure consists of changes to the physical environment that help people to meet their basic needs and to be more productive. Producer goods are the tools and equipment that people use to function more productively.⁶

Crucially, in this model of development, physical capital is one element of an interdependent group of resources which contribute to social change and economic development.⁷ This links better with CABE's thinking which also makes space for social and economic capital. However, CABE is both broader (the notion of space as physical requires some mental agility) and narrower (it does not include tools or equipment) in its description of physical capital as



the idea that every neighbourhood is made up of a collection of buildings and spaces (homes, streets, shops, a school, a park), which taken together with the cultures, commerce and behaviour of local people (its social and economic capital), determine the identity and quality of life in any given community.⁸

In short, and despite the well-established and central position of physical capital in economics and development, there are quite different understandings of what the term means. CABE must adopt a definition which at least complements those current in related fields if it hopes to establish a basis for common thinking and action with other partners.

2.4 Capital and ownership

A particular challenge in connecting with how others use the term is in the area of ownership. Established ideas of capital assume its control by an individual or a group. Money, industrial equipment, natural resources, education, even access to networks as understood in current thinking about social capital, can all be seen as belonging to someone.

Ownership, whether personal or corporate, is central to the idea of capital. An asset must be available for someone's use to confer benefit, whether to themselves or to others they wish to assist. This is evidently the case of financial capital; likewise, human capital, if understood as a person's capacities, clearly belongs to the individual. Social and cultural capital are also centred on people, and their access to, and inclusion in, networks, norms, education etc..

But if the concept of physical capital is extended to mean the 'buildings and spaces' that 'determine the identity and quality of life in any given community', ownership becomes complex. The fabric of a neighbourhood lies in private, corporate or public ownership, and is treated, legally and in other ways, largely as a form of financial capital. Different owners will have different objectives: contrast the developer mothballing a building while prices rise, with the shopkeeper who needs to encourage trade. Historically, it has been the role of the planning authority to hold the ring between the diverse and often incompatible purposes to which owners apply their properties. But councils are important players themselves, aiming to shape the character and quality of life in neighbourhoods in increasingly ambitious ways.

So the use of the built environment to produce common (and commonly valued) goods such as neighbourliness or community identity, is fraught with difficulties: it depends absolutely on co-operation between owners, which in turn depends on a shared vision of a place.

2.5 The boundaries of physical capital

A further difficulty is introduced by the extension of physical capital to include 'spaces'. CABE is right to be concerned with the interstices between buildings, the ambiguous spaces of complex and shifting use: these are crucial in shaping the character and liveability of neighbourhoods. At London's South Bank Centre what happens outside the buildings, and the flow between inside and outside, have been fundamental to its development, creating an open ground in which different groups (tourists, buskers, concert audiences, skateboarders, day trippers, street traders etc.) have found a reasonable *modus vivendi*: the contrast with space around the Barbican Centre, or any private retail centre, is instructive.



But can such territories, whose importance lies partly in ambiguity of ownership and control, be considered in the same terms as buildings where there is no such uncertainty? Where does the realm of physical capital in the built environment begin and end?

3 ELEMENTS OF PHYSICAL CAPITAL

There are evident difficulties in applying the concept of physical capital to something as large and ill-defined as the buildings and spaces which comprise the built environment. Before attempting to resolve them, we should look in more detail at the characteristics of that environment when considered from the perspective of physical capital.

3.1 Use value: functionality and the built environment

As outlined above, the essential characteristic of capital is to enable the production of other goods. Transferring the concept to fields other than manufacturing, or even economics, means taking a much larger view of what constitutes a good. No longer simply a product, still less a marketable one, a good in these terms is about capacity: the capacity to trade (a shop), to meet as a faith community (a temple), or to eat sandwiches



away from the office (a park). In practice, buildings, streets and public spaces have multiple capacities: a pub exists to sell drink and food, but it may also be a social centre, an old people's lunch club, a music venue, a place of work, a home and more besides.

Use-value is recognisable, quantifiable and potentially tradable, but it is not inevitably good. It empowers, but the uses to which it can be put are not equally desirable. A scrapyard may be financially viable, fulfil a socially useful process, and still be unwelcome to its neighbours. The same is true of many other forms of physical capital, from hostels to playgrounds, or wind-farms to speed cameras.

