



HERTFORDSHIRE

GUIDE TO GROWTH-2021

HOW SHOULD THE COUNTY GROW?

DRAFT

The Hertfordshire Charrette of 2008 was an initiative hosted by the Chancellor and Vice Chancellor of the University of Hertfordshire.

The principal consultants were:

Duany Plater-Zyberk & Company led the Charrette, prepared the designs and wrote this guide.

www.dpz.com

The Division of Geography and Environmental Management at the University of Hertfordshire provided the Geographic Information Systems research.

www.herts.ac.uk/environment

The Building Research Establishment carried out the Green-Print environmental assessment.

www.bre.co.uk

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THE GUIDE TO GROWTH

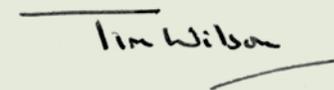
We are pleased to present this *Guide to Growth*, which records the Hertfordshire Charrette process. The Charrette provided a rare chance for a diverse group of residents and professionals to convene to discuss challenges the region will face in future years. The exercise, which was held between the 24th of June and the first of July 2008 was led by urban planner Andres Duany and offered the Hertfordshire residents and professionals the opportunity to work directly with a design team developing sustainable growth strategies. The Charrette was funded by a combination of local and national sponsors including the County Council, the University, local landowners and a number of organisations and companies based in Hertfordshire.

The guide focuses on six general 'Scenarios' by which the County might grow in the years until 2021, as the growth allocations proposed by the Government Office of the East of England come to pass. Each Scenario includes clarifying illustrations and a critical analysis, along with an environmental assessment, or 'GreenPrint,' undertaken by the Building Research Establishment. The design team also provided analysis of typical urban models, including a critique of the design of the New Town of Stevenage, and case studies, including village and hamlet extensions.

We think we would all agree that to continue the development approach of the past 30-40 years is not the optimal vision for the future. We are therefore happy to have provided this forum, and hope that this Guide will become a valuable resource to planners, Councillors, and residents interested in the growth of the County. We welcome any comments you may have, and hope you will continue the productive discussions undertaken at the Charrette.



Marquess of Salisbury
Chancellor, University of Hertfordshire



Professor Tim Wilson
Vice-Chancellor, University of Hertfordshire

PROCESS

The Hertfordshire Charrette provided a wide range of parties the opportunity to participate in the development of this report. Unique in its regional focus and private/public funding structure, the exercise offered the general public the opportunity to work with design professionals to determine the most socially sustainable and environmentally-sensitive means for the County to grow, whilst maintaining its current character and landscape.

The design team's work addressed the proposals put forward by the East of England Plan, or Regional Spatial Strategy (RSS), which was produced in May 2008 by the Government Office of the East of England. This document, which is the first Regional Spatial Strategy to be completed within the UK, mandates a planning and development approach for the years through 2021. Whilst the document focuses on a great range of regional political and economic concerns, a primary focus is the provision of housing. The report anticipates the new housing which the region will require, and then proposes the numbers of dwellings to be constructed within each County. Specifically, the plan allocates 83,200 new dwellings to Hertfordshire, although it does not provide a site-specific plan for their distribution.

The Charrette design team studied the various ways which the County could accommodate the number of dwellings mandated. Discussing with the general public both the historic and current development patterns, the designers developed six strategies or Scenarios, including

- Continuing existing development trends
- Developing available brownfield and greyfield sites
- Densifying existing town and neighbourhood centres
- Extending current settlements at the edges
- Building numerous small, satellite Garden Villages
- Building a stand-alone New Town or Garden City

After selecting these six development approaches as those most characteristic or promising for Hertfordshire, the design team worked to illustrate all six and analyse their strengths and weaknesses. In addition, the team generated specific case studies, to provide more specific information on design and implementation. All of the design proposals aimed to establish a high standard for new development, featuring mixed-use, pedestrian-friendly urban villages, with well-connected transport systems and thoroughfare networks.

All the Scenarios and case studies were in turn examined by a team of consultants from the Building Research Establishment, who assessed them for sustainability and environmental performance. The specific strengths and weaknesses of each Scenario are discussed at length within this report.

Public participation was a critical element of the entire exercise. The design team worked directly with numerous County officials and members of the general public, all of whom were asked to provide their opinions. Organisations, companies and groups represented included Hertfordshire County Council; the Hertfordshire District Councils; the Hertfordshire Parish Councils; the Hertfordshire Town Councils; the Hertfordshire Society/Campaign to Protect Rural England; Groundwork Hertfordshire; the East of England Development Agency; the Hertfordshire Chamber of Commerce; Hertfordshire Prosperity; Herts & Middlesex Wildlife Trust; Friends of the Earth; the Welwyn Garden Heritage Trust; and other local companies, residents' associations, environmental activists' groups, and heritage societies.



The Hertfordshire Charrette was held at the MacLaurin building on the University's De Havilland campus. Formal meetings and design sessions were attended by the design team (top left); local Councillors, planners and other leaders (top centre and bottom left); University of Hertfordshire geography students and Building Research Establishment staff (top right).



Eight special interest groups convened to discuss specific aspects of the County's growth. They included:

- Local planners, who discussed planning practice at the District and County levels and policy at the national level
- Environmental professionals and activists, who discussed the merits of an environmental strategy
- Councillors, who discussed the general region and the current political climate
- Local transportation engineers and the traffic authority, who discussed the transportation network, as well as means of calming traffic and alleviating congestion
- Business leaders and representatives from the Chamber of Commerce, to discuss the economy and means of encouraging retail and business activity
- Local property owners and developers working in the region, who discussed current development practice and their plans for upcoming years
- Social and community advocates, who discussed needs and means of providing resources
- Local and national design professionals who discussed specific design strategies

CURRENT PLANNING POLICY

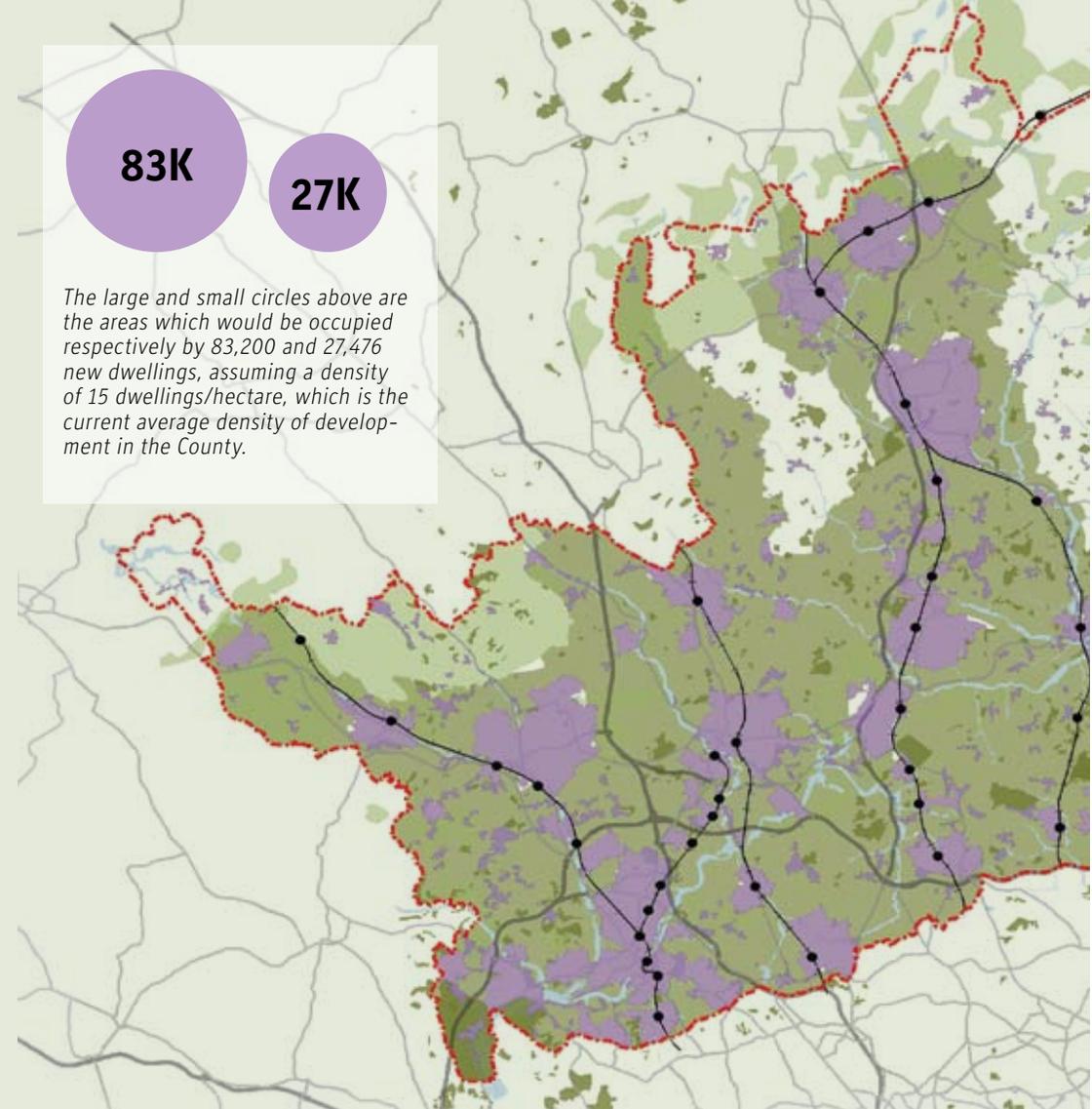
The Charrette team's work was catalysed by the East of England plan, which offers specific proposals for population growth, economic development, transportation, infrastructure, mineral extraction and general development strategy. The plan, which is available in full from the Government Office of the East of England (www.goeast.gov.uk), is intended to provide a comprehensive means of managing growth to the year 2021.

The East of England Plan provides population growth estimates and housing development requirements to the region as a whole, as well as the specific counties. According to the Plan, Norfolk, Suffolk, Essex, Cambridgeshire, Bedfordshire and Hertfordshire, are mandated to expand by 508,000 dwellings, whilst Hertfordshire as a single County is mandated to accommodate 83,200 dwellings. Of these 83,200 dwellings, approximately 26,000 had already been built as of April 2008, whilst an additional 29,500 had already been permitted, though not yet constructed. Accordingly, approximately 27,000 dwellings have yet to be sited. In addition, approximately 20,000 dwellings are separately allocated for Luton and Harlow New Towns. These are not addressed by this Guide.

The Plan also identifies Stevenage, Watford, Hemel Hempstead, and Welwyn Garden City/Hatfield as 'Key Centres for Development and Change', with each town receiving a specific development strategy.

The 83,200 dwellings allocated to Hertfordshire will have a significant impact on the Counties' character and landscape. It is most likely that they will be located on a variety of sites. Whilst Government policy focuses on brownfield development and urban regeneration strategies, the East of England Plan also states that many of the new dwellings will inevitably be located on current Green Belt land. Accordingly, the Charrette design team's proposals focus on development of all types of sites, including the regeneration of urban centres, the extension of current towns and villages, and the development of new villages or towns on green belt land.

The table on the right summarises the housing provisions, proposed by the East of England Plan; some figures are approximations.



The large and small circles above are the areas which would be occupied respectively by 83,200 and 27,476 new dwellings, assuming a density of 15 dwellings/hectare, which is the current average density of development in the County.

Total new dwellings required to be built between 2001 and 2021	83,200
Dwellings already built as of April 2008	26,163
Dwellings yet to be built as of April 2008	57,037
Dwellings in the "planning pipeline" as of 2008	29,561
Dwellings yet to be sited	27,476
Additional homes separately allocated to Luton & Harlow	20,000



The above diagram depicts Hertfordshire County, with currently urbanised areas noted in purple. Open space is noted in green, with the darkest greens signifying specifically protected space.

VISION STATEMENT

The following is extracted verbatim from the East of England Plan. The document is available in full at www.goeast.gov.uk

By 2021 the East of England will be realising its economic potential and providing a high quality of life for its people, including by meeting their housing needs in sustainable inclusive communities. At the same time it will reduce its impact on climate change and the environment, including through savings in energy and water use and by strengthening its stock of environmental assets. The specific objectives are:

To reduce the region's impact on, and exposure to, the effects of climate change by:

- locating development so as to reduce travel needs;
- effecting a major shift in travel away from car use towards public transport, walking and cycling;
- maximising energy efficiency of development and promoting the use of renewable energy; and
- reducing the risk of adverse impact of flooding on people, property and wildlife habitats.

To address housing shortages in the region by:

- securing a step change in the delivery of additional housing throughout the region, particularly the key centres for development and change; and
- giving priority to the provision of affordable housing to meet identified needs.

To realise the economic potential of the region and its people by:

- facilitating the development needed to support the region's business sectors and clusters, improving skills and widening opportunities in line with the Regional Economic Strategy;
- providing for job growth broadly matching increases in housing provision and improving the alignment between the locations of workplaces and homes;
- maintaining and strengthening the East of England's inter-regional connections by improving access to economic opportunities in London; and
- ensuring adequate and sustainable transport infrastructure.

To improve the quality of life for the people of the region by:

- ensuring new development fulfills the principles of sustainable communities, providing a well designed living environment adequately supported by social and green infrastructure;
- promoting social cohesion by improving access to work, services and other facilities, especially for those who are disadvantaged;
- maintaining cultural diversity while addressing the distinctive needs of each part of the region;
- promoting the regeneration and renewal of existing disadvantaged areas; and
- increasing community involvement in the implementation of the strategy at the local level.

Minimum Dwelling Provision, 2001 to 2021		
District	To Build (2001-2021)	Already Built (2001-2006)
Broxbourne	5,600	1,950
Dacorum	12,000	1,860
East Hertfordshire	12,000	2,140
Hertsmere	5,000	1,080
North Herts	6,200	1,900
St Albans	7,200	1,830
Stevenage	16,000	1,570
Three Rivers	4,000	1,010
Watford	5,200	1,410
Welwyn Hatfield	10,000	2,730
Hertfordshire	83,200	17,480

To improve and conserve the region's environment by:

- ensuring the protection and enhancement of the region's environmental assets, including the built and historic environment, landscape and water;
- re-using previously developed land and seeking environmental as well as development gains from the use of previously undeveloped land;
- promoting and, where appropriate, supporting and enhancing biodiversity through the protection of habitats and species and creating new habitats through development;
- providing a thorough network of accessible multi-functional greenspace; and
- reducing the demand for and use of water and other natural resources and reducing waste, whilst increasing the sustainable management of waste.

THE URBAN VILLAGE MODEL

All the proposals generated by the design team are intended to offer an alternative to the continuation of the generally unsatisfactory growth patterns which have been delivered by the post-war planning process within Hertfordshire.

