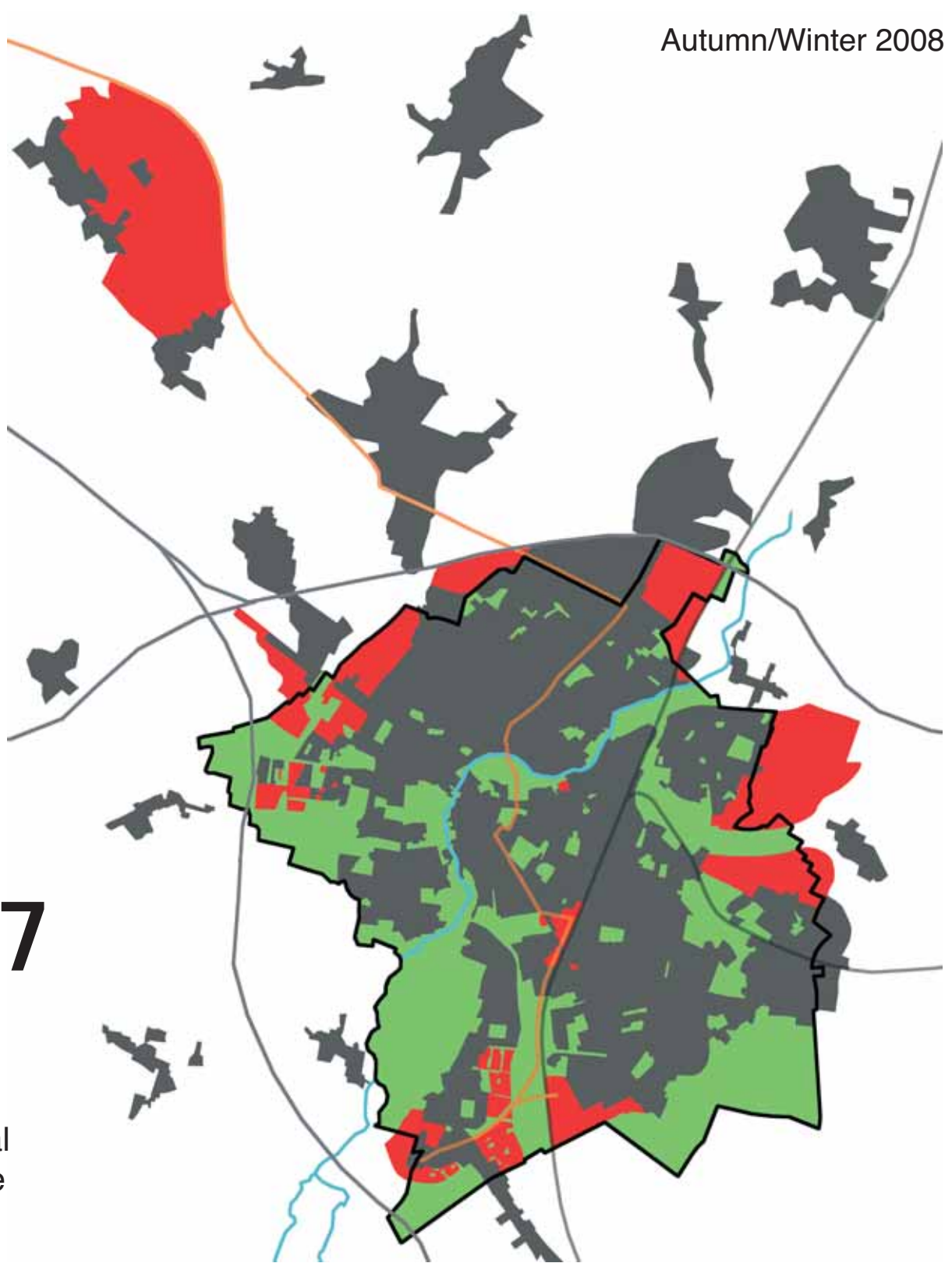


architecture
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Cambridge
city region



Expanding City

Life on the edge: the growth of Cambridge

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plus
Leader
News and history
Infrastructure and interview
Research on sustainable suburbs

THE EDITORS

A SECRET NO LONGER

In just 12 years time, the population of Cambridge and South Cambs should be 33% higher than it was at the start of the century. That's the plan – and the economic crisis is playing havoc with it. Even so, such a projected rate of growth is mind-boggling.

How did this planned expansion come about? Where will the new housing be built? What form will it take? Strangely enough, there is no single publication or website with the answers. It's as if the full extent of this plan is meant to be a well-kept secret. Hence this special issue of the gazette – in which we seek not to criticise but to fill the information gap.

Over half a century of planning constraint has, more or less, preserved Cambridge as the university town Holford envisaged in 1950. However, the Cambridge Phenomenon, university growth and new motorway and rail links have imposed enormous stresses on economic activity, housing availability and traffic management. The very prosperity upon which our quality of life is based is threatened. It is (or was) time to move on.

A unitary authority?

But how can such a huge expansion programme be efficiently implemented by so many players? Incredibly, there is not a single plan available to the public showing in detail those developments straddling the City and South Cambs boundary! It is surely time for a sub-regional unitary authority.

The County is represented by country folk and the City by townies. Like car drivers and cyclists, neither really understands the other. But that division is breaking down – for, all over the world, urban populations are increasing. And, with the guided bus linking the city with Northstowe and points north, more and more will flood into Cambridge to work, shop and play.

The hollow doughnut

Large populations need to be supported by adequate facilities. We have enough retail space but transport remains a huge problem and the new extensions will exacerbate this. The much-vaunted interchange proposed for cb1 doesn't look adequate even for the present population so it's good news that the Chesterton Parkway station has been agreed in principle between County and Network Rail.

But what plans are there to enhance the already pressured public realm in the historic city centre? As currently evolving, the city is in danger of developing like a hollow doughnut. Inside the crispy crust of the urban extensions too little is being planned to ensure that the centre can keep up with the periphery and not be overwhelmed by it. We should use these uncertain times to think about the implications of expansion. Wait for our next issue.

IN THE NEWS

CONFRONTING CONTRACTION

So where's the growth plan now? And what can be done during the down-turn? Early in October, on a day the FTSE dropped 391 points, Alex Plant, Cambridgeshire Horizons' Chief Executive talked to CAg. Predictably, he's an optimist.



... of the housing market

'Rates of growth tend to be commensurate with economic activity – and there's not much of that just now,' says Plant. We're sitting in a small interview room in Endurance House, his aptly named headquarters. There's a whiteboard on the wall with figures, formulae and hastily scrawled words like transport, growth and infrastructure, conveying an air of rather desperate activity.

But Plant is not despairing – indeed, he's almost bullish – bubbling away in that argot of 'delivery' and 'value', 'flexibility' and 'quality' that now peppers the language of so many politicians and public servants. 'Horizons', he points out, is a unique body – neither a local authority nor an urban development corporation. Lacking the power and resources of both, it brings together the six (or three if you just want to focus on County, SCDC and City) local authorities involved in the expansion of the sub-region. Created by the local authorities, the Development Agency and English Partnerships, but driven too by Government frustration at what it perceived as insufficient focus on delivering major settlements like Northstowe – the largest new settlement since Milton Keynes – it now has to help its partners make the best of the current dramatic downturn.

'On sites which have stopped', Plant says, 'there's a lot we can do to improve things for residents, without spending a lot of money. We are talking with the local authorities, master developers and registered social landlords (RSLs) to see what can be done to complete things like paving and planting, landscaping and community centres. It's not big money and it can potentially be done quickly.'

'More broadly, looking at how we can keep up some pace of delivery during a market downturn, we must use what public money is available in the best way possible. The Homes and Communities Agency, due to start operations in November when the Housing Corporation and English Partnerships merge, will be the largest Government agency in the country – with a huge budget. It can help us through this period and so, too, can the RSLs. They have been buying market housing for years and could now use some of their funds for building it. And just now, land is relatively cheap.'

'Elsewhere, we must ensure we are still delivering major infrastructure projects. Construction of the guided busway continues and it's important that we get ahead with this and with other infrastructure work that can enable a quick pick-up when the cycle swings upwards again. Here, we've established a precedent earlier this year when Government agreed to additional funding in the shape of loan-type finance – not grant – towards the Addenbrookes access road. The "loan" will be repaid by the developers as they complete their work, as part of a 106 agreement. We are now asking for more money in this form from Communities and Local Government.'

'The important thing is to think imaginatively and try to keep to the long-term growth trend. To do what we can

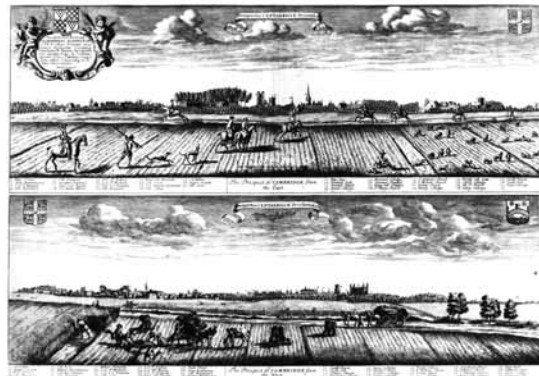
now so that we don't have an impossible catch-up when house building picks up again. I firmly believe that the current crisis is cyclical – not structural. And Cambridge has recovered very swiftly from previous recessions. There's already a pent-up demand for housing – so much so that if supply slows in the current period then house prices are likely to rise again once the immediate credit crunch eases. Importantly, the economic prospects for Cambridge's high tech sector remain strong – the difficulty, as ever, is the lack of housing and transport problems which affect labour market flexibility and can reduce the attractiveness of Cambridge as a location for those businesses and the individuals who work in them.

'The number of new houses needed over the long-term still looks right and achievable, but it's nonsense to think that we're going to deliver the levels previously envisaged over the next couple of years.' Just how nonsensical will have become a lot clearer by the time you read this.

IN THE PAST

THE BEST LAID PLANS ...

