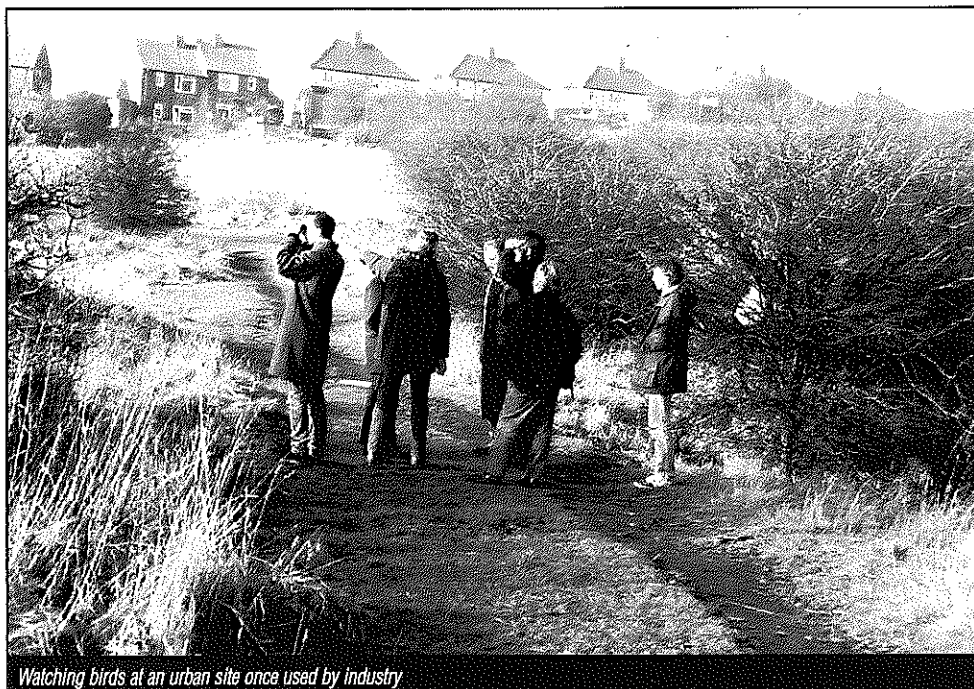


John Box and Peter Shirley look at quality of life issues for both the people and the wildlife affected by the current housing debate

# BIODIVERSITY, BROWNFIELD SITES AND HOUSING



Watching birds at an urban site once used by industry

## BROWNFIELD SITES

**'The crucial element missing from the debate is the contribution made by open spaces of all kinds to local biodiversity and the quality of human life'**

**T**he need for housing has generated one of the most significant debates about land use there has ever been. In this context, it must be remembered that land use policies and practices are fundamental to creating and retaining biodiversity. Two main questions lie at the centre of the current debate:

- How many homes are needed over the next 20 years?
- Where should these homes be built?

The debate is polarised between 'developers'— i.e. those who generally favour using 'greenfield' sites that have not previously been built on, and which are perceived to be in rural and green belt areas—and 'defenders of the countryside'— who favour using 'brownfield' sites,

which are perceived to be areas of dereliction in towns and cities.

This simplistic approach only serves to create confusion. In fact, there are brownfield sites in the countryside and greenfield sites in the towns, and many brownfield sites have wildlife, recreation and amenity value. The approach also overlooks the fact that the green belt is a planning and not a conservation tool—it is a designation that depends upon where a piece of land is and not whether it is of good, bad or indifferent quality.

Indeed, central government policy in respect of green belts is to encourage the recycling of derelict and other urban land irrespective of its nature conservation value, and to secure nature conservation interest within a green belt—the clear inference being that derelict and other

urban land has no nature conservation value, unlike green belt land.

The crucial element missing from the debate is the contribution made by open spaces of all kinds to local biodiversity and the quality of human life.