Capital, of all kinds, is essential neutral. It has an absolute use value, in enabling people to do things they could not otherwise do. Beyond that, its value is subjective and dependent on people's culture and situation. Take social capital, whose promotion is now widely (and sometimes naively) seen as a desirable policy goal. Its components – trust, reciprocity, networks, social norms and conventions etc. – are vital factors of development, but they can lead, for example, to the exclusion of those who do not conform. In the recent past, such groups have included unmarried mothers and gays, among others; today one might identify travellers, or, increasingly, Muslims. Worse, it can be applied to wholly anti-social purposes: the Mafia's power is rooted in high levels of social capital within the group.

If physical capital were a simple, uncontroversial good, we should not need a planning process; we do, because its use value can be applied to all sorts of ends, many of which will, at some point, conflict with someone's desires and values.

3.2 Cultural value: perception and the built environment

Even if we allow for complex, overlapping and conflicting uses, there remains a point – that might be expressed simply as fitness for purpose – beyond which differences of quality in physical capital are exactly that: qualitative. A 17th century timber-framed cottage is not essentially different from a similarly-sized Barratt home. If some people pay more for it, it is partly because of its scarcity, and partly because of a perceived quality and cultural value; others prefer the second because of their different perceptions of the same things.

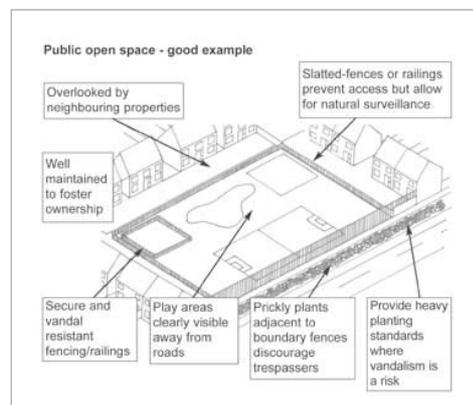
The planning difficulty is that people's perceptions of value change. In the 1960s, and 1970s, the wealthy inhabitants of the historic town of Cartagena de Indias, in Colombia, were attracted to new Florida-style condominiums along the shore at Bocagrande. Today, the old city is a UNESCO World Heritage Site, investors have begun restoring its crumbling mansions, and the wealthy are coming back. Nothing has changed in the physical capital of either district: everything has changed in how they are seen and valued.

The same is true of streets and public space. They enable people to move about, access buildings and interact with others, whether on the rutted mud of a Rio *favela* or the trim verges of a Suffolk commuter village. Beyond a basic functionality, the character and quality of the street does not necessarily affect how people can or do use it. There may be more sociability on a dusty street in Ouagadougou than on a tidy Milton Keynes boulevard – and for reasons of culture and society rather than with the fabric of the place. Indeed, it could be argued that, since these factors, with economic ones, govern how we conceive, build and design, physical capital is no more than the outward reflection of them.

3.3 Shaping values and conduct through the built environment

If we can identify use value and cultural value as components of physical capital in the built environment, we also need to be aware of its influence on our conduct: the way in which where we live allows us to **be**, not just to **do** or even to **feel**. To some extent this is in our own hands, managed either individually (in our homes) or collectively through the endless process of negotiation which constitutes the social contract. But, as the state's power and ambitions over the lives of its citizens has grown with industrialisation, it has become increasingly concerned to create places which will make people live 'better' lives.

This vast subject is central to CABE's mission, and stretches from classical theories of urbanism, through slum clearance and the garden city ideal, to contemporary sociological analyses such as 'What would a non-sexist city be like?'.⁹ It remains a very practical concern of planning authorities, architects, designers and those who live and work in neighbourhoods. The concept of designing out crime is an obvious example. Good lighting, greenery, secure grounds and buildings, overlooked spaces and an absence of dark corners change behaviour. They make street crime and burglary less easy, and perhaps less tempting; they make residents and passers-by less fearful, and perhaps more sociable. In both cases, the explicit purpose is to change how people behave.



There are serious ethical dilemmas here, though they tend to be glossed when the issue is crime and safety, since most people are more concerned about an immediate threat (real or perceived) than abstract questions of the citizen's relationship to the state. However, if the

aim of policy is to shape the built environment (physical capital) to encourage inclusion, neighbourliness and community relations, they must be considered. To what extent is it acceptable for a planning authority, or an advisor such as CABE, to try to influence, covertly or unconsciously, how people live by changing their environment?

3.4 Physical capital and design

Even if it were ethically acceptable to treat people as laboratory rats, and shape their behaviour by changing their living space (and it is not), there must be doubts about how far it could be done by managing of the physical fabric of a neighbourhood. The big limitation of physical capital, beyond its use value already described, is that it is not read, understood or responded to in the same way by everybody.