These patterns can be seen to prioritise three aims: the free and rapid flow of traffic, the provision of high quantities of parking and the segregation of building clusters by their purpose. The result is that traffic and the consequential pavement become the central, unavoidable focuses of public life.

The design team's proposals instead return to the traditional pattern of pedestrian and transport-oriented Urban Villages – an approach which has

been inadvertently sidelined in the post-war years. Although Urban Villages can be easily identified within Hertfordshire – in places like St Albans, Hertford and Standon – this sort of outcome is not typically envisioned in the planning process, placing architects and developers in a peculiar position of being unable to emulate the County's most admired, and indeed environmentally sustainable, historic patterns.

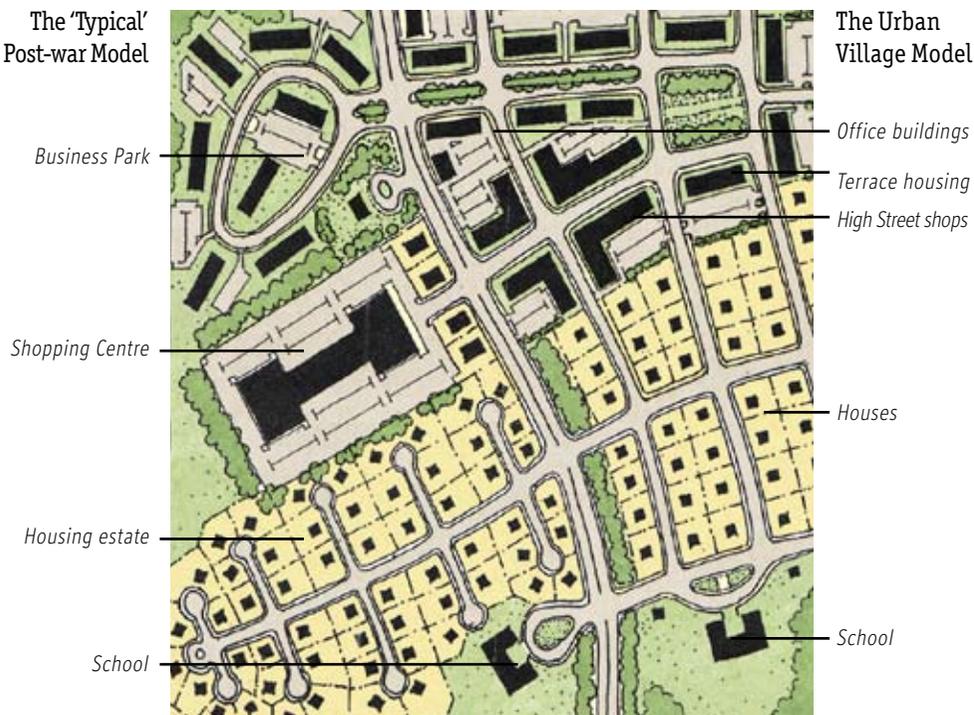
THE URBAN VILLAGE VS. THE SUBURBAN MODEL

The Urban Village has the following attributes:

- It is important to recognise that particular care is required with certain special cases such as hospitals or universities. Otherwise there are a number of important comparisons between the Urban Village and the suburban model.
- The Urban Village is a comprehensive planning increment: when clustered with others, it becomes a town; when standing free in the landscape, it becomes a village. The Urban Village varies in population and density to accommodate local conditions.
- The Urban Village is limited in area so that a majority of the population is within a pedestrian shed of a 5-minute walking distance of its centre (500 M). The basic needs of daily life are ideally available within this area. This centre provides the location for a bus stop or rail station, convenience stores, work places, community events, and leisure activities.
- The streets are laid out in a network, so that there are alternate routes to most destinations. This disperses traffic, permitting most streets to be smaller and slower and as a result, able to support parking, trees, sidewalks, and buildings without buffers or setbacks. They are equitable for both vehicles and pedestrians.
- The streets and other public spaces are spatially defined by building frontages along the pavements in a disciplined

The 'Typical' Post-war Model

The Urban Village Model



The diagram to the left depicts two models of growth, the post-war suburban pattern, which is currently common within the County and the 'Urban Village' pattern, which has numerous historic precedents in Britain.

The suburban model (depicted on the left side), features cul-de-sacs and collector roads which rarely connect to the greater network. Shopping centres and office parks exist as isolated entities, with separate access to the main roads and no direct connections to the nearby residential areas. Landscaping is not continuous throughout the development, with trees primarily serving as buffers. This approach to development isolates the housing and can lead to an unwarranted dependence on the car. The Urban Village model (depicted on the right side) accommodates a similar number of residential and commercial units. Housing is accommodated on a network, which offers residents alternative routes to most destinations. Retail and offices are allocated within a high street. This approach to development not only lessens dependency on cars; it can foster a sense of community and local identity.

- manner, uninterrupted by car parks.
- The buildings are diverse in function, but compatible in size and in disposition on their plots. This allows for a harmonious mixture of houses (large and small), terrace houses, small apartment buildings, shops, restaurants, and offices.
- Community buildings (schools, community halls, theaters, churches, clubs) are often placed on squares or at the termination of street vistas. By being built at important locations, these buildings serve as landmarks.
- Open space is provided in the form of specialised squares, playgrounds, and parks and Green Belts.

Post-war models have quite different physical attributes:

- The development is disciplined by isolated “zones”, which are dedicated to single uses such as “shopping centres”, “business parks”, and “housing estates”. These are inaccessible to each other except by car. Housing is segregated into large clusters containing units of similar cost, hindering socioeconomic diversity.
- Size is limited only by the range of the car which can depend on catchment areas for shopping, often exceeding 20 miles.
- There is a high proportion of culs-de-sac and looping streets within each zone. Through traffic is possible only by means of a few “collector” streets, which consequently become easily congested.

- Vehicular traffic controls the scale and form of public space, with streets being wide and dedicated primarily to the car. Car parks are a dominant feature.
- Buildings are often highly articulated, rotated on their plots, and greatly set back from streets. They are thereby unable to create spatial definition or sense of place. Civic buildings do not normally receive distinguished sites.
- Open space is often provided in the form of “buffers”, “pedestrian ways”, “berms”, and other ill-defined residual spaces.

The urban village has several positive consequences:

- By bringing many daily activities into walking distance, everyone (especially the elderly and the young) gains independence of movement.
- By reducing the number and length of automobile trips, traffic congestion is minimized, the expenses of road construction are limited, and air pollution is reduced.
- By providing streets and squares of comfortable scale and with defined spatial quality, neighbors, walking, may come to know each other and to watch over their collective security.
- By providing appropriate housing concentrations at easy walking distances from transport stops, public transport becomes an economically viable alternative to car trips. The emissions resulting from driving are reduced.
- By providing a full range of housing types

- and work places, age and economic classes are integrated encouraging the bonds of resilient community.
- By providing suitable civic buildings and spaces, democratic initiatives are encouraged and the balanced evolution of society is facilitated.

Post-war models have several negative consequences:

- Each car not only generates more roads, but also requires a paved parking place at the house, another at the work place, and yet another at the shopping centre. By the construction of an excessive horizontal infrastructure, the natural landscape is destroyed.
- By consigning the bulk of the available public budget to pay for horizontal infrastructure, the vertical human infrastructure of schools, post offices, fire stations, meeting halls, cultural buildings, and affordable housing is starved.

The groups who suffer particularly from the post-war models include:

- The middle class, who are forced into multiple automobile ownership. The average yearly cost of car ownership is over £4,000. The possibility of owning one less car is the single most important subsidy that can be provided towards attaining housing. The investment of personal time in the activity of commuting is mandatory. A person who drives one hour a day spends the equivalent of a month each year in the car.

- The young, below the legal driving age, are dependent on adults for their social needs. They are bused to schools, to which they cannot walk, and isolated at home until their working parents arrive. The alternative is to relegate one parent to a career as the child’s chauffeur. The detached house with garden is a good place for childhood only if it is structured as part of an Urban Village, within which a child can walk or bicycle to school, to play, to shops, and to friends’ houses.
- The elderly, who lose their self-sufficiency once they lose their drivers’ licences are still able to walk and can continue to live independently within an Urban Village. People do not need to be consigned to specialised retirement communities where their daily needs are met at great cost.

The current planning process tends to monitor only traffic flow, parking counts, the segregation of building use, and the safeguard of open space. New planning policy should encourage the Urban Village, which is the authentic human habitat in all its complexity.



SIX GROWTH SCENARIOS

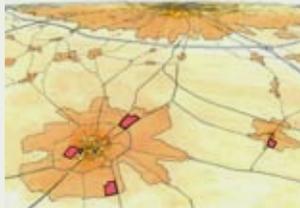
The strengths and weaknesses of each Scenario are analysed in the following sections.



1 CONTINUING EXISTING TRENDS

Growth continues at its existing rate and pattern, with the housing primarily on smaller sites wherever found.

This Scenario advocates the status quo, proposing that the County continue with its current approach, developing plots of all kinds as opportunity arises.



2 BROWNFIELD & GREYFIELD SITES

Some of the housing is placed on large previously developed or underutilised sites.

This Scenario advocates the development of both industrial brownfield sites, and commercial car parking sites, or 'greyfields.'



3 TRANSPORT-ORIENTED DEVELOPMENT

Some of the housing is placed along transportation nodes.

This Scenario proposes the development of housing within walking distance to existing rail and bus stations. This will require the radical intensification of existing areas.



4 SETTLEMENT EXTENSIONS

Some of the housing is attached to the edges of existing settlements on Green Belt land.

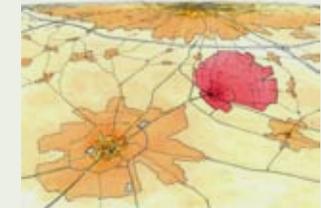
This Scenario proposes the distribution of new housing on the boundaries of existing settlements of all sizes, including towns, villages and hamlets.



5 SATELLITE (GARDEN) VILLAGES

Some of the housing is assigned to new villages in proximity to existing settlements.

This Scenario envisions the development of new settlements of a small scale, some of which would provide an opportunity for farming and agriculture.



6 STAND-ALONE GARDEN CITY

The majority of the housing is assigned to a new Garden City on the existing rail network.

This Scenario proposes the development of one major new settlement to accommodate most of the new housing, along with the jobs, infrastructure and amenities to support them.

BRE ASSESSMENT CRITERIA

Each of the six strategies was found to have certain positive and negative consequences. These were formulated as “Scenarios” to help organise the public discussions that are to take place at the Borough and District Councils over the coming years.

Within this report, the Scenarios are accompanied by two types of assessment. One is subjective, listing the relative merits of each approach as they emerged in the Charrette discussions. The second is the result of a more objective analytical method called the GreenPrint, which has been developed by the Building Research Establishment to gauge sustainability.

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This established technique rates the sustainability of the proposed Scenarios, making it possible to take a more objective view of the potential approaches to development in Hertfordshire.

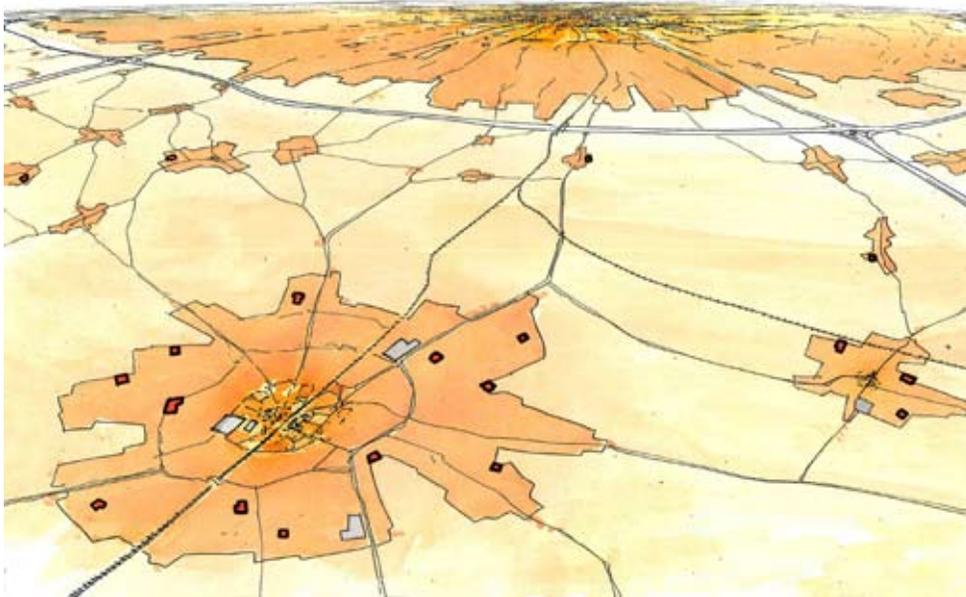
When examining the Scenarios, the BRE team did not consider factors that would be the same in each case, instead concentrating on variables that differ, many of which related to matters of scale or location. Likewise, the factors that remain constant for all the Scenarios were considered to be ‘Givens.’ The full list of these factors is published in a companion document to this one along with further information on BRE’s GreenPrint methodology.

None of these Scenarios can entirely accommodate the necessary allocation aside from Scenario 6 (the Garden City), and so these Scenarios must be considered in combination.

