

Re-Enclosure of the Urban Picturesque: Green-Space Transformations in Postmodern Urbanism Author(s): Michael Hebbert Source: *The Town Planning Review*, Vol. 79, No. 1 (2008), pp. 31-59 Published by: <u>Liverpool University Press</u> Stable URL: <u>http://www.jstor.org/stable/40112746</u> Accessed: 26/09/2014 11:06

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at http://www.jstor.org/page/info/about/policies/terms.jsp

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.



Liverpool University Press is collaborating with JSTOR to digitize, preserve and extend access to *The Town Planning Review*.

http://www.jstor.org

Michael Hebbert

Re-enclosure of the urban picturesque Green-space transformations in postmodern urbanism

The paper seeks to compare and contrast the roles of green space within modern and postmodern urbanism. Modernism rejected enclosure in favour of an open space vision inspired by eighteenth-century picturesque landscape design. Its paradigm of an unbounded public realm was diffused and regularised during the second half of the twentieth century through housing and highways development, open space policies and regulatory practices. As the stock of green space increased, so did concerns about its environmental and social utility. Towards the end of the century there appeared an alternative vision of urban open space. Instead of openness it sought enclosure, and instead of a passive pictorial quality it aimed at the active provision of ecosystem services to the built environment. This article describes this rethinking of town greenery, looks for its underlying social and environmental rationale, and assesses its place within a wider planning theory of postmodern urbanism.

The tree shown in Figure 1 was one of thousands recently uprooted by Manchester City Council, having been planted some thirty years ago. Then the council's vision was to replace the building frontage along the main roads into the city with a green, flowing, open landscape. Now its vision is to grub up the buffer greenery so frontage can be rebuilt, framing streets and squares in which new trees will be planted. A dispersed, pervasive landscape in which buildings stood is being replaced by a landscape that stands between and is framed by buildings. The alteration can be described as a process of matrix reversal, a shift from 'out' to 'in' landscape, extensive to intensive form, modernist to postmodern space. However described, it involves a fundamental turn in purpose and method, a paradigm shift.

What follows is a description of this shift of vision through the medium of a wideranging review article. It takes the long twentieth century as its time-frame and draws on European and US as well as British planning literature. It is one of a sequence of essays on the theme of reconsolidation in recent urban design; others have looked at public health, collective memory, highway design and street architecture as well as the underlying concepts of urbanism (Hebbert, 1999; 2003; 2005a; 2005b; 2006; forthcoming).

The article begins with the pulling down of park railings and the opening up of towns to a free-flowing natural landscape evocative of the eighteenth-century picturesque. The first half describes the ideal and the social and environmental disappointments of its realisation. The second half turns to contemporary or postmodern green

Michael Hebbert teaches at the School of Environment and Development, Arthur Lewis Building, University of Manchester, M13 9PL; email: michael.hebbert@manchester.ac.uk.

Paper submitted October 2006; revised paper received November 2007 and accepted December 2007.



Figure 1 Grubbed tree on pile of spoil in Beswick, East Manchester, where a thirty-year-old landscape buffer along the radial Ashton Old Road is being replaced by buildings with active frontage *Source*: author's photoaraph

space. It describes the shift from extensive to intensive provision and considers how *less* may prove to be *more*. We conclude with a discussion of social and ecosystem roles which allow the re-enclosure phenomenon to be understood – like other aspects of postmodern urbanism – in terms of design for multi-functionality.

The modernist urban landscape

The twentieth century's landscape vision was to bring nature to town. The US parkway movement experimented from the 1860s onwards with systems of interconnected green space to oxygenate the city and dispel its miasmas (Lubove, 1967; Szczygiel and Hewitt, 2000). The 'emerald necklaces' of Olmsted and his followers were radical green-space systems that broke down conventional categories of park, urban and rural (Hirsch and O'Hanlon, 1995). English garden-city builders responded weakly to these ideas, using green space in a conventional fashion within curve-plan suburbs and axially geometric civic centres. The authentic twentieth-century landscape vision





was born between the wars from the marriage of modern highway engineering layout with Modern Movement design. Open green landscape plus new white architecture became the universal icon of social democracy (Worpole, 2000).

A seminal statement of this ideal was Christopher Tunnard's book, *Gardens in the Modern Landscape* (Tunnard, 1938; Neckar, 1990). The author was the team member responsible for green space within MARS (the Modern Architectural Research Group), the British arm of the international modern movement. An active member of the new Institute of Landscape Architects (previously the British Association of Garden Architects), his book was the manifesto for the profession that gave the architectural avantgarde its settings of sunlight, openness, and freedom. No more rockeries, streams and contoured lawns, no more regimented lines of trees; nature should not be contained but should flow into the city, connecting playgrounds, recreation areas, home, factory and countryside in a continuous stream of health-giving greenery, a 'garden without limitation' (Tunnard, 1938, 166).

The image of the country calling in on the town was a direct homage to eighteenthcentury picturesque landscape theory. Tunnard ingeniously transformed a proprietary aesthetic – open vistas from a country landowner's seat to a distant horizon – into a template for landscapes of urban collectivism. He took inspiration from the Claremont estate in Surrey, a great eighteenth-century estate by Sir John Vanburgh, Charles Bridgeman, William Kent and Lancelot 'Capability' Brown, which was divided by five firms of builders into luxury homes. He caricatured this enclosure process with a sketch of a cow marked up for its carcass joints, entitled the 'Butcher Method'. By contrast (see Figure 2), he showed how its picturesque setting could have been preserved intact without the loss of a single great tree as an open background for flats and terraced houses, with shared gardens flowing uninterruptedly into a communal landscape (op. cit., 158).

The idealised pre-industrial pastoral imagery of the picturesque movement fitted well with the technological optimism of the machine age. Nature free of toil was laid out for contemplation and physical enjoyment (Worpole, 2000; Jacques, 2000). In mid-twentieth-century planning theory, it was axiomatic that the introduction of vegetation on a large scale to the interior of cities would 'bring life, change and vigour direct to the townsman' (Gutkind, 1962, 52). Lewis Mumford saw modernism's urban landscapes as transformative spaces, 'giving collective form to the I–Thou relation', where old-fashioned parks had merely provided places of refuge from the urban crowd. Throughout his influential career, Mumford urged planners to conceive the green public realm on an ambitious scale:

Perhaps the first step towards regaining possession of our souls will be to re-possess and plan the whole landscape... In the cities of the future, ribbons of green must run through every quarter, forming a continuous web of garden and mall, widening at the edge of the city into protective green belts, so that landscape and garden will become an integral part of urban no less than rural life. (1964, 173–75)

This vision was international, though its nuances varied from culture to culture. The landscape of US parkways was a setting for the American Dream, giving the suburban commuter a daily taste of the great outdoors (Gandy, 2002). The post-war *stadtland-schaft* concept offered a way of repairing Germany's broken historic nexus between folk and homeland (Diefendorf, 1993; Mantziaras, 2003). Hans Berhard Reichow's *Organische Stadtbaukunst* of 1948, a key text, saw the change from intensive to extensive green space, park to landscape, as a move 'away from the satisfaction of merely aesthetic needs to the fulfilment of general elemental needs, to the establishment of the biologically necessary' (Sohn, 2003, 125). In French landscape theory, an appeal to rural vitality and tradition combined with the promise of machine-age mobility for 'horizontal spirits' (Bardet, 1949, 121; Cohen, 1995; Rabinow, 1989). The gigantic public realm of Soviet cities embodied the all-encompassing Communist state (Engel, 2006). In their nests of greenery, the neighbourhood units in British reconstruction plans evoked the national nostalgia for the face-to-face world of the village green (see Figure 3).