In Britain, more than in many countries, we live among the assets of previous generations, rubbing up constantly against their values, imaginations and social structures. Urban life today is shaped by the Victorian infrastructure of our large towns and cities, though we live in very different ways and have very different beliefs. The past we accept, we cherish (and call heritage) or do not notice; the past we reject, we tolerate or demolish, when we have the money. But whatever we think of it, we are influenced, consciously and otherwise, by the embedded cultural values of our built inheritance.



Debate, conflict even, over those values becomes much more acute when we build or rebuild. Then we have to make a statement of values about the kind of society we are, no less than our ancestors did, knowing that our statement will stand and be judged beside theirs. Sometimes, as in the second Coventry Cathedral, there's an immediate recognition that the what was said was right. More often, there is controversy before, during and after. The difficulties exist because Britain today is both more diverse and more democratic than it was, and the contestation of values is constant and essential.

Even where it is not contested, design is read and responded to differently. A low-maintenance business park may seem bleak to someone who does not drive, or whose only reason for being there is to clean the offices at night; a bustling street market might be read as threatening by someone who lives in a quiet suburb. Moreover, our responses to the environment change, as we do, and as tastes and society changes. The concrete estates of inner Nottingham have been demolished and replaced with low-rise, brick housing: but the councillors who approved the original plans, at huge cost, thought they were providing people with a well-designed environment which would improve the quality of their lives.

4 PHYSICAL CAPITAL, QUALITY AND MEASUREMENT

4.1 How coherent is the concept of physical capital?

It will be evident, even from this brief introduction, that there are problems in describing the built environment (as opposed to objects within it) as a form of physical capital comparable with more established concepts of financial, human or social capital; these include:

- The existence of an established concept of physical capital, grounded in economics, but different from, and narrower than, the ideas so far outlined by CAFE.
- The difficulty of distinguishing between simple use value (up to basic fitness for purpose), and qualitative value (value added beyond fitness for purpose).
- Physical capital, as envisaged by CAFE, is either in multiple ownership, or not owned in any meaningful sense at all; consequently, given the inevitably different aspirations of those who control it, it is difficult to see how it can be used to produce general value.
- Physical capital is inseparable from complex, contested cultural and social values affecting every aspect of the built environment including whether it is even seen as an asset.

The rest of this paper considers ways in which CAFE might use the concept of physical while taking account of these objections.

4.2 A working definition of physical capital

Given the established use of the term in economics, any expanded concept of physical capital must build on what is already accepted. That might be expressed as 'human-made, physical assets with a production use, including infrastructure and producer goods'. But of these elements, only infrastructure ('changes to the physical environment that help people to meet their basic needs and to be more productive') concerns CAFE: anything moveable lies beyond its remit; (there are grey areas, such as street furniture, but CAFE's essential concern is permanence). So a working definition of physical capital for CAFE might be:



- Fixed human environmental interventions, producing physical assets with use value.

This purposely ignores aspects of physical capital which are vital from CAFE's perspective, notably social and cultural value. But CAFE must describe physical capital as a (relatively) neutral resource if it is to open discussion with partners and stakeholders on a clear basis. From there it can work to include a social and cultural dimension that adds value (up to and including economic value) to the basic physical resource.

4.3 The quality of physical capital

But, as we have seen, interventions in the physical environment cannot be considered certain assets. Baghdad's physical environment has seen much recent change: little of it, beyond the removal of some public sculpture, has enhanced its residents' physical capital. Even in less extreme situations, the results of environmental change is questionable: in the 1960s and 1970s, the creation of ring roads in cities such as Leicester was seen as an economically sound investment, with little consideration of its impact on the quality of the urban fabric, or how it would be used by pedestrians and others. So physical capital without an assessment of quality is not a very useful term. What then are the criteria of quality against which physical capital could be assessed? There are at least three.

Intrinsic quality

The intrinsic quality of physical capital lies primarily in its fitness for purpose and its longevity. The first relates to the basic concept and design of a building or infrastructural project, and its suitability for the use to which it will be put. The second, obviously enough, relates to the length of its usable life before it is likely to need renovation, restoration or reconstruction.



On this basis, the Millennium Dome in Greenwich could be said to have little intrinsic quality as physical capital, since it had no essential purpose to be fit for (the purpose to which it was eventually put was dictated by the structure, evident in the difficulty of finding a subsequent use), and has a planned life of only 25 years before the roof will need to be replaced.

