

orientation and principles

chapter 1

INTRODUCTION

1.1 LOCAL GLOBAL PLANNING

MANIFESTO

Neighbourhoods are the localities in which people live. They imply a sense of belonging and community, grounding our lives in a specific place we call home. They are the building blocks of towns and cities. Aspirations for neighbourhoods are surprisingly consistent among people with very different backgrounds. We want neighbourhoods that are attractive, safe, healthy and unpolluted, with high-quality local facilities, access to green spaces, and excellent connections to other areas. We would like the opportunity for convivial social activity and friendship. There is recognition that how we live locally must work in harmony with nature, with the flow of natural cycles and with global ecology. Neighbourhoods sit in the front line of actions to support healthier lives and more sustainable lifestyles. They should be planned so as to:

- ◆ provide a healthy local human habitat
- ◆ enable all people to flourish physically, mentally and socially
- ◆ enhance local and global biodiversity and natural assets
- ◆ work towards net carbon neutrality

The challenge

Society shapes neighbourhoods and neighbourhoods shape people's lives. The long-term trend has been the progressive decline in significance and quality of neighbourhoods, as economic globalisation, technological innovation, and urban change have altered people's behaviour. The choices we are making, corporately or individually, are in turn threatening personal and planetary health. On the one hand there are increasing problems of obesity, mental illness, social exclusion and inequality; on the other hand, unsustainable greenhouse gas emissions and biodiversity loss.

We see that microcosm and macrocosm are interdependent. Individual lifestyle and wellbeing are connected to earth ecology. Spatial planning, in particular the integrated planning of neighbourhoods and towns, plays a critical role in the chain connecting the personal to the global. Decisions about the physical development and renewal of localities – housing, workspace, transport, facilities, greenspace – can go either way, compounding the problems or creating healthy, convivial, low-carbon

CONTENTS

INTRODUCTION

- 1.1 Local global planning
- 1.2 Neighbourhoods for real
- 1.3 Powers, professions and processes

POLICIES AND AGENDAS

- 1.4 Sustainable development
- 1.5 Health and wellbeing
- 1.6 Health and place equity
- 1.7 Climate emergency
- 1.8 Ecological crisis
- 1.9 Spatial planning at the crossroads

THE NEIGHBOURHOOD AS HABITAT

- 1.10 The ecosystem approach
- 1.11 The Settlement Health Map
- 1.12 The natural human habitat

THE NEIGHBOURHOOD IN FOCUS

- 1.13 Defining neighbourhoods
- 1.14 Town, neighbourhood, homezone
- 1.15 Neighbourhood design principles

CASE STUDIES

- 1.a Three neighbourhoods in Algiers, Algeria
- 1.b Polimipara, Rio de Janeiro, Brazil
- 1.c Hammarby Sjöstad, Stockholm, Sweden
- 1.d Utrecht, the Netherlands

1.1

The role of this guide

This guide is designed to bridge the gap between rhetoric and action, between research and policy, between social, economic and environmental priorities.

It adopts a radical and challenging stance, offering evidence, effective policies, spatial strategies and design solutions that work towards healthy, inclusive, sustainable and net-zero carbon communities.

It recognises that neighbourhood initiatives may stem from civil society, private investors and/or the local authority, and the key is to find ways to work together.

The guide is concerned with reality, not vain hopes. It is about socially and economically feasible policies for everyday towns and urban neighbourhoods.

neighbourhoods. This book offers the insight, knowledge and skills to enable the latter to happen: local global planning.

GOALS FOR THE LOCAL HUMAN HABITAT

This guide is about enhancing the quality of neighbourhoods as places to live, work and play. It advocates an inclusive, environmentally responsible model of neighbourhoods. There are three overarching goals:

Health and quality of life for all

Following the World Health Organization (WHO) lead, we define health as a state of complete physical, mental and social wellbeing and not merely absence of disease or infirmity (WHO Charter 1946). The physical environment of neighbourhoods affects health and wellbeing both directly, through the quality of housing, facilities and public space, and indirectly, through impact on behaviour and the sense of community. A key theme is the degree to which neighbourhoods provide for all groups – young and old, rich and poor, whatever their ethnicity or abilities.

Environmental sustainability

The ecological footprint of settlements in terms of resource use and pollution is great, continues to grow in many respects, and ought to be greatly diminished. Central to this agenda are the interlinked emergencies of climate change, with the need to achieve net carbon neutrality, and the loss of habitat, species and biological diversity across the globe. Planning sustainable neighbourhoods means reworking the development conventions of the recent past. We advocate local neighbourhoods taking greater responsibility for the health of the global commons – climate, land, water, biodiversity.

Economic and civic vitality

Localities should not be mere dormitories. Their rejuvenation as healthy, thriving and sustainable neighbourhoods can only be achieved if there is both local dynamism and appropriate spatial policy context. Part of the local energy comes from the vitality of the local businesses and services, investing in people and places; part comes from political commitment, plus effective partnerships between community, voluntary, public and private sectors.

HEALTH AS THE PULSE AND HEART OF PLANNING

If there is one over-riding hope for the guide, it is to enable planners, designers, politicians and developers, who are making decisions about the urban environment, to see clearly how to put the long-term health and wellbeing of people first. In the wake of the COVID-19 pandemic there is recognition that public health is a huge motivator for political, business and public action. For the future it should be the motivation for creating and sustaining towns and cities that provide high quality of life for all.

1.1

CHECKLIST**World Health Organization****12 healthy urban planning principles**

Do planning policies and proposals promote and encourage:

1. healthy lifestyles
2. social cohesion
3. housing quality and access for all
4. employment and education opportunities
5. accessibility to facilities
6. access to healthy low-impact food
7. a safe and attractive public realm
8. social and health equity
9. good air quality
10. clean water and sanitation
11. conserving resources of land, soils, minerals and materials
12. sustainable climate and global ecology

SOURCE: adapted from Barton and Tsourou 2000

Case study 1.d
Utrecht,
the Netherlands

The WHO Healthy Cities network has been promoting this idea since 1990, pointing out that good health is not primarily about illness services (such as the NHS in Britain) but about healthy environment, healthy work, equitable access to housing and services, long-term climate and ecological sustainability. Public health professionals – who take centre stage during pandemics – should now focus their minds on the continuing human need for healthy environments. This should be the starting point for urban planning and design, re-energising the alliance of planning and public health from the beginning of the twentieth century, when the dire effects of poor environments on health were all too evident. The subsequent severance of built environment professions from health, and from each other, due to the creation of legal, institutional and professional silos, can be healed.

THE IMAGE OF A GOOD NEIGHBOURHOOD

When we have run 'visioning' workshops for varied participants, the aspirations for neighbourhoods are surprisingly consistent. They do not necessarily reflect the choices that people have actually made in their lives, but rather the ideal they hold in their hearts. They want neighbourhoods that are attractive, safe, healthy and unpolluted, with high-quality local facilities, access to green spaces, and excellent connections to other areas. They would like the opportunity for convivial social activity and friendship. There is recognition that for some people – particularly the young and old, and those who are home-based throughout the day – the neighbourhood is vitally important for health and wellbeing. The first quality listed below is the first point made by most of those involved. The list has been ordered and expressed by us, with some poetic licence.

Top ten qualities of a good neighbourhood

1. A place where birdsong, rustling leaves, running water and (for some) children playing can be heard, rather than the sound of traffic or industrial processes.
2. A socially mixed and inclusive community, especially in terms of age, with varied housing opportunities which are suited to a range of incomes and types of household.
3. Diversity of use – housing, business, shopping, social, cultural, educational and health facilities, offering easy accessibility, opportunity and choice for all.
4. A pedestrian-friendly human-scaled public realm which makes walking around a pleasure, safe and convenient, where casual meetings on the street reinforce the sense of community.
5. The neighbourhood integrated into the city, inter-connected by all travel modes – offering freedom of movement by bike, public transport, car and foot;
6. Buildings and infrastructure designed for clean air, minimum energy use and net-zero carbon, including solar roofs, multiple bike and car charging points.
7. A green environment, with trees throughout the area, and plenty of greenspace with varied habitats, rich wildlife, pure streams and ponds, beautiful flowers.
8. Local working, educational and volunteering opportunities supporting all-age learning, including those with disabilities, and an engaged, caring community.
9. Multiple opportunities for play, recreation, social and civic engagement, with coffee shops, pubs and meeting rooms, and where children are able to roam free.
10. An aesthetically-attractive physical environment, including older buildings, streets and features that root the area in time and place, giving the community spatial identity.

The design of a place enables people to start living in new ways: car-free street in Freiburg, Germany.



1.2



An iconic, pedestrianised main street with mature trees helps create the atmosphere that allows the town centre to flourish: Cheltenham, England.



A classic European urban square, once full of traffic, now a place for social activity, hospitality and events.



A small town high street in New Zealand providing a vital service and social centre, but car-dependent.

1.2 NEIGHBOURHOODS FOR REAL

RECOGNISING THE DIFFICULTIES

The reality is often very different from the image above. High mobility and economic change have undermined the significance of locality in people's lives. Where once children played on the street, front doors were left unlocked and there was a close local community, people now travel out by car to dispersed activities or rely on virtual connections. As a result, local shops and facilities cease to be viable. Without local amenities there are fewer people on the street and a spiral of declines sets in. While the changes may represent choice and opportunity for some, others find their lives impoverished. Poorer households and less able households experience tough conditions in the housing market and in access to opportunities. Lifestyles have become less healthy. At the same time, we are using resources unsustainably and exacerbating the climate emergency.

Public policy: sometimes part of the problem

These trends are in part the response of the market to perceived consumer preferences, but they have often been reinforced by official policies for transport, schools, hospitals, libraries, post offices and swimming pools that demote the significance of local accessibility. The modernist images of the twentieth century still pervade much political and commercial thinking. In many countries, planning authorities in alliance with developers have been promoting single-use residential estates and business parks, at relatively low densities and poorly located so that they are inevitably car-dependent, land-hungry and polluting. The trends not only affect the quality of the environment, but also worsen problems of social exclusion, discourage exercise and restrict the potential for local economic activity. In run-down areas people can get the sense of powerlessness – unable to influence the decisions that are degrading their own environment.

Varied contexts, different problems

Experience varies in different countries, different cities, different parts of a city region. The varied geographical, economic, cultural and political contexts of localities lead to a wide variety of planning issues. Here are some varied contexts for which we hope the guide will prove relevant.

- ◆ **Inner city older housing:** in older towns and cities the industrial revolution led to an explosion in residential development, mostly high density terraced development, with areas of large detached villas. Despite renewal last century of the worst housing, these inner areas typically have concentrations of poverty, inadequate open space, high exposure to traffic and poor air quality. Where extensive gentrification has occurred, neighbourhoods have revived, but

sometimes at the expense of poorer households who are priced out of the market.

- ◆ **Traditional suburbs:** suburban expansion in the mid to late twentieth century resulted mostly in lower density housing with more greenspace around, but often lacking local facilities within easy walking distance. Social segregation, with large estates of social housing, persists to this day. Huge supermarkets, retail strips, business parks and campus-style hospitals and higher education establishments are premised on car access and extensive hinterlands, undermining neighbourhood functions.
- ◆ **Planned new suburbs:** urban extensions at moderate densities, ideally based around tram or train stations (transit-oriented development) but more often car-based and lacking easy access to facilities. In the twentieth century such new suburbs tended to be a class monoculture – all social housing or owner-occupied.
- ◆ **Comprehensive renewal areas:** extensive inner city areas that were originally sub-standard housing, industrial, quayside or railway zones have been or are being renewed, often transforming the street pattern and including high rise development. In central areas typified by 'loft living' and a monoculture of younger lifestyles. After poor design in the post-war years, some such areas have been redeveloped twice.
- ◆ **Pioneer suburbs:** in North America, Australasia and some more recently urbanised societies, housing has been developed at very low densities, facilitated by major road investments, giving everyone a large plot, but requiring one car or more per adult to get to dispersed locations for work, learning, shopping, playing and socialising. Issues of obesity and loneliness are common, especially among the poor.
- ◆ **Historic towns:** while large towns exhibit similar patterns to cities, small towns (often with historic character) can function as single large neighbourhoods, with pedestrian and cycling access to the centre. However, many such towns have lost their original economic base, and/or become commuter settlements, and the centre is undermined by peripheral car-based services.
- ◆ **Rapidly growing cities:** in middle- and low-income countries the hectic pace of urbanisation can sometimes lead to unplanned informal settlement for the urban poor planned alongside new car-based suburbs for the affluent. Both may be at high densities, though of completely different character. Typically such cities exhibit all the problems of cities in rich countries – congestion, air pollution, social exclusion, poor accessibility, lack of open space – but are experiencing them in double-quick time. Sometimes they also have fundamental health issues related to water supply, sewage treatment, overcrowding and poor building construction – issues often exacerbated by climate breakdown.

Case study 1.b
Polimipara, Brazil

1.2

INTERNATIONAL ADVOCACY FOR NEIGHBOURHOODS

WHO Healthy Cities Network

Neighbourhoods offer shared activities that provide a focus for social life and are especially important for the health and wellbeing of old and young people, and disadvantaged groups. Neighbourhoods should provide varied, affordable housing, excellent pedestrian accessibility to local facilities and greenspaces. (Barton and Tsourou 2000)

United Nations: the New Urban Agenda
UN-Habitat envisages human settlements that provide for basic needs of clean water, sanitation and housing, promote civic engagement, engender a sense of belonging and ownership, prioritise safe, inclusive, accessible, green, high quality environments that are friendly for families, foster social interaction, cohesion, inclusion in peaceful and pluralistic societies, where the needs of all inhabitants are met. (United Nations 2016)

International review of the role of cities in improving health

Some of the boldest attempts to improve population health in cities have been fuelled by the involvement and leadership of local people. City governments can harness the assets, resourcefulness and creativity of communities by creating the conditions for active citizenship and acting as a catalyst of locally led initiatives. (Naylor and Buck 2018)

American Planning Association (APA)

The APA cites research showing that demand for traditional auto-oriented suburbs is plummeting. People value walkability, travel options and proximity to key facilities. They want to live in a diversity of neighbourhood settings, from small towns to urban centres. (APA 2014)

UK Localism Act 2011

Introduced neighbourhood planning as a formal part of the planning system, with new rights and powers to allow local communities to shape development and improve their local environment.

Wales Future Generations Act

The Wellbeing of Future Generations Act requires public bodies in Wales to think about the long-term impact of their decisions, to work better with people, communities and each other, and to counteract persistent problems of poverty, health inequalities and climate change.

1.2



Neighbourhood Renaissance begins when people take over the street. Margaret Bond, the oldest resident in this Bristol street, only became visible once the cars were cleared out and street parties happened. Her wealth of stories became part of the oral history of the street, Bristol, England.



- ◆ **New settlements:** planned new towns can in theory provide an ideal healthy environment. However, they all-too-easily fail to deliver. Their location may be decided on the basis of land ownership rather than economic rationale and sustainable travel. Their size may be inadequate to support essential town facilities. Their layout may be determined more by conventional market preferences than the principles of healthy, sustainable planning and design. The opportunity for net-zero carbon development is lost.

NEIGHBOURHOOD RENAISSANCE

In many contexts it is difficult for neighbourhoods, in the sense of local place communities, to exist. Commentators in the 1960s foresaw a time when place and locality would be submerged by the 'non-place' urban realm. However, recurrent suggestions of the death of neighbourhoods are misplaced. Grass-roots activism, especially in run-down localities, can be a trigger for renewal. When community dynamism meets municipal policy re-direction, change can be profound. Cities can successfully re-invent themselves.

While almost all cities were going in the same highly-motorised direction in the 1960s, inspired by modernist dreams, cities at the forefront made a political decision at some point in the last 50 years, to give priority to pedestrians, cyclists and public transport instead of the car. Squares given over to car parking are again vibrant social spaces; residential rat-runs are now traffic-free so children can play. In parallel some cities have planned greenspace networks for health and sustainability. The positive impacts on the feel of the urban environment, levels of physical activity and air quality have been huge. In particular, neighbourhoods flourish because people are out on the street, not in vehicles.

The neighbourhoods of the future need to reflect cultural shifts, new technology and global priorities. We cannot nostalgically return to the localism of the past. Rather, neighbourhoods must be open, varied, egalitarian and connected places – providing more choice, opportunity and beauty, supporting healthy living and healthy ecology. Ironically the COVID-19 pandemic, by revealing to many people the attractions of home-working, may be a lever for neighbourhood renaissance.

A neighbourhood is not an island

Except for isolated settlements, far from the influence of major cities, neither small towns nor urban neighbourhoods are islands of potential self-sufficiency. Inhabitants are dependent on the city or town region of which they are a part. Job markets, city-wide services and many varied social networks, link between places. Cycleways, public transport services, roads and virtual networks make up the web of connectivity that enable social and economic development. The location of the neighbourhood in relation to that web is critically important. Only if the strategic planning of transport, land use, housing and economic development is correctly aligned can a place hope to be healthy.

Neighbourhoods as testbeds

Neighbourhoods can be pivotal to positive change and have a special role in the transition to sustainable settlements. They are small enough to reflect personal lifestyles, social networks and quality of life, yet they are also of sufficient size to affect the environmental impacts and economic function of towns and cities. Following the UN's New Urban Agenda, they are a vital element in a bottom-up approach to sustainable development. Individual neighbourhoods or small towns can act as testbeds for innovation and experimentation.

1.3 POWERS, PROFESSIONS AND PROCESSES

WHO SHAPES NEIGHBOURHOODS?

There is no simple answer to this question. In most situations the process of urban change and renewal is incremental and disjointed. New investment in infrastructure or buildings occurs when an investor (private, public or voluntary sector) makes the decision to act. Some of the people investing may be local, but others are far removed from the locality – commercial or institutional agencies with their own agendas. Policies and plans approved by democratically accountable bodies (including neighbourhood and parish councils) can help shape investor decisions but cannot necessarily determine them. Direct action by residents can sometimes galvanise authorities and investors to act – see 'Bottom-up creativity' and 'Harnessing activism'.

People and organisations come to any planning process with different perspectives, often quite narrow, driven by personal experience, by vested interests (e.g. property), by institutional restraints, by political/environmental values and/or professional training.

Community, professional and institutional change

Given the plurality of interests involved, co-operation is vital. No one interest or profession has a monopoly of wisdom. New institutional ethics need to be adopted, reflecting the new paradigm, so that consistent overall strategies work towards healthy, net-zero carbon environments that contribute to global sustainability. This section highlights the roles of different actors, stressing the need for professional, institutional and community development. It is a call for all involved to:

- ◆ come out of your silos!
- ◆ see personal and organisational interests in the context of social and environmental priorities
- ◆ put people's health as a prime motivation for action
- ◆ take a holistic, integrated approach

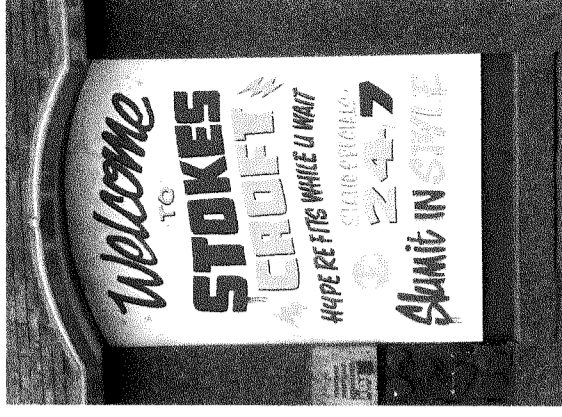
No magic wand, but clarity, co-operation, integration.

It is vital to recognise that we cannot achieve local global planning of healthy neighbourhoods by simple bolt-on measures – such as wind turbines or 20mph (30kph) zones – useful as they may be.

1.3

Bottom-up creativity

This can be a valuable resource in change and renewal. The somewhat run-down and neglected Stokes Croft area in Bristol has seen the emergence of vibrant community life and entrepreneurial activity. This has been supported by local initiatives including the 'People's Republic of Stokes Croft', which have helped mobilise city council action to improve the area.



Harnessing activism

The energy and enthusiasm of young people in housing need were critical to the renewal of Spangenberg, Rotterdam, the Netherlands. Years of dereliction and crime were carefully turned round by a renaissance programme backed by the municipality with an innovative programme that included self-building and co-housing.



1.3

KEY TERMS DEFINED

This set of definitions is provided in order to help develop a common understanding between the many interests and professions which are involved in neighbourhood planning.

Neighbourhood

This is commonly used in the generic sense of the localities in which people live, but here we have normative definitions based on an easily walkable catchment for local facilities, or areas of shared (named) identity. Section 1.13 goes into detail.

Shaping

In the title this word is intentionally used in two senses: 'shaping' as a decision-making process; shape as in the physical form of neighbourhoods. All chapters deal with process to some degree, but chapter 2 is entirely devoted to it, and provides context for the others. Chapters 3–6 all examine aspects of physical form, linking to social, economic, ecological and aesthetic variables.

Health

While many health professionals use a biomedical definition of health (the measurable physical/physiological condition of a person), the definition here is the broader one adopted by the World Health Organization (WHO), which equates health with a state of physical, mental and social wellbeing. See section 1.5 for the way this is related to public health and the built environment. For greater depth see 'Demystifying health: Valuing Nature Programme' (Lovell, 2018).

Local/urban/population health

In this book we are concerned with local neighbourhood health. This is a subset of city-wide or local authority area health. Contrasts between wards within an urban area and between authorities can be very illuminating. Population health simply refers to overall (not individual) population health at any particular scale. See sections 1.5 and 1.6.

Global sustainability

This takes a holistic global ecological perspective, concerned with climate, air, water, soils, wildlife, genetic diversity and natural resources – and the effect of human actions upon them. 'Planetary health' is used to embrace both the health of the natural world and the health of humankind. See sections 1.4 and 1.8.

The changes needed are much more fundamental. They relate to all policy areas and all levels of decision-making. Implementation through planning and design of neighbourhoods only works when broad strategy and local interventions reinforce one another. They work when the key policy makers, the local communities themselves and the investors who implement development are all pulling together.

