2012

THE LEA VALLEY GLASSHOUSE INDUSTRY:

Planning for the Future

Laurence Gould Partnership Limited with Derek Hargreaves, Andrew Colquhoun and Triple Consultancy

Laurence GOULD PARTNERSHIP LTD

Published by Laurence Gould Partnership Ltd
Head Office: The Forge
Four Mile Stable Barns
Cambridge Road
Newmarket
Suffolk
CB8 0TN
www.laurencegould.com

Executive Summary

This report is produced as part of the Evidence Base to inform the forthcoming policy review that is being undertaken by Epping Forest District Council in 2012 in relation to glasshouse planning policies.

The research objectives were:

1. To focus on the current state of the glasshouse industry in the Lea Valley area;
2. Set out the likely development of the industry over the next 10-15 years having regard to the development since the previous report on the sector in 2003;
3. Understand what the requirements are from the industry in terms of planning policy to assist the sector's long-term viability;
4. Determine how planning policy can meet the industry's objectives taking into consideration other external factors;
5. Evaluate the level of glasshouse dereliction and opportunities for use by the industry.

Phase 1 of the research aimed to analyse the current state of the glasshouse sector and identify likely trends that will occur over the period to 2031. Building on phase 1 the next step was to analyse and understand the future requirements of the Lea Valley glasshouse sector in terms of planning policy to secure a viable sector in the long-term. The 'ideal' planning policy was then considered in the context of external factors including wider council policy, the Lee Valley Regional Park's policies and objectives and national policy. Finally the research considered the issue of dereliction – what drives dereliction and what could be done to mitigate the problems.

The main findings are:

- The protected cropping sector (in the Lea Valley and across the UK) has been declining in area but less so in terms of total output for a number of years. The economic outlook in the last few years has been very challenging. As a result, especially since 2006, the number of applications for new or replacement glasshouses in the Lea Valley has fallen;

- Many growers believe that large-scale development (similar to Thanet Earth in Kent and Billingham at Stockton-on-Tees) will provide sufficient efficiency of production to make a viable future. Most growers currently in the Lea Valley plan to invest in the business in the next 5 years and the majority would like to invest within the Lea Valley;

- If the economic outlook for the sector does not improve, demand for new and replacement glass is likely to stay low;

- Over the next 20 years growers expect the minimum size unit for viable glasshouse production to more than double;

- Growers in the Lea Valley are significantly smaller than the average unit in the rest of the UK. This means that businesses in the Lea Valley are less efficient, have lower yields and have fewer opportunities for new products and crops than businesses in the rest of the UK;

- The glasshouse sector in the Lea Valley makes a significant economic and employment contribution to the area;
- The areas based policy currently in place within the Lea Valley is successful in meeting its intended objectives of containment and clustering. If this policy is to continue to be successful it is vital to ensure sufficient areas are designated. This is a minimum of a ratio of 2:1 and ideally a ratio of 4:1 of designation to expected demand;
- Four scenarios ('continuation of current trend', 'medium and large-scale grower expansion', 'large single site development' and 'managed decline') have been identified. With the exception of managed decline all scenarios will require additional E13 designations if the area based policy is to continue;
- Energy is one of the growers' main concerns. CHP, biomass heating and anaerobic digestion are all potential solutions to this problem and potentially provide environmental benefits from (i) being net energy producers, (ii) beneficial use of waste heat and CO_2;
- Traffic is a major concern for local residents but it is not clear if the actual growing of the crops is the issue. It appears likely (although a traffic survey is needed) that the main traffic issues come from the packhouses and adjacent industrial uses;
- Packhouses are contrary to green belt policy but play a vital role in the glasshouse sector in the Lea Valley.

The following recommendations are made:

Recommendation 1 *Epping Forest District Council should adopt a clear strategic vision for the glasshouse sector. The current position of support for the sector within E13 designations but with E13 designations insufficient to allow large-scale expansion is not viable for the sector in the long-term.*

Recommendation 2 *The glasshouse sector makes a significant contribution to the local economy and employment. Support for large-scale expansion of the sector would be a positive economic step. Large-scale expansion will require new designations of E13 areas. To reflect the traffic issues and the incompatibility of glasshouses and the Regional Park, designations should be considered to the east of Epping.*

Recommendation 3 *To support small to medium sized growers, the Council should consider expansion of the existing E13 designation outside the Park Authority boundary. Large-scale growers moving to new designated sites would also create opportunity for smaller growers. However, expansion of the existing E13 areas within the Park Authority boundary would be resisted.*

Recommendation 4 *Both growers and the Council should look to work closer together in developing new sites. Thanet Earth is an excellent example of what can be achieved through positive partnership.*

Recommendation 5 *The Council should consider using Section 215 amenity notices and discontinuance orders to avoid dereliction. In extreme cases compulsory purchase powers could be used. Where compulsory purchase powers are used the Council should look to communities to develop acquired sites for renewable energy, community projects and affordable housing.*

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1. Introduction

This report sets out the findings of the *'Lea Valley Glasshouse Industry: Planning for the Future'* research project. Epping Forest District Council commissioned Laurence Gould Partnership Limited in April 2011 to undertake the research. Laurence Gould Partnership Limited worked with industry experts Andrew Colquhoun and Derek Hargreaves to complement the research team. Triple Consultancy (a Dutch horticultural consultancy) was sub contracted to undertake a review of comparisons from an international perspective.

This research forms part of the evidence base that will inform the forthcoming policy review that is being undertaken by Epping Forest District Council in 2012 in relation to glasshouse planning policies. The research complements previous studies undertaken by Reading Agricultural Consultants and the most recent review of E13 designations undertaken by Howard Green FRICS in 2005.

The study included desk-based research and analysis of published statistical information from sources including DEFRA and EEDA. Meetings were held with a number of growers and grower representatives and an online survey of growers' views was conducted throughout the research period. Stakeholders and other interested parties were also consulted during the research. A consultation event was held in October 2011 with a session for district councillors and a second session for parish and town councillors and local interest groups. Initial findings and conclusions were presented to EFDC Officers, stakeholders and the Growers Association in December 2011 and further research was undertaken. The final report was published in June 2012.

Phase 1 of the research aimed to analyse the current state of the glasshouse sector and identify likely trends that will occur over the period to 2031. This included analysing information on areas of production, output, costs of production and profitability. Building on phase 1 the next step was to analyse and understand the future requirements of the Lea Valley glasshouse sector in terms of planning policy to secure a viable sector in the long-term. This included appraising the outcomes of the current planning policy against its intended objectives, analysing the area to identify potential development areas and discussing with growers their primary challenges. The 'ideal' planning policy was then considered in the context of external factors including wider council policy, the Lee Valley Regional Park's policies and objectives and national policy. Finally the research considered the issue of dereliction – what drives dereliction and what could be done to mitigate the problems.

2. Approach and Methodology

2.1 Research Objectives

1. To focus on the current state of the glasshouse industry in the Lea Valley area;
2. Set out the likely development of the industry over the next 10-15 years having regard to the development since the previous report on the sector in 2003;
3. Understand what the requirements are from the industry in terms of planning policy to assist the sector's long-term viability;
4. Determine how planning policy can meet the industry's objectives taking into consideration other external factors;
5. Evaluate the level of glasshouse dereliction and opportunities for use by the industry.

2.2 Methodology

To focus on the current state of the glasshouse industry in the Lea Valley area

Information on the nature and structure of the UK, Eastern England and Lea Valley glasshouse sector was reviewed to identify the trends in total protected cropping area, cropped area, crop types and value, yield, production and price.

Financial information was then analysed to identify the trends in profitability. In particular farm gate price and costs of production were analysed. Future trends were identified as well as potential issues that will impact on the economic sustainability of the sector.

The primary sources of information for this stage of the research were: DEFRA, EEDA and the Lea Valley Growers Association. Most of the information is peer reviewed and published as statistically significant. Not all data underwent this level of scrutiny and a lower level of weighting was given to this information. The more specific the dataset the less available were statistically significant data. Although DEFRA publish very detailed UK data and regional data, there is limited information available at the Lea Valley specific level.

An online survey was published in May 2011 and submissions were accepted until December 2011. The survey investigated quantitative data such as growing areas, staffing, crops and resources and structure in addition to qualitative data such as business confidence, opinions on planning policy and future business intentions. In addition to the online survey a series of meetings with growers, packhouses, marketing organisations and growers' representatives was held to discuss specific issues in greater detail. Throughout the project the research team were in contact with the Lea Valley Growers Association. A meeting was held with Lea Valley Growers Association in December 2011 to present and discuss initial findings and LVGA held a presentation for the research team in January 2012 to develop some of the areas of concern.

Set out the likely development of the industry over the next 10-15 years having regard to the development since the previous report on the sector in 2003

Initially the 2003 Reading Agricultural Consultants' report was reviewed in the context of what was projected to happen and what happened in reality. This was also assessed in the light of wider policy changes to identify any factors which were not known in 2003 and which could influence the industry in the next 10 – 15 years.

Using these findings and the results of the statistical review a number of potential scenarios were developed of how the sector could develop if planning policy constraints were not an influencing factor. The status of the current policy was then analysed against the potential scenarios – specifically a detailed appraisal of the existing E13 areas was undertaken to identify the area available (both physically and taking account of ownership) for development.

Case studies were also analysed to draw conclusions and lessons from similar situations both in the UK (West Sussex, Thanet and Billingham) and internationally (Holland).

Understand what the requirements are from the industry in terms of planning policy to assist the sector's long-term viability

Using the outcomes of the previous two parts of the research and following a detailed appraisal of planning policy (including likely future trends in policy) a number of scenarios for industry development were identified, tested and discussed. This included further discussions with growers and the LVGA.

Determine how planning policy can meet the industry's objectives taking into consideration other external factors

A review of EFDC policy, national policy and the objectives and policies of the Lee Valley Regional Park Authority was undertaken to assess how these may limit or influence the potential scenarios which had been identified. Mitigation factors were also considered where there was incompatibility between industry objectives and external factors.

Evaluate the level of glasshouse dereliction and opportunities for use by the industry

EFDC identified this as a main issue/concern with regard to the glasshouse sector. The main issues and drivers for dereliction were identified through discussion with growers and appraisal of the economics of protected cropping. District, town and parish councillors and local interest groups were consulted on the issues they experience from dereliction and potential alternative uses were discussed.

3. About Epping Forest District & Lee Valley Regional Park

Key Points:

- *Epping Forest District has a relatively affluent population with a large number of commuters living within several main towns and the green belt who commute to London;*
- *The wider area is better known as a commuter belt with the M11 corridor focusing on service industries and technology;*
- *Agriculture and horticulture represent a larger proportion of total employment in this area compared to England as a whole (see section 5.5);*
- *The glasshouse area is generally concentrated in a small westerly element of the District;*
- *The Lee Valley Regional Park Authority (The Park) has a statutory right to be consulted on planning applications, contribute to planning policy and request that decisions are referred to the Secretary of State;*
- *The Park's vision and objectives are not compatible with a horticultural glasshouse sector, although it has now (in 2011) recognised the importance of food production in the Lea Valley. That said The Park broadly accepts E13 designations and development of glasshouses within these areas;*
- *The Park's objectives include support for the demolition or improvement of glass in the Park area but also indicate that glasshouse horticulture is not compatible with the Park's vision for the future;*
- *The 2006 District Plan alterations identified additional E13 designation land to meet projected demand for new glass. A ratio of double the supply to demand was considered to be appropriate;*
- *The 'Howard Green 2005 Report' suggests that if designated land does not become available to growers the Council could consider its compulsory purchase powers as a means of resolution.*

3.1 General

Epping Forest District is in the South East Local Enterprise Partnership (SELEP). This comprises East Sussex, Essex, Kent, Medway, Thurrock and Southend. The district has 24 parishes and is 92.4% Green Belt.

3.2 Glasshouses

The glasshouses are predominantly located in the three most westerly parishes (Nazeing, Roydon and Waltham Abbey), and are either adjacent to, or within, the Lee Valley Regional Park.

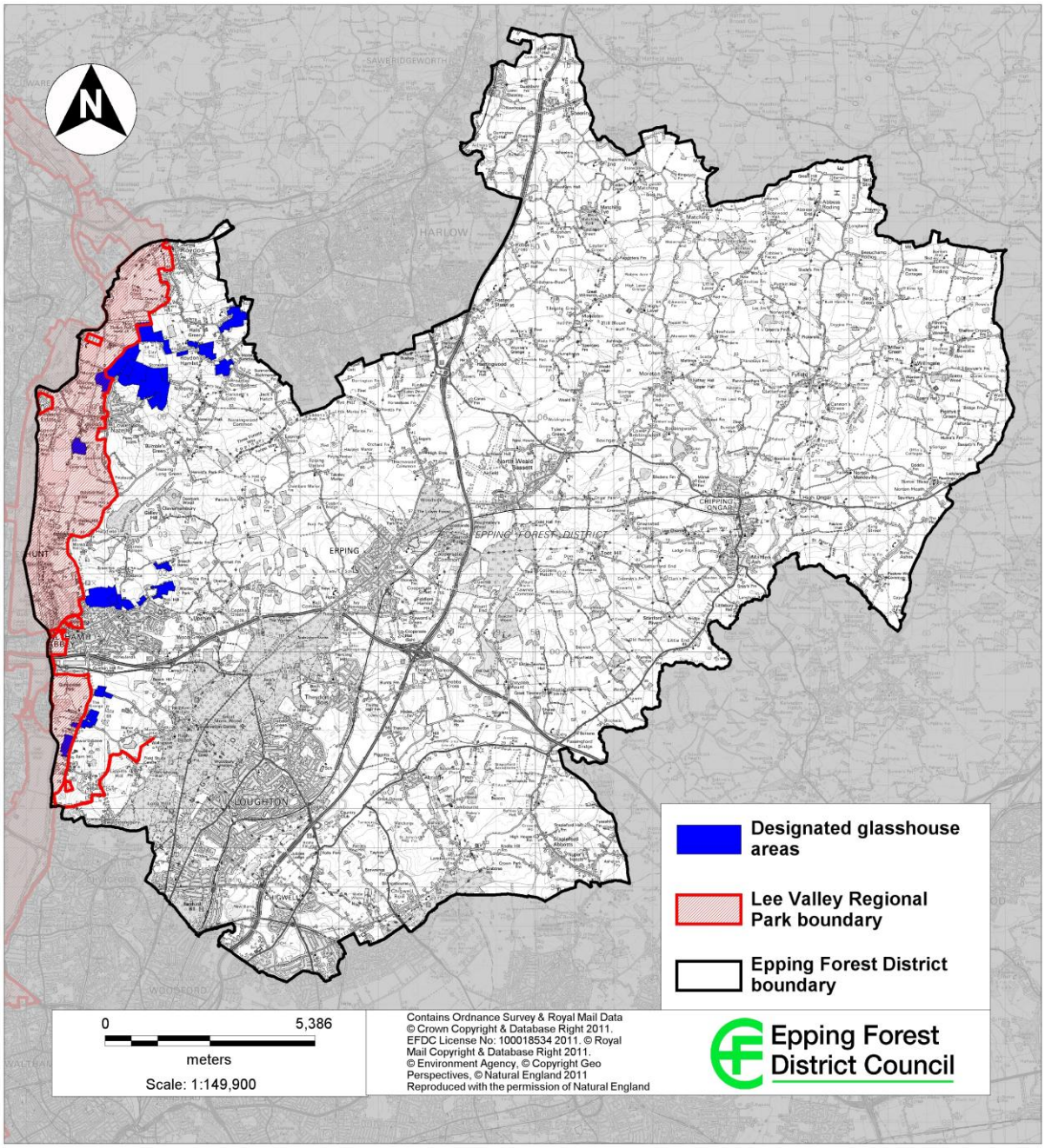


Figure 1 – Map of Epping Forest District Council Area
(Epping Forest District Council http://www.eppingforestdc.gov.uk, 2012)

3.3 Population

- 123,400 total population (ONS Mid-Year Population Estimates, 2009);
- Approximately 25% of the population live in the three parishes with Glasshouses;
- Nazeing and Roydon have low levels of deprivation;
- Waltham Abbey has very high 'pockets' of deprivation (Communities and Local Government Indices of Multiple Deprivation, 2007).

3.4 Economy & Employment

- London, M11 corridor and Harlow are the main focus of employment;
- 45% of the resident population commute to London (highest outside of London);
- Construction (16.38%), business services (10.32%) and health (8.89%) are three highest employment sectors in EFDC (shown as % of total employment of 55,900) (EEDA, Local Area Forecasts, 2011);
- Agriculture and horticulture employment is 2,700 FTE jobs (4.84% of total employment);
- Unemployment is 1/3 of the national average.

3.5 Epping Forest District Council Local Plan

Alterations to the 1998 local plan were adopted in 2006. The Alterations state that glasshouse development is appropriate within the Green Belt and accepted that economic pressures were driving growers towards larger units than historically were present in the Lea Valley. The Alterations recognise the benefits of proximity to London and commented that a large number of respondents to the consultation supported growing glasshouse crops 'close to where they are sold' and 'in this country where pesticides are more carefully controlled'.

The amended local plan accepts that development may be required adjacent to designated glasshouse concentrations. The 1998 plan designated 244.8 hectares of land suitable for glasshouse use. Howard Green FRICS, however, identified (in 2005) that only 33.39 hectares was available for development – this being only suitable to meet the lowest projection from the Reading Agricultural Consultants' Report in 2003. In consequence and upon external advice the 2006 revisions to the local plan added 100.44 hectares of designation (of which 11.73% was already in development). In addition 30.14 hectares was proposed for de-designation as it was deemed to be unsuitable for glasshouse development. This resulted in a net gain to the designated area of 70.30 hectares.

The council calculated that this would provide a total area for development of 96.5 hectares which would be adequate for the estimated 50 hectares of development identified for the next 10 years (2003 – 2013) in the 2003 RAC report.

The RAC report identified that building new glasshouses was the preferred option for developing nurseries rather than replacing existing glasshouses, which contributes to the issue of dereliction. Traffic concerns remain one of the primary issues regarding glasshouse use/development in the area.

Some of the E13 designations are directly adjacent to The Park boundary and some of the areas are actually within it. Generally speaking The Park accepts the E13 designations but would object to

development outside of or adjacent to E13 designations and any 'non-agricultural' developments that are not suitable developments within the green belt. In analysis of recent planning outcomes 20% of all applications outside of The Park have been refused whereas within The Park's boundary it is significantly higher at 48%.

It is unlikely that The Park would support expansion of E13 designation areas in or around The Park.

3.6 About the Lee Valley Regional Park

The Lee Valley Regional Park (The Park) is managed (and part owned) by the Lee Valley Regional Park Authority (LVRPA). The Park extends to a total of 4,000 hectares (of which 1,600 hectares are Authority owned). The area covered is oblong in shape starting in East London at the River Thames and extending northwards to Ware in Hertfordshire.

In terms of the Epping Forest District Council Planning Authority the Eastern side of The Park extends into the three parishes in Epping Forest which contain the majority of the glasshouse businesses. In particular The Park boundary extends to the western edge of Waltham Abbey, it incorporates part of Lower Nazeing and covers all of Roydon Park which is immediately west of Roydon Village.

The LVRPA is governed by the Lee Valley Regional Park Act 1966. The Authority is not a planning authority but does have the following powers and duties:

- Prepares the plan for the management and development of The Park;
- Prepares the plan of proposals for the future use, development and management of The Park (required under Section 14 of the Park Act 1966);
- Planning Authorities are required to include those plan proposals affecting their area in their own planning strategies and policies (Local Plan) although inclusion does not imply that the planning authority necessarily agrees with them;
- Planning Authorities must consult the Park Authority on all proposals within The Park;
- Planning Authorities must consult the Park Authority on all proposals that affect The Park;
- The Park Authority can request a decision is referred to the Secretary of State where that proposal conflicts with The Park's plan.

The Authority does not have the statutory right to impose section 106 requirements but can suggest this, in particular for contributions to support the mitigation of negative impacts, to the relevant local authority as part of the consultation process. The Park Authority has the right of Compulsory Purchase.

The Park Authority is required by statute to encourage or work with others to provide:

- Sport;
- Recreation;
- Leisure;
- Entertainment;
- Nature conservation.

It has no responsibility or requirement to support the glasshouse industry.

The Park Plan (Parts 1&2) 2000 (Park Plan 2000), is still the adopted s.14 Plan of the Authority. But in 2007 the Authority started work on the Park Development Framework to update and in due course replace the Park Plan 2000.

In July 2010 the Authority adopted the Park Development Framework (PDF) Vision, Strategic Aims and Principles and in January 2011 a set of Thematic Proposals were adopted setting out the Authority's Park wide aspirations for future development and management. The PDF will eventually be supported by a series of area based proposals covering all land within the Park. These area based proposals will in due course amend either in part or in its entirety the Park Plan 2000 for the purposes of s.14. It should be noted that the PDF is consistent with the Park Plan 2000 and the Authority's remit. Accordingly both the Park Plan 2000 and the PDF are relevant in terms of Section 14 (2) of the Park Act and are formal statements of the Authority's position in respect of development within the Regional Park.