Indicators of the **intrinsic quality** of physical capital might include:

- The appropriateness of design for its planned purpose;
- The relative degree of productivity enabled by its design;
- The quality and life-expectancy of materials used;
- The ease and cost of maintenance and renewal;
- The versatility of the design in relation to potential alternative use.

Use quality

The intrinsic quality of a building or public space is one thing, but it doesn't follow that people will actually use it according to its designed purpose. Individually and collectively, people are complicated and happily unpredictable. Buildings which work on paper can be disliked and under-used; spaces with little apparent value can attract affection and activity. This is partly because we have different values, interests, aspirations, tastes and needs, so, how we move within and make use of the physical environment varies enormously. What one person finds warm and familiar, another reads as cold and hostile. And that is not simply a matter of perception: it is embedded into the fabric of places, into the physical capital which is the concrete expression of the needs and values of its creators.

Indicators of the **use quality** of physical capital might include:

- The unnecessary use people make of buildings and space (i.e. beyond what they need);
- The extent of interaction between people which the space enables;
- The patterns of use by different people during the day, week and year;
- The range of people who use a building or a space.

Cultural quality

The final aspect of quality in terms of physical capital is cultural. This is subtle, complex and largely invisible. It is concerned with how people read and understand a building. Is it welcoming or alien? Does its design and use connect, or make people uncomfortable? Alsop's Peckham Library is one solution to making a Victorian idea



but it may not resonate with those who prefer buildings to look as they expect them to. Equally, the cultural value of a Miner's Welfare may be much greater to local people than that of a new, purpose-built community centre, though the latter may have much better facilities. The cultural significance of Coram's Field's make it a far more valuable site than other urban playgrounds. These aspects cannot be seen, measured or commanded, but they can make a successful building, street or neighbourhood. They need therefore to be understood by anyone concerned with built environment and its impact on the lives of those who use it.

Indicators of the cultural quality of physical capital might include:

- The views of local people about their built environment, including such things as their knowledge, comfort, sense of ownership, memories, interest and dreams;
- The incidence of vandalism, and evidence of respect;
- The degree to which people are willing to get involved in its life.

4.4 A physical capital audit

What is the purpose of assessing physical capital? The worst reason for doing so would be to justify an intervention, a campaign or a programme of work. Changes to the fabric of an area cannot be graded like hotel rooms. When the assessment is made, how, of what, and by whom – these and other factors will shape the results and make them inevitably contingent. It is not possible to make a definitive or objective assessment of something which is so bound up in quality and people. It is possible to learn, and so to make better choices next time.

Besides the intrinsic value of knowledge, the best reason for wanting to assess physical capital is to make changes which improve a neighbourhood. The problem there, however, as we have seen, is that people have very different ideas of what might constitute an improvement. And it is, after all, their neighbourhood. At the moment, most people have limited ability to do anything about the physical capital of their area, even if they personally control some

of it, because there are few mechanisms which enable them to take action. A physical capital audit might help redress the balance – especially if it prioritises the process of gathering information and debating its results, rather than the inevitably unreliable and approximate results.

A physical capital audit could, of course, be done by outside professionals, but they would miss much of the use and cultural value aspect of the resources. It would be better to facilitate a process, which might be undertaken by a variety of community organisations, through which residents and owners might be directly involved in considering the physical assets at their disposal and the possible ways in which they might be used to improve the situation.

There are different precedents for this kind of activity, such as planning for real and other more arts-based approaches. Thought should be given to whether there is a need for a separate tool – focusing specifically on ideas of physical capital as sketched out here – or whether these ideas can be effectively integrated into existing models to strengthen their capacity to deal with the quality of a place's fabric.

4.5 Physical capital and time

The relationship of physical capital to time is complex. On the one hand, it changes very slowly: my street has seen only one new building in the past 10 years, while other changes have been subtle (new street lamps) or important but invisible (cabling). On the other hand, it can change very fast: remove an important building, change the flow of traffic, close a post office, allow a crack house to start up and the quality and value of a physical environment can change overnight. Everywhere changes on its own timetable: conservation areas and poor neighbourhoods will evolve more slowly and subtly than a new development, or a high street.