All were variations on a shared theme. It was an idea of progress from enclosure

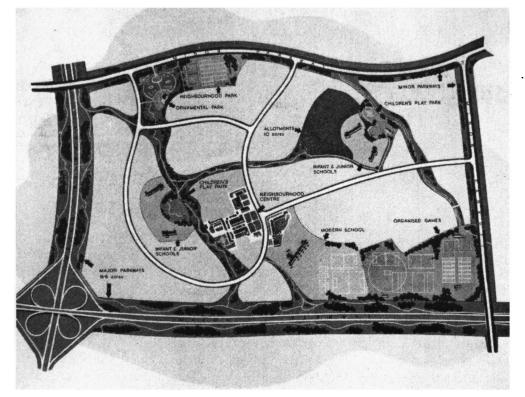


Figure 3 City neighbourhood, deliberately reduced to quasi-rural isolation by a combination of highway severance and landscape buffer planting. Source: Nicholas, 1945

to openness, from the *in* space of a conventional park to an *out* landscape of flowing edgeless greenery (Fairbrother, 1974, 142); from the confinement and muddle of the street to the geometrical purity of the freeway (Merriman, 2004); from the profane-confusions of the town to the purity of a new Garden of Eden (Tuan, 1974, 104).

Christopher Tunnard left Britain in 1939 for a career at Harvard and Yale. But his fellow pioneers – Geoffrey Jellicoe, Brenda Colvin, Sylvia Crowe and Nan Fairbrother – continued to take Capability Brown as a reference point for the public landscapes of the welfare state (Jacques, 2000; Crowe, 1960; Matless, 1998). The vision was collectivist and its implementation ran alongside the progress of welfarism. Some progressive British municipalities began to pull down their park railings even before the Second World War made it a patriotic duty (Conway, 2000; Rasmussen, 1982, 416; Fox, 1995). In post-war reconstruction, open-plan was the norm. In reaction against the brutal mineral environment of the industrial city, green-space seemed an unquestionable benefit; the most gentle and universal form of social engineering (Abrams, 2003, 119)

and the surest basis of public health (Forshaw, 1943). The essential building block of the welfare state – the neighbourhood unit – came wrapped in it (see Figure 3). National policy statements such as the Dudley Report (CHAC, 1944) made generous allowances mandatory within planned estates. Planners and landscape architects took it as a basic tenet 'that people inherently like the picturesque, and given the choice would decide to live in a setting not dissimilar to eighteenth-century parkland' (Gilbert, 1989, 11). As an international phenomenon, state involvement in housing supply was linked to extensive amenity landscapes (Beer et al., 2003). Jane Jacobs wrote *Death and Life of Great American Cities* (1962) from her observations of the newly-formed open grass settings of US social housing projects. As US jobs and households migrated to the suburbs and beyond, the same picturesque treatment was extended to the voids left behind, if they were not used for parking lots (Ford, 2000).

An equally important factor of change was road transport. The central idea of twentieth-century highway design was that roads, like railways, should have their own permanent way for uninterrupted driving. Landscape ideals featured prominently in road construction propaganda. In the US, the American Association of Nurserymen was an active lobbyist for the 1944 Federal-Aid Highway Act and the eventual creation of the \$100 billion, 41,000-mile interstate system. It offered landscape planting as a way to win over objectors, reducing 'misunderstandings, oppositions and bad public reactions' (White, 1959, 190). Urban roads would become 'elongated parks bringing to the inner city a welcome addition of beauty, grace and green open space' (Snow, 1959, xii). The green stuff simultaneously enhanced the driver's pleasure and protected the non-driver's health and safety (Giedion, 1941; Crowe, 1960; Halprin, 1966). From the mid-twentieth century onwards, the principle of a vegetated sleeve or buffer came to be applied by city authorities to roads of every size and grade (Figure 4). As the autobahn concept of a roadway without built frontage or side-turns was extended from arterial roads to distributor and local roads, so did the realm of roadside planting. At the most detailed level of site layout, engineering standards specified wide road verges for the convenience of the utilities, and generous visibility splays so that traffic need not slow down on the approach to junctions (Woodford et al., 1976). Road landscapes did more than any other factor to break open the built fabric of cities, reduce densities and increase the area of planted voids. In planned new towns and housing estates, they provided the matrix for complete schemes of landscape design (Higson, 1997). Several million tons of spoil were moved to create an invented topography of traffic-screening berms along the highway grid of Milton Keynes, the UK's largest new town (Turner, 1998). 25 million trees were planted: the chief planner said his aim was 'to lose the city in a re-created forest' (Walker, 2007, 75).

Programmed into the pattern language of the twentieth-century city, the matrix of green space continued to grow with the passage of time. Whereas the size of private gardens was shrinking (Ravetz, 1995, 193–94) and the stock of private allotments



Figure 4 East Kilbride, near Glasgow: the Westwood neighbourhood, green but still largely treeless 28 years after the designation of the new town Source: by kind permission of BRE

diminishing (Meller, 2005), new development, public and private, steadily added to the stock of public amenity space. Edge planting and amenity strips of grass were often required by planners as a condition or developer contribution (UGSTF, 2002, 53). The dominant typology of a building set like a poached egg in its own car-park on an access road multiplied the off-cuts of space left over after (or in) planning (SLOAP and SLOIP) (Casson, 1956; AR, 1973; Fairbrother, 1974). It was rare for a new building not to be equipped with a vanity patch of evergreen shrubbery to the front or side (Figure 5). In Tunnard's original vision, the landscaper (his term) stood equal with architect and engineer as the expert who would open up the city to the flow of nature (1938, 166), but in dispiriting reality the profession seemed little more than a service industry for property developers and highway engineers (Gandy, 2002, 147). The modernist picturesque had declined into a routine application of design standards (Manthorpe, 1956). We can hear a thin echo of *Gardens in the Modern Landscape* in the clumps of



Figure 5 Buffer planting along a flank wall anywhere in the UK. A common requirement of planning permissions, this miserable vestigial vegetation is the direct descendant of the landscape buffers shown in Figure 3

Source: author's photograph

shrubbery and strips of grass of any suburban business or retail park, and the 'indeterminate land oozes' along roadsides and around housing projects (Jacobs, 1962, 102). The entire practice of green-space design and management was on the defensive and under fire from two directions.

Social and environmental critiques of the urban picturesque

The green space favoured by modernist urbanism was regarded more for its masticlike ability to join together the functional zones of the city than for its own functional attributes. As the quantum of urban vegetation grew, so did questions about functionality. Unlike conventional types of street/square/park/garden, its pieces were usually unnamed and weakly identifiable. The earliest criticisms of the post-war picturesque had to do with its amorphousness and lack of urbanity; they were part and parcel of Iain Nairn's infamous 'subtopia' (AR, 1956, 355). Amenity spaces were often of the wrong scale for human use. They often appeared alongside roads; as Peter Blake put



Figure 6 Uninviting sign on a Warrington distributor road. Pedestrians prefer the hazards of the road verge to the thickets and subways. *Source*: author's photograph

it, where people wouldn't want to use them or couldn't get at them even if they did (1964, 30). Their very freedom posed new issues of social control (Carr and Lynch, 1981). Whereas traditional enclosed parks had been designed for control and managed by keepers, open-plan landscape was intrinsically harder to supervise, whether in its all-too-open patches of grassland or its all-too-closed belts of shrubbery with their undercrofts and detritus of litter. Close planting, for initial impact, often produced dense thickets (Figure 6) that – with the exuberance of nature – would overgrow footpaths and outrun the efforts of maintenance teams (Comedia and Demos, 2002; HoC, 1999 and 2002–3; DTLR, 2002, 10).