The Park's Vision as set out in the PDF is as follows:

> ***Lee Valley Regional Park – A world class visitor destination***
>
> *The purpose of the Park as a place for leisure, recreation, sport and nature remains firmly at the heart of our future aspirations.*
>
> *However our ambition has grown; we want the Park to become a truly world-class destination, and an exemplar of the many benefits that large-scale parklands can deliver.*
>
> *We are already committed to developing and operating world-class sports facilities as a legacy of the London 2012 Olympic and Paralympic Games. This will see the Park develop further as a centre of sporting excellence. We recognise the importance of developing the visitor facilities within the Park, and of balancing the Park's biodiversity offer with a range of other leisure and recreation activities.*
>
> *We also believe the Park offers a vital resource for social and community wellbeing and for the development of sustainable communities as a whole. Within our remit there is a role the Park can play in helping everyone live in a more sustainable way; to adapt to, and mitigate future climate change, and to manage the impact of past land uses.*
>
> ***The Strategic Aims are as follows***
>
> ***Visitors***
>
> *A Park that is a high quality and regionally unique visitor destination*
>
> *We want the Park to be a great destination. A special place to visit, somewhere people choose to come again and again because it provides experiences they cannot find anywhere else. We believe that to be a great destination, the Park needs more than just great activities, sights and experiences: it needs to be well known and recognised, easy and enjoyable to get to and move around, and accessible to people of all abilities.*

Sport and Recreation

A Park that delivers a range of high quality opportunities for sport and recreation

The Park has been conceived and developed over the past 40 years to be a place for leisure, recreation and sport. These activities continue to be at the heart of what the Park is about. We want to ensure the Park is a place that offers exciting and varied experiences that attract, and are used by, as many people as possible - while at the same time ensuring that what is offered is of the highest quality.

Biodiversity

A Park that delivers a high quality biodiversity resource for the region

The Park is a valuable biodiversity resource. Large areas of the Park are internationally designated and protected for their nature conservation value, while other sites within the Park have similar recognition and protection at a national, regional and local level. We want to continue to develop and manage the Park to be an even richer place for wildlife – a place where plants and animals can thrive, and where people can experience and enjoy the natural environment.

Community

A Park that helps people improve their wellbeing

We want a Park which is first and foremost a place for people – a place where anyone and everyone is encouraged to visit and get active, creative, involved, meet others, learn new things, or simply enjoy themselves. It is a place to develop happier and healthier individuals, and in turn happier and healthier communities. We believe the Park is a fantastic venue for all sorts of activities and events that will give people the reason and motivation to come and visit.

Landscape and Heritage

A Park landscape that embraces the physical, cultural and social heritage of the area

We want the Park to be a great landscape: a place that looks, sounds, smells and feels amazing. We want a Park landscape that reflects its river valley character, yet retains the distinctive personality of each local area. It should tell the unique story of the Lee Valley and communicate its rich and historic diversity.

Environment

A Park that contributes to the environmental sustainability of the region

The Park is home to many different activities that support modern urban life: drinking water supply, disposal of waste, production of food and energy, sand and gravel extraction, flood water storage, electricity pylons, waterways, roads, and railways.

We want a Park that can provide and accommodate these important functions, while allowing people to use and enjoy the facilities on offer, supporting wildlife, and contributing to a sustainable future for all.

We also believe the Park will play an increasingly important role in helping to mitigate and adapt to the impacts of climate change.

3.7 Lee Valley Regional Park Plan

The Lee Valley Regional Park Plan[1] ('The Plan') is a comprehensive document setting out the vision of The Park, its view towards development and its core principles. Reference to the horticulture industry operating within and adjacent is limited but references which are relevant to agriculture and horticulture in Part One of the Plan are:

- **Chapter 1**
  Notes that the Regional Park is facing 'intense development pressure' from the 'industrialisation of agriculture' [among other things] which affects all of The Park area.

- **Chapter 4**
  Identifies land in agricultural and horticultural use as 'opportunities to enhance the use of or the amenity of the Regional Park in the long-term' and comments that these land uses (in addition to residential and industrial uses) are included in the plan to 'allow influence on the design and landscaping of further development'.

  Identifies the open land as a 'most valued characteristic' and states that all development in or around the Regional Park should not 'adversely affect this characteristic'.

Horticultural development does not fit with the statutory remit of The Park and is considered to have a negative impact on the open nature of The Park. Interestingly within the references to sustainability there is no comment on food production and self-sufficiency in food rather focusing on protection of land and non-renewable resources.

Part Two of the Plan makes more explicit reference to horticulture and glass:

In **Section 2 – Roydon to Broxbourne** it states 'extensive glasshouses both within and outside the regional park have a detrimental impact'. It identifies large levels of dereliction alongside the areas of 'rough ground' surrounding glasshouses as the primary issues. These areas are seen as opportunities for 'future appropriate development' of The Park.

Section 2 goes on to identify the removal and improvement of derelict glass as a proposal for The Park. It states that glasshouses 'spoil the view' from higher ground around Roydon, are detrimental to the 'rural character' of The Park and are 'not compatible with the purposes of the Regional Park'.

Proposal i refers to the need for remedial work (i.e. replacement or removal) of derelict glasshouses between Nursery Road and St Paul's Field. This raises the question of to what extent The Park

[1] *Lee Valley Regional Park Plan, Part One: Strategic Policy Framework (approved 23rd April 1998)*

Authority is supportive of replacement of derelict glass when glasshouses are 'not compatible with the purposes of the Regional Park'.

This section does note the benefits of a flourishing horticultural sector (presumably at least in part in terms of food production) on a national level but states that 'the recreational resources are not assisted by areas of derelict glasshouses or by intensification which results in more permanent structures'.

Section 3 – Broxbourne to Waltham Abbey notes that the two concentrations of glass and industrial buildings (presumably packing facilities) have a visual impact on visitors, fragment the area and generate traffic.

Whilst one has to accept that the Park Authority has a very different strategy the point must be made that visitors create far more traffic than the glass sector. Furthermore, the current E13 policy should result in more concentrated areas which appears to be the most practicable way of addressing The Park's remit and interests.

Section 3 goes on to state that 'there are no intrinsic merits of this land which would justify its use for horticultural purposes in preference to alternative, non-designated sites in the region'. This suggests the Authority would prefer to see glass development outside and not adjacent to The Park. However, it rarely objects to applications for suitable horticultural development where it is within the existing E13 designations (which are based on historic areas of glass) even when within/adjacent to The Park.

3.8 Lee Valley Regional Park – Park Development Framework

The Park Development Framework Thematic Proposals, unlike the Park Plan 2000, do make explicit reference to the importance of food production (under the environmental theme) albeit within the constraints of the wider objectives of The Park. Of particular note is a desire for The Park to 'develop strong partnerships' with commercial operators to develop branding, retail and visitor opportunities. There are no clear guidelines, however, on how the horticultural glass sector might fit with this theme.

Another key element of the Framework relevant to horticulture is the reference to protection of the landscape and the strategic landscape vision. The principal aim is to identify the key landscape characteristics in the Park. These include vegetation, water features, structures and land uses which are distinctive to the area and the Park; the existing landscape strengths; and the overall landscape experience. From this a Strategic Landscape Vision will be developed to provide guidance for future development and management.

It is the view of Laurence Gould Partnership that glasshouses should be recognised and accepted as part of the distinctive landscape character of the area, following existence in the Lea Valley for over a century.

4. Consultations

Key Points:

- *Most growers would like to or plan to invest in the future;*
- *Most growers, in addition to increasing the growing area, intend to increase the height of their glasshouses. The majority of glasshouses are 4.0 metres tall or less. The majority of growers are planning on investing in their business in the next 5 years and many of these are planning to build taller glasshouses;*
- *Planning constraints are a barrier to investment and business growth in the area but the existing site constraints are a greater issue;*
- *Growers are unlikely to leave the Lea Valley despite the barriers they face to expansion/investment with more planning to invest inside the Lea Valley than outside;*
- *The minimum unit size for a viable business is thought to be 2.60 hectares at the present time but this is likely to increase to 6.28 hectares in the next 20 years. However, currently a large proportion of growers have sites of 1 hectare or less;*
- *Traffic and its impact on local residents' amenity are two of the major concerns regarding glasshouse development;*
- *Dereliction is a concern for the local community, district and parish councillors and the Park Authority.*

4.1 Growers and Businesses (meetings)

On-going discussions were held with growers, grower representatives and advisors to the sector throughout the process. Some views expressed were emotive (especially when decisions were being made in respect of their own businesses) and some data/information was commercially confidential. However, below summarises the common views that were expressed.

- There is a mix of growers that operate solely within the Lea Valley and both inside and outside the area. The common theme is that they all have historic (often family) connections to the area and have little or no ambition to totally leave. Several businesses have made significant investments away from the Lea Valley due to issues related to expansion and investment within the area;

- Typically the height of glasshouses is relatively low (circa 4 metres or less) and almost unanimously they hope/plan to increase the height of their glasshouses;

- Again, almost unanimously, the businesses consulted plan to invest in larger growing areas and new crops but planning is always a negative consideration when looking at investment in the Lea Valley as are constraints with their existing sites;

- We met with the main 5 packhouses/packers. On average they are packing for 11.4 businesses per facility but planning constraints have affected their business in some way;

- On average the minimum size glasshouse unit to be viable is considered to be 2.60 hectares currently but is expected to rise to 6.28 hectares over the next 20 years;

- Ornamental cropping needs to be in smaller blocks to allow temperature control of different crops throughout the year. Incremental blocks of 1.60 hectares are manageable, but economies of scale dictate that these blocks are of sufficient number (and therefore total area) to meet the order requirements of the large-scale retailers;

- At least 50% of the businesses consulted cited transport, energy and water as issues for their business or significant issues for the future;

- The smaller size and restrictions on expansion are a primary limiting factor for nearly all businesses;

- The main issues in terms of the planning system are:
    - Decision makers do not understand the sector;
    - Decision makers do not understand business needs;
    - The default answer is no.

4.2 Growers and Businesses (online survey)

A total of 27 responses were received from the online survey which represents a sample of approximately 35% of the sector (by number). The survey was circulated to all Lea Valley Growers Association members and promoted by (a) the National Farmers Union, (b) contacts within the research team and (c) high profile people within the sector.

Demographic

- The majority of the respondents are the owners of the business (96%), the majority of respondents are over 41 years old (87%) and 48% are over 50 years old;
- All the businesses responding to the survey are family controlled and run;
- Just over half of the businesses surveyed (52%) do **not** have the next generation involved with the industry. Only 36% of the growers over 51 years old have the next generation

involved with the business. Where the next generation are involved in the business they are all younger than 40 with 45% over the age of 31 years;

- The average area within the parishes of Roydon, Nazeing and Waltham Abbey was 87% of growers' total area and 82% of respondents operate solely within these Parishes;
- The average total business size was 2.11 hectares which is significantly above the average for the Lea Valley sector calculated as part of this study (1.25 hectares per unit) but 35% of respondents were 1 hectare or under.

Size

- The average area within the Parishes of Roydon, Nazeing and Waltham Abbey was 1.38 hectares whereas the average size outside of the Parishes was 2.88 hectares;
- The majority of respondents operate a single site unit (91%) but the average unit size for multiple site operators is nearly 1 hectare larger than single site operators;
- On average 78% of the respondents' glasshouses are less than 4 metres tall with only 3% over 5 metres and none over 6 metres;
- When asked what the growers thought their glasshouse height would be in 10 years' time:
    - 67% said their glass would be less than 4 metres;
    - Nearly 20% said their glass would be over 5 metres;
    - 74% thought their glass height would not change.

Crops

- Of those surveyed there was only one grower who grows only tomatoes. There was only one chilli grower and there were no aubergine growers. Of the 83% of respondents who grow cucumbers, for 52% it is their sole crop;
- The average cucumber area per business was 1.34 hectares and 1.64 hectares for peppers;
- Of the growers taking part in the survey 35% intend to change their cropping in the next three years.

Sales

- Of those respondents willing to provide financial information (43% of all respondents) 90% rely wholly on crop sales for their business revenue;
- 98% of all sales are through a supermarket/marketing organisation to supply a supermarket and growers thought this would be exactly the same in 5 years' time.

Employment

- The businesses responding employ, on average, 8.04 full-time workers, 0.77 FTE part-time workers and 0.86 FTE casual workers;
- 30% have seen their levels of employment increase in the last 5 years and only 13% have seen their employment decrease;
- Nearly 9% of respondents have seen their employment increase by more than 20%.

Recent Developments

- Over 25% of businesses have replaced glass in the last 5 years – half having replaced glass like for like and half increasing the height of their glass;
- Nearly one fifth (17%) of businesses have increased their growing area in the last 5 years;
- Less than 15% of the growers have invested in new cropping in the last 5 years;
- Of all the growers 22% have invested in energy – 60% in mains supply gas and 40% in renewable energy generation (100% CHP);
- 22% of growers have invested in heat dump storage and 70% in moveable thermal screens.

Future Developments

- Less than one fifth (17%) of the growers have no plans to invest in their businesses in the next 5 years;
- Moveable thermal screens and IT are the most common areas of investment that are planned;
- Only 5% are planning on investing in their existing water capacity but nearly one third plan to invest in water recycling capacity;
- 30% of the growers are planning to invest in their business inside the Parishes of Roydon, Nazeing and Waltham Abbey whilst only 13% plan to invest in their businesses outside these Parishes;
- If their site was sold for a 'significant capital uplift' (e.g. residential development) nearly half (48%) would look to reinvest inside the main Parishes whilst less than one fifth (17%) would invest outside the Parishes. Nearly one third (30%) would retire and only one grower was unsure what he would do.

Barriers to investment

- When asked to rank barriers to investment:
    - 74% stated size constraints of their existing site were a complete barrier;
    - 65% stated lack of confidence in the sector was a complete barrier;
    - 21% stated planning constraints were a complete barrier;
    - 17% stated capital availability was a complete barrier;
- Of those with sites both inside and outside the Parishes of Roydon, Nazeing and Waltham Abbey 57% found there to be greater barriers to investment in these Parishes compared to outside.

Minimum Sized Units

The table below summarises the respondents' estimates of minimum size unit for financial viability by crop type now, in 5 years, in 10 years and in 20 years' time:

	Minimum viable unit size (hectares)			
	Today	**In 5 years**	**In 10 years**	**In 20 years**
Tomatoes	3.2	5.1	5.5	6.5
Cucumbers	2.0	3.3	4.9	6.5
Aubergines	2.2	2.8	3.8	4.8
Sweet Peppers	3.0	4.4	6.5	7.3
Average (mean)	2.60	3.90	5.18	6.28

Table 1 – Minimum Unit Sizes by Crop Types (growers' survey)

Why the Lea Valley?

- When asked what the **best** thing was about growing in the Lea Valley common themes were:
  - Close to transport routes;
  - Close to supermarket distribution network;
  - Close to other growers;
  - Close to family/family ties to the area.

- When asked what the **worst** thing was about growing in the Lea Valley common themes were :
  - Lack of room to expand around their existing sites primarily due to E13 designations;
  - Lack of support from the planning authority in terms of decisions made by planning committee (N.B. although this is a view of the growers the rate of applications approved where they comply with policy is high therefore this view is questionable);
  - Planning issues – growers have a general feeling of frustration that planning policy does not allow them to develop their businesses as they would like to.

Business Objectives and Barriers

The most common business objective was future expansion and the most common barrier to achieving this and other objectives was considered to be the planning system.

Planning System in the Lea Valley

- Of those who had submitted planning applications and provided details 63% had a 100% success rate in planning applications, 24% had been successful in some but not all of their applications and only 13% had not been successful at all (and all of those were where only 1 application had been submitted);
- The average success rate for planning applications was 78% i.e. nearly 8 in 10 applications from the sample response;

- The following were the most common positive comments about the system:
  - General support from planning officers;
  - Application of E13 policy;
- The following were the most common negative comments about the system:
  - Lack of understanding of needs of the glass sector by officers and members;
  - Regulation makes investment in new/modern technology difficult in the Lea Valley;
- Respondents felt the system could be improved by:
  - Greater understanding of needs and greater flexibility within the planning authority;
  - Greater support towards modern systems by planning committee and officers;
  - Less bureaucracy in the planning process/faster process.

4.3 Epping Forest District Councillors and Lee Valley Regional Park Authority Members

A consultation event was held at the Council Chamber in Epping on 6th October 2011. The aims were:

a. To raise awareness of the on-going research;
b. To obtain a better understanding of the views of the District Councillors;
c. To help Councillors understand the value and issues of the sector better;
d. To consult on views of how the sector should develop in the future;
e. To consult on views of what the main issues/concerns are regarding the glasshouse sector.

Within the discussion the following points were raised and discussed:

- Growers are starting to work together but [the opinion stated was] the fundamental issue is that there are too many growers for the available area resulting in too many small and inefficient businesses. A more effective, efficient and profitable future could be fewer growers with larger units;

- Traffic is a significant issue for local residents especially where it is moving through villages and also where single track roads lead to significant glasshouse areas. If larger glasshouse businesses are to develop then this must be associated with appropriate infrastructure investment. A policy or strategy is needed to identify key traffic routes to link groups of growers to the major transport network;

- Renewable energy generation on glasshouse sites should be supported but only where it truly fits with the glasshouse operation and makes a direct contribution to that business. Where there are large amounts of waste being imported to fuel the renewable energy generation this should not be supported as it will increase traffic on unsuitable roads;

- Localised areas of significant dereliction are a major concern. It was suggested that after a period of dereliction growers should be compelled to offer the site to other growers before it becomes uneconomic to bring into modern production;

- Residents are very concerned by the potential impact on their homes of taller glasshouses and artificial lighting for crop production;

- 'Green'/rural areas outside the Lee Valley Regional Park (as well as inside The Park) are being used more for leisure activities such as walking, sports and recreation. Glasshouse development may have a detrimental impact on this and therefore this should be considered before any further E13 designations are made;

- Other districts are considering support for large scale glasshouse investment. This could present a competitive threat to the Lea Valley glasshouse sector and affect employment in the District. The council and business therefore need to look beyond the authority borders when considering future policy in relation to the glasshouse sector;

- The use of the 'seasonal' definition in reference to the General Permitted Development Order (GPDO) and caravans for 'seasonal workers' needs to be reviewed by the council. With artificial lighting and modern growing techniques there is virtually no season. This is being abused by having permanent caravan sites for workers rather than seasonal semi-permanent sites;

- Community buy in for the future of the glasshouse sector is vital for an effective joint strategy. There is a conflict between the Regional Park (on the best glasshouse land) with its amenity objectives and the needs/desires for the future of the glasshouse sector.

4.4 Parish Councillors and Local Interest Groups

A consultation event was held at the Council Chamber in Epping on 6th October 2011. The aims were:

a. To raise awareness of the on-going research;
b. To obtain a better understanding of the views of relevant interested parties;
c. To help leaders of these groups understand the value and issues of the sector better;
d. To consult on views of how the sector should develop in the future;
e. To consult on views of what the main issues/concerns are regarding the glasshouse sector.

Within the discussion the following points were raised and discussed:

- There is an issue where non-approved uses, e.g. light industry in derelict sites, are not being properly enforced (N.B. the planning officers questioned whether this was an accurate statement);

- Concerns were raised over plans to convert glasshouse areas to large scale renewable energy sites that process waste. Renewable energy is supported particularly where derelict sites are used for photovoltaic energy generation, but it has to be suitable and fit with the glasshouse business - not be instead of or detrimental to it;

- There are significant traffic problems. Roads are not wide enough and local communities believe that weight and width limits are not being enforced;

- Broadly the policy of concentration has worked although less so in Waltham Abbey where the owner of a major designated site is not willing to sell land for glasshouses;

- The Council should consider designating new sites adjacent to the M11 and M25 where traffic should be less of an issue;

- Local and affordable housing and renewable energy should be appropriate uses of derelict sites and supported by the planning authority;

- The Lee Valley Regional Park statutory aims mean that glasshouse development within the Park will be discouraged.

4.5 Lee Valley Regional Park Authority Officers

Members of the Research Team met with the Lee Valley Regional Park Authority officers. Those present were:

- Stephen Wilkinson, Head of Planning and Strategic Partnerships;
- Claire Martin, Policy Officer;
- Andrew Wright, Planning Officer.