People, professions, firms, institutions and elected representatives need to erode conventional barriers and escape from silo thinking, building the potential for co-operation through identifying shared values, and agreeing on 'who are we working for?'

- ◆ **Shared values:** almost everyone accepts the central importance of planning an environment that is good for human health and wellbeing, and recognises the overarching need for climate and biodiversity action. Agreement on these can help build trust and co-operation.

- ◆ **Who are we working for?** Some may initially look no further than the client who is paying them, the possible profit margin or their agency role. Acceptance of a broader social and environmental responsibility is vital. We are working for the whole community and the environment on which the community depends.

Chapter 2 lays out processes and techniques that can help build collaborative communities. It identifies three possible launch pads for neighbourhood planning: the local community, the local planning authority and large private or public developers. The guide as a whole provides powerful arguments for change, backed by scientific evidence, and shows how healthy, sustainable settlements are both possible and highly desirable. Below in this section we set out briefly the plurality of forces, local and strategic, affecting neighbourhood evolution, and pointers to their specific responsibilities.

ACTORS IN NEIGHBOURHOOD FUTURES

Local neighbourhood actors, if they are to achieve real change, have to recognise that the critical decision-makers are often not local at all. In capitalist democracies the rules of the game are set by government. As we have seen in the COVID-19 crisis, governments can in the last resort make dramatic change happen. The set of policy-makers below include central and local government, and two sets of professionals that advise and can sometimes shape policy. The gap between policy and action can, however, be great. Sometimes the real decisions are being taken by the private and public firms/agencies with money to invest in the built environment. All this makes for a complex tangle of influences that local people have to try to disentangle.

National and municipal policy-makers

The state politicians who make policy and frame the options open to neighbourhoods, may well espouse noble social and

environmental goals – such as tackling air pollution, obesity and carbon emissions. The test is whether they convert rhetoric into action. In relation to the health and sustainability of neighbourhoods, this action needs to encompass, for example, sustainable, active transport investment, strong local authority powers and a balance of private and community property rights, enabling healthy decisions locally. For a discussion of some of the issues, see chapter 5.

Local government councillors

In most countries, decisions about significant change within any neighbourhood will be made by councillors at municipal, city or county scale. This could include decisions about local transport, employment, housing, services and green infrastructure which profoundly influence the quality and healthiness of the urban environment. The ability to make good decisions will be affected by the powers that local authorities have, and the resources available. Local politicians need to be working for the health and wellbeing of the whole population, recognising global climate and ecological priorities. In order to do this, they need a clear understanding of the spatial dynamics of settlements in relation to healthy household behaviour.

Built environment agencies and professionals

Planners, urbanists, designers, civil engineers and surveyors have a huge responsibility to advise politicians and developers on how to plan places that are good for health and sustainability, conversely on how to avoid counter-productive decisions, even when they superficially seem the easiest and most economically productive. It is vital that these professions' initial education and mid-career training emphasise deep and up-to-date understanding of the health/environment interplay. No politician wants to make decisions that are declared to be unhealthy. This clutch of professions, working together, hold the levers and skills to make visions into reality. Organisationally and individually they could be proactive, taking on a place-based leadership role.

Public health agencies and professionals

The public health agencies at national and city levels have until recently largely ignored spatial planning as a key health determinant. But they could act as powerful forces demanding healthy city policies and development decisions. Public health agencies should be devoted to influencing the decision-makers in the city council, in the major private enterprises, economic development and transport authorities, so that the large investment decisions and wide-area plans support healthy, convivial lifestyles, good air quality and net-zero carbon strategies. This then provides the positive platform for neighbourhood activists, planners and designers to achieve healthy neighbourhoods. Public health professionals can reinforce this by contributing their specialist knowledge.

KEY TERMS DEFINED (Continued)

Net carbon-neutral strategy

The Intergovernmental Panel on Climate Change (IPCC) recommends that by 2050 the world must reach the point where any residual carbon emissions are balanced by carbon absorption. See section 1.7.

Spatial planning

This is the generic term we use to embrace the planning of all human elements of the physical environment, including housing, transport, economic activity, facilities, open space, utilities, landscape, human settlements from farmsteads to conurbations. It is based on an understanding of the needs and behaviours of people, markets and institutions. Alternative terms (town, urban, territorial planning) have broadly similar meanings.

Urban design

This is the design and management of the built environment, especially in terms of the three-dimensional relationship of buildings, spaces and networks and their relation to behaviour, aesthetic perception and development processes. Urban design overlaps with spatial planning. See illustrations throughout the guide and especially chapter 6.

The planning system

While spatial planning is a ubiquitous and integrated activity, planning systems – the legal powers given to central and local government to control land use – vary widely between nations, even between states or countries within one nation (e.g. in Germany, the UK and the USA). They can be prone to manipulation and abuse. Property rights between private, public and community interests are key. See section 5.2.

Healthy planning

A clear distinction must be drawn between planning health facilities (e.g. hospitals, health centres) and planning a healthy built environment. The former is discussed in section 3.12. The latter is the rest of the guide! Public health, environmental health and planning professions all originated in the modern era from concern for unhealthy 19th-century urban environments, and are now re-building connections.

5.2 Land governance

5.17 Working together

1.3

The key investors

In practice, many of the critical decisions affecting the future of localities are taken by the private enterprises and public agencies who invest in urban development and renewal. Often they are not party to the discussions of the main policy-makers, yet are effectively making policy by their decisions. It is essential that these interests are brought 'on board', working strategically and locally with the policy-makers. Some of the relevant groups are:

- ◆ **Transport authorities.** Investment in transport infrastructure by national, regional and city authorities is one of the key determinants of the way towns and neighbourhoods evolve, affecting locational and development decisions. Part of this is the way public transport services are structured and managed.
- ◆ **Economic development agencies.** The decisions of public economic investment units are also critical. If their decisions favour dispersed locations and car-oriented designs with large car parks, then neighbourhoods in the area will struggle to achieve sustainable environments and healthy lifestyles.
- ◆ **Commercial land investors and speculators.** Plans by themselves cannot control future urban development. Land ownership is a more powerful lever, and investment in land with the hope or expectation of development profits is a shaper of settlements.
- ◆ **House builders.** Private sector house-builders and public sector social housing providers are highly influenced by land values and development costs. The easiest options (often greenfield sites) are not necessarily the best.
- ◆ **Health and Education departments.** The accessibility of schools, colleges, hospitals and health centres is critical to achieving healthy urban environments. They are major sources of employment as well as providing services for people.
- ◆ **Water, parks, recreation and wildlife agencies.** Agencies which plan aspects of green infrastructure are assuming more and more importance in the context of climate and ecological emergencies. Recognition of the importance of a city-wide green network influences what is appropriate at neighbourhood level.

The local community

The uncertainties and complexities of urban change in a pluralist society make the task of local people, trying to influence the future of their immediate environment, challenging. It is essential to make powerful allies – political, professional and/or commercial. Chapter 2 focuses on the process of neighbourhood planning. It gives three possible starting points: community action, local authority initiative or commercial development. Whichever path occurs, collaboration and shared learning between the interests are necessary.

2.1 Purpose and scope

1.4

The Brundtland definition

'Sustainable development is development which meets the needs of the present generation without compromising the ability of future generations to meet their own needs.'
(WCED 1987)

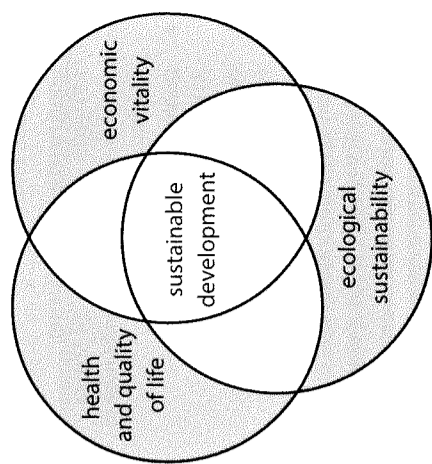


Figure 1.1

Searching for sustainable development

The trefoil diagram does not imply a weak trade-off between social, economic and environmental priorities, but the need to find solutions that marry all three.

1.4 SUSTAINABLE DEVELOPMENT

There are many global agendas espousing the mantra of sustainable development that cities sign up to. However, the rhetoric may remain at mayoral or city level with neighbourhoods gaining little benefit. Currently we have networks of resilient cities, smart cities, sustainable cities, liveable cities, 15 minute cities, slow cities, 85cm cities, healthy cities, child-friendly and age-friendly cities... and the list goes on. While there is a role for all of these, in *Shaping Neighbourhoods* we advocate the use of the UN Sustainable Development Goals twinned with a place-based approach to health as an holistic way to capture the aspirations of all these initiatives.

Defining sustainable development

The classic Brundtland definition (see side column) makes it clear that the focus is on people – on equity for current and for future generations. Sustainable development is about maintaining and enhancing the quality of human life – social, economic and environmental – while living within the carrying capacity of supporting ecosystems and the resource base. The trefoil diagram makes the point that it is not a question of choosing one of the three aspects of sustainability over the others but searching for solutions that marry all three.

There is continuing and growing pressure placed on our planetary resources by human activity – and in particular the nature of much of that activity. Some of the primary impacts are clear at a global scale, for example the challenges we now face from more extreme weather, desertification and loss of soil fertility, increased extinction rate and loss of biological diversity. Other impacts are severe in particular regions, including air pollution, water shortage and flooding. The impact on the biosphere is now so profound that a new epoch of geological time has been proposed, referred to as the Anthropocene (Waters et al. 2016).

UNITED NATIONS 2030 AGENDA

The holistic nature of sustainable development was powerfully reinforced by the UN in 2016, when it produced the 2030 Agenda for Sustainable Development. This aimed to provide a shared blueprint for 'peace and prosperity for people and the planet'. At its heart are 17 Sustainable Development Goals (SDGs). As a set these recognise that ending poverty and inequality between and within nations must go hand in hand with strategies to promote education and health and spur economic growth, while tackling the climate emergency, the loss of biodiversity and environmental degradation.

The 2030 Agenda has been adopted by all the United Nations member states, and the 17 SDGs are being used by countries and organisations across the globe as a means

UN Sustainable Development Goals

Listing the sections in the guide which are most relevant to each goal:

1. **No poverty**
1.6 Health and place equity; 3.3 Housing for all; 3.6 Access to jobs; 3.14 Neighbourhood travel strategy
2. **Zero hunger**
4.9 Neighbourhood planning for urban food and soils
3. **Good health and wellbeing**
1.5 Health and wellbeing; 3.4 Strong communities; 3.12 Community health; 3.13 Recreational space.
4. **Quality education**
3.11 Educational facilities.
5. **Gender equality**
6.3 Walkability, conviviality and community hubs.
6. **Clean water and sanitation**
4.6 Neighbourhood water planning
7. **Affordable and clean energy**
4.3 Neighbourhood energy planning
8. **Decent work and economic growth**
3.6 Access to jobs
9. **Industry, innovation and infrastructure**
3.7 Resilient local economies; 3.14 Neighbourhood travel strategy
10. **Reduced inequality**
1.6 Health and place equity; 3.3 Housing for all; 3.9 Planning local accessibility
11. **Sustainable cities and communities**
1.10 The ecosystem approach; chapter 5 Neighbourhood strategy; and chapter 6 Neighbourhood design and placemaking
12. **Responsible consumption and production**
3.7 Resilient local economies; 4.13 Domestic resource recovery
13. **Climate action**
1.7 Climate emergency; 3.14–3.18 Planning for travel; 4.3 Neighbourhood energy planning; chapters 5 and 6
14. **Life below water**
1.8 Ecological crisis
15. **Life on land**
1.8 Ecological crisis; 4.14–4.16 Biodiversity; 6.2 The structure of space and place
16. **Peace, justice and strong institutions**
1.9 Spatial planning; 2.3 Collaborative communities; 5.2 Land governance
17. **Partnerships for the goals**
Chapter 2: A neighbourhood planning process.

of shaping and legitimising policy. The strength of the set is that they do encompass a very full range of social, economic and environmental concerns, challenging policy-makers to find patterns of development that can knit them together. Neighbourhood planning may impinge on all of them. The side column lists all 17 goals and the sections of the guide where they are most relevant. Four key goals for neighbourhoods are set out below.

SDG 11 – Sustainable cities and communities

SDG11 is central to all aspects when shaping neighbourhoods. The SDG text points to the big picture – that well over half of humanity (5 billion people) will live in cities by 2030, with most of the growth in cities occurring in low- and middle-income countries. A quarter of the current urban population live in slums. Rapid urbanisation is putting huge pressure on fresh water supplies, sewage treatment, the living environment of people, and the quality of the air we breathe. All this adds up to a public health crisis. At the same time, cities account for most energy use and 75 per cent of carbon emissions. Cities are challenged to create jobs and prosperity, to make cities safe, inclusive, resilient and sustainable, and to solve the problems of congestion, housing, infrastructure and services without straining land and resource use.

Clearly neighbourhoods within towns and cities are critical to this goal – whether affluent suburbs, high-density city renewal or marginalised informal settlements. Neighbourhoods provide the physical setting for sustainable communities, and clusters of neighbourhoods make up the sustainable city.

SDG 3 – Good health and wellbeing

The UN recognises that 'ensuring healthy lives and promoting wellbeing for all at all ages is essential to sustainable development'. While the main focus is understandably on eradicating communicable diseases and the availability of health services, the target is also to reduce premature deaths due to



noncommunicable diseases by one-third by 2030, highlighting issues of ambient pollution and sanitation. The WHO Healthy Cities network goes much further in stressing the importance of settlements that promote physical activity, healthy food, social capital and mental wellbeing. Shaping neighbourhoods is central to these agendas, and supports universal health coverage.

SDG 13 – Climate action

Reducing the speed and impact of global warming has been central to the idea of sustainable development since the 1980s. SDG 13 highlights the nature of the emergency, pointing out that the poorest and most vulnerable people are already being seriously affected. The challenge for every country is to implement the Paris Agreement to work to limit temperature rise to less than 2 degrees centigrade. That challenge has since been ratcheted up by the IPCC Report of 2018. Climate action could go hand in hand with ensuring a more equitable society. The nature of buildings, the public realm, green infrastructure and travel patterns in neighbourhoods and between neighbourhoods are central to tackling climate breakdown and creating resilient communities.

SDG 15 – Life on Land

This goal (along with SDG 14 – Life below water) stems from the international Convention on Biological Diversity signed at the Earth Summit in Rio in 1992. Following generations of destruction, the goal is to protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss. Planning nature-based solutions in every neighbourhood involves growing food locally, planting trees, biodiversity action, soil protection, and robust green and blue infrastructure plans.

SDG 17 – Partnerships for the goals

A successful sustainable development agenda requires partnerships between governments, the private sector and civil society. Urgent action is needed to unlock investment in sustainable infrastructure, energy and transport, and this can only be done if people work together. While the UN's prime emphasis is at the national and international level, nowhere is partnership more relevant than at the level of the neighbourhood.

PUTTING IT ALL TOGETHER

The difficulties of achieving all the SDGs are profound. The language of United Nations bodies and national governments is general and establishes broad aspirations for nations and regions. At the level of town or city region planning the preconceptions of councillors, the vested interests of residents, businesses and institutions, skill gaps among professionals and the arbitrariness of some governmental decisions all mean that the quality of local authority action is often severely compromised. As neighbourhood

Universal Health Coverage defined
The United Nations resolution on Universal Health Coverage states that health is an important cross-cutting policy issue on the international agenda, as it is a precondition and an outcome and indicator of all three dimensions of sustainable development.

The resolution calls on Member States to adopt a multisectoral approach and to work on the social, environmental and economic determinants of health to reduce inequities and enable sustainable development.

SOURCE: UN 2012

English policy: the NPPF

The key statement of sustainable development policy in England (there are equivalents in Scotland and Wales) is the National Planning Policy Framework, last up-dated in 2019. It is explicit about the social, economic and environmental aims of spatial planning, including putting health centre-stage. It contains sound guidance on most facets of policy. However, it also contains weasel words in relation to delivery which mean that market interests in land can often take precedence over healthy, sustainable development. See section 5.2 on land governance.

Wales: seven overarching goals

Major projects have to demonstrate that they are in line with these goals to the Commissioner of the Future Generations of Wales.

- a prosperous Wales
- a resilient Wales
- a more equal Wales
- a healthier Wales
- a Wales of cohesive communities
- vibrant culture and thriving Welsh language
- a globally responsible Wales

1.5

plans and development projects sit within the context set by local government, they are likely to be compromised too.

This guide translates the UN principles into actions for neighbourhoods. The central point is that one SDG should not be sacrificed on the altar of another – for example climate action marginalised in the interests of economic growth. There needs to be progress across the board. Simplifying back to the basic concept of sustainable development (figure 1.1), the wellbeing of the whole population depends on:

- ◆ a sound economy – satisfying needs, offering useful work and adequate income
 - ◆ an attractive local environment that supports healthy lifestyles while reducing global climate and ecological impacts
 - ◆ a just, healthy and inclusive society – social networks, social provision, community cohesion and empowerment
- Despite much poor practice, signs of hope can be found across the globe, as our case studies in each chapter illustrate. However, these examples are mainly limited to specific cities or isolated exemplar developments. The lessons from such places are not easy, involving difficult political decisions. If we are to achieve more sustainable settlements, then local authorities need power: specifically, power over budgeting and land (PRP et al. 2008; Hall 2014).



Defining health

'Health is not only the absence of disease but a state of complete physical, mental and social wellbeing. The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being, without distinction of race, religion, political belief, or economic and social conditions.'

(WHO 1946)

3.1 Putting people first

PUTTING PEOPLE AT THE CENTRE

Planning and design shape the buildings, streets, greenspaces, activities, and aesthetic qualities of neighbourhoods. These are the tools, or the means available. But the ends are about people. Putting people at the heart of planning: people of all ages, genders, abilities and cultural backgrounds; people living in the neighbourhood, those in settlements around, future residents, future generations. Success is measured through assessing health, wellbeing and quality of life. Planning an urban environment that works towards health for all provides an aspiration that everyone can vote for.

1.5 HEALTH AND WELLBEING

The idea of sustainable development, with its multiple, apparently competing, dimensions, can lead to confusion and irresolution. The WHO Healthy Cities network, with its core message of 'health in all policies', sees health and wellbeing as the lens through which to address sustainable development. The health of the whole population depends on all three overlapping circles of sustainable development: a sound economy satisfying needs and offering useful work; a healthy environment, locally and globally, that facilitates physical and mental wellbeing while reducing risk; and social networks, social provision, community cohesion and empowerment.

HEALTHY PLACES, HEALTHY LIVES

There are various ways of expressing the idea of healthy environments (see figure 1.2). As noted in the side column, WHO expressly states that health is not simply the absence of disease. It is about the positive concept of wellbeing. The Ottawa Charter for Health Promotion states that:

'Health is created and lived by people within the settings of their everyday life; where they learn, work, play and love. Health is created... by ensuring that the society one lives in creates conditions that allow the attainment of health by all its members.'

(WHO 1986, p.7)

Understanding the health-environment link

The relationship between personal health and the environment is multifaceted. Figure 1.3 gives a fair impression of this, linking characteristics of the urban environment to a very wide range of physical and mental illnesses. At a simpler level the relationship is also a matter of quite intuitive understanding.