BRE ASSESSMENT CRITERIA:		"Does the Scenario..."	SCENARIOS						
			1	2	3	4	5	6	
Climate	Development should take all cost effective options to ensure it is appropriately adapted to present and projected climate change impacts, such as flooding and increased temperatures.	<ul style="list-style-type: none"> a. accommodate sustainable drainage schemes to manage a rainfall event? b. enable efficient passive solar design? c. offer sufficient scale to allow a viable community heating system? d. reduce the 'heat island' effect of existing urban centres? e. ensure significant cost efficient technology, energy and installations? 	1	2	1	2	3	3	
			1	2	1	2	3	3	
			0	3	3	2	3	3	
			0	1	3	1	0	0	
			1	2	2	2	3	3	
			3	10	10	9	12	12	
Resources	Development should reduce the use of resources both in construction and operation. Assesses the current status of the land and its reuse and how waste is managed when the construction site is in operation.	<ul style="list-style-type: none"> a. remediate contaminated land? b. reuse land (brownfield and greyfield)? c. introduce sustainable and integrated waste management and treatment schemes? d. allow for the use of locally recycled building materials? 	1	2	1	1	0	0	
			1	3	3	0	0	0	
			0	1	1	1	2	3	
			1	2	3	1	1	1	
			3	8	8	3	3	4	
Transport	Development should depend on the availability of transport options, walking and cycling, and public transport (bus and train).	<ul style="list-style-type: none"> a. locate growth in a walkable neighbourhood? b. allow movement along desire lines? c. enable safe, weatherproof and secure cycle storage convenient to key locations? d. enable safe pedestrian and cycling routes that mitigate intermodal conflicts? e. provide sufficient demand for a bus stop within 500m from dwellings? f. provide demand for a railway station situated 15 minutes (non-car journey) from dwellings? g. offer sufficient scale to improve public transport provision to the area? h. humanise vehicle movement? 	1	1	3	3	3	3	
			1	1	2	2	3	3	
			1	2	3	2	3	3	
			0	1	2	2	3	3	
			1	2	3	3	3	3	
			1	1	3	0	0	3	
			0	1	2	2	3	3	
			0	2	2	2	3	3	
			5	11	20	16	21	24	
Ecology	Development should ensure that biodiversity of a site is protected and enhanced wherever possible, and that links are established to surrounding ecological sites where they exist.	<ul style="list-style-type: none"> a. support green infrastructure such as substantial green corridors? b. provide designated space for food growing (allotments or community gardens)? c. provide a new area managed for biodiversity value? 	0	2	1	2	3	3	
			1	1	1	2	3	3	
			0	1	1	1	3	3	
			1	4	3	5	9	9	
Business	Development that increases in population should be accompanied by a corresponding increase in employment opportunities in a variety of business sectors. Dwelling without employment opportunities results in travel patterns which burden the transport infrastructure.	<ul style="list-style-type: none"> a. provide sufficient critical mass for new shops and basic services? b. provide new space for business? c. provide a varied scale of commercial and industrial properties? d. support existing community scale retail and services? e. provide the scale for a viable home working hub? f. allow for the creation of local jobs in the construction phase? 	0	1	3	3	2	3	
			0	1	2	2	2	3	
			0	1	2	1	2	3	
			2	3	3	3	0	0	
			0	0	2	2	3	3	
			1	1	2	1	3	3	
			3	7	14	12	12	15	
Community	Development should offer more than good quality dwellings. Residents should have community facilities that allow social gathering and communication opportunities across economic and ethnic groups.	<ul style="list-style-type: none"> a. provide a significant number of affordable houses? b. provide sufficient scale for provision of additional community facilities? c. protect existing community facilities? d. protect the social character of the existing communities? e. provide community management of communal facilities and infrastructures? 	1	2	3	2	3	3	
			0	1	2	2	3	3	
			1	1	2	3	0	0	
			3	2	1	1	3	3	
			0	1	2	2	3	3	
			5	7	10	10	12	12	
Placemaking	Much of what makes a settlement where people want to live and work in is related to how individuals perceive the environment around them. Good development provides a positive sense of the location itself which is linked to the landscape in which it sits, its history and legibility and how the public spaces are designed.	<ul style="list-style-type: none"> a. enhance legibility and orientation within existing settlements? b. provide access to age appropriate space for children and teenagers? c. provide access to public open space at the required distance? d. integrate neighbourhoods with existing ones? e. enhance the existing public realm? 	0	2	3	1	0	0	
			1	1	2	2	3	3	
			1	1	2	2	3	3	
			1	2	3	1	0	0	
			1	3	3	1	0	0	
			4	9	13	7	6	6	
Buildings	Development should improve the performance of individual buildings through of technology and by incorporating existing structures. This protects the existing character or heritage and retains the embodied energy and materials.	<ul style="list-style-type: none"> a. ensure significant installations of non-energy related sustainable technologies? b. allow existing buildings to be brought back into use? c. allow the existing building stock in the area be made more sustainable? 	0	1	2	2	2	3	
			2	2	3	0	0	0	
			1	2	3	0	0	0	
			3	5	8	2	2	3	
			23%	53%	71%	55%	63%	69%	
			Average score %	23%	53%	71%	55%	63%	69%
			Ranking	6th	5th	1st	4th	3rd	2nd

SCENARIO 1

CONTINUING EXISTING TRENDS



Growth continues at its existing rate and pattern, with new housing placed on sites wherever found.

In recent years, much of Hertfordshire’s growth has been piecemeal, occurring without a greater master-planning strategy. In most cases, growth occurs on opportunity sites identified by local authorities or “found” by private developers. Such sites are random, and may or may not be well-located relative to existing urban villages and transportation patterns. Such sites may be large or small, within developed areas or on the outskirts of settlements. Much of this kind of development has not been considered aesthetically or environmentally advantageous for the County.

Hertfordshire cannot accommodate the number of houses required by the East of England Plan if it continues with business as usual. Indeed, to do so will require active resistance, as well as official Council initiated legal challenges. Such tactics can delay the construction of housing but can not eliminate it. Ultimately, the difference between the housing allocation for 2021 and the anticipated number of houses built at the current rate of construction is only about 23,000 dwellings out of a total of 83,000. It is safe to say Hertfordshire, one way or the other, will continue to grow.

Delivering the housing at the slower rate of the existing trend might better maintain Hertfordshire’s traditions, as newcomers arriving in small groups are more likely to absorb the local ethos than large groups might be. However, it is also notable that continuing the current rate of construction will prolong the current housing shortage, preserving the current high prices and thus hampering the prospects of companies that need a diverse workforce. Indeed, scarce and expensive housing would prevent the young from remaining or moving into Hertfordshire and ultimately lead to an imbalanced, aging population.

The most acute negative consequence of simply following the existing trends is that growth would continue to be located opportunistically, seldom at optimal locations, with the result that effective planning for concurrency would be virtually impossible. The most elemental level of regional planning would be scarce.

ADVANTAGES

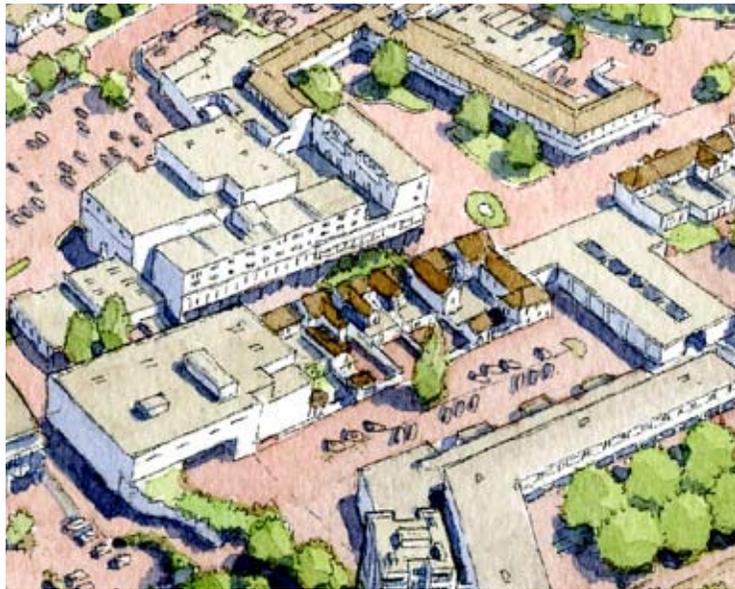
- Incremental development
- Maintains current social structure

DISADVANTAGES

- Housing capacity less than required
- Piecemeal development
- More expensive housing
- Uncoordinated infrastructure
- Relatively inefficient process
- Seldom at optimum locations

REQUIRED DWELLINGS

2001 Population	1,033,977
2008 Population	1,072,800
2021 Population Projection	1,177,800
2001 - 2021 Population Growth	143,823
Dwellings at existing trends (@ 2.4 persons per dwelling)	59,926
Dwellings required by the RSS	83,200
Difference in dwelling requirements RSS/Trends 2001-2021	23,274



At best, current development practice in Hertfordshire involves private sector developers identifying and purchasing an underutilised site, demolishing the existing buildings and replacing them with denser housing types. The images above depict a mediocre site before and with excellent new redevelopment after.

GREENPRINT ASSESSMENT: SCENARIO 1

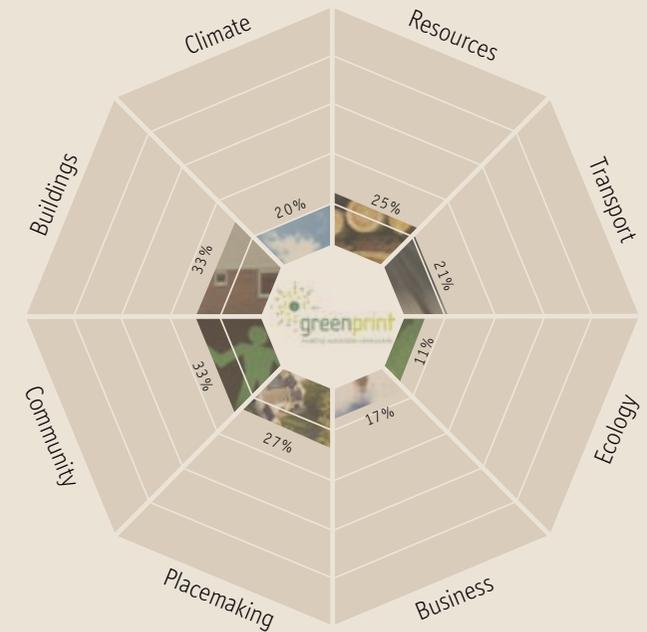
This Scenario performs poorest overall of the six assessed in this exercise. It is strongest in the buildings category because it has some potential to bring empty buildings back into use and to improve the efficiency of existing ones. However, it achieves the lowest scores in all other categories.

On average this Scenario offers the least development capacity, with many sites occurring in fairly random locations. It is the one which makes the least difference to a settlement, either positive or negative. So whilst it could be viewed as protecting the status quo, that means there is little chance for improvement where the current situations are sub-optimal.

It is “pot luck” as to which facilities already exist around any new development, and it is unlikely that it will provide size enough for a financial contribution sufficient to build new ones (made under a section 106 agreement).

It is possible that existing inefficient buildings will be replaced under this Scenario, but it is not likely that developments will be sizable enough to improve street environments or public transport, or offer economies of scale for utilities or renewable technologies. It is unlikely that these developments will offer uses other than dwellings.

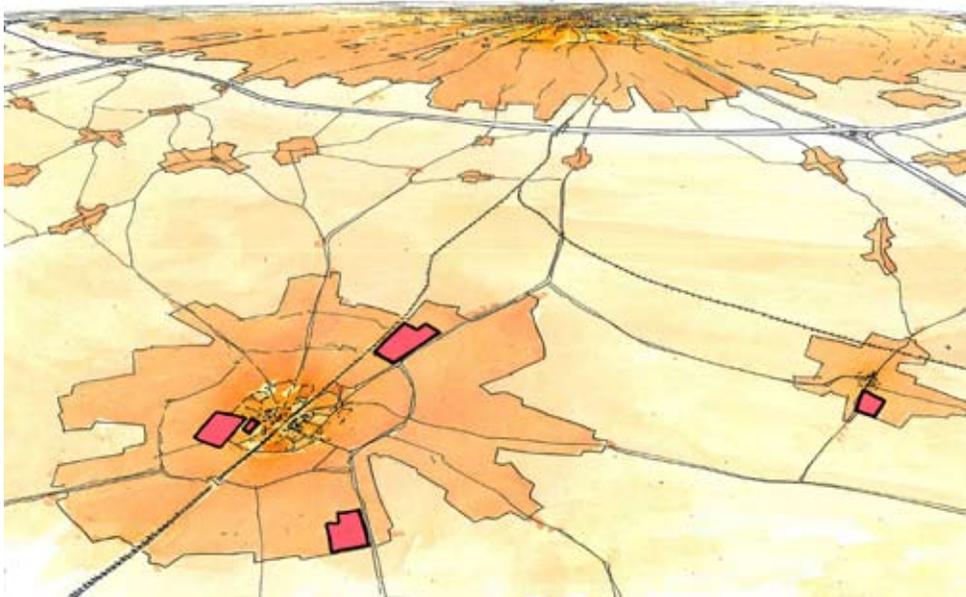
Best case: The plot brought forward has one or more existing buildings which are reused for housing. This makes efficient use of resources and maintains the local vernacular and heritage. The site is located close to a settlement centre, and thus within easy reach of public transport links and facilities, reducing car dependence and the need for parking space. The public realm is improved as the site is brought back into use, and nuisance issues are addressed by the reuse of the site. The dwellings have high energy and water efficiency standards, and ecological needs are integrated into the buildings.



Category	Score	Rank
Climate	20%	6th
Resources	25%	6th
Transport	21%	6th
Ecology	11%	6th
Business	17%	6th
Community	33%	6th
Placemaking	27%	6th
Buildings	33%	3rd
Average	23%	
Overall ranking		6th

SCENARIO 2

BROWNFIELD AND GREYFIELD SITES



Some of the housing allocation is placed on previously developed sites, within the boundaries of existing settlements.

ADVANTAGES	DISADVANTAGES
<ul style="list-style-type: none"> • Conserves Green Belt • Reuses land resources • Reuses existing infrastructure • Remediate of contaminated land 	<ul style="list-style-type: none"> • Too few sites available • Incurs additional cleanup costs • Seldomly uses optimum locations • Removes industrial & commercial space

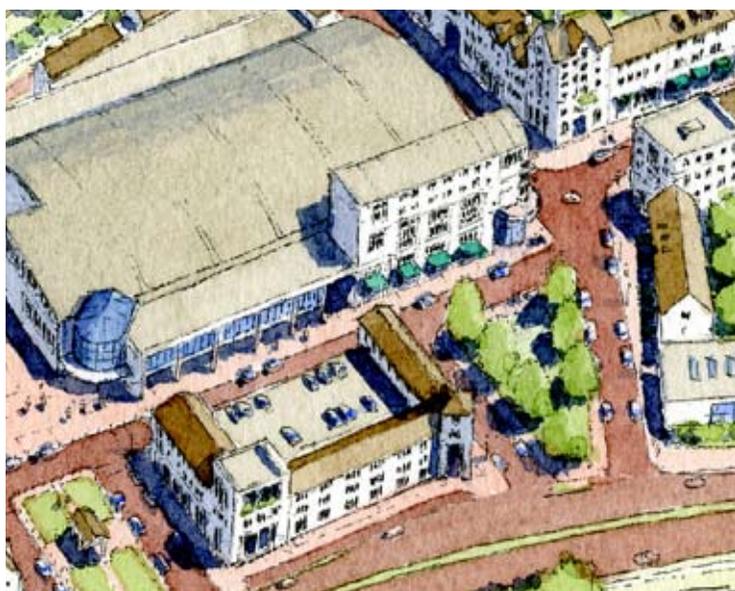
Brownfield sites are developed industrial areas that are no longer in use. The best-known example of such a site in Hertfordshire is the Hatfield Aerodrome, now home to the University of Hertfordshire's De Havilland campus.

Greyfield sites are large open car parks, in use as a support area for an existing development, such as a shopping centre or a business park. In many cases, these sites can be redeveloped, with car parking placed in a multi-storey car park.

Brownfield and greyfield sites have the great ecological advantage of reusing committed urban land and resources, as well as existing infrastructure. Developing such sites, however difficult, conserves Green Belt area. The only disadvantage of brownfield and greyfield sites is that they are not always optimally located for public transport.

