REFERENCES

1. The House Price gap: Analysis of house prices and earnings, Shelter, February 2014, p2

2. Until there’s a house for Everyone: Obstacles and Opportunities – Solving England’s Housing Shortage, Shelter, January 2014, p2

3. Garden Cities of To-Morrow, Ebenezer Howard, Faber 1965, Author’s Introduction, p44

4. Garden Cities of To-Morrow, Ebenezer Howard, Faber 1965, Author’s Introduction, p48

5. Garden Cities of To-Morrow, Ebenezer Howard, Faber 1965, Author’s Introduction, p48


CONTENTS

EXECUTIVE SUMMARY

01
INTRODUCTION TO NEW GARDEN CITIES

02
THE ORIGINAL CONCEPT
THE LEGACY
CHANGING CONTEXT
THE CONCEPT OF SUSTAINABILITY

03
GARDEN CITY PRINCIPLES
HISTORIC DESIGNS
TCPA PRINCIPLES FOR A 21ST CENTURY GARDEN CITY

04
CHOOSING GARDEN CITY LOCATIONS
GREENFIELD OR BROWNFIELD?
THE ‘SOCIAL CITY’
THE CHANGING GEOGRAPHY OF THE UK
THE ARC OF OPPORTUNITY
THE POTENTIAL AREAS OF SEARCH

05
AN INTEGRATED FRAMEWORK
THE NATURAL ENVIRONMENT
PEOPLE AND THE SOCIO-ECONOMIC INFRASTRUCTURE OF THE TOWN
MASTER PLANNING THE PHYSICAL FRAMEWORK
THE TRANSPORTATION NETWORK

06
DESIGNING IN SUSTAINABILITY
INVESTING IN LOW CARBON INFRASTRUCTURE
ENERGY SYSTEMS
WATER AND DRAINAGE SYSTEMS
WASTE SYSTEMS
THE ‘SMART CITY’ CONCEPT

07
DELIVERING THE NEW GARDEN CITY
ROLES AND RESPONSIBILITIES
PLANNING A NEW GARDEN CITY
OUR APPROACH
DELIVERING THE GARDEN CITY
SOWING THE SEEDS OF A NEW COMMUNITY
EXECUTIVE SUMMARY

New garden cities need to operate in a complex 21st century environment. The original concept needs to be adapted to take account of climate change, future energy supply, community engagement and sustainability. Garden cities do not need to replicate the architectural styles of the early 20th century. What distinguishes a garden city from other forms of development is its approach to land value capture for the benefit of the community, community ownership of land and long term stewardship of assets.

Garden cities should be located in areas of greatest need and where there is a strong prospect of economic growth and development. There is an arc of opportunity extending from Southampton on the south coast through Oxfordshire, Buckinghamshire, Bedfordshire and Cambridgeshire to Felixstowe/ Harwich on the east coast. The ‘social city’ concept supports the concept of clusters of new garden cities linked by good transport networks; these could be within and on the edges of the arc of opportunity. Intermediate stations on high speed rail also support major development.

The natural environment should be respected and provide a setting for the development but planning policies should not be sacrosanct. It is legitimate to question the value of restrictive planning policies in the face of severe housing shortage.

Sustainability should be designed in from the outset. There should be investment in low carbon infrastructure including a sustainable energy framework which is market led, energy efficient and climate resilient. Water conservation, environmentally sensitive drainage systems and flood risk should be priorities. The system should harness rainwater and grey water and utilise SUDs. Waste systems should be integrated with water and energy strategies. Smart city systems should support sustainability strategies.

In terms of delivery, radical solutions that depart too far from existing systems would be time-consuming and high risk. We propose modest adjustments and a greater degree of collaborative working between political parties. Essential requirements are:

- Clear leadership, direction and decisiveness from central government based on a robust evidence base to demonstrate the nature and scale of housing land requirements.

- Publication by central government of a ‘New Garden Cities Strategy’ providing a clear spatial framework, identifying preferred growth areas and areas of search for new garden cities. This strategy should be prepared on a cross-party basis, a 30 year timescale and a commitment that it will be supported by successive governments. It would focus initially on the South East and South Midlands but ultimately would extend across England.

- Extensive public consultation, undertaken by central government, on the proposed strategy and site specific locations. This would be independent of the development plans process which cannot respond in the timescale required. The Infrastructure Planning Commission would consider the strategy and site specific proposals and report to a specially convened cross-party committee of politicians. Decisions would be taken by this committee to ensure democratic accountability.

- A Garden Cities Trust should be established as the ‘guardian’ of the garden city vision. The Trust would define the essential garden city principles for master planning, design, delivery and community involvement. It would ensure the establishment of management, maintenance and stewardship regimes funded from the increase in land values. The Trust would have a supervisory role to ensure that any site specific proposals were of the highest quality. The Garden Cities Trust would be independent of central and local government and would be funded by a levy on Garden City Delivery Companies.
New, single purpose bodies would be established for each site (the Garden City Delivery Companies). They would be private limited companies operating under the control of the cross-party committee on Garden Cities, under the supervision of the Garden Cities Trust. Each would be run by a Board of independent trustees. Statutory agencies, the local development partnership and key local organisations would have nomination rights. The membership should be wide-ranging and include representatives from business, housing, environmental groups, statutory agencies, etc.

The Garden City Delivery Company would transfer responsibilities for management and maintenance of the estate to another body, the Garden City Legacy Trust. This would fund its operations through income from an endowment of commercial land and property.

The vision, commissioned by the Delivery Company, would be articulated in a master plan and supported by a design guide and development briefs in the conventional way with the exception that compliance would be mandatory.

Land acquisition would be by negotiation at slightly enhanced values. Powers of compulsory purchase would be used if landowners refused to sell.

The Garden City Delivery Company would procure the delivery of all advance infrastructure. New buildings would be delivered by way of licenses to develop serviced parcels of land and ownership/occupation would transfer direct to occupiers. Social housing and start-up business accommodation would be retained by the Garden City Legacy Company so that it is available in perpetuity.

Funding of new garden cities would be via loans from government and commercial sources. Government would underwrite the risk and make a long term profit on the loans. More detailed financial arrangements relating to tax relief, MUSCOs, ESCOs, etc. would be available.