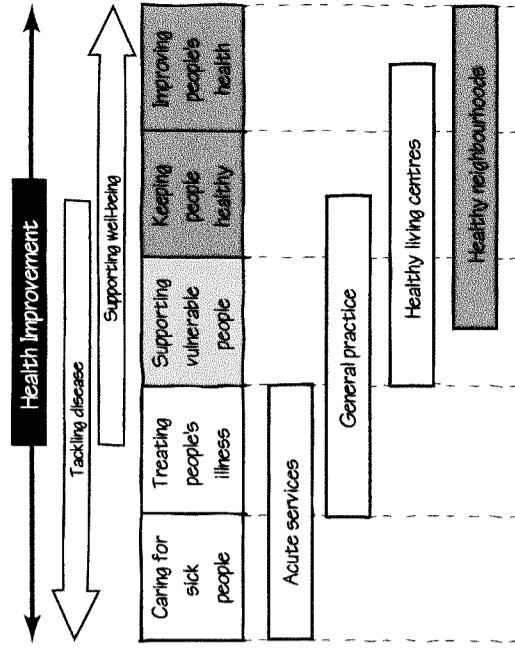
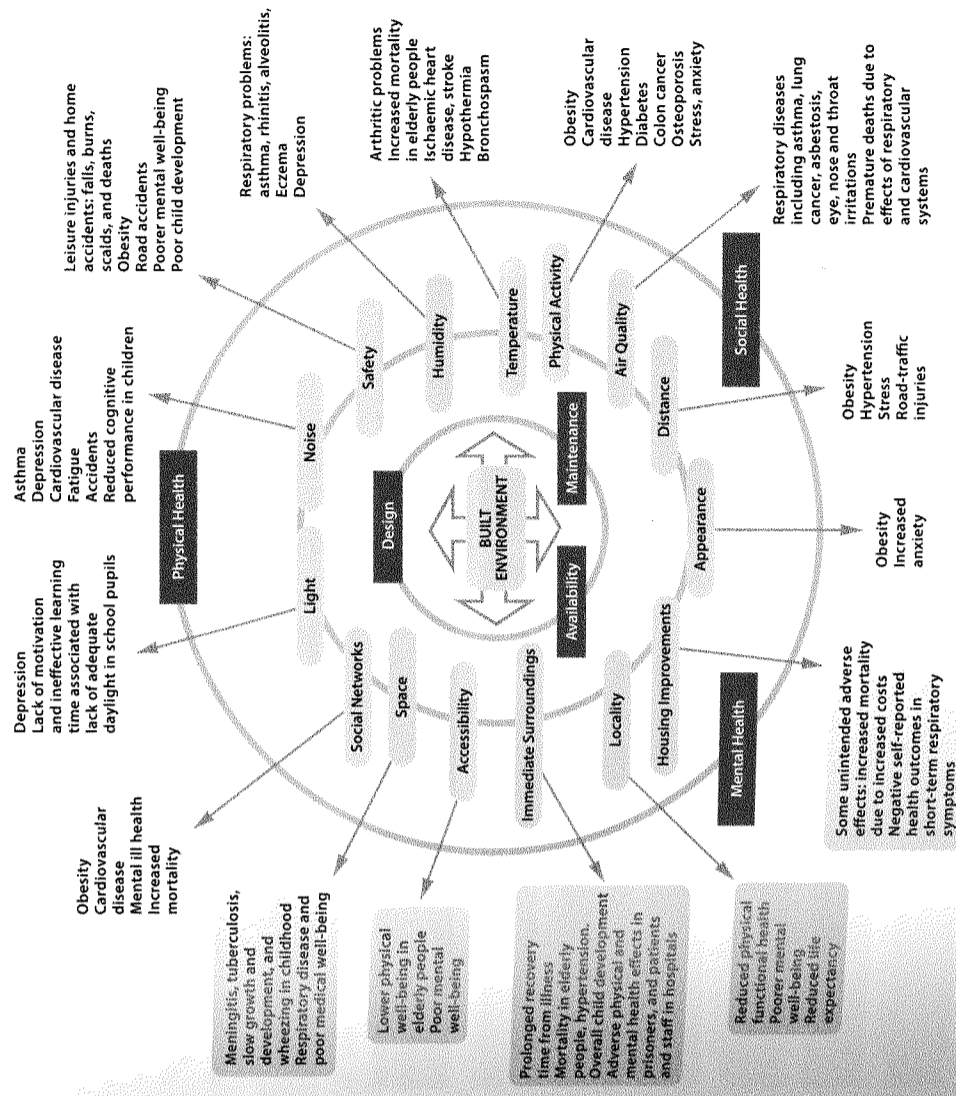


Figure 1.2
The neighbourhood's role in health

Figure 1.3
The impact of aspects of the urban environment on health problems



SOURCE: Rao et al., 2007

1.5

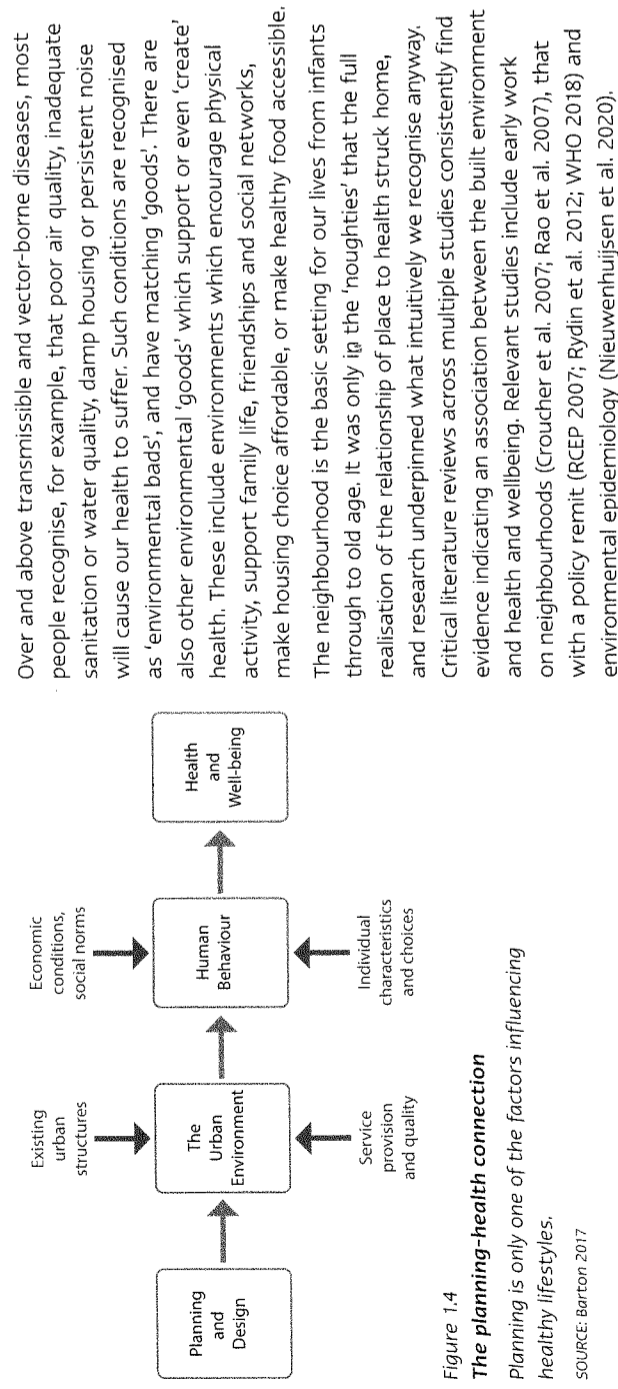


Figure 1.4
The planning-health connection
Planning is only one of the factors influencing healthy lifestyles.
SOURCE: Barton 2017

Environment and behaviour

It is unreasonable to expect large proportions of the population to change their behaviours when the environments where they live discourage such changes.

Schmid et al. 1995

Reducing the incidence of disease
When shaping neighbourhoods, therefore, we are not primarily concerned with the services that treat illness, but the qualities of place that promote wellbeing (see also Lovell 2018). The physical quality of neighbourhoods can support healthy behaviour, relieving the burden on health services. Systemic planning and public health action can combat diseases such as heart disease, respiratory problems, obesity, type 2 diabetes, mental illness and even some forms of cancer, reducing risk factors such as lack of opportunities for everyday exercise, poor air quality, inadequate access to fresh food and fragmented social cohesion.

THE ECONOMIC CASE

Build-in health or build more hospitals?

It is morally right to work for healthy places that reduce human suffering. It is also economically right, reducing the cost of health services and supporting local economic prosperity. Tackling avoidable noncommunicable disease reduces health care demand, supporting universal health coverage.

Evidence is accruing from both academic research and official studies. The health economics case is that interventions for prevention of illness at the population level are a more effective way to use scarce health finances than treating each individual once they get sick (Masters et al. 1997; WHO 2018a). Here are some indications of the potential savings:

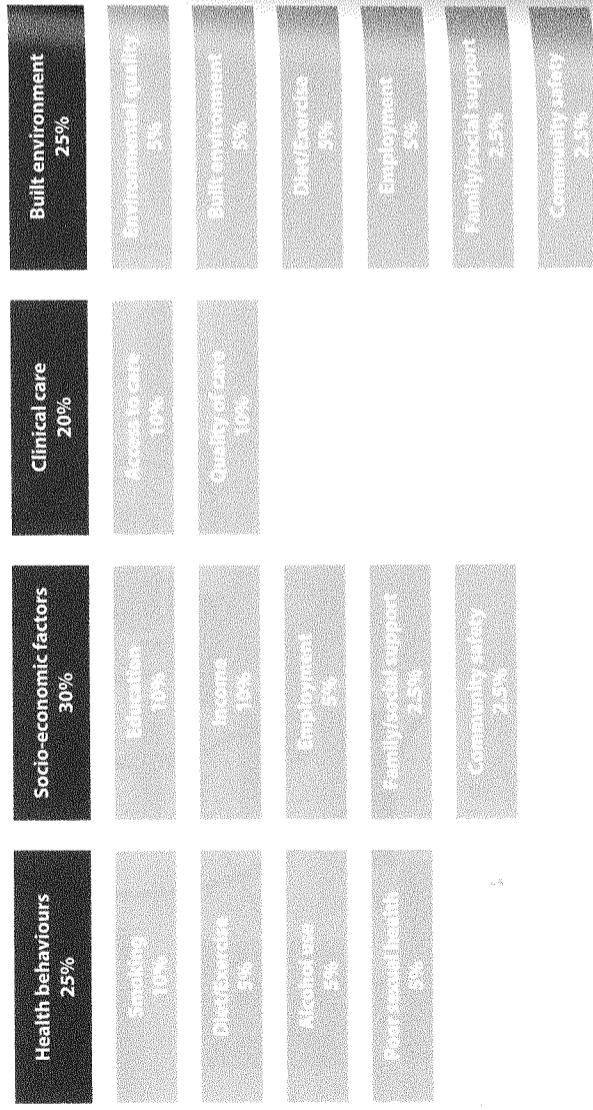
- ◆ **Obesity:** the UK Foresight Report, Tackling Obesity (Butland et al. 2007) calculated that extra treatments and care resulting from people being obese or overweight cost the NHS £6.3 billion in 2015.
- ◆ **Air pollution:** WHO estimate that seven million people across the world die prematurely because of air pollution (WHO 2016d). The UK Parliament estimates the cost to the UK is around £16 billion p.a, similar to the estimate for smoking (House of Commons 2011).
- ◆ **Greenspace:** one study found that Londoners avoid £950 million p.a. in health service costs due to public parks, which create the opportunity for people to exercise, socialise, relax and enjoy semi-natural surroundings (GLA 2017).
- ◆ **Cycle infrastructure:** a study in New York concluded that investments in cycle routes were exceptionally good value because they addressed multiple public health problems, and the cost per individual was far less than the threshold which triggers individual medical interventions in the UK (Gu et al. 2017).
- ◆ **Fuel poverty:** a health-energy coalition found it financially cheaper to solve the health problems arising from fuel poverty (asthma, respiratory diseases) by topping up a government scheme to provide new heating and insulation rather than picking up the predicted costs treating a family's ongoing illnesses (Preston et al. 2014).

It is more cost effective to treat the causes than the symptoms

In the competition for resources between 'sick individuals or sick populations', as Rose (2001) pointed out, we risk forever treating people when they are ill, instead of focussing on whole populations and 'treating' places themselves. Using an environmental model of prevention for public health, Chokshi and Farley (2012) showed that it can be far less expensive to alter an environmental element that many people are exposed to, than to interact with each person directly.

Figure 1.5
Factors affecting an individual's health outcomes

SOURCE: Adapted from a model developed by Robert Wood Johnson Foundation and University of Wisconsin Population Health Institute (Bookse et al. 2010)



Wealth is not measured by GNP

'The gross national product does not allow for the health of our children, the quality of their education, or the joy of their play. It does not include the beauty of our poetry or the strength of our marriages; the intelligence of our public debate or the integrity of our public officials. It measures neither our wit nor our courage; neither our wisdom nor our learning; neither our compassion nor our devotion to our country; it measures everything, in short, except that which makes life worthwhile.'

Robert F. Kennedy, University of Kansas, March 18, 1968

Property agencies support healthier cities

'Better designed cities could save our society and the UK economy an estimated £15.3bn by 2050 - and make us all happier and healthier.'

British Land et al. 2015, p.8

'There are many important intangibles which contribute to (property) value. Because markets do not trade explicitly in these things, it is hard to identify and quantify their value. Intangible factors in the area of health, happiness and wellbeing, for example, have the potential to keep the cost of health services affordable and are only now becoming better recognised.'

RICS 2016, p.45

Assessing wellbeing

City leaders around the world are using regular assessments of wellbeing to evaluate progress and identify problems. These 'quality of life' or 'State of the environment' reports, have agendas strongly overlapping with health. They include mapping analysis which reveals exactly where problems lie and how neighbourhoods compare.

Typical factors examined are:

- air quality
- road accidents
- access to greenspace
- unemployment rates
- housing conditions

Assets of vulnerable communities

'As well as having needs and problems, our most marginalised communities also have social, cultural and material assets. Identifying and mobilising these can help them overcome the health challenges they face.'

Foot and Hopkins 2010

Supporting economic prosperity

The health of the economy is not just an economic issue, but a key determinant of people's health, in the sense of providing income, activity and a role in society. A sound economy is about physical and mental wellbeing.

- ◆ **Tackling obesity:** the same Foresight study as above estimates that if present trends continue, the cost of obesity to the UK economy in terms of days of work lost, reduced productivity, disability benefit, early retirement, will become greater than the entire current cost of the NHS (Butland et al. 2007).
- ◆ **The walking environment:** a comprehensive review found that making places better for walking can boost footfall and trading by up to 40 per cent and raise retail rents by 20 per cent (Lawlor 2013).
- ◆ **Walking and cycling:** in terms of return on investment the economic benefits of walking and bicycling interventions can be highly significant averaging 13:1, and some countries as high as 19:1 (Davis 2010).
- ◆ **Physical activity:** cities with physically active residents are more productive as well as healthier (Sallis et al. 2015b).
- ◆ **Specific local projects:** horticultural projects, wood stations and exemplar energy projects can provide social benefits, training, employment and small businesses opportunities.
- ◆ **Greenspace ecosystem services:** it has been estimated that green spaces in London reduce health risks by providing £2.8m storm water alleviation and £126.1m in pollution removal per year (GLA 2017).

Converting the evidence to action

The economic case is clear. However, there are three barriers to change. First, the political and policy focus of the health sector remains trapped in an illness and service delivery model. Second, the built environment investors and developers tend to have a conservative attitude relying on 'tried and tested' approaches that have yielded profit in the past at the expense of people's health. Third, and most fundamentally, the standard economic measure of success - gross national product - distorts political decision-making (see Kennedy quote in side column on p.17).

Without a concerted focus by all built environment professionals on the impacts they are having on health through their interventions in neighbourhoods, supported by enlightened politicians and a radical public health movement, the costs of running a health service will spiral out of control. Such a focus is part of the WHO 'health in all policies' principle. It equates to the 'fully engaged' scenario developed in a report for the UK Treasury looking at future health funding up to 2050 (Wanless 2004).

A WHOLE LIFETIME APPROACH FOR NEIGHBOURHOODS

The WHO promotes a life-course approach to an individual's health. When shaping neighbourhoods we need to treat the physical environment as an essential enabler of healthy and independent life (Green and Tsourous 2008). Figure 1.6 illustrates the 'dependency' threshold. At the start of life, young children are totally dependent. A child-friendly environment is one that will best support them on their journey to independence. Towards the end of life, some - but not all - old people become heavily dependent on social support because of illness or disability. At any age, a few people may experience illness or disability for a range of physical or mental reasons. The aim for neighbourhood planning is to create a situation where fewer people sink below the dependency threshold, and even if they do, the neighbourhood environment is supportive.

The intergenerational neighbourhood

Neighbourhoods should be places where all generations mix. This principle is explored in detail in chapter 3. This is for two reasons. First, that as household status evolves, from young singles and couples through family raising to empty nesters and old age, it should be possible to stay in the same familiar place and community. Second, social interaction between generations, especially the old and the very young, can be good for all, and enhanced by careful location and design.

Child-friendly places

Habits established in childhood persist in later life. If children spend all their time indoors, or persistently over-eat, these behaviours will often be carried right through, with obesity the result. The culture of children's independence has been in decline since the 1870s in virtually every continent (Kyttä et al. 2015). For younger children, the safety, attractiveness and conviviality of the immediate environment near the home are critical to parental permission to go outside and play. The street, the playground, greenspace and walking/cycling routes to school are all central to neighbourhood planning, boosting physical activity and social contact. Poor dietary habits can also be discouraged by the absence of fast/sugary food outlets near schools. Chapter 3 explores all the issues.

Healthy ageing

The urban environment profoundly affects the physical and mental health of older adults. Living in walking-oriented neighbourhoods with easy access to essential services and strong social networks contributes to healthy ageing. Getting out and about on foot is associated with fewer visits to the doctor (Cairncross 2016). Ageing in place is desirable. It means 'being able to remain in one's current residence even when faced with increasing need for support because of life changes, such as declining health, widowhood, or loss of income' (Greenfield

Measuring the life-course

There are several measures of health that relate to the life-course, and may be available at neighbourhood, town, ward, parish or commune level.

- The most basic and widespread is the straightforward measure of life expectancy.
- The second, and more illuminating is Healthy Life Years (HLY), i.e. the number of years men and women live without any kind of life-limiting illness or disability.
- The difference between the two varies greatly between population groups, rich and poor.
- A third measure combines these two as QALYS (Quality Adjusted Life Years), used often as an economic evaluation to assess treatment or intervention options.

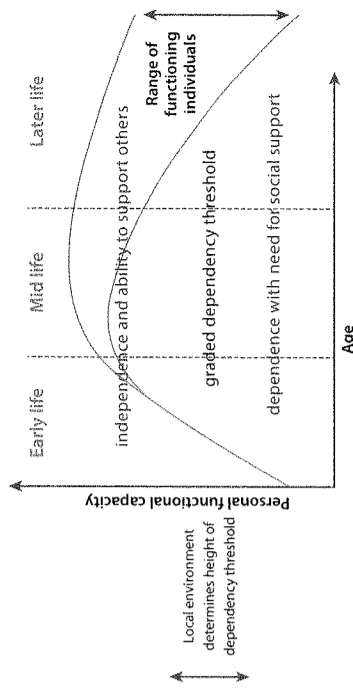


Figure 1.6

The degree of individual independence through the life course

People's functional capacity changes through the life-course. However, the quality of the local environment affects the degree of independence or dependency - especially among poorer groups.

SOURCE: Adapted from Kaijache and Kickbusch 1997 and WHO 2000

Active ageing defined

Active ageing is the process of optimising opportunities for health, participation and security in order to enhance quality of life as people age.

WHO 2002

3.2 A diverse population

1.6

COVID 19

At the time of writing it is not clear what the longer-term impact of Covid 19 will be. For those who contract the virus, the most severe complications occur for the frail elderly and people with hypertension, diabetes, chronic lung and heart disease. Being overweight is a risk factor for middle-aged people. There is also gathering evidence that air pollution is a factor.

The future of neighbourhoods after extended lock-down is very uncertain. People may well permanently reduce travel, relying more on virtual connections. Some predict that while city centres are likely to suffer decline and vacancy, smaller town and local centres could benefit from people working from home and spending social and leisure time locally. But home-based life could have serious downsides, with children getting out of the habit of outside activities and becoming even more attached to their phones and iPads.

et al. 2012, p.1). Drastic change late in life, such as relocation, can lead to poor health outcomes. However, many places are not well suited to older people if their mobility impairments increase. The quality of the neighbourhood becomes more important as walkable distance and driving ability decline, and can help reduce isolation and loneliness (Yen et al. 2009).

Mental health and physical health are codependent especially for the elderly. Research has found that the quality of 'buildings and surroundings', 'community facilities and amenities,' and 'social attributes of a place' are important for older people to feel at home and comfortable in their localities (Sun et al. 2020). The process of neighbourhood planning should aim to actively engage older residents, including the 'oldest-old' (people aged 85+).

1.6 HEALTH AND PLACE EQUITY

This section concentrates on three critical health issues, which are interlinked and all impacted by the quality of the urban environment, to a degree often not recognised:

- ◆ health equity and health inequalities
- ◆ physical wellbeing – especially related to obesity
- ◆ mental wellbeing, happiness and depression

Long-standing political concerns for social justice have been sharpened by the growing recognition that in most countries there are huge health inequalities by income in terms of life expectancy, healthy life years (without disability) and the incidence of illness. Health inequality is closely related to income inequality and also to problems of obesity, stress and mental illness. It severely damages the prospects and happiness of some of the poorest in society, depresses productivity and prematurely undermines the ability to work.

Health equity implies that everyone should have a fair opportunity to attain his or her full health potential and that no one should be disadvantaged from achieving this potential.

Health and place inequality

Inequality is spatially organised. People living in localities with lowest average incomes, shortest healthy lives and highest unemployment also experience the most adverse environmental conditions: poor air quality, high noise levels, traffic danger, poor housing, little greenspace along with high drug dependence and crime levels (Allen and Allen 2015). Place equity is therefore an important element in health equity. Neighbourhood planning has a vital role in attempting to reduce the spatial inequities through housing, transport, greenspace and placemaking policies.

The World Health Organization places as much emphasis on health equity as on supporting health itself. Improvements in aggregate population health outcomes must not be achieved at the expense of those 'at the bottom'. In other words, everyone should have a fair opportunity to attain their full life potential. The degree of health inequity is measured by differences of life expectancy, years of disability-free life or healthy life years, and/or the incidence of particular illness between groups or areas. Data is often available on a disaggregated basis, down to neighbourhood, ward or village level.

The disparity between rich and poor countries is marked. In 2013 life expectancy ranged from 46 years in Sierra Leone (before Ebola) to 84 years in Japan. Even within rich countries inequality can be alarming: in the UK socially and economically deprived populations spend a third of their shorter lives with physical or mental disability. Within cities, the situation can be shocking: the Birmingham example in the side column is not exceptional.

PLANNING EQUITABLE NEIGHBOURHOODS

The planning of neighbourhoods and cities is part of the problem and can be part of the solution. There are a number of critical factors:

- ◆ Household disposable income is a very important determinant of health. Housing costs (rent or buy), transport costs and energy costs are major items that help determine the income available to poor households for other living costs, including food (Barton 2017).
- ◆ The priority is to plan the location and spatial arrangement of housing, employment and transport so that every household can gain access to housing and has easy access to a wide range of jobs, facilities and greenspace without the need for a car.
- ◆ The housing market – for social housing, private rent or owner occupation – needs to be managed so that living space is affordable to all.
- ◆ Socially mixed neighbourhoods lead to better health outcomes for poorer households than equivalent households in one-class ghettos. Planning can try to ensure diversity of housing supply while protecting reservoirs of cheaper housing from being gentrified.
- ◆ The scale and form of neighbourhoods, and the quality of placemaking, can ensure that local facilities are viable and accessible by foot and pedal, increasing household options and helping to enable a vibrant local community.
- ◆ Dwellings and neighbourhoods can be designed or retrofitted to reduce running costs for heating, cooling and electricity, avoiding the health impact of fuel poverty.

3.3 Housing for all

Health Equity defined

The World Health Organization defines health equity as the absence of avoidable, unfair, or remediable differences among groups of people, whether those groups are defined socially, economically, educationally, demographically or geographically.