As cities' landscape estates expanded, older parks and newer planted areas were in competition for a diminishing resource base (UGSTF, 2002, 53). In a context of continuous downwards pressure on unit costs of maintenance, governments sought economies in batch contracts, replacing site-based groundsmen and specialist keepers with all-purpose maintenance teams who used the same trimmers and gang-mowers in parks as on highway verges. As the quantum of planted space grew, so the ancient art of urban horticulture became coarsened into mechanical crudity (Spirn, 1984).

Too many parks have been reduced to grass, trees and tarmac in the quest for cheaper maintenance. The damage thus inflicted is quickly and clearly visible, but what is now also clear is the profoundly demoralising effect that it has on park users and the surrounding community and its economic and social life. (HoC, 1999)

Parliamentarians examining the state of UK parks in 1999 were shocked at the levels of decline and abandonment; they found that the keeperless park had become, like the unstaffed railway station, 'one of the ghost zones of modern Britain'. David Nicholson-Lord contrasted the great historical tradition of the picturesque - what Alexander Pope had called 'calling in the country' - with the reality of public open spaces rife with vandalism (1987, 32). Whatever the actual levels of danger, the landscapes of the urban picturesque often had the physical attributes of risky places: concealment, exposure, short lines of sight and non-supervision (Coaffee, 2003). Maarten Hajer defines the urban public realm as a landscape under continual scrutiny by its occupants for signs of reassurance or threat (Hajer and Reijndorp, 2001, 73). Perceptions of danger dominate green-space user surveys (DoE, 1996; DTLR, 2002; WDS, 2004; MKP, 2005, 35). When city leaders meet to talk about green-space, as the US Mayors' Forum did at its Los Angeles meeting in the summer of 2004, issues of personal fear top the agenda (Hudnut, 2004). Urban landscapes of fear offer an ironic inversion of the historical idea of towns as places of sanctuary from the dangerous thickets and lurking predators of the countryside (see Figure 7; Tuan, 1980, 146).

Meanwhile, a similar process of disenchantment was occurring within the natural enviroment. The urban picturesque had aimed to bring nature into the city, yet that was not what happened. The Dutch garden designer Mien Ruys observed of Le Corbusier that he worshipped nature but fundamentally misunderstood it (Woudstra, 2000, 136). Twentieth-century modernism's image of nature was controlled, improved and gardenesque, and assumed intensive maintenance (Gilbert, 1989). It encouraged a perception of green space as an inert construction-industry material, like the green sponge used in architectural models, a static exterior decoration based on nursery-catalogue distinctions: grass, flowers, shrubs, trees (Taylor, 1981, 85). As Ian McHarg (1969) showed, this was really an anti-nature attitude. There was a systematic failure to see planted ground as 'a living composition with its own inherent patterns of survival which nature constantly reinstates' (Fairbrother, 1974, 25). As those successional processes in a temperate climate would normally tend towards a forest climax, the pre-forest combinations used in the urban picturesque were intrinsically unstable, and so required a continuous input of labour, chemicals and machinery. The conventional mowed, weed-controlled grass of urban amenity space became 'a symbol for everything that is wrong with our relationship to the land' (Hough, 1994, 129).

The contrast was shown up as deindustrialisation began to grip the urban economy. Nicholson-Lord (1987) contrasted the environmental sterility and placelessness of public green space with the ecological richness of brownfield land. It was extraordinary how rapidly hard-surfaced factories, marshalling yards, docks and gasworks could develop a soil structure and a successional vegetation of understorey, overstorey and canopy. The ecological landscape movement around Ian McHarg, Ian Laurie and Michael Hough argued for parks and other categories of urban green-space to be allowed the same ecological freedom, reverting to semi-wild urban commons with vegetation left to seed, grow and decay in natural succession (Laurie, 1979). Some Dutch cities successfully applied this successional approach, though it was generally resisted by open-space managers (Spirn, 1984).

The most famous case in the UK, and one of the largest in Europe, was the adventitious landscape that colonised an abandoned war munitions factory to the north of Warrington. When the land was developed for housing, much of its semiwild landscape was retained and incorporated into the system of highway and housing greenery. However, the physical layout of the estates was entirely conventional, with clusters of cul-de-sacs surrounded by buffer planting. It was innovative only in the ecological dimension. Unsurprisingly, residents of Warrington's urban wildwoods have proved uneasy about the naturalistic thickets which press too closely around their homes, and fearful of the paths and roadways that run through them (Jorgensen et al., 2007). We need to balance biophilia with human liveability. Abrams (2003) found overgrown vegetation projecting 'an image of desolation and despair' in overgrown courtyards of Ralph Erskine's celebrated ecological landscapes at Byker in Newcastle. For the second edition of his book *City Form and Natural Process*, Michael Hough revisited some of the natural landscapes around Dutch housing estates and found that their low-maintenance naturalised vegetation had been radically thinned

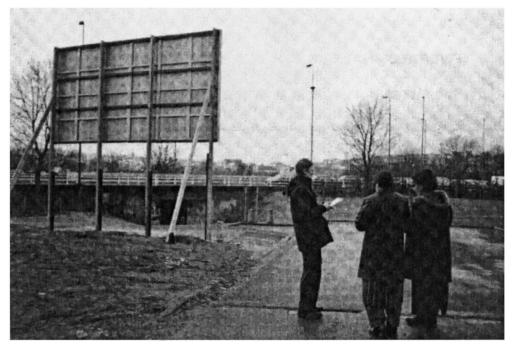


Figure 7 The Women's Design Service undertakes a safety audit in the buffer landscaping by Bristol's Baptist Mills/Millpond underpass. Few women use the amenity. *Source*: by kind permission of the WDS

and simplified in response to mugging and drug-dealing (1994, 123). Nicholson-Lord (2004) notes the vicious circle by which CCTV surveillance forces the removal of shrubs and undercroft vegetation, forcing a reversion to the lowest denominator of sterile monoculture.

Developments in the urban environmental agenda have widened the functionality gap still further. The urban picturesque was a landscape of mobility, designed to make driving enjoyable. Global warming has put it in a new light. As Matthew Gandy (2002) observes, highway landscapes along arterial roads used to symbolise the marriage of nature and human artifice; today they have become a symbol of estrangement between the two (Figure 8). The uprooted tree in Figure 1 symbolises the arrival of a fresh paradigm: postmodern urbanism. As Nan Fairbrother put it, 'new lives, new landscapes'.

The re-enclosure movement

The German landscape architect Peter Latz (2000) looks back on the latter half of the twentieth century as a period of lost opportunity; an era of buffer greenery in

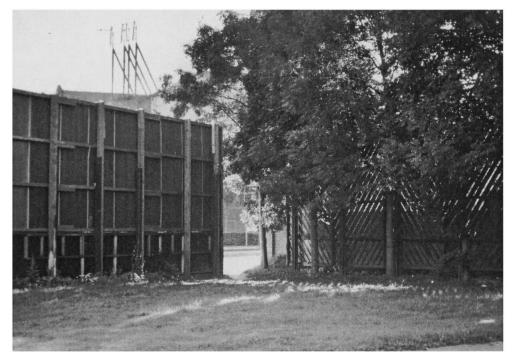


Figure 8 A landscaped road junction with a screen of maturing trees obliterated by a 96-sheet billboard. Clear Channel wastes no paint on the gimcrack carpentry seen from adjacent homes. *Source*: author's photograph

which open space was defined by anti-urban values. 'What we need more of', Peter Blake once said, 'is less urban open space. We need closed space' (1981, 11-12). Today that shift is happening. After half a century of indeterminate land oozes, cities are reinventing and retrofitting morphologies not practised since the early years of the twentieth century: the urban square, the avenue of street trees, the multi-way boulevard, building along frontage lines, the grid-bounded square and park, the corridor (Turner, 1996). Urbanism, in the phrase of Trancik's influential study Finding Lost Space (1986), has become the task of 'making figurative space out of the lost landscape'. Michael Hough (1990) speaks of a strategy of 'matrix reversal', which turns the green matrix of modernism into a matrix of built form, open into closed space, out to in. The re-enclosure tendency reflects new confidence about cities as places to work, play and live. Its design discourse spans all styles of urbanism from late modern Rotterdam to retro-romantic Berlin (Hajer and Reijndorp, 2001). The variety of approaches can be explored at the Centre de Cultura Contemporàna de Barcelona's web-based European Archive of Contemporary Urban Space, a collection of hundreds of projects entered for the centre's biennial prize (http://urban.cccb.org). For Peter Latz, this archive

marks the end of twentieth-century space and the beginning of a twenty-first-century urban landscape (2000, 5).