The main themes which emerged were:

- Fundamentally The Park Authority has objectives within its remit set by statute to provide sporting, leisure and nature conservation opportunities for the local community. The glasshouse sector does not contribute to these aims and as such the Authority would not support expansion of the glasshouse sector in or around The Park. However, it is notable that the Authority broadly accepts the E13 designations and in the last few years 5 of the 7 applications the Authority has responded to have been either no objections or no objections with requests for mitigation for the visual impact;

- The main concerns that the Authority has in relation to the glasshouse sector are the impact on the delivery of its statutory aims from:
    - traffic (especially heavy goods vehicles);
    - impact on biodiversity from lost agricultural land;
    - impact on the landscape from glasshouses and ancillary development.

- In some cases the Park Authority would welcome modern glass as replacement for derelict buildings provided they are within the E13 designations. The Park Authority supports the area based approach – limiting glass to its historic locations, but considers, given the number of applications outside the E13 designation, that it might not be working. The Authority prefers an area based approach over a criteria based approach as it provides clarity;

- The Authority recognises that the glasshouse sector has the ability to generate employment but (correctly) notes that that is a concern of the local authority not the Park Authority;

- Broadly the Park Authority would not object to applications for glasshouses where:
    - They are within the existing E13 designation;
    - They are the same as the current use i.e. no increases in height;
    - Any additional impacts on neighbouring areas of the Park are mitigated.

- The Park would support renewable energy generation provided that it does not compromise other Park functions or values (i.e. biodiversity, recreation, route network, landscape etc.) and provided that wherever possible it delivers multiple benefits over and above the identified energy production benefit.

5. Current Situation

Key Points:

- *In the last 18 years there has been a trend for a declining area of protected cropping in England. Eastern England and Greater London have declined proportionally more than the whole protected cropping sector. The area of ornamental cropping has risen;*
- *In the Lea Valley the area of protected cropping has fallen by 86% in 60 years;*
- *The trend in declining area of protected cropping has slowed and the average size of glasshouse businesses has increased due to very large investments of significant size outside the Lea Valley*
- *The average glasshouse business in the Lea Valley is 2.20 hectares smaller than the UK average (Lea Valley 1.25 hectares versus 3.45 hectares UK). New opportunities for production under glass in the UK (e.g. fruit under glass) are not being exploited in the Lea Valley because the average size of glasshouse businesses is too small;*
- *Increased yield due to more efficient glasshouses has meant total UK production of salad crops has reduced less than the total area of production ;*
- *The home grown fruit and vegetable sector is worth £1.83 billion with the UK importing £4.42 billion worth of fruit and vegetables in 2010;*
- *It is likely that the trend for larger glass businesses will continue alongside a decline in the total area as production efficiencies are achieved and cost pressures continue to affect growers;*
- *Imports have been increasing to meet the total increase in demand for tomatoes, cucumbers and sweet peppers. Demand is likely to continue to grow with some of this being for home grown product, however, much of the demand is outside of the UK growing season so will be met by further imports;*
- *Agricultural and horticultural employment is proportionally much higher in Epping Forest compared to Essex, Hertfordshire and Bedfordshire. Of the 2,700 agricultural and horticultural workers in Epping Forest nearly 40% are engaged in the protected cropping sector.*

5.1 Area of Crops Grown under Glass/Plastic

The national and regional trend (1991 – 2001) of decreasing cropping under glass/plastic as identified by Reading Agricultural Consultants (RAC) in 2003 has continued. The greatest decline has been seen in the North East (although the decrease of 44% only equates to 12 hectares) and the region with the smallest decline was the North West and Merseyside (2.7%) (Table 2).

	1991	1996	2001	2006	2009	*% Change (1991-2009)*
North East Region	27	18	21	20	15	*-44.4%*
North West & Merseyside	220	265	234	226	214	*-2.7%*
Yorkshire & Humber	296	284	247	240	205	*-30.7%*
East Midlands	212	205	168	173	158	*-25.5%*
West Midlands	161	159	168	195	189	*17.4%*
Eastern England & Greater London	***496***	***427***	***378***	***429***	***384***	***-22.6%***
South East England	492	494	457	385	408	*-17.1%*
South West England	197	218	190	207	178	*-9.6%*
ENGLAND	**2,101**	**2,070**	**1,863**	**1,875**	**1,751**	***-16.7%***

Table 2 – Total Area (Hectares) of Crops Grown Under Glass/Plastic in England (DEFRA June Census, 2009)

England has seen protected cropping areas decline by 16.7% (350 hectares). Eastern England and Greater London Region[2] has seen a 112 hectare decline in area under glass/plastic (as reported in the DEFRA June Census, 2009) representing a decline of 22.6% between 1991 and 2009 (see Figure 2).

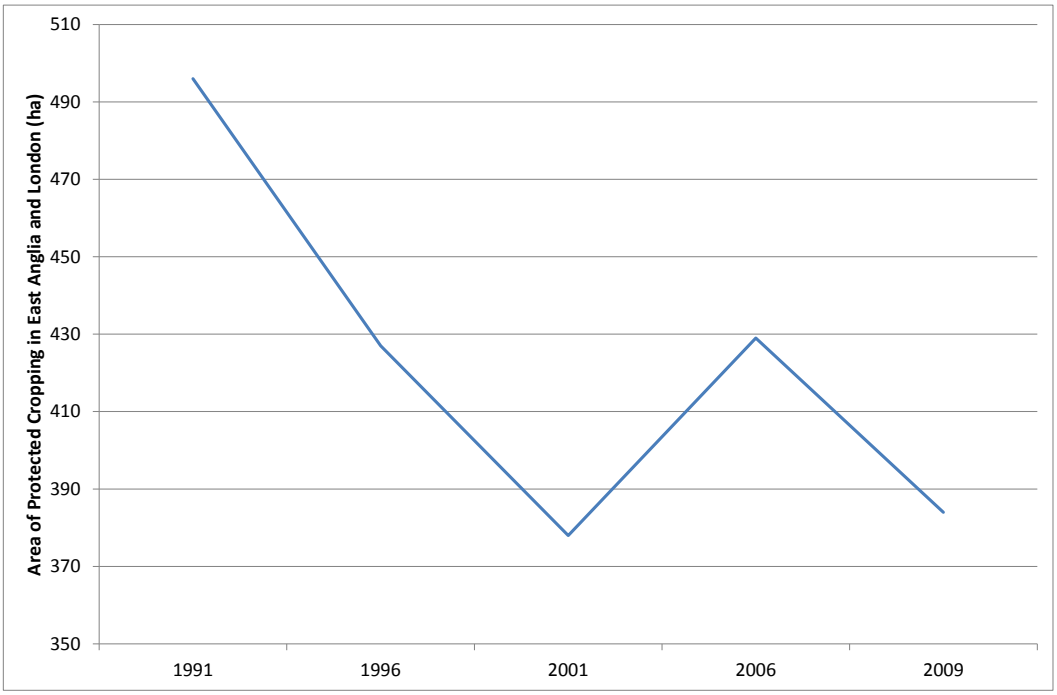


Figure 2 – Total Protected Cropping Area in East Anglia and London (DEFRA June Census, 2009)

[2] *DEFRA now categorises Greater London with the South East Region, however, for continuity the data has been manually revised to retain Greater London in the Eastern England dataset*

Eastern England and Greater London remains a significant region in terms of protected cropping (Figure 3). Only the South East (23.3% of total area) has a larger area of protected cropping (i.e. area under glass/plastic) than this region (21.9%):

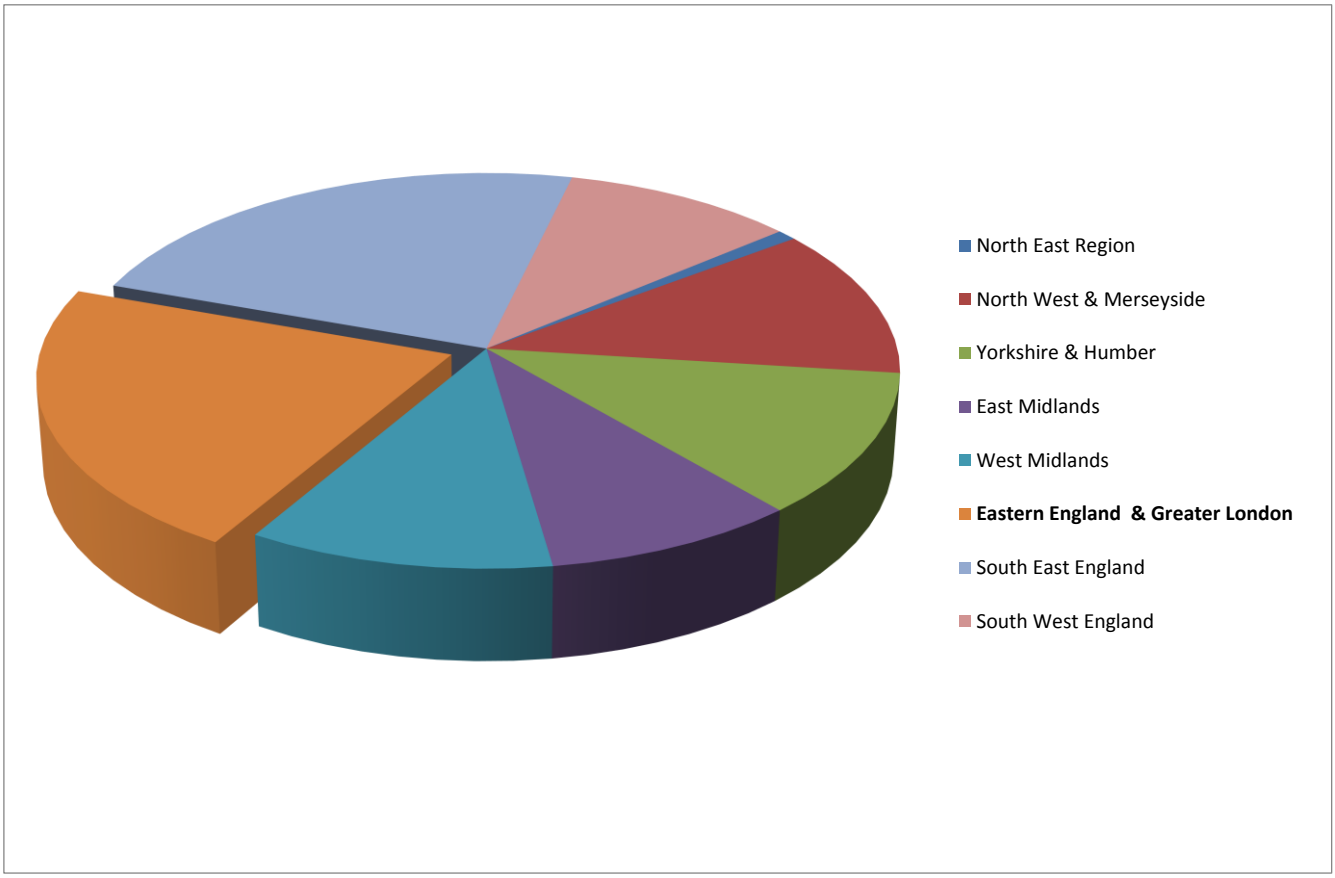


Figure 3 – Regional Breakdown of Cropped Area under Glass/Plastic (DEFRA June Census, 2009)

Focusing on the Eastern Region (Table 3) only Norfolk has bucked the trend of declining protected cropping areas. The increase in Norfolk is highly likely to be as a result of a trend towards soft fruit strawberries being grown under plastic and the British Sugar tomato unit at Wissington.

	1991	1996	2001	2006	2009	% Change (1991-2009)
Norfolk	61	57	62	143	123	101.6%
Suffolk	32	30	33	23	17	-46.9%
Cambridgeshire	86	51	51	45	39	-54.7%
Bedfordshire	47	41	24	12	11	-76.6%
Hertfordshire[3]	57	50	41	34	35	-38.6%
Essex[3]	183	171	157	153	146	-20.2%
Total Eastern England	**466**	**400**	**368**	**410**	**371**	**-20.4%**
Greater London	30	27	10	18	13	-56.7%
Eastern England & Greater London	**496**	**427**	**378**	**428**	**384**	**-22.6%**

Table 3 – Total Area (Hectares) of Crops Grown Under Glass/Plastic in Eastern England (DEFRA June Census, 2009)

[3] *See Figure 4*

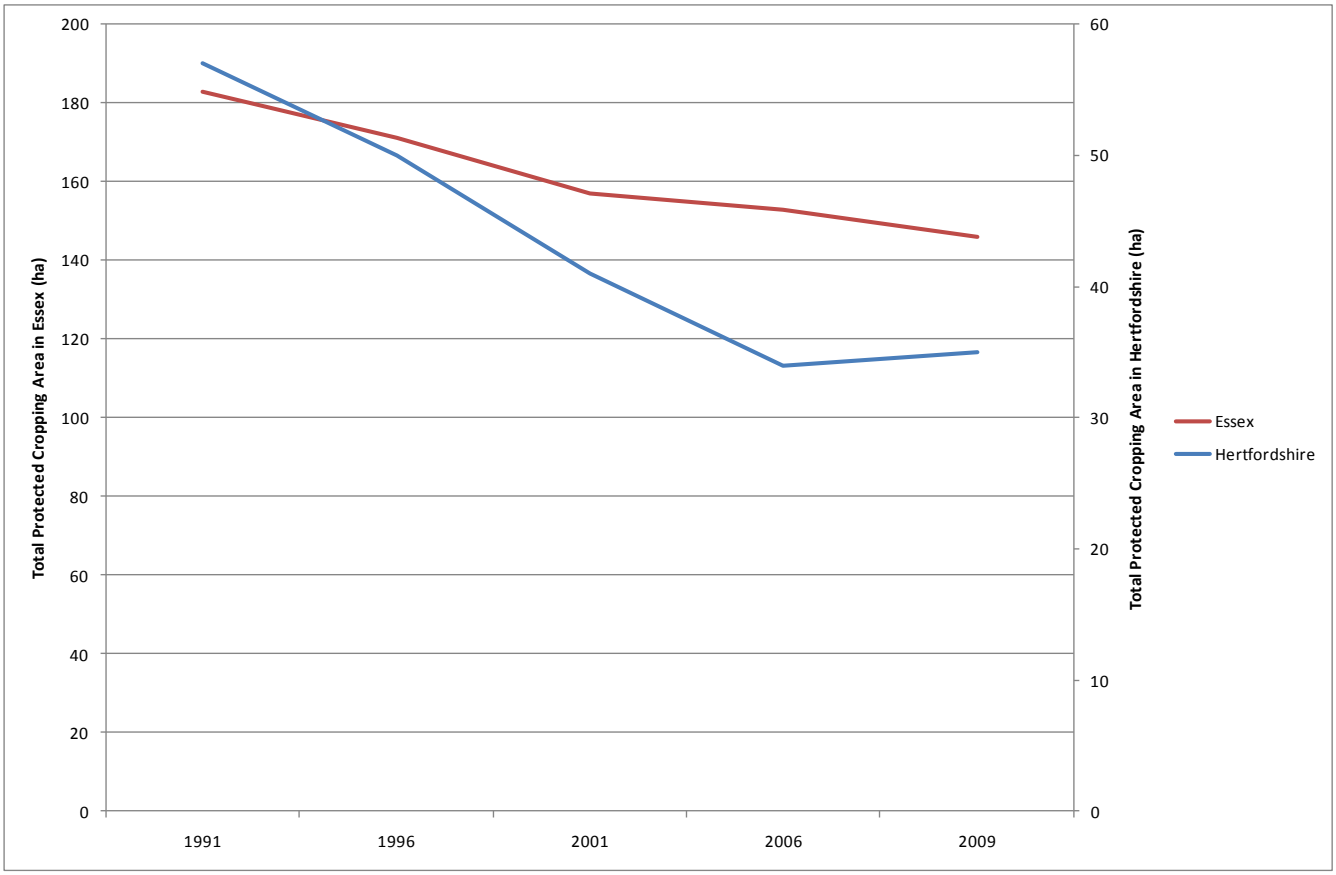


Figure 4 – Protected Cropping Area in Essex and Hertfordshire (DEFRA June Census, 2009)

UK protected vegetable and fruit production is dwarfed by field grown crops. Nevertheless protected fruit is the only sector of the total fruit and vegetable market which has shown expansion in the last 18 years (Table 4). However, this only represents 0.12% of the total. Protected fruit has grown from 0.84% of the total protected cropping sector to over 20% in 2010. This information is highlighted as it is of interest that the trend towards fruit grown in a protected cropping situation is not reflected in the Lea Valley.

It is suggested by growers that units in the Lea Valley are not large enough to produce sufficient volumes of fruit for this market. Table 4 and Figure 5 below summarise the total area of fruit and vegetables grown in the United Kingdom and the trend for the last 18 years:

	1991	1995	1999	2003	2007	2010
Field Vegetables	186,241	154,669	147,834	123,512	118,025	121,764
Protected Vegetables	2,661	1,808	1,242	905	676	691
TOTAL VEGETABLES	**188,902**	**156,477**	**149,075**	**124,417**	**118,701**	**122,454**
Open Fruit	40,061	33,751	28,519	27,095	27,808	29,218
Protected Fruit	23	35	75	143	146	180
TOTAL FRUIT	**40,084**	**33,786**	**28,593**	**27,238**	**27,954**	**29,397**

Table 4 – Total Planted Area (fruit and vegetables) in the UK (DEFRA Horticultural Statistics, 2011)

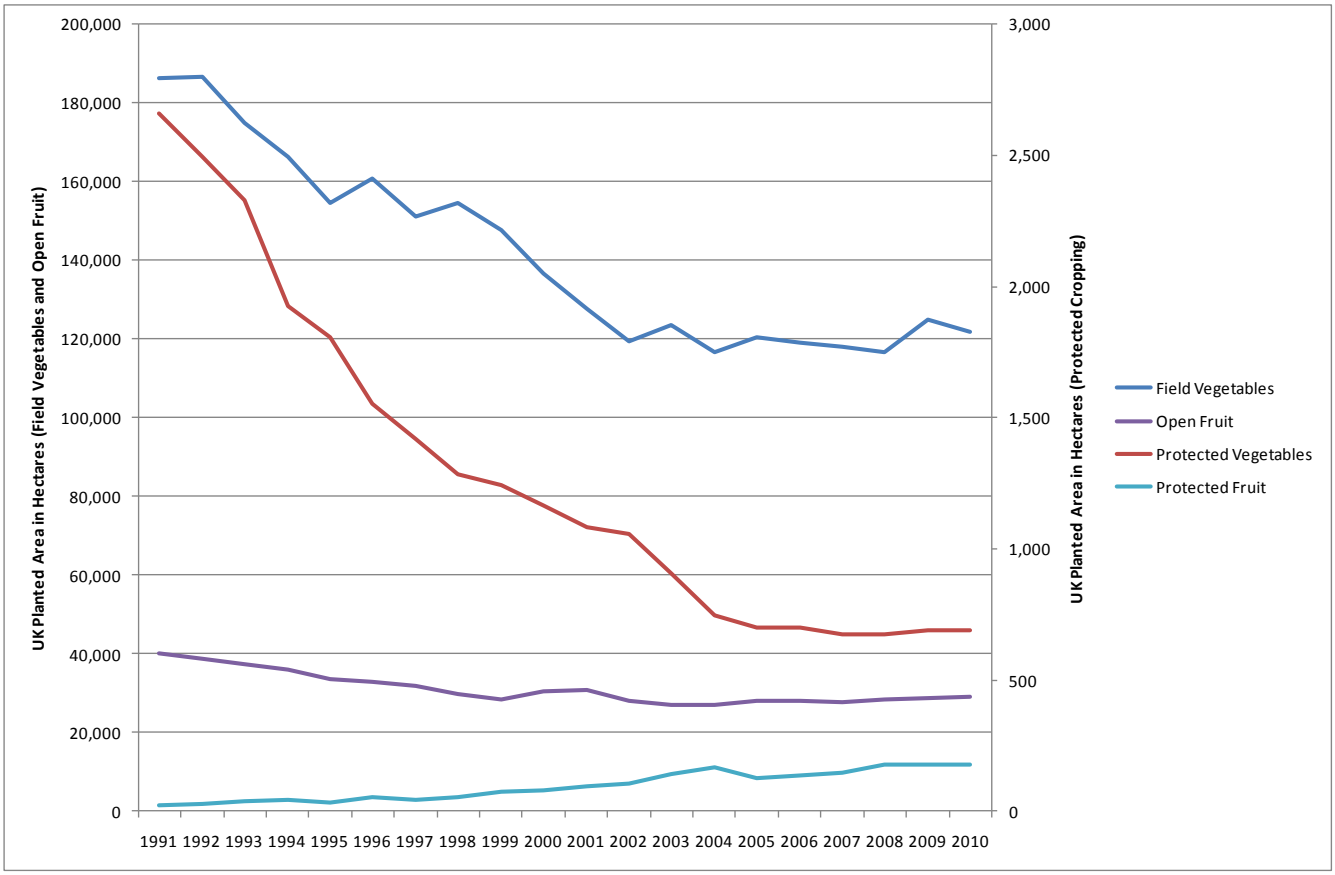


Figure 5 – Total Planted Area (fruit and vegetables) in the UK (DEFRA Horticultural Statistics, 2011)

Protected vegetable cropping (in terms of area) has been in steep decline for the last 18 years but this trend appears to have halted, or at least paused, since 2005 (Figure 5). There is no information available to assess the correlation between the declining area and glasshouse height but it is considered that there may be some correlation between these two factors. Both of these factors will also be related to increases in the gross output by area (see section 5.3).