Some brownfield sites are designated for their wildlife value, both as statutory sites— Sites of Special Scientific Interest (SSSIs) or Local Nature Reserves (LNRs)— and as non-statutory sites (sites of importance for nature conservation or wildlife sites). Brownfield sites may contain valuable ecological features or have the potential to develop significant local biodiversity. Indeed the use of the terms 'brownfield' and 'greenfield' to describe sites is unhelpful in conserving biodiversity. After all, 'greenfield' sounds so much more attractive than 'brownfield'.

The question of where new homes should be built is crucial, as is the debate about the numbers of houses needed. It is inevitable that many new homes will be built, and decisions about the broad housing allocations as well as the specific locations will have direct impacts on biodiversity.

### The debate

The debate really started in 1995 with the publication of a Housing White Paper,<sup>1</sup> which included the then Conservative Government's own target that 50 per cent of new housing should be on previously developed land, and with the publication of a Government report<sup>2</sup> which contained the now famous projection that 4.4 million new homes would be needed by 2016 (a figure recently updated to 3.8 million between 1996 and 2021). A subsequent White Paper<sup>3</sup> set out the Labour Government's new target of 60 per cent of new houses on brownfield sites.

The Urban Task Force chaired by Lord Rogers was set up in 1998 to recommend ways of bringing people back into urban areas, and has now reported.<sup>4</sup> And in July 1998 a further contribution was made in a Select Committee report on housing<sup>5</sup> which supported an interim target of 60 per cent of new homes being built on brownfield sites and said that it should be close to 100 per cent in some regions (London, the North West and the North East).

All this has been happening against a background of claims by urban planning authorities that they will have difficulty

sustaining the current level of house building in their areas on one hand and rural interests campaigning against development in rural areas on the other.

#### Brownfield sites and wildlife

Brownfield sites can vary widely in:

- size – from a few hundred square metres to many hectares;
- the time they have remained undeveloped – from a few months to many decades;
- degree of contamination;
- biodiversity value – the biological richness of a site is a function of its size, current land use and management, previous land uses, time since it was last used, presence of contamination, proximity to more natural open spaces or features, aspect and topography;
- access for local people – from private land to public open space; and
- value to local people – very much related to access, but also connected to amenity, recreation, local history, educational potential and their role as sources of wildlife for people to enjoy in parks and gardens.

These factors make it undesirable to lump all previously developed but now open land into the generic term 'brownfield', and even worse to use epithets such as 'waste' and 'derelict'. A further confusion arises because for many people some of the richest and most diverse urban brownfield sites will be virtually indistinguishable from areas of encapsulated countryside in towns and cities that have never been developed.

There is a considerable body of academic literature to support assertions about the biodiversity value of brownfield sites.<sup>6,7</sup> Up to 50 per cent of species in inner city areas have been found to be part of a flora common to many urban areas which includes species indicative of habitats associated with human settlement and development as well as species only recently established in the wild (golden rod, Michaelmas daisy, buddleia, Japanese knotweed, Russian vine). These species can co-exist with long established indigenous species in urban areas to form plant communities which are distinct from those in rural areas.

Changes in the range of habitats and building densities from countryside to the city centre are associated with an overall decline in the numbers of species of plants, birds and invertebrates. The number of species on this rural-city gradient can rise in the outer suburbs, which tend to have a more extensive range of habitats for a given area than the countryside but lower building

densities than the inner suburbs or city centre. Open spaces, especially large ones, can have a significant moderating effect on this biological gradient.

Vacant land in urban areas is often composed of heterogeneous patches which allow species to colonise and grow. The heterogeneity is provided by the physical and chemical nature of the substrate, combined with factors such as recent or frequent disturbance. Many of these sites hold mixtures of species from a wide range of habitats which are not normally found living together.

Most brownfield sites have surface substrates which are completely divorced from the underlying natural geology. The variation in the type and age of these substrates provides a mosaic of open spaces, each capable of supporting a different range of plants and animals. This variety enriches the experience of local residents, as well as giving the potential for conserving a broad spectrum of species.

Brownfield sites can support populations of rare plants and invertebrates, and can also provide terrestrial and aquatic habitats for other protected species such as great crested newts.