The re-enclosure phenomenon goes beyond local circumstances and cultures; like earlier phases of green-space conversion, its reach is global (Clark, 2006, 6). Tjallingii (2003) speaks of a fundamental shift from 'green' to 'red' dominance in the struggle for urban land. In the former Communist bloc, the process of infilling and partitioning open space is driven by a sometimes chaotic process of privatisation (Beer et al., 2003; Engel, 2006). Re-enclosure in market economies is also often linked to neoliberal shifts of ownership and management of a previously undifferentiated public realm. The political economy of these processes was discussed in a recent issue of this journal by Webster (2007). Here we focus on the physical outcome. In France the process is called 'residentialisation', and it involves a mix of demolition, low-rise infill, internal fencing and privatisation. Phillipe Panerai's reworking of the Teisseire district of Grenoble (Figure 9) is a characteristic example (Panerai, 1999; Desfontaines, 2004). In Holland, the once-iconic modernist landscape of Amsterdam's Bijlmermeer has become an equally iconic example of an architecture of addition (Figure 10) to form streets in the green void (Docter, 2000, 203-13; Bruijne et al., 2003). In Germany, Berlin's city authorities have pursued an ambitious and controversial strategy to replace freeflowing urban landscape (Stadtlandschaft) with bounded urban space (städtischer Raum) (Burg, 1997, 75; Hajer and Reijndorp, 2001). In Ireland, Dublin's high-rise satellite estate of Ballymun has been transformed by a process of architectural enclosure, which reclaimed 170 acres of housing land from bleak amenity grassland to create a townscape of gardens, parks, pocket-parks and tree-lined boulevards (Figure 11; BRL, 1998). In England, the open amenity spaces of the Hulme estate in Manchester were recolonised after only 20 years to make a grid reminiscent of the nineteenth-century street lines (Rudlin and Falk, 1999). At the time of writing, the UK's largest and greenest new town, Milton Keynes, is pursuing controversial intensification proposals that involve grubbing up trees and levelling landscape bunds so that some sections of the busy grid roads can be made viable for pedestrians and public transport, by being fronted in the urban fashion with buildings instead of vegetation. The city's Campbell Park, originally designed to blend seamlessly into the green matrix, is acquiring a hard frame of high-density flats (MKP, 2005). Everywhere, the once 'sturdy, versatile, recognisable and timeless concept' of modernism's urban picturesque is undergoing matrix reversal. Indeed the urban picturesque suddenly begins to seem like an endangered habitat (Docter, 2000; Beer et al., 2003).

Enclosure and functionality

We opened with a disconcerting image of nature uprooted. The site of that tree in East Manchester was part of an aerial photograph included in Richard Rogers's Urban



Figure 9 New owner-occupied housing with detached garages inserted around the edge of the Teisseire estate in Grenoble with the aim of *désenclavement* (breaking social and physical isolation). The prospects for the tree seem poor *Source*: author's photograph

Task Force report over the caption 'land going to waste'. Some of Manchester's wasteland was derelict industrial property (brownfields), but most was public open space.

Some urban areas have too much public space, much of which is poorly designed, managed and maintained. Many twentieth-century residential developments have a public realm that is simply SLOAP (space left over after planning) – soulless, undefined places, poorly landscaped, with no relation to surrounding buildings. (UTF, 1999, 57)

Excess open space exacerbated the problems of abandonment in neighbourhoods where almost half the shops and a quarter of dwellings were empty. The remedy is compaction (Echenique and Saint, 2001). East Manchester's amorphous landscapes are being reduced and re-enclosed into public spaces framed and overlooked by building, as the Urban Task Force prescribed: 'from the front door to the street, to the square, the park and on out to the countryside ... a hierarchy of public spaces that

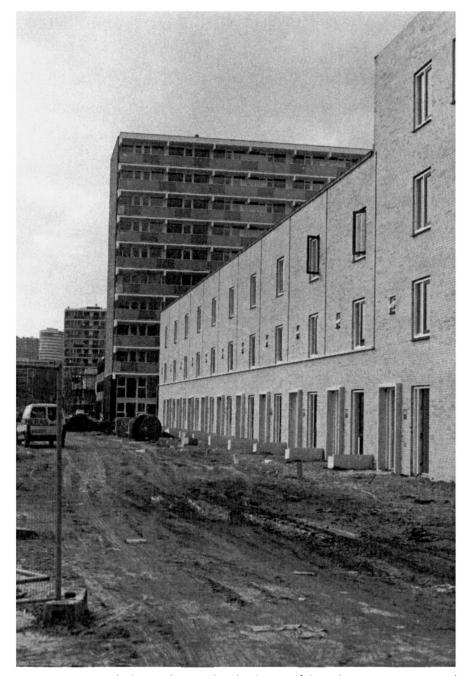


Figure 10 New terraces built over the arcadian landscape of the Bijlmermeer estate in south-east Amesterdam, to form a connective street fabric. *Source*: author's photograph



Figure 11 Street trees receive attention in the new central high street of Ballymun, Ireland *Source*: author's photograph

relate to buildings and their entrances' (UTF, 1999, 71). If the defining feature of the twentieth century urban landscape was its freedom of definition – everything flowed into everything else – the emergent paradigm is based on spaces with definition and purpose, and not one single purpose but multi-functionality, serving both human use and enjoyment and as an infrastructure for ecosystem services (Beer et al., 2003).

This multi-functional infrastructure is composed of various typologies at several scales, from the gardens, balconies and roofs of individual buildings to the green belts that structure metropolitan regions (Turner, 1998; TCPA, 2004; Woolley, 2003; Swanwick et al., 2003). To begin at the scale of the individual dwelling, gardens (and even balconies) are the most familar category of multi-functional green space. Their ecological potential has long been recognised (Gilbert, 1989), and their contribution to sustainable drainage and run-off is belately becoming appreciated in response to losses through paving, decking and infill. Many rebuilds of mass housing projects turn amenity lawns into enclosed gardens to make their open space more personal, useful and enjoyable for residents (Desfontaines, 2004). The sanctuary quality of back