The redevelopment of brownfields may require demolition as well as soil remediation, thus adding to delay and expense. Unfortunately, in Hertfordshire there are very few remaining brownfield sites available, as the recent generation of development has consumed most of them, and those which remain should be retained for commercial purposes that lead to job creation.

Greyfield sites (of which there are many) are not normally considered for redevelopment as the owner/operators believe current uses require the surface car parks. Activating them for development may involve the outright and unrequested grants for density as well as certain subsidies for the building of multi-storey car parks. The identification of greyfield sites would be at the initiative of the District Planning Councils.



Although there are few brownfield sites available in Hertfordshire, there are numerous 'greyfield' sites featuring underutilised surface car parks. The images above depict a supermarket, before and after redevelopment with new apartment buildings and multi-story car parks "lined" with offices or flats.

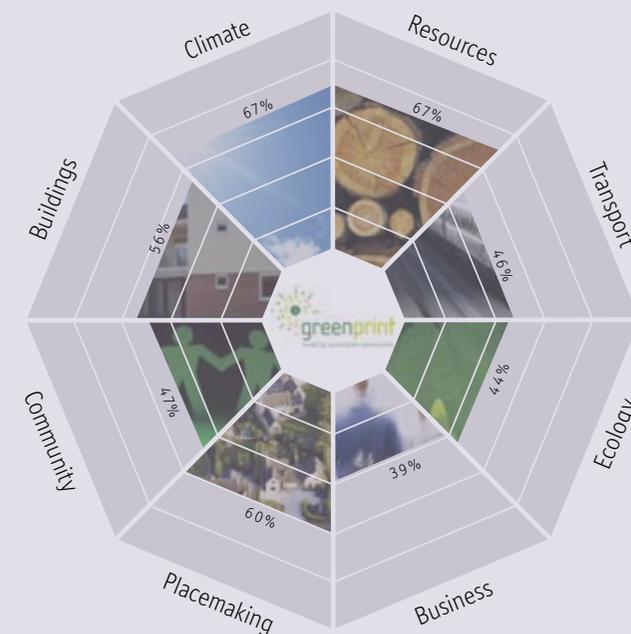
GREENPRINT ASSESSMENT: SCENARIO 2

This Scenario is the fifth best performing of the six analysed, although it scores significantly better than the worst (Scenario 1). Its best performance is in the resources and buildings categories, largely as it brings fallow urban land and buildings back into use and improves their energy and water efficiency. It also performs well in the placemaking category because it provides the opportunity to improve the street scene and appearance of existing settlements. Whilst the size of developments in this Scenario is not as large as in some others, there is an opportunity for a degree of mixed use.

This is the Scenario most likely to offer opportunities to clean up contaminated sites, and when existing buildings and infrastructure are replaced, they can provide recycled building materials for new developments.

Housing on brownfield sites is likely to support existing facilities and may be of sufficient scale to support new ones. Developments in this Scenario are also likely to be large enough to perform well in terms of climate change and carbon efficiency, but they are not likely to be large enough to support the provision of new public transport.

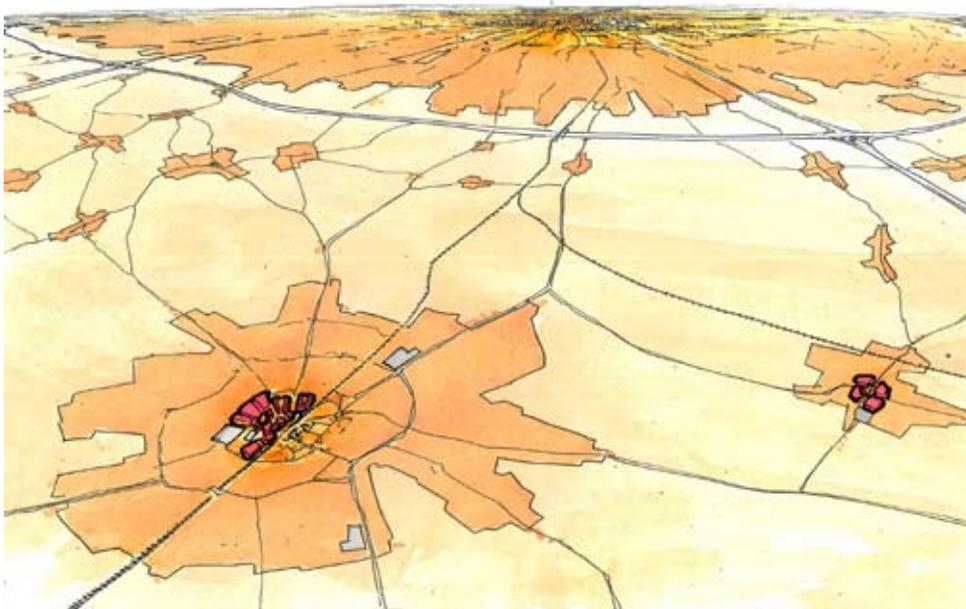
Best case: The brownfield site is close to existing centres or public transport connections. The development reuses materials from the previous buildings. Mixed-use development provides employment opportunities, and there is proximity to additional employment sites. Contaminated sites are cleaned, and old buildings are made more efficient.



Category	Score	Rank
Climate	67%	jt 3rd
Resources	67%	jt 1st
Transport	46%	5th
Ecology	44%	4th
Business	39%	5th
Community	47%	5th
Placemaking	60%	2nd
Buildings	56%	2nd
Average	53%	
Overall ranking		5th

SCENARIO 3

TRANSPORT-ORIENTED DEVELOPMENT



Some of the housing allocation is placed around railway stations and bus stops.

Transport-Oriented Developments are located within walking distance of rail stations or bus stops. Catering to both those who work in the vicinity and those who commute, T.O.D. can lessen the general dependence on cars.

Whilst opportunities for this sort of development exist in Hertfordshire, there are not enough suitable sites remaining to accommodate all of the housing allocation.

Although the majority of railway stations in Hertfordshire have already been developed, some stations offer the opportunity for additional residential, commercial and retail development. Amongst these are rural railway

stations which could become hubs for larger settlements, and urban sites which currently include large car parks or other underutilised land offering the opportunity for development.

Because these sites offer the ideal location for housing, they may justify the demolition of existing underutilised structures, even if it will add to the expense of development. Indeed, when developed in a balanced, pedestrian-oriented and mixed-use pattern, these sites can become both destinations in themselves and feeders to London, ultimately allowing a more efficient use of the rail network as a whole.

One design challenge with these sites is that they must accommodate the parking for the on-site program as well as for commuters who have driven to the station.

ADVANTAGES

- Improves commercial performance
- Conserves Green Belt
- Reuses resources
- Reuses existing infrastructure
- At existing nodes
- Improves commercial sense of place

DISADVANTAGES

- Too few sites available
- Requires compulsory purchase
- Requires demolition



Hertfordshire could accommodate significant transport-oriented development on sites adjacent to railway stations. The illustrations above depict the Stevenage entertainment complex, as it exists currently, and after redevelopment including the construction of new parking structures, as well as flats and shops structured around walkable streets, squares and public gardens.

GREENPRINT ASSESSMENT: SCENARIO 3

This Scenario performs best overall in the analysis because it provides an opportunity to address problems in existing settlements and improve the quality of life in and around the New Town centres, whilst also providing new dwellings. Development in central and accessible locations provides the opportunity to strengthen existing employment opportunities. The scale of the development enables construction efficiencies. Some existing buildings and building materials can be reused in new developments.

This Scenario's worst performance is likely to be in the ecology category because there is unlikely to be much opportunity to provide green infrastructure, and in city centre locations may not provide additional space for managing rainwater and growing food.

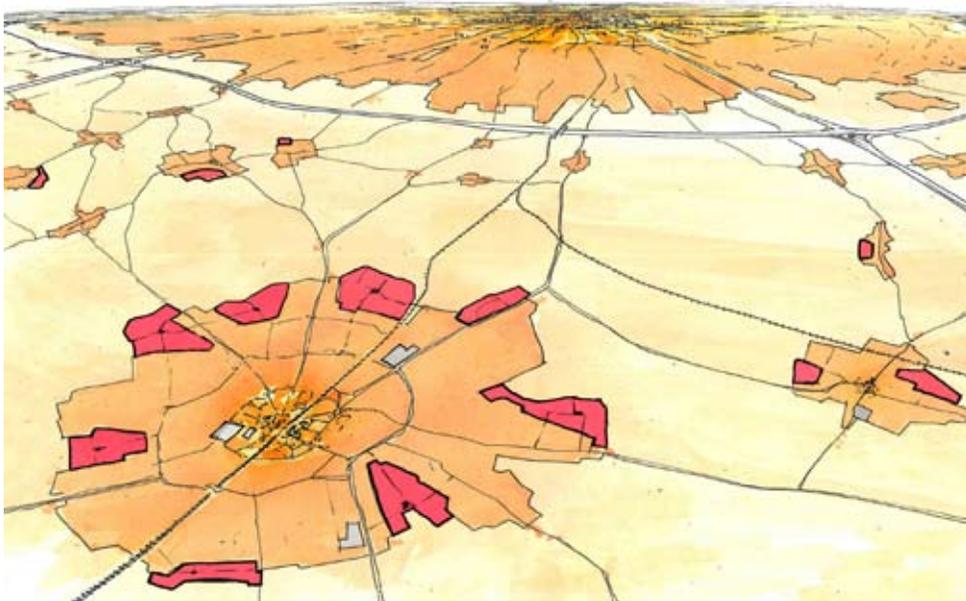
The central location and proximity to existing public transport facilities helps reduce car dependence, and its size provides more critical mass for public transport improvements. Redevelopment in the New Town centres can improve pedestrian and cycle routes and generally improve connectivity to surrounding neighborhoods. The scale of the development offers a better opportunity for well-integrated affordable housing.

Best case: The intensification provides small-scale employment opportunities, and integration of uses creates a "place" in its own right. Noise is carefully managed through design standards. Residents using the public transport are encouraged to walk through the development, adding to its economic sustainability. The new development is linked to existing economic and social networks. Connectivity and resource efficiency throughout the town centre are improved.



Category	Score	Rank
Climate	67%	jt 3rd
Resources	67%	jt 1st
Transport	83%	3rd
Ecology	33%	5th
Business	78%	2nd
Community	67%	3rd
Placemaking	87%	1st
Buildings	89%	1st
Average	71%	
Overall ranking		1st

SCENARIO 4 SETTLEMENT EXTENSIONS



Some of the housing allocation is attached to the edges of existing settlements.

Settlement Extensions are large and small sites developed at the edges of existing settlements, most likely attached to suburban housing estates, office parks or shopping centres. All of these types of sites would benefit from re-balancing to mixed-use with the addition of shops, employment, and housing diversity as required. The optimal sites should be of an increment and located so that one full neighbourhood, or urban village, may be provided or completed.

Extensions, by definition will take place in open land or Green Belts. They thus have the disadvantage of blocking the “vested” open space views of immediately adjacent residents, and of increasing the walking distance of all residents to the open space.

Resort to settlement extensions should take place after available infill sites (brownfields, greyfields and T.O.D.s) have been developed. However, it should be clear that some settlement extensions will be necessary as the housing allocation cannot be wholly absorbed with infill sites.

Note that the designation of “Green Belt” does not necessarily guarantee that the land is not legally available for development. (See the map on pages 6, which shows only the green areas that are legally preserved in perpetuity.)

Another disadvantage of extensions is that the existing roadway system is unlikely to provide efficient access. One marked advantage for villages and hamlets is that additional housing may provide the population to support “third places” as well as shops, churches, and civic institutions.

ADVANTAGES

- Equitable distribution of growth
- Sustains community facilities

DISADVANTAGES

- Not integrated with transportation
- Could block existing greenfield views
- Blocks access to Green Belt
- Impacts all communities



The images above illustrate a Settlement Extension designed to complete an existing housing estate in a manner compatible with the scale and precedents of the adjacent development. Such a settlement should be designed to 're-balance' the existing area with buildings of complementary size and cost.

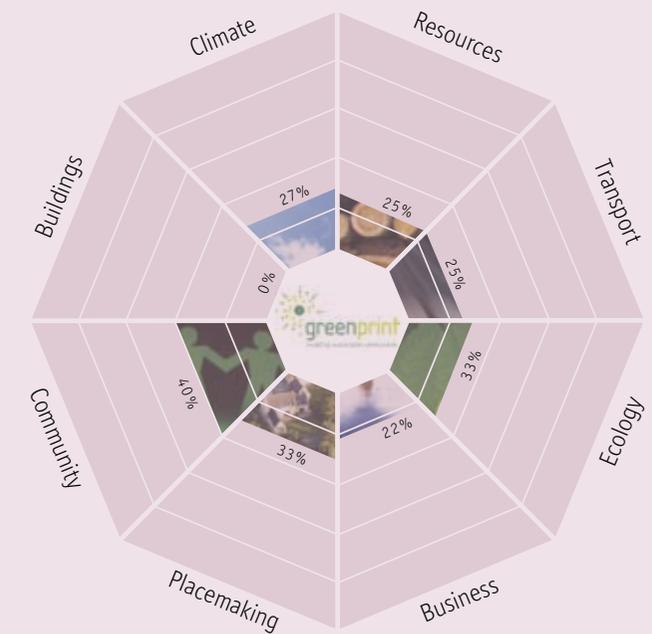
GREENPRINT ASSESSMENT: SCENARIO 4

In this Scenario, extensions would be built onto the edges of many of the existing settlements. They would be in the form of either a complete new urban village or an extension of an existing condition that results in the creation of a complete one. This Scenario is in the middle scoring segment, performing fourth best. It scores slightly better than re-using brownfield and greyfield sites (Scenario 2) because it improves existing neighbourhoods. However, developments under this Scenario would extend into the Green Belt, therefore there is little potential to re-use buildings or land, or remediate contaminated land.

Each existing settlement would benefit from a gain of critical mass, though it may not be of a large enough scale to create benefits relating to placemaking and generation of renewable energy.

Developing at the edges provides little opportunity to deal with issues that occur within the core of existing settlements, and extensions may inherit conditions already present at the edges. The opportunity to improve existing public transport is unlikely, even as extensions to existing bus routes will need to be provided. Indeed, the peripheral location of the new developments suggests they would be more car based.