Cambridge is an unplanned city. Its greatest glory – the long line of riverine green space running from Stourbridge Common through the Backs and on to Grantchester – is an accident of history. Nevertheless, behind the current almost totally invisible 'plan' for expanding the city, lie a whole line of attempts to embellish, expand and contain Cambridge.



1. Mediaeval Green Belt: The East and West Fields, David Loggan, 1690

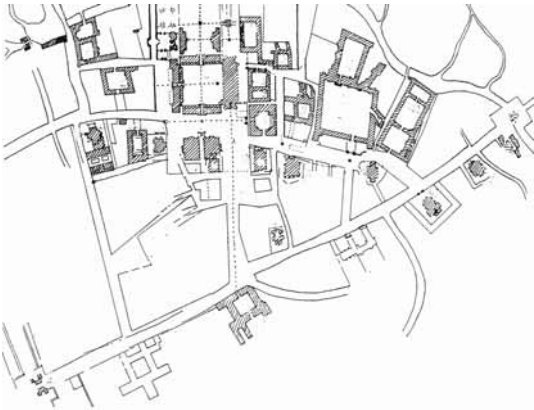
In the early 1700s, Cambridge was still a cramped and chaotic mediaeval town. Encircled by a 'green belt' of unenclosed land – the East and West Fields [1] – it had accommodated its ever-increasing population by adding storeys and building in back gardens, a process of 'densification' with which we are familiar today. It was a 'sustainable' town and even the furrows of the fields that supported it agriculturally ran with the fall of the land the better to drain it.

To Nicholas Hawksmoor – then working on designs for King's – the condition of the town was an opportunity. No one asked him to make his 'Plan for the town of Cambridge as it ought to be reformed'. He just did it [2 and 4-7]. Two great gates at each end of the Bridge Street-St Andrews Street axis marked the entrances to the town; a spacious civic and university Forum [5] was created where King's Parade now is and new streets formed cross links between Colleges to the east and west. Sadly, together with his proposals for King's, Hawksmoor's plan came to nothing.

Cambridge broke its mediaeval bounds in the early 1800s, following the Acts of Enclosure. To the east, new housing extended along the roads out of town while, to the west, the Colleges kept their backs free from development. In 1828, working in the area of Hawksmoor's putative Forum, William Wilkins created the city's most distinctive public space. Sweeping away the houses on the west side of the High Street to expose his screen, he created King's Parade [8]. But his wish to straighten out Trumpington Street and the approach from London was a step too far and, like his great formal approach to Downing, unrealised.

As the century wore on, the railway arrived and the town expanded as an agricultural centre. Without the raw

materials of manufacture, the industrial revolution had passed it by. But, in 1849, a serious fire in the town centre brought about some major rebuilding and, with it, the emergence of large retail firms like Joshua Taylor and Eaden Lilley. It is from this time that, building on its long-term role as a market town and trading centre, Cambridge's prominence as a major regional retail centre starts, very slowly, to emerge.



2. Grand vision: Hawksmoor's plan for Cambridge c.1712 (tracing)

C20 preservation and constraint

Large new areas of housing were built through the latter part of the nineteenth century. There is a remarkable degree of uniformity in some of these but the 'planning' is rudimentary – as was that of the huge areas built to accommodate the town's phenomenal growth from 40,000 to 90,000 inhabitants in the first 50 years of the twentieth century. Fields were taken over, roads and sewers laid out, villages absorbed and ribbon development ubiquitous. The latter led to the establishment, in 1928, of the Cambridge Preservation Trust and thus to the protection of the Gogs and Grantchester, Coton and Madingley.

It led, too, to the setting up of a Regional Planning Committee and, in 1934, to the first regional plan with its proposal for the town, circumscribed by a ring road and contained by an 'open belt' of linked reservations within and beyond which was a 'necklace' of villages and the market towns. This compelling vision was confirmed in 1939, at the first-ever Public Inquiry into a Plan for Cambridge. In the war years that followed, the architect Stephen Dykes Bower developed an unofficial 50 year plan for the area – limiting the town's population to 100,000, expanding the University south to the Botanic Gardens and siting offices in Station Road.

Oxford and Cambridge escaped significant war damage. Although the former had also escaped the industrial revolution, it had not escaped the impact of Morris Motors. By 1950, Oxford was seen as a terrible warning to Cambridge. In addition there were disagreements on the proposed ring-road, the role of the County and the independence of the University. Thus it was that, in the late 1940s the town (as it still was) of Cambridge became, at the instigation of Whitehall, the only un-war damaged city or New Town to become the subject of a major town planning study. William (later Lord) Holford and Myles Wright accepted the commission, fully aware that they were 'about to enter another graveyard of reputations' – trying to resolve the conflicting preferences of County, Borough and University.

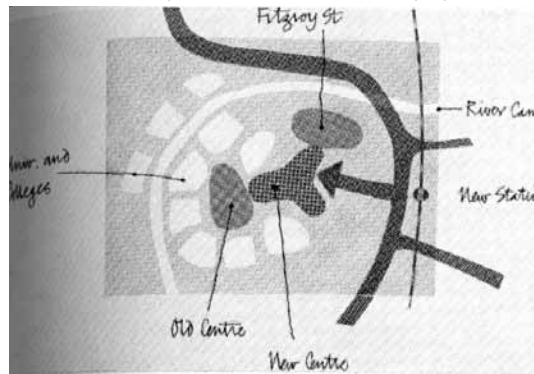
Holford stated that '... one cannot make a good expanding plan for Cambridge. If, however, the citizens of Cambridge decide they are out for quality – to make the best possible town of 100,000 or even 125,000 (it was then 86,000) ... then ... there is every hope of making Cambridge something very fine ... We make this recommendation with full appreciation of the difficulty of carrying it out. No ancient town comparable to Cambridge has ever tried to limit its population ...' Holford's small additional population was intended to increase the viability of retail services.

Following its publication in 1950, the Holford Report

formed the basis for the 1952 County Development Plan. The Green Belt was defined and was given the status of a planning policy in 1957 (but not formally defined in a Local Plan until 1992); decaying inner city housing was to be demolished and compact new housing areas developed on the northern and south-eastern fringes; population was capped at 100,000 and industrial development restricted; and the University was to develop to the west rather than the south. Over the years, Holford's extensive and detailed proposals to sort out the 'intolerable' traffic problem were only partially implemented. Meanwhile, his plan for the wholesale commercial redevelopment of the Lion Yard area was fiercely resisted by the University (but was finally realised this year following the completion of the Robert Sayle/Grand Arcade/Christ's Lane redevelopment.)

Challenging Holford's plan and assumptions

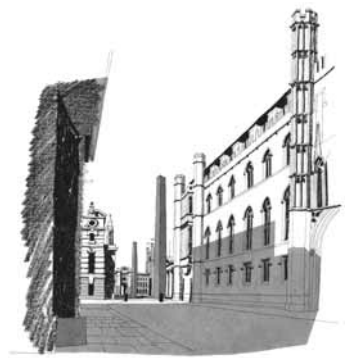
In contrast to Holford, the University felt that the Lion Yard should be a mixed civic and University precinct and that a new regional retail centre should be developed in the City Road area. It was a debate that continued for two decades. In the meantime, Cambridge became open city for architects and planners. In 1962, Sir Leslie Martin, then Professor of Architecture in the University, and his young colleague Lionel March encapsulated the University's view in *The Shape of Cambridge* exhibition. In addition to the City Road (now referred to as *The Kite*) proposal, they advocated an Eastern Loop road running along the railway from the south before sweeping round north of the river to join Victoria Road: new inner city housing lay to the west of this road and industry to the east. Alison and Peter Smithson and Ralph Erskine [3] made similar proposals.



3. Dramatic simplification: Ralph Erskine's proposals, 1964

The City (as it had become in 1951) and its Architect and Planner, Gordon Logie, also piled in to the debate. First, in 1965, he came up with a plan for Lion Yard. Trying to satisfy both University and commercial interests, he ended up pleasing neither and, a few years later, his successor, Ian Purdie, oversaw a more modest retail redevelopment. Next, in 1966, Logie produced a report entitled *The Future Shape of Cambridge*. Abandoning Holford's vision of a compact city, Logie proposed large extensions south to Fulbourn and Stapleford together with the expansion of Histon and Girton to the north. His proposals – which extended the tradition of interpenetrating green spaces or 'fingers' – were rejected. So, too, was IBM's 1968 application to set up its European headquarters in Cambridge – a debacle which led to the University's Mott report of 1969 and its proposal for limited research-related expansion. Planning for the Trinity Science Park was initiated the following year. The so-called 'Cambridge Phenomenon' had begun.

Meanwhile, the debate on a regional retail strategy rumbled on. In 1974, the economic planner John Parry Lewis, convinced that the Kite development would be unviable, proposed a new settlement in the Trumpington area, centred round a hypermarket. Instead, the Kite – now the Grafton Centre – went ahead. And, as the pressures on the city-region grew, the debates in County, City and South Cambs continued. Holford's policy of containment was proving not just unviable but also, arguably, positively damaging. By the late 90s it had become clear that his assertion that '... one cannot make a good expanding plan for Cambridge ...' had to be challenged. PC



4. Trumpington Street approach to ...



5. Hawksmoor's Forum ...



6. ... Plaza (now Trinity Street) ...



7. ... and Market Place screen



8. Wilkins' screen and King's Parade

Acknowledgements

The tracing of Hawksmoor's plan (2) is taken from *The Architectural Review*, April 1948 and reproduced with the consent of the Editor.

The vignettes of Hawksmoor's proposals (4 – 8) were drawn by Gordon Cullen and are taken from *Roberts, D., The town of Cambridge as it ought to be reformed: the Plan of Nicholas Hawksmoor interpreted in an essay by David Roberts*, and a set of eight drawings by Gordon Cullen, Cambridge University Press 1955, with the consent of the publisher.