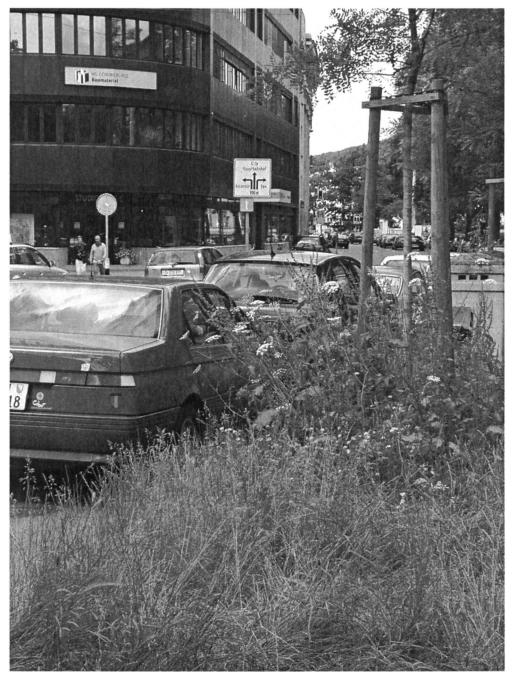


Figure 12 The city of Zurich allows the free growth of adventitious weeds around the base of street trees and along parking verges. *Source*: author's photograph

gardens is reinforced in postmodern urbanism by the typology of the perimeter block, in which buildings line the edge of a development site with their fronts facing outward to the public realm of the street while the backs define the green space. Urbanists admire perimeter blocks because the outer walls make urban space and reconstitute streets as places with identity and purpose, but an equally significant benefit lies within. These spaces have particular and fascinating properties. Their micro-climate is sheltered by the heat-retaining walls of buildings. The walls themselves can cascade vegetation. Sunlight can penetrate most parts of a court providing that outer building heights are properly managed. The inward-facing windows enjoy a communal view whatever the ownership and management arrangements at ground level. The interior enclosures can form individual gardens or shared landscapes, depending on residential density, and they often absorb parking. Their plant and animal life is both a biodiversity value and an enhancement to liveability and wellbeing (Rohde and Kendle, 1994). The gardened courts of perimeter blocks are one of the most ancient types of green space in European cities. Camillo Sitte (1900) mourned their disappearance at the turn of the twentieth century. A hundred years later this type of green space has been widely revived. Barcelona's Villa Olimpica and Amsterdam's Eastern Harbour District have led the way in reinventing the typology with innovative mixtures of communal spaces and private gardens, as well as ingenious ways of fitting in car-parking, interior blocks and through pathways without losing the sense of an enclosed whole.

Outside the perimeter block lies the public realm of streets and squares, mineral pavings framed by the mineral walls of buildings. Streets have been social environments through human history and their green-space potential is once again becoming appreciated as they are prised from the grasp of the highway engineer and redefined as multi-functional spaces (DfT, 2007). Urban arboriculture is still convalescent; trees are often put in pavements without adequate preparation or aftercare (Spirn, 1984; Pauleit, 2003). As universities revive the scientific and skills basis, more is being discovered about the benefits that street landscapes can bring (Randrup et al., 2002; Nowak et al., 2004; Konijnendijk et al., 2005). Trees reduce vehicle speeds, dampen noise, form a psychological safety barrier between lanes of movement, moderate the microclimate and reduce the traffic-induced pollution of ozone, sulphur dioxide and particulates (Beckett et al., 1998; Jacobs et al., 2002). They have equally important functions within the larger web of a town's green infrastructure: they provide a significant share of the urban forest; their continuous canopy acts as an ecological corridor; and each tree pit (as Zurich demonstrates, Figure 12) has the potential to be a mini-wildflower patch (Bonamoni, 1990, 60). Sustainable drainage requirements are also beginning to transform that old cliché, the tree-planted amenity grass-strip, into a new type of linear green-space, a vegetated open swale (Figure 13) whose wetland planting adds fresh strands of ecological interest to the street environment (Konijnendijk et al., 2005).

Moving upwards in scale, the next category of postmodern green space is the

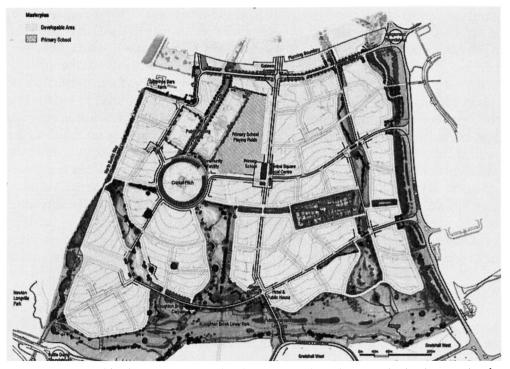


Figure 13 Sustainable drainage integrated with compact urban design in the landscape plan for Tattenhoe Park, Milton Keynes

Source: by kind permission of English Partnerships

local park, now seen not as a diffused background but as a precious enclosure within a predominately mineral urban matrix. Again, the postmodern approach combines human and ecosystem functions. For humans, the emphasis is on safe accessible spaces for relaxation, physical exercise and play. As Jane Jacobs realised fifty years ago, people will shun spaces that are just landscape oozes; a park needs to be a complex enclosure (Jacobs, 1962). A generation used to the lifestyle of an urban flat needs outdoor spaces that function as public or shared realms. Hajer and Reijndorp (2001, 9) argue that unless such spaces are fenced, defined and identifiable they cannot give structure to social encounters amid the cosmopolitanism and social diversity of the modern city.

From an ecosystem perspective, neighbourhood green space has important functions to do with climate change mitigation and adaptation, such as sustainable drainage systems to reduce flood risk and water pollution, and micro-climate design to reduce the effect of urban overheating. The use of green space to manage surface water is revolutionary for urban design. At the outset it implies much closer attention to topography and the lie of the land in the layout of new development (Gordon and Tamminga, 2002). Green spaces engineered for water retention will tend to be located centrally in relation to the buildings and spaces they drain. While much of the initial work on sustainable urban drainage systems (SUDS) was suburban in spirit, with wide swales and filter strips that pushed buildings apart and reduced site density (CIRIA, 2000), surface-water management can enhance streetscapes and reinforce the urbanist concept of neighbourhood parks as enclosed spaces framed by the buildings they serve, as the masterplan for the new Milton Keynes neighbourhood of Tattenhoe Park illustrates (Figure 13). All that needs to be devised is a regime for managing such a multi-functional resource (White and Howe, 2005).

Next on the scale of urban green spaces are the bigger parks, commons, valleys and landscape corridors that shape a town's overall structure. The crucial discovery of postmodern urbanism is the need for connections and corridors, and again the concept has been reached from more than one direction. For human liveability and transport sustainability, greenways are systems for mobility and recreation, making the built-up mass permeable by modes other than the private car. Climate change science emphasises the contribution of structural green space to mitigating heat-island effects through air movement. Landscape ecology reveals the biodiversity yield of green spaces linked by river valleys, transport infrastructures and the filigree of gardens, parks and streets. The ecological patch/corridor/mosaic model is directly applicable to built-up areas (Dramstad et al., 1996), though always with an extra dimension of human presence and memory. As Kowarik and Körner (2005, 215) put it, Bambistyle nature protection is out of place in a town. The built fabric encloses this green space not as undifferentiated, free-flowing nature, but as an infrastructure of patches and corridors purposively planned and managed for connectivity and heterogeneity (Forman, 1995, 448). Its biodiversity depends on an effective spatial zoning of patches in which vegetation is allowed to grow freely: annually as a summer meadow or through the years as a successional plant community (CABE, 2006). Successful urban wildernesses may not have railings and keepers in uniforms, but need to be as carefully designed as traditional parks for multi-functional use, so that undisturbed areas are zoned with margins, and clear routeways are offered that connect up, have good visibility and look cared-for (Kowarik and Körner, 2005; Konijnendijk et al., 2005; Gilbert, 1989). As CABE puts it (2006, 17), 'litter picking is as important in a wildlife area as in a formal rose bed'.

At the scale of the overall pattern of a town in its setting, postmodern urbanism has given new life to one of the oldest multi-functional concepts, the green belt. Picturesque landscape interpenetrated nature and built form as a deliberate counterpoint to the freedoms of individual motorised mobility. Climate change has set the context for a radically different agenda of ecological modernisation, in which the city resumes its historic role as a place of compactness, convenience and diversity, and cars are an occasional option, not an everyday necessity (Beatley and Manning, 1997). This design concept is inconceivable without a physical boundary and effective regulatory measures to prevent sprawl (Register, 2002). In the postmodern figure-ground, the final enclosure is the green space separating town from country.