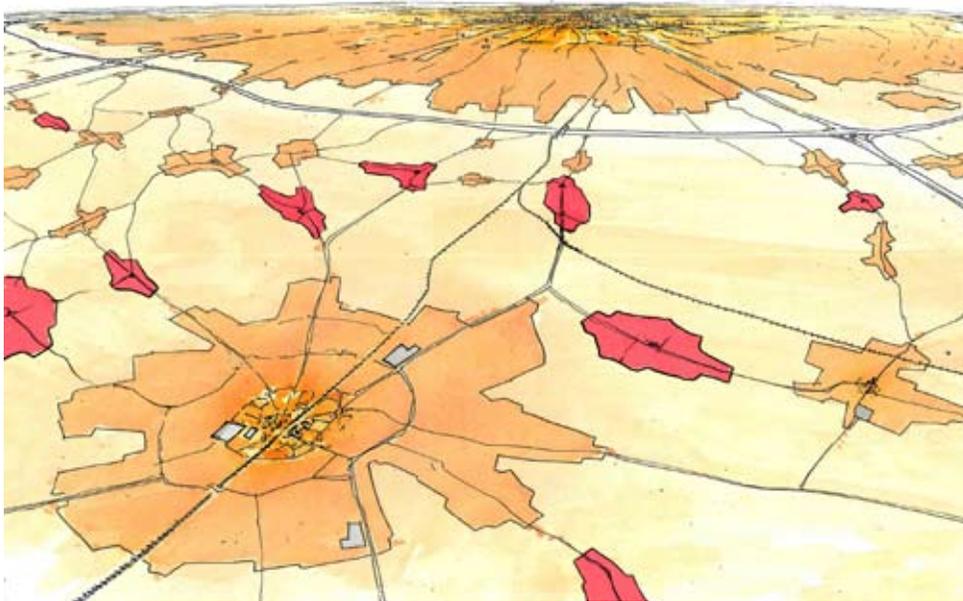
Best case: The extension is sensitively added to the existing settlement. A careful audit enables the new development to add the facilities needed to create a complete, walkable neighbourhood. The existing area is respected, leading to a feel of a single "place." This is best achieved by single ownership and comprehensive planning. Permeability and connectivity are enhanced, enabling walking and cycling routes. Public transport is enhanced as the number of residents increases. Dwellings formerly adjacent to green fields, but now bordered by the new development, retain easy routes to green space. The greater the increment of a settlement extension the more prospect to improve the sustainability, especially if it can rebalance a business area.



Category	Score	Rank
Climate	60%	5th
Resources	25%	jt 4th
Transport	67%	4th
Ecology	56%	3rd
Business	67%	jt 3rd
Community	67%	jt 3rd
Placemaking	47%	3rd
Buildings	22%	jt 5th
Average	55%	
Overall ranking		4th

SCENARIO 5

SATELLITE (GARDEN) VILLAGES



Some of the housing allocation is assigned to new villages independent of existing settlements.

ADVANTAGES	DISADVANTAGES
<ul style="list-style-type: none">• Minimal impact to neighbours• Rational provision of infrastructure• Can enhance small scale agriculture	<ul style="list-style-type: none">• Extends utilities network• Poor jobs / housing balance• Tends to generate excess traffic

A satellite village is a settlement which is dependent on an approximate town or village but does not infringe on the vested views of Green Belt land. Ideally, these villages should be located along principal roads that may be serviced by a network of buses.

Each satellite village should be of sufficient size to support a range of residents as well as shops, offices, and the other amenities they require.

The buffer separating a satellite village from an existing settlement is sometimes referred to as the "green wedge," an area of open space retained for the purpose of physically distinguishing settlements from one another, whilst allowing them to be close enough for non-motorised transport between the two. To this end, 500-1000 meters is ideal.

If local soil is of sufficient quality, satellite villages can be designed as "garden villages" which encourage locally sourced farming. Satellite villages are alternatives to settlement extensions (Scenario 4), reducing the visual impact from the existing edge while remaining close enough to

be accessible by walking, bicycling or very short car trips. Together, the satellite village and the existing edge settlement should be large enough to be equipped with infrastructure relatively efficiently, and to provide for a minimum of the daily needs of the residents of both.

If the satellite village is designed as a garden village, it may increase the economic productivity of the agriculture to more than compensate for the loss of farm land.

The disadvantage of this type is that the additional distance created by the green wedge extends the run of utilities and transportation. Also, like any edge settlement, including the settlement extension (Scenario 4), it is too small to achieve a balance of jobs and housing. Creating a balance and having jobs and public transport is key to the ultimate performance of the option.



The Satellite Villages proposed in Scenario 5 offer an alternative to Settlement Extensions (compare with page 21), which can occasionally block access--both visual and walkable--to the Green Belt.

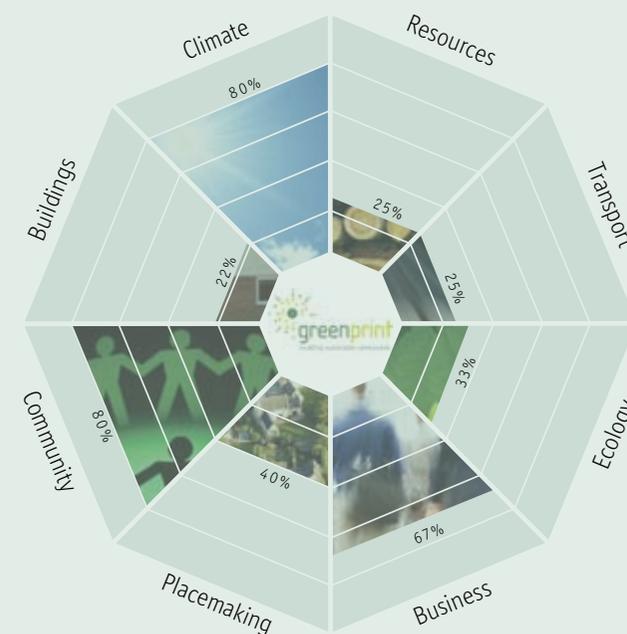
GREENPRINT ASSESSMENT: SCENARIO 5

This Scenario performs third best of those assessed, largely because building completely new developments enables design and construction techniques which meet current priorities. Good design would create a sense of place and identity, however these villages would not provide the scale opportunities of stand-alone garden cities (Scenario 6) nor the occasion to bring buildings or brownfields back into use.

Existing towns and villages would be unchanged, but issues in existing settlements would not be addressed, and existing community facilities would not be supported. The new villages would not be self-sufficient, but would be large enough to have their own facilities and bus links to nearby settlements, therefore being less car-dependent.

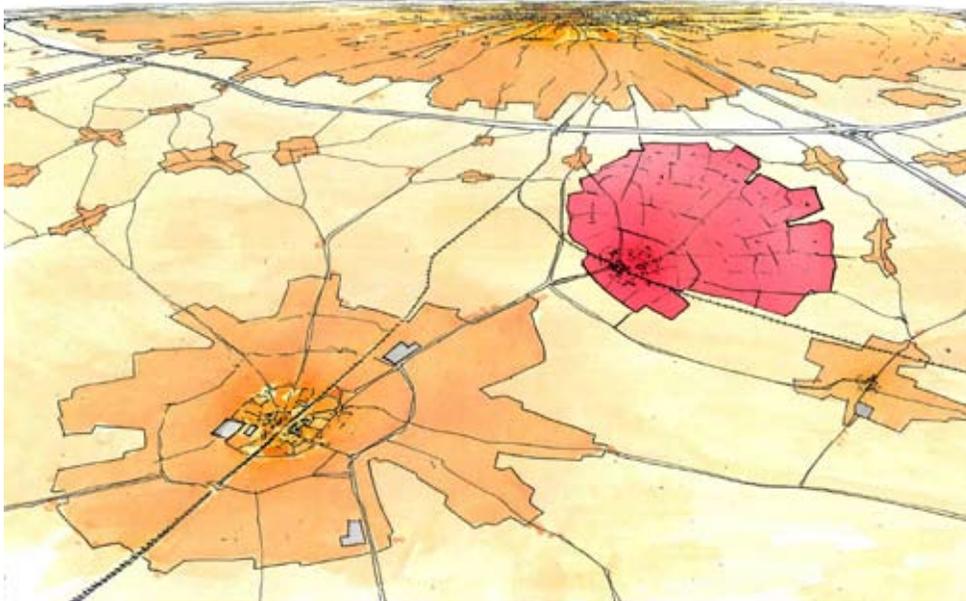
Satellite villages would be located on greenfield sites, usually providing space to grow food and enabling continuous green infrastructure. Rainwater and grey water could be captured and used. Villages of this size present opportunities to incorporate designs and technologies which reduce or eliminate carbon production and allow for community management of infrastructure, similar to the garden cities of Letchworth and Welwyn. The scale would also allow the integration of a significant number of affordable homes.

Best case: The new village has good public transport connecting directly to a major transport hub in a neighbouring settlement. The village uses locally produced, locally managed, renewable energy. Water is sustainably managed. Residents grow some of their own food. The village has community facilities.



Category	Score	Rank
Climate	80%	jt 1st
Resources	25%	jt 4th
Transport	25%	2nd
Ecology	33%	jt 1st
Business	67%	3rd
Community	80%	jt 1st
Placemaking	40%	jt 4th
Buildings	22%	jt 5th
Average	63%	
Overall ranking		3rd

SCENARIO 6 STAND-ALONE GARDEN CITY



The majority of the housing allocation is assigned to one new Garden City on the existing rail network.

A stand-alone garden city is the only type of Scenario which could accommodate the entirety of the housing allocation and the necessary amenities. The development would require a large, well-drained, relatively uninhabited area of Green Belt, with the potential for, or a pre-existing, railway station.

There is at least one such site available in the County. While a New Town could not be realistically designed and constructed by the 2021 deadline of the current allocation, it could still provide the best ultimate solution for the continual allocations that will follow the present one. Indeed, a New Town of 100,000-140,000 dwellings could absorb the growth of Hertfordshire well into the mid-century.

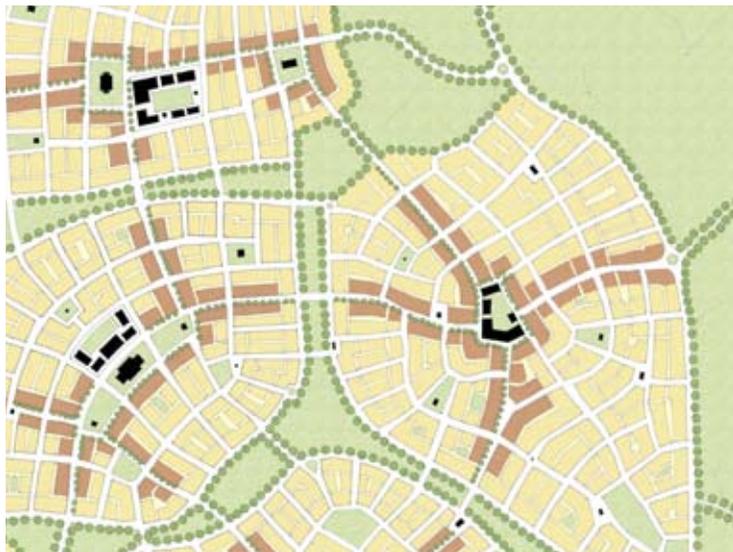
There is a long history of New Towns in Hertfordshire. The County is home to the first and best-known garden cities in the world, Letchworth and Welwyn, as well as several of the most important New Towns from the postwar period. Whilst the garden cities have been judged successful, the New Towns are not necessarily considered to be so, and have damaged the reputation of New Towns as desirable Scenarios for growth. Nevertheless a new town on a revised model, incorporating all that has been learned, should be considered as it would have many positive consequences.

ADVANTAGES

- Minimal impact to neighbours
- Rational provision of infrastructure
- High traffic capture
- Economies of scale
- Excellent jobs & housing balance
- Decreased trip generation
- Rational provision of facilities

DISADVANTAGES

- Diminishing of greenfield
- Complex planning process



Although the term 'New Town' now holds something of a stigma, the construction of one would offer an opportunity to build a sustainable settlement. Above the site plan of the existing New Town of Steveage offers a contrast to the proposed urban villages which could structure the urban pattern.

GREENPRINT ASSESSMENT: SCENARIO 6

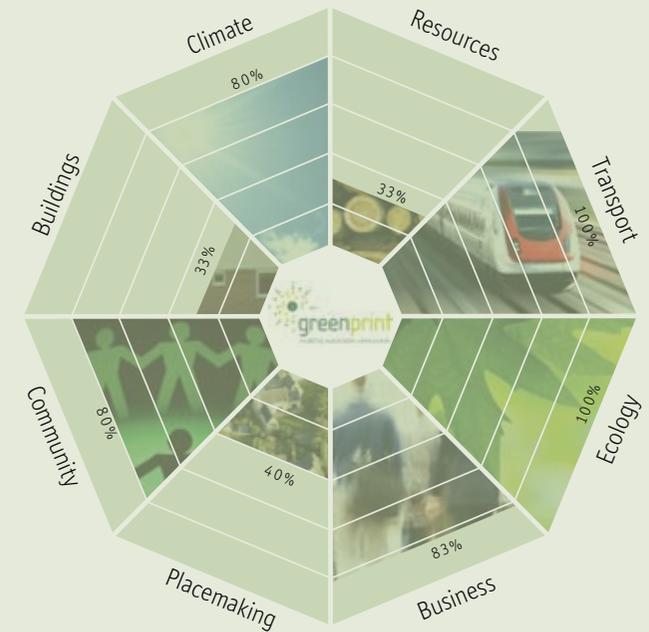
This Scenario performs second best in the analysis, largely because it enables the use of techniques which meet current priorities. It provides the potential for reduced car dependence because the scale is large enough to support a diversity of businesses, Jobs and facilities can be located close to dwellings, and it would be large enough for an integrated transport network of rail, bus, cycle and walking routes.

With this Scenario growth is concentrated in one location, leaving existing towns and villages relatively unchanged. Whilst reducing the disruption of scattered growth, it also removes the opportunity to improve existing settlements or support existing facilities. The development would need to be located entirely on a greenfield site to accommodate its size.

New Towns present opportunities to incorporate designs and technologies which reduce or eliminate carbon production and allow for community management of infrastructure, similar to the garden cities of Letchworth and Welwyn. The scale would also allow the integration of a significant number of affordable homes.

If well designed, the new city would be largely self-sufficient, sustainable, and have a strong sense of "place" and identity.

Best case: The city is made up of walkable urban villages. Their design is not homogeneous, but harmonious and with a clear collective identity. Eco-business parks make use of each other's by-products, share waste reprocessing facilities, and cooperate on transport. Specifically designed public transport and excellent walking and cycling routes lead to low car dependency. The city is self sufficient in renewable energy, with a community heating, cooling and power network and efficient buildings. Coordinated sustainable urban drainage enables the reuse of rainwater and grey water. Green space is located and managed to meet ecological, recreational and landscaping needs.