WHO 2020

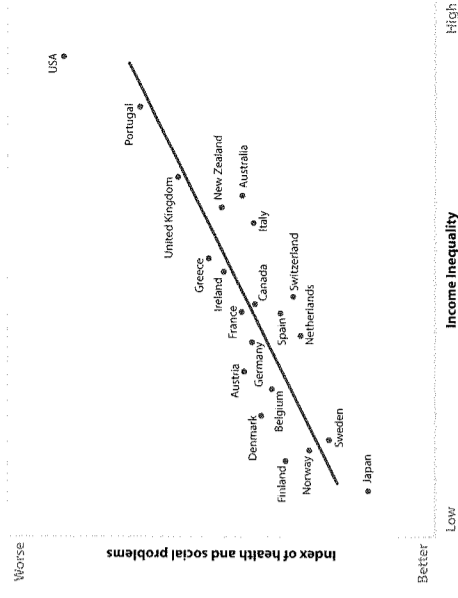


Figure 1.7

Health and social problems in relation to income inequality

SOURCE: Barton 2017, based on Wilkinson and Pickett 2009

Inequality in Birmingham

In Birmingham, England, life expectancy for all neighbourhoods was increasing, and the divergence between rich and poor reducing, until 2011. Since then the poorer areas have experienced both falling life expectancy and reducing healthy life years (HLY). Men in the poorest wards live with physical and/or mental disability from 50 on average, by comparison with 72 in rich areas. Women in the poorest wards live with disability 14 years longer than those in rich wards.

SOURCE: Birmingham City Council 2017

Obesity defined

Obesity is normally measured by Body Mass Index (BMI). This is a person's weight (kg) divided by their height (m).

Classification	BMI
Underweight	<20
Normal	20–25
Overweight	25–30
Obese	30–40
Morbidly obese	>40

Obesity and overweight increase the risk of these nine diseases

- type 2 diabetes
- cancers
- respiratory effects
- reproductive function
- coronary heart disease and stroke
- osteoarthritis
- hypertension
- dyslipidaemia
- liver and gall bladder disease

SOURCE: BURLAND ET AL. 2007

Environmental obesity strategy

Progress towards change in policy and practice is always slow; however, there are valuable opportunities for health and planning professionals to work together and forge a desperately needed whole systems approach to tackle obesity at the neighbourhood level (Townshend & Lake 2017).

OBESITY AND OBESOGENIC ENVIRONMENTS

An overconsumption of energy intake in relation to energy expended in daily activity has led to a global trend towards being obese and overweight, with attendant health risks (see side panel). Obesogenic local environments have been long recognised as contributory factors (Swinburn et al. 1999). Worldwide obesity has nearly tripled since 1975. In 2016, more than 1.9 billion adults, 18 years and older, were overweight; of these, over 650 million were obese. Most of the world's population now lives in countries where overweight and obesity kill more people than underweight. The trend affects children too. Some 340 million children and adolescents aged 5–19 were overweight or obese in 2016 (WHO 2020).

There is a complex web of causal factors, but the evidence for the crucial significance of the built environment for obesity in relation to both physical activity and food is progressively becoming stronger. In all countries, local environments and global drivers interact to produce a complex causal web (Swinburn et al. 2011). The arguments are well rehearsed in Barton et al. 2015, and most particularly Townshend et al. 2015. Increased car dependency and reduced active travel (walking and cycling) are critical factors. The spatial design of cities and neighbourhoods, their food environments and the way we plan our travel networks are all significant determinants. Each additional hour spent in a car is associated with a 6 per cent increase in the likelihood of obesity. Each extra kilometre walked a day is associated with a 4.8 per cent reduction in the likelihood of obesity (Frank et al. 2004). One research review suggested that the decline in walking in itself can account for most, if not all, of the increase in obesity (Davis et al. 2007).

Tackling obesity through neighbourhood planning does not depend on one aspect of policy, but the way the whole place functions and influences behaviour. A built environment that is compact (with relatively high population density) tends to be one where people are more active because of the ease with which they can reach places and people (Garden & Jalaludin 2009). But density by itself is insufficient. Shaping towns and cities for daily physical activity involves the pattern of mixed uses, the permeable network of streets, the quality and safety of pedestrian and cycling routes, and the accessibility of attractive open space.

To a limited extent diet can also be influenced by the environment. While diet is largely a cultural, habitual matter, bad habits are reinforced if fast food and sweet food outlets are all that is available – especially for children at the end of the school day (Townshend et al. 2015). Such outlets can be forbidden close to schools, while fresh fruit and vegetable outlets encouraged in neighbourhood centres.

3.15 Pedestrians first!

MENTAL WELLBEING AND DEPRESSION

Halpern's seminal work 'Mental Health and the Built Environment: More than Bricks and Mortar?' (1995) stimulated empirical work that continues to this day. Both physical and social urban environments cause mental stress, as can having no say to changes made to the local environment.

- ◆ Depression is one of the leading factors causing disability.
- ◆ Suicide is a leading cause of death among 15- to 29-year-olds.
- ◆ People with severe mental health conditions die prematurely (WHO 2019).

Urban environmental effects associated with poor mental health vary by disorder but include psycho-social stresses of the urban environment (such as traffic jams, fear of crime, getting lost), low quality housing, anti-social neighbourhoods, reduced access to green space, and air and noise pollution (Flies et al. 2019). In Libby Burton's analysis, many facets of the built environment have an impact, but it is the way streets, dwellings and spaces are designed, not a tick-box exercise (Burton 2015).

Social, physical and health variables are related to each other. Neighbourhoods that are characterised as more walkable are associated with increased physical activity, increased social capital, fewer weight problems, lower levels of depression, and less alcohol abuse (Renalds et al. 2010).

Social inclusion features very highly in supporting positive mental health. A systemic review found the following features boost social relations through improvements in community infrastructure (Bagnall et al. 2018):

- ◆ community hubs and places for people to gather.
- ◆ changes to neighbourhoods that helped promote sense of belonging and community pride.
- ◆ green and blue spaces interventions that increased shared access, activity and healthy eating.

The degree and nature of social mix are also key factors. People are less likely to get depressed if they live close to others like them (Halpern 1995). This is a complex issue, explored in chapter 3.

Happiness, environment and health

Happiness is a subjective measure of wellbeing, assessed through social survey. Studies have found an intimate relationship between the social and physical character of places and subjective feelings of happiness. The ability of cities and localities within them to offer safe environments, enjoyable amenities and meaningful services that people value not only directly affects happiness, but also health and social connectedness (Goldburg et al. 2012).

People's response to environmental features

Recent real-time experiments with portable brain wave recorders (Neale et al. 2020) or mobile user feedback devices (Ellard and Montgomery 2011) confirm much intuitive knowledge. For example:

- long, featureless façades lead to people being bored, while active and open façades are appealing
- people have a positive response to safe green spaces
- urban traffic noise results in symptoms of stress
- in dense urban areas, even a small space for respite from noise and crowds such as a quiet churchyard can provide psychological benefit

3.4 Strong communities

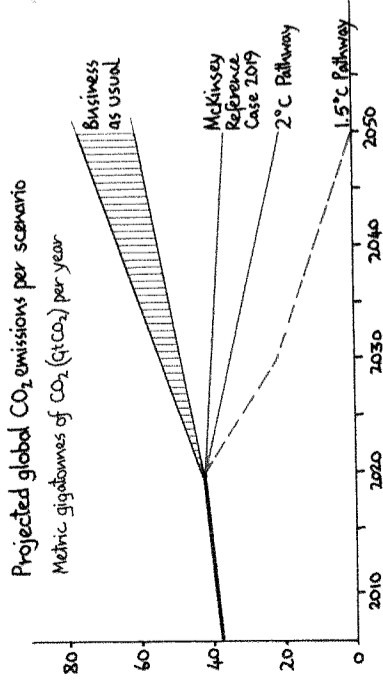


Figure 1.8
Carbon dioxide emission scenarios
To hold down temperature rise to 1.5°C above the pre-industrial level by 2050, there needs to be 50 per cent reduction by 2030, plus 40 per cent reduction of other greenhouse gases, and net-zero emissions by 2050.
SOURCE: McKinsey 2020

1.7 CLIMATE EMERGENCY

The prognosis for human health is intimately connected with planetary health. This can be seen starkly in both the global climate and ecological emergencies which each have dire consequences for our health. However, these are not two separate agendas. Both are ensnared in current economic structures of conspicuous consumption, unsustainable economic activity and globalisation.

THE CLIMATE BREAKDOWN

Responding to the climate emergency has profound implications for the future of neighbourhoods. The widely accepted goal of becoming net-carbon neutral by 2050 implies a radical shift in lifestyles, in the way energy is generated and used, and in the way people travel. Urban areas also need to develop coping mechanisms to deal with the predicted impacts of climate change. This includes ways to mitigate hotter temperatures, manage water supplies and prevent flooding. There is an umbilical link between local personal behaviour and global ecology: microcosm and macrocosm. Neighbourhoods act as a key links in the chain which connects the two: neighbourhood planning as local global planning.

The problem of climate change

The intergovernmental Panel on Climate Change (IPCC) – the most authoritative source available – revised its predictions in 2007, 2012 and 2017, mostly in an upward (i.e. worsening) direction. It pointed out that atmospheric carbon levels are at their highest for three million years, and global temperatures have increased by 0.9°C in the last 150 years. It is convinced that human activity is causing the emission of higher levels of greenhouse gases than can be absorbed by Earth's metabolic processes, and thus is contributing to observed and predicted climate change. The median predictions are:

- ◆ 4°C temperature rise by 2100 CE
- ◆ an increase in extreme weather events
- ◆ sea-level rise of at least one metre
- ◆ significantly different climates in most countries

The uncertainties of the predictive techniques, reflecting uncertainties in our understanding of global ecology, mean that there are risks of much more severe impacts – particularly on sea levels. The observations of melting glaciers in Greenland and the reduction of the north polar sea ice give added cause for concern. The likely ecological impacts of 4 degrees temperature rise are severe, with major shifts of wildlife habitats, threatening species extinction, and of human activity. The WHO considers global

warming, given current trends, to be the world's biggest threat to health. The problems already evident include:

- ◆ Growing exposure to air pollution – 7 million deaths worldwide in 2016.
- ◆ Increased exposure to extreme weather events, such as wildfires, flooding and hurricanes.
- ◆ Heat causing uninsured economic losses, with a third more potential work hours lost than in 2018 – with a severe human health toll.
- ◆ Increased exposure of vulnerable elderly to heatwaves.

Future unquantified risks include poverty exacerbation, migration especially due to sea level rise, violent conflict and mental illness. Without accelerated intervention 'the life of every child born today will be profoundly affected by climate change' (as reported in The Lancet Countdown, Watts et al. 2019, p.1).

Net-zero carbon emissions by 2050

In the face of the accumulated evidence, the international community at the Paris Climate Change Conference in 2015 set the aim of keeping global temperature rise well below 2 degrees above pre-industrial levels. The 2017 IPCC report strongly recommended that 1.5 degrees would be far preferable to 2 degrees, in terms of the level of risk: floods, droughts, extreme heat waves in the tropics, changes to natural ecosystems. However, current national pledges are insufficient to achieve 2 degrees. The report states we need very substantial cuts in carbon dioxide emissions by 2030, and net-zero carbon emissions by 2050. The McKinsey study of 2020 estimates that by that date carbon emissions of one-tenth the current level would need to be compensated by an equivalent level of carbon sequestration, through re-forestation and carbon capture, use and storage. We also need urgent action on methane emissions and other greenhouse gases. The McKinsey report highlights that for methane the biggest current problem is 'fugitive' emissions from fossil fuel industries, which would decline as those are phased out. Action would also be needed to reduce methane from ruminants (cows and sheep), from rice paddies and from waste disposal.

Some countries have declared a climate emergency and adopted the 2050 target. The IPCC says, if we are to achieve that, we need:

- ◆ effective carbon pricing
- ◆ renewable electricity substituting for fossil fuels
- ◆ diets less reliant on greenhouse-gas-intensive foods
- ◆ an increase in forest and soil carbon sequestration
- ◆ demand-side management and behavioural change
- ◆ transformative systemic change in finance, government systems, energy, land, industry and urban systems

Heat wave illness and deaths
More intense urban heat waves are only one of several ways that a warming climate will affect health. The main impacts on health are through:

- Emergence of infectious diseases
 - Extensive heat causing dehydration, heat exhaustion and heat syncope
 - Respiratory difficulties, heat cramps and heat-related mortality
 - Circulatory and cerebrovascular effects like heat exhaustion, heat collapse and heat stroke
 - Increase in morbidity and fatality, especially for those working in outdoor conditions
- Melbourne averaged approximately 200 heat-related deaths in 2013, in comparison to the state road toll of 242 deaths. By 2030, the number of deaths as a result of heat is expected to double.
Commonwealth of Australia, 2013
- In the USA, heat waves kill more people than any other weather-related phenomenon, with around 1,300 deaths each year.
McDonald et al. 2020

'Pursuing place-specific adaptation pathways towards a 1.5°C warmer world has the potential for significant positive outcomes for wellbeing in countries at all levels of development.'
IPCC 2017

'Without societal transformation and rapid implementation of ambitious greenhouse gas reduction measures, limiting warming to 1.5°C will be exceedingly difficult if not impossible to achieve.'
IPCC Summary for policy-makers, chapter 5, 2017

1.7

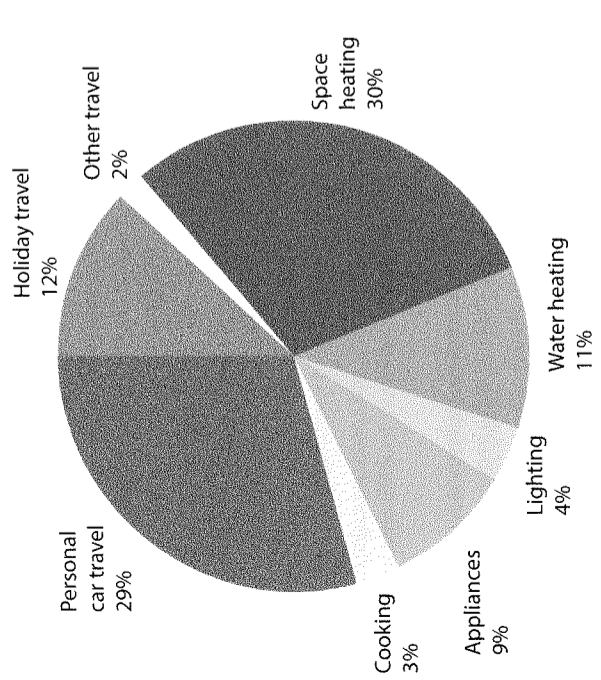


Figure 1.9
UK carbon emissions 2019
Since 1990 there has been a 45 per cent fall in overall greenhouse gas (GHG) emissions, mainly due to dramatic change in power station fuels and sharp decline in other GHG emissions.

The IPCC believes that these changes would be consistent with poverty alleviation, improved energy security, purer air and healthier lives. If we fail to hold down the rise in temperature to 1.5 degrees above pre-industrial levels, the risks disproportionately affect disadvantaged and vulnerable populations – with food insecurity, loss of livelihoods and population displacement.

NEIGHBOURHOOD CARBON-NEUTRAL STRATEGIES

Radical national and international action is essential to send the right legislative and financial signals. In that context every city, town, neighbourhood and village is the place where the mitigation battle will be lost or won. Each area or settlement is different and carbon budgets may vary widely from the norm. The UK example in the side column shows transport as the biggest carbon emitter, with home heating in second place. The main culprits are coal, oil and gas. In the next 40 years it is necessary to wean ourselves off fossil fuel dependence. Here are some of the policies developed in the guide:

- ◆ All new buildings to be heavily insulated, draught-proofed, and orientated so as to make good use of passive solar gain, photovoltaics and solar hot water.
- ◆ A massive programme to retrofit all old buildings, including listed buildings, to near carbon-neutral standards.
- ◆ A renewable energy strategy maximising the potential for solar and wind power or other renewable sources locally available – together with combined-heat-and-power (CHP) schemes using waste products that are incapable of reuse or recycling.
- ◆ A local food strategy encouraging local organic production, composting of organic waste matter and fostering attitude change to locally-sourced, low-carbon diets.
- ◆ A progressive shift from diesel and petrol vehicles towards electric vehicles, facilitated by rapid re-charging points and flexibility in home charging provision.
- ◆ A travel and route network strategy that transforms the convenience, safety and attractiveness of walking, cycling and public transport.
- ◆ A land use strategy that increases the local provision of facilities, the opportunity for multi-purpose trips and the quality of the public realm so as to reinforce the desirability of active travel.
- ◆ A green infrastructure strategy that increases tree cover and natural green cover (including on roofs), while reducing design based on hard heat-absorbing surfaces.

Resilience in the face of climate change

Given climate change, it is vital to increase the resilience of neighbourhoods. Depending on location, the key risks are

1.8

The co-benefits of taking action on climate change.

- Health and wellbeing are improved as a result of improved air quality through reduced use of combustion engine vehicles, increased activity from people walking or cycling more, as well as through reduced fuel poverty from more energy efficient homes.
- Equity and social cohesion are improved through moving towards an environment which reduces household costs, encourages conviviality, as well as the factors above.
- Investing in initiatives to reduce carbon emissions can create economic opportunities and jobs in the low carbon economy.
- Biodiversity and natural systems are greatly enhanced by the emphasis of greenspace, tree planting and environmental resilience.

higher temperatures, more powerful storms, increased run-off and consequent flooding, and conversely, drought, soil erosion and water supply problems. Coastal settlements are also at risk from sea-level rise. There is likely to be a wide variation in maximum temperatures between high density, hard surface parts of a city and major green spaces, with suburbs somewhere in-between. Resilience strategies overlap with mitigation:

- ◆ A green infrastructure plan which increases the amount of greenspace and tree-cover, including street trees, creating green networks that break up the urban heat island, and offer shade where needed.
- ◆ Improving the storm-water holding capacity of the settlement, slowing the speed of run-off and reducing flood risk with green roofs, sustainable drainage systems, permeable hard surfaces.
- ◆ Land use plans that protect and increase the capacity of flood-plains, and anticipate the threat of rising sea level and more violent storms.
- ◆ Management of natural habitats and other greenspaces allowing for the gradual evolution of flora and fauna as the climate changes.
- ◆ New and renovated buildings designed to insulate against heat and/or cold, and maximise the potential for in-situ water capture and re-use.

1.8 ECOLOGICAL CRISIS

The evolution of the human species was only made possible through millennia of development of a complex biosphere on which its continued flourishing depends. The biosphere, which has been referred to as Gaia, creates the stability in environmental conditions and the abundance of resources that permits human civilisations to flourish.

The evolution of that balance of complexity and stability is now being challenged. In effect we have made the planet sick. The symptoms of the illness are evidenced in the mass species extinction, loss of habitats and system shifts away from ecological stability that we now see globally – so much so that some scientists now claim we live in a new archaeological era – the Anthropocene.

Human impact on our planet's biosphere

There is widespread consensus among scientists that human activity is accelerating the extinction of many animal and plant species through the destruction of habitats, consumption of resources, and the elimination of species that humans view as threats or competitors (Vignieri 2014). In 2017, a statement signed by over 15,000 scientists from 184 countries asserted

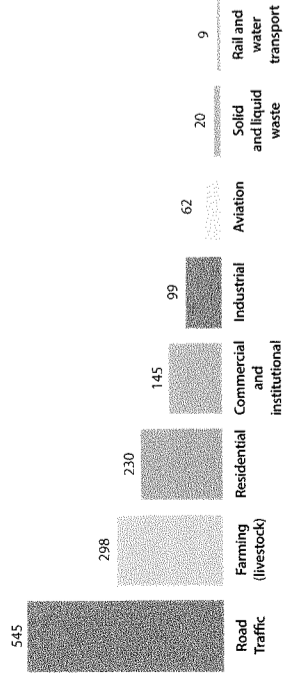


Figure 1.10
Stroud District CO₂e emissions
In this mainly rural area with small towns the balance of emissions is very different from the UK average. CO₂e stands for 'CO₂ equivalent'; these estimates include methane as well as carbon dioxide.

The sixth mass extinction

Current rates of species extinction are at their highest since the last great period of extinction 65 million years ago – around 100 times higher than normal rates found in the fossil record, with future predicted rates of 1000 and more (MEA 2005a).

‘Even with all our medical technologies, we cannot have well humans on a sick planet. Planetary health is essential for the wellbeing of every living creature. Future healthcare professionals must envisage their role within this larger context, or their efforts will fail in their basic objective.’

Thomas Berry, 1992, p.61

Ecological public health defined

We need to link environmental and health explicitly. The idea of ecological public health is that health depends on successful co-existence of the natural world and social relationships. Analysis of human and natural systems should be integrated, and health professionals need to think ecologically if they are help shape healthy local and global environments.

SOURCE: Lang and Rayner, 2012

that humanity had unleashed a mass extinction event, the sixth in roughly 540 million years, wherein many current life forms could be annihilated or on the path to extinction by the end of this century (Ripple et al. 2017).

The nature of living for many in high-income countries requires the resources of several planet earths to deliver. Using National Footprint and Biocapacity Accounts, every year Earth Overshoot Day is calculated as the date on which we have used up the total annual planetary resources (GFN 2020). That date tends to creep back further each year. However, in the unique year 2020, due to COVID-19, many governments restricted what they termed ‘unnecessary economic activity’, bringing a relief to planetary rundown and the date moved from late July to 22 August. This certainly raises the issue of the incompatibility of ‘unnecessary economic activity’ and planetary health.