Two themes run through all these typologies. The first is that *less* can be *more*. The quality and functionality of planted space count for more than its extent in hectares. One of Europe's most environmentally aware municipalities, the Dutch town of Breda, has downsized its public open space, selling land for development and giving the proceeds to its parks department (Tjallingii, 2003, 112–13). The Commission for Architecture and the Built Environment (CABE) has encouraged English local councils to do the same, releasing the parts of their estate that fail to provide 'local identity, character and delight' (CABE, 2004, 87). In the opinion of the parliamentarian who chaired two Commons select committees on the topic, excess open space remains an issue (Bennett, 2004).

But Andrew Bennett MP also noted, and this is the final point, an alarming absence of information and policy. Towns with no green-space inventory can hardly oversee the pattern and functioning of these assets (Campbell, 2001). British urban areas have gone down a dangerous route of intensifying and infilling gardens, allotments, playing fields and amenity landscapes without any strategy for the green space that will remain. This policy lacuna extends through all levels of government and was a central point of criticism in the Royal Commission on Environmental Pollution's recent report on the urban environment (RCEP, 2007, 82). The Scottish policy guideline on open space and physical activity (SG, 2007) requires authorities north of the border to take a thorough audit and make a strategy that sets out the vision for new and improved open spaces, but no such requirement applies elsewhere in the UK. The pace of enclosure is running faster than the practice of multi-functional space management (Barber, 2005.)

Conclusion

This paper has told a before-and-after story. It started with the twentieth-century vision of an unbounded natural realm within towns and cities, and followed the vision through implementation and disillusion with its environmental and social outcomes. Then it followed the alternative vision of enclosed green spaces, differentiated by function and conceived as much for ecological infrastructure as for human use and enjoyment; in the words of the post-unification plan for inner Berlin (Burg, 1997), städtischer Raum nicht fließendoffene Freiräume (urban-type space, not open-flowing free space).

Of course, neither type has been universal. The rise of the modern landscape concept hardly affected the cities of Mediterranean Europe, where the late-twentiethcentury experience was of a prolonged assault on the landscape by speculative devel-



Figure 14 Today, the strains of maintaining an 'out' landscape show even in the iconic settings of the British and Swedish new towns, as seen here in Vallingby. *Source*: author's photograph

opment and self-built housing, much of it unauthorised; see, for example, Gabriella Corona's terrifying account of the disappearance of nature in modern Naples (2005). The postmodern decline of the picturesque landscape should not be overstated. Despite the privatisation of their assets, most of the UK's new towns maintain their extensive landscape areas to a good standard, thanks to the setting up of special trusts with significant revenue-generating endowments of offices, shops and pubs to cover upkeep costs (Higson, 1997). In the best of Scandinavian post-war settlements, such as Vallingby outside Stockholm, Christopher Tunnard's vision of a democratic landscape of open layout and interweaving greenery can still be seen and enjoyed. But even these famous settings are showing the strain (see Figure 14), while the best new Scandinavian development – such as Stockholm's Hammarby Sjöstad – follows a radically different strategy of enclosure.

Ken Worpole's book Here Comes the Sun (2000) celebrated the passing of the

modernist landscape in an optimistic spirit. He wrote hopefully about the new greenspace agenda:

Increasingly, the issue of the provision of high-quality public amenities and public spaces, together with a much greater attention to issues of environmental quality, ranging from air quality to the reduction of traffic and greater walkability of urban settings and amenities, is bringing back together for the first time since the 'heroic' period of early modernism, issues of urban planning, social equity and public health policy in the name of 'ecological modernisation'. (2000, 131)

In other words, the new enclosure movement is doing today what the modernists did seventy years ago: crystallising a conception of social and environmental progress into a tangible landscape form. This is another heroic moment for urban landscape design.

References

ABRAMS, R. (2003), 'Byker revisited', Built Environment, 29, 117-31.

- AR (ARCHITECTURAL REVIEW) (1956), 'Subtopia' (December Special Issue).
- AR (ARCHITECTURAL REVIEW) (1973), 'SLOAP space left over after planning', Architectural Review, **920**, 201–66.
- BARBER, A. (2005), Green Future: A Study of the Management of Multi-functional Urban Green Spaces in England, Reading, Green-space Forum.
- BARDET, G. (1949), Mission de l'Urbanisme, Paris, Les Edition Ouvrières.
- BEATLEY, T. and MANNING, K. (1997), The Ecology of Place: Planning for Environment, Economy and Community, Washington, DC, Island Press.
- BECKETT, K. P., FREER-SMITH, P. H. and TAYLOR, G. (1998), 'Urban woodlands: their role in reducing the effects of particulate pollution', *Environmental Pollution*, **99**, 347-60.
- BEER, A., DELSHAMMAR, T. and SCHILDWACHT, P. (2003), 'A changing understanding of the role of green-space in high density housing', *Built Environment*, **29**, 132-43.

BENNETT, A. (2004), 'Is there too much space?', Green Places, 13 April.

- BLAKE, P. (1964), God's Own Junkyard: The Planned Deterioration of America's Landscape, New York, Holt Rinehart & Winston.
- BLAKE, P. (1981), 'The Surgeon General has determined that urban open space is dangerous to your health', in Taylor (ed.), 11-12.
- BONAMONI, L. (1990), Le Temps des Rues: vers un nouvel aménagement de l'éspace rue, Lausanne, IREC.
- BRL (BALLYMUN REGENERATION LTD) (1998), Master Plan for the New Ballymun, Dublin, Ballymun Regeneration Ltd.
- BRUIJNE, D., VON HOOGSTRATEN, D., KWEKKEBOOM, W. and LUIJTEN, A. (2003), Amsterdam Southeast: Central Area Southeast and Urban Renewal in the Bijlmermeer 1992–2010, Bossom, Thoth.

BURG, A. (ed.) (1997), Planwerk Innenstadt Berlin: ein erster Entwurf, Berlin, Kulturbuch-Verlag. CABE (COMMISSION FOR ARCHITECTURE AND THE BUILT ENVIRONMENT) (2004), Creating Successful Masterplans: A Guide for Clients, London, Commission for Architecture and the Built Environment.

CABE (COMMISSION FOR ARCHITECTURE AND THE BUILT ENVIRONMENT) (2006), Making Contracts Work for Wildlife: How To Encourage Biodiversity in Urban Parks, London, Commission for Architecture and the Built Environment.

- CHAC (CENTRAL HOUSING ADVISORY COMMITTEE) (1944), The Design of Dwellings: Report of the Central Housing Advisory Committee, London, HMSO.
- CIRIA (CONSTRUCTION INDUSTRY RESEARCH AND INFORMATION ASSOCIATION) (2000), Sustainable Urban Drainage Systems: Design Manual for England and Wales (CIRIA C522), London, Construction Industry Research and Information Association.

CAMPBELL, K. (2001), Rethinking Open Space: Open Space Provision and Management, A Way Forward, Edinburgh, Kit Campbell Associates for Scottish Executive Central Research Unit.

CARR, s. and LYNCH, K. (1981), 'Open space: freedom and control', in Taylor (ed.), 17-18.

CASSON, H. (1956), 'Outrageous postscript', Journal of the Town Planning Institute, 42, 187-91.

CLARK, P. (ed.) (2006), European City and Green-space, Aldershot, Ashgate.