Despite a slight increase since 2003 in the total protected cropping areas of tomatoes, cucumbers and sweet peppers, the longer-term trend (since 1985) remains a significant decline (Figure 6).

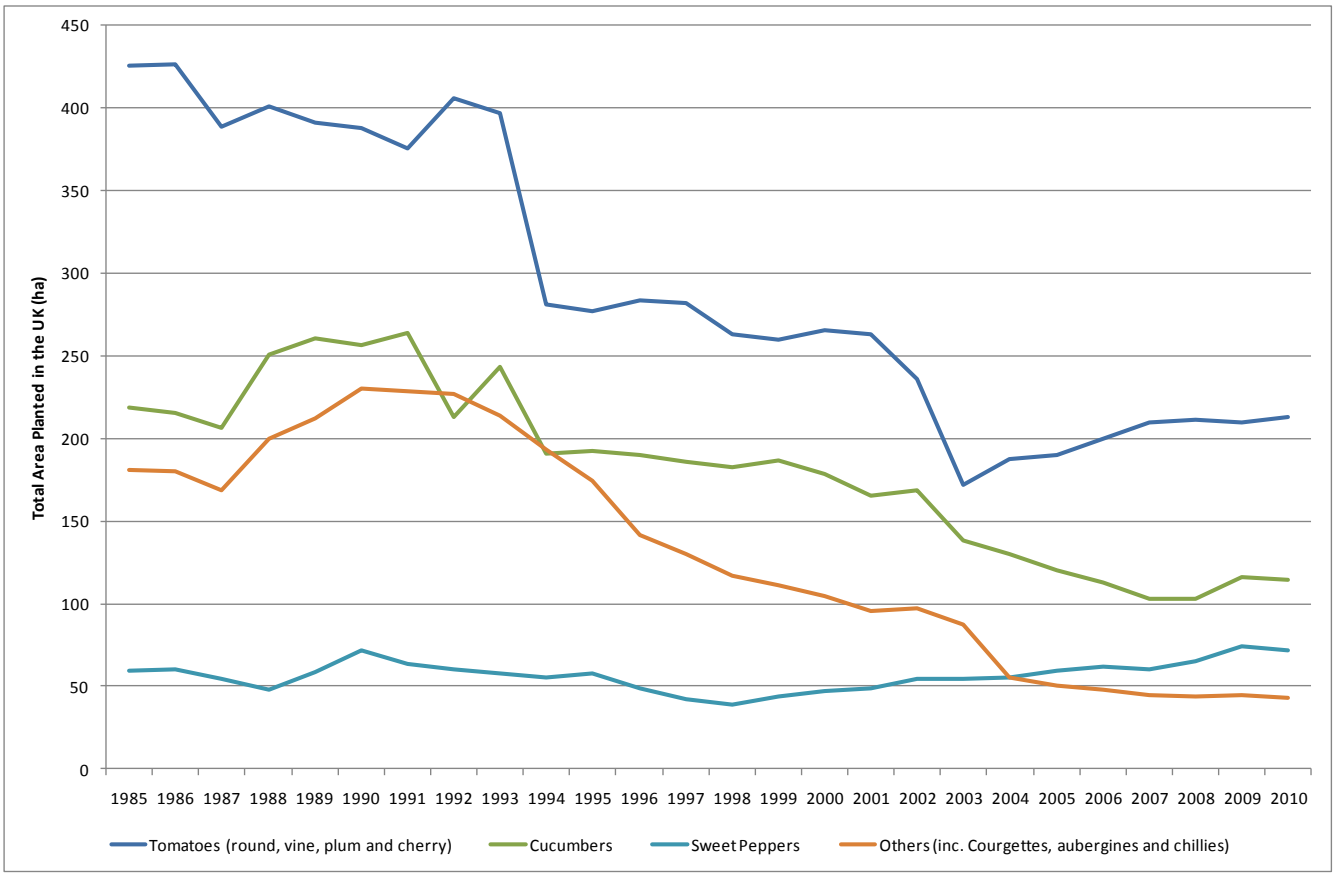


Figure 6 – Protected Vegetable Cropping Areas (DEFRA Horticultural Statistics, 2011)

Tomatoes represent nearly half (48%) of the total protected cropping vegetable area with cucumbers 26%, sweet peppers 16% and other crops 10% (Table 5). Cucumbers represent 34% of output (by tonnage) from 26% of the productive area.

	UK Area (Ha)	UK Output ('000 tonnes)
Tomatoes[4]	213	89.3
Cucumbers	114	64.6
Sweet Peppers	72	19.2
Others[5]	43	16.2
TOTAL	**442**	**189.3**

Table 5 – Planted Area of Protected Cropping Vegetables (DEFRA Horticultural Statistics, 2011)

[4] *Includes round, vine, plum and cherry varieties*
[5] *Includes courgettes, aubergines and chillies*

The recent national trend for a slight rise in protected cropping area has not been reflected in the Lea Valley in terms of applications and/or approvals for planning consent. Predominantly the increases are a result of expansion in other parts of the country – in the main 'super glasshouses' at Thanet Earth (Kent) and large scale developments at Billingham (Stockton-On-Tees) and Wissington (Norfolk) (Figure 7) which account for 53 ha on these 3 sites alone. Industry reports and analysts expect that the trend towards larger units on single sites will continue in the future.

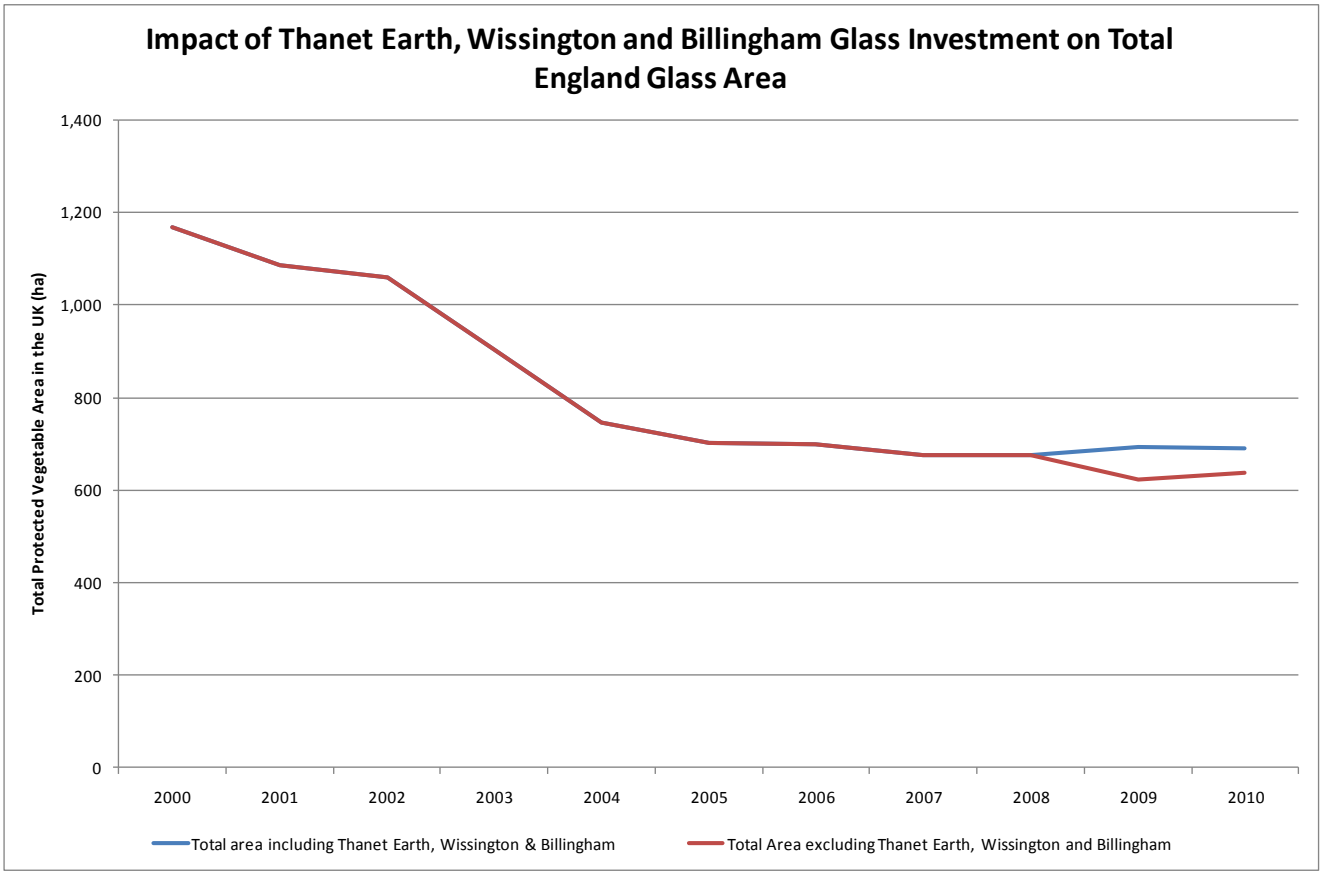


Figure 7 – Impact of Thanet Earth, Wissington and Billingham on Total Protected Cropping Area (DEFRA Horticultural Statistics, 2011 & Thanet Earth Website (www.thanetearth.com), 2011)

According to the Lea Valley Growers' Association (LVGA) the area of glass in the Lea Valley has declined by 86% since 1951. LVGA estimate that 65% of glass within the Lea Valley is in Epping Forest District.

In the period 1985 – 2004 (DEFRA stopped publishing ornamental cropping information in 2004) protected ornamental cropping increased significantly (Figure 8). This was largely due to the changing supply chain for the ornamental sector. Growers in the Lea Valley historically sold plants to wholesale and small retailers (i.e. corner shops), however, the demise of the small retailer along with the emergence of supermarkets, large chain garden centres and DIY retailers mean the majority of ornamentals now go to the retailer supply chain. This has resulted in the development of a small number of large sites in the Midlands and the South Coast whilst smaller sites persevere. This has resulted in the increase in total area but is unlikely to be a long-term trend.

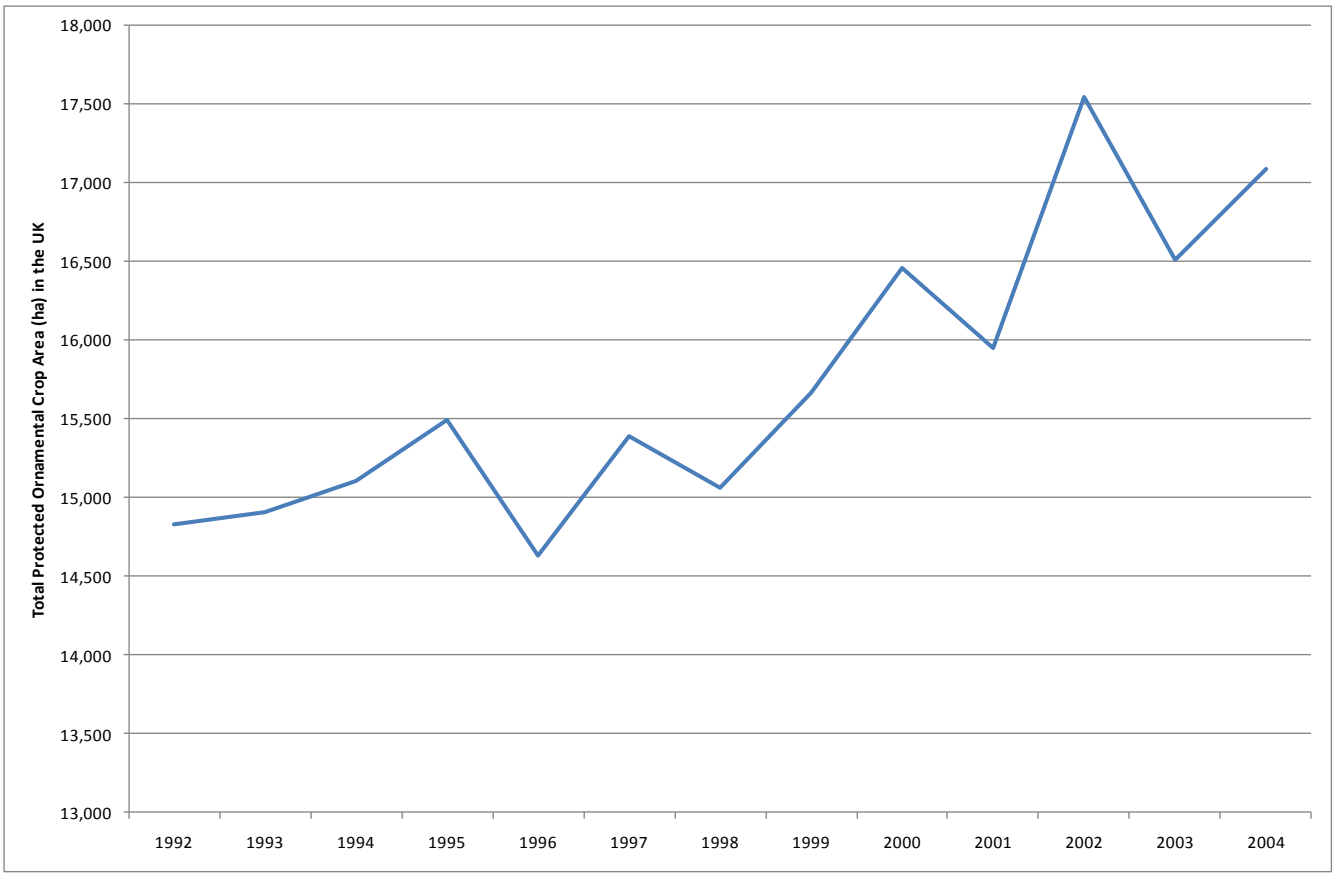


Figure 8 – Protected Ornamental Crop Area in the UK (DEFRA Horticultural Statistics, 2011)

5.2 Average Horticultural Glass Unit Size

The average size of a horticultural glass business in the UK increased by 172% between 2008 and 2009 (Figure 9). The average glasshouse area per unit has more than doubled in four years. Although a breakdown of the information is not available this is almost certainly as a result of the three large projects referred to above (which average 17.7 hectares). The average unit size rose from 1.27 hectares to 3.45 hectares.

Notwithstanding the recent increase in average unit size a large number of glasshouse businesses are below the size which growers believe is financially viable. The DEFRA data show a decline in 2010 although the reason for this is unclear.

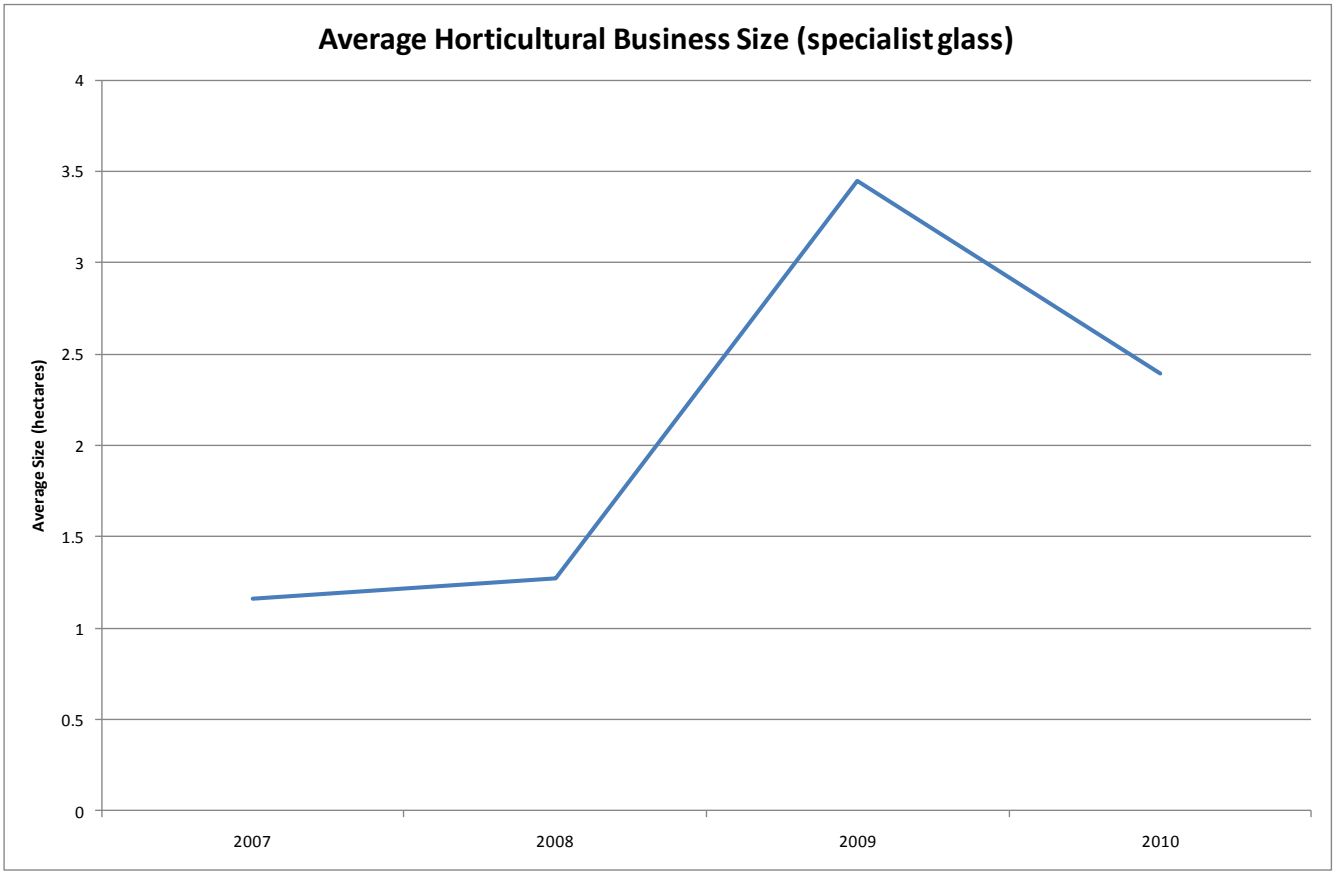


Figure 9 – Average Horticultural Business Size (specialist glass)
(Farm Business Survey 2006/2007 - 2009/2010 Horticulture Production in England)

While there are no detailed statistics published by DEFRA, the average unit size in the Lea Valley is much lower than the UK average. It is broadly agreed that there are approximately 60 active growers in the Lea Valley and this research suggests the total area of active glass is circa 75 hectares (an average unit size of 1.25 hectares). This is significantly below the minimum size unit for financial viability indicated in the growers' survey.