That makes it very difficult to set a timetable for assessment – and assessment must be linked to time, since only time can record change. It is valuable to be able to compare the physical capital of two neighbourhoods; it is more valuable to compare one neighbourhood with its former self. But when is the right time to do that? The only answer is to set up a schedule for auditing physical capital which is appropriate to the character and situation of the area in question. That is likely to involve two main elements:

- A major survey, undertaken on a regular timetable – perhaps once every five or ten years;
- A mechanism for keeping the evolution of a neighbourhood under review.

Further thought should be given to how both might be approached in the context of a physical capital audit.

5 A CABE APPROACH TO PHYSICAL CAPITAL

This paper has tried to unpick some of the logic underlying the concept of physical capital as it might be applied to the built environment. Although it has identified a variety of useful aspects to the concept, one inescapable conclusion of the analysis is that, except in certain very specific and limited areas, physical capital cannot be objectively described, quantified or assessed. Indeed, it could be argued that what matters most about physical capital, in relation to quality of life, is necessarily subjective.

That need not be a problem: there are many other things that can be quantified. More than that, the subjectivity, changeability and ambiguity of many aspects of physical capital are an opportunity to do something else: to focus a democratic debate about the quality of neighbourhood environments – to look at the fabric of our visions.

Our buildings and public spaces reflect our values, beliefs, ideals, fears and hopes: they are the stuff that dreams are made on. There is much to be gained from developing approaches that go beyond planning debates to engage with the things people feel and care about in the places they live, to give expression to all that which so often goes unsaid or even un-thought. It may be that a process – which I have tentatively called a physical capital audit – has the potential to open up those areas of vision, and so engage people more deeply in dialogue about their neighbourhoods.

Rather than physical capital and design being a way to shape society, it could be a way for communities to shape themselves.

François Matarasso

August 2004

matarasso@mac.com

ILLUSTRATIONS

Title page, **The Old Grammar School**, King's Norton Green, Birmingham, Winner of the BBC Restoration programme public vote: <http://www.bbc.co.uk/history/programmes/restoration/profiles/?13> (accessed 9/8/04)

Page 3, **The Asset Pentagon** 'was developed to enable information about people's assets to be presented visually, thereby bringing to life important inter-relationships between the various assets': Andhra Pradesh Rural Livelihoods Project <http://www.aplivelihoods.org/livelyhoodassets.html> (accessed 6/8/04).

Page 6, **Local Planning Guidance Note No 24 Designing Out Crime**: from Wrexham Council website: http://www.wrexham.gov.uk/english/planning_portal/lpg_notes/lpg24.htm (accessed 6/8/04).

Page 9, **The Millennium Dome** <http://millennium-dome.com/> (accessed 7/8/04)

Page 10, **Peckham Library**, from Southwark Council website (accessed 9/8/04) <http://www.southwark.gov.uk/OurServices/LibrariesSection/LibrariesLocationsSection/peckhamlibrary.html>

Other illustrations by the author

NOTES

- ¹ Love, which certainly fits the concept of capital as defined by classical economics, has not yet been discovered as a form of capital, but there is still time.
- ² Raymond Williams (1986) *Keywords*, A vocabulary of culture and society, London.
- ³ Analysis by Stephen Borgatti, Associate Professor, Organization Studies Department, Boston College, USA. See http://www.analytictech.com/networks/definitions_of_social_capital.htm (checked 5/8/2004).
- ⁴ http://en.wikipedia.org/wiki/Physical_capital (checked 5/8/2004); the authors of this entry go on to observe that 'Such analyses, however, fail to make distinctions considered critical by many modern economists. Natural capital grows, while infrastructural capital must be built. Even 'balanced' economic growth includes many processes thought to be, or lead to, uneconomic growth. Human capital requires rest and must make choices whether to seek rest or income, which physical capital does not make. Accordingly, the designation as 'physical' has come into some recent dispute.'
- ⁵ Birdsall, Nancy (2000) *Human Capital and the Quality of Growth*, World Bank Institute's *Development Outreach*; http://www.ceip.org/files/Publications/HC_growth.asp?from=pubauthor (checked 5/8/2004). Such reservations did not, of course, figure in the emerging European welfare states of the 1950s and 1960s.
- ⁶ http://www.aplivelihoods.org/physical_capital.html (checked 5/8/2004).
- ⁷ The omission of cultural capital from this particular model of development is notable.
- ⁸ Brief for think-pieces on the definition of 'Physical Capital', CAFE 2004.
- ⁹ Dolores Hayden (1981) 'What Would a Non-sexist City Be Like?: Speculations on Housing, Urban Design, and Human Work' in Richard T LeGates and Frederic Stout (1996) *The City Reader*, London.