- COAFFEE, J. (2003), Terrorism, Risk and the City: The Making of a Contemporary Urban Landscape, Aldershot, Ashgate.
- COHEN, J.-L. (1995), Scenes of the World to Come: European Architecture and the American Challenge 1893-1960, Paris, Flammarion.

COMEDIA and DEMOS (2002), Park Life: Urban Parks and Social Renewal, Stroud, Comedia.

- CONWAY, H. (2000), 'Everyday landscapes: public parks from 1930 to 2000', Garden History, 28, 117-34.
- CORONA, G. (2005), 'Sustainable Naples: the disappearance of nature as resource', in Schott et al. (eds), 97-112.
- CROWE, S. (1960), The Landscape of Roads, London, Architectural Press.
- DAILY, G. C. (ed.) (1997), Nature's Services: Societal Dependence on Natural Ecosystems, Washington, DC, Island Press.
- DESFONTAINES, M. (2004), 'Un nouveau concept, la résidentialisation des HLM', La Gazette des Communes, 1735, 40.
- Dft (DEPARTMENT FOR TRANSPORT) (2007), Manual for Streets, London, Department for Transport.
- DIEFENDORF, J. (1993), In the Wake of War: The Reconstruction of German Cities after World War II, Oxford, Oxford University Press.
- DOCTER, R. (2000), 'Postwar town planning in its midlife crisis', in T. Dekker (ed.), The Modern City Revisited, London, E & FN Spon, 197-213.
- DOE (DEPARTMENT OF THE ENVIRONMENT) (1996), People Parks and Cities, London, Department of the Environment.
- DRAMSTAD, W. R., OLSON, J. and FORMAN, R. (1996), Landscape Ecology Principles in Landscape Architecture and Land Use Planning, Washington, DC, Island Press.
- DTLR (DEPARTMENT FOR TRANSPORT, LOCAL GOVERNMENT AND THE REGIONS) (2002), Improving Urban Parks, Play Areas and Open Spaces, London, Department for Transport, Local Government and the Regions.
- ECHENIQUE, M. and SAINT, A. (eds) (2001), Cities for the New Millennium, London, E & FN Spon.

ELLIOTT, B. (2000), 'Historical revivalisms in the twentieth century: a brief introduction', Garden History, 28, 17-31.

ENGEL, B. (2006), 'Public spaces in the blue cities of Russia', Progress in Planning, 66, 147-239.

ENGELS, F. (1952), The Condition of the Working-Class in England in 1844 (translated by Florence Kelley Wischnewetzky), London, George Allen & Unwin.

- FAIRBROTHER, N. (1974), The Nature of Landscape Design, London, Architectural Press.
- FORD, L. (2000), The Spaces Between Buildings, Baltimore, MD, Johns Hopkins University Press.
- FORMAN, R. (1995), Land Mosaics: The Ecology of Landscapes and Regions, New York, Cambridge University Press.
- FORSHAW, J. H. (1943), Town Planning and Public Health (Chadwick Public Lecture), London, P. S. King and Staples.
- FOX, C. (1995), 'The battle of the railings', Architectural Association Files, 29, 50-60.
- GANDY, M. (2002), Concrete and Clay: Reworking Nature in New York, Cambridge, MA, MIT Press.
- GIEDION, S. (1941), Space Time and Architecture: The Growth of a New Tradition, Cambridge, MA, Harvard University Press.

GILBERT, O. L. (1989), The Ecology of Urban Habitats, London, Chapman & Hall.

GORDON, D. and TAMMINGA, K. (2002), 'Large-scale traditional neighbourhood development and pre-emptive ecosystem planning: the Markham experience 1989–2001', *Journal of Urban Design*, 7, 321–40.

GUTKIND, E. A. (1962), The Twilight of Cities, New York, Free Press of Glencoe.

- HAJER, M. (1997), The Politics of Environmental Discourse: Ecological Modernization and the Policy Process, Oxford, Oxford University Press.
- HAJER, M. and REIJNDORP, A. (2001), In Search of New Public Domain, Amsterdam, NAI Publishers.
- HALPRIN, L. (1966), Freeways, New York, Reinhold Publishing.

HARRISON, S., PILE, S. and THRIFT, N. (eds) (2004), Patterned Ground, London, Reaktion Books.

- HAYDEN, D. (1995), The Power of Place: Urban Landscapes as Public History, Cambridge, MA, MIT Press.
- HEBBERT, M. (1999), 'A city in good shape: town planning and public health', Town Planning Review, 70, 433-54.

HEBBERT, M. (2003), 'New urbanism: the movement in context', Built Environment, 29, 193-209. HEBBERT, M. (2005a), 'The street as locus of collective memory', Society & Space, 23, 581-96.

HEBBERT, M. (2005b), 'Engineering, urbanism and the struggle for street design', *Journal of Urban Design*, **10**, 39–60.

HEBBERT, M. (2006), 'Town planning versus Urbanismo', Planning Perspectives, 21, 233-52.

HEBBERT, M. (forthcoming), 'An everyday unity: the art of street architecture', in J.-F. Lejeune and C. Bohl (eds), *Modern Civic Art: Sitte Hegemann and the Metropolis*, London, Routledge.

- HIGSON, N. (1997), 'Landscape', in *New Towns Record 1966–1996* (CD-ROM), Glasgow, The Planning Exchange.
- HIRSCH, E. and O'HANLON, M. (1995), The Anthropology of Landscape: Perspectives on Place and Space, Oxford, Clarendon Press.
- HOC (HOUSE OF COMMONS) (1999), House of Commons Select Committee on the Department of Environment, Transport and the Regions: Town and Country Parks, London, HMSO.

- HOC (HOUSE OF COMMONS) (2002-03), House of Commons Select Committee on the Office of the Deputy Prime Minister, Eleventh Report: Town and Country Parks, London, HMSO.
- HOUGH, M. (1990), Out of Place: Restoring Identity to the Regional Landscape, New Haven, CT, Yale University Press.

HOUGH, M. (1994), Cities and Natural Process, London, Routledge.

- HUDNUT, W. H. (2004), 'Mayors' Forum: the unifying lens of green infrastructure', Urban Land Institute, available at experts.uli.org/Content/ResFellows/Hudnut/UL.
- JACOBS, A., MACDONALD, E. and ROFÉ, Y. (2002), The Boulevard Book: History, Evolution, Design of Multiway Boulevards, Cambridge, MA, MIT Press.

JACOBS, J. (1962), The Death and Life of Great American Cities, London, Jonathan Cape.

- JACQUES, D. (2000), 'Modern needs, art and instincts: modernist landscape theory', Garden History, 28, 88-101.
- JORGENSEN, A., HITCHMOUGH, J. and DUNNETT, N. (2007), 'Woodland as a setting for housing in Warrington New Town UK', Landscape and Urban Planning, **79**, 273–87.
- KEEBLE, L. (1956), Principles and Practice of Town and Country Planning, London, Estates Gazette.
- KONIJNENDIJK, C. C., NILSSON, K., RANDRUP, T. B. and SCHIPPERIJN, J. (eds) (2005), Urban Forests and Trees, Berlin, Springer.
- KOWARIK, I. and KÖRNER, S. (eds) (2005), Wild Urban Woodlands, New Perspectives for Urban Forestry, Heidelberg, Springer.
- LATZ, P. (2000), 'Structuring the avant-garde landscape', Garden History, 28, 4-5.
- LAURIE, I. (1979), Nature in Cities: The Natural Environment in the Design and Development of Urban Green-space, Chichester, Wiley.
- LEWIS, P., LOWENTHAL, D. and TUAN, Y.-F. (1973), Visual Blight in America, Washington, DC, Association of American Geographers.
- LUBOVE, R. (1967), The Urban Community: Housing and Planning in the Progressive Era, Englewood Cliffs, Prentice-Hall.
- MCHARG, I. (1969), Design with Nature, New York, Natural History Press.
- MANTHORPE, W. (1956), 'The machinery of sprawl', Architectural Review, 120, 409-19.
- MANTZIARAS, P. (2003), 'Rudolf Schwarz and the concept of Stadtlandschaft', *Planning Perspec*tives, **18**, 147-76.