HUMAN DEPENDENCE ON THE BIOSPHERE

It is impossible to overstate humanity’s total dependence on the Earth, our habitat. Yet the value of natural systems in sustaining healthy human activity is often taken for granted, and therefore ignored in decisions about the direction of economic and urban development. Services provided by natural systems (‘ecosystem services’) happen at all scales, from the global to the local. The UN has conceptualised and audited these services in its publication *Living Beyond Our Means: Natural Assets and Human Well-being* (MEA 2005b), and continuing to

Environmental changes and ecosystem impairment

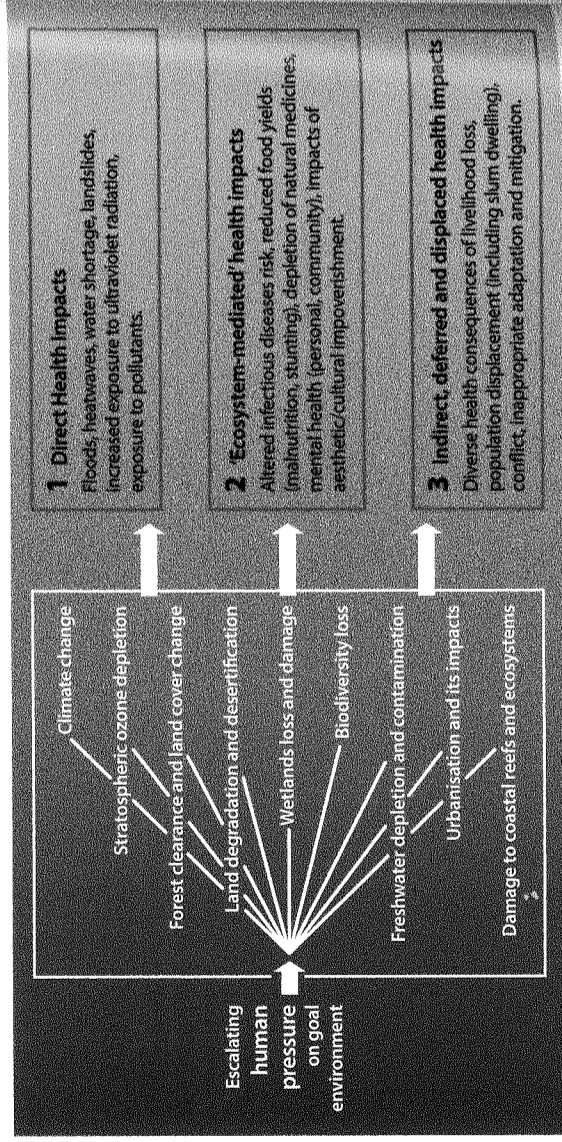


Figure 1.11
Examples of adverse health impacts from ecosystem impairment

SOURCE: based on MEA 2005

This figure describes the causal pathway from escalating human pressures on the environment through to ecosystem changes resulting in diverse health consequences. Not all ecosystem changes are included. Some changes can have positive effects (e.g. food production).

develop the concept, dividing the part that biodiversity has in supporting human wellbeing into four ‘roles’:

- ◆ supporting roles. E.g. soil formation, plant growth, nutrients
- ◆ provisioning roles. E.g. food, fresh water, fuel, wood and fibres
- ◆ regulating roles. E.g. stability related to climate and disease
- ◆ cultural roles. E.g. aesthetic, spiritual, educational, recreational

Neighbourhood ecosystem services

All these roles are strongly interrelated with multiple links to health and wellbeing. At the level of the neighbourhood there are multiple ecosystem services that the population depends on. These are explored in chapter 4.

- ◆ air quality and pollution absorption
- ◆ water availability and quality – surface and/or ground water
- ◆ drainage management and flood risk
- ◆ the fertility of soils
- ◆ greenspace, vegetation, local wildlife
- ◆ natural energy sources: solar, water, wind, geothermal

Rebuilding the biosphere

Counteracting the prevailing social and economic forces depends on major change. Aspirations, lifestyles, consumption of material resources and the treatment of natural habitats have to become ‘sustainable’. All the policies listed above in relation to the climate crisis have equal positive relevance to the ecological crisis. In addition, at the level of towns and neighbourhoods, we can emphasise:

- ◆ Safeguarding areas of special habitat or rare species, and planning new reserves where opportunities arrive within the green network.
- ◆ Ambitious tree planting programmes using indigenous species and creating wildlife threads, nodes and reservoirs so that the overall ecological capacity is progressively increased.
- ◆ Developing a local materials strategy based on reuse and recycling, including community composting, thereby reducing overall resource use.
- ◆ Promoting local food production, exchange and retailing, preferably with organic agriculture and gardening principles.
- ◆ Designing new developments and renewals/extensions to support biodiversity through features such as bird nest boxes, wildlife gardens, insect-friendly planting and boundaries that are permeable to small animals’ movements.

Case study 1.c
Hammarby, Sweden

4.9 Neighbourhood planning for urban food and soils

4.14 Neighbourhood biodiversity planning

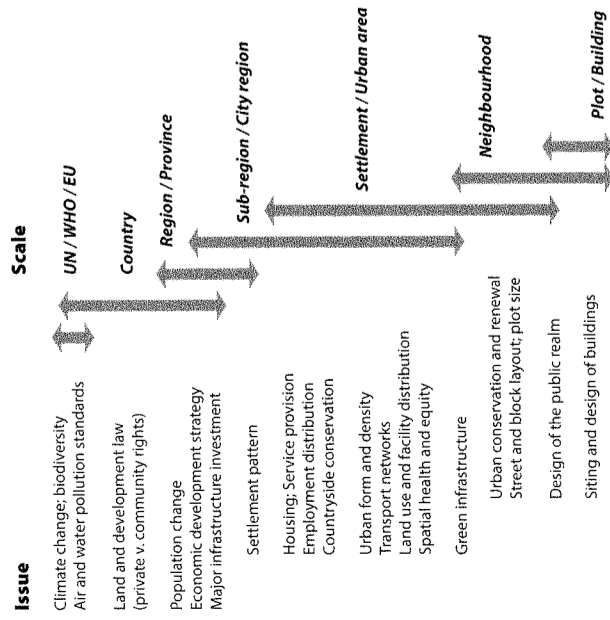


Figure 1.12
Interlocking spatial scales
Spatial issues and scales showing the range of matters relevant to planning and design, from building plot to globe.

SOURCE: Barton 2017

Learning from history

The Algiers case study (1.10) illustrates the value of traditional neighbourhood forms by comparison with recent market-led developments. Further reading about historical precedents, see Barton 2017, chapter 3.

1.9 SPATIAL PLANNING AT THE CROSSROADS

Key message

The future of neighbourhoods and small towns cannot be divorced from broad questions of strategic planning. No place is an island. The spatial pattern and the size of the eco-footprint are influenced by location, density and transport networks as well as by culture, income and social position. Hovering behind options in strategic and neighbourhood planning is a bigger question: who is making the main decisions? In many contexts private sector companies, motivated primarily by profit, or public sector transport agencies, trying to keep traffic moving, are making the critical decisions. A different approach is necessary if we are to develop healthy places.

PLANNING AND THE MARKET

The future role of spatial planning is contentious. On the one hand, there are hopes that planning will prioritise healthy and sustainable living environments: fulfilling international obligations on air quality, climate change and biodiversity; responding to issues of population change, housing need, employment, congestion and obesity; satisfying public aspirations in relation to environmental quality and heritage. On the other hand, there are powerful societal moves, evident in many countries, to 'lift the burden' of planning off the back of the market, trusting in competition and consumer choice to produce the environment we want' (Barton 2017, p.13).

Two aspects of political and societal thought underpin the belief in market solutions: the first is the dominant economic philosophy of neo-liberalism; the other is the value put on private ownership of land, and private development rights. The balance between personal rights and community rights is a vexed one – central bureaucracies rarely deliver locally sensitive results, but neither does the globalised market system. The alarming increases in obesity and health inequalities across the globe are evidence of something profoundly wrong.

Shifting minds, motivating the market

The answer is not in any way to suppress the market, but rather to establish ground rules that both shape market options aright and recognise local community interests. There are four aspects to this:

- ◆ The ability of local authorities to assemble land and provide infrastructure in locations that are 'sustainable' rather than in locations dictated by market interests. Some form of land value capture for infrastructure costs is critical.
- ◆ The mechanisms used to shape and coordinate land development and redevelopment so that diversity of provision and healthy placemaking occur. See section 2.8 and chapter 6.

- 5.2 Land governance
- 6.11 The scheme and its implementation

2.8 Agreeing a co-ordinated programme

- ◆ Financial arrangements and cost/profit relationships that offer incentives to investors. See below.

- ◆ Education and mid-career training for surveyors, estate managers as well as built environment professions that emphasise design for health and wellbeing, not just the bottom line.

Financial costs and benefits

Innovation is always expensive, but once that hurdle is overcome the cost of constructing healthy places need be no more than unhealthy places. Extra quality of the public realm, for example, can be paid out of savings of land and structures for car storage. Calculation of land value also needs to factor in necessary social and physical infrastructure costs. In countries where healthy development is currently untypical there is added sales value in places that are well located and designed, highly walkable and green. People prefer such places (Sallis et al. 2015a; 2015b). Housing, office properties and rental apartments have higher value in walkable locations (Pivo & Fisher 2010; Lawlor 2013).

Places that are already getting it right

- ◆ Social-democratic countries such as Denmark and Sweden, where the wise balance of central, community and market forces is enabling healthy places to be created.
- ◆ Places where geographical circumstances force effective planning, as in the Netherlands and Hong Kong.
- ◆ Individual cities where land powers and strong leadership have allowed radical approaches.

Case studies in every chapter

STRATEGIC POLICY ISSUES

Below are four areas of strategic policy debate that are alive at the political, investor and professional levels, shaping the options open now or in the future to neighbourhoods.

Economic development vs. sustainable development

Economic interests (public sector investors as much as private sector developers) tend to conservatism, looking to capitalise on the successes of previous years. In terms of development, this can be a force for policy inertia. The traditional recipe involves the state improving the road system and commerce (backed by the banks) choosing greenfield locations on main highways. The result is to undermine basic principles of healthy development. It makes achieving net-zero carbon by 2050 impossible. Neighbourhood planning struggles to find room to make a difference, especially in poorer areas.

It takes strong state or city action to redirect infrastructure and commercial investment. It is, however, essential to treat market and institutional interests not as enemies, but as allies, working with them to devise sustainable solutions. Instead of motorway-based use-segregated development, rail/tram stations and bikeways can become the triggers for sustainable development.

Planned sprawl

Car-centric sprawl in Atlanta, USA, did not come from an absence of planning, regional and federal forces planned it carefully. An examination of the process of writing a 1975 regional development plan for the metropolitan area of Atlanta provides a case example of the role of planning technologies in shaping regional planning.

Atlanta Regional Commission staff adapted a large-scale urban model to produce a set of region-wide population, employment, and land-use projections, for a 30-year horizon (1970–2000). The Commission then encouraged the building of a vast, low-density landscape, to match the model's predictions. A number of participants argued that the model had distorted the process, privileging motorisation policies that inevitably resulted in sprawl.

SOURCE: Basmajian 2010

Barriers to change

Due to high levels of uncertainty and upfront finance required, developers' financial models are very risk-adverse and slow to adopt new practice. Health and sustainability need to be built in at the earliest stage in a neighbourhood proposition, so that any extra costs can be factored into the land value. It is precisely at this point where the resistance to doing so is strongest. By developing health and sustainability measures at the start of a project, any extra capital outlay as compared with 'business as usual' can be minimised.

Densification

Within urban areas the pursuit of compact city principles has led to infill and redevelopment at higher densities, wherever the market can support it. The progressive reduction in household size has also been an influential motive. More dwellings per hectare allows the population level to be maintained, helping to support the viability of local services and community vitality.

However, the blanket adoption of high density on every urban redevelopment site ignores the variation in accessibility. Sites which are poorly served by public transport and far from local services should not be intensively redeveloped for either housing or commercial purposes.

Changing preferences in the USA

A recent study of 21 65-year-olds in the USA found that consumer preferences had shifted, away from traditional, auto-dependent, carbon-intensive suburbs, towards settings which are pedestrian-friendly, offer good local access to services and transport options. Only 10 per cent favoured the car-oriented suburbs, despite many living in them.

American Planning Association 2014

Assessing urban potential

A technique designed to find the best sites for urban development is presented in chapter 5. It treats brown and greenfield sites on a similar footing, based on locational and character analysis.

Compact city versus dispersal

Dispersal of urban activities has been the general pattern since the 1960s in developed countries and increasingly in developing countries. Urban activities have decentralised to car-based locations in suburban and exurban sites. Even around cities like Milan and Barcelona, held up as models of concentration, there is an extensive low density residential and business penumbra. Covid-19 has encouraged such dispersal as home-working has flourished, and households find more space and contact with nature in the countryside. But dispersal leads inevitably to high vehicle use, undermining health and sustainability strategies. The strong consensus of policymakers and researchers is that the 'compact city' is the answer: supporting active travel, viable public transport, good accessibility, vibrant centres, shorter journeys, lower car use, lower infrastructure costs, and lower carbon emissions. It is critical, then to make the urban areas attractive. We support the principles of the compact city:

- ◆ New development should use brownfield sites and greenfield sites closely knit into the town or city.
- ◆ Settlements need to be planned so as to avoid the obvious risks of congestion, air pollution, social segregation and the loss of greenspaces.
- ◆ Where demand is high, new settlements can be considered. Location is critical, and should be based on innate economic logic, with excellent public transport connections to nearby towns.
- ◆ Urban extensions and new settlements should be planned at a sufficient scale to ensure that they become a town or urban district, not simply a commuter village or dormitory estate.

5.3 Location, location, location

Brownfield versus greenfield development

While developers often prefer the simplicity and lower costs of developing the open fields, governments tend to favour reuse of previously developed land where possible. This is not quite the same argument as compact versus dispersed, because many old industrial and mineral workings are not in urban areas. Brownfield development in-city has potential benefits:

- ◆ Reclaiming land that would otherwise lie derelict, and decontaminating land that has been polluted, bringing new life into decaying neighbourhoods.
- ◆ Locating new housing conveniently, where there is a wide range of jobs/services accessible by public transport, foot and pedal.
- ◆ Protecting valued open countryside from development. Conversely, development of brownfield sites is completely counter-productive when it leads to:
- ◆ 'Sporadic' development on isolated rural sites (e.g. worked out quarries or old airfields) which would lead to dispersal and should be returned to agriculture, forestry or nature.

5.11 Local assets and potential

- ◆ Development on flood plains, urban playing fields, parks, allotments or long-derelict sites that have become nature reserves – unless innovative design can enhance the existing human or natural functions.

Smart city: does technology have the answer?

The term 'smart city' can be used in a very general sense, but here it refers to the use of technology to provide information and manage urban functions and activities. Sometimes it seems to be the application of IT, almost for its own sake, but sometimes it is expressly technology in the service of achieving sustainable development. Systems already in use include ventilation control, energy systems, recycling systems and 'intelligent' buildings, capable of responding to human instructions at a distance. The novel concept making waves is the autonomous electric vehicle, able to be hailed on the smart-phone, move in traffic and park without the necessity for a driver.

There are developments aimed at enhancing centralised data analysis, including a burgeoning sector looking a 'smart health'. Sidestepping direct patient and surgical applications, the role of smart systems in monitoring people's health and wellbeing is already being felt. On an individual level, people can monitor many physiological functions. There are also plans for whole neighbourhoods relying on embedded sensors and 'the cloud' to manage traffic systems, assist crime prevention and monitoring healthy environmental indicators. This could lead to 'wired' cities. Some of the smart city trends see top-down central control rooms monitoring and responding to the 'physiology' and functioning of a whole city.

A counter-trend is for citizen-collected smart data to inform decisions. Communities are developing and installing air quality monitors on babies' buggies and in school playgrounds to capture more vulnerable exposure. People are using their mobile phones to record neighbourhood noise and tranquillity.

However, there are possible disadvantages:

- ◆ The whole emerging IT-based world is dependent on reliable electricity and potentially vulnerable forms of communication.
- ◆ There is the real worry that centralised information will enable centralised control – Big Brother is watching you!
- ◆ Autonomous vehicles, acting as taxis, will travel much further, creating more traffic, than private vehicles currently. See section 3.18.
- ◆ If energy, heating, cooling, ventilation, water, waste, doors and windows are all cyber-managed, this removes consciousness from the users, which can result in inflexibility and vulnerability.
- ◆ Direct manual control of systems requires users to understand them, get out of their armchairs and gain incidental exercise.
- ◆ At the building, neighbourhood and city level there is the issue of privacy. Pervasive cameras and sensors could be needed to monitor movement and behaviour.

3.18 Taming cars and vans

Cyber quarter in New York

Hudson yards describes itself as 'the nation's first quantified community'. Constructed over 24 acres of rail yards on the Manhattan periphery, it is one of the biggest real estate developments in the USA, with a mix of commercial, residential and civic space. It has access to the New York High Line and a new subway stop. Embedded sensors assist auto vehicle movement, integrated management of energy, garbage and recycling. There will be internet city 'labs' helping to manage social care, social services and community collaboration. Buildings will be highly adaptable and very energy-efficient. It aims to be a testing ground for smart, sustainable development.

1.10

the neighbourhood as habitat

Promoting the ecosystem approach

- Barton, Davis and Guise (1995) 'Sustainable Settlements'
- EU Expert Group on the Urban Environment (1995) 'European Sustainable Cities'
- Hough (1995) 'Cities and Natural Processes'
- Tjallingii (1995) 'Ecopolis: Strategies for Ecologically Sound Urban Development' 1995 - a critical year in the development of sustainable development concepts.

Earlier ideas

Many writers have articulated the ecosystem principle, if not the term. In ancient times Plato showed remarkable insight into the relationship between tree-cover, sustainable water supply, climate and human activity. Hippodamus, Hippocrates and Vitruvius all understood the interdependence of people and environment. Much more recently, Ian McHarg famously developed a multi-layered method for integrating human settlement design and land use with natural catchments, systems and cycles in 'Design with Nature' (1967).

1.10 THE ECOSYSTEM APPROACH

The ecosystem approach provides a coherent philosophy to underpin the principle of planning for health and sustainability. The neighbourhood is an ecosystem in the sense that it is the essential local habitat for humans, providing not only shelter but also social networks and opportunities for a wide range of leisure, cultural and economic activities. It is also a natural habitat, where humans and other species live in a symbiotic relationship. Physical systems - part natural, part constructed - control energy and water flows, affect soil and air quality, and influence climate.

The idea of the settlement as ecosystem has a long heredity. Plato used the idea (if not the phrase) with remarkable insight when describing the decline of Greek settlements in the fourth century BCE (in Critias). The Chicago urban ecologists early last century (Burgess, Hoyt and others) applied ecological principles to the process of urban change. Towards the end of the century the urban ecosystem concept was developed as a means of articulating the principle of sustainable development.

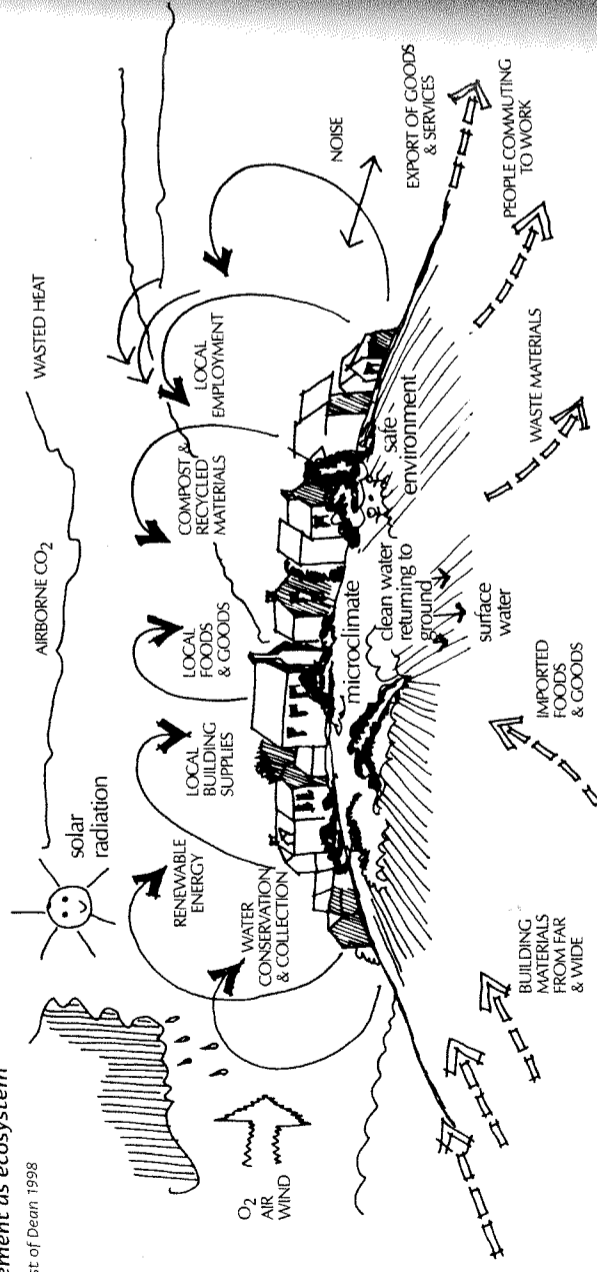
ECOSYSTEM CONCEPTS

The central insight of the ecosystem approach is that cities are not simply human artifacts, but part of the natural world, affecting it and depending on it' (Barton 2017, p.135). The settlement is a system embracing its people, their activities, the built environment and the natural environment, its biosphere. There are synergies

Figure 1.13

The settlement as ecosystem

SOURCE: Forest of Dean 1998

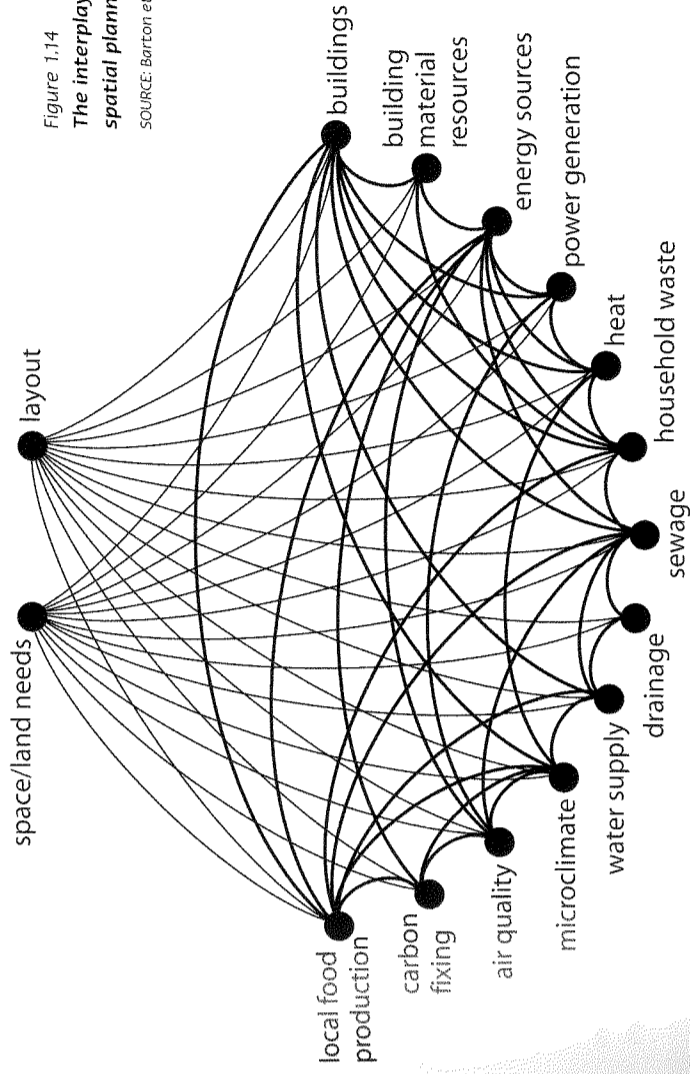


1.10

Figure 1.14

The interplay of ecological processes and spatial planning

SOURCE: Barton et al. 2000



and feedback loops within the settlement. There are inputs from and outputs to the wider world. The object of sustainability is to progressively increase healthy synergy within the settlement, while avoiding the exploitation of the wider environment.