THE PLAYERS

Government

National Government sets the shape of the planning system through primary legislation. Detailed operation of the system is elaborated through Regulations and Guidance. Government also produces statements of planning policy on matters such as housing and issues broader statements on concerns that influence planning, such as climate change. Critical to some areas of planning are statements that set targets, e.g. the Housing Green Paper 2007. Government approves and issues the Regional Spatial Strategy (RSS – see below) and plays a key role in funding. The growth agenda is supported by the Housing Growth Fund and there is finance for specific projects such as the Cambridge Guided Busway.

Regional Assembly

The East of England Regional Assembly promotes the environmental, social and economic well-being of the Region. It represents the interests of Bedfordshire, Cambridgeshire, Essex, Hertfordshire, Norfolk and Suffolk, and the unitary authorities of Luton, Peterborough, Southend and Thurrock. The assembly has 105 members. It prepares the Draft Regional Spatial Strategy. The Regional Planning Panel steers the preparation of the Draft Spatial Strategy. The Strategy is subject to public examination by an independent panel and final approval by the Secretary of State.

County Council

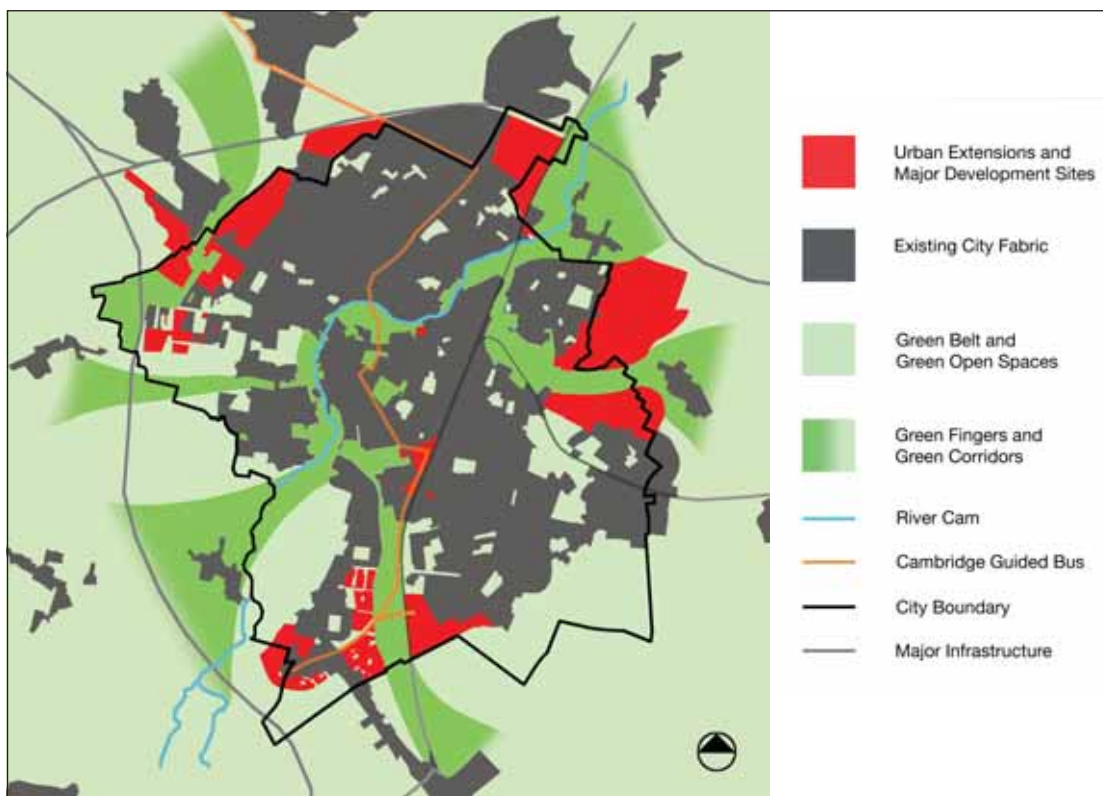
Cambridgeshire County Council is responsible for the provision of a wide range of services across the whole County. All are important in delivering the growth agenda. The County was responsible for preparing the Structure Plan, but the strategic planning role has now been subsumed within the Regional Spatial Strategy. However, because of its strategic and wide ranging responsibilities the County has a key role to play in the development of the RSS.

City and District Councils

Cambridge City and South Cambridgeshire District Councils have responsibility for a range of specific services. All have important parts to play in delivering the growth agenda. A critical role is in planning where the City and District are responsible for policy planning through the Local Plan/Local Development Framework and for other advice, e.g. conservation and urban design, and development control in determining individual planning applications.

Cambridgeshire Horizons

Cambridgeshire Horizons was established by the Cambridgeshire Local Authorities, the East of England Development Agency and English Partnerships in 2004 as the Local Delivery Vehicle for the major growth in the County. It works in partnership with all stakeholders and aims to facilitate delivery. It has no statutory planning powers. Horizons is steered by a board under an independent chair with core funding provided by the local authorities and central government.



Cambridge plan showing major urban extensions and sites and the 'green finger' principle which underlies the spatial strategy for the expanded city

WHY, WHERE AND WHEN?

For over fifty years – from 1952 to 2003 – the policy of containing Cambridge's growth created ever more serious problems in employment, housing and transport. The current expansion plans are intended to address these issues. Brian Human explains.

Planning today is policy driven. William Holford's Cambridge Planning Proposals of 1950, based on a desire to maintain the status quo, were heavily dependent on visual analysis and detailed planning studies. In contrast, the current plans for the expansion of the city have emerged from documents setting out policies (themselves based on analyses and studies). Local plans are now based on local policies strongly influenced by county, regional and national 'guidance' (see Players and Process). It's a slow process – and the shift away from a policy of containing Cambridge to one of expanding dates back to 1990 and the start of work on the Local Plan of 1996.

The 1980s had been a period of frustration. The 'Cambridge Phenomenon' of high tech-driven expansion had proceeded apace but the City had no plan to guide its development. The consequences were over-rapid job growth, an imbalance between the locations of homes and jobs, traffic congestion, lack of affordable housing, erosion of the environment and quality of life, limited leisure opportunities and disadvantaged communities.

The response of the 1996 Plan to these issues, some of which were strategic, was modest – it allocated 24 dispersed sites for the development of just 850 additional houses. In taking this approach the Plan was constrained by the need to comply with the Regional Planning Guidance for East Anglia (1991) and the Cambridgeshire Structure Plan (1989) – both of which still sought to limit growth in Cambridge, to promote more dispersed housing growth in villages and new settlements and to generally favour development in the comparatively disadvantaged north and east of the Region.

Changing priorities

Publication of the 1996 Plan coincided with a period in which national priorities were shifting – the ideas of sustainability were emerging. Significant publications included This Common Inheritance (1990), Sustainable Development: The UK Strategy (1994), New Deal for

Transport (1998) and A Better Quality of Life: A strategy for Sustainable Development in the United Kingdom (1999). Government policy encouraged sustained economic growth and sustainable development.

The Regional Planning Guidance for East Anglia to 2016 (RPG6), published in 2000, reflected this shift. Its vision and strategic aims acknowledged the importance of the environment, the economy and resources. Objectives included tackling energy use/emissions, enhancing the economy and competitiveness, promoting a close relationship between homes and jobs and meeting housing need. It stated that:

'Much development in East Anglia in recent years has been in smaller settlements, [and] has been poorly located relative to the location of employment and services.... If East Anglia is to accommodate its development needs in an environmentally acceptable and sustainable way existing trends will need to be modified. Development for housing, jobs and services will need to be much more closely integrated with each other and much more closely related to sustainable transport provision.'

This statement mirrors the Cambridge experience.

RPG6 applied these spatial principles to a quantitative assessment of the Region's future, including a 3.8% annual growth in the regional economy, and the construction of 2,800 houses a year in the Cambridge Sub-region – a figure derived from existing need, new household formation and job led in-migration.

Growth strategy development

This new approach set an agenda of major growth for the Cambridge Sub Region and required a planning framework to be established which would, 'allow scope for, rather than constrain, continuing development beyond 2016'. Two RPG6 policies were of particular importance for the way the current growth strategy developed.

Policy 22, set out a test for the location of major housing development to be, in order of preference:

- within the built up area of Cambridge

- on the periphery of the built up area of Cambridge
- in a new settlement close to Cambridge
- within the built up area of market towns, larger villages and previously established new settlements with good public transport access
- extensions to market towns, larger villages and previously established new settlements with good public transport access.

The other policy, 24, proposed a review of the Cambridge Green Belt to establish what land might be released for development bearing in mind the purposes of the Green Belt. The Regional Guidance required that these policies be included in Local Development Plans.

The need to review the Green Belt (drawn very tightly around the City and leaving almost no scope for expansion) had been anticipated by the City Council, which published a study, Cambridge Green Belt Towards 2016, in 1998. Following the requirements of RPG6 a study of the Cambridge Sub-region was carried out by consultants, including a fundamental review of the Green Belt and preferred locations for major new development. South Cambridgeshire also published its own consultant's study of the Cambridge Green Belt in 2002.

The Green Belt studies provided critical inputs to the Cambridgeshire and Peterborough Structure Plan (2003) by evaluating alternative scenarios and assessing where land might be released for development without compromising the fundamental principles of the Green Belt. The Plan proposed that land to the west and south-east of the City should be protected, while land to the east, south and north-west could be developed.