The Garden City Delivery Company would:
- target community facilities at existing residents so they derive early benefits
- deliver community facilities early and ensure that these are ‘ring-fenced’
- create community forums to air topical issues
- subsidise local clubs and societies

Residents who do not wish to support the new development would be offered 150% of the purchase price of their homes plus additional compensation for relocation. Residents who choose to stay would become the treasured seeds of the new community; they too should be compensated for the noise and disturbance from construction. We propose that they should receive 50% of the value of their property and a further 25% to buy shares in the Delivery Company as part of their pension planning arrangements.

What distinguishes a garden city from other forms of development is its approach to land value capture for the benefit of the community, community ownership of land and long term stewardship of assets.
INTRODUCTION TO NEW GARDEN CITIES

Our starting point is that the housing crisis is not in dispute. All major political parties agree that high house prices are stopping people from getting on to the housing ladder. As house prices continue to rise, rents move inexorably upwards, and more people despair of ever buying a house.

Recent research by Shelter showed that, in the period 1992-2012, house prices have vastly outstripped wages. If wages had risen as fast as house prices, an average couple with children would earn an extra £44,000 per annum\(^1\). Shelter has undertaken research into the obstacles to and opportunities for providing new homes\(^2\). Common themes emerge:

- England’s housing shortage no longer just affects those on low incomes – those on middle incomes are affected too.
- There is an impending generational crisis whereby young people are unlikely to be able to afford their own homes until after they have started their own families whilst older people assume the role of ‘grandlords’, using the rental market as a way of propping up the disappointing returns on their pension plans.
- No one political party is solely to blame and there are no easy answers; most policy options have been short-term, poorly-funded and have failed to deliver on aspirations.

- The supply of new housing, even in the good years, falls far short of requirements and the backlog of unmet demand is catered for by people living longer at home, sharing when they do not wish to do so, renting on a long term basis rather than owning and, in extreme circumstances, finding themselves in temporary accommodation or homeless.
- The recession has exacerbated the problem.

The solution is far more problematical and partisan. Many accept that the only credible response is an ambitious programme of investment and reform to build the 250,000 new homes a year that we need in England but this requires difficult, politically contentious, decisions.

The country is polarised into different groups: those in favour of new, affordable housing delivered where and when it is needed; and those with a vested interest in maintaining the status quo. The problem is undoubtedly worse in London and the South East.

Climate change and the ‘smart’ city approach did not exist in 1898 when Howard wrote his seminal work. Concepts of sustainability, eco-system services and technological advances in infrastructure and ICT had not been conceived. Localism had not been defined in its modern guise. Today, these considerations are commonplace and the master plan, delivery strategy and management arrangements for new garden cities must be adapted to suit.

The competition requires new garden cities to be visionary, economically viable, and popular. We believe that this is possible with an integrated approach, effective delivery mechanisms and genuine community engagement.

It is not the purpose of this paper to debate the nature and extent of the housing crisis: we take this as read. Neither is it necessary to debate the genuine merits of a portfolio-based approach to housing provision. This balances the need for greenfield development with the sensible and pragmatic redevelopment of brownfield sites and this assists the regeneration of our towns and cities; this too we take as read.
The competition requires new garden cities to be visionary, economically viable, and popular.
THE ORIGINAL CONCEPT

THE LEGACY

Few people will have heard of Sir Ebenezer Howard but his legacy to the art and science of town planning is extensive. From the original garden city at Letchworth, and the desirable suburbs of Hampstead and Bedford Park in London, to the more debatable post-war new towns, Howard has bequeathed a distinctive legacy to the UK, and indeed throughout the world.

In 1898, when Howard wrote his seminal work ‘Garden Cities of Tomorrow’, England was a very different place. The industrial revolution, which had started in the mid-18th century, had moved into its second phase with the increasing use of steam-powered boats, ships and railways, the large-scale manufacture of machine tools and the increasing use of steam-powered factories.

This increased the speed of population migration, the movement from rural areas to towns and cities that had been taking place for over a century. There were two principal effects: the central parts of our towns and cities became overcrowded, insanitary and highly polluted while the countryside suffered from de-population as the young and able-bodied moved to the cities in search of their dreams.

In his book, Howard identified ‘town-life’ and ‘country-life’ as two separate attractions, or ‘magnets’, but he refused to accept that these were the only alternatives available for civilised living. He therefore invented his third magnet, ‘town-country’, “in which all the advantages of the most energetic and active town life, with all the beauty of the country, may be secured in perfect combination”.

His theory was encapsulated in his famous ‘three magnets’ diagram.

The stated purpose of Howard’s book was to show how the ‘town-country’ magnet could be delivered, that it was practicable and based on sound principles “whether viewed from the ethical or the economic standpoint”.

---

Figure 1: Howard’s ‘Three Magnets’ Diagram: “Town and country must be married, and out of this joyous union will spring a new hope, a new life, a new civilisation”.

CHANGING CONTEXT

Despite a shared goal of delivering high quality affordable housing, the social, economic and environmental conditions within which a garden city would be planned and delivered today are very different.

New housing and town planning legislation in the early part of the 20th century, coupled with slum clearance programmes in the 1960s and tighter building regulations, have effectively removed the problems of overcrowding, insanitary conditions and severe pollution in all but the most specific circumstances. There remain problems of dereliction and decay in many central areas but slowly these areas are being reformed and contribute a wide range of social and economic benefits.

The biggest change has probably occurred on the edges of our towns and cities and in the countryside. Howard’s work pre-dated the change that was wrought by the exodus of people to the suburbs, facilitated by the railway lines, underground and over-ground, and the freedom that was offered by the car and bus.

As new routes forged out of London connecting it to regional towns and cities, there grew up around the edges of these places vast tracts of new residential development that had few services and limited employment opportunities. Social and economic pressures continued to exist but these were of a different type: residents complained of a sense of isolation, loss of community, limited work opportunities and family lives disrupted by long commuting.

In the countryside a different pattern of activity was taking place. Out-migration continued in the case of the young and well-educated but an older, more affluent generation arrived in search of quality of life for retirement; families came seeking the community life that they could not have in the city. In both cases, newcomers used nearby towns and cities as their service centres (at the expense of local shops) and the young worked elsewhere; they pushed up prices and increased CO₂ emissions.

THE CONCEPT OF SUSTAINABILITY

Today’s garden cities have to be shaped and delivered in a completely different context.

In the late 20th century, issues of climate change, resource depletion and energy supply were coupled with concerns over the natural and historic environment. Weather patterns became more extreme and natural environments were increasingly under threat. Decision-making however remained focused on economic growth and development.