5.3 Output and Yields

During a period of significant decline (1985 – 2010) in the protected cropping area the marketed yield has shown significant improvement. The net result is that in the tomato sector, despite a 50% decline in area, total production has fallen by just 4%. The position is the same in respect of cucumbers with a 48% decline in area resulting in a 4% decline in marketed tonnage. In the sweet pepper market the production area has increased by some 21% but marketed tonnages have risen by over 650%. The graphs below (Figure 10 and Figure 11) demonstrate the increase in output:

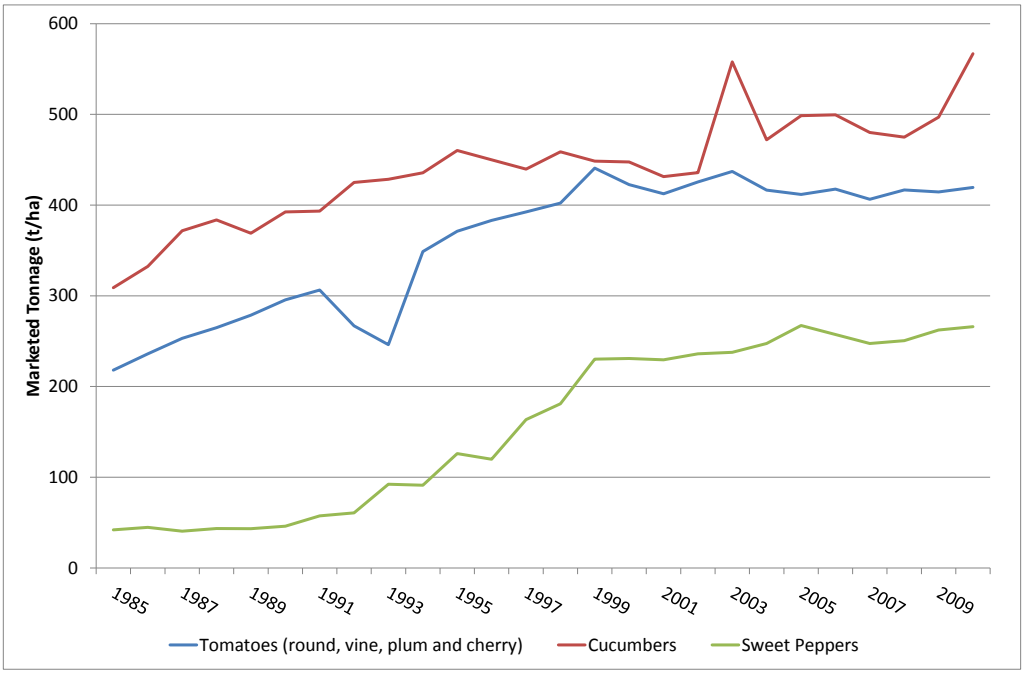


Figure 10 – Marketed Yield from UK Production (DEFRA Horticultural Statistics, 2011)

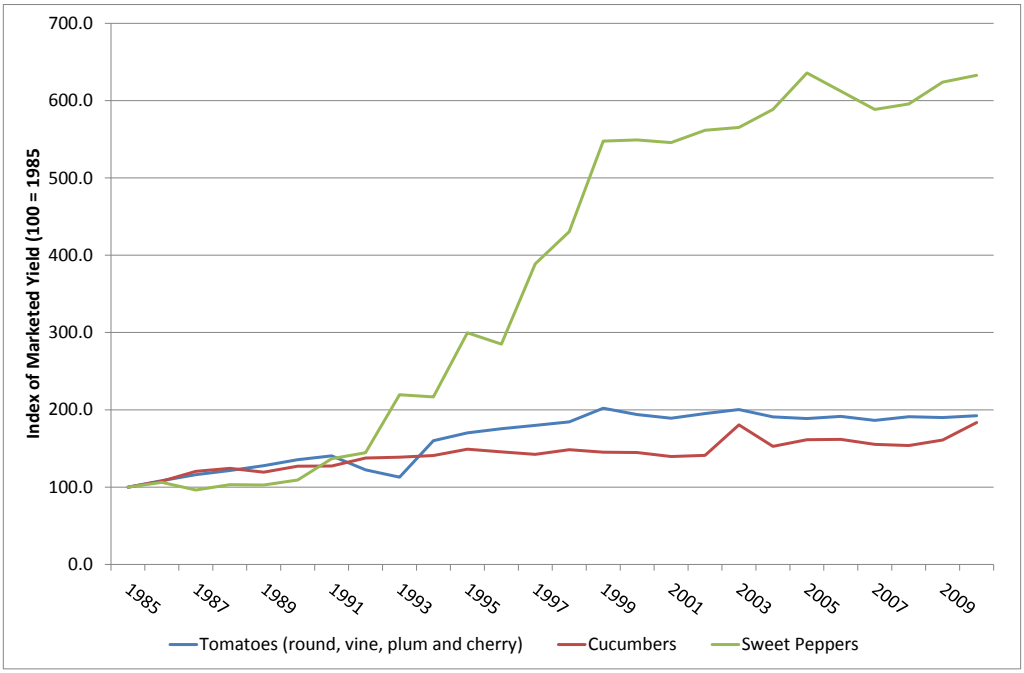


Figure 11 – Index of Marketed Yield from UK Production (Data from DEFRA Horticultural Statistics, 2011)

In the last 25 years the yield of tomatoes and cucumbers (per hectare) has nearly doubled whilst the yield from sweet peppers has increased nearly 6 fold. Despite this the total domestic production of tomatoes and cucumbers has been declining (Figure 12).

The total value of home grown marketed produce from the protected vegetable cropping sector declined steeply between 1996 and 2004. Since 2004 there has been a significant increase in the total value despite reduced total production.

The trend over the last 25 years has been increasing value of home grown vegetables but within this trend there has been significant volatility.

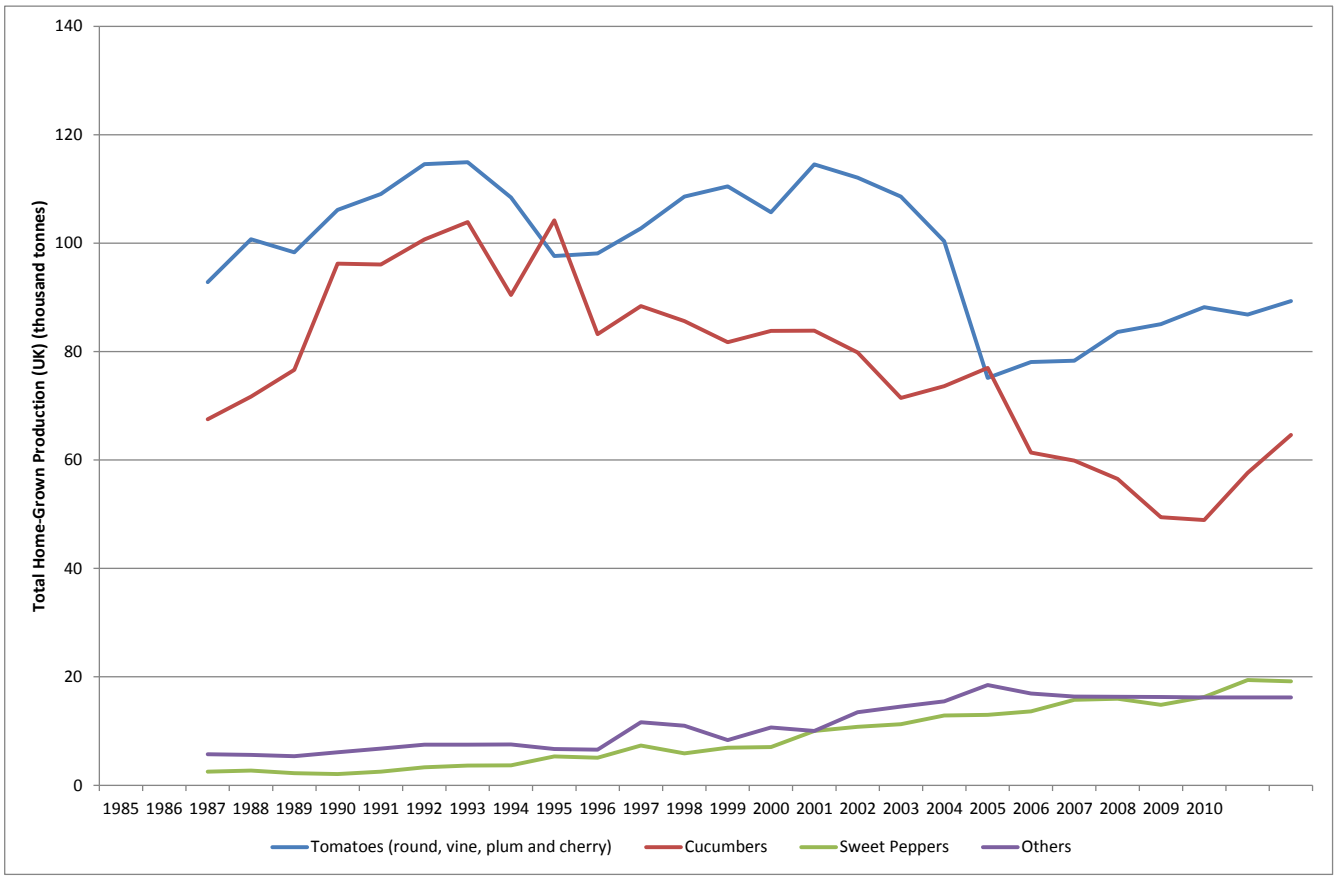


Figure 12 – Total Home Grown Production
(DEFRA Horticultural Statistics, 2011)

The value per planted hectare is highest in tomatoes and has been steadily increasing over the last 25 years (Figure 13). This is on the back of both increased yield and increased farm gate price.

The gap between tomatoes and cucumbers on the value per hectare basis was comparable until the cucumber price dipped steeply in the mid-1990s. Other crops (including aubergines) have been on a steady rising trend since 1999.

The value per hectare of tomatoes, cucumbers and sweet peppers increased sharply since 2008/2009. This correlates directly with the relative weakening of sterling against the Euro, which has made European imports less competitive.

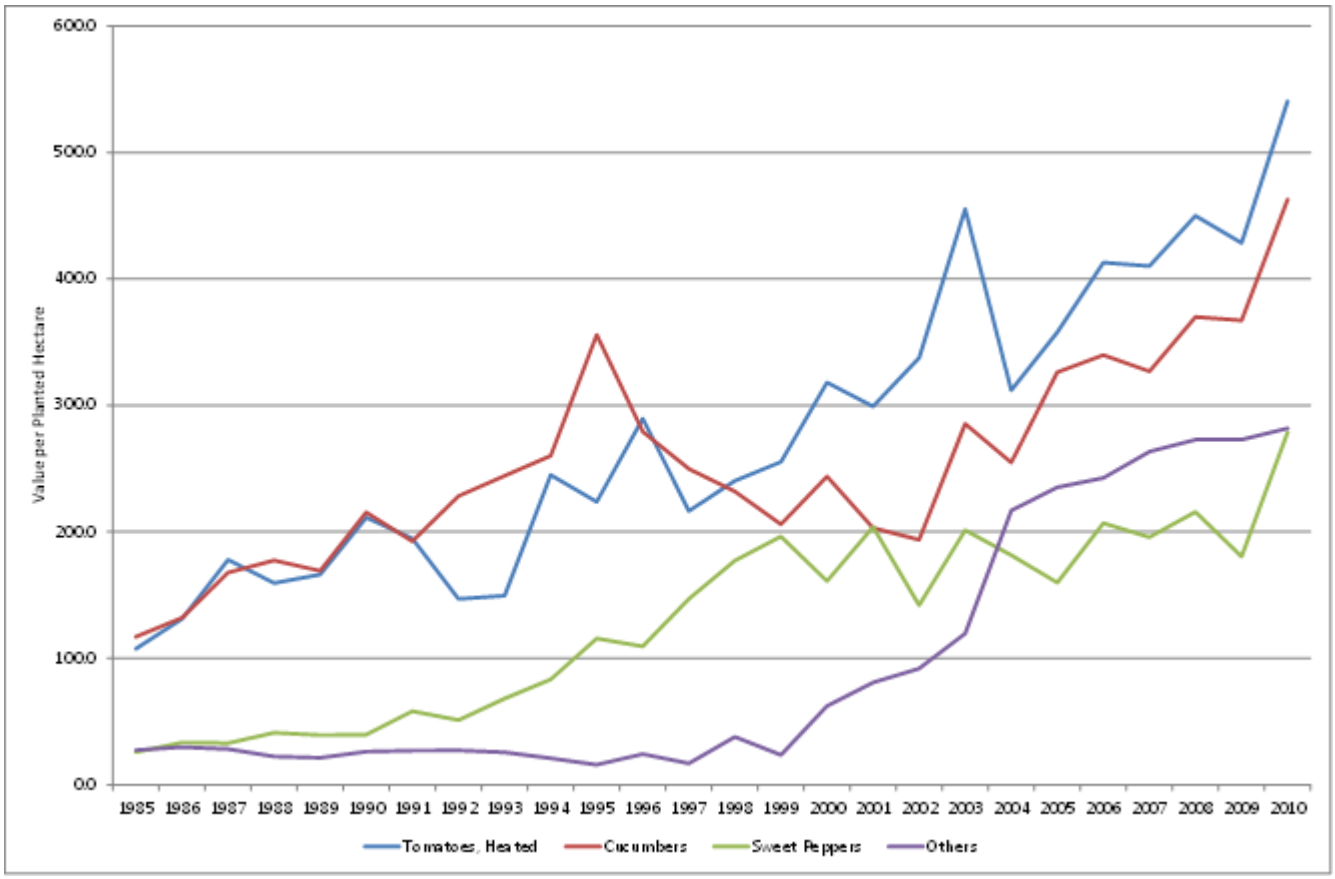


Figure 13 – Value per Planted Hectare
(DEFRA Horticultural Statistics, 2011)

The total value of home grown produce from the protected fruit sector has risen in line with increased net area (Figure 14).

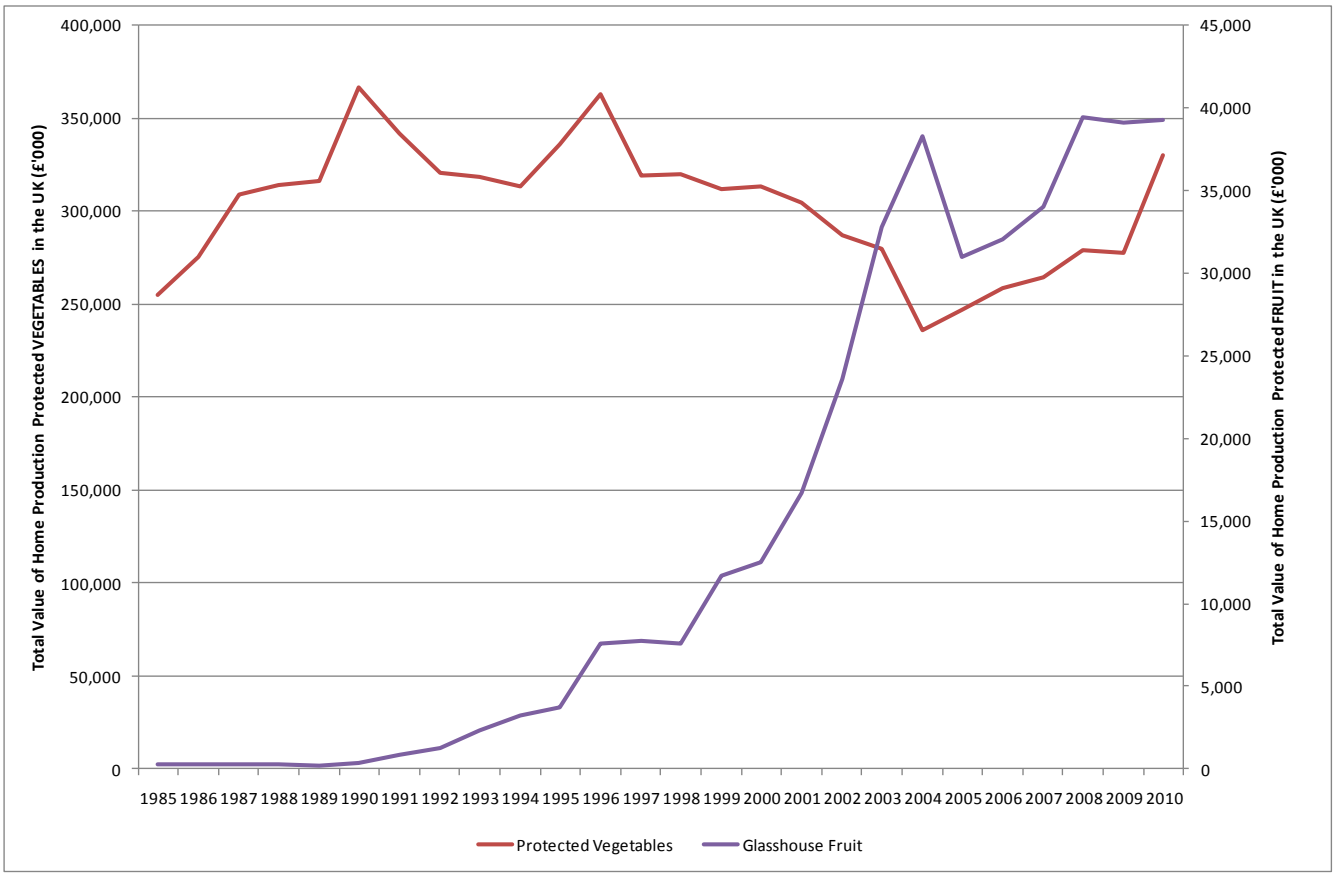


Figure 14 – Total Market Value of Home Produced Protected Fruit and vegetables (DEFRA Horticultural Statistics, 2011)

The Lea Valley produces 75% of the total UK cucumber production (Lea Valley Growers Association, 2011). This puts total output of cucumbers at 48,500 tonnes per annum from the Lea Valley (estimated value £39.6 million). The total area of tomatoes has fallen from 283 hectares in 1951 to just 2 hectares in 2010 (a 99% decrease). Total production of tomatoes is in the region of 849 tonnes per annum (estimated value £1.09 million). It is possible if the economics of production are not viable that a similar decline could be seen in the cucumber sector. It is likely in 2012 cucumber planting in the Lea Valley will be lower due to price pressure, fuel costs and the impact of the E coli outbreak in 2011.

5.4 Trade Balances

The total value of home produced fruit and vegetables in 2010 were £1.83 billion an increase of £705 million since 1988. In the same period imports of fruit and vegetables rose in value by £3.09 billion to £4.42 billion and exports increased by £126.11 million to £164.48 million. In 1988 the value of imports exceeded home production value by £204 million. By 2010 this had risen to a deficit of £2.59 billion (Table 6). As the value of home production has not increased much (£1.13 to £1.83 billion from 1988 to 2010), this has led to a significant growth in negative trade balance for fruit and vegetables (£2.42 to £6.09 billion in the same period).

	1988 £billion	2010 £billion	Change (%)
Home Production (HP)	1.13	1.83	+61.9%
Imports (I)	1.33	4.42	+232.3%
Exports (E)	0.04	0.16	+300%
Balance (HP+I-E)	2.42	6.09	+151.7%

Table 6 – Trade Balance for Fruit & Vegetables 1988 & 2010 (DEFRA Horticultural Statistics, 2011)

In the tomato sector declining home production and increased demand have been offset by rising imports (Figure 15).

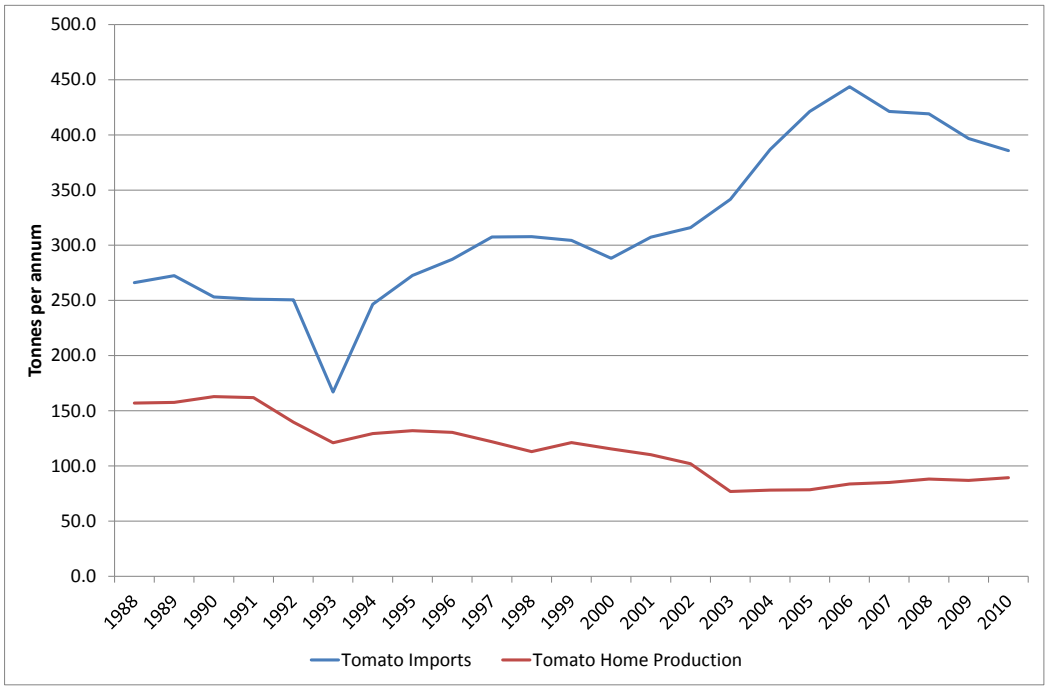


Figure 15 – Tomatoes UK Trade Balance (DEFRA Horticultural Statistics, 2011)

The situation is similar for cucumbers although, until 2000 and briefly again in 2002, home production accounted for a larger proportion of consumption than imports (Figure 16). There is, however, a growing negative trade balance in these crops because of low price imports.