Urban Extension	Location	Total Development Area (ha)	Estimated planned residential units	Phasing
Cambridge East	North of Newmarket Road	50.0	1750	2009/10 – 2015/16
	North of Cherry Hinton	60.0	2100	2010/11 – 2015/16
	Cambridge Airport	140.0	7150	Post 2016
Cambridge Southern Fringe	Clay Farm - Showground	60.7	2150	2009/10 – 2015/16
	Trumpington Meadows	31.0	1180	2008/09 – 2013/14
	Glebe Farm	9.8	350	2009/10 – 2011/12
	Bell Land	7.6	270	2009/10 – 2011/12
North West Cambridge	Addenbrooke's 2020 - Mediapark	68.2	Some staff housing	2008/09 – Post 2016
	Madingley Road - Huntingdon Road (University Land)	68.0	2250 2000 student units	2010/11 – 2015/16
	Huntingdon Road – Histon Road (NIAB)	52.9	1780	2008/09 – 2013/14

Urban extensions: areas and housing units

One other study made a significant contribution to the evolution of the Structure Plan. Between 1996 and 2002, Cambridge Futures, a non profit-making group of local academics, politicians, professionals, business leaders and local government officers, looked at the options for growth and tackling transport issues in the Sub-region. It provided valuable insights into the challenges and possible solutions, but refrained from recommending preferred alternatives.

Development scale and locations

The Structure Plan policies are based around a Sustainable Development Strategy embracing the scale and location of built development, economic and social development, the provision of infrastructure and community facilities and environmental performance. It specifically aims at 'providing for the Cambridge Sub-region to accommodate continued expansion whilst restoring the balance of jobs and housing'. It forecasts that the population of the City would rise by 21,100 between 1999 and 2016 and that of South Cambridgeshire by 42,700; projected housing growth was 12,500 and 20,000 units respectively; and the combined growth in jobs is estimated to be 38,180 over the same period.

The Plan sets out a number of policies to guide the development of the Cambridge Sub-Region – including:

- Provision of 8,900 dwellings within the built up area of Cambridge and 8,000 on the edge of Cambridge subject to a review of the Green Belt (12,500 in the

City and 4,400 in South Cambs); 6,000 in a new settlement (Northstowe); and 9,600 in market towns and elsewhere

- A Green Belt to be retained but land for development to be released in Cambridge East (north of Newmarket Road, north of Cherry Hinton, Cambridge Airport); Cambridge Southern Fringe (south and west of Addenbrooke's Hospital, east and south east of Trumpington); Huntingdon Road - Histon Road (NIAB); and Madingley Road - Huntingdon Road (north-west Cambridge).
- This will provide for 8,000 houses by 2016. (Cambridge Airport is unlikely to come forward before 2016; nor will land between Huntingdon Road and Madingley Road be brought forward until the University can show a need for its development.)
- Master plans to be prepared and Cambridge East and the Southern Fringe to include protected green corridors running into the City.
- High quality public transport to be provided along key corridors (one being the Cambridgeshire Guided Bus from Huntingdon and partially linking development in the north and south of the City)
- Orbital movements around the city to be accommodated
- Demand management measures for car use to be introduced in Cambridge
- Improvements for walking and cycling
- Highway improvements to serve new development, e.g. the Addenbrooke's Southern Access Road.

Crossing boundaries, reflecting history

The adoption of this strategy embodies some fundamental re-thinking about planning priorities. It suggests that the benefits of meeting housing need, supporting economic prosperity, providing transport infrastructure and achieving a more sustainable pattern of development (better co-location of homes and jobs) outweighs the importance of retaining a sacrosanct Green Belt. In a notable break with the planning of Cambridge, releases of Green Belt Land for development envisage continuous urban extensions across the City / South Cambridgeshire Boundary.

Between 2006 and 2008, the City and South Cambridgeshire Councils have translated the Structure Plan policies into Local Plans, Core Strategies and Area Action Plans. These policy documents identify the extent of the development for each urban extension, including the land take and the number of dwellings [see Table]. They set out the need for the major development areas to include a mix of land uses and activities essential for sustainable communities, including employment land, open space, retailing (usually in a local centre), education, community facilities and transport infrastructure. The plans also establish the principle that the urban extensions should include major green corridors (or 'fingers') [see Plan], some to be developed as country parks, linking the urban area and the countryside and thereby reflecting the City's historic form.

And there's yet more to come

The growth agenda allocates 548 hectares of land for development in three major urban extensions, intended to deliver 18,980 housing units, spread over the period 2008/09 through to 2016 and beyond. However, the projected delivery will almost certainly be delayed due to the current financial crisis, which has effectively stopped major house building. It is also anticipated that planning applications will edge numbers upwards.

The local planning authorities might congratulate themselves on a job well done in difficult circumstances – they have produced, contrary to Holford's predictions, 'a good expanding plan for Cambridge'. But their task is by no means finished for, in May 2008, the Government published the Regional Spatial Strategy for the East of England, requiring a further 4,000 dwellings to be accommodated in Cambridge. How this will be dealt with remains to be resolved. If Cambridge suffered in the past from a lack of sound planning, some may feel that, after decade of plans, a period of respite to focus on the delivery of a hard won strategy is due.

THE PROCESS

Introduction

Planning is a complex business, involving the reconciliation of often competing priorities between a wide range of stakeholders. The overall process of planning is comparatively simple adopting a logical hierarchical approach. However, it becomes complex as the planning system evolves and is interpreted.

National Planning Policy

National policy establishes the planning system through primary legislation, Regulations and Circulars. Policies on a wide range of individual issues, e.g. housing are set out through Green and White Papers and Planning Policy Statements. All of the subsequent stages in the planning process are expected to have regard to these policies.

The Regional Spatial Strategy

Regional policy takes national policy and an assessment of local needs and issues and synthesises these into a Regional Spatial Strategy. The Strategy includes regionwide policies and policies for sub-areas and key areas for development.

The Structure Plan

The Structure Plan sets out a strategy and strategic planning policies for the County. The 2003 Structure Plan translated to the County level the strategy in the 2000 Regional Planning Guidance and provided a framework for local planning. Structure Plans are no longer prepared under the new Development Plan system.

The Local Plan and DPDs

The Cambridge Local Plan sets out objectives and detailed policies and proposals, including land allocations for defined uses. Following changes in legislation the Local Plan is being replaced by statutory Development Plan Documents (DPDs) including a Core Strategy, Site Specific Allocations, a Proposals Map and Area Action Plans. Supplementary Planning Documents are being prepared on specific issues.

ADFs, Briefs etc

Planning authorities may opt to prepare detailed planning and design guidance for specific sites. These may take the form of master plans, development briefs or area development frameworks (ADFs).

Development Control

Following from the planning framework relating to site allocations or speculative development, a development proposal will be prepared and submitted to the local planning authority. Proposals may be in outline or detail and, following consent, will be subject to conditions and frequently an S106 agreement. All of the preceding policies will be taken into account in determining the application.

Implementation

Once consent has been given (and any S106 agreement signed) the development may commence. It will be monitored to ensure compliance with the consent.



SOUTH



Trumpington Meadows seen from the south-east. Country park at top left, Park and Ride and Guided Bus terminal, top right

TRUMPINGTON MEADOWS [1]

Lying on the western edge of the Southern Fringe, this development will provide about 1,200 homes (including 40% affordable housing), a primary school, community facilities, a couple of shops and a vast new country park. The housing will wrap around the Park and Ride, Guided Bus terminal and John Lewis distribution warehouse, extending north as far as Waitrose and the gardens of Anstey Hall. The southernmost point will line up with the proposed Glebe Farm estate to the east where a new gateway to Cambridge will eventually be formed; this will require (quite literally) some joined-up thinking to pull off successfully.

With the Park and Ride and warehouse at its centre the layout is less cohesive than the other Southern Fringe developments with no opportunity to create a real 'centre'. The access road loops around in a wide arc with two junctions onto Hauxton Rd, north and south of the P&R. Along the road proposals now include a 'circus' of houses and a wedge-shaped local centre next to the new school. These features, together with broad avenues opening up vistas of Trumpington Church and Anstey Hall, show a desire for some grand gestures, though in places the road layout still appears a little awkward and uncertain.

The most exciting element is the proposal for a 60ha country park, to be managed by the Cambridgeshire and Peterborough Wildlife Trust, extending beyond the M11 as far as Hauxton. The idea is to connect with Grantchester Meadows in the north preserving a green corridor along the Cam, but the link-up around Byron's Pool is somewhat stymied at present. Perhaps a footbridge can eventually be built here that would create a truly continuous linear park with enormous benefit.

Trumpington Meadows is unusual in a number of ways. First, it abuts one of the city's 'green fingers' – an extension of Grantchester Meadows which will provide fully accessible open space for residents. It is often forgotten that much green belt land – both agricultural and at Cambridge Airport – is not accessible. Second, the site is located at the southern end of the guided bus route, which terminates in the Park and Ride area. And, third, at its northern end it engages with the Trumpington Conservation Area's historic setting. A resolution to grant planning consent was made in February by the joint planning authority.

GLEBE FARM [2]

Located between the Hauxton and Shelford Roads, the site wraps around the southern edge of Trumpington and faces out towards Great Shelford. Bounded on the southern perimeter by the new Addenbrooke's access road, it will be close to the Park & Ride and Guided Bus terminal.

This edge of Cambridge has always presented a rather bleak frontage with some uninspiring 1960s blocks of flats. The developers have good intentions to beef up the city edge here and improve views from the south – including proposals for a 5-storey 'gateway' block on the south west corner. The detailed design of this will be absolutely crucial; gateways do not naturally form part of our urban edges, though views from the flats should certainly be spectacular.

Of the four Southern Fringe residential developments, Glebe Farm is, with the Bell School site, one of the two smallest. With no shops or schools it relies instead on landscaping and a clever block structure to add interest to the design. A green lane alongside Hauxton Road and a well-landscaped southern edge will create buffers and help with noise. The single-point road entrance at the centre of the development leads into a small park, reminiscent of a village green, incorporating existing hedgerows and with pavilion and pond. On the eastern edge allotments are proposed.



Glebe Farm seen from the south west, Trumpington Meadows lower left.