Furthermore, animals need places in which to breed, nest, feed, rest and overwinter. These places may be distributed over a fairly wide area, and the feeding and resting locations may differ at different stages of the life cycle. If one element is taken away, the whole system collapses, and a species can be lost from an area unless alternatives are provided.

The loss of a brownfield site which provides an essential part of the mosaic for goldfinches or slow-worms or great crested newts will mean that the species concerned will not be seen in the

neighbouring parks and gardens which are also used for other parts of the life cycle.

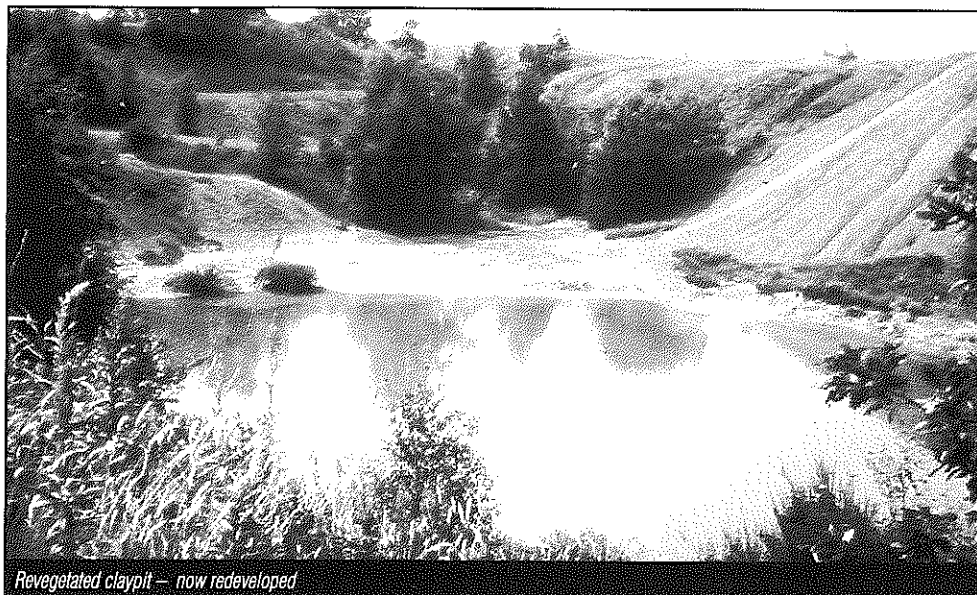
Open sites in urban areas, particularly large ones, can have substantial environmental roles in absorbing rainfall and preventing floods, ameliorating urban heat-island effects, and promoting flows of air which can flush out pollutants. These benefits tend to increase with the extent and structure of plant cover. Indeed, urban woodlands and wooded landscape features can reduce air pollution and noise. The retention of these important environmental functions needs to be considered during the redevelopment of urban sites.

Brownfield sites are part of the urban wild spaces where 90 per cent of the population have their day-to-day contacts with wildlife. Research suggests that people derive considerable benefits from contact with nature,<sup>8</sup> so ensuring adequate opportunities for people to come into contact with nature in their everyday lives should result in direct benefits to their health and happiness.

By extension, the provision of accessible green space in urban areas should make these areas more acceptable to live in and help reduce the desire to move to 'greener' surroundings elsewhere. Sites awaiting redevelopment are an important source of such green space, and the complete removal of nature during their redevelopment may therefore prompt the very exodus from urban areas that their redevelopment was intended to forestall.

Although most brownfield sites have no public right of access, many are *de facto* accessible natural open spaces. These sites are often robust landscapes capable of absorbing high-intensity uses

**'Sites awaiting redevelopment are an important source of green space, and the complete removal of nature during their redevelopment may therefore prompt the very exodus from urban areas that their redevelopment was intended to forestall'**



Revegetated claypit – now redeveloped

**BROWNFIELD SITES**

**'The major players in the development of new housing need to change their perceptions of brownfield sites in towns and cities as well as of greenfield sites in the countryside'**

by local people, especially youngsters, without suffering significant damage. There may be local ambivalence about these sites owing to their potential impermanence combined with a sense of untidiness or neglect. Nevertheless, urban wild spaces can offer a growth point for communities by providing opportunities for their guardians and defenders to develop into community groups.