The relationship between economic development and environmental degradation was first placed on the international agenda in 1972, at the United Nations Conference on the Human Environment. Little was done, however, until 1983 when the Brundtland Commission put forward the concept of sustainable development.

This was presented as an alternative approach to one simply based on economic growth — one “which meets the needs of the present without compromising the ability of future generations to meet their own needs”. Later work developed the ‘three pillars’ of sustainability - social, economic and environmental - and it is within this wider framework that we have shaped our vision for new garden cities whilst recognising the validity of the original concept.

Figure 2: The ‘three pillars’ of sustainability
HISTORIC DESIGNS

Most people associate garden cities with low density, two-storey housing set amidst rolling parkland and tree-lined boulevards. Much of Letchworth does indeed take this form and has a clear sense of character and identity. The town was designed and developed at the height of the ‘arts and crafts’ movement and its principal architect followed the fashion to exceedingly good effect.

But this design was of its time. It suited the architects to explore this fashionable style and to apply it to the greenfield site that they were given. In his book, however, Howard set down the bare minimum of design requirements and focused instead on those matters that he considered would most impact on quality of urban life, emphasising the importance of architecture, civic design, public spaces, transport networks, and infrastructure.

The point being made is that garden cities can take a variety of physical forms: architecture can change, density can be increased, transportation systems can be designed to suit modern movement patterns, etc. What is important is that the physical framework should engender a sense of civic pride, encourage community interaction and deliver both essential and desirable requirements for modern life.
TCPA PRINCIPLES FOR A 21ST CENTURY GARDEN CITY

The TCPA, as the custodian of the garden city concept, advocates the following principles for 21st century garden cities:

- land value capture for the benefit of the community
- community ownership of land and long-term stewardship of assets
- mixed-tenure homes that are affordable for ordinary people
- a strong local jobs offer in the Garden City itself, with a variety of employment opportunities within easy commuting distance of homes
- high-quality imaginative design (including homes with gardens), combining the very best of town and country living to create healthy homes in vibrant communities
- generous green space linked to the wider natural environment, including a mix of public and private networks of well-managed, high-quality gardens, tree-lined streets and open spaces
- opportunities for residents to grow their own food, including generous allotments;
- access to strong local cultural, recreational and shopping facilities in walkable neighbourhoods, and
- integrated and accessible transport systems – with a series of settlements linked by rapid transport providing a full range of employment opportunities (as set out in Howard’s vision of the ‘Social City’).
GREENFIELD OR BROWNFIELD?

There is no reason why new garden cities can’t be built on derelict, damaged and despoiled land. There are large tracts of brownfield land throughout, and on the edges of, our towns and cities, the relics of past industrial processes, in need of revitalisation and repair. Depending on their size, these sites might better be termed ‘garden suburbs’ but garden city principles can still be applied to good effect.

There is also the rather more debatable form of ‘brownfield land’, the former airfields, defence installations and decommissioned major infrastructure sites, many of which are in remote locations, poorly served by public transport infrastructure. These too are previously used but often more greenfield than brownfield in appearance. Development here too can be founded on garden city principles to good effect but greater effort needs to be put into establishing good transportation systems to link these communities into other centres.

Some sites, however, either greenfield or brownfield, are so well-located relative to economic opportunity, transportation connections and sheer weight of population growth that they merit special consideration. Often they are in areas of intense development pressure and some are protected by restrictive planning policies. These sites, often forming part of a constellation of other settlements, present different issues.

THE ‘SOCIAL CITY’

Garden cities are often discussed in the context of being free-standing, self-contained communities. Howard, however, merely sought to locate his garden cities beyond the reach of London; he did not expect them to be completely free-standing and self-contained. He acknowledged the reality that a settlement of some 30,000 population, even in 1898, could not provide all of the higher order goods and services that its population might desire so he invented the concept of the ‘social city’, a new town surrounded by useful and useable open space, forming part of a wider constellation of cities in a hierarchy.

Figure 3: Howard’s diagram of the ‘social city’
In 1900, however, the population of England was only 30 million; today it is almost double this figure and London and the South East are deemed to be ‘crowded’. Statistics on the other hand support the concept of a ‘green and pleasant land’ with only 7% of the UK being classed as ‘urban’7, and 13% of England being green belt8. Yet residents feel beleaguered and generally oppose change.

Historically, there has always been an underlying reason for the formation of a settlement; a location close to a port, on a cross roads or at a major bridging point. More recently, transportation networks created ribbon development and suburban sprawl. Generally, however, successful settlements were driven by commerce, the interaction between people to effect trade and to support their families.

We have adopted a similar approach in our selection of potential areas of search for new garden cities, focusing on transportation links, the main drivers of economic growth and the areas of greatest need.

Traditionally, the geography of the UK has been dominated by a series of radial routes emanating from London, linking it by road and rail with the east and west coast ports.

**Figure 4: High Speed Rail in the UK**

Source: www.estatesgazette.com
Recently, this geography has been changing. Underlying factors include:

- London has expanded such that its green belt is under increasing pressure. Development is leapfrogging the green belt; good transportation nodes are popular destinations.

- With the increasing size of container ships, the importance of the west coast ports has declined.

- Public sector regeneration programmes have tackled urban dereliction and decay; regional cities, notably Birmingham, Manchester and Bristol are more popular. ‘Lifestyle moves’ are becoming more common.

- The east coast ports have increased in importance with the need for deep-berth container facilities and there has been major investment in existing and new facilities, not least Felixstowe, Harwich, London Gateway and Thamesport. Imported goods are now by-passing London en route to the Midlands and the North.

- Southampton fulfils a similar purpose serving a Midlands market.

- Strategic rail-freight interchanges at key locations will give further impetus to this shift in the movement of goods. Highly accessible and located at critical intersections of road and rail infrastructure, close to major centres of population, these ‘inland ports’ will further draw trade away from London and its congested road network.

- There is a heated debate about the best location for a new or expanded airport but new capacity will not materialise for some time. Regional airports will increasingly fill the gap and establish feeder routes to hub airports on mainland Europe.

- HS2 will generate activity around the destination and intermediate stations. Major development will take place around Birmingham Interchange and Toton (Nottinghamshire); Ebbsfleet ‘new town’ will eventually be built.