TRUMPINGTON MEADOWS

Area of site: 31ha
 Population: c. 2000
 Housing density: 50 d/ha (ranging from 24 to 70 d/ha)
 Developer: Grosvenor
 Masterplanner: Terence O'Rourke

GLEBE FARM

Site area: 9.8 ha
 Residential population: c. 600
 Housing density: 35 d/ha (44 d/ha max)
 Developer: Countryside Properties
 Masterplanner/architect: PRPArchitects
 Landscape consultants: David Jarvis



Clay Farm site plan, green finger and railway to right

CLAY FARM [3]

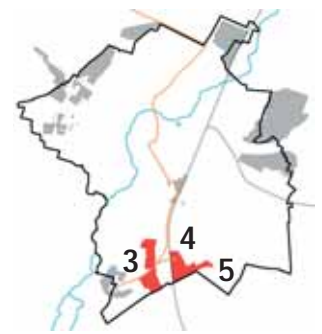
Forming the centrepiece of the Southern Fringe housing developments, this site cuts a huge swathe from Long Road in the north to the Shelford Road houses in the south. It will straddle its main transport link – the Guided Bus track that follows the curve of the old Bedford railway line out to the Trumpington Park and Ride.

The new Addenbrooke's access road will provide the main vehicular access into the development from the south, via a new roundabout. To the north a new junction with Long Road is to be provided. Traffic connecting each of these access points will be restricted to public service and emergency vehicles.

There are proposals for up to 2,300 dwellings, a neighbourhood centre with community facilities, some retail, and two schools (with an alternative scheme available should the secondary school not go ahead).

A feature of the scheme is the spine road or 'high street', which is intended to change in character as it winds through the site with the higher densities (up to 5 storeys), placed along it. A permeable street pattern and the kind of informal vehicle/pedestrian hierarchy seen at Accordia will help to create a series of identifiable 'places'.

A major public benefit of the proposal will be the creation of a large area of green space between Hobson's Brook and the railway line, almost as big as the built area of the development itself. This will maintain the important 'green finger' that exists here while at the same time making this almost forgotten part of countryside accessible to everyone with sports pitches and allotments as well as informal parkland – though it will be crossed by the guided bus routes and the ramped approach to the hospital access road.



Bell School site plan



Clay Farm from south-east. Guided bus route at centre, hospital access road at bottom, Shelford Road at left, green finger at right.

BELL SCHOOL [5]

Located off Babraham Road south of Addenbrookes Hospital. Outline planning consent granted in principle for up to 347 homes and apartments (including 40% key-worker and affordable units) and accommodation for 100 students.

BELL SCHOOL

Area of site: 7.78 ha
 Population: 773
 Overall housing density: 48 d/ha
 Developer: Bell Educational Trust
 Masterplanner/architect: Hankinson Duckett Associates

CLAY FARM

Area of site: 60.7 ha
 Population: c. 4600
 Housing density: 48 d/ha overall (90 d/ha max - 40 d/ha min)
 Developer: Countryside Properties
 Masterplanner/architect: PRP

ADDENBROOKES MEDIPARK

Area of site: 28.33 ha
 Population: 7,500 jobs, some staff housing
 Housing density: n/a
 Developer: Countryside Properties/
 Cambridge University Hospitals NHS
 Trust/Liberty Property Trust
 Masterplanners: Aukett Fitzroy Robinson

ADDENBROOKES MEDIPARK [4]

Planning permission has been given for the extension of Addenbrooke's to create the Cambridge Biomedical Campus to the southwest of the existing hospital perimeter road, extending up to the railway line and the access road and bridge now under construction. This road will link the campus to the new Southern Fringe housing and the M11, with measures to eliminate its use as a cut-through from Hills Road. The guided bus will also connect to the new development via a separate bridge. The development will provide a massive 215,000m² of new biomedical research and clinical space; learning, conference and hotel facilities; and, possibly, a relocated Papworth hospital. With huge employment potential it will also be a significant driver of demand for the adjoining new developments, helping, through walking and cycling, the sustainability credentials of the Southern Fringe. JL



Medipark seen from the south west, railway line to left



NORTH



Northwest Cambridge 'indicative' plan (currently under review) with M11 at left. West Cambridge is at bottom, south of Madingley Road

NORTHWEST CAMBRIDGE [1]

This site lies in the triangle bounded by Huntingdon Road, Madingley Road and the M11 motorway. Owned by the University of Cambridge, it is largely within the Green Belt. Currently in agricultural use as the University Farm, it also contains the headquarters of the World Conservation Monitoring Centre (WCMC).

The University plans to locate faculty and research buildings close to the WCMC, forming a new 'cluster', or academic core, together with affordable housing primarily for University staff and their families. Both the Cambridgeshire Structure Plan (2003) and the City of Cambridge Plan (2006) have designated the area as being suitable to accommodate the University's expansion needs.

The indicative masterplan has evolved out of a number of consultation workshops with a wide range of stakeholders. The plan is structured around a central 'circus' providing green space at the centre of the site with academic buildings grouped around. This 'circus' is crossed by a 'green corridor' (or 'finger') connecting the southern edge of the site with the northern boundary along Huntingdon Road and providing a direct route from the University's West Cambridge site south of Madingley Road to the NIAB site and Girton to the north. The Madingley Road Park and Ride lies along this route.

From the 'circus', routes will radiate off through a number of residential neighbourhoods. A school, hotel and community facilities are also proposed. The scale of massing is arranged so that medium density residential units are concentrated at the centre of the site, with low density houses backing on to the existing low density houses lining the south west side of Huntingdon Road.

On the other side of the site the edge of the proposed research and development buildings and housing runs along the contour lines and a wide strip of open landscape is preserved to form a buffer between the new development and the M11. This both ensures that views towards Cambridge from the motorway are of green fields rather than a dense urban development and reduces the impact of motorway noise.

WEST CAMBRIDGE [2]

This University site, bounded by Madingley Road to the north and Coton Footpath to the south, is seen as a place where commercial research and academic facilities can complement and enhance their mutual objectives.

At the time that consultants were appointed to develop the 1999 masterplan, the site accommodated the Vet School, Cavendish and Whittle Laboratories, British Antarctic Survey, Schlumberger Laboratories and other smaller units. The approved masterplan proposed some 41,000 square metres of new commercial research accommodation to sit alongside a further 130,000 square metres of new academic faculty buildings, sports facilities and residential accommodation for staff and research students.

The first buildings constructed in accordance with this plan included the new Computer Science department and the Microsoft Research building (William Gates building), completed in 2001. More recently, the Nanoscience Centre and a residential development providing 206 units together with nursery facilities have been completed.

In 2004, a review of the Masterplan allowed provision for 12,000m² of additional residential accommodation, and approved a scheme for the East Forum Building for Innovation, now under construction.



West Cambridge from the air, Madingley Road lower right.

NORTHWEST CAMBRIDGE

Site area: 140 ha
Residential population: 7000
Housing density: At least 50 d/ha overall
Developers: University of Cambridge
Masterplanners: EDAW

WEST CAMBRIDGE

Site area: 66.45 ha
Total gross floor area: 182,600 sq. m.
Residential population: c. 450
Developers: University of Cambridge
Masterplanners: MacCormac Jamieson Prichard Architects

NIAB [3]

This city fringe agricultural site lies between Huntingdon and Histon Roads. It is in the ownership of the National Institute of Agricultural Botany, the Chivers family estate and Chivers Farms Ltd. Sports grounds belonging to Christ's, Sidney Sussex and St Catharine's Colleges also fall within the site area.

The Cambridge Local Plan of 2006 removed this land from the 'greenbelt' and designated it for development. The proposed development makes provision for a mainly residential area, with housing of between one and four storeys in height graded so that one and two storey buildings on the south edge of the site mimic the scale of houses on the adjacent streets. Larger apartment buildings are located towards the centre and north western edge of the site.

A grid of streets around a central park forms the primary structuring device for the proposal. At the northwest corner of the park a local centre is proposed, with shops and community facilities arranged around a small square. A secondary landscaping feature is a wide, car-free 'green edge' that runs the length of the northwest boundary of the site. This linear park connects with smaller 'green fingers' bisecting the site. A sustainable drainage scheme with 'bio swales' (an open drainage system) will absorb surface-water run-off.

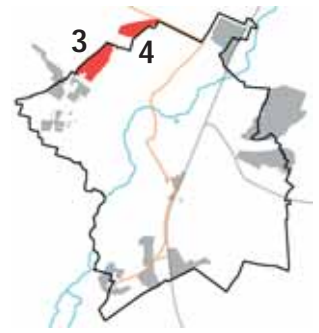
The guided bus route will follow Histon Road and a separate new bus route is also proposed through the site on the north side of the park. At this stage the overall character of the development is difficult to gauge, as a wide range of housing types and sizes is proposed. However, the generous landscaped areas may pay rich dividends if the proposed buildings are of high quality, and succeed in attracting a broad spectrum of residents to this new local centre. Some of the fields to the north are currently being considered by South Cambs for more housing.

ORCHARD PARK [4]

Partly concealed behind an acoustic barrier, this site extends from the A14 south to King's Hedges Road. Formerly Arbury Park, it has been renamed Orchard Park in recognition of the site's history as part of the Chivers Farm orchards. Contrary to popular belief the site is not part of the City but is part of South Cambridgeshire.

Infrastructure construction began in 2005 with house building starting in 2006 and 360 out of the planned 900 homes – mainly of the affordable type - have been completed. Planned commercial buildings will also buffer the residential areas from the noise of the road.