The potential for such areas to contribute to minimum targets for the provision of urban green spaces<sup>9,10</sup> should not be overlooked within wider development planning and control processes. Individual sites are often linked by wildlife corridors into the network of wildlife sites and open spaces which form the green framework of urban areas.<sup>11</sup>

#### **Biodiversity issues**

There is a lack of acknowledgement by the major players in the debate of the multi-functional nature of many brownfield sites, let alone their ecological value and their potential contribution to local biodiversity action plans.

In general, there is no acknowledgement of Britain's obligations under the Biodiversity Convention agreed at the Earth Summit in Rio de Janeiro in 1992, and re-iterated by the Prime Minister at the United Nations Special Session in 1997. The opportunities presented in urban areas to contribute to achieving targets in the resulting UK Biodiversity Action Plan are not taken into account.

There is, in addition, no effort to relate the Government's support for Local Agenda 21 (which also arose from the Rio Conference) either to the decision-making and planning processes for new housing, or to the impacts that developing wildlife-rich brownfield sites may have on local biodiversity action plans and the quality of the local environment.

Nevertheless, nature conservation strategies have been prepared for many urban areas. Their planning status varies from one which has become a statutory local plan (City of Dundee Council Urban Nature Conservation Subject Local Plan), to those which have been adopted as supplementary planning guidance (for example, the Birmingham and Cardiff Nature Conservation Strategies), to those such as the Black Country Nature Conservation Strategy which has no legal standing but provides planning guidance on a range of nature conservation issues. However, existing policies to protect valuable nature conservation sites, especially non-statutory sites, in unitary development and local plans may be jeopardised by revised regional planning guidance (RPG) incorporating the new housing targets.

We need to develop ways of identifying the sites that are valuable, or have the potential to be valuable for biodiversity, either directly because of the species and habitats they contain, or indirectly because of the way in which they demonstrate natural processes or contribute to awareness-raising and

education work in relation to local biodiversity action plans.

There is also a need to find ways of assessing the biodiversity and nature conservation values of brownfield sites against those of greenfield sites as a factor in determining where development is planned.

The resulting information should be in a form that makes it useful to local communities, planners and other decision-makers. It can then be used to inform strategic planning, evaluate development proposals, and provide a case for protection for the most important wildlife sites. Having such information to hand will help those who have to implement the national planning policy advice<sup>12</sup> that green spaces in urban areas need to be retained for recreation, amenity and nature conservation.

Indeed, PPG 3: *Housing* (which relates to England) states: 'There can be no question of sacrificing the green spaces which all towns and cities need for recreation and amenity.' (para. 2) (The latest draft revision of PPG3 states: 'Local planning authorities should have clear policies for the protection of open spaces and playing fields... Other types of open space should also be protected against pressures for development...')

#### **The way forward**

Physical restructuring is a necessary process for the survival of urban settlements, and vacant land provides the spatial flexibility which is often needed in inner city areas. It is clear, however, that the present ways of

## **BROWNFIELD SITES**



*Wildflowers across a brownfield site*

approaching city design and management do not meet the current demands for environmental sustainability and social equity. There needs to be a positive attitude to land in urban areas and any associated wildlife and natural features, in keeping with the broad policy goals for sustainable development identified by the UK Round Table on Sustainable Development.<sup>13</sup>

A fresh approach is needed which incorporates a valuation of the environmental services and community benefits provided by open spaces and brownfield sites; the protection of important green spaces, wildlife habitats and natural features; and the recognition that owners and managers of urban sites have a duty of care in respect of wildlife and natural features:

● **Recommendation 1:** Every site proposed for development or redevelopment needs to be treated on its merits in respect of its wildlife and natural features, whose value needs to be judged against appropriate environmental and social criteria. Such an approach would need to draw on the ideas of valuing natural capital and ecosystem services and has been used in Durban (South Africa) in terms of the cash benefits derived from the services provided by its metropolitan open space system.<sup>14</sup>