- Changes to work patterns will allow people to work at home, encouraging lifestyle decisions about where to live and longer, fewer, commutes on a weekly basis.

- Major rail electrification will mean that more locations will be within commuting distance of London.

- Upgrades to highways are not currently a priority for government but will deal with localised problems; collectively, these could have stronger influence.

The Oxford to Cambridge ‘arc of opportunity’ is a well-established planning concept but has delivered relatively little in terms of major development. By and large, it sits in a part of the country which is semi-rural in character, well-protected by green belt and other restrictive planning policy designations and remains dominated by radial routes to London.

This perception will change. Road, rail, port and airport investment plans within and adjacent to this area will extend the arc of opportunity both to the south and east.

The arc of opportunity actually extends from Felixstowe/Harwich in the east to Southampton in the south roughly focused along the A14, the East-West Rail route and the A34. Within this arc there are three sectors, each responding to a different market sector:

- between Oxford and the area around Southampton – this would extend westwards and eastwards recognising the importance of the M4 and M27 corridors

- between Oxford and Cambridge – the greatest area of potential opportunity, with fingers reaching out to Northampton, Corby/Kettering/Wellingborough and to Peterborough

- from Cambridge eastwards to Felixstowe/Harwich.
Figure 5: The Arc of Opportunity and areas of search for new garden cities
THE POTENTIAL AREAS OF SEARCH

This arc of opportunity, together with an understanding of the economic geography of adjoining areas, has helped us to identify potential areas of search for new garden cities. These include:

- The generally rural area between Oxford and Southampton focused on the A34 and the Southampton-Midlands railway line (soon to be electrified). The area between Southampton and Portsmouth (along the M27 and rail routes) and the area around its intersection with the M4 should also be investigated.

- The extensive area from Oxford to Cambridge, the focus of the East-West rail route (freight and passenger), improved road connections along the A43 and at its western end the intersection of HS2 and East-West Rail.

- An intermediate station on HS2 near Bicester and the intersection with East-West Rail has the potential to justify a major new garden city in this location. There is also the potential to develop ‘social city’ clusters using existing networks and connections e.g. Milton Keynes to Bedford, Corby/Kettering/Wellingborough, St Ives/Huntingdon.

- The eastern leg from Cambridge to Felixstowe can take advantage of economic activity generated by Cambridge and the port of Felixstowe/Harwich.

There is the potential for three out-lying locations:

- The Thames Gateway, a long-standing regeneration area where only modest progress has been achieved. The area around Ebbsfleet station, an intermediate station on HS1, has greatest potential but London Gateway to the north will put pressure on the north bank of the Thames.

- The land around Birmingham Interchange, close to the Meriden Gap separating Birmingham from Coventry but with tremendous potential as a result of its access to HS2, the West Coast Main Line, Birmingham Airport and the M40/M42/M6.

- Land at Toton, Nottinghamshire where the eastern leg of HS2 would have an intermediate station, close to the M1 and the Midland main line.

The single location with the greatest potential for major new development is at the intersection of HS2 with East-West Rail around Bicester. This strategic location, coupled with local road and rail improvements could deliver development far in excess of anything elsewhere if an intermediate station were built.

It is not appropriate, within this study, to undertake more detailed analysis within these areas of search. Suffice to say that all demonstrate potential in terms of their economic performance and infrastructure investment. An area-wide sieve analysis of potential locations, and thereafter a more detailed analysis of site considerations, will allow protected assets (e.g. high quality agricultural land, protected landscapes, historic parklands, etc.) to be identified and protected accordingly. Other designations, not least green belt, ought to be re-assessed; it is important that local policy designations are not accepted without question.
We have considered Howard’s concept of ‘social cities’ in seeking to identify potential locations for new garden cities. Modern high speed rail and excellent inter-city connections, both road and rail, render it increasingly difficult to define what might be termed a ‘reasonable’ commuting distance.

There is talk in the media about ‘extreme commuting’ whereby employees travel in excess of four hours a day travelling, with all of the attendant dis-benefits on social and family life. Frequently, however, extreme commuting is combined with flexible work practices, working at home, working part-time and even working flexi-time to acknowledge the need for communication working with clients or colleagues in another part of the world.

Such extreme examples, however, distort the reality that most people, given a free choice, will choose to work within 30-40 minutes of their workplace and most parents would like to send their children to schools within walking distance of home.

A spatial strategy for the South East/South Midlands would allow national and regional infrastructure investment to be aligned with areas of strong economic growth.

Figure 6: The intersection of HS2 and East-West Rail – significant development potential
Four components define a town and its success:

- the natural environment
- people and the socio-economic infrastructure of the town
- physical form
- transportation infrastructure

Applying these concepts to a site specific location we can use the garden city principles advocated by the TCPA to create a robust master plan and delivery strategy. These sound principles are already enshrined in planning policy and good practice guidance.

**THE NATURAL ENVIRONMENT**

The natural environment provides the setting for any new development and needs to be treated with care and respect; careful site selection can minimise adverse impacts. Topography needs to be considered from the outset and can add character and identity to a location. Built up areas should be defined so that they have the minimum impact on long range views or from sensitive areas.

Areas of high nature conservation value should be avoided but planning policy designations should not necessarily be taken as inviolate. Sensitive review of designations (including green belt, local countryside protection policies, low grade nature conservation policies, etc.) allows judgements to be made about the merits of development versus preservation. There might be instances in which development of a previously protected area might be preferable to severe housing shortage. Mitigation measures and compensatory habitat can be negotiated as part of the scheme.

Historic towns, developed slowly, blend into their landscape. The use of traditional materials, weathered and softened by trees and other planting, creates a sense of the built development sitting comfortably within its landscape.

Modern building programmes do not allow this gradual change. The economics of modern construction processes require development to be built at scale and services to be provided for the end state; it can appear out of scale with its surroundings. Advance planting and careful phasing of development can minimise adverse effects.

Figure 7: The natural environment – the importance of topography, flora and fauna and landscape as a setting for development
PEOPLE AND THE SOCIO-ECONOMIC INFRASTRUCTURE OF THE TOWN

Sustainable communities need more than houses to live in: they need jobs, shops, schools, community meeting places and a range of sports and leisure facilities. These need to be arranged within the town in such a way that they create places of intense activity (the town centre, major employment areas), places where people socialise (pubs, cafés, community halls), places where people work and where their children are educated.