Two of the three house builders currently on site have postponed building work because of the current slowdown. However, when complete, the site will have a range of open spaces, sports facilities and play areas. The 'circus', edged by crescent shaped terraces will be a formal park while the 'square' will contain a community centre. A brightly coloured new primary school near the Histon Road end of the site opened in 2007. The site is well placed for the guided bus route – currently under construction at the north-east corner. LK



Orchard Park is incomplete. A14 in distance



NIAB site plan. A14 top, Huntingdon Road lower left, Histon Road to right. The Northwest Cambridge site is in the lower left corner

NIAB
Site area: 53 ha
Population: c. 4,000
Overall density: 50 d/ha overall (80 d/ha max - 30 d/ha min)
Developers: David Wilson Homes/Barratts Strategic on behalf of a Landowners Consortium
Masterplanners: LDA Design
Lead and Planning Consultants: Bidwells

ORCHARD PARK
Site area: 33 ha
Residential population: c. 2,250 persons
Overall density: 55 d/ha overall (40 d/ha max - 80 d/ha min)
Developers: Gallagher Estates with Land Improvements Holdings, Kings Hedges Investments Ltd and Cambridge City Council
Masterplanners: David Lock Associates (Development Plan) and John Thompson and Partners (Design Guide)



EAST



East Cambridge seen from north. Circles identify local centres and, in red, the main centre. The site is as large as Northstowe

WATER WORKS AND SIDINGS [2]

Originally included in the expansion proposals, the development – through housing-led regeneration – of the waste water works and Chesterton railway sidings site is now considered to be unviable for the foreseeable future. It no longer features in strategic housing allocations.

EAST CAMBRIDGE [1]

The site for the Cambridge East proposals is centred on the existing, working, airport site, owned and operated by Marshall. The proposals are the longest term of all those outlined for the sub-region with construction projected for beyond 2016 although the actual timescale and scope of the development is dependent on the relocation of a proportion of Marshall's current operations elsewhere.

Despite its proximity to Cambridge city centre, with approximately 10,000 - 12,000 homes earmarked for the site, Cambridge East is of the scale of a new town and unlike an urban extension the intention is that it would have its own focus and a fully developed town centre – it is equivalent in scale to the proposals for Northstowe.

In the proposals a 'green finger' runs from the Coldham's Common area eastwards and widens to protect Teversham and maintain its distinct physical identity. A country park and replacement park-and-ride site are proposed beyond the built area to the east. Thus the site is split into three broad areas: that north of Newmarket Road, that between Newmarket Road and the green finger, and that south of the green finger. It is anticipated that the areas adjacent to Abbey in the north and Cherry Hinton in the south would be developed first, with the central area being developed later.

Water and a concept of grids structures the urban form. A range of densities is proposed across a thoroughly mixed-use urban area with active uses proposed in the town centre, along Newmarket Road and in smaller sub-centres north and south.

It is anticipated that the development would be served by an extension of the guided bus network. However, the nature of the development's relationship with the existing city – in particular in terms of a transport connection along Newmarket Road or otherwise - is an open question and one that is likely to prove critical. KP



Masterplan with Newmarket Road running E - W



Red boundary indicates built area, green indicates country park

EAST CAMBRIDGE

Site area: 320 ha

Population: c. 25,000

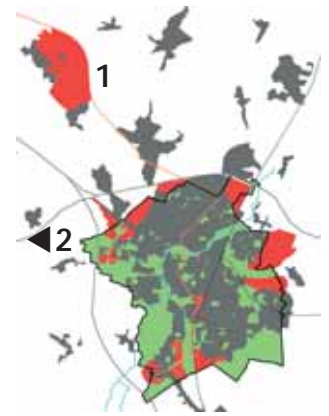
Housing density: varies between 35 and 150 d/ha

Developer: Marshall of Cambridge (land owner)

Masterplanners: LDA



Northstowe from the north. The guide bus route runs from Trumpington in the south to Huntingdon in the north. There are 148 ha of open space



SOUTH CAMBS

NORTHSTOWE [1]

The site, much of which is a redundant airfield and barracks, is approximately 5 miles north-west of Cambridge between Longstanton and Oakington. It is to be a complete new town with approximately 10,000 homes. Construction is projected to start in approximately two years and will be phased with the town fully complete by around 2025.

The route of the Cambridgeshire Guided Bus bounds the site to the east – running south to Cambridge and north-west towards Huntingdon – and is a critical component in the siting and premise of the town. A local loop off the main route of the guided bus takes a route north-south through the town, providing a focus for each of its three districts.

Separating these districts, and forming buffers to the neighbouring villages, are corridors of multiuse open space. The town centre is to be located adjacent to the

southernmost of the two east-west green corridors providing a direct connection to the countryside beyond. In this way the development is characterised as a fen edge market town. The strategies relating to water management and the relationship between landscape and the urban form are intended to reinforce this sense and provide a distinct identity for the new community.

Northstowe is not one of the highly publicised eco-towns as the planning for the new town began many years prior to the Government's current eco-town proposals. However many of the eco-town principles and criteria of sustainability will feature at Northstowe creating what former Housing Minister, Yvette Cooper described in 2007 as a "prototype for eco-towns".

Over one-third of the total area will take the form of open space including 35 ha of outdoor sports areas and 22 acres of children's play areas.



Northstowe plan. A14 lower left, Oakington lower right



Upper Cambourne. Red line indicates site boundary

UPPER CAMBOURNE [2]

The new settlement of Cambourne, nine miles west of Cambridge and adjacent to the A428, has been under construction since 1998. Upper Cambourne, the third of the three physically distinct villages that make up the settlement, remains incomplete. Following its completion, the total number of homes in the settlement will rise from 3300 to 4250, and an additional (third) primary school will be added. This increase would be accommodated within the same built area as originally proposed because housing densities as built and as proposed are greater than originally anticipated – in response to revised planning policies encouraging higher density development.

Reflection on the earlier phases, culminating in the Lessons from Cambourne report, has highlighted ways of improving the sustainability of future developments. KP

NORTHSTOWE

Site area: 427 ha
 Population: c. 24,000
 Housing density: between 30d/ha and 100d/ha, average 46d/ha
 Developer: English Partnerships + Gallagher
 Masterplanners: Arup Urban Design

UPPER CAMBOURNE

Site area: 38.13 ha
 Population: c. 10,000
 Housing density: av. 24.9 d/ha (51 d/ha max – 28 d/ha min)
 Developer: Cambourne Consortium
 Masterplanners: Randall Thorp



CENTRE



cb1 development seen from the east. Hills Road at top. The dark building in the centre is a hotel (by another developer) with the landmark offices opposite

cb1 [1]

By far the largest development project ever planned for the city, the cb1 site stretches along the railway from the Hills Road bridge to the Carter bridge and thence to almost the end of Station Road. When complete it will join the Lion Yard and Burleigh Street areas as the third of the city's three commercial centres. It will also contain the city's transport interchange – linking the railway with the guided bus and city bus routes.

The run-down, semi-derelict area in front of the station will be transformed into a broad fully-paved, partly tree-planted public 'square' twice the size of the Market Square. Facing onto this, opposite a restored and extensively upgraded station, will be three six-storey buildings for offices and an NHS polyclinic. These incorporate a set-back top storey and a two-storey colonnade with cafés and small shops opening onto the Square. The overall height of these buildings corresponds to the lower parapet of the old mill silo.

The area immediately in front of the station will be primarily pedestrian, with bus traffic passing through one corner, between the bus stands and Station Road. Taxis and cars will be restricted to the northern end of the square, with access from Tenison Road. Behind an office building (not shown in the illustrations) at the north end of the square will be a long multi-storey car and cycle park building, extending towards the Carter bridge and also accessed from Tenison Road.

Station Road will be enhanced with replacement tree planting and extended areas of paving. On the north side, the villas remain untouched but new offices and a hotel (by other developers) are planned for the remainder. On the south side, only the recently refurbished Kett House will remain – the four 'deity' office buildings, the mill offices and Murdoch House will be replaced by six new office buildings, one of which will also face the station. These offices will gently rise in height from the west towards a 'landmark' office building opposite the proposed hotel.



Station area plan with new buildings in bold line and Square in brown

The more robust of the old mill buildings are to be retained. The mill will be reused for residential accommodation. The central section of the silo will have a new wing added to each side. Originally intended for a historic research and cultural centre it will now, following the withdrawal of that proposal, be used as offices. The open, glazed form of the new wings will contrast with the more closed nature of the older core.

The old mill buildings form part of one side of the street containing the bus stands. A long building on the opposite, railway, side is for ARU student rooms while, further to the south on the mill side, there are new flats focused around a small park to be shared with the recently completed Triangle site housing. Further flats are proposed on either side of the new road opening off Hills Road, opposite Brooklands Avenue. These will form a 'gateway' into the southern part of the station area.

To the north of Station Road, lining the sides of the vehicle access route from Tenison Road, is yet more housing. Between this and the rear of the hotel, will be a new green space for public use. Nursery and other community facilities are dispersed around the residential areas.

The potential significance of this development – for which outline planning consent was granted in October – cannot be overstated. The area is already the city's most important 'gateway'. With ever-increasing railway use, the introduction of the guided bus and the growth of the urban fringes its development is central to the future of Cambridge.

cb1

Site area: 9.9 ha
 Residential population: c. 1860
 Housing density: 70 d/ha
 Developer: Ashwell Property Group
 Masterplanner: Rogers Stirk Harbour and Partners
 Transport Consultants: Mott MacDonald
 Planning Consultant: Savills
 Conservation and historic buildings and Areas consultant: QuBE
 Landscape Architects: Robert Myers Associates



The Square at night – station at left. Preliminary design



The Living Screens seen from the Cambridge Leisure Park

THE LIVING SCREENS [2]

The principal element in this development is a ten storey tower sited at the Hills Road/Cherry Hinton Road junction – seen by planners as one of the city ‘gateways’. The scheme’s name is derived from the tower’s free-standing façade – or ‘screen’ – a lively city-scale integration of art and architecture completing the south side of the Cambridge Leisure Park.

Two wings of four and five storey flats extend along the street fronts with two smaller blocks of affordable flats located off Cherry Hinton Road. A garden lies between the two wings and extends into the eastern corner of the site. At the corner and below both wings, retail space, which may include a small supermarket, is provided at street level. Below the tower, at first floor level, a café opens out to a publicly accessible balcony overlooking the Leisure Park.

This scheme (the outcome of a competition) is designed as an accessible part of the city with a public route through it and views into the main garden.



Kaleidoscope view in central area

KALEIDOSCOPE [3]

This ‘brownfield’ site was formerly used by Cambridge University Press. Set on the edge of the Brooklands Avenue Conservation Area, it lies between the railway and Clarendon Road and Fitzwilliam Road. The scheme was initially rejected by the Planning Committee against officers’ advice. Following an appeal, consent was granted for residential use only, with an emphasis on green space.