Ecological niche and diversity

The ecological niche of a natural organism is the functional role that it plays within an ecosystem. The concept has validity for humans too. Every neighbourhood is a complex ecosystem supporting a diversity of niches within the locality for human and non-human life. Good planning and design attempt to provide a niche for all the various inhabitants so they can live more or less in harmony with each other and with the wider world. In terms of non-human and abiotic factors, the land of the neighbourhood, its water systems, soils, flora and fauna, the air above it and its micro-climatic character all contribute to the quality of a neighbourhood ecosystem. The interaction of all these with planning and development decisions is complex (see figure 1.14). Chapter 4 focuses on the implications for neighbourhood planning and design.

For local people to flourish, we must recognise their diverse needs and interactions with each other, the built and natural environment. This is a complex ecology, with different ages and life stages, different income levels, varied ethnic, household and family groupings, different cultures, lifestyles and levels of mobility. We need to recognise not only the needs of residents but workers, providers, visitors, business people, social and cultural

1.11

entrepreneurs. People are responsible for satisfying their own needs, but the spatial design of the neighbourhood can either support this self-reliance or restrict and frustrate it. A key principle of neighbourhood planning is to open up choice, providing a congenial, health-giving and sustainable habitat for everyone.

The concept of the ecological niche, for human and non-human needs, informs many of the spatial recommendations in the guide, for example wildlife havens, flood water management, affordable housing, parks and playgrounds, industrial service areas. The dovetailing of different functions and needs becomes the art of planning and design. It means intervening in the land market so that activities that provide no rent, those that are vulnerable or cannot compete with high rent-paying activities are given protection.

Symbiosis and succession

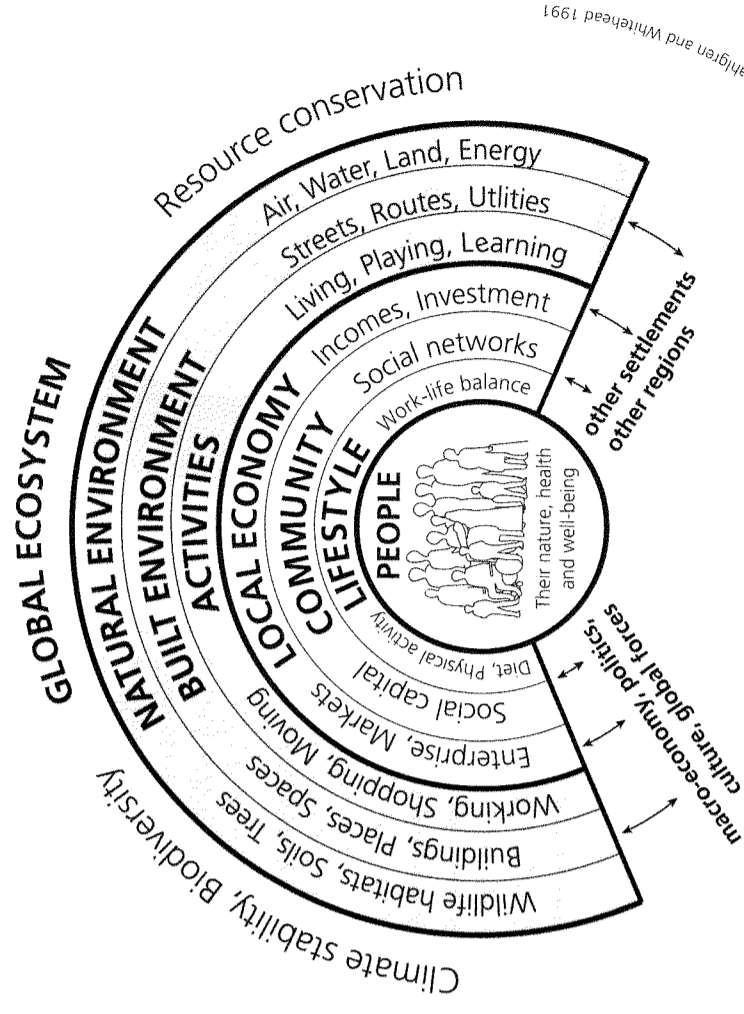
Neighbourhoods are dynamic places. Habitats evolve, the mix of species changes, households grow and move, businesses come and go, buildings age and are replaced. The physical form needs to be able to adapt. In some localities new social groups start buying up property and gradually taking over from an older population – as in gentrification or ethnic change. In urban ecology this is called succession. At the extreme, rich incomers can effectively push poorer local households out, leading to housing stress, and the false impression of improvement. Such processes need managing to avoid social dislocation and social monoculture. The ideal is to achieve symbiosis, so different groups and interests flourish together, complementing each other, and living lightly upon the earth.



The Settlement Health Map is being used worldwide in policy documents, project workshops and in teaching.

1.11

Figure 1.15
The Settlement Health Map
SOURCE: Barton and Grant, 2006.
developed from the model by Dahlgren and Whitehead, 1991.



The ecosystem model of settlements

The health map, Barton and Grant, 2006 developed from a concept by Dahlgren and Whitehead 1991



The Settlement Health Map is a flexible tool for use in bringing people together for shaping cities, towns and neighbourhoods. UN-Habitat workshop, Xiamen, China.

knock-on effects) of change within any particular sphere. The key insight is that all the elements that go to make up the human, built and natural ecosystem of the neighbourhood, town or city, also impinge systematically on people's health and wellbeing.

WAYS TO USE THE MAP

The map can be used for many different purposes, from assessing the impact of a development project to analysing the social determinants of health; from providing an ice-breaker for discussion to appraising the characteristics, strengths and weaknesses of a neighbourhood. Different arcs can be taken as the starting point depending on the issue being examined. Here are some examples.

Analyse the effects of a development project

This is a critical use of the model in the context of this guide. Adopting the built environment version, the model gives a clear

2.7 Developing ideas

1.12

Contact with nature is the medicine

A web platform called the information hub for Park Prescriptions was initiated by a director at the Golden Gate National Parks Conservancy. It helps doctors write their patients prescriptions for time in nature. The initiative is driven by evidence between time spent outdoors in nature and health outcomes (Zarr et al. 2016).

There are physical health impacts too. Street trees were found to be associated with a lower prevalence of early childhood asthma (Lovasi et al. 2008).

NATURE AND HEALTH

The natural world is increasingly viewed as being salutogenic. It creates and supports health. Humankind evolved within landscapes of great biodiversity and now increasingly creates and inhabits an environment of bio-deficiency. Evidence of the effects on health and self-fulfilment of what has been an incremental change for hundreds of years is difficult to interpret. There are theories of biophilia (Wilson 1984), placing contact with nature at the centre of human identity and wellbeing.

Health benefits from contact with nature

Recent empirical studies point to a strong relationship between contact with nature and human health. Even small amounts of green near home can reduce the risk of dying prematurely as shown in the findings of a systematic evidence review of over 8 million adults across seven countries, followed for up to seven years (Rojas-Rueda et al. 2019). Urban green space can help mitigate negative impacts of urban living and provide positive effects on citizens' mood, health and wellbeing. Emotional responses correlate to levels of biodiversity the participant perceives around them and to the presence of birds (Cameron et al. 2020).

In a classic study Hartig et al. (1991; 2003) found that natural spaces have a restorative effect, helping people recover more quickly from attention-demanding tasks. They also can play a role in recovery from stress and can benefit concentration and mood (HCN and DACRSPNE 2004; Hartig et al. 2014). We also know that walking in natural environments produces stronger short-term cognitive benefits than walking in the residential urban environment (Gidlow et al. 2016). Several studies have found that people with access to nearby nature are generally healthier than those without (WHO 2016a and 2017a). Contact with nature provides opportunities for personal development and wellbeing, stimulating feelings of relaxation, autonomy and competence. (HCN and DACRSPNE 2004).

However, with generalised findings such as 'populations in urban areas with greenspace and gardens have fewer health problems' we need to be cautious and assess causality. Can people with fewer health problems better afford to live in places that are greener, or do greener places lead to fewer health issues? Many studies now attempt to control for influencing factors. For example, it has been found that the percentage of greenspace in a person's residential area is positively associated with their perceived general health, and that this relationship is strongest for lower socioeconomic groups (Mitchell and Popham 2008) and that a 10 per cent increase in greenspace in the living environment can lead to a decrease in health complaints equivalent to a reduction in age of five years (de Vries et al. 2003).

3.13 Recreational space

AIR QUALITY

Breathing fresh, uncontaminated air is valued by everyone and contributes to a sense of wellbeing. Polluted air – by particulate matter, ozone, carbon monoxide, nitrogen oxides, sulphur dioxide and benzene – causes respiratory problems, heart disease and cancer. Weakened lungs due to past exposure to air pollution have contributed significantly to the rampant spread of COVID-19.

Air pollution is a huge international problem, with 7 million deaths attributed to it worldwide each year (WHO 2020). It is a disease of cities, caused by energy production, industry, transport and heating/cooling of buildings. Across the EU air pollution shortens lives by 8 months. 400,000 premature deaths are attributed to particulates (PM2.5) and 70,000 to NO₂. The reduction in pollution when industry closed down and vehicle use reduced due to the Coronavirus, meant that by April 2020 it is estimated there were 11,000 fewer EU deaths (SALUS 2020). Exposure to air pollution displays an inequitable distribution at both national and local levels. In 2015, more than 99 per cent of deaths due to household air pollution and approximately 89 per cent of deaths due to ambient air pollution occurred in low-income and middle-income countries (Landigran et al. 2018). Air pollution also exacerbates local health inequalities. The most deprived wards in England were also those with the highest concentrations of pollutants (Walker et al. 2003).

North American studies have shown that the neighbourhoods where low-socioeconomic-status communities live experience higher concentrations of critical air pollutants. Many European studies show a similar trend as does research from Asia, Africa, and other parts of the world (Hajat et al. 2015). 98 per cent of urban areas in low-income and middle-income countries with populations of more than 100,000 people fail to meet the WHO global air quality guideline for PM2.5 pollution (Landigran et al. 2018).

Traffic pollution is often the most critical factor. A number of studies show that children living close to busy roads have approximately a 50 per cent increased risk of respiratory illness, including asthma (RCEP 2007). Air pollution places a strain on health care services and the wider economy. For example, in the UK where every year 40,000 people die prematurely due to poor air quality, and the cost to UK society in healthcare and lost production is estimated to be of the same order as for smoking and obesity (House of Commons 2011).

Controlling air quality

Moves away from fossil fuels to reduce climate change emissions also improve air quality. Pollution from industrial processes and energy generation is subject to regulation in many countries, and can be tackled at source with better engines, different power sources, cleaner processes. Other means of achieving purer air are:

Living near major roads is not healthy

A large cohort study in Ontario, Canada, found that living close to heavy traffic was associated with a higher incidence of dementia due to air pollution and noise. The study suggested that improvements in environmental health policies and land use/transport planning aimed at reducing traffic exposure could have considerable potential for prevention of dementia. These findings were confirmed by a study using Swedish national data. People continuously exposed to air pollution are at increased risk of dementia, especially if they also suffer from cardiovascular diseases.

SOURCES: Chen et al. 2017 and Grande et al. 2020

Integrated resource management in Linköping, Sweden

In the 1970s the city was suffering from air pollution, partly because of its diesel buses, and having to pay high prices for the imported fuel. It decided to switch bus fuel to methane-rich biogas derived from local industry, agriculture and sewage waste. In addition to reducing air pollution, the volume of landfill and waste incinerated has been cut. Solid wastes from the process are re-used as fertiliser, returning nutrients to the soil. An incidental benefit is the reduction of methane emissions into the atmosphere.

SOURCE: UN-Habitat 2012b

the neighbourhood in focus

1.13 DEFINING NEIGHBOURHOODS

No easy answer

Most neighbourhoods are not separate units but interconnected parts of the urban continuum, often merging into one another, their edges 'fuzzy'. There is no generally accepted basis for defining neighbourhoods. If a local authority or a community forum wishes to identify different urban neighbourhoods for purposes of public debate and planning, then they will first need to agree what they mean by the term.

Localities may be defined:

- ◆ administratively: by ward or parish boundaries
 - ◆ aesthetically: by distinctive character or age of development
 - ◆ socially: by the perceptions of local residents, often associated with a named area
 - ◆ functionally: by catchment areas for local services
- Given these varied interpretations, it is vital for stakeholders to agree the main purposes of a neighbourhood exercise before defining areas on the ground. In the next section we suggest a straightforward approach which is then used in the rest of the guide.

THE ALTERNATIVES EXPLAINED

1. Administrative convenience

Using existing ward or parish boundaries is a pragmatic, simple way of defining localities. It has the advantage of tying into local democratic processes and thereby clarifying political responsibility. The local ward councillors, the parish or town councils are given clear obligations and added legitimacy.

Wards and parishes are also the units for census and health analysis, 'state-of-the-environment' or 'quality-of-life' reports. Assessing problems, measuring progress and comparing different areas thus become relatively straightforward.

The major disadvantage with reliance on administrative boundaries is that they may be historical accidents unrelated to people's own perceptions, functional linkages or aesthetic character. If so, then reliance on them can compromise both the level of public involvement and practical value.

2. Areas of distinctive character

These can be defined by analysis of maps, aerial photographs and 'Street View', along with personal knowledge. Typically building age and dominant building form give the distinctive character. For example, early 20th-century detached villas or 21st-century terraced town houses. They may have an estate name. Special quality could be a factor: localities that are

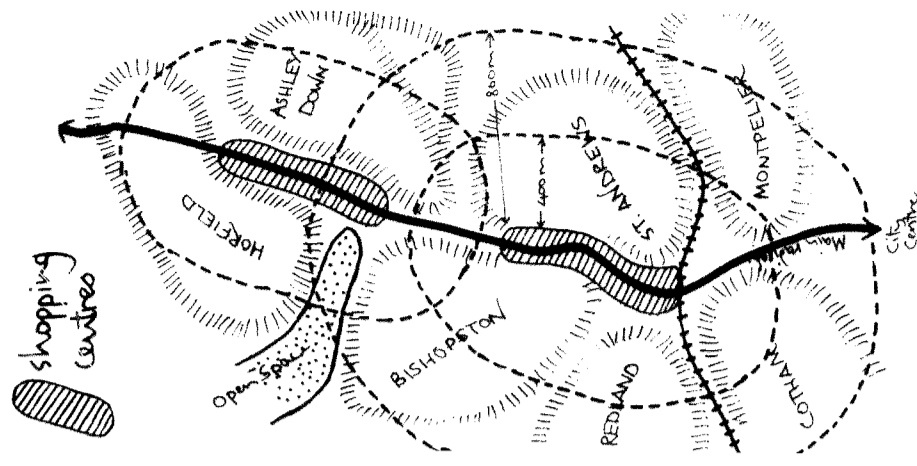


Figure 1.22
Named city neighbourhoods are often quite different from retail catchment areas Gloucester Road area, Bristol, England.

- ◆ Smoke-free zones, where coal burning is forbidden.
- ◆ Land use zoning, to separate noxious industry and plants relying on heavy lorry movements from residential and recreational areas.
- ◆ Avoiding the construction of 'canyon' streets, such as Oxford Street in London, which concentrate fumes.
- ◆ Progressive investment in electric and hydrogen vehicles (see section 3.18).
- ◆ Promotion of a sustainable travel strategy increasing walking, cycling and public transport (section 3.14).
- ◆ Planning urban green networks with plenty of trees, breaking up the pollution dome over the city, reducing the impacts of road traffic and industries and improving air quality in urban residential areas (Bowler et al. 2010).

SOUND AND NOISE

The 'sound of the city' maybe an evocative term. Positive sounds for many can be children playing, birdsong, wind through trees and human voices. Tranquillity – a perception of the absence of sound – can also be restorative. However, unwanted or excessive sound, known as noise, has negative impacts on human health and wellbeing and is of growing concern. In cities where zoning separates noisy industrial processes and regulation controls commercial and residential noise, transport is the main source of harmful and chronic noise. Rail and aircraft are of concern in some areas, but the main source is road traffic. The distribution of harmful urban noise is not equal across the population with evidence of racial/ethnic and socioeconomic differences in noise exposure (Casey et al. 2017).

Critical health outcomes can be serious and include: cardiovascular disease, long-term annoyance, sleep deprivation, cognitive impairment, hearing impairment and tinnitus.

Noise levels tend to be expressed as maximum or average decibels. An informed approach to noise will control both general levels and night-time levels, according to different sources, and attuned to the function of an area.

The principles for addressing this neighbourhoods should be to:

- ◆ Promote interventions to reduce exposure to noise: reduce traffic speeds, discourage through traffic.
- ◆ Conserve quiet areas: map urban tranquil zones so they can be protected within long-term strategic spatial planning.
- ◆ Coordinate approaches to control noise sources: use architectural, urban design and landscape measures to reduce noise emission or shield communities. Examples include low noise road surfacing, acoustic walls and bunds, building design and window orientation.
- ◆ Inform and involve communities affected by noise exposure Using citizen science apps, an initiative that help communities assess local noise.

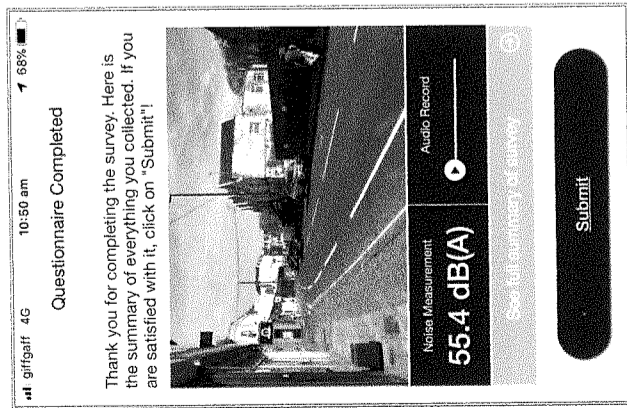
5.7 Land use and activities

4.16 Urban trees

6.5 Shaping the homezone

HushCity: Citizen sound science

HushCity is a smartphone application. It allows communities to record noise levels and stores that data in a global map. The sound recordings, photos and associated data from all users can be viewed and accessed by all.



In contrast to municipal sensors, sound is recorded by local people wherever relevant. Municipal authorities can use this citizen data to complement traditional assessment. Calibration of decibels and sensitivity of frequency range are not as accurate as with professional devices, but this form of citizen-led science can play a strong role in local advocacy and decision-making.

Urban zone	Daytime limit	Nighttime limit
Hospitals and villas	50dB	40dB
Residential, schools and rural	55dB	45dB
Mixed-use	60dB	50dB
Industrial	65dB	55dB
Road sides	70dB	55dB

Figure 1.21
Chinese noise standards
In China urban areas are defined and categorised into five general zones in respect of noise regulations.

1.13

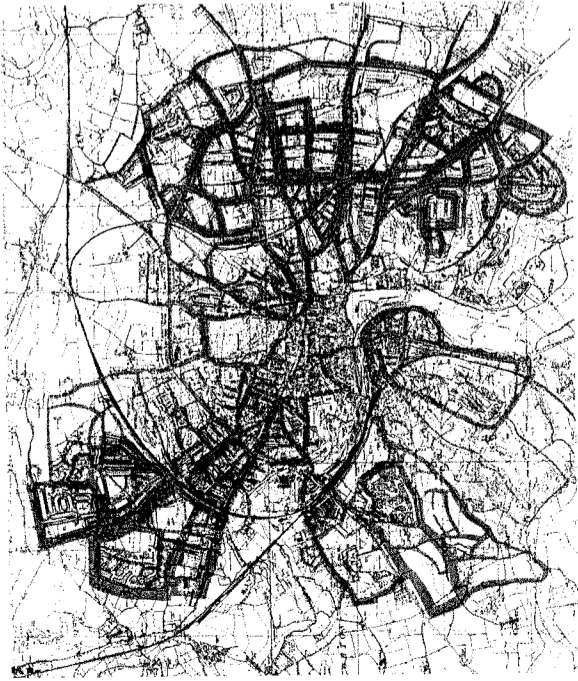


Figure 1.23
Ipswich, England: residents' perceived neighbourhoods

The thickness of line denotes the frequency of mention by residents

SOURCE: Shankland, Cox and Associates 1968
Original base map © Crown copyright

Low traffic community areas

These are areas where the local quality of environment, safe pedestrian movement and safe cycling for young children take precedence over traffic circulation – as in Buchanan's 'environmental' areas. According to Buchanan et al. (1963), traffic flows in such areas should be held below 300 passenger car units per hour. This is a sound principle, to which should be added a speed limit of 30kph (20mph). Both policies can be achieved through a combination of careful planning of road hierarchies, street closures, street design and provision for pedestrians and cyclists. Low traffic areas may approximate to perceived, named neighbourhoods.