Careful planning of the socio-economic infrastructure also ensures that jobs can be created. The community itself will generate many of the jobs, in its schools, shops and local service industries. Effective business development, marketing and communications strategies can help to attract new businesses and accommodation can be planned to provide a range of building types.

Good housing needs to be provided in a variety of types and tenures to cater for a varied population, different ages, different incomes and different family circumstances. Good housing should also allow for change over time, allowing people to adapt their homes or move to new ones nearby.

Towns also need parks and open spaces with good leisure and recreation facilities. Together, these elements create healthy places that are economically robust and enduring.

An integrated approach to development, looking at people and the socio-economic infrastructure that they need, ensures that these essential components are planned from the outset. Development components can be phased to suit.

Figure 8: People and the socio-economic infrastructure of the town
The master plan is the vehicle around which discussions on integration take place. It encapsulates the vision for the development and is a key document in the delivery process.

Good master planning helps to define character and sense of place and to organise the delivery of essential infrastructure at the right time and in the right place. It allows the end-state of the development to be anticipated so that provision can be scaled up to meet this demand.

It is essential that the new garden city has its own identity; this comes from ensuring a sensitive response to its site and situation. Local features and architectural heritage must be respected; this lays the foundation for a successful place and connects with its history.

Master planning allows the public realm to be defined and a consistent approach in the design of individual buildings. It allows services to be planned so that they are in easily accessible corridors, and the provision of schools and other community facilities can be phased in accordance with population growth.

The public realm needs to be of high quality. Advance planting can screen future development sites and transport infrastructure can be co-ordinated so that pedestrians, cyclists, public transport and cars co-exist without conflict.

The overall master plan, defining the long term vision for the site, should endure. It should be accompanied by a town-wide design guide, describing the local vernacular, suitable design responses, materials and styles whilst leaving room for creativity and innovation.

Development briefs can be prepared for individual development sites specifying land uses, quantum of development, etc.

**Figure 9: Master planning the physical framework**
THE TRANSPORTATION NETWORK

The transportation network is what links together the activities in the town. It is critical to the success of the town because a fast and efficient transportation network has a major influence on sustainability.

There should be a hierarchy of movement within the city. Land uses should be arranged such that they encourage walking and cycling, to get to work and school, and for leisure.

For those unable to walk or cycle public transport systems should be frequent, easy to use and comfortable. Bus rapid transit systems can move people around the city itself and mass rapid transit (trains and express buses) can be used for longer journeys.

Most households will own a car so provision needs to be made for it. What must be controlled is its use; this should be achieved through incentives (the offer of excellent public transport) and restrictions on car parking (availability of spaces and charging).
DELIVERING A SUSTAINABLE GARDEN CITY

Delivering a sustainable garden city relies on creating a dynamic balance between population, resources, environment and development: it responds to the three pillars of sustainability – social, economic and environmental.

It must also be oriented towards the needs of the citizens and should embrace all matters relating to urban management including economic growth, land use planning, architecture and construction, industry, transport, energy, housing and community services. These should be delivered in an integrated manner.

INVESTING IN LOW CARBON INFRASTRUCTURE

Our new garden cities would invest in low carbon infrastructure. There are four considerations:

- **Development of a sustainable energy framework**: Provision must be made for the long-term planning of urban infrastructure based on a systems approach to the urban environment. So that targets can be identified, monitored and enforced, a specific ‘Developer Code’ must be devised to provide guidance, targets and incentives for meeting and exceeding the minimum requirements.

- **Market-led energy infrastructure provision**: A market-led approach, with community buy-in, will increase private investment in the development of a decentralised energy infrastructure network and create both incentives and competition between suppliers to satisfy the consumers’ requirements.

- **Creation of incentives for energy efficient development and refurbishment of existing buildings**: New garden cities need to develop and implement the best available technological, technical and managerial solutions to ensure energy efficiency within new buildings and to create incentives to support the diffusion of these technologies.

- **A new climate resilient utility infrastructure**: An entirely new utilities infrastructure will be developed for the new city to meet its long-term needs. A smart grid system will optimise the supply and demand profile of the network to reduce wastage.

**Figure 11: Sustainable infrastructure systems**
ENERGY SYSTEMS

BUILDING ENERGY EFFICIENT HOMES

The garden city will make energy-efficient homes a priority to eliminate fuel poverty. All new homes, both privately-owned and social housing, will be designed to meet state-of-the-art energy efficiency requirements without affecting occupier comfort. They will also be designed to meet the Decent Homes and Lifetime Homes standards.

The new garden city will also encourage the sustainable refurbishment of existing properties. A series of initiatives with a concerted, long term programmes will be proposed as part of the management and maintenance regime to ensure that existing residents can benefit from the city-wide energy efficiency programme.

Upgrading existing properties to zero carbon standard might not be feasible in the initial stages but, with technological advancement, insulation costs can effectively be recouped from energy savings. The Energy Bill Revolution, which represents almost 200 of Britain’s biggest businesses, unions and charities, is calling on the Government to pay for the scheme using carbon tax.

Key to this reduction in cost and the enhanced potential for achieving zero carbon standard is build quality in terms of insulation, cold bridging, air tightness, the reduced PV installation cost and the revised definition of zero carbon. All of these technologies exist today and costs will decline over time.

DISTRICT HEATING SCHEMES

Climate resilient and secure energy infrastructure is one of the keys to achieving zero carbon homes in a cost effective manner. The mix and density of development in the new garden city will support investment in district-wide heating schemes which would be planned to supply zero carbon homes. These will also enable the development to be supplied with heat from a number of sources.

The primary source of heat and power would use advanced fuel cell CHP technology. This will reduce the emissions from natural gas and, in future, provide the flexibility to run on clean-burning hydrogen gas. This would be complemented by micro-generation systems (solar photovoltaics) generating potential revenue streams via the Feed-In Tariff.

Figure 12: Low carbon infrastructure schemes
The viability of other technologies, including waste-to-energy and biomass CHP, is dependent upon the characteristics of the site. If the potential exists, the energy centre using these technologies and the extension of the network could be funded by front-loading of the investment via Allowable Solutions as part of the investment in preparing the infrastructure for the site.

In those parts of the garden city, where on-site low carbon heat and power is not viable, new buildings will need to use Allowable Solutions by buying CO2 credits to contribute to the expansion of the heating network into the wider area.

District heating schemes require a planned approach to create the right conditions for underwriting investment in infrastructure primarily because of the high up-front capital cost.