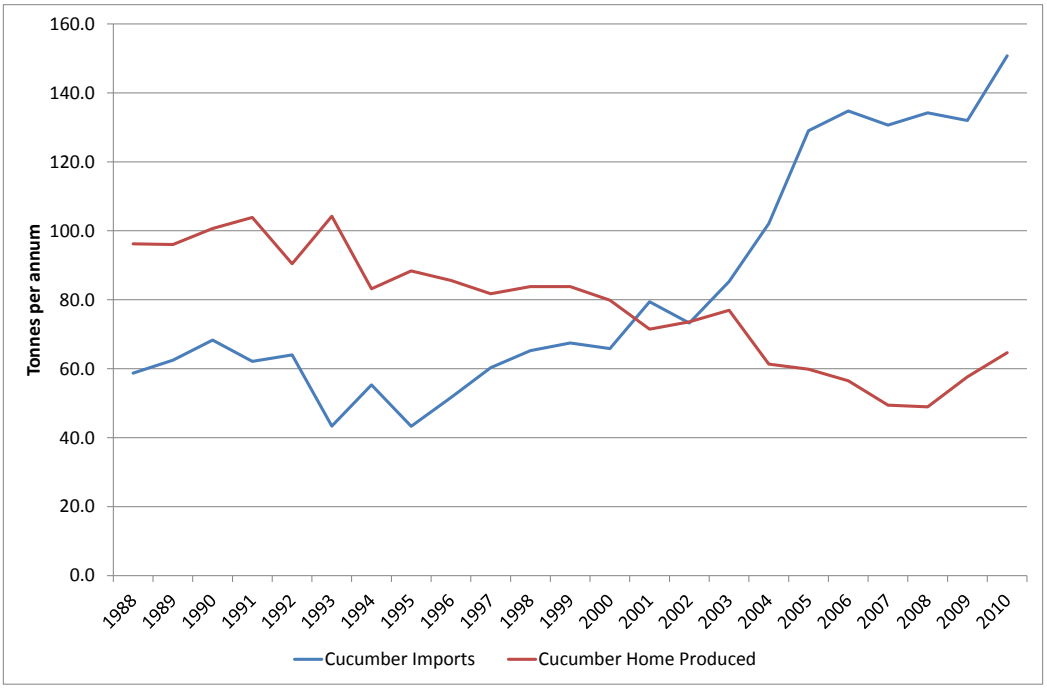


Figure 16 – Cucumbers UK Trade Balance
(DEFRA Horticultural Statistics, 2011)

It is similar for sweet peppers with total home production in a rising trend but this is not able to match demand so imports have also risen (Figure 17).

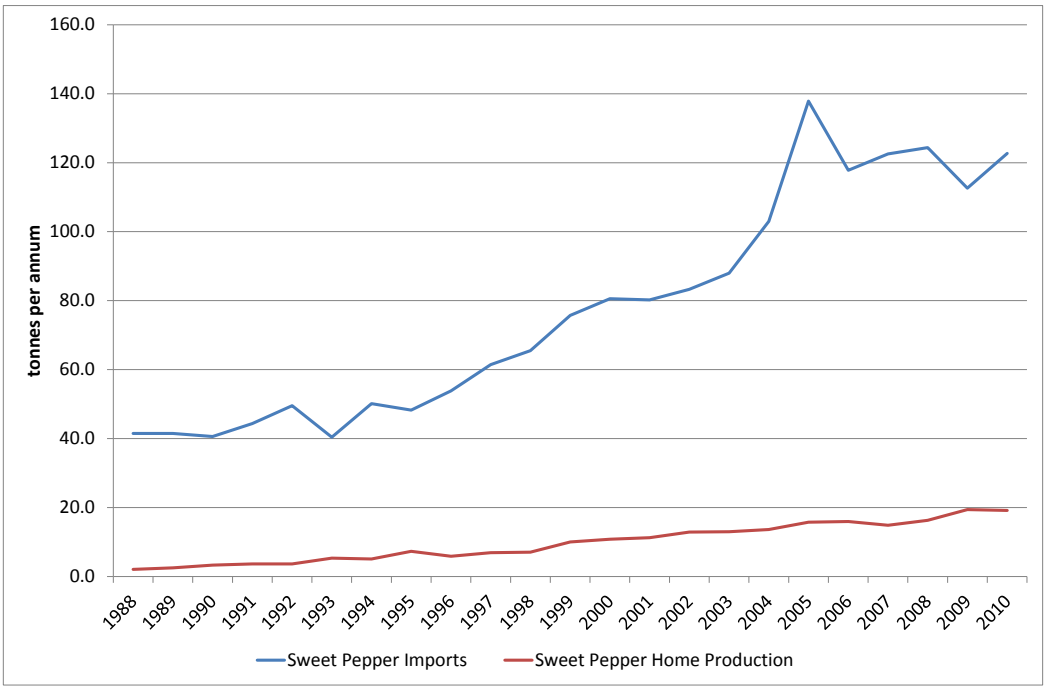


Figure 17 – Sweet Peppers UK Trade Balance
(DEFRA Horticultural Statistics, 2011)

Although there is some element of seasonality in these figures they also demonstrate there is significant potential for increased output in the UK to offset imports particularly at a time when the relative weakness of the pound and consumer demand for local produce give home production a competitive edge.

5.5 Employment

Agriculture and horticulture employed 2,700 people in Epping Forest in 2010 – 4.8% of the working population (EEDA 2011).This compares with 2.0% nationally and 1.8% in the rest of Essex. The Lea Valley glasshouse sector represents nearly 40% of the total agricultural and horticultural employment in the district.

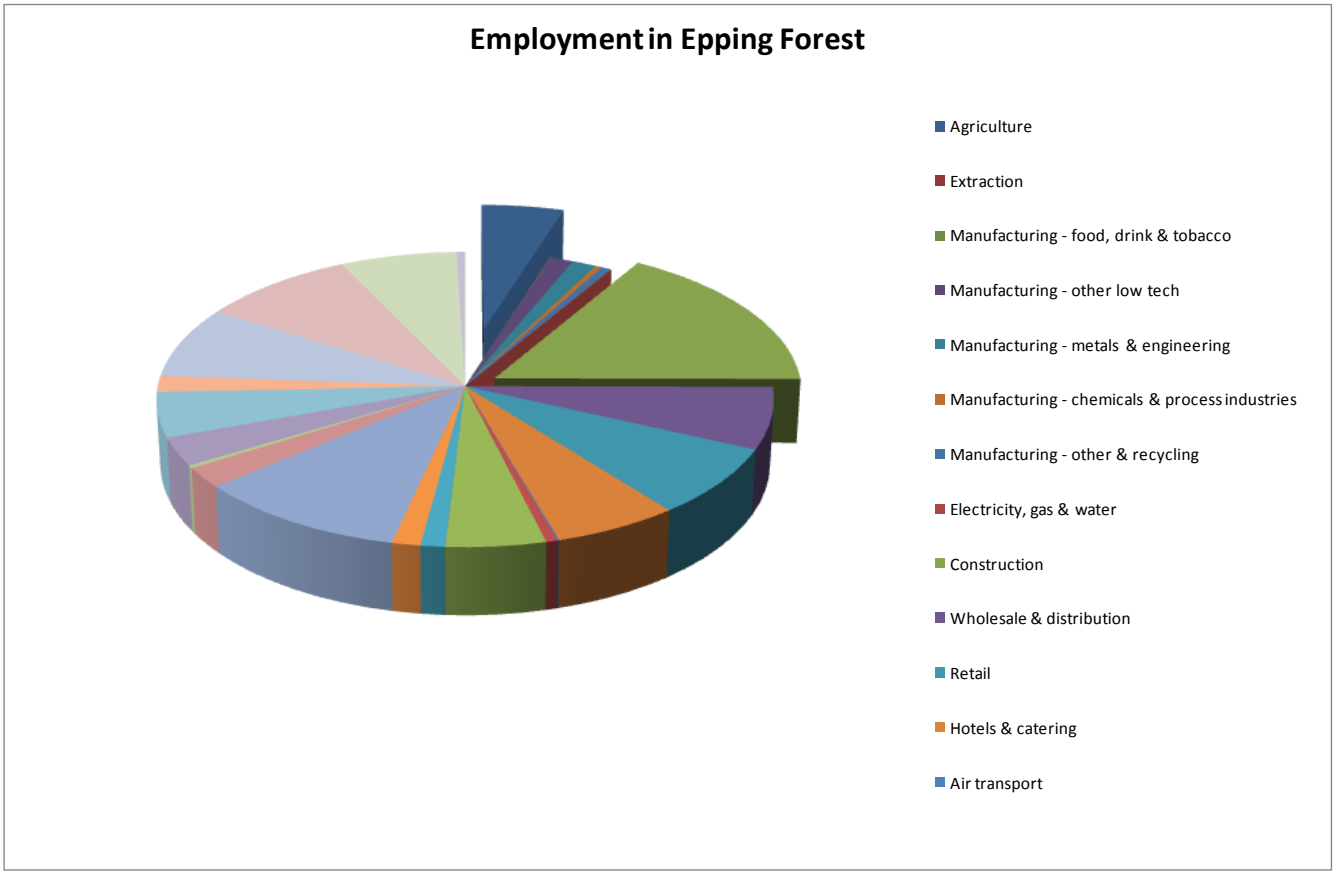


Figure 18 – Employment by Sector – Epping Forest
(Annual Business Inquiry (ABI), Office for National Statistics and Oxford Economics, 2011)

6. Financial Outlook

Key Points:

- *The Lea Valley protected cropping sector has a turnover of £78 million per annum;*
- *Producer prices generally rose between 2005 and 2010, but this stopped in 2011. Fresh vegetable producer prices dipped slightly in 2008 – 2009 but rose again between 2009 and 2010. The producer price for fresh vegetables was 32% higher in 2010 compared to 2005;*
- *Input costs and overheads have all risen very significantly in the last 6 years with the exception of the cost of finance. Energy costs in particular have risen by 90% in the last 8 years. It was predicted that, by next year, gas prices will have doubled in the period 2007 – 2012;*
- *In the specialist glass sector (protected cropping) variable costs have risen by 14%. Labour costs (66% of all overheads) increased by 19%;*
- *Profitability outlook for the sector was negative in 2011 with significant price pressure from supermarkets, the adverse impact of the European E-coli outbreak and significant rises in fertiliser and gas prices;*
- *Although there has been a trend for rising farm gate prices, the economic problems and supermarket competition mean that it is unlikely farm gate prices will increase significantly in the near future;*
- *It is likely that growers will continue to look to improve viability through more efficient glasshouses (newer and taller) and larger units to achieve economies of scale. In the UK new crops and different production techniques are likely to be considered but the smaller glasshouse business size in the Lea Valley will limit options;*
- *In the long-term food scarcity is likely to drive producer prices upwards but input costs, especially those related to fossil fuels, will also increase significantly unless investment in renewable energy such as anaerobic digester systems are taken up;*
- *Labour availability is a significant threat to the horticultural sector in England.*

6.1 Financial Commentary – General

The recent economic downturn has put financial pressure on many small businesses with the banks being (i) reluctant to lend money to small businesses; and (ii) faced with increasingly onerous lending criteria making it more difficult to obtain approval from credit committees to lend. The relative weakening of the pound against the euro has assisted the export markets whilst making imports less competitive.

Due to the longer-term trend of a strong pound (thus cheap imports) the cut flower market grown under glass has contracted with much of the area taken up by strawberries grown under glass resulting in a much longer domestic strawberry season. This is a trend not seen in the Lea Valley. The main reason for this is the size and potential size of units and the location of the larger strawberry growing businesses. The supply chain demands large output from individual growers to minimise the number of suppliers to the supermarkets. Given the current number and size of growers this is not a market that Lea Valley businesses can benefit from.

In 2010 (data published by DEFRA) total value of UK home-produced fruit and vegetables was £1.83 billion (vegetables accounting for £1.26 billion). Protected cropping accounted for 26% of the vegetable crop output and 18% of all fruit and vegetable output.

6.2 Horticultural Prices

Fresh vegetable producer prices dipped slightly in 2008 – 2009 but rose again between 2009 and 2010. The price for fresh vegetables was 32% higher in 2010 compared to 2005 (Figure 19).

In the tomato market there has also been significant volatility with:

- An upward trend in prices over the last 25 years increasing 144%;
- A significant jump in farm gate prices in 2010;
- The price only just recovering in 2009 to the level previously seen in 2002;

The upward trend for cucumbers is less dramatic. There was less volatility in the cucumber price during the period 1985 – 2010, although between 1995 and 2002, the price reduced by 42%. In 2010 it was only 5.6% higher than the average farm gate price in 1995. The price has been volatile throughout the period from 1985 to 2010. In general terms, prices were highest between 1988 and 1998, followed by a number of years of lower prices (2000 to 2009), although the price in 2010 was 70% higher than that in 1985.

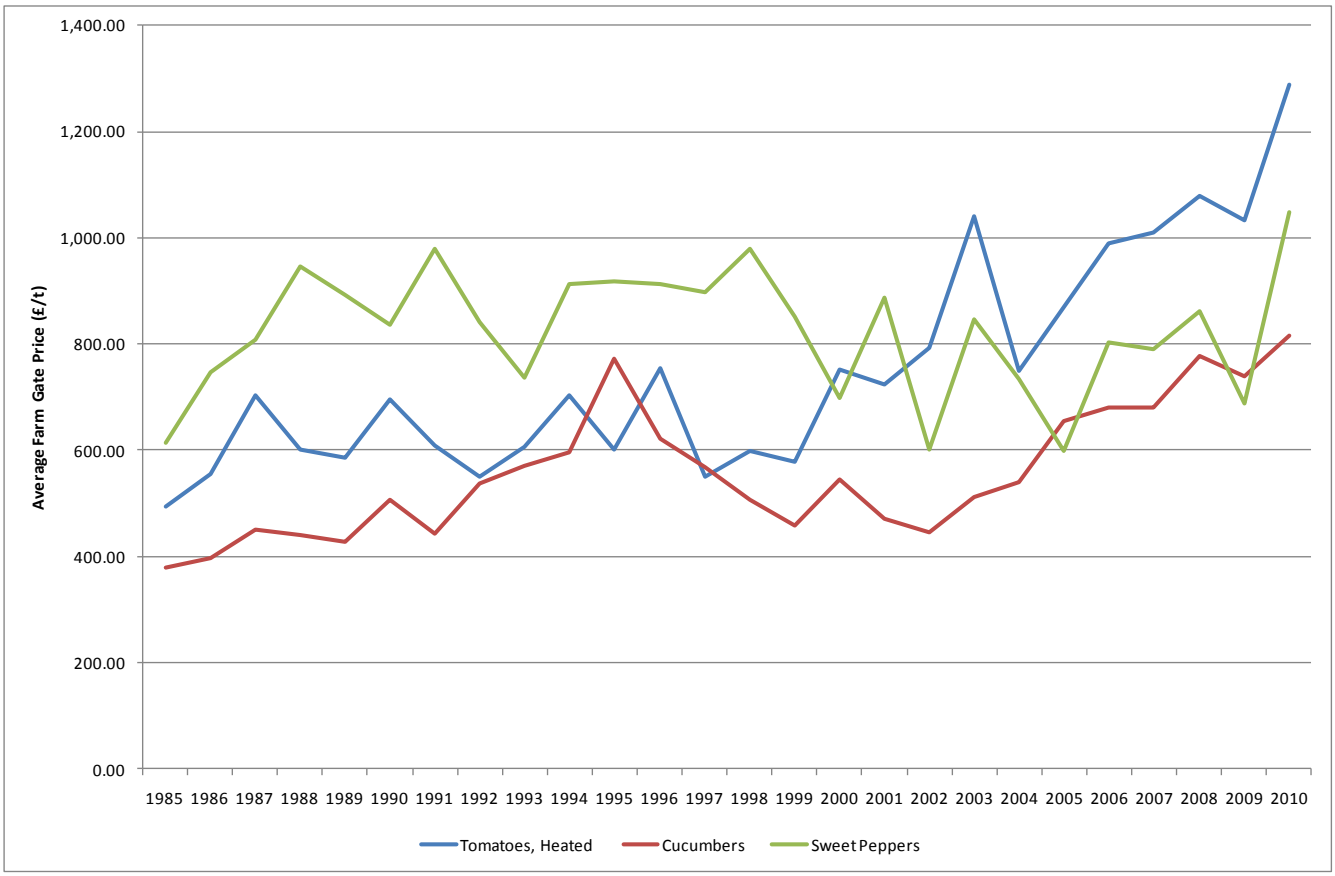


Figure 19 – Average Farm Gate Prices (DEFRA Horticultural Statistics, 2011)

6.3 Input Costs

Input costs and overheads have all risen very significantly in the last 6 years with the exception of the cost of finance. The greatest increases have been seen in fuel and fertilisers (directly related to the cost of fossil fuels), which have risen 38% and 62% respectively (Figure 20). By 2012 it is forecast that gas prices will have risen by 150% in three years.

In the Lea Valley fuel costs have risen from an average of £5.80 per m^2 (£58,000 per ha) to £9.40 per m^2 (£94,000 per hectare). With gas prices projected to rise to £1.00 per therm in 2012 this would take fuel costs to £14.50 per m^2 (£145,000 per hectare).

Across all inputs and overheads there has been an average increase in the cost of production for horticultural growers of 15% between 2005 and 2010.

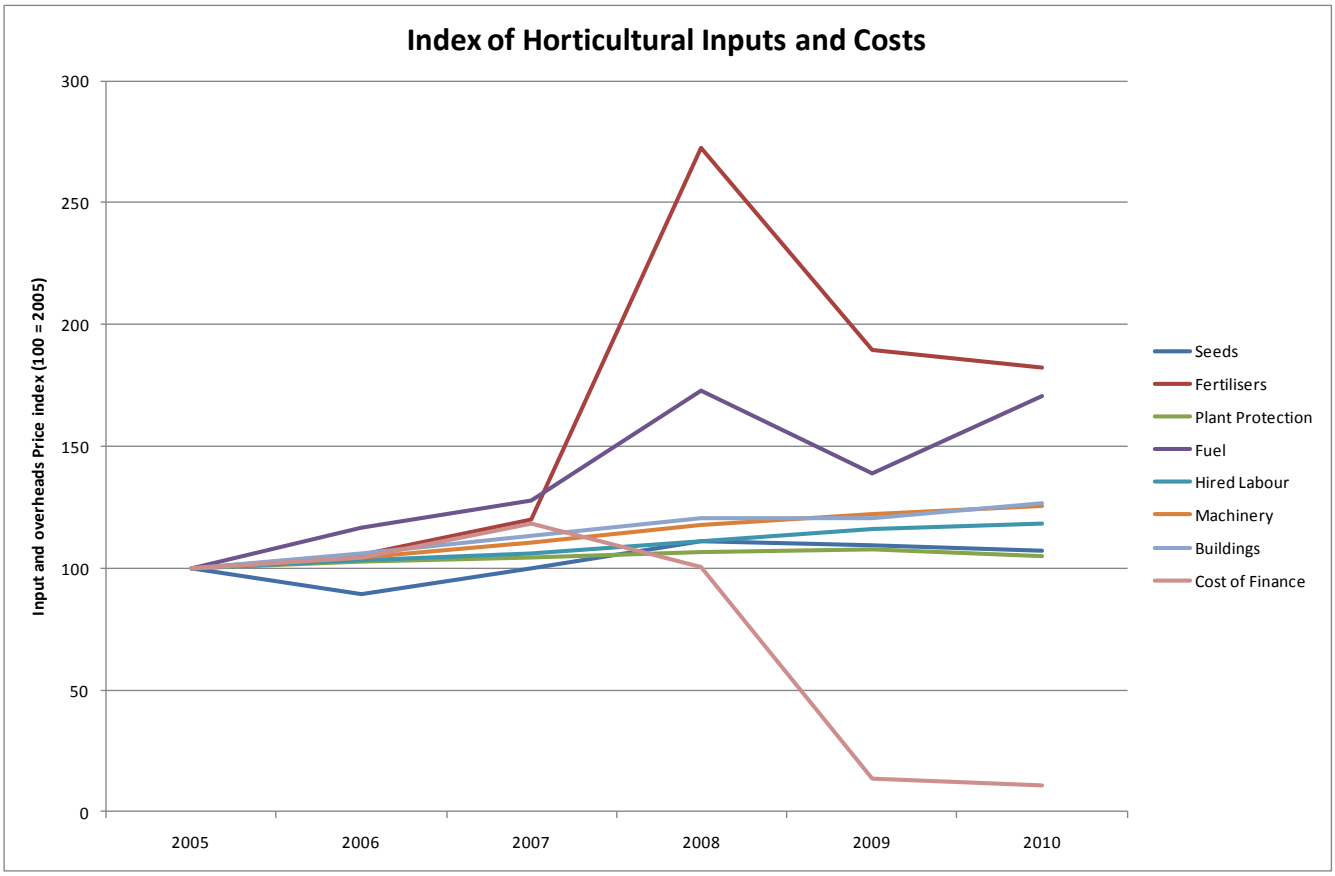


Figure 20 – Index of Horticultural Inputs and Costs
(Farm Business Survey 2009/2010 Horticulture Production in England)

6.4 Financial Performance – Specialist Glass

Table 7 below summarises the (per hectare) output from specialist glass horticultural businesses for the period 2008 – 2010:

	Financial Performance - £/ha		
	2008/2009	**2009/2010**	***% change***
Output from crops	£108,558	£126,982	*17%*
Seeds and plants	£16,673	£16,653	*0%*
Fertiliser, compost and plant protection	£5,501	£5,605	*2%*
Marketing and packing costs	£13,479	£17,638	*31%*
Sundries	£3,230	£5,234	*62%*
Glasshouse fuel	£8,556	£8,875	*4%*
Variable Costs	**£47,439**	**£54,005**	***14%***
Gross Margin	**£61,119**	**£72,977**	***19%***
Labour	£38,300	£45,621	*19%*
Power and Machinery	£10,449	£12,363	*18%*
Rent (or imputed rent)	£2,261	£2,823	*25%*
Other overheads	£7,570	£8,677	*15%*
Total Overheads	**£58,580**	**£69,484**	***19%***
Net Profit (before management and investment income)	**£2,539**	**£3,493**	***38%***
Management & Investment Income	£2,540	£3,488	*37%*
Net Profit including management and investment income)	**£5,079**	**£6,981**	***37%***

Table 7 – Specialist Glasshouse Businesses Financial Performance (2008/2009 – 2009/2010)
(Farm Business Survey 2009/2010 Horticulture Production in England)

Variable costs have risen by 14% in the most part related to rising marketing and packing costs (which rose 31%). Despite this the gross margin increased by 19% on the back of a 17% increase in output. Labour costs (66% of all overheads) increased by 19%. However, these figures take a general view of the UK wide sector including bedding plant production which requires far lower levels of fuel input – section 6.6 gives a more specific view of the Lea Valley sector.