Category	Score	Rank
Climate	80%	jt 1st
Resources	33%	3rd
Transport	100%	1st
Ecology	100%	jt 1st
Business	83%	1st
Community	80%	jt 1st
Placemaking	40%	jt 4th
Buildings	33%	jt 3rd
Average	69%	
Overall ranking		2nd



GROWTH AND DEVELOPMENT CASE STUDIES

The six Scenarios propose a wide variety of possibilities for development, which could be implemented in different ways depending on the availability of sites and the general interest of landowners. The following case studies

are directly relevant to the various Scenario and are intended to illustrate the specific challenges of implementation. These case studies, even if associated with a specific place, are applicable to similar situations throughout the County.

FOR SCENARIO 1

HOUSING DENSITY P. 28

A study of urban density in Hertfordshire illustrated by various areas of St. Albans.

HOUSING PATTERNS P.29

A study of site planning alternatives in Hertfordshire, with a focus on housing estates

FOR SCENARIO 2

GREYFIELD HOUSING P. 30

A study of housing renovation options within New Town areas, such as Hatfield and Stevenage New Towns

GREYFIELD URBAN VILLAGE P. 31

A study of the regeneration of a neighbourhood centre, modelled after the Hill Top site in Hatfield New Town.

GREYFIELD TOWN CENTRE P. 32

A study of redevelopment for a greyfield town centre, modelled after a site in Hatfield New Town.

FOR SCENARIO 3

GREYFIELD TRANSPORT-ORIENTED DEVELOPMENT P. 34

A study of a transport-oriented development opportunity modelled on the site adjacent to the Stevenage rail station.

FOR SCENARIO 4

VILLAGE EXTENSION P. 36

A study of a greenfield village extension, designed to follow the village's urban fabric.

HAMLET EXTENSION P. 37

A study of a greenfield hamlet extension, whilst maintaining its original urban structure.

TOWN EXTENSION P. 38

A study of a greenfield town extension designed to follow the existing urban pattern and complement the program.

FOR SCENARIO 5

SATELLITE VILLAGE P. 34

A study proposing the design of a new satellite village separated from an existing town's urban fabric by a 'green wedge' intended to preserve current views of the green belt.

GARDEN VILLAGE P. 40

A study proposing the design of a new satellite garden village intended to enhance agricultural production.

FOR SCENARIO 6

GARDEN CITY P. 42

A study proposing the design of a new Garden City of the same size and general urban 'footprint' as Stevenage for purposes of criticism and comparison.

CASE STUDY FOR SCENARIO 1 HOUSING DENSITY

High density development undoubtedly has a bad reputation amongst the general public, even though there is general agreement that it is necessary in order to maintain open space and accommodate the high number of residents anticipated in the County.

To identify existing local settlement patterns, and gauge their ability to accommodate high numbers of people, the study at right measures the number of units per hectare within several neighbourhoods of St. Albans. These housing estates, all of which were built in different periods, take on typical patterns to accommodate housing, with densities ranging from 22 units/hectare on winding, residential streets to 66 units/hectare, sited on urban blocks.

The two highest densities studied (63–66 dwellings/ha) are actually the historic districts, whilst the lowest density ones (21–22 dwellings/ha) represent more recently constructed residential areas. The more densely developed areas were widely considered to be desirable places to live, thus reflecting that high density development can be designed sensitively.



St. Albans (1930) - 21 Units/Ha



St. Albans (1960) - 22 Units/Ha



St. Albans (1910) - 63 Units/Ha



St. Albans (1850) - 66 Units/Ha +Commercial

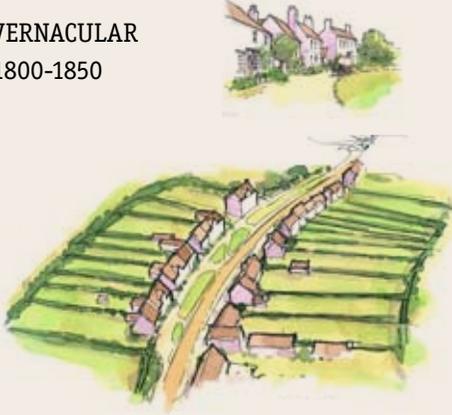
CASE STUDY FOR SCENARIO 1 HOUSING PATTERNS

This study depicts the typical housing patterns of the past century and the urban pattern associated with them. When taken together, the images tell the story of the gradual loss of the Hertfordshire building tradition and its potential, if gradual, recovery.

Today, the vernacular houses in the County are among the most popular, and have retained their value best. However, through much of the twentieth century, developers have moved away from traditional architectural and urban design approaches, building instead innovative housing on winding, suburban thoroughfares.

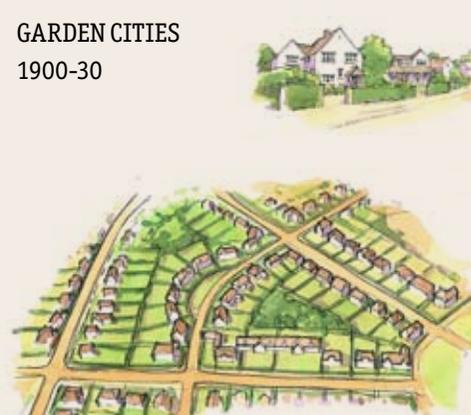
After half a century of diversion, the builders of today's housing estates have begun to return to the County's native architectural vocabulary, building with traditional methods and materials, and siting houses on connected networks of streets. These strategies are available for the construction of the additional dwellings required by the housing allocation.

VERNACULAR
1800-1850



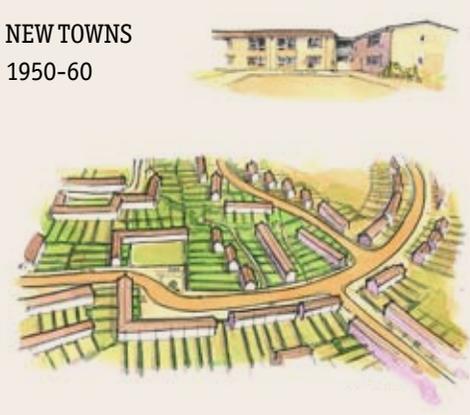
- Picturesque street-trajectories
- House-fronts shape public space
- Composition of facades in a harmonious style
- Narrow deep lots for agricultural use

GARDEN CITIES
1900-30



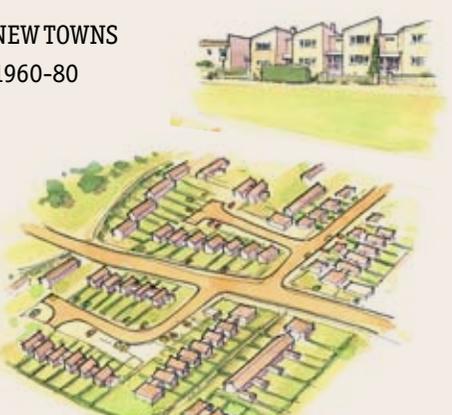
- More regular network of streets
- Well designed public (green) space
- Distinction between public front and private back

NEW TOWNS
1950-60



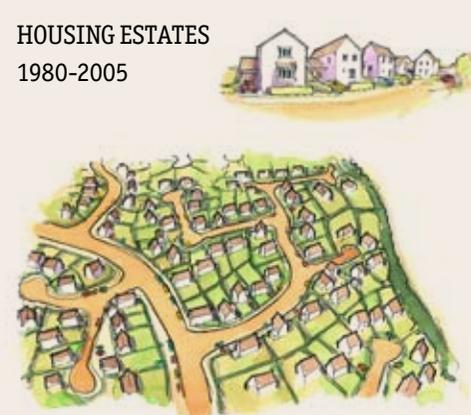
- Breaking with traditional syntax
- Confusion with front and back, public and private
- Monotonous architecture
- Poor definition of public spaces

NEW TOWNS
1960-80



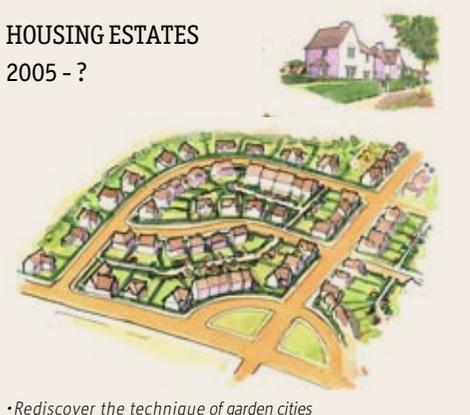
- Experiments with house-types
- Streets do not create a network
- Car parking randomly in front

HOUSING ESTATES
1980-2005



- Individual houses, designed for lots--not the ensemble
- Streets wiggle without concept and end in cul-de-sacs
- Cars and garages dominate the image of the street

HOUSING ESTATES
2005 - ?



- Rediscover the technique of garden cities
- Parking alleys in the back
- Public space designed specifically
- Pattern-book architecture
- Mixed use

CASE STUDY FOR SCENARIO 2 GREYFIELD HOUSING

As the housing proposed by the East of England Plan will require construction on currently undeveloped land, some of the dwellings may be accommodated within the footprint of existing settlements. To accommodate new residents, existing housing could be enlarged and renovated to suit larger families, or even to become more desirable to those already dwelling there. At right, several studies of existing New Town terraces show strategies for expanding the structures and subsequently improving the housing's relationship with the streets.

New Town terraced houses are mid-century modern structures with deep setbacks dedicated to parking on ill-defined, semi-public front gardens. Characterised by out-of-date styles consisting of panelized material composition, strip windows and flatish roof lines, these structures can be ill-disposed to aging, particularly on account of their forms, detailing, and materials. The buildings lack individuality due to relentless repetition of elements, and may also be too small and under equipped by current standards.

This housing should not be discarded, as it can be modified to better accommodate emerging populations. The proposed renovations add to the units' front yards, with rooms, family living areas or a private studio flats, all of which help define public street frontage, upgrade the aesthetic to a more contemporary one and/or hide parked cars in courtyards.

A single unifying material would be most effectively employed for these additions. It would also be possible to use the vernacular style endemic to English village architecture, including pitched roofs, bay windows and garden walls and gates, all of which can endow the buildings with a more human scale and a more popular look. Vertically-proportioned windows, chimneys to vary roof line, and detailed cornices can also add a visual vitality to the streetscape.



Typical existing housing

Housing extended to the streetfront

CASE STUDY FOR SCENARIO 2

GREYFIELD URBAN VILLAGE

This study proposes specific measures to revitalise a New Town centre, (a greyfield site): a plan to both provide additional housing and generally improve commercial activity.

The original neighbourhood centre site consists of a one-storey retail scheme fronted by a large under-landscaped, pedestrian plaza and a car park. A stand-alone building blocks views of the

shopping centre from the street, hampering the retail. A listed church occupies one end of the plaza, but lacks civic presence.

Throughout the neighbourhood, unnecessary variations in the street frontage detract from a spatially-defined pedestrian experience and fragments the public space. The overlong blocks with few pedestrian passages contribute to a disconnected, high-speed thoroughfare network. Furthermore, several streets, such as the one along the back of the retail units, have fronts along it.

The proposal to increase density is organised around a spatially defined central square. The retail is replaced by a four-storey mixed-use buildings more accessibly located along a new vehicular street-front. Parking is conveniently available as parallel spaces in front of the shop-fronts, as well as in a mid-block car park behind the shops. The existing church is enhanced with a detached bell tower and a forecourt that presides over the new square and terminates various vistas that radiate from the centre.

The former long, sweeping streets are traffic-calmed by new greens and deflected trajectories. The street-fronts are disciplined with house-fronts facing other fronts and mid-block mews inserted to provide garage access. Paved cul-de-sacs are redesigned as coherent, discrete closes arranged around pockets of useful green space.



The existing New Town neighbourhood centre



The re-designed neighbourhood centre



The New Town neighbourhood centre, in its current condition



The same site, developed sensitively with houses, shops and a green as an urban village

CASE STUDY FOR SCENARIO 2

GREYFIELD TOWN CENTRE

Greyfields are sites such as car parks which are not redundant but may be compacted into parking structures. Greyfield sites offer a number of development opportunities across Hertfordshire, particularly within New Towns. The following study uses the existing centre of Hatfield South as a model, and proposes to accommodate new housing whilst providing residents with a sense of place and proper, walkable, urbanism.

In general, the New Town's commercial centres have failed because they were in their origins untested inventions, deriving little from the High Streets to which they were to be the surrogate. Even when well-located along a high-traffic thoroughfare of the "movement economy" they remain deficient both in their physical design and in their management. The following analysis addresses only aspects of physical design.

The existing town centres consist of pedestrian "streets" which are not visible from, nor connected to actual traffic streets. The buildings are generally one and two stories with offices above the shops, and towers of flats nearby. In recent years, many of these centres have been enhanced, but not saved, by the addition of an "anchor tenant" such as a supermarket enfronted by suburban-style car parks. In general, these town centres are not helped along by very dated modernist architecture which was "of its time" in the 1960s. No less than the cultural problem of

out-of-date aesthetics, there is the dismal way that such building technology has aged: without the dignity of acquiring patina, it has just aged badly.

Because these town centres are too low in density, well-located for transportation purposes, and already failing, they have become strong candidates for redevelopment. Their regeneration may be accomplished through the following techniques:

- Conventional slow-movement vehicular streets can be brought through the sites, including into the pedestrian "malls".
- Car parks can be converted to building sites, with existing surface parking moved into multi-storey structures, masked by "liner" buildings.
- "Big box" retail establishments like supermarkets can likewise be masked by liner buildings.
- The existing single-storey buildings can be demolished and replaced with larger mixed-use buildings, with shops on the ground floor and flats or offices above.
- Car parking can generally be accommodated in multi-storey car parks.
- Truly urban tree planting can improve the functioning of streets, squares and plazas.



A greyfield site, with an enclosed shopping centre and multiple car parks. In this case, Hatfield New Town Centre as existing



The same site, regenerated as urban blocks enclosing parking decks and featuring a mix of shops, offices and flats. The supermarket has been retained.

CASE STUDY FOR SCENARIO 3

TRANSPORT-ORIENTED DEVELOPMENT

Public transport-oriented development could offer the opportunity to link new dwellings most efficiently to London, and to other towns within the County, thereby minimising commuters' environmental footprints. The following study provides a detailed master plan for a 25 hectare site adjacent to Stevenage's rail station, proposing a retrofit introducing a new urban centre featuring a combination of residential, retail, commercial and recreational accommodation, along with a 300-bed hotel.

As it stands, much of the site accommodates a commercial centre with freestanding restaurants and entertainment outlets surrounded by large expanses of car parking. The other half of the site consists of several industrial parcels with associated office buildings and storage facilities. In general, this does not seem to be the optimal use for a site in such close proximity to a commuter rail station.

The proposed retrofit envisions a 12-block, high-density urban centre that would take better advantage of the rail connection. A large square provides a centre for the community, and is linked to the upper plaza of the station by a grand staircase.