The various phases of development within the master plan would be co-ordinated by the developer. Ideally, an ‘anchor’ development such as a local hospital, college, school or hotel would provide the certainty that is needed for the district network. Subsequent phases of new development would be designated as ‘network connection’ areas and would be required by planning policy to connect into the network thereby providing long term certainty over the future expansion of the district heating network.

Alternatively the district heating network would be developed in a phased and modular manner with a series of “energy islands” which would be connected together once the various phases of development have been completed; this, however, is a less desirable solution.

**Figure 13:** Carbon compliance and zero carbon targets

WATER AND DRAINAGE SYSTEMS

Managing water involves water conservation, drainage design and avoiding flooding. The current Flood Risk Regulations require the Environment Agency to publish Flood Risk Maps and to review them every six years. Many areas in the southern half of England are considered to be at risk.

Although annual mean precipitation has not changed significantly, seasonal rainfall has varied considerably with a trend towards a slight decrease in the summer and an increase in the winter over time. Recent climate change projections have shown that these trends are set to continue with winter rainfall increasing by up to 54% and summer rainfall decreasing by up to 49% by the 2080s under the medium emissions scenario.

Some projections have indicated that while the total summer rainfall is decreasing, giving an increased potential for drought, the rainfall is concentrated into a few high intensity events. Hence climate change could have a significant effect on future return periods of extreme rainfall events.

To provide better resilience for the future, it is proposed to design the surface water management system based on a 1 in 1000 year occurrence. At present, DEFRA recommends that 1% annual probability event (i.e. an event with a return period of 100 years) is used for designing SUDs; however, some local authorities have required a 1 in 1000 year occurrence for some development.

The proposed water strategy for the new garden city will incorporate the following:

- a new clean water reservoir and aquifer to provide high quality potable water
- the treatment of storm water and surface water run-off via a Sustainable Urban Drainage system (SUDs) and careful filtration and treatment before discharging to a river
- the use of permeable surfaces and natural soakaways wherever possible as part of SUDs design
- waste water connection to a new treatment plant whose waste bi-product will be used as a resource for the city’s energy plant
- the harnessing of rainwater and grey-water to be treated and re-used for irrigation and toilet flushing which will significantly reduce potable water demand

Figure 14: City water balance
WASTE SYSTEMS

New garden cities will be served by an integrated waste and energy strategy. This will identify incentives, clearly structured and implemented, to reduce landfill. The strategy is based on the following:

- each neighbourhood will be provided with a waste recycling centre, and there will be campaigns to raise awareness of waste recycling and re-use
- all organic waste will be used as resource for an efficient energy plant
- there will be an integrated strategy in terms of movement of freight which will reduce the number of traffic journeys and their cost: inward journeys will be used for the delivery of goods, and outward journeys for the collection of waste
- vacuum waste collection systems will be considered to mitigate the need for waste collection at the neighbourhood scale, thereby reducing transport-related carbon emissions
- incentives for households and businesses to reduce waste and a new landfill tax introduced to raise money to develop supporting infrastructure and create new jobs

THE ‘SMART CITY’ CONCEPT

The economic success of a town or city depends not only on its hard infrastructure (‘physical capital’), but also on the availability and quality of knowledge communication and social infrastructure (its ‘intellectual capital and social capital’). Viewing urban systems in this way has led to the concept of the smart city which has been introduced as a way of describing modern urban systems in a common framework.

The smart city approach highlights the growing importance of Information and Communication Technologies (ICTs) and their relationship to social and environmental capital in profiling the competitiveness of cities. The emphasis on social and environmental capital distinguishes smart cities from their more technology-laden counterparts.

Our new garden cities will be based on smart city principles to encourage people to adopt sustainable life styles. Provided with the necessary equipment and technologies, smart cities create connections and feedback loops between people and businesses, and regulate the supply and demand for utilities. In this way, they maximise the efficiency of the infrastructure that serves the city.

Figure 15: Smart City systems
Adopting Smart City principles requires the new garden cities to have the following:

- **Smart grid:** The garden city’s community-based energy supply company will implement a smart grid energy network (including electricity and heat) using the information and communication technologies to enhance the security of power supply. This allows the grid infrastructure to run more efficiently and encourage the decentralised renewable energy connections. At the same time the convergence of control and enterprise software offers energy utilities new business models.

- **Adaptive digital infrastructure:** This enhances information from existing systems including those relating to transport management, street-lighting, real-time transport/traffic information, highways, utilities, bus network, leisure and cultural and community networks. The system will support an interactive journey planner system to be implemented.

- **Smart Card:** The system will be sufficiently flexible to accommodate new systems that we propose to create, such as a fully pervasive SmartCard/Loyalty card system, smart metering of energy and water, and advanced assistive technology for older people. It will interact with skills providers and service providers to help those on benefits or seeking work. It will interact with business systems to help our existing and new businesses to expand and innovate.

- **Smart services:** the digital infrastructure will support public services, environmental services with real time indication and management such as waste bins collection, air quality, and flood risk.

"Viewing urban systems in this way has led to the concept of the smart city which has been introduced as a way of describing modern urban systems in a common framework."
DELIVERING THE NEW GARDEN CITY

ROLES AND RESPONSIBILITIES

There are four key roles in the delivery of a new garden city: the ‘guardian’ of the vision; the delivery agency; the partners; and the occupiers. Each of these groups plays a vital role in its conception, delivery and management.

THE GUARDIAN OF THE VISION

The guardian of the vision will be the organisation that has developed the concept of new garden cities, established the principles and identified good practice in the delivery of individual proposals. It will articulate the contribution of new garden cities to solving the housing crisis in social, economic and environmental terms.

THE DELIVERY AGENCY

The delivery agency will commission the master plan, and appoint the team who will articulate the vision for an individual site and secure the necessary planning approvals. It will assume responsibility for the delivery of the garden city in accordance with the long term vision.

THE PARTNERS

The partners include the local authority with statutory duties in relation to planning, building control, education, waste collection and other statutory services. Other statutory agencies will participate e.g. the Environment Agency in relation to flood risk and drainage; Natural England in relation to nature conservation; English Heritage in relation to historic buildings and landscapes, etc. Utility companies and other service providers will also have a role to play. Individual developers will be responsible for the delivery of individual components in line with the overall master plan. The contribution of the partners will be co-ordinated by the delivery agency.