3.4 Strong communities

defined as conservation areas. Such areas often do not relate to administrative, social or functional neighbourhoods – in inner urban areas and small towns they may be quite small. But they can be valuable for analysis of physical change and urban capacity (see section 3.5).

3. Resident perceptions

Social surveys and/or community workshops can be used to find out what the people living in an area perceive as their own neighbourhood. Often people associate with a particular neighbourhood name. The Ipswich study shown here (undertaken as part of the city expansion project) illustrates a surprising degree of resident consensus. While residents had varying views about neighbourhood size, the boundaries they chose provide a strong pattern, often following barriers formed by rivers, railways, main roads and open space. For the most part the perceived neighbourhoods were not centred on local shops and facilities. Rather they were bounded by them, because retailing was concentrated along main roads. Local centres can thus be the place where people from different neighbourhoods mingle.

4. Local catchments and planned neighbourhoods

The conventional image of a neighbourhood – derived from many new estates and new towns – is that of a local catchment area, with residential areas grouped around a local service centre or primary school. The Harlow town plan illustrates this principle, defining two levels of neighbourhood, equating with 'neighbourhoods' and 'urban districts' in the section that follows. Catchments may be identified empirically by pedestrian surveys and time/distance mapping. The term 'ped-shed' (like 'watershed') has been coined for the area within a 5- or 10-minute walk of the local centre (Llewellyn Davies 1998). Such ped-sheds are not normally the same as perceptual neighbourhoods. But they do offer a very useful analysis, and a prompt for action where barriers or cul-de-sac layouts impede accessibility.

In this guide we adopt criterion 3 (i.e. neighbourhoods defined primarily by the perceptions of residents). But analysis will need to be based on the most relevant criterion for the purpose in hand.

NEIGHBOURHOOD AND COMMUNITY

There are seeds of confusion in the way these two terms are used: they are not interchangeable, as neighbourhood is about place while community is about people. The neighbourhood, in terms of its streets, houses, facilities and greenspaces, may be consciously planned. Communities – in the sense of networks of mutual support and friendship – cannot be planned in the same way, but occur through people's choices and actions. Most communities are based around shared interest or identity rather than closeness. Many communities of interest (to do with work, education, leisure pursuits, politics or culture) are spatially wide-flung, though most

1.13

CHECKLIST

Neighbourhood variables

The typology list in the main column is heavy on data. Here is a list of variables which could be used by a community group on a more impressionistic basis:

- the social composition of the area and how it is changing
- the current housing stock, tenure pattern, density, quality and condition
- social networks and the distinctive local culture
- the level of economic activity, retail, social. Health and educational facilities available locally
- the quality of networks for walking, cycling and public transport, problems of safety or barriers to access
- the spatial character of the area, the pattern of land use and activity
- the relationship of open/greenspace and outdoor recreational activity
- the ecology of the settlement: water, energy, wildlife, food supply, etc.

All these are explored in detail in subsequent chapters.

Size	Streets
Area in hectares. Deciding on boundaries – what to include or exclude – can be awkward. See above	Degree of pedestrian and cycling priority, convenience and safety locally. See 3.14–3.16
Population	Built form
Total number of residents. This may be elaborated in terms of age structure, household types and ethnic mix. See 3.2	Detached/semi-detached/terraced/low rise apartments/high rise apartments. See 6.4 and 6.6
Housing	Movement
Total number of dwellings; size of dwellings (square metres/bedrooms); owner-occupied/private renting/social/ co-operative. See 3.3	Pedestrian, cycling and traffic flows; the quality of public transport services. See 3.14–3.18
Density	Age and character
Population per hectare, dwellings per hectare and average persons per dwelling. See 5.8	Age of the area; general age and character of the buildings: recent construction or renewal. See 6.4
Location	Condition
Inner city/suburban/x-urban estate/free-standing town or village. See 5.3	General condition of the buildings, the gardens, open spaces and streets. See 6.4
Shape	Health
Gated style/compact 'cell'/integrated part of urban fabric/sprawling/linear. See 5.5	Life expectancy of men and women and/or healthy life years. See 3.1
Networks	Employment
Hierarchical/grid/loop and cul-de-sac/segmented/irregular. How permeable? See 5.9	Proportion unemployed, in part-time work and full-time work, men and women. See 3.6
Land uses	Greenspace and wildlife
Level of non-residential uses: educational, retail, health, social and greenspace. See 3.9–3.13	Proportion of the area which is accessible to greenspace; tree cover; wildlife networks. See 3.13, 4.15 and 4.16
Connectivity	Utilities
Distance and quality of public transport, cycling and road connections to main activity centres. See 3.17 and 5.3	The source and quality of water supply; the degree of local renewable energy supply. See 4.3 and 4.6

Figure 1.24

Neighbourhood spatial variables

1.14

From city-region to window-box

Christopher Alexander (1977) proposed an holistic design approach that flows seamlessly from regions, through cities, local centres and neighbourhoods, to streets, houses, gardens, trees and even window boxes. It is critical to recognise the interaction between these nested scales.

The basic unit of land: a PLOT

The plot is a unit of land normally defined by ownership or a specific development. It may be sold, rented or transferred. Plots are often very long-lasting, over centuries. They come in many sizes, usually occupied by one house, shop, school, playing field or other function, but sometimes amalgamated into more extensive ownerships, especially through comprehensive redevelopment. They can be a key tool of planning policy.

1.14 TOWN, NEIGHBOURHOOD, HOMEZONE

SCALE IS VITALLY IMPORTANT

Towns and cities vary tremendously in size, form, density and character. There is no universally applicable template for neighbourhoods. But it is crucial to understand the significance and relevance of different scales, ranging from a whole small town or urban district to the immediate vicinity of the home. This guide structures policy and design at three distinct levels.

Small town, urban district

A small town or a district in a city should be large enough to support a full range of local facilities and a good level of employment opportunities. The median population, valid in many developed countries, is about 25,000 – though in practice the population may vary widely, from, say, 12,000 to 40,000. Facilities could include a district or town centre, one or more supermarkets, several secondary schools and, depending on policy, a library, leisure centre, cottage hospital and technical college. The figure of 25,000 is the population recommended by one UK report as the minimum viable size for a free-standing new settlement (Breheny et al. 1993).

This scale is equivalent to many existing rural or market towns, especially if the dependent hinterland population is included. The planning principles are often clearer for towns than for urban districts because of their physical detachment from other settlements. Within cities, districts are rarely distinct, and may include several neighbourhoods.

Neighbourhood

The definition of 'neighbourhoods' adopted in this guide is one based on resident perceptions. As such they are normally residential areas of distinctive identity, often distinguished by name, and bounded by recognisable barriers or transition areas such as railway lines, main roads, parks, and the age or character of buildings (often associated with social or land-use differences). Neighbourhoods thus defined vary in size very widely according to local circumstances, but a typical population might be 4,000–5,000 people. They are often large enough to include a primary school and some local shops. However, as noted in Ipswich and illustrated in figure 1.22, they may not coincide with local catchment areas. The local high street with its wider range of township facilities will sometimes be at the edge of the neighbourhood.

Home zone

The home-zone is the individual street, square block or cul-de-sac that people commonly feel is home territory. Often the dwellings have shared identity or character. They may be clustered round a common access. Together the home zones make up the

patchwork of the neighbourhood. They are critically important in residents' feelings of security or insecurity, and often have a particular social character. Increasingly, this scale is seen as a useful unit for urban design – offering the potential for Dutch-style 'woonerfs' or British play streets, where safety for play and social exchange is paramount, and traffic is either excluded or calmed to 10kph (5 or 10mph).

NESTED SCALES, GRADED FUNCTIONS

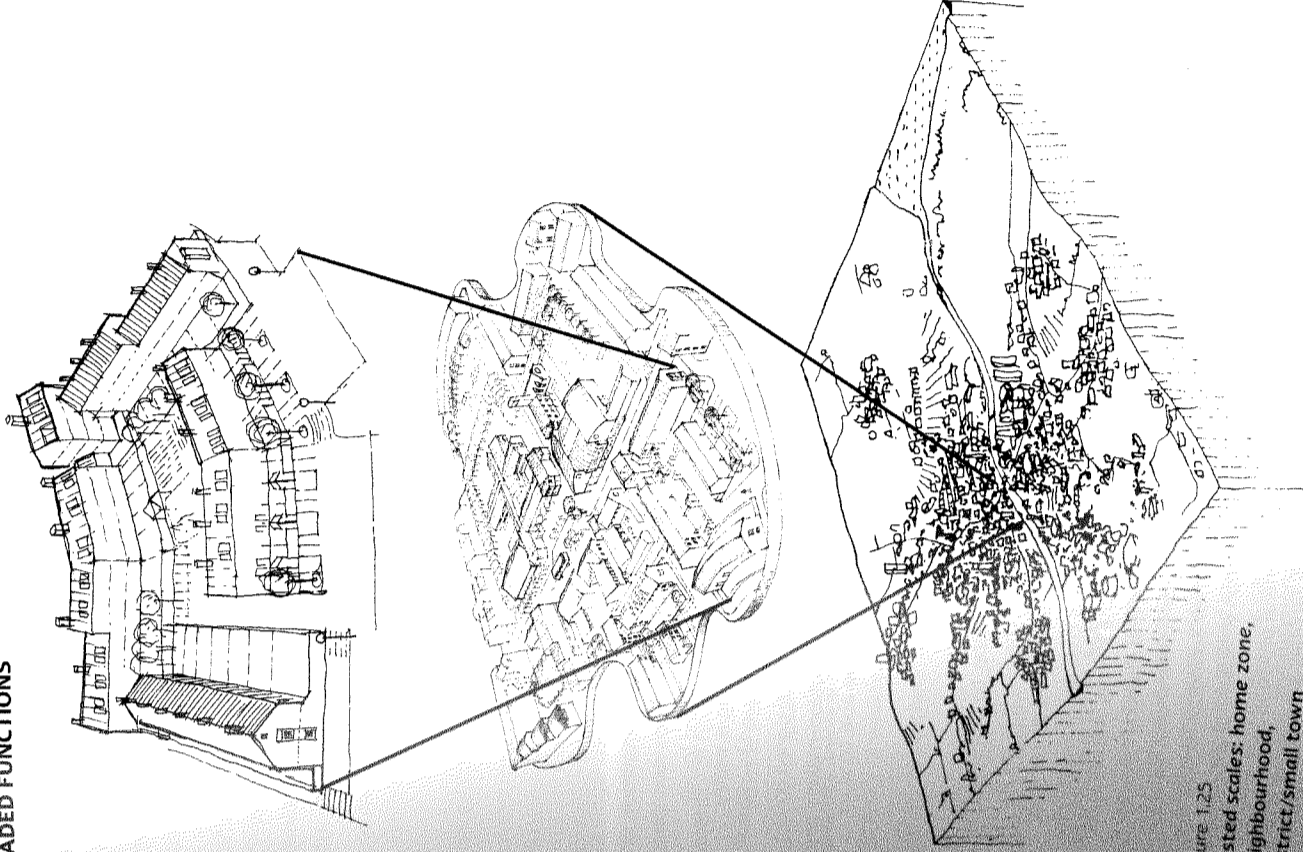


Figure 1.25
Nested scales: home zone, neighbourhood, district/small town

DEFINING TERMS

From small scale to large scale

Building

The single dwelling, school, shop, block of flats or offices occupying a plot. May be renewed or rebuilt on the same plot.

Home zone

A cluster of dwellings, often built at the same time and with similar character, grouped along a street or around a square or block.

Perimeter block

Dwellings, often in terraces, facing out to the surrounding streets, sometimes with semi-private shared facilities in the centre. See the home-zone drawing.

Neighbourhood

A mainly residential area as identified by residents, and often with a distinctive identity and name. Other related terms are 'urban village' (often historic, with a bustling centre) and 'urban quarter' (often defined by a common activity, as in Birmingham's jewellery quarter).

Urban district

An area/sector of town or city large enough to have a wide range of facilities and jobs, often centred on a 'district' shopping and social centre.

Catchment area

The accessible urban or rural hinterland to a facility (school, shopping centre, etc.). In this guide we refer in the main to the pedestrian catchment area, as defined by walkability.

City region

This includes the city and its hinterland(s), an area which is likely to include many settlements, and is an appropriate scale to plan transport and urban form. The term sub-region may be used when there is no one dominant settlement.

1.15 NEIGHBOURHOOD DESIGN PRINCIPLES

THE NEED FOR ROBUST PRINCIPLES

The neighbourhood vision presented at the beginning of the chapter set up formidable aspirations for neighbourhood planning and design. In themselves, the objectives are difficult to argue with, but many people would see tension between them – they would seem to be difficult to achieve all at the same time. Equivalently, the ecosystem philosophy presented above (1.10) may seem admirable in theory, providing a holistic and integrated approach, but difficult to interpret in practice.

It is for these reasons that we believe it is important to try to identify robust principles of spatial planning and design that cut right across the divergent objectives and demonstrate the practicality of the ecosystem approach. We have identified six such principles that seem to stand every test we have subjected them to. They underpin the detailed advice given in the guide. In summary they are:

- ◆ stakeholder involvement
- ◆ increased local autonomy
- ◆ connectivity
- ◆ diversity
- ◆ response to place
- ◆ adaptability – lifetime neighbourhoods

1. STAKEHOLDER INVOLVEMENT

The active involvement of the local community and locally relevant actors in the process of decision-making is widely recognised as essential if sustainable development is to be achieved. The process (set out in chapter 2) is designed to build consensus, gain the commitment of decision-makers and investors, and build community capacity to be able to work together towards shared goals.

2. LOCAL AUTONOMY

The principle of local autonomy runs counter to powerful trends in government and in commerce. Nevertheless, it is key to realising many of the elements of a healthy and sustainable community. One way of expressing it is that decisions, services and activities should be managed at the lowest feasible level, with higher levels acting in facilitating and enabling roles. In this guide we advocate neighbourhoods or towns should take as much responsibility as possible for their ecological footprint, in terms of energy, water, waste, carbon emissions and biodiversity. The principle also applies to the general provision and management of services. The more facilities are available,

- 3.2 Collaborative communities
- 2.5 Defining a shared vision
- 3.4 Strong communities
- 3.8 Town and local centre vitality
- 3.10 Accessibility criteria
- 4.2 Implementing an integrated strategy
- 5.2 Land governance

accessible and viable at the neighbourhood level, the more people will be encouraged to walk to them, meeting people, forming social networks, all good for healthy life and reduced car reliance.

3. CONNECTIVITY

Connectivity is about easy connections both within the neighbourhood and between neighbourhoods, linking to the wider world. Supporting greater local autonomy does not imply isolation of one neighbourhood from another. Connectedness is essential for vitality, viability and choice. The principle applies across many areas of policy:

- ◆ the connections and permeability of the street network
- ◆ the integrated management of the natural and recreational environment, both within the neighbourhood and out from it
- ◆ the association of retail, social, health, leisure and educational facilities
- ◆ the interdependence of adjacent neighbourhoods and links to the city centre
- ◆ the reciprocal relationship between each neighbourhood and environmental systems at local, regional and global levels

4. DIVERSITY

The principle of diversity is in response to the failures of conformity. The tendency of markets and governments to seek economies of scale and standardisation has led to large single-class, single-use estates, social polarisation, land use apartheid, traffic domination and visual monotony. The solution is to value diversity over conformity within neighbourhoods, for example:

- ◆ diversity of housing types and tenures
- ◆ diversity of households, incomes, ethnicity
- ◆ diversity of local work and service opportunities
- ◆ diversity and real choice of modes of movement
- ◆ diversity of wildlife habitats
- ◆ variety of aesthetic character

Spatial planning and design cannot determine how people choose to live, or who chooses (is able) to buy in a locality, but can try to ensure that options are available, opening up choices for all.

5. RESPONSE TO PLACE

Every place is unique, in terms of location, topography, drainage, and cultural landscape. Responding to the special qualities of each place is essential. Often standard development solutions have been applied irrespective of the characteristics of the place concerned. This can lead to resource inefficiency, characterlessness and functional isolation. Rather, we should:

- 5.9 Street networks
- 3.13 Recreational space
- 5.7 Land use and activities
- 5.13 Devising the spatial framework
- 3.3 Housing for all
- 3.2 A diverse population
- 3.7 Resilient local economies
- 3.14 Neighbourhood travel strategy
- 4.15 Biodiversity framework
- 6.6 Character and coherence
- 6.2 The structure of space and place
- 4.14 Neighbourhood biodiversity planning

1.15

6.8 Appraising the site and its context

4.4 Energy-efficient layout and landscape

3.5 Neighbourhood identity

3.13 Recreational space

- ◆ capitalise on the specific environmental assets such as streams, ponds, woods, and wildlife habitats
- ◆ assess and respond to the local physical characteristics such as slopes, solar aspect, wind direction and natural sources of heat or cold
- ◆ build new developments to reflect the best of what is already there, cultivating 'local distinctiveness'
- ◆ develop spatial policy so that the location and links enable integration with the wider area, not segregation.

6. ADAPTABILITY: THE LIFETIME NEIGHBOURHOOD

Neighbourhoods, like wildlife habitats, are not fixed and unchanging. People come and go; initiatives are born, grow, mature, and die; buildings are extended, used for different purposes, redeveloped. The human habitat has to adapt to changing conditions or decay. Currently we are threatening our own long-term habitat quality by ignoring global ecology.

The aspiration for every existing neighbourhood is that it should evolve steadily and 'naturally' so as to provide a healthy, convivial environment for residents and users, while playing its part in promoting sustainability. This means, for example:

- ◆ robust systems of drainage and flood management
- ◆ adaptable building forms, so uses can change
- ◆ keeping long-term options open for a more localised society
- ◆ a street pattern that can adapt to new movement priorities
- ◆ historic areas that can evolve, not preserved in aspic
- ◆ linked greenspaces that allow flora and fauna to adapt to climate change.

Lifetime neighbourhoods more specifically means planning for all ages, so people can grow up, grow old, in the same place if they choose to, ensuring that homes and other buildings can be adapted to the needs of children, young adults, older households and to disability. The environment around buildings, the private and the public realm, is equally important. Neighbourhoods, once built and occupied, should not be treated as 'finished', but able to respond to predicted and unpredicted needs and challenges.

4.8 Flooding, drainage and run-off

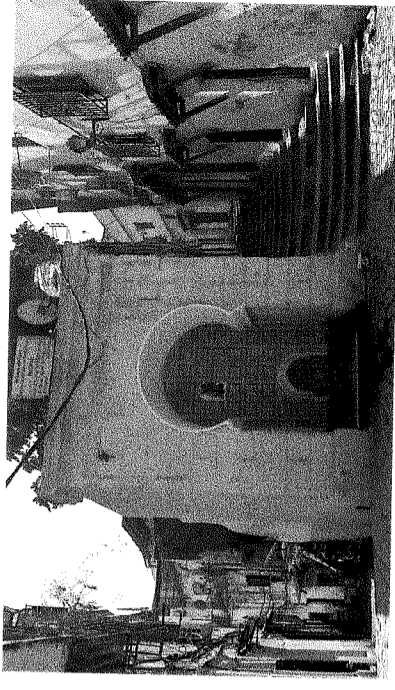
6.12 Tactical change and adaptation

3.16 Planning for the cyclist

4.15 Biodiversity framework

Three neighbourhoods in Algiers Algeria

Learning from the past



The Casbah – the historic core of the city. Narrow streets provide shade and due to their orientation, funnel cooling sea breezes. Streets work their way uphill diagonally for ease of gradient.



Bab el Oued – a district laid out during the 19th century, following the then current French urban planning norms. This provided tree-planted squares and avenues, enclosed by 'walk-up' blocks, with arcaded street-level shops.



Cité Belle Vue – a recent gated community on the western outskirts of the city. Large blocks and towers surround spacious areas of parking and play areas. The open layout and lack of tree planting create very little shade and coupled with the single use nature of the development, result in few opportunities for social interaction.

SOURCE: Mohamed Yazid Khemi, Portsmouth University, personal communication 2020

A cautionary tale

design principles often follow architectural and development fashions, rather than the logic of creating healthy places. A study of three development styles in Algiers, North Africa, demonstrates the lessons of the vernacular city in relation to thermal comfort and street life, lessons either adapted or ignored by subsequent generations of planners.

The Casbah – historic core of Algiers – is a World Heritage Site, characterised by a dense network of narrow streets which can be seriously overcrowded. Shade is ensured by the narrow streets, rarely wider than 3 metres, and hanging vines. The streets are oriented towards the Mediterranean Sea, funneling the fresh sea breezes into the area. Fountains are used for drinking, street cleaning and refreshing the open spaces. The human scale and mixed uses of the spaces foster social interaction, a sense of community and thereby an attachment to the place. This encourages residents to collaborate to enhance their neighbourhood through street art and beautification projects.

Bab El Oued neighbourhood originated in the colonial period and was designed according to the principles of Haussmann, who transformed much of 19th-century Paris. It is characterised by a formal orthogonal street layout, including boulevards, planted avenues, arcades and fountains in public spaces. The compact urban form provides a shady comfortable microclimate which encourages walking. There is a rich urban life throughout the day, including chatting, resting, browsing and informal commercial activity. People across a wide age range and both genders use the spaces at different times of day for a variety of social and sporting activities, making it lively, inclusive and safe.