Research is needed into ways of evaluating the ecological and environmental functions of brownfield sites, rather than just the environmental features themselves. It would then be possible to decide how to deal with the environmental features of a particular site in order to maintain or enhance environmental sustainability. The environmental functions of environmental capital and the services they provide for human well-being are examined in a recent report prepared for the Countryside Commission, English Heritage, English Nature and the Environment Agency.<sup>15</sup>

Research is also needed into how information on environmental functions and services (environmental capital) can be fed into the strategic and local planning and decision-making processes – for example, the identification of good and interesting case studies and the establishment of relevant criteria in relation to the ecological and environmental values and functions of brownfield sites for use by planners and developers as well as site owners.

● **Recommendation 2:** The UK Round Table on Sustainable Development recommended in its recent report on housing and urban capacity<sup>16</sup> that central government should issue new national planning policy guidance in

respect of urban revitalisation and development on previously used land. The UK Round Table added a rider that this new guidance 'should also provide strong support for the protection and enhancement of urban green space'. Indeed, any such new guidance should take careful account of the existing government guidance on nature conservation, which recognises that the natural wildlife heritage can be found both in the countryside and in urban areas and urges the use of sensitive landscaping and habitat creation for derelict areas.

● **Recommendation 3:** A duty of care in respect of wildlife, landscape and natural features should be placed on owners and managers of developed and undeveloped land in urban areas. Such a duty has been recommended by the UK Round Table on Sustainable Development with regard to agricultural and undeveloped land in rural areas.<sup>17</sup> This would provide a uniform basic level of obligations – a level playing field – to which local initiatives could be added. There is, of course, the question of what are the obligations in respect of this duty of care and who enforces them. But a first step in this direction could bring significant environmental and community benefits.

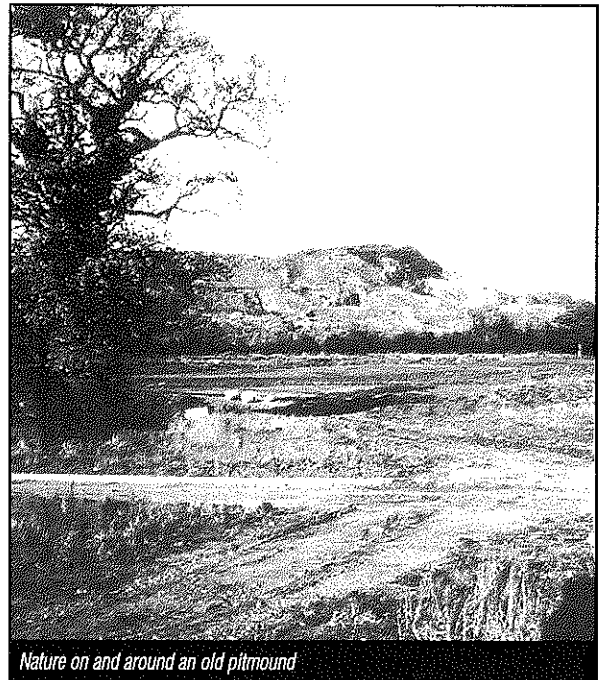
#### Changing the perception of brownfield sites

The major players in the development of new housing need to change their perceptions of brownfield sites in towns and cities as well as of greenfield sites in the countryside. Decisions need to be made on the basis of good information and a sound understanding of the roles that previously developed and currently undeveloped land play in environmental, economic and social terms.

The challenge to developers is to be creative and flexible, to planners to include biodiversity considerations in planning policies and effective development control, and to conservationists to provide robust criteria for identifying areas which have real biodiversity value. ■

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*Peter Shirley is Director of Community Affairs for The Wildlife Trusts and is based in West Bromwich and Newark (prshirley@cix.co.uk). This article is based on a discussion paper, Biodiversity, Brownfield Sites and Housing: Quality of Life Issues for People and Wildlife, produced in 1999 by the Urban Forum of the UK Man and the Biosphere Committee. The paper is available from Chris Gordon, Secretary to the Urban Forum, c/o The Wildlife Trusts, The Kiln, Waterside, Mather Road, Newark NG24 1WT, on receipt of an A5 SAE with 31p stamp.*