Specialist glasshouse businesses spend proportionally less (compared to all horticultural businesses) on plant protection, seeds and plants but (unsurprisingly) much more (16% of all variable costs) on fuel for heating glasshouses (Figure 21). Packing charges are also 7% more per ha (as a share of all variable costs) compared to all horticultural businesses.

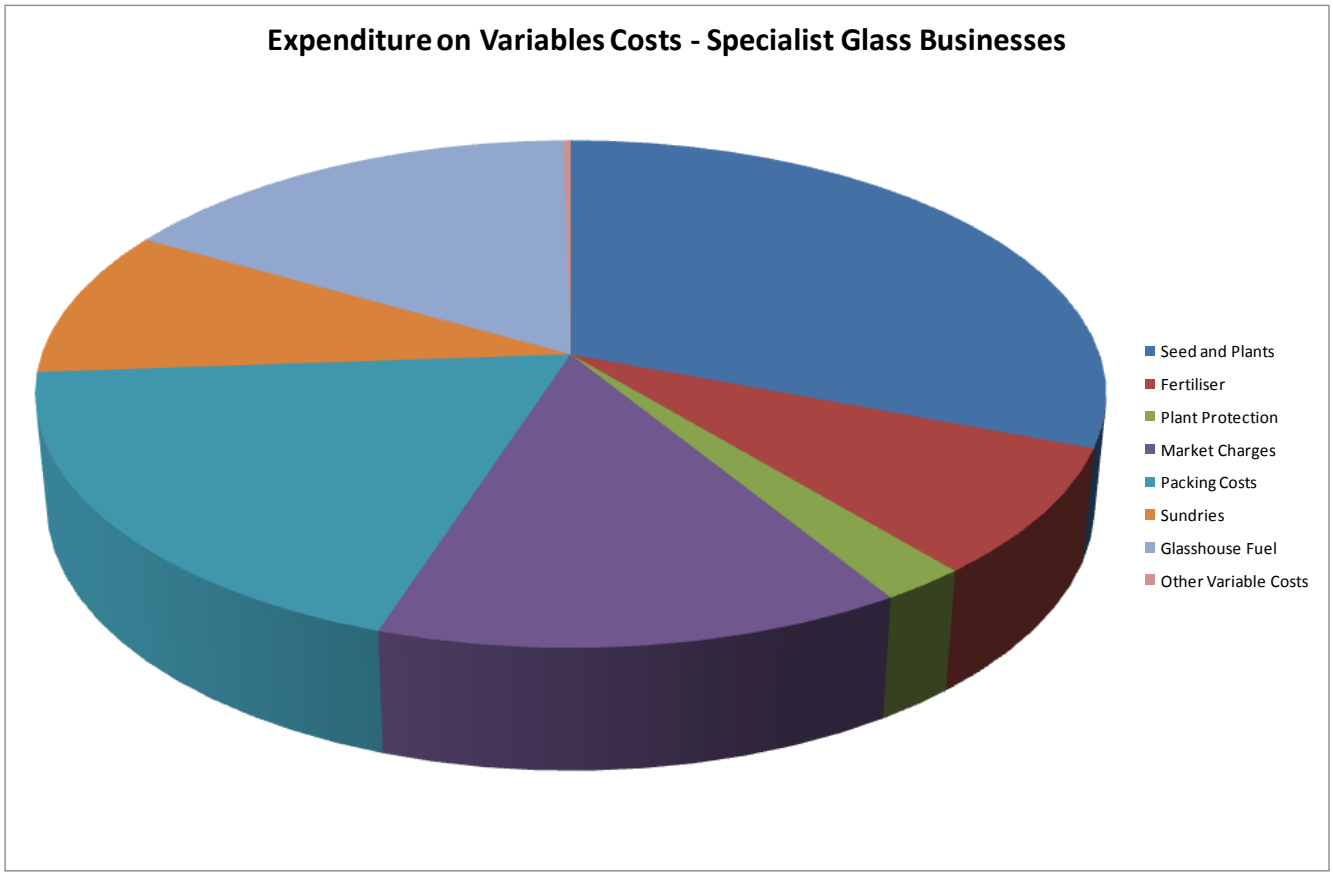


Figure 21 – Expenditure on Variables Costs - Specialist Glass Businesses (Farm Business Survey 2009/2010 Horticulture Production in England)

Labour, power and machinery represent over four fifths of the total overheads cost for specialist glasshouse businesses (Figure 22). This presents, potentially, two problems; the first is that labour and power are typically susceptible to inflationary pressure. In a recovering economy, with taxation rises driving inflation this could become in the next couple of years a significant issue for growers. The second issue relates to availability of casual labour for peak periods. With a changing economy in Eastern Europe and difficulties in recruiting domestic labour glasshouse businesses could see their labour cost rise and/or supply become very tight.

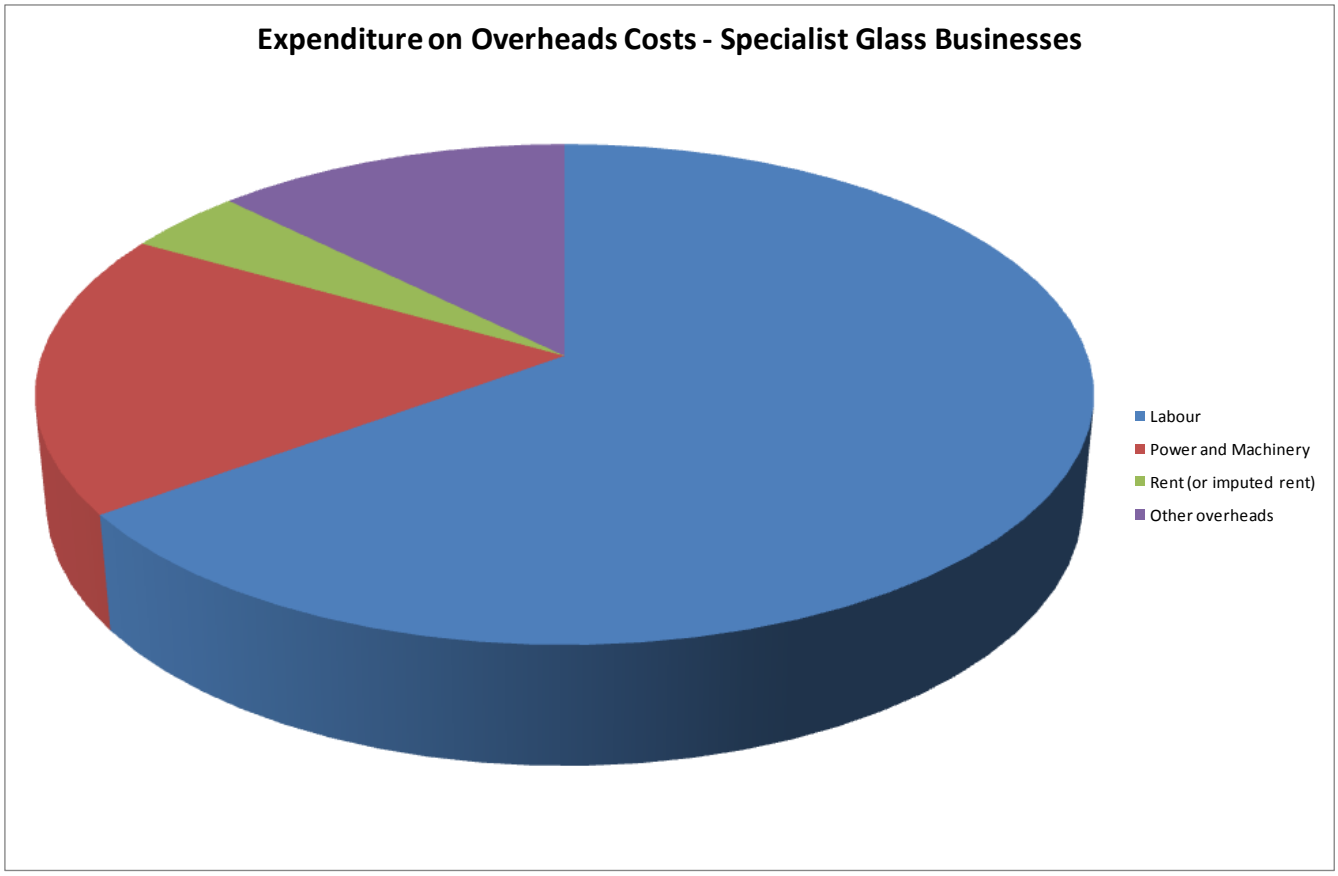


Figure 22 – Expenditure on Overheads Costs - Specialist Glass Businesses (Farm Business Survey 2009/2010 Horticulture Production in England)

6.5 Financial Outlook for the Specialist Glass Sector

Although there has been a trend for rising producer prices the economic downturn and supermarket competition mean that it is unlikely that producer prices will increase significantly in the next few years. Food inflation is currently (January 2012) in excess of 5%, however, this is more related to the increasing cost of imports (71% of all fruit and vegetables) rather than the return to the growers.

Input costs particularly fuel, seeds, fertiliser and plant protection are all anticipated to continue to rise significantly due to rising fuel and transport costs (Table 8).

Inflation pressure is likely to see some labour costs rise but this could be offset by cheaper Eastern European labour (if the pound strengthens against the Euro) and rising domestic unemployment potentially increasing the supply (and so reducing the cost) of temporary labour. However, the potential end to Seasonal Agricultural Workers Scheme (SAWS) could place added pressure on labour availability and cost as will the pressures from cost of living and alternative employment because of proximity to the capital.

	Financial Performance - £/ha		
	2009/2010 Actual[6]	**2011/2012 Forecast**	***% change***
Output from crops	£126,982	£133,300	*5%*
Seeds and plants	£16,653	£19,100	*15%*
Fertiliser, compost and plant protection	£5,605	£7,300	*30%*
Marketing and packing costs	£17,638	£18,500	*5%*
Sundries	£5,234	£5,400	*3%*
Glasshouse fuel	£8,875	£9,800	*10%*
Variable Costs	**£54,005**	**£60,100**	***11%***
Gross Margin	**£72,977**	**£73,200**	***0%***
Labour	£45,621	£46,077	*1%*
Power and Machinery	£12,363	£12,981	*5%*
Rent (or imputed rent)	£2,823	£2,964	*5%*
Other overheads	£8,677	£8,937	*3%*
Total Overheads	**£69,484**	**£70,960**	***2%***
Net Profit (before management and investment income)	**£3,493**	**£2,240**	***-36%***
Management & Investment Income	£3,488	£3,500	*0%*
Net Profit including management and investment income)	**£6,981**	**£5,740**	***-18%***

Table 8 – Forecast Financial Performance

[6] *Farm Business Survey 2009/2010 Horticulture Production in England*

6.6 Benchmark Performance for the Lea Valley

Table 9 below summarises the output and gross margin of a typical Lea Valley salad producer:

	£ per 1,000m^2 (0.1 hectare)	% of Output
Sales	£39,955	100.00%
Plants & Seeds	£4,725	11.83%
Fertiliser	£1,020	2.55%
Sprays & Bio-controls	£1,525	3.82%
Energy	£12,810	32.06%
Labour	£10,382	25.98%
Marketing	£4,500	11.26%
Equipment & Sundries	£2,323	5.81%
TOTAL COSTS	**£37,285**	**93.32%**
NET MARGIN	**£2,670**	**6.68%**

Table 9 – Benchmark Gross Margin for Lea Valley Protected Salad Grower (Confidential industry source based on a number of growers actual performance)

The industry target is to achieve a net margin of 7% of turnover, however, in the last two years the result for most producers has only been 4-5%.

In 2003 Reading Agricultural Consultants estimated the turnover from the protected cropping sector to be £75 million. In 2011 Lea Valley Growers Association calculated the turnover for 2010 as £78 million (+4%). DEFRA information shows in the same period there was a 2.5% increase in farm gate prices.

In the same period the DEFRA index of agricultural inputs (i.e. not weighted for higher levels of energy use) showed that agricultural inputs have increased by 59.3% (DEFRA, 2011). Focusing on the largest costs in the glasshouse sector between 2003 and 2010 heating oil increased by 99.2% and electricity 89.6%.

7. International Perspective: Holland

This section of the report summarises the work undertaken by Triple Consultancy on behalf of the research team. They were asked to provide a summary of the Dutch protected cropping sector in relation to the key questions which form each sub-heading. Holland was selected as a case study for the 'international perspective' as they (a) are a main competitor to the UK protected cropping sector, (b) the sector has undergone some significant changes which might be relevant to this research and (c) a number of Dutch growers are investing in grower capacity in the UK e.g. Thanet Earth.

Key Points:

- *Similarly to the UK in Holland tomatoes are the primary crop followed by cucumbers and sweet peppers;*
- *The sector has focused on product differentiation e.g. vine tomatoes;*
- *However, in Holland, both total area and yields are rising;*
- *The current economic outlook is challenging for the Dutch sector with demand from the major importing countries falling and competition from other countries increasing;*
- *Producers have been facing significant price pressure mainly due to supermarkets and 2011 was very challenging due to the E Coli outbreak;*
- *Many glasshouse businesses have been relocating to the northern coastal areas in particular to create 'green port' areas with production, processing, packing, services and distribution all concentrated in these areas;*
- *Within the sector there has been a focus on energy generation with many businesses net exporters of energy;*
- *Local and central government are very supportive of the glasshouse sector in particular supporting the policy of 'green ports'.*

7.1 Changes in the Sector in the Last 10 Years

- Tomatoes have remained the primary crop, followed by sweet peppers and cucumbers;
- Tomatoes have become more differentiated (i.e. a wider range of products);
- Sweet pepper development has been focused on increased yield rather than new products due to the difficulty in differentiating between varieties.

- The area of protected cropping has increased by 17% in the last 10 years;
- The area of tomatoes increased by nearly 50% to 1,676 hectares;
- The pepper area increased to 1,399 hectares, an increase of 21%;
- The cucumber area was stable at 668 hectares.
- Yields have increased by nearly 20% in the last decade due to technological advances including:
    - Use of gutters (for optimal working heights);
    - Improved crop protection;
    - Artificial lighting;
    - Thermal screens;
    - Increased glass height.
- Productivity of labour(i.e. output per labour unit) has increased in the last 10 years;
- The labour structure has also changed significantly:
    - 10 years ago the manager was typically the owner, this is now not the case - the owner will still oversee the business but there will be a salaried operational manager;
    - The majority of casual labour was Turkish or Moroccan whereas now there is a larger proportion of Eastern European workers (especially Polish);
    - A large proportion of seasonal work is undertaken by students rather than immigrants;
    - Overall the management structure is more complex;
- Historically the majority of Dutch glasshouses used gas fired boilers for heating;
- In the last decade this has changed with the increased use of decentralised CHP plants;
- Since 2006 the sector has been a net supplier of electricity to Holland;
- Many businesses have a positive energy position (i.e. energy sales exceed energy purchases);
- There has been a significant increase in the number of 'energy clusters' to achieve economies of scale in both capital investment and gas buying power;
- Glasshouses are being located adjacent to industry to benefit from waste heat and CO_2;
- Glasshouse businesses/groups of businesses are creating ESCos (energy supply companies);
- Growers are now looking at:
    - Geothermal energy;
    - Wind and solar energy;
    - Biogas CHP (anaerobic digestion).

7.2 Economic Outlook

10 Years Ago

- The economic outlook was good / fairly good;

- Production and sales were fragmented – i.e. many independent growers/suppliers;
- EU grants were available for investment in added value (packhouses);
- Finance for expansion was relatively easy due to profitability of the sector;
- There was a focus on environmentally friendly production and food safety.

5 Years Ago

- The economic outlook was fairly good;
- Sales were becoming more and more fragmented;
- Producers were increasing unit size;
- EU grants were used for investment in year round production (by artificial lighting);
- Some growers' associations invested in the establishment of labour supply companies;
- The energy market offered growers the possibility to reduce energy costs by using CHP;
- The German and UK consumers preferred home grown products;
- Eastern Europe was an increasing potential market for vegetables;
- The US and Japanese markets were increasingly supplied by Mexican and local greenhouse producers therefore exports to these countries were in decline.

Present

- The economic outlook for the sector is poor;
- Higher energy prices are increasing cost of production;
- Finance is harder to secure for investment
- Production is increasing in other countries (Turkey, Poland, Russia, Ukraine, Spain) because of use of better growing systems (higher investments per m^2);
- Seasons overlap with other countries because of the better growing systems which is a drawback for an export orientated country like Holland;
- Interest in domestic production has increased in the UK and German markets;
- In 2009 all vegetable sectors faced significant price and cost pressures. In 2010 the tomato sector had a good year. However, most of the pepper and cucumber growers had poor yields.
- In 2011 the crisis of E coli bacteria in Germany directly influenced pricing of tomatoes, peppers and cucumbers.

7.3 Investment

- There has been a significant shift to the northern coast of Holland (Westland and Wieringermeer). This is largely due to:
    - Higher natural light levels;
    - Lower summer temperatures and higher winter temperatures;

  - There being a high concentration of horticultural businesses and distribution networks;
  - Local government and community being more supportive of the glasshouse sector;
  - A higher availability of skilled/semi-skilled labour agricultural labour;
  - More larger sites (>40 hectares) being available especially in Wieringermeer;

- In addition to relocation growers have focused investment on production technologies:
  - Increased use of gutter systems;
  - Reduced energy costs through use of thermal screens;
  - Artificial lighting;
  - Internal (i.e. company controlled) distribution logistics;

- And investment in non-growing technologies:
  - CHP;
  - Labour services;
  - Central distribution centres.

7.4 Glasshouse Design

The table below summarises the typical glasshouse business in Holland 10 years ago and present:

10 years Ago	**Present**
Optimum unit size: - Tomatoes – 5 ha; - Sweet peppers – 3 ha; - Cucumber – 2 ha;	Optimum unit size: - Tomatoes – 8-10 ha; - Sweet peppers – 5-8 ha; - Cucumber – 5 ha;
Heat from natural gas boiler	Heat and power from CHP
Temperature controlled packing facilities on site	Small shed for short-term storage. Packing undertaken in large distribution centre
Maximising glass area less important	Maximised glass on land area
Typical height 4.5 metres	Typical height 6 metres
	Use of thermal screens
	Use of artificial lighting

7.5 Government Involvement

- Horticulture is concentrated on specific areas which is supported by government;

- These areas are referred to as 'green ports' with production, processing, packing, services and distribution all concentrated in these areas. Planning policy specifically related to these areas is supportive of glasshouse development and ancillary uses e.g. packhouses, logistics and offices;

- Five 'green port' areas have been identified by government, and local government within and adjacent to these green ports is considered very supportive.