THE OCCUPIERS

Occupiers include those who currently live in or run businesses on or close to the site. They also include members of the new community that will move into the new garden city. This group will be constantly changing and enlarging.

Figure 16: Roles and Responsibilities
PLANNING A NEW GARDEN CITY

Over the years planning for garden cities and other forms of new communities has taken a variety of forms:

- **The original garden city:** Howard simply found some 6000 acres of land in a good location, established a development company, bought the site, sold shares in the company and proceeded to work up his scheme. That was in the early 20th century when town and country planning, as a legislative force, was in its infancy.

- **The new towns:** The New Towns Act 1946 provided the mechanism for central government to take control. New town development corporations were established as single purpose, focused organisations charged with the delivery of the new town. They achieved considerable success in delivering new housing and new jobs. Many operated at a profit, delivering returns to the treasury in the form of interest on loans issued and sale of serviced land.

- **‘New settlements’:** In the 1980s, in a political environment of de-regulation and free market opportunity, ‘new settlements’ were conceived as private sector development opportunities. Many went straight to planning application and appeal; few succeeded. Most were limited in scale – less than 10,000 population. The high risk and long term returns meant that they were accessible to only a few major developers and consortia.

- **A return to plan-making:** With the enhanced profile of regional planning in the 1990s proposals for new communities emerged in the Sustainable Communities Plan and in the government’s Growth Points strategy. These programmes achieved notable success but still failed to deliver the numbers that were needed.

- **The eco-towns initiative:** In response to the twin challenges of housing and climate change, the eco-town initiative was launched in 2007. The initial degree of central government prescription meant that it was highly controversial. It has had very limited success.

Key lessons can be learned from this past experience:

- New communities need to be planned at a national, regional and sub-regional level, with the largest new communities necessitating consideration at the highest levels. It is inconceivable that the Duty to Cooperate could deliver anything other than modest scales of development but there is no national plan for England, planning policy guidance is non-spatial and the regional tier of government has been abolished.

- The private sector is incapable of delivering anything at scale and even this will take years to materialise. The number of firms capable of engaging on this scale and for this length of time is very small. The reality of high risk and long term returns precludes all but the largest development companies.

- The most successful developments have been the new towns, with dedicated delivery teams, a degree of autonomy from central government, a long term strategy and access to funds (loans and grants) for advance infrastructure.

The logical response would be to propose a national plan, the reinstatement of regional bodies charged with plan-making and the return of the new town development corporations to ensure delivery. We believe that this is politically unacceptable: the localism agenda, now embraced by all political parties, has raised expectations on the part of local communities for engagement and a return to central control would be politically unacceptable. Any new initiative must engender the support, or tacit acceptance, of local communities.
OUR APPROACH

We do not propose radical solutions that depart too much from existing systems; that would be time-consuming and fraught with risk. Our focus is on delivering the largest number of new dwellings, of the highest possible quality, in the shortest possible time. We propose modest adjustments and a greater degree of collaborative working between political parties. Essential requirements are:

■ Clear leadership, direction and decisiveness from central government based on a robust evidence base to demonstrate the nature and scale of housing land requirements.

■ Publication by central government of a ‘New Garden Cities Strategy’ providing a clear spatial framework, identifying preferred growth areas and areas of search for new garden cities. This strategy should be prepared on a cross-party basis, a 30 year timescale and a commitment that it will be supported by successive governments. It would focus initially on the South East and South Midlands but ultimately would extend across England.

■ Extensive public consultation, undertaken by central government, on the proposed strategy and site specific locations. This would be independent of the development plans process which cannot respond in the timescale required. The Infrastructure Planning Commission would consider the strategy and site specific proposals and would report to a specially convened cross-party committee of politicians. Decisions would be taken by this committee to ensure democratic accountability.

■ A Garden Cities Trust should be established as the ‘guardian’ of the garden city vision. The Trust would define the essential garden city principles for master planning, design, delivery and community involvement. It would ensure the establishment of management, maintenance and stewardship regimes funded from the increase in land values. The Trust would have an over-seeing role to ensure that any site specific proposals were of the highest quality. The Garden Cities Trust would be independent of central and local government and, other than a start-up loan (which would be repaid with interest), would be funded by a levy on the Garden City Delivery Companies.

■ New, single purpose bodies would be established for each site (the Garden City Delivery Companies). These would be private limited companies operating under the control of the cross-party committee on Garden Cities and with the supervision of the Garden Cities Trust. Each would be run by a Board of independent trustees. Statutory agencies, the local development partnership and key local organisations would have nomination rights. The membership should be wide-ranging and would include representatives from business, housing, environmental groups, statutory agencies, etc.

■ The Garden City Delivery Company would transfer responsibilities for management and maintenance of the estate to another body, the Garden City Legacy Trust.

Figure 17: Planning, delivery and stewardship: tasks and responsibilities
DELIVERING THE GARDEN CITY

ARTICULATING THE VISION

The Garden City Delivery Company would commission a master plan for the site. This would articulate the long term vision for the site and the goals that it is designed to achieve; it would reflect the overarching principles of the Garden Cities Trust who would have the right of veto on master plans that did not uphold the overall vision.

The master plan would adopt an integrated approach towards the various elements of the plan and should be accompanied by an Infrastructure Delivery Plan. This would provide a list of infrastructure components, each phased according to the growth of the development.

The Garden City Delivery Company would prepare Design Guides and Design Codes for the garden city as a whole, ensuring that vernacular architecture and traditions were enshrined in the documents. Development briefs would be prepared for individual sites and would be mandatory.

LAND ACQUISITION

The important point is that all, or almost all, of the increase in land value created by the designation of the new garden city or the grant of planning permission should be captured for the public good and used to fund investment in infrastructure, advance landscaping, social and community services, etc. and to contribute to a fund for future management and maintenance.

Land should be bought at existing use values but, to encourage existing landowners to sell, and thereby avoid the need for lengthy and expensive public inquiries, compensation payments could be made at enhanced levels.

Compulsory purchase powers should be used where necessary to ensure that the majority of the uplift in value created by the designation of the town is captured by the delivery body rather than the landowner.

DEVELOPING THE GARDEN CITY

The Garden City Delivery Company would procure the delivery of all advance infrastructure. New buildings would be delivered by way of licenses to develop serviced parcels of land. Thereafter, ownership or rental of individual properties would pass directly to the occupiers.