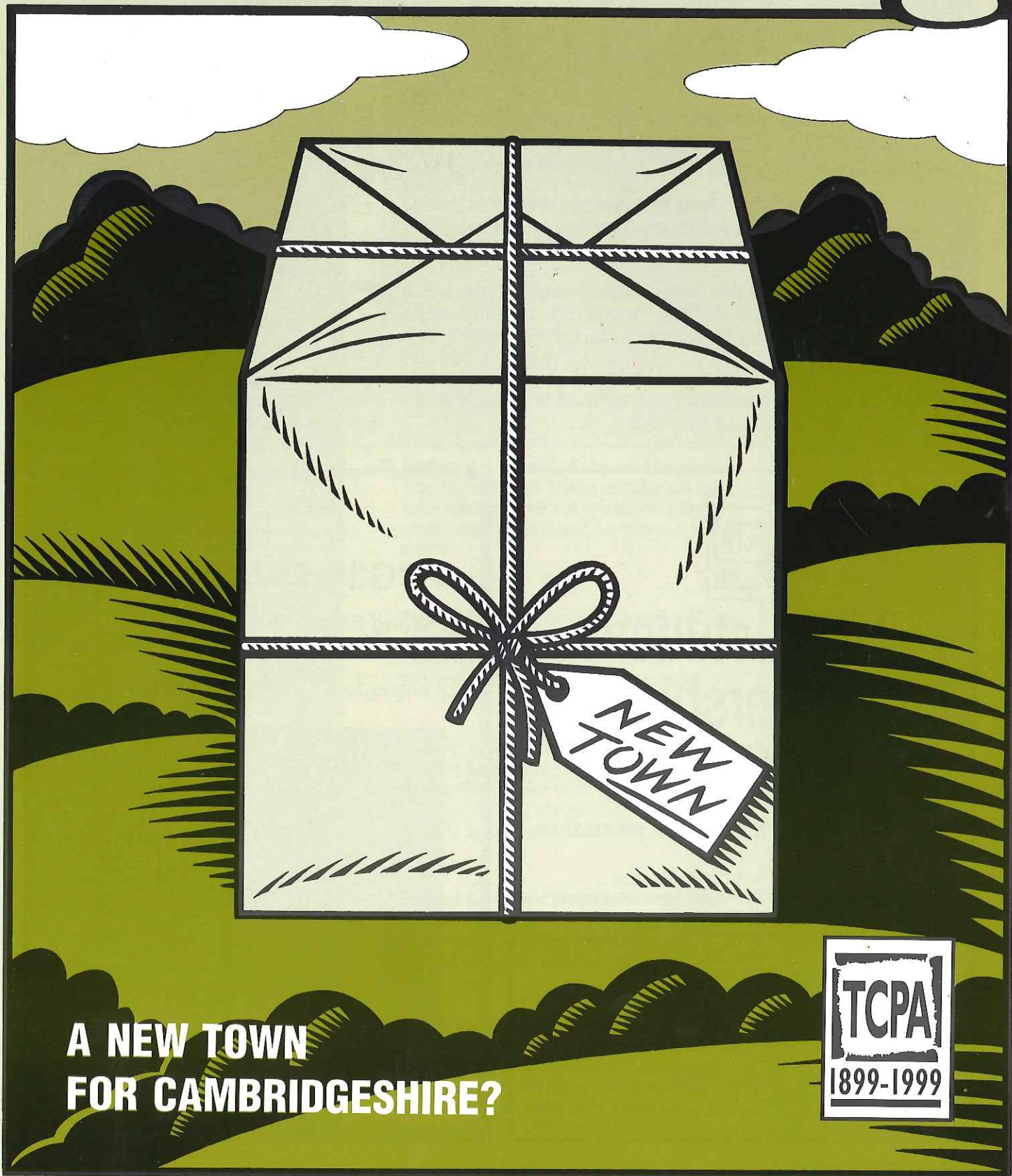
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