Currently under staged construction, the Kaleidoscope development will, when completed, consist of 408 dwellings, 122 of which will be ‘affordable’. As with

most current Cambridge schemes, there is a predominance of one and two bedroom flats. Within easy reach of Cambridge station – which will be reached via a new underpass under Hills Road – it should attract both local workers and some London commuters.

The Masterplan is intended both to respond to the existing urban and historic context to provide an easily understood building and circulation layout. A central linear landscaped place is surrounded by a combination of four courtyard groups, some freestanding elements and some perimeter ranges. The two affordable housing courts are located at the site extremities.



Botanic Place and, right, Hills Road entrance to the Botanic

BOTANIC PLACE [4]

The site, bounded by Hills Road and the University Botanic Garden is close to the Station Road junction. At its northern end, a seven-storey lens-shaped office and retail building dominates not only the new development but also the entrance to the Botanic Garden and the repositioned war memorial.

Together with the office building, a series of five and six-storey residential perimeter blocks enclose the site to form an internal space. At the centre of this, a small residential tower overlooks, on one side, a public space containing office and retail uses and, on the other, a private residential space.

Many of the flats overlook the Botanic Garden. Of the 156 apartments and mews houses, 63 are affordable homes.

The popular Flying Pig and Osbourne Arms public houses are to be retained. This tight-knit scheme is of a more urban nature than the existing Botanic House development.



Brunswick Riverside site (red) with Elizabeth Way, right

BRUNSWICK RIVERSIDE [5]

This sensitive site, placed along the west side of the southern approach to the Elizabeth Way bridge, forms an important backdrop to the River Cam and Midsummer Common, not far from the historic centre of Cambridge. It is at present used by Cambridge Regional College.

The scheme design is currently under refinement. A preliminary scheme proposed residential accommodation in a combination of closed and open courtyard forms together with some terraced family housing. The closed courtyard was for ARU student accommodation. At the centre of the site, a small tower with a ground floor café acted as a ‘landmark’ focus.

This, the first major south bank development west of the Elizabeth Way bridge, will set a quality precedent for any further large-scale developments abutting Midsummer Common. Sadly, despite the developer’s efforts to purchase it, the tyre depot on the Newmarket Road roundabout is not included in the development site. AC



THE LIVING SCREENS

Site area: 0.805 ha
Population: 261
Housing density: 177 d/ha
Developer: Highland Homes (Trilatera) Ltd
Architect: Gort Scott LLP
Consultant Engineers: White Young Green
Structural Engineers: Arup
Planning Consultant: January’s

KALEIDOSCOPE

Site area: 2.75 ha
Population: 759
Housing density: 148 d/ha
Developer: Crest Nicholson / Luminus Group
Masterplanner/architects: Proctor & Matthews Architects
Planning Consultants: January’s
Engineers: Blyth & Blyth

BOTANIC PLACE

Site area: 0.868 ha
Population: c. 380
Housing density: 186 d/ha
Developer: Pace Investments (Cambridge) Ltd
Architects: Formation Architects

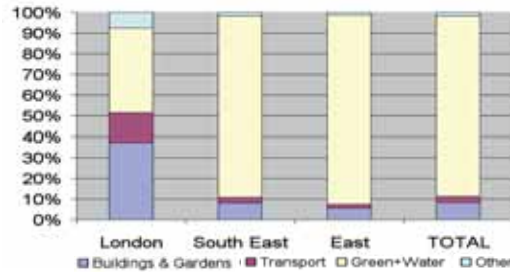
BRUNSWICK RIVERSIDE

Area: 1.64 ha approx.
Population: 653
Housing density: 167 d/ha
Client: Berkley Homes/UNITE Integrated Solutions Ltd
Architects: John Thompson & Partners & Stride Treglown
Landscape Architects: Fabrik
Planning Consultants: January’s
Environmental Consultants: WSP

RESEARCH

SUSTAINABLE SOLUTIONS

The planned expansion of Cambridge is part of a Government push for growth in the Greater South East (comprising the London, East and South East regions). But many questions surround the form of this growth. In an effort to resolve these, a Cambridge-led £1.75m research project, SOLUTIONS (Sustainability of Land Use and Transport in Outer NeighbourhoodS) has been studying current trends and alternative options. Marcial Echenique, the principal investigator, discusses some of its findings.



1. Regional land use comparisons

There is an accepted view in the UK that cities must be compact. That was the thinking behind the Town and Country Planning Act of 1947 – the principal motivation of which was the protection of the countryside. It is a view that, somewhat surprisingly, also lies behind the New Urbanism and Smartgrowth schools in the US – although, in their case, the motivation is the reduction of CO2 emissions by reduction of car travel. In the UK, the Prince's Trust has been pushing this approach in the development of country towns while, at the official level, Lord Rogers' Urban Task Force translated it into the Urban Renaissance strategy adopted by the Mayor of London, with high density development and enhanced public transport.

But there are two other schools of thought – one promoted by most economists, consisting in a market-led dispersal and private transport (often referred to as 'sprawl') to reduce house prices and increase competitiveness, and another, promoted by the Town and Country Planning Association, based on planned extensions and new settlements (as in Cambridge), to obtain the economic benefits of increasing land supply without destroying the countryside. How do they compare with each other and with current trends? In order to assess this, the research team has been simulating conditions over a thirty year period. The simulations have been undertaken through a quantitative computer model similar to the one used ten years ago in the Cambridge Futures study – but applied to the entire Greater South East region.

Far too many flats

Looking at the current situation revealed some intriguing facts. First, contrary to popular belief, buildings, gardens and roads take up 11% of the land in the Greater South East – including London [1]. In our own area, the figure is only 8%. Second, the average density in England is 27 dwellings per hectare (dph) – very close to Raymond Unwin's 1930 recommendation of 12 dwellings per acre. At this density there is a range of dwelling types – such as 25% of detached, 40% of semi-detached and 22% of terraced houses and 13% of flats – catering for a wide range of tastes and needs.

The average in our region is 15 dph and contains a larger proportion of detached houses (45%). However, in our new developments it is about 34 dph – thus reducing the supply of houses with a corresponding increase in numbers of flats. In London, the change in density is dramatic – from an overall average of 45 dph to one of 110 dph in new developments. Such increases in density can only be achieved by a dramatic reduction in the numbers of detached and semi-detached houses and a huge increase in the number of flats.

At present, only 8% of the population live in flats and

surveys indicate that 92% of respondents want houses with gardens. So if the trend in new developments continues there is going to be a huge number of empty flats. There is a belief that demographic change is creating a need for single-person flats but this obscures the fact that the principal increase in such households is caused by old persons who, living longer and wishing to maintain their standard of living, are staying on in accommodation formerly shared with others.

Housing and job location

If we are to solve the housing problem, we will have to build dwellings that people want where they are needed. At the moment, there is an imbalance in the Greater South East. The areas to the west of the region are heavily underprovided with housing. As a result, costs are very high. Current Government policy is to build dwellings in the Thames Corridor – where few 'nimbys' will object but where there are far fewer jobs. For those who will live there but work elsewhere, traffic congestion (both public and private) will become a major issue. One of the techniques to overcome this is road user charging but this would increase the cost of living and affect wages and profitability.

We have studied over a thirty year period a whole range of dispersal options and compared these to the compact model [2a-f]. The really unnerving conclusion is that the economic costs of continuing current trends is horrendous – billions of pounds per year. The cost to the region of the compact city option is higher still but the benefits of the dispersed and planned expansion options are substantial as they reduce the cost of living and production. With current trends, 2% more green-field land will be needed, CO2 output will increase and all costs will rise.

Adopting the compact option, only 0.7% less land is required (but with smaller dwellings in the form of flats) and CO2 output only reduces by 1.5% as the expected reduction of travel by car is relatively small but is at the expense of cost increases which will affect the competitiveness of the region. The dispersed option requires 3.4% more land and increases CO2 output but lowers costs. And the planned extension option (as in Cambridge) requires only 0.3% more land, involves a small increase in emissions and a small reduction in costs.

New technologies and spatial strategies

Our main conclusion is that, compared to current trends, the various alternative design options make a small contribution to sustainability – but there is not much to choose between them (about 5% either way) – and that land use and transport changes are relatively marginal because the market will adapt to optimise constraints imposed by the supply of land and the availability of transport.

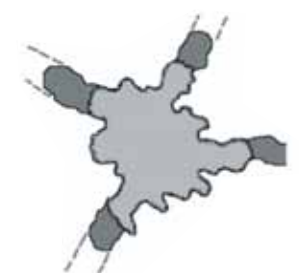
It is clear that substantial improvements to the region's sustainability will have to rely on technological developments in transport and in buildings – the use of renewable energy and materials for efficient building and transport systems. The introduction of new technologies such as the use of geothermal power or solar energy for powering electric or hybrid cars can only be achieved, however, by the adoption of alternative spatial strategies. Given the number of cars on the roads and our reliance on them in a world where work, schools and shopping are dispersed, this changeover presents a huge challenge.

The increased use of renewables will also take time but there is room for optimism in the huge amounts of energy that can already be saved in new buildings: here, the greatest challenge is in the existing building stock. The spatial strategies will be dictated not so much by the way we behave but by the ability of urban forms to adopt sustainable technologies, including the harvesting and recycling of water, the capture of energy from renewable resources, the recycling and use of waste and so on. Successful adoption will depend heavily on the form of the city-region and points to less compaction in the future. Our next research programme – ReVISIONS – will focus on these alternative spatial strategies.