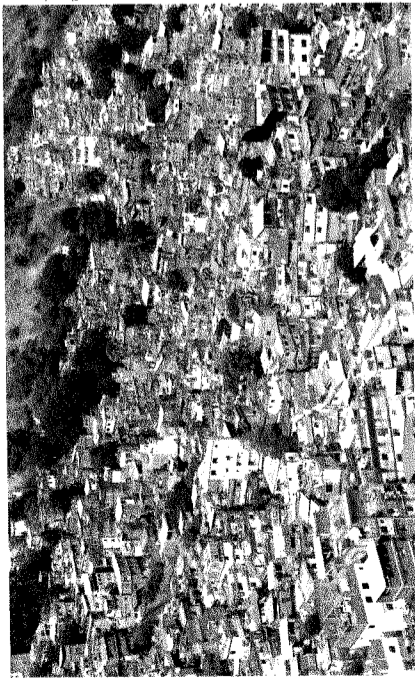
Cité Belle Vue, Ain Benian, is a recent self-contained neighbourhood in West Algiers, designed following Modern Movement principles. It is a gated community solely zoned for housing, with parallel blocks of apartments and some medium-rise blocks. The wide spaces between buildings, the few trees and poor maintenance of the public realm result in an uncomfortable microclimate unsuited to outdoor activity. The gated compounds restrict access, making the semi-privatised spaces vacant and lifeless. There is little evidence of social interaction and children playing.

Designing for pedestrians, conviviality and community

The different levels of thermal comfort and social interaction of these areas can be predicted from their design principles and layout, together with locational and development characteristics. Getting it right is not rocket science, but it can be challenging for governments, developers and designers in the modern, motorised era.

Polimipara project Rocinha, Rio de Janeiro, Brazil

An holistic approach to slum upgrading



One hundred years of incremental and unregulated housing growth on the hillsides and valley to the south west of Rio.

Health and infrastructure

The lack of basic infrastructure and the inefficient waste and water management are correlated with the problems of poor health and disease in this favela. In Brazil the rate of tuberculosis is 37.5 cases per 100k people, in Rocinha the figure is 380 per 100k.

Very few houses have running water and sewage running through the streets makes the area prone to viral diseases spread by the mosquitoes that proliferate in the area. Water contamination, flooding caused by the obstructed drainage networks and piles of waste create an urgent need to provide basic infrastructure

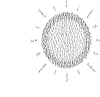
Rocinha is the largest informal settlement in Brazil, covering 2km², with a population of almost 200,000. Many projects have attempted to address the multiple issues that arise in slum development. Here, there is an acute shortage of water, lack of waste and sanitation services, few urban green spaces, and poor access to adequate nutrition and housing. The Rocinha community has one of the highest rates of tuberculosis in the world. Crime and social unrest are major issues. The favela, 15km south of the city centre, is disconnected socially and physically from the city.

The Polimipara initiative has been selected as it demonstrates many of the aspects we recommend for shaping neighbourhoods.

Solutions. Research also points to ill-health from poor diets which mainly affects children and youth, as a traditional healthy diet is replaced by highly processed food.

Holistic approach

To address a complex tangle of issues, the entry point used was the spatial urban analysis. Four main themes (waste, food, mobility, energy and water) were used to understand the problems and potential solutions as a connected system. With such a large favela, three smaller zones inside Rocinha were selected as a focus for pilots. The technical analysis was



Typical cross-section indicating some of the proposed solutions for food, water, electricity and waste. No single approach or intervention can 'solve' all issues prevalent in informal urban settlements. Interlinked sets of problems require systemic solutions.



Location for a variety of sustainable urban drainage features to ameliorate storm water run-off damage and deal with sewage issues.

Proposed rain water infrastructure. Proposed sewage infrastructure linking into existing network.

Food growing of vegetables and fruit with school students and greengrocers. This area links to proposed rain infrastructure and will also host an aquaponic system.

Solar panels and electrical network.

Indicative local electric grid.

Solid waste collection point.

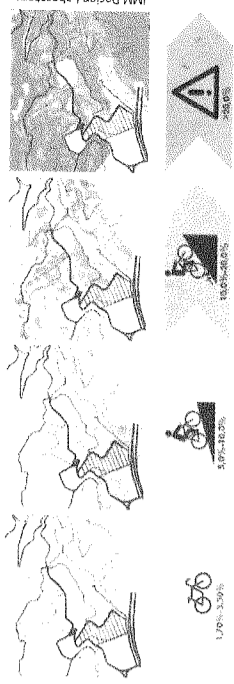
Polimipara project Rocinha, Rio de Janeiro, Brazil

An holistic approach to slum upgrading

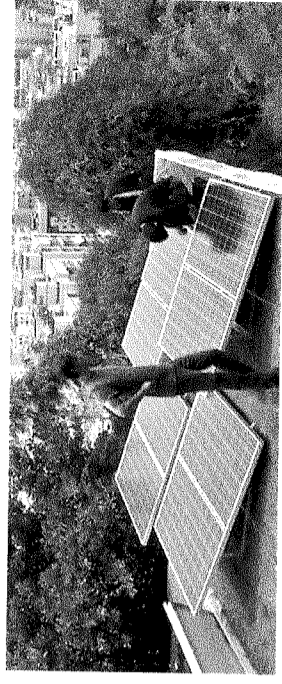
Lessons

By activating a local trigger, a project like Polimipara Rocinha has the capacity to improve the environmental and social performance across a wider area. The main challenge here is to raise awareness of the authorities to use what has been learnt here across this and other favelas.

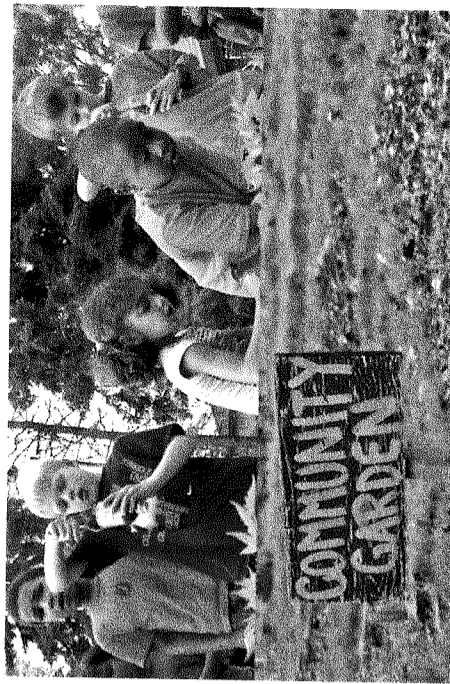
A valuable lesson of this case study is rediscovering the assets and potential, both people and place-based, offered by informal settlements. In general these are underrated. In terms of dense urban living in all countries, a lot can be learned about meeting the SDGs, in an integrated manner, from studies and intervention for shaping neighbourhoods in urban slums.



Analysis of slopes for cycle routes.



Solar panels and green roofs.



Involving children with food and growing.

underpinned by Integrated Modification Methodology, developed at the Politecnico di Milano as a tool for built environment change for Sustainable Development Goal 11.

Stakeholders

The relevant stakeholders were involved such as the public administration, academic institutions, civil society, non-governmental organisations and informal businesses. Using an assets-based approach, the skills and experiences of local entrepreneurs, including already established local collectives and co-operatives, were identified as having potential to both support, and benefit from, the project.

Mobility and the public realm: With this densely packed steep hillside development, houses had been incrementally extended to cover and constrain pedestrian routes, where stairs, paths across rooftops and tunnels were unsafe, damp, unpleasant and had restricted accessibility. Solutions can require selective demolition and relocation of businesses and homes. Careful negotiation with all those affected often led to significant benefits. One benefit has been improvement to the public realm, creation of new public spaces and the social interactions that can result from these. Analysing the steepness of potential cycle routes has also helped identify how to construct a workable cycling network.

Waste and energy: Local collectives already involved in aspects of the waste stream were involved in designing and running new services such as biogas production from organic waste. The main energy strategy was to make better use of the sunlight, an underused local resource.

Food: The project included several integrated actions to improve accessibility to fresh and healthy food. Local fresh food production was supported through aquaponics production managed by local social enterprises, community gardens/urban agriculture and small rooftop food productions. Education and training promoted healthier diets for children, youth and women, including information on health risks from consuming highly processed food.

Sewage and flooding: The existing sewerage system is limited serving only a small number of households; grey water and foul water are mixed with unmanaged stormwater from intense rainstorms. Catchment mapping contributed to sewerage system design and provided valuable information for preventing environmental hazards and managing runoff.

Community gardens: Studies proposed a series of community gardens to simultaneously produce food and involve communities.

Hammarby Sjöstad Stockholm, Sweden

Neighbourhood resource cycles

The touchstone for this innovative project has been to 'close ecocycles' at the smallest appropriate scale. Sponsored by the local authority and three utility companies, it represents a significant step forward in terms of resource reduction for a new build neighbourhood.



Sjöstad means lake city.



Repurposing of former industrial buildings.

An integrated approach to resources underpins the design and planning of this new urban district in Stockholm, housing some 20,000 people in 10,000 apartments. It also has about 6m² of workspace per inhabitant. Hammarby equates to an urban district, with neighbourhood zones within it. The aspiration was to integrate technical infrastructure, mobility and communication infrastructure, building infrastructure and to some extent green-blue infrastructure.

In developing a resource strategy, the energy, water and waste utilities collaborated and used interdisciplinary planning based on resource system principles. Innovative solutions arose from new working methods and partnering between research, industry, national and local government organisations and environmental groups.

Providing for local need

Municipal and commercial services were completed in phases in step with population growth. These include a primary school, a nursery school, convenience stores, a health-care service and other local facilities. There is a central library with meeting rooms and in the larger neighbourhoods there are facilities for holding meetings, throwing parties, local clubs and hobbies. Excellent pedestrian accessibility combined with good public transport and helpful information systems minimise the need for private cars and low traffic volumes. Public transport takes priority, with both a tram service and a boat service to the city centre.



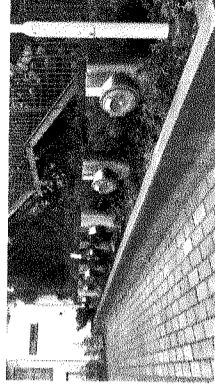
Main shopping street with tram stop.



Inner courtyard with communal garden.

Hammarby Sjöstad Stockholm, Sweden

Neighbourhood resource cycles



Mobilt sopsugssystem



Vacuum waste collection system and food waste. Concept and reality.

Urban environment
Proximity and accessibility are important design considerations. There are mixed-use local centres in addition to a core nucleus for the whole district. Development is based on a range of densities from 4–6-storey 'inner city' apartments to more open housing layouts. The waterside location gives a sense of space and contact with the wider environment.

Resources

The aim was to halve negative environmental impacts, compared with other modern developments. Although new technology and innovative design were part of the solution, the commitment of the residents is also seen as essential. They have the ability to monitor their own energy and water consumption via an internal data network.

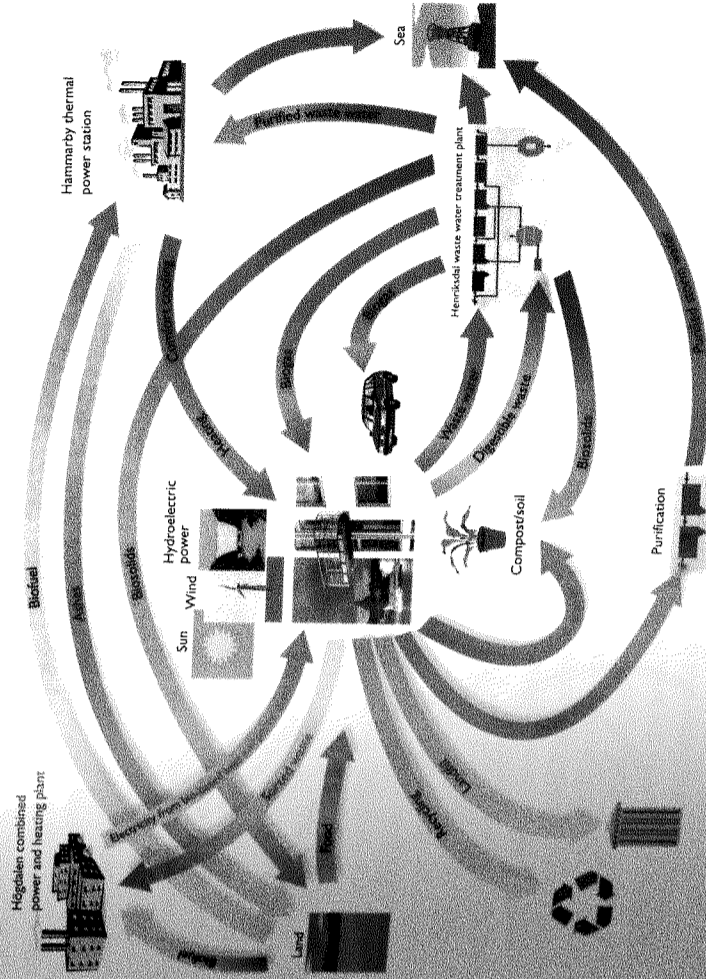
Energy: demand is reduced by efficiency in all appliances and plant, e.g. lifts, fans, pumps, and lights. Technology further reduces consumption, for example lighting and ventilation are switched off in uninhabited rooms. District heating and cooling are provided and energy is generated from solar panels, heat pumps and biofuels.

Water: the local water cycle has been integrated into the model. Hammarby Sjöstad has its own sewage treatment plant, wastewater is treated, heat is recovered and nutrients recycled to agricultural land. Sustainable drainage systems control quantity and quality of surface water.

Food and soils: there is some provision for local food to be grown, with soil fertility being improved by the use of locally produced composts.

Materials and waste: household organic waste and sewage produce biogas, residual solids are used in agriculture. Leading-edge technologies are being piloted – urine separation for nitrogen recovery and vacuum system waste collection.

Biodiversity: the district is linked to the natural environment by an 'Ecoduct', a 50m-wide tree-lined pathway that is a conduit both for wildlife and for non-motorised movement.



General arrangement of blocks for some of the neighbourhoods.

Urban eco cycling concept

This model for energy, waste and water management is known as the Hammarby model. It was developed jointly by Birka Energi, Stockholm Vatten and Skafab.



Utrecht The Netherlands

Health in spatial development strategy

With a population of some 500,000 Utrecht City is the fourth-largest city of the Netherlands. It is located in the eastern corner of the polycentric Randstad conurbation which connects Rotterdam, Amsterdam and The Hague.

A whole administration policy in 2015 placed 'Health at the heart of urban development strategy' with five basic principles:

1. taking a positive approach to health
2. preventing problems and helping people to lead 'normal lives'
3. reducing health inequalities
4. enabling everyone to live in dignity
5. monitoring public health

Starting from robust and well-understood principles of healthy urban planning, the city was able to create a strong 'Health in All Policies' momentum, both within the administration and the citizens. By 2017 the activity had spread to several policy areas such as innovation, health economy and infrastructure. This journey of spreading health across many policy areas, continues with several ambitious projects and goals for 2030.

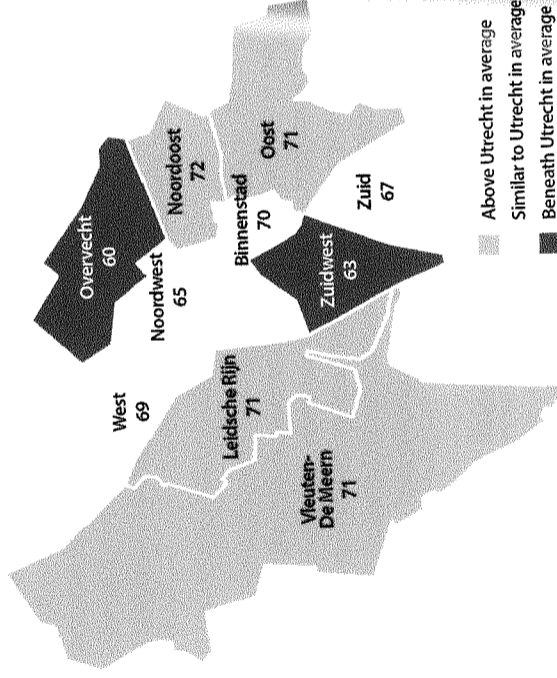
Health Hub Utrecht

The Health Hub Utrecht is a network of different partners and municipalities across the whole Utrecht city region who have adopted a bottom-up approach to health. Partners work together to keep healthcare affordable and accessible to everyone. With a long-term programme, the focus is not only on health as the absence of sickness, but also on wellbeing and happiness. This links to a wider determinate of health approach looking at financial health, social health, mental health and environmental health.

WHO Healthy City

The Utrecht approach has been influential in the WHO European Network of Healthy Cities, of which they are a member. The healthy city element sees spatial development, promoting health via: healthy, sustainable, local food; and healthy lifestyles with the promotion of active travel and public transport. The urban planning and design elements are particularly well developed with health appraisal of policies and proposals being completely mainstream. Several renewal and new build city development projects

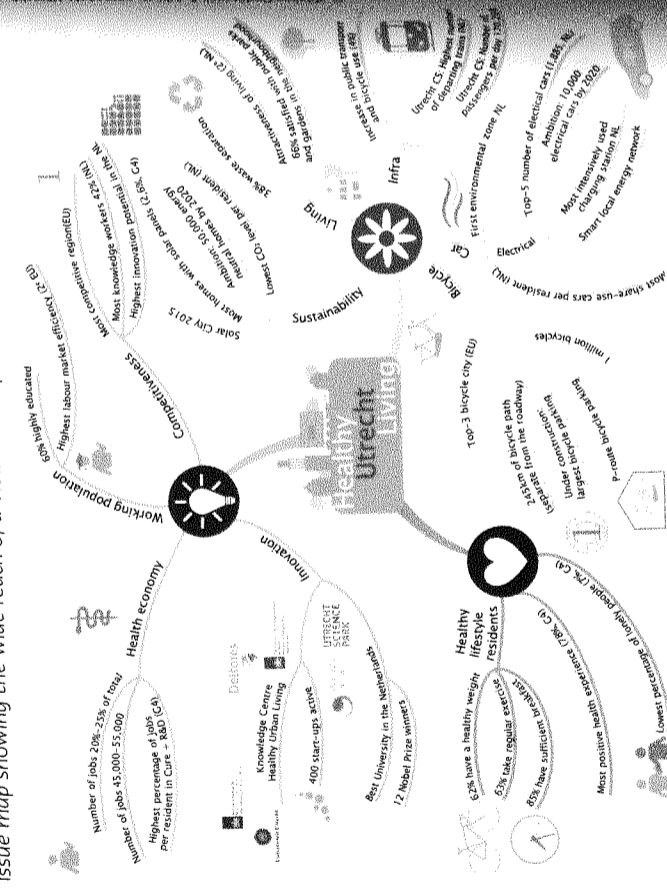
Life expectancy in good health, per neighbourhood – 2012



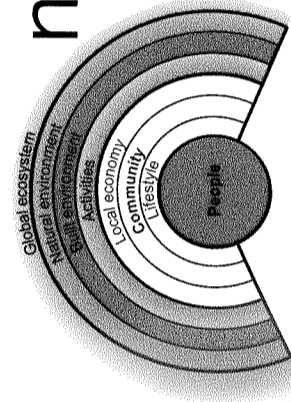
Vast differences between neighbourhoods in life expectancy.

are distinct in demonstrating the positive influence that a health lens approach has brought to their planning and design. The global aspect, in terms of impact of development across the UN Sustainable Development Goals, is also integral to the strategy.

Issue map showing the wide reach of a 'Health in all policies' approach.



a neighbourhood planning process



overview

2.1 PURPOSE AND SCOPE

This chapter is about how to consult, collaborate, analyse and take effective decisions at the neighbourhood or township level. It is therefore not so much about what to do but how to do it. It encompasses both the political and technical processes:

- ◆ a collaborative process of decision-making and implementation
- ◆ an integrated and systematic appraisal of problems, policy and development opportunities

These two processes are entwined but distinct. Effective collaboration between all stakeholders and decision-makers is indispensable to the implementation of effective strategies. But collaborative processes without dispassionate analysis can lead simply to negotiated agreements between established and vested interests. If the needs of under-represented groups, future generations, biodiversity and response to climate crisis are to be recognised, then political expediency must be married to inclusive rationality.

Clearly in some areas there will be no or little impetus for a neighbourhood strategy. Even in relatively stable areas, however, each modest incremental change affects the trajectory towards or away from sustainability. A strong spatially specific strategy, backed by the significant local players and the community, is desirable.

WHOSE PROCESS?

The impetus for some kind of neighbourhood plan may come from municipal, private, voluntary or community sectors. Whatever the trigger, however, the decision process needs to follow a transparent and inclusive pathway if it is to gain the support of the local partners and have a chance of promoting healthy development. In chapter 1 we described how health, wellbeing and responses to climate emergency are compatible and convergent aims. The process described in this chapter, and outlined in section 2.2, is for a neighbourhood-level community strategy. The focus is on the physical development of the area. This first section discusses three common sources of initiative and the mechanisms involved.

CONTENTS

OVERVIEW

- 2.1 Purpose and scope
- 2.2 The seven-stage process
- 2.3 Collaborative communities

GETTING GOING

- 2.4 Stage 1 – Taking the initiative
- 2.5 Stage 2 – Defining a shared vision

CREATING A STRATEGY

- 2.6 Stage 3 – Understanding the locality
- 2.7 Stage 4 – Developing ideas
- 2.8 Stage 5 – Agreeing a co-ordinated programme

MAKING IT HAPPEN

- 2.9 Stage 6 – Taking action
- 2.10 Stage 7 – Learning lessons

CASE STUDIES

- 2.a Sweet Home Farm, Cape Town, South Africa
- 2.b The Spectrum approach, Houndwood, Street, England
- 2.c Stroud Neighbourhood Plan, Gloucestershire, England

THE NEIGHBOURHOOD CHECKLIST