MATLESS, D. (1998), Landscape and Englishness, London, Reaktion Books.

MELLER, H. (2005), 'Citizens in pursuit of nature: gardens, allotments and private space in European cities 1850–2000', in Schott et al. (eds), 80–96.

- MERRIMAN, P. (2004), 'Freeways', in Harrison et al. (eds), 86-88.
- MKP (MILTON KEYNES PARTNERSHIP) (2005), The New Plan for Milton Keynes: Environment and City Design, Milton Keynes, Milton Keynes Partnership.
- MUMFORD, L. (1964), The Highway and the City, London, Secker and Warburg.
- NECKAR, L. M. (1990), 'Christopher Tunnard's gardens in the modern landscape', Journal of Garden History, 10, 237-46.
- NICHOLAS, R. (1945), City of Manchester Plan, Norwich and London, Jarrold & Sons.
- NICHOLSON-LORD, D. (1987), The Greening of Cities, London, Routledge and Kegan Paul.
- NICHOLSON-LORD, D. (2004), 'Crimes against nature', The Guardian, 26 July.
- NOWAK, D. J. (2002), 'The effects of urban forests on the physical environment', in Randrup et al. (eds), 22-42.

NOWAK, D. J., KURODA, M. and CRANE, D. E. (2004), 'Tree mortality rates and tree population projections in Baltimore, Maryland, USA', Urban Forestry and Urban Greening, 2, 139-47.

ODPM (OFFICE OF THE DEPUTY PRIME MINISTER) (2002), Planning Policy Guidance 17: Planning for Open Space, Sport and Recreation, London, Office of the Deputy Prime Minister.

PANERAI, P. (1999), 'Convictions et références', Projet Urbain, 18, 19-21.

PAULEIT, s. (ed.) (2003), 'Perspectives on urban green space in Europe', Built Environment, 29, 89–93.

- PRIGGE, w. (1996), 'Layerings: architecture and landscape in the urban area of Frankfurt/ Main', in K. Wachten (ed.), Change Without Growth? Sustainable Urban Development for the 21st Century, Braunschweig/Weisbaden, Friedr. Vieweg & Sohn, 98-105.
- RABINOW, P. (1989), French Modern: Norms and Forms of the Social Environment, Cambridge, MA, MIT Press.
- RANDRUP, T. B. et al. (eds) (2002), Urban Forests and Trees, Luxembourg, Office for Official Publications of the European Communities.

RASMUSSEN, S. E. (1982), London: The Unique City, Cambridge, MA, MIT Press.

- RAVETZ, A. (1995), The Place of Home: English Domestic Environments 1914-2000, London, E & FN Spon.
- RCEP (ROYAL COMMISSION ON ENVIRONMENTAL POLLUTION) (2007), The Urban Environment, Norwich, HMSO.
- REGISTER, R. (2002), *Ecocities: Building Cities in Balance with Nature*, Berkeley, CA, Berkeley Hills Books.
- ROHDE, C. L. E. and KENDLE, A. D. (1994), Human Wellbeing, Natural Landscape and Wildlife in Urban Areas (English Nature Science Report No. 22), London, English Nature.
- RUDLIN, D. and FALK, N. (1999), Building the 21st Century Home: The Sustainable Urban Neighbourhood, London, Architectural Press.
- SCHOTT, D., LUCKIN, B. and MASSARD-GUILBARD, G. (eds) (2005), Resources of the City: Contributions to an Environmental History of Modern Europe, Aldershot, Ashgate.
- SG (SCOTTISH GOVERNMENT) (2007), Open Space and Physical Activity, Edinburgh, Scottish Government.
- SITTE, C. (1900), 'Greenery in the city' in G. R. Collins and C. C. Collins (trans. and intro.), City Planning According to Artistic Principles, London, Phaidon Press, 303-21.
- SNOW, W. B. (ed.) (1959), The Highway and the Landscape, New Brunswick, NJ, Rutgers University Press.
- SOHN, E. (2003), 'Hans Bernhard Reichow and the concept of *Stadtlandschaft* in German planning', *Planning Perspectives*, **18**, 119-46.
- SPIRN, A. W. (1984), The Granite Garden: Urban Nature and Human Design, New York, Basic Books.
- SWANWICK, C., DUNNET, N. and WOOLLEY, H. (2003), 'Nature role and value of green space in towns and cities: an overview', *Built Environment*, **29**, 94–106.
- SZCZYGIEL, B. and HEWITT, R. (2000), 'Nineteenth century medical landscapes: John H. Rauch, Frederick Law Olmsted and the search for salubrity', Bulletin of the History of Medicine, 74, 708-34.

TAYLOR, E. (ed.) (1981), Urban Open Spaces, London, Academy Editions.

TCPA (TOWN & COUNTRY PLANNING ASSOCIATION) (2004), Biodiversity by Design: A Guide for Sustainable

Communities, London, Town & Country Planning Association.

- TJALLINGII, s. (2003), 'Green and red, enemies or allies? The Utrecht experience with green structure planning', *Built Environment*, **29**, 107-16.
- TRANCIK, R. (1986), Finding Lost Space, New York, Van Nostrand Reinhold.
- TUAN, Y.-F. (1974), Topophilia: A Study of Environmental Perception, Attitudes and Values, Englewood Cliffs, NJ, Prentice-Hall.
- TUAN, Y.-F. (1980), Landscapes of Fear, Oxford, Blackwell.
- TUNNARD, C. (1938), Gardens in the Modern Landscape, London, Architectural Press.
- TURNER, T. (1996), City as Landscape, London, E & FN Spon.
- TURNER, T. (1998), Landscape Planning and Environmental Impact Design, London, UCL Press.
- UGSTF (URBAN GREEN SPACES TASK FORCE) (2002), Green Spaces Better Places, London, DTLR.
- UTF (URBAN TASK FORCE) (1999), Towards an Urban Renaissance: Final Report of the Urban Task Force Chaired by Lord Rogers of Riverside, London, Department of Environment, Transport and the Regions.
- WALKER, D. (2007), 'Milton Keynes at 40', Urban Design, 104, 14-16.
- WDS (WOMEN'S DESIGN SERVICE) (2004), Making Safer Places: Interim Reports, available at www.wds. org.uk.
- WEBSTER, C. (2007), 'Property rights, public space and urban design', *Town Planning Review*, **78**, 81–102.
- WHITE, I. and HOWE, J. (2005), 'Unpacking the barriers to sustainable urban drainage use', Journal of Environmental Policy & Planning, 7, 24-41.
- WHITE, R. P. (1959), 'The functional uses of plants on the complete highway', in Snow (ed.), 182-92.
- WOODFORD, G., WILLIAMS, K. and HILL, N. (1976), The Value of Standards for the External Residential Environment, London, Department of the Environment.
- WOOLLEY, H. (2003), Urban Open Spaces, London, E & FN Spon.
- WORPOLE, K. (2000), Here Comes The Sun: Architecture and Public Space in Twentieth Century European Culture, London, Reaktion Books.
- WOUDSTRA, J. (2000), 'The Corbusian landscape: arcadia or no man's land?', Garden History, **28**, 135-51.

Acknowledgements

The author gratefully acknowledges the support of the Royal Commission for the Exhibition of 1851 and (with the usual disclaimers), the stimulus of colleagues John Handley, Alan Barber and Stephan Pauleit.