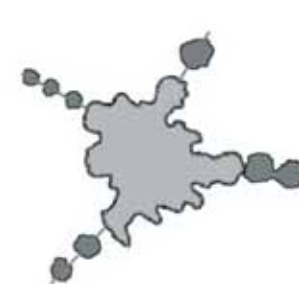
2. Alternative urban forms
a Compaction



b Planned extension – edge



c Planned extension – corridor



d Planned extension – corridor



e Planned extension – new



f Dispersed

SOLUTIONS is funded by the Engineering and Physical Sciences Research Council. Academic Partners are: The Martin Centre, University of Cambridge; Faculty of the Built Environment, University of the West of England; Institute for Transport Studies, University College London; Transport Operations Research Group, University of Newcastle. Non-academic Partners include: Cambridgeshire County Council; Cambridge City Council; Cambridge Futures; Cambridge Horizons; Department for Transport; Communities and Local Government; Transport for London; Thames Gateway London Partnership; North East Assembly, Tyne and Wear; Highways Agency; Bristol City Council; Institution of Civil Engineers.

INFRASTRUCTURE TRANSPORT CHALLENGE

The projected growth of Cambridge to 2021, and its likely continued growth to 2031, present acute transport challenges. The central problem is that unrestricted use of the car will gridlock the narrow streets of Cambridge, will produce unacceptable pollution, and will make life very difficult for pedestrians and cyclists.

It is generally accepted that Cambridge is not large enough to justify a conventional underground network. Accordingly, the County Council (which is responsible for transport) has been pursuing for several years a carrot and stick strategy designed to shift trips from car to bus. The carrot has been improvement of bus services, including the provision of Park & Ride facilities. The stick has been the use of rising bollards to ban private cars from much of the City centre. As a result of these measures congestion has been contained to reasonably acceptable levels, and Cambridge has become one of the few places in the country showing growth in bus usage.

To cope with further growth, the County Council has prepared proposals to take this approach a step further, by introducing a congestion charge between 7.30am and 9.30am Monday to Friday. As part of this proposal, it has applied to the Government for more than £400m of funding to improve bus and cycling facilities. These proposals were the subject of public consultation during the first half of 2008. There is now to be a Cambridge Transport Commission, comprising independent specialists, which will review those proposals and make recommendations.

In addition to considering a congestion charge, the Commission will need to address the question of how the £400m from the Government can best be spent. Two options which deserve consideration are the construction of some bus tunnels under the city, and the construction of an underground Personal Rapid Transit system with driverless pods, similar to the Ultra system currently being built at Heathrow. Although both sound improbable, they are real possibilities which should be thoroughly evaluated. *Alex Reid*

WATER, STORM AND FLOOD

The Environment Agency has defined Cambridge as an 'area of serious water stress'. For, as the Cambridge Water Company often reminds us, East Anglia's rainfall is half the national average. Cambridge, as the driest part of this dry region, has less rainfall than Barcelona (where, this year, water has been imported in tanker ships).

CWC's recently published draft water resources management plan is on view at www.cambridge-water.co.uk/community/resource_plan.asp. It states that planning for 40,000 new homes by 2021 (or 3,000 a year) in the sub-region is well under way – despite the fact that 'from experience of the market the Company does not believe that this rate can be achieved'. Overall, demand is expected to rise by 20% – of which 2% is accounted for by climate change.

Building on recent successes, demand will be controlled through the promotion of efficient water use, resulting in a lower per capita consumption; the use of water meters and rain and grey-water in new developments; and leakage control. New water resources will be tapped but, as part of the policy of restraint, their use will be limited. Bar a run of dry summers, CWC seems confident it can cope up to 2035.

Foul and storm water drainage is the responsibility of Anglian Water. Its planning horizons are somewhat shorter – the period between 2010-2015 is currently being looked at – but it is confident that capacity can be provided where needed. AW's principal concern is extreme weather of the kind that caused such severe flooding in Gloucestershire in 2007.

Flood prevention and the control of construction on floodplains is the concern of the Environment Agency. None of the proposed urban extensions and settlements is within Flood Zone 3 (indicating a high risk of flooding). *CAG*

AND WHAT ABOUT THE BUILDERS?

The construction industry is losing workers at rates not experienced for nearly twenty years, particularly in the residential sector. Mention the anticipation of construction of any of the projects listed elsewhere in this gazette to any house builder as being likely in the short or medium term and you will be met with either laughter or a look of disbelief. Locally, major housing construction sites are being abandoned before completion as sales falter. This article is written, therefore, not on the basis of what is happening in the marketplace in 2008 but in some, seemingly fictitious time in the not too distant future when the economy has recovered and the demand reappears for housing. At that time the first question likely to be posed is where will the workers come from?

No residential developer employs directly all of its own labour resource, if indeed any. All trades are sub-contracted and the industry as a whole has focused on repeat business through key relationships and supply chains to provide continuity of work and certainty of delivery. However, the changes of the past few months have seen a number of these relationships evaporate. The majority of the major residential projects are served by nomadic sub-contractors who move from major project to major project throughout the region and beyond. The contraction in the marketplace has impacted on them first.

Traditionally, apprenticeships and other forms of training are early casualties of a reduction in the workload of construction firms. In two years' time the market is likely to be suffering a similar vacuum of talent to that in the early 1990s. Available money to sponsor apprenticeships is already drying up. When competition in the marketplace rises and resources are scarce the price paid increases. The current situation, however, should indicate that prices fall. Whilst there is some initial evidence of that there are still some major external factors driving material prices higher. As in the residential sales market, there are areas within the construction industry at large in which prices continue to hold firm.

Price distortions unlikely

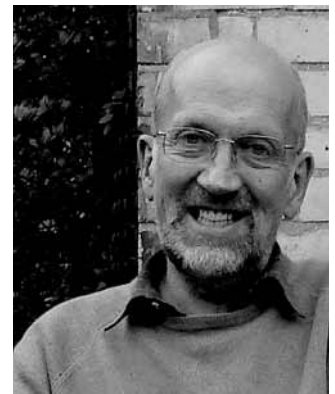
The construction of so many large projects should provide an upward pressure on pricing levels. However, it is worth reminding ourselves that prior to the construction of the recently opened Grand Arcade it was feared that such a large project would suck in any spare resource and force prices to rise. However, we saw no firm evidence in either tenders received or pricing levels that was directly attributable to the Grand Arcade. But there is evidence that the introduction of the rising bollards around Cambridge City Centre has done more to increase construction costs of inner city projects in recent years. None of the proposed residential sites, however, are within the restricted centre of the city and we would not expect any significant price distortion in the local economy when these projects commence. Developers know better than most the need to maintain margins and maintain cost control.

Despite all the doom and gloom, there is a thriving, funded, residential construction marketplace which is still active. Registered Social Landlords are still busy fulfilling their role of providing affordable housing. The majority of these schemes are constructed by local constructors with input from local consultants. With pressure from the Government, these providers have led the way in terms of innovation within the industry and continue to meet the ever increasing demands of sustainability and more efficient homes. Another benefit to the local construction economy is through the monies secured through section 106 agreements, basically a contribution from major developments to support the social infrastructure. Highway improvements, new roads, open space, schools and community centres are funded through such payments. The figures involved are significant – with sums in the region of £15,000 per residential unit being typical.

Whilst the industry may be facing bleak times in the immediate future it is well placed to respond to the challenge of providing the quantity of homes outlined in this issue of the gazette. *Laurence Brett*

PROFILE PLAN MAN

Peter Studdert is Director of Joint Planning for Cambridge's Growth Areas and Northstowe New Town. He talked to Nicholas Ray.



He lives in the sort of house he'd like others to be able to have, but of which few have been built in the last hundred years - semi-detached with a small garden, but close to the centre of town and to excellent landscape and recreational space. The density averages 50 houses to the hectare, and that's what is being aimed at in Northstowe – a bit denser in the centre and looser on the periphery. For comparison, Cambourne averages between 30 to 35.

Peter trained as an architect at Newcastle, and an encounter with the notorious T. Dan Smith, whom he'd invited as keynote speaker to a conference he organised while still a student, persuaded him that planners, rather than architects, would have the greatest influence in shaping the future environment. He subsequently took a day release course in planning at Central London Polytechnic, and worked at Westminster, Islington and Tower Hamlets Councils before moving to be Cambridge City Planning Officer in 1991.

When he arrived the Green Belt was sacrosanct, and the context only changed in the middle of the 90's, when the expansion of Cambridge was recognised as essential to support the city's booming economy. Peter sees the Cambridge Futures project, initiated by the then mayor together with the University architecture school head, and directed by Marcial Echenique (see page opposite), as a major turning point, and the present 2003 Structure Plan and 2006 Local Plan drew from its conclusions.

Planning requires joined-up thinking, and Peter helped to establish Cambridgeshire Horizons as a sub-regional body that could provide that, moving from the City Council to become one of its Directors in 2004. Since 2007, he has moved back to the front line of planning, leading multi-disciplinary teams drawn from the City, County and South Cambridgeshire Councils working on the major City Fringe housing sites and Northstowe.

Peter is keen to see Northstowe drawing on recent German and Dutch housing experience. Ironically, these places had themselves learnt from British experience in a previous era, but Thatcherism dismantled the planning system that created the New Towns and has ensured that it is now a major challenge to co-ordinate infrastructure and spatial planning. But Peter is an optimist: the guided bus will connect Northstowe to the City of Cambridge; the A14 improvements are agreed; and the precedent of the Stirling Prize-winning Accordia development shows that with the right carrots and sticks it's possible to create quite dense housing of real quality – as good as the street he himself lives in.

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W: www.acleigh.co.uk

A.C. Leigh



Cover: design by Bobby Open who also prepared all location key plans and the plan on p. 4

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This issue edited by:
Peter Carolin
Anthony Cooper
Liz King
Bobby Open
Kieran Perkins

Fundraising by:
Marie-Luise Critchley-Waring

Editorial Group:
David Raven
Peter Carolin
Bobby Open
John Preston

Cambridge Architecture gazette
c/o 25a Hills Road
Cambridge CB2 1NW
Tel 01223 36555 Fax 01223 312882
Email mail@dra-architects.demon.co.uk
or pc207@cam.ac.uk or
mail@bobbyopen.com

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