A high street with retail at the ground level and residential above is the principal spine that traverses the neighbourhood, connecting all the blocks and the three principal open spaces, including the main square, a one-hectare park and a small pocket park. A substantial amount of office space is also located along the perimeter of the neighbourhood, providing a protective layer for the residential neighbourhood within.

A service road parallel to the perimeter high-speed arterials provides the offices a slower-paced street address and the possibility of on-street parking. The office, retail, hotel, and residential uses are served by a six multi-storey car parks that are also able to accommodate rail commuters.

This T.O.D. is designed to be built in at least two phases, with the industrial tenants remaining in place whilst the commercial centre begins redevelopment.

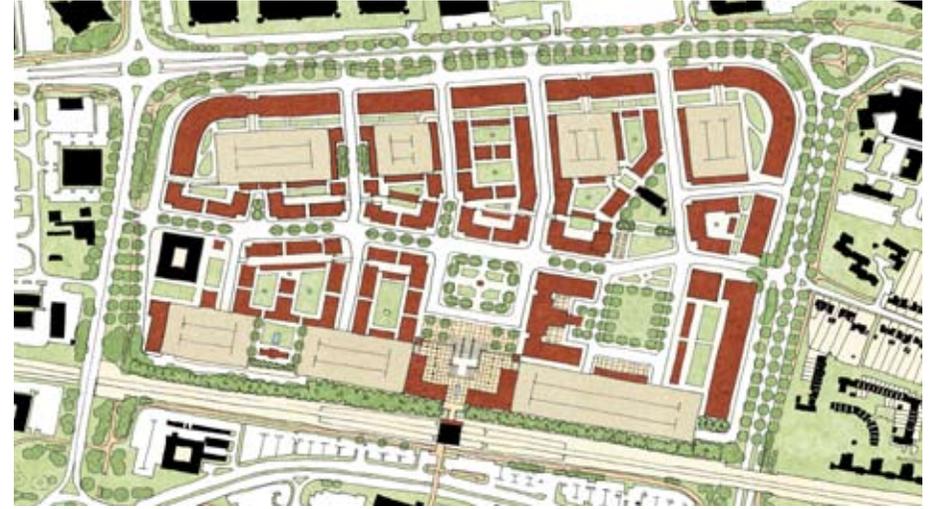
Size of site:	25 hectares
Housing:	1400 units (5 & 6 stories)
Retail:	18, 460 m ²
Hotel:	300 rooms & 3000 m ² of conference
Office:	141,500 m ² (6 levels)
Car Park:	10,032 (6 levels)



A plan and aerial view of the existing Stevenage entertainment complex, illustrating the high proportion of the site currently dedicated to car parking, as opposed to active residential, retail or office uses.



The first phase of the redevelopment retains the existing industrial buildings while the site's car parks are redeveloped to accommodate new buildings structured around urban streets, blocks and squares. Parking decks for commuters have been inserted.



The final phase of the redevelopment involves the replacement of the existing industrial buildings with high-density office buildings and flats, intended to complement the settlement's housing and shops with a great number of jobs.

CASE STUDY FOR SCENARIO 4

VILLAGE EXTENSION

Hertfordshire is renowned for its scenic villages, such as Wheathampstead, Berkhamsted and Bishop's Stortford. Often boasting picturesque landscapes, and charming High Streets, many of these villages have become hubs for County-wide leisure activity and tourism. Village Extensions are developments located immediately adjacent to these country villages, often on the green belt.

Villages have traditionally grown parallel to their High Streets, with patterns of growth often occurring along the 'backs' of existing housing or farm plots.

At right, the proposed village extension follows the urban pattern of the existing settlement in order to create a larger, but still-cohesive community. The addition grows along the backs of the Village lots, with 150 dwellings seamlessly added in five layers of lots.



An existing village with a dense High Street running parallel to a linear green. Houses with larger garden plots line the periphery of the settlement.



The proposed village extension builds to the right side existing settlements, proposing 150 residences on five blocks that follow the traces of the agricultural pattern.

CASE STUDY FOR SCENARIO 4 HAMLET EXTENSION

Even the hamlets of Hertfordshire, some of which comprise very few houses, may need to accommodate some of the dwellings of the East of England Plan. The addition of even a few houses could significantly damage the fabric of a small hamlet. It is also possible to sensitively site houses that seamlessly add to a hamlet's existing urban fabric.

This study delineates several means of accommodating new houses within a hamlet characterised by two primary streets crossing on a central green. These houses - built on existing streets, new back lanes, or even on existing plots - could actually enhance the character of a hamlet if sensitively sited. The proposals indicate the variety of possibilities, including construction on the hamlet's periphery, as well as within.

The specific design proposals stem from the urban pattern of the existing hamlet. Hamlets of a different size and structure could certainly accommodate homes using similar strategies, but adjusted by bespoke site plans.



An existing hamlet, which is disposed around a green



A twelve house extension along existing approach roads



An additional twelve-house infill along an existing agricultural lane



An additional thirteen house extension on a new lane running parallel to the High Street



An eighteen house extension, on two closes within existing back gardens



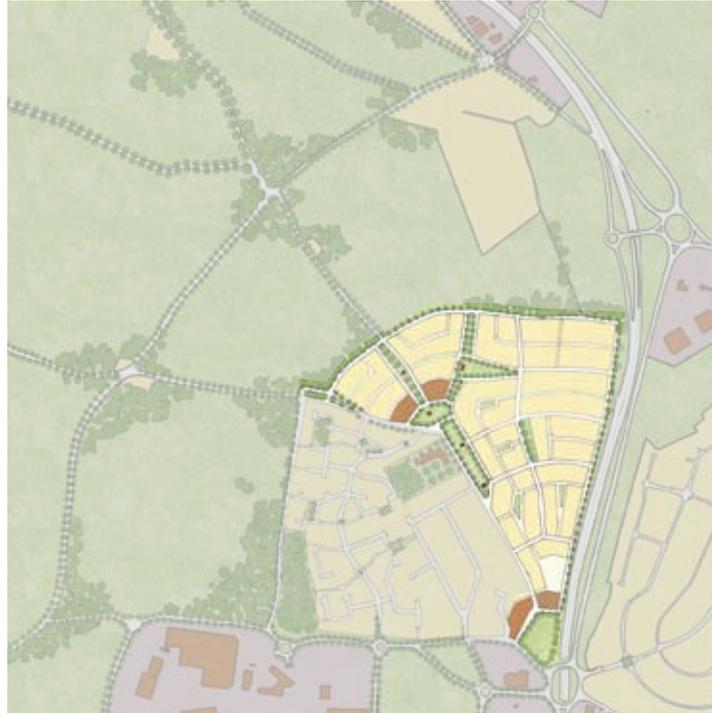
A total of fifty-five dwellings have been added to the original hamlet

CASE STUDY FOR SCENARIO 4 TOWN EXTENSION

Many of the Towns of Hertfordshire have been expanded over the years. In most cases the extensions did not necessarily reference the urban fabric that preceded them, or even maintain properly connected thoroughfare networks. The town extensions advocated in Scenario 5 should be designed to reference the character of their predecessors and seamlessly connect to them.

The extensions should be in the form of Urban Villages, including housing of a range of sizes, as well as commercial development, offices, and community spaces. These new buildings should either complete and rebalance the adjacent existing sector, which may be deficient in program, or it may be a full increment of urban village, complete in all of its aspects.

If planned as a single increment, and the increment is substantial in scale, then the town extension can make a worthwhile addition to growth.



An initial extension completes an urban village that incorporates an existing housing estate by providing new retail space and civic park space. However it improves upon the original by having a network of well-connected streets.



A more substantial urban extension continues with the urban pattern established by the first extension, creating a continuous thoroughfare and a linear park. Two retail centres anchor the two urban villages with pedestrian sheds of five-minute's walk.



The existing and new thoroughfare network



The expanded town urban network



The existing and new thoroughfare network



The total urban network

CASE STUDY FOR SCENARIO 5

SATELLITE VILLAGE

Designed as stand-alone settlements in close proximity to existing urbanised areas, Satellite Villages provide new housing, commercial and office space whilst maintaining current views of the Green Belt.

These villages should be separated from existing urban settlements by "Green Wedges" which distance should be no longer than can be navigated on foot. These wedges are intended to preserve nearby houses' vested views and access to open spaces, by allowing for a continuous green corridor between the new urbanism and the old.

The Satellite Villages must be serviced by bus routes, with a stop at the centre, and should feature the amenities ordinarily required by residents on a daily basis: shops, offices and community gathering spaces. If the area to be developed is larger, the plan should call for multiple urban villages, each determined in size by a pedestrian shed.

To be most effective, Satellite Villages should be designed to connect to the thoroughfare networks of nearby towns, with direct routes between the new and old centres for efficient use of bus transport.



The plan for two new Satellite villages illustrates them separated by a "Green Wedge." Each settlement includes a retail High Street, indicated in orange, which would be primarily of mixed-use buildings, with shops on the ground floors and offices and flats on the upper floors or terrace houses. These village centres are designed around the primary community green space and civic buildings such as churches or neighbourhood

halls, which are indicated above in dark red. Networks of well-connected residential streets and blocks radiate from these high streets. Pocket parks providing casual recreational space are in close proximity to each house. Each urban village should be no larger than one pedestrian shed, a five-minute walk from edge to centre.

CASE STUDY FOR SCENARIO 5

GARDEN VILLAGE

The model of the satellite garden village offers the opportunity to build new communities designed to produce food--which is the historic purpose and justification of villages. Indeed, this garden village design enables the harmonious intersection of agriculture and urbanism by allowing all dwellings, in some measure, to participate in growing food.

The new village is designed to provide for gardening and farming plots of many types and sizes, all correlated to the variety of housing. Key features of the design can be summarised as follows:

- The 'green spine' provides the core of the community, housing the principal civic and food processing structures and gathering spaces as well as a farmer's market.
- The spine is lined with apartment buildings equipped with window boxes and roof and balcony gardens.
- Extending from the spine are agricultural 'wedges' that fan out into the countryside.
- Community gardens are shared by apartments and terrace houses, whilst small houses have private kitchen gardens
- Larger houses on the village outskirts have gardens of a quarter to one-half of a hectare
- One to five hectare 'homesteads' round out the village edges, with tractor farming occurring in the larger fields beyond.
- There is a farmyard with supporting equipment and other necessary amenities on one edge of the village.





The Satellite Garden Village's streets extend outwards, providing a gradual agricultural transect to fields beyond. Within that urban-to-rural transect, there is the means of producing food as shown in the detail on the right.

Farmer's Market

Processing Plant

Window Boxes
Roof Gardens
Balcony Gardens

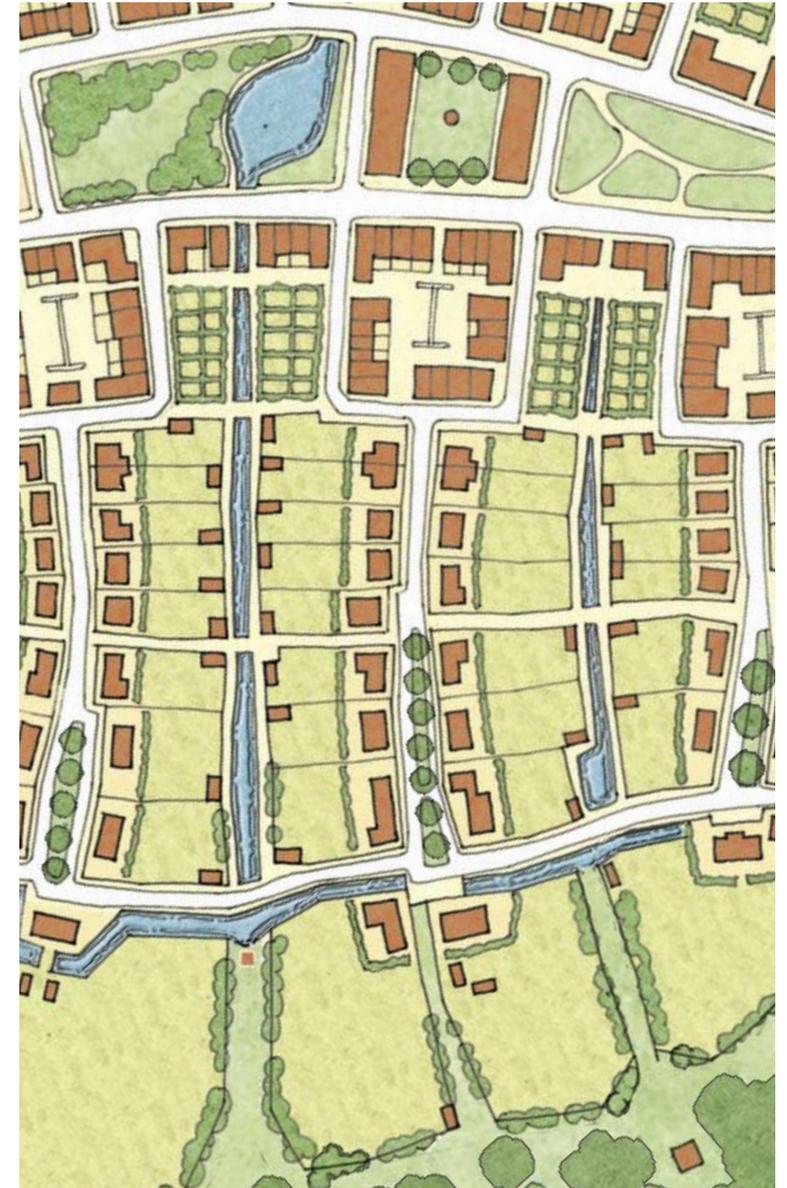
Allotment Gardens

Kitchen Gardens

Large Gardens

Small Farms

Large Farms



CASE STUDY FOR SCENARIO 6 GARDEN CITY

Planned in the aftermath of World War II, Stevenage, like all Mark I New Towns, has certain flaws clearly identifiable. Indeed, many Hertfordshire residents participating in the Charrette spoke about this New Town as the kind of development to be avoided, whilst praising traditional towns like St. Albans. The older Garden Cities of Letchworth and Welwyn were also well-regarded.

One of the exercises undertaken at the Charrette was a consideration of how the planning of a New Town could avoid repeating mistakes, while incorporating current best practices based on the Urban Village. The following diagrams explain the concepts critical to this re-design-- in contrast to those of Stevenage.





STEVENAGE URBAN STRUCTURE

Existing Stevenage was composed of “neighbourhoods” associated to a principal town centre. A few major thoroughfares link to neighbourhood housing, which is on isolated cul-de-sacs. Community buildings (noted in black) are rarely associated to the nearby neighbourhood centres. The open space (note the green) is randomly allocated; the result of wherever natural conditions survived.

This urban structure has hampered the settlement from reaching its full potential, particularly as the dendritic thoroughfare network concentrates traffic on the few main thoroughfares, creating undue congestion and thereby discouraging pedestrian activity. These thoroughfares bypass the neighbourhood centres because of their high traffic volume, thereby weakening them.