Provision should be made in the land disposal strategy for ownership, in perpetuity, of social rented housing to be vested in the delivery body, or a successor organisation. This will ensure that the social rented housing remains accessible to future occupiers over the long term. This will require special arrangements to be made in relation to leasehold arrangements for the new garden city properties and exceptions to ‘right to buy’ legislation.

The master plan would adopt an integrated approach towards the various elements of the plan and should be accompanied by an Infrastructure Delivery Plan.
FINANCIAL ARRANGEMENTS

New garden cities are long term development projects. They require very substantial investment in advance infrastructure and the profits from individual components might not materialise for several years; the private sector new settlements of the late 20th century have demonstrated that the private sector is unwilling or unable to shoulder this burden of risk. By agreeing to loans central government is demonstrating its commitment to the strategy and a willingness to underwrite the risk in the early stages of the project. Loans also recognise the social purposes of the development.

The post war new towns delivered a profit to the Treasury on the long term loans that they received. The Garden City Delivery Company should have the same opportunity; loans would be repaid, with profits, allowing central government to receive a long term and significant return on its investment.

Otherwise, the principal funding should come from the sale of licenses for the development of serviced parcels of land, shares in the New Garden City Delivery Company and commercial loans. The grant of planning permission for a 30 year development programme will create substantial value against which loans can be guaranteed. It will also be possible to harness the future income streams from the new garden city, anticipating the future taxation income (business rates, council tax and/or development levies).

BUSINESS DEVELOPMENT

Business development would be an important and well-funded aspect of the new garden city. Providing the opportunity to live and work in close proximity is a founding principle of sustainability and should be a priority for the new garden city. The Garden City Delivery Company would be empowered to provide accommodation for start-up businesses (at less than market rates) on the basis that this subsidy is repaid when the business reaches a defined level of profitability. The money would be recycled and the benefit given to other new businesses.

Within the development, special arrangements should be made for tax relief on the construction of start-up business premises. They should be owned in perpetuity by the Legacy Company and the economic development strategy for the town should encourage entrepreneurial activity. Flexible arrangements should be put in place to help businesses with the transition from low-cost start-up accommodation to commercial floor space.

Local businesses should be offered premises, free of rent and rates for limited periods of time to encourage start-ups. There should be extensive provision of business hubs to reflect the growing number of people who work at home on a regular basis for part of the week.

MUSCOs, ESCOs, ETC.

Given the importance of energy efficiency, and the principle of sharing financial rewards within the garden city, one or more community-based MUSCOs (multi-utility service companies) or ESCOs (energy supply companies) should be established to ensure that the community can benefit from energy supply schemes.

Options for mitigating up-front costs within CHP (combined heat and power) schemes include the following:

- adjustment of land value to reflect additional capital costs
- the establishment of a community-led energy company or ESCO joint venture with the developer to provide the majority of the finance for the infrastructure
- modular installation of energy centres as phases of development are complete
- retention by the community-led energy company of ownership of solar photovoltaics in order to recover capital cost from future feed-in tariff
- investment in heat and power infrastructure could form part of the site works
- in order to finance of the network extension, and the energy centres, firm energy supply contracts with public sector buildings (e.g. the local College) and housing developers (through planning requirements) are likely to be required.
**STEWARDSHIP**

The Garden City Delivery Company should be established in such a way that, as elements of the garden city are completed, responsibility for their management and maintenance should transfer to another body. This new body, the Garden City Legacy Trust, should assume responsibility for all matters relating to the management and maintenance of the Garden City estate. These stewardship arrangements for the new garden city should be one of its most distinctive features.

Maintenance of the public realm should be undertaken on a similar basis to that of the Milton Keynes Parks Trust or the Letchworth Garden City Foundation. This is a tried and tested arrangement whereby the Garden City Legacy Trust would be endowed with a number of commercial properties, the income from which would be used to pay for the management and maintenance in perpetuity of the public realm.

The Garden City Legacy Trust would retain powers over certain development management matters, a role similar to that exercised by the big London estates. This power would allow the Trust to control detailed matters of design in relation to the external appearance of all buildings e.g. the design of extensions, colour of render and front door, etc.

These powers, using landlord controls, operate well; they are accepted by and popular with residents who know that the overall character and identity of the place will not be eroded by incremental change in the fabric of the buildings.

**COMMUNITY PARTICIPATION**

The early occupiers of the new garden city will be pioneers, literally occupying new territory with no guaranteed friendship or family ties. Engaging with neighbours and others in the community can be a daunting task.

The Garden City Delivery Company would:

- establish good relations with the local authority and voluntary organisations
- target early community facilities at the existing community so they derive early benefits
- appoint community development workers
- deliver community facilities in advance and ensure that these are ‘ring-fenced’ for residents
- create community forums to air topical issues
- subsidise local clubs and societies

The community development workers are vital: they would welcome newcomers, ensure that they had access to services and explain how they can participate in the life of the town.
SOWING THE SEEDS OF A NEW COMMUNITY

The ideal scenario is for a new garden city to be accepted by those who live in the area at present and popular with those who will live there in the future. These could well be mutually exclusive objectives.

Many new garden cities will be in semi-rural locations, with existing settlements small enough to provide a sense of community but sufficiently accessible to allow easy travel to higher order centres. Those who live in these communities will have lived there for a long time or moved there precisely for these reasons; they like it that way. A new garden city, however attractive and well-designed, will disturb this equilibrium, the place will change forever and, for many years, it will be a construction site.

Some will be willing and able to adapt to the change. Others will decide that this is not the lifestyle they want and will look to replicate their original environment in another location. This is an entirely understandable reaction and those who wish to relocate should be amply compensated with the purchase of their property at 150% of the market value plus additional compensation for relocation. In return, they would forfeit their right to oppose the principle of development.

This has the potential however to set local residents against each other. We therefore propose that residents who remain would be compensated for the noise and disturbance that will arise during the lengthy construction period.

We propose that their compensation should be set at 50% of the purchase price of their property. They would also receive a further 25% to buy shares in the Delivery Company as part of their pension planning arrangements with additional tax benefits.

Residents who choose to stay would become the seeds of a new community and would provide consistency and stability. They should be treasured and rewarded by having their needs and requirements tackled as priorities by the Garden City Delivery Company.
Residents who choose to stay would become the seeds of a new community and would provide consistency and stability. They should be treasured and rewarded by having their needs and requirements tackled as priorities...