STEVENAGE URBAN STRUCTURE RE-DESIGNED

The redesign follows the same footprint as Stevenage and is designed to accommodate the same number of residents, albeit in a different urban pattern. It preserves the location of the town centre, the trajectories of the major thoroughfares, and the primary industrial areas. The redesign consists of Urban Villages, designed to function quasi-independently of the town centre, with elemental retail and community assets located systematically within a five-minute walk of most dwellings.

The Urban Villages are thoroughly connected to each other, and to the town centre. They are systematically separated by storm-water management and recreational parkways. Other open space is in the form of sociable squares within the centres. This design allows a more sustainable walking lifestyle for residents, while more closely following Hertfordshire’s historic precedents.



1. NEIGHBOURHOOD STRUCTURE

Stevenage: The existing “neighbourhoods” of Stevenage lack the discipline of pedestrian scale, indistinctly overlapping each other and being too large to encourage pedestrian activity to the centres.

Re-design: The New Town is structured as well-defined urban villages, each on the increment of the pedestrian shed.

2. VEHICULAR NETWORK

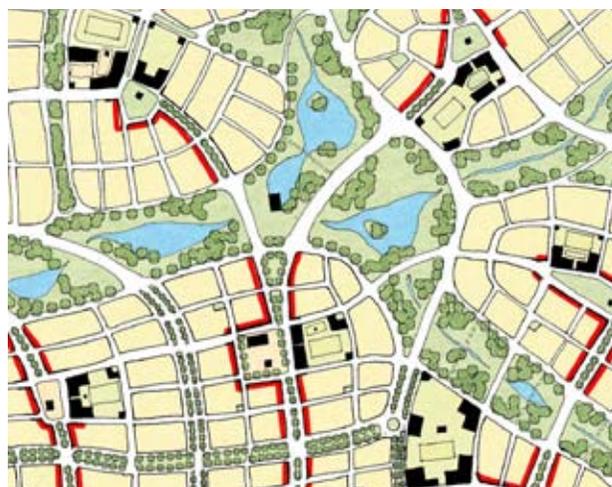
Existing: The vehicular system is a dendritic layout of highways connected only to cul-de-sacs. Neighbourhood centres are not often located on major thoroughfares, thus hampering their vitality and general retail activity.

Re-design: The New Town network consists of a great variety of thoroughfares appropriate to their use and context. The major ones connect directly the urban village centres.

3. OPEN SPACE NETWORK

Existing: The open space is quantitative rather than specifically designed. It is fragmented and often incidentally located relative to the urban structure.

Re-design: The open space is designed as a specific range of public places, each associated with buildings and amenities. They are identifiable as squares, greens, parks and greenway, which are distributed to be within walking distance of most dwellings.



4. TOWN CENTRE

Existing: The Centre is based on the suburban shopping centre model. It is disconnected from the adjacent neighbourhoods by ring roads and parking lots. Large car parks are not the 'highest and best' use, particularly given the intense demand for housing London commuters.

Proposed: Housing offices, retail, and communal facilities form a very dense transport-oriented development around the rail station. The Town Centre is a high street, seamlessly connected to the historic high-street and to the town's overall fabric,

5. VILLAGE CENTRES

Existing: Community amenities, such as schools, are not allocated rationally, such that they can be walked to. They are often away from main routes, making efficient bus access impossible.

Proposed: Community amenities, including schools, are placed at the Urban Village centres, reinforcing them socially and functionally, while increasing their accessibility by pedestrians as well as buses.

6. THOROUGHFARE DIVERSITY

Existing: The sparse major thoroughfares are actually highways that separate neighbourhoods with high speed traffic discouraging pedestrian activity. Pedestrian trails and underpasses are unsupervised by buildings and hence tend to be unsafe.

Proposed: A permeable small-scale network provides multiple routes, thus dispersing traffic and allowing pedestrian-friendly streets throughout. An integrated network of walking pavements provide interesting experiences along building frontages.



7. BUILDING DIVERSITY

Existing: Most neighbourhoods are residential monocultures, lacking variety in dwelling types.

Proposed: There is a multitude of building types within each Urban Village, integrating residents of a variety of socioeconomic situations: younger, older, poorer, wealthier, singles, and families.

8. FRONTAGES

Existing: Buildings rarely enfront thoroughfares directly, more often facing "open space" pathways or alleys. This structure is difficult to navigate, as fronts and backs are often confused.

Proposed: Building frontages are disciplined along streets, with clear fronts and backs throughout.

9. ARCHITECTURAL SYNTAX

Existing: Vast residential areas are an aesthetic monoculture with an architectural syntax so pronouncedly "of its time" that it has now falling inevitably "out of date." Most buildings are by a single architect.

Proposed: An architectural syntax that is, insofar as possible, on timeless forms and materials that respond to the environment and culture. The buildings are designed by a multitude of architects.

INDEX OF TERMS

The following terms were used frequently in discussions at the Hertfordshire Charrette. They can often be found in sustainable design manuals, or in planning policy documents, such as the East of England Plan.

Brownfield Site: Previously developed land, or land that contains or contained a permanent structure and associated infrastructure. Brownfield land occurs in rural and urban areas, but does not include agricultural or forestry land or buildings.

Charrette: An intense, week-long urban design workshop, in which members of the public at large, as well as professionals such as Councillors, planners, transportation engineers and environmental specialists, work with a design team to determine the optimal approach for new development

Civic building: A building for use by a community at large, often dedicated to the arts, culture, education, recreation or government.

Concurrency: The planning discipline that provides the timely location of thoroughfares, utilities and schools in correspondence to development.

Cul-de-Sac: A dead end street that broadens at its end to allow vehicles to turnaround but not pass through.

Density: The number of dwelling units within a standard measure of land area.

Envelope: Boundaries, usually set out in the local development plan, beyond which the local planning authority constrains urban expansion.

Frontage: A term encompassing both the façade of a building facing the street and the land between the property and street.

Garden City: The settlement prototype of the Ebenezer Howard-led town planning movement of the early 20th century that produced Letchworth Garden City and Welwyn Garden City. The design of the Garden City aimed to incorporate the countryside into the city; communities were to share farming with industrial and residential land use.

GIS (Geographic Information

System): A computerised computer programme that organises mapping data, used to inform regional planning initiatives. The University of Hertfordshire's Geography Department provided GIS support to the Charrette design team.

Government Planning Policy: National planning policies that planning authorities need to consider when preparing regional and local plans. Government planning policy guidance is set out in a series of Planning Policy Guidance notes (PPGs).

Green Belt: An area of open space retained to delineate settlement boundaries and provide land for agricultural activity. Its width may be determined by geographical features or the requirements of local farming practices.

GreenPrint: A sustainability performance test conceived and developed by the Building Research Establishment and undertaken at the Charrette in relation to each of the six Scenarios. Developments are assessed in terms of their provisions relating to climate change, resources, transport, ecology, business, community, placemaking and building.

Greenfield Site: Land that has not previously been used for urban development. It is often land once used for agriculture and located next to or outside existing built-up areas of a settlement.

Green Wedge: An area of open space acting as a boundary marking out settlements as distinct from one another. A green wedge may be the equivalent of a 10 minute walk or approximately 800 metres. This distance maintains psychological separation between urbanised spaces while allowing for non-motorized transportation between the settlements.

Greyfield Site: A redevelopment site that consists principally of a large surface parking lot. The rejuvenation of a greyfield site usually involves condensing accommodation of automobiles in parking structures and constructing additional buildings on ground that has been liberated.

Hamlet: A small, isolated group of houses situated in the countryside.

Infill: New development on land that has been previously developed within an urbanised area, including brownfield redevelopment and greyfield redevelopment

Mixed Use Development: Development that incorporates a range and variety of uses within a single development site, for example, retail, residential and business.

Neighbourhood Centre: A small, mixed-use centre catering to residents' daily retail needs. Neighbourhood centres often feature general stores, pubs or small restaurants, but do not offer the same variety or density as town centres.

New Towns Act of 1946: An Act of Parliament which allowed the government to designate sites to be developed as New Towns, with development carried out by a Development Corporation. Fifteen New Towns in England were built in response to this act, including Hemel Hempstead and Stevenage; other existing towns were extended, including Hatfield. The Act was ultimately replaced by the New Towns Act of 1964.

Pedestrian Shed: The distance that a person can be expected to walk, providing that the urban experience is convivial, from the edge of a neighbourhood to its centre. A neighbourhood centre as a destination has a pedestrian shed of 5 minutes or 400 metres. A transport stop has a pedestrian shed of 10 minutes or 800 metres. An elementary school has a pedestrian shed of 20 minutes or 1600 metre. The pedestrian shed is often used to determine the physical size of a neighbourhood.

Piecemeal Development: Small developments undertaken over a long period of time, and which can lead to the inefficient provision of infrastructure and the dilution of local landscape character.

Place-making: A development approach which aims to create a unique sense of community, in which buildings are linked to the landscape around them and are responsive to each other and to the general public realm. Place-making is one of the rating categories used within the BRE's GreenPrint methodology.

Planning and Compulsory Purchase Act 2004: A recent piece of UK planning legislation, which has introduced sustainable development as an objective of the planning system.

Plot: A parcel of land accommodating a building or buildings of unified design.

Regeneration: The rejuvenation of an area that was previously run-down or not performing to its full potential. This may include rebuilding, restructuring and reinvesting in order to improve environmental, economic and social conditions. Such redevelopment commonly respects the physical heritage of the area.

Regional Spatial Strategy (RSS): A guide to planning and transport policy for the years up to 2021, and which was determined by the East of England's Regional Assembly. The RSS for the East of England is also referred to as the East of England Plan.

Retrofit: The upgrading or modification of buildings or structures through the installation of new features that were not fitted during original construction.

Satellite Village: A small settlement on the outskirts of a larger settlement that is dependent on the town for certain amenities or employment opportunities but separated from it by clear boundary space such as green wedge or green belt.

Sustainable Development: Building activity which wisely uses resources to ensure long-term environmental, economic and social viability for future generations.

Tandem Development: or "Backland Development", where a new dwelling is placed immediately behind an existing dwelling and served by the same vehicular access.

Thoroughfare Hierarchy: The structure of a thoroughfare network, in which some thoroughfares act as primary routes between popular destinations and smaller thoroughfares disperse traffic amongst residential areas which are less frequently visited by members of the population at large.

Third Place: A place of social semi-anonymous gathering, such as pubs, cafés, gyms and libraries. Third places can be considered to be as necessary for society as are the dwellings and commercial that provide the other "places."

Thoroughfare: A way for use by both vehicular and pedestrian traffic

Town Centre: The community gathering place and retail centre for a large settlement.

Transport-Oriented Development (T.O.D.): Development within the pedestrian shed of an existing or planned railway station or a bus stop. Transport-Oriented Development is usually designed to be high-density.

Urban Fringe: The edge of a built up area where urban and rural environments converge.

Urban Village: Model for settlement in Britain until World War II. The Urban Village is an organic model, which allowed communities to expand into larger settlements or to develop in isolation: where standing free, a settlement remained as a village; when clustered with others, it became a town.

Urbanism: A collective term for the physical form of its development and its environmental, functional, economic and socio-cultural aspects.

Village: A settlement in the countryside, larger than a hamlet but smaller than a town. A village will often include at least one community amenity, such as a church, a pub or a general store.



SCENARIO FEEDBACK

Name: Occupation: I have lived in Herfordshire for years I have owned a home for years

SCENARIO	ADVANTAGES	DISADVANTAGES	GREENPRINT ASSESSMENT		YOUR PREFERENCES
1 CONTINUING EXISTING TRENDS Growth continues at its existing rate and pattern, with the housing primarily on smaller sites wherever found.	<ul style="list-style-type: none"> Incremental development Maintains current social structure 	<ul style="list-style-type: none"> Housing capacity less than required Piecemeal development More expensive housing Uncoordinated infrastructure Relatively inefficient process Seldom at optimum locations 	Climate Change 20% Resources 25% Transport 21% Ecology 11% Business 17% Community 33% Placemaking 27% Buildings 33%	Comment 	
2 BROWNFIELD & GREYFIELD SITES Some of the housing is placed on previously developed sites.	<ul style="list-style-type: none"> Conserves Green Belt Reuses land resources Reuses existing infrastructure Remediates contaminated land 	<ul style="list-style-type: none"> Too few sites available Incurs additional cleanup costs Seldom uses optimum locations Removes industrial & commercial space 	Climate Change 67% Resources 67% Transport 46% Ecology 44% Business 39% Community 47% Placemaking 60% Buildings 56%	Comment 	
3 TRANSPORT-ORIENTED DEVELOPMENT Some of the housing is placed along transportation nodes.	<ul style="list-style-type: none"> Improves commercial performance Conserves Green Belt Reuses resources Reuses existing infrastructure At existing nodes Improves commercial sense of place 	<ul style="list-style-type: none"> Too few sites available Requires compulsory purchase Requires demolition 	Climate Change 67% Resources 67% Transport 83% Ecology 33% Business 78% Community 67% Placemaking 87% Buildings 89%	Comment 	
4 SETTLEMENT EXTENSIONS Some of the housing is attached to the edges of existing settlements on Green Belt land.	<ul style="list-style-type: none"> Equitable distribution of growth Sustains community facilities 	<ul style="list-style-type: none"> Not integrated with transportation Could block existing greenfield views Blocks access to Green Belt Impacts all communities 	Climate Change 60% Resources 25% Transport 67% Ecology 56% Business 67% Community 67% Placemaking 47% Buildings 22%	Comment 	
5 SATELLITE (GARDEN) VILLAGES Some of the housing is assigned to new villages in proximity to existing settlements.	<ul style="list-style-type: none"> Minimal impact to neighbours Rational provision of infrastructure Can enhance small scale agriculture 	<ul style="list-style-type: none"> Extends utilities network Poor jobs / housing balance Tends to generate excess traffic 	Climate Change 80% Resources 25% Transport 25% Ecology 33% Business 67% Community 80% Placemaking 40% Buildings 22%	Comment 	
6 STAND-ALONE GARDEN CITY The majority of the housing is assigned to a new Garden City on the existing rail network.	<ul style="list-style-type: none"> Minimal impact to neighbours Rational provision of infrastructure High traffic capture Economies of scale Excellent jobs & housing balance Decreased trip generation Rational provision of facilities 	<ul style="list-style-type: none"> Diminishing of greenfield Complex planning process 	Climate Change 80% Resources 33% Transport 100% Ecology 100% Business 83% Community 80% Placemaking 40% Buildings 33%	Comment 	



For general queries, please contact
The University of Hertfordshire
Corporate Affairs and Events Department
Hatfield, Hertfordshire
AL10 9AB
Tel: 01707 284 004



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