8. Case Studies

Key Points:

- *Although not intended to suggest this is the future vision for the Lea Valley the following case studies provide some useful insight into the potential options for the future;*
- *Thanet Earth is part way through a development that will cost in excess of £153 million. The site produces salad crops all year round and uses artificial lighting. All produce is packed on site and is sold to supermarket buyers. The successful planning application was a result of a prolonged period of work and a successful partnership between a commercial developer and the planning authority;*
- *The glasshouses at Billingham were situated close to industrial uses in order to benefit from waste heat and CO_2 from factory and processing units. The process of acquisition and planning applications was assisted as it was an area of regeneration and this scale of development offers significant economic and employment benefits;*
- *The Cornerways Nursery at Wissington makes significant beneficial use of heat and CO_2 from the British Sugar factory;*
- *In the future the Lea Valley may face increased competition (both price and volume) from potential large-scale developments in Peterborough and Enfield.*

8.1 Thanet Earth, Kent

Thanet Earth was the first 'super glasshouse' development in the UK. The business model is groups of growers (each operating one of the seven glasshouses) working with one central marketing/ distribution company. The project came about through facilitation of interested growers by the central marketing company (who also provided some of the capital funding).

Fresca Group Limited, a UK company, originally purchased the Thanet Earth site and was the driving force behind bringing the partner growers together. Fresca is a 50% shareholder in the marketing company (Thanet Earth Marketing Limited), which packs and markets all the produce from the Thanet Earth site. Growers from across the UK and Europe were approached to be involved.

Three growers are currently based at Thanet Earth (Rainbow Growers, Kaaij Greenhouses and A&A) each owning one of the three greenhouses. The growers purchased the plot from Fresca and funded the cost of development themselves. Each of the growers has a supply agreement with Thanet Earth Marketing Limited in which they are shareholders.

Two of the Dutch growers have maintained their businesses in Holland in addition to their operations at Thanet Earth (one of the companies also operates in Spain). The third company sold their 6.5 hectare greenhouse and business to fund their move to Thanet Earth.

Fresca undertook an extensive scoping activity to identify the potential site. In particular redundant/former RAF bases were assessed. The site was identified because:

- It was of sufficient size;
- It was close to an existing arterial road system;
- The water main was already running through the site;
- It was relatively flat;
- There was sufficient electricity capacity to export energy;
- Light levels were good.

A model of a number of glasshouses in one local area (rather than a single site) was considered, however, it was felt this would not be beneficial because of the loss of economies of scale in terms of labour, management and heat use. Furthermore the main benefit of this type of development is the 'flag ship' status which attracts the supermarkets and therefore offers a marketing advantage.

The 90 hectare (220 acre) site will, eventually, house 7 glasshouses although only 3 have been developed to date. Investment to complete the site will cost circa £150 million on infrastructure, ancillary development and glasshouses. A further two (of the seven) glasshouses are currently being planned subject to securing finance.

The development cost of the whole site will be in the region of £170 per m^2 to provide all infrastructure including roads, power and heat. Approximately 45% of the capital cost is the glasshouse and packing facility structures. 25% of the capital cost relates to the provision/generation of heat to the sites and 30% of the cost relates to road access, infrastructure and power provision to the site.

In the Lea Valley the development costs are similar to this site although in the current locations the road and power provision i.e. the capital cost for a complete glasshouse unit without new roads or power would be circa £120 per m^2. Where glass is added to a site where there is spare heat capacity or already available heat then the cost would be less (£77 per m^2 if the roads and power were also already in place).

Finance has been from a number of sources (banking and private/corporate). There were initially some issues in securing bank finance due to the conditions of the planning consent requiring the site to be returned to green field status if protected cropping production ever ceased. The growers have funded the construction of their own sites, one by selling a site in Holland.

The glasshouses are 7.28 metres tall, use recycled water, have thermal and light screens and use artificial lighting. Each grower has a single glasshouse which produces one type of crop (although a range of varieties). Rainbow Growers produce peppers, Kaaij Greenhouses produce vine tomatoes and A&A produce cucumbers. Production includes:

- Tomatoes (9 varieties) – all year;
- Peppers (7 types) – 9 months;
- Cucumbers – 9 months.

This compares to a typical Lea Valley glasshouse which will have a 22 week growing season i.e. peppers and cucumbers have a 67% longer growing season and tomatoes have a 136% longer growing season compared to the Lea Valley. The intention is that the site will be able to produce 15% of the UK salad crop production, however, at present the site is only operating at 40% capacity (100% includes all areas not yet built).

The highly efficient system and longer growing season mean that Thanet Earth will have a higher output per m^2 compared to the Lea Valley. Detailed yield data are not available but it is understood that Thanet Earth potentially yields up to 100% higher than the average Lea Valley grower and 20 – 40% higher than the best growers in the Lea Valley.

The use of artificial lights and light screens allows the season to start earlier and end later when other glasshouse production would have ended. It is understood that the light screens mean that light pollution is very low with less than 5% in the local area (although this area is much less populated than most of the Lea Valley). The artificial light means crops can be planted earlier, start producing earlier and the season is extended. In the Lea Valley the growing season is typically 22 weeks compared to 37 – 52 weeks at Thanet Earth.

However, it is important to note that in most cases the winter production (with higher light and heat costs) will be being sold below the cost of production but this is done to maintain the sales volume and supply contract with the supermarket for the rest of the year. This strategy retains the demand and makes it difficult for competitors to enter the market.

The business will employ 550 people (all new jobs) once fully operational and will have a labour bill of circa £13 million per annum. The intention had been for these to be a high proportion of local people (and this was one of the main selling points of the project), although, it has turned out that there is still a high proportion of migrant workers. Local business has been very supportive noting an improvement in trade due to new employment. There is no onsite accommodation provided with all workers (considered 'migrant' due to their nationality rather than their actual status) living in accommodation in local towns.

Labour and in particular a good supply of regular and reliable labour is a problem with protected cropping units of this size. Most units engage a high proportion of migrant/non-domestic employees because of the lack of supply and availability rather than any other reason.

It is intended that 75% of water used on the site will be from recycling or rainwater (Thanet Earth, 2011). But despite having its own reservoir and water recycling, water availability is understood to be an issue for some of the growers. Another issue which was not anticipated is the levels of effluent from the site. This was a concern for the Environment Agency and now effluent has to be transported away from the site.

There is onsite heat and electricity generation and beneficial use of CO_2. When fully operational the site will generate 50% of the energy demands of the local town of Birchington. Currently electricity for 25,000 houses is produced with the intention for this to rise to 50,000 homes once the remaining 4 glasshouses are developed.

In terms of heat use the preferred model was siting the glasshouses adjacent to a power station/industrial area to benefit from the 'free' heat, however, no suitable sites were identified.

Anaerobic Digestion (AD) was considered at the site but was rejected because there is a need for 0.6-0.7 MW of AD per ha of glass. A 2.5 MW AD site costs in excess of £6 million and would require 1,000 ha of feedstock crops (thus traffic would be a major issue).

Growers are unlikely to relocate to have glasshouses next to AD plants for the above reason plus the revenue and benefit from on-site gas CHP is better (they get the free heat plus the Feed in Tariffs (FiTs)/Renewable Obligation Certificates (ROCs) income) so commercially it is not a worthwhile them relocating outside the area to an AD plant where growers would be charged for the heat.

Thanet Earth has a much lower net heat cost (i.e. fuel purchases less any heat/electricity sales) because of the CHP which will be generating electricity to sell. Some growers in the Lea Valley have CHP but most do not therefore their net energy cost is much higher.

It is estimated that turnover is currently £64 million per annum from the site which is anticipated to rise to £84 million in 2012/2013. Turnover is projected to be in excess of £140 million once fully operational. This compares to a turnover of circa £78 million per annum from the whole of the Lea Valley. This equates to £2.13 million per hectare per annum at Thanet Earth compared to £1.04 million per hectare per annum in the Lea Valley. This is due to higher yields per hectare (due to the taller glasshouses) and the longer growing season (due to the cheap heat and artificial lighting).

The developers were in contact and consultation with the planning authority for over 12 months prior to the application being submitted. The planning authority was very supportive of the concept as it potentially would create employment (in a high unemployment area) and the highly visible development would be seen as 'a clear statement to investors'. Many councillors supported the project (and spoke in favour at the planning committee meetings) because of the potential job creation, however, a large proportion of the labour resource is foreign migrant workers rather than domestic. Despite a very positive relationship between almost all parties it still took over 24 months for full planning permission to be granted.

The original planning application for the project which was to become Thanet Earth was first considered by the Planning Committee in May 2006, having been submitted in 2005. The application was for the erection of seven glasshouses, a pack-house, a research and education centre, seven horticultural managers' dwellings, roadways, reservoirs, conveyor system and ancillary works, across the site.

The application was subsequently approved in June 2006 with conditions imposed on a number of matters such as:

- The type of glass used;
- Landscaping;
- The use of fork-lifts outside at night;
- Lorry movements after 9pm.

The committee had previously sought assurances about access to highways, water sources, bird hazards, soil stripping and glare. No caravans were permitted for seasonal workers. All these conditions were subsequently reflected in a s106 agreement.

The Environment Agency was involved in the planning process and raised no substantial issues about water issues, other than to seek assurances about a bore-hole. It was necessary, however, to reconfigure the water main around the site. Similarly, discussions with Natural England threw up no significant points.

At the meeting in June 2006, however, two councillors successfully put forward an amendment also imposing restrictions on the use of lighting in the glasshouses at night. The developers subsequently argued, also successfully, that this restriction would inhibit plant growth and hence the viability of the project. Final planning permission was given in September 2007 without undue restrictions on lighting at night. The Committee also agreed to increase the height of the glasshouses. The s106 agreement was finalised in the same month.

Under the agreement, there were also extensive requirements imposed on the developers in terms of archaeology, operating to protocols set down by Kent County Council. Some reconfiguration was needed around a Saxon burial site, for example. Floor levels of greenhouses had to be set so as not to disturb possible artifacts below. There were also restrictions on construction in wet weather in case heavy machinery disturbed sub-soil structures. To date, archaeological work has cost the businesses about £1.9m. It also added about 4-5 months to development time.

The packhouses only pack about 10-20% UK produce and 80-90% imported and this is probably the main cause of the traffic problems not necessarily the new glass. Only about 40% of turnover generated at the site is due to the on-site produce. The site operators now consider that the on-site packing is of no benefit, mainly because of traffic issues and other logistical problems. For these reasons, a more suitable location for packing and distributing Thanet Earth produce would be the eastern part of the M25, or even the M11 corridor. There could therefore be potential synergies with the packhouses serving the Lea Valley, but the M25 and M11 are both entirely in the Green Belt in Epping Forest District. In any event, relocation of the Thanet Earth packhouse facilities does seem unlikely given the level of investment that has already gone into the site.

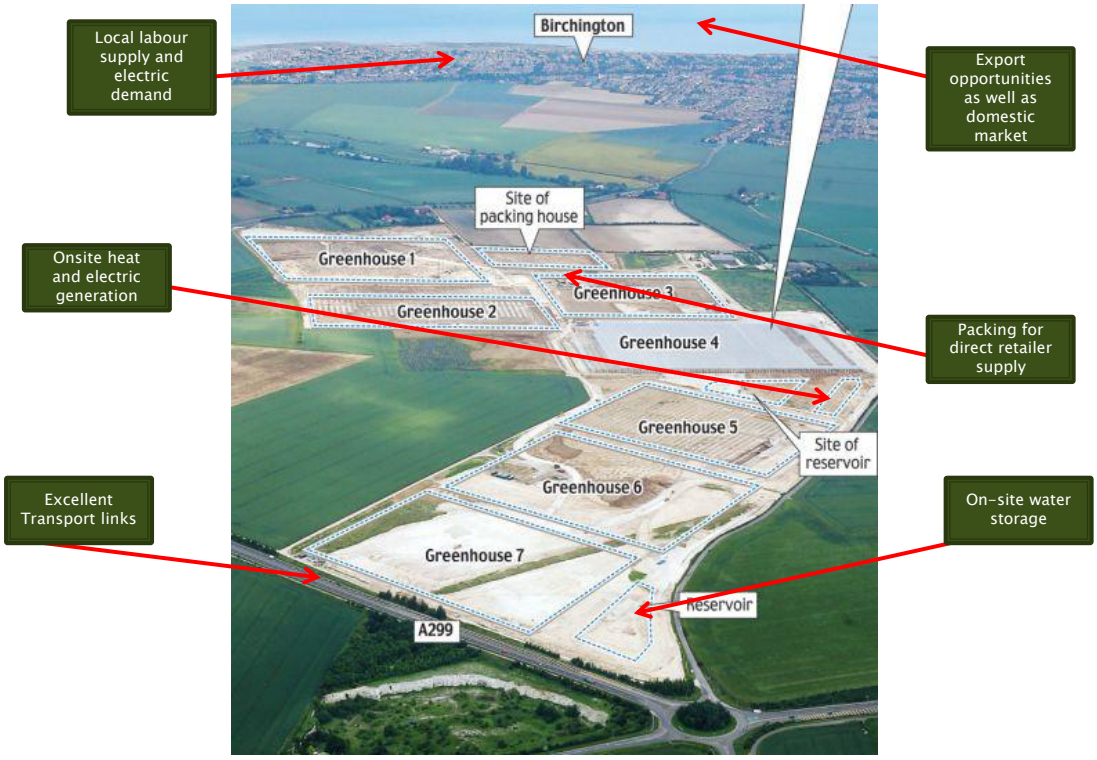


Figure 23 – Plan of Thanet Earth

8.2 Billingham, Stockton-On-Tees

The primary investor in this site was an existing glasshouse grower with two separate sites totalling 8.5 hectares, one of which did not have access to mains gas. The business wanted both to expand and reduce its energy costs which were rising. It was decided that the expansion of either of the existing sites was not viable and that an alternative site would need to have access to gas and/or waste heat. Therefore five potential sites were identified and appraised. The five sites were:

- Scottish Coal - various sites in Scotland;
- Killingholme oil refinery - both the Total and Fina units;
- Guardian Glass – Goole;
- Bio diesel production unit – Wilton;
- Terra (ex ICI) fertiliser production unit – Billingham.

Eventually the business decided on Billingham in Stockton-on-Tees. The level of natural light was a concern (being lower than the south east) but the relatively low cost heat and free availability of CO_2 from the adjacent industry compensated for the lower light levels.

There is a history of glasshouse businesses in the Billingham area as far back as early 20th Century although in recent times it has become more associated with heavy industry and many businesses have ceased production and/or migrated to southern England and in particular West Sussex for the higher light levels.

There was significant investment in the 1960s with some of the largest glasshouses in the country (at the time) largely supported by EU grants. More recent investment has been around the Terra Fertiliser Plant (the old ICI site).

This was an area identified for regeneration with a history of heavy industry and high levels of surrounding redundant industry. The incentives for glasshouse investment in this area were (i) heat availability from adjacent industrial processes; (ii) a major water main running through the site; and (iii) sufficient electricity capacity, meaning no upgrade was required. There was the additional benefit of the industrial nature of the site meaning light pollution from artificial lighting would not be an issue.

Initially the business considered a site directly next to the Terra plant, however, space restrictions meant that in the end the site identified was slightly away from the Terra plant but had sufficient space for the glasshouses and infrastructure and had potential for further expansion.

The glasshouse unit is 16.2 hectares (40 acres). It was felt that the glasshouse unit had to be at least this size to justify the investment. The glass height is 5.5 metres. The total capital investment was £27.5 million. Although there was an existing supply of heat and CO_2 at the site there was still substantial costs of 'plumbing' the heat to the glasshouse site. The glasshouse structure and buildings cost circa £12.1 million, the roads and access plus power supply cost approximately £8.7 million and the heat supply and systems cost £6.7 million.

The investment created 150 new jobs in the area and regenerated a redundant brown field site. The site was developed in two stages – 9.7 hectares initially with a further 6.5 hectares being developed after stage 1 was completed.

A regular supply of labour has been an issue at this site and the vast majority (and a growing proportion) are 'migrant' workers from Eastern Europe. The other issue that has been identified at this site is that domestic workers have a lower rate of productivity and also higher sickness absence levels.

Similar to Thanet Earth, the design of the site and the economies of scale mean that output is higher and some costs lower. In terms of yield output the growing season at Billingham is all year round with the use of artificial lighting. The marketing organisation is able to provide all year round supply (albeit lower output in the winter) to the supermarkets. The supermarkets prefer to deal with them (and units such as Thanet Earth) rather than the Lea Valley as they do not need to have an additional supplier for winter production. The yield from tomatoes in Billingham compared to the Lea Valley is typically 30% higher . Although the total area of tomatoes in the Lea Valley has reduced significantly in the last 60 years (mainly due to competition from other growing areas) it is known that at least one grower in the Lea Valley is investing in modern tomato production facilities therefore yields in the Lea Valley may improve in the future.

Public sector bodies One North East and Tees Valley Regeneration assisted with the land purchase and the planning applications. Planning was granted with relatively few issues as there were no local residents that would object and the area was already industrial in nature. The local area has high

levels of unemployment therefore there was a planning condition requiring the employment of local people.

In addition to the direct employment it also provides some security to the businesses supplying the energy and carbon dioxide for the site. All of these people live in the local community and as such make a contribution to all aspects of community life - both economic and social.

To further reduce the energy costs the glasshouse unit has also started to take waste hot water from the Marlow Foods (Quorn) factory next door to the glasshouse site. This waste hot water is not working as well as it might due to problems with the plumbing supply.

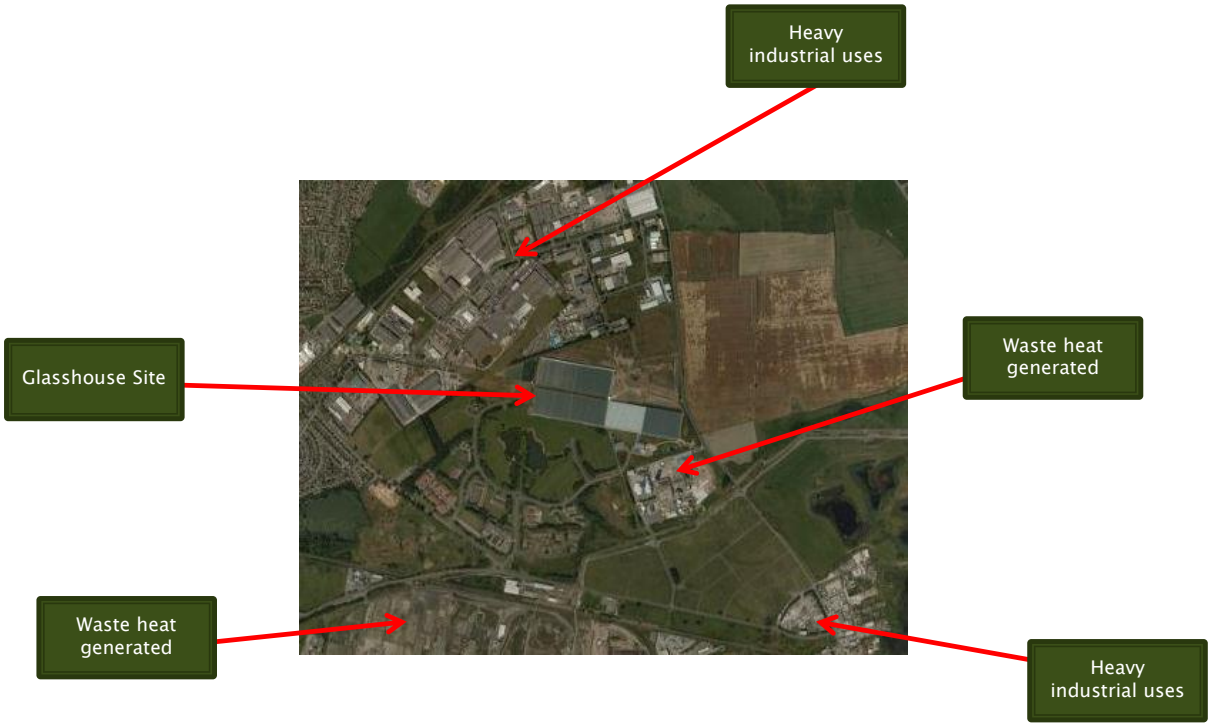


Figure 24 – Plan of the Billingham Glasshouse Site

8.3 Wissington, Norfolk

The Wissington Glasshouse business (trading as Cornerways Nursery) is owned and controlled by British Sugar and, as such, detailed production figures are not available. The British sugar factory at Wissington has approximately 18 hectares of glass for tomato production. The site started at 5 hectares and in 2007 an additional 5.7 hectares expansion was commissioned. In 2010 British Sugar started planning a further 7.3 hectare expansion which was commissioned in March 2011.

This site was identified due to (i) good light levels and (ii) the potential for free waste heat from the sugar beet factory and (iii) waste CO_2 from the factory's CHP unit. Next to the site there is a 70MW CHP system. This output provides electricity for the British Sugar factory and over 100,000 nearby

homes. The low grade heat (in the form of hot water) is piped to the glasshouses to provide free heat. Also the CHP unit provides 2,400 m^3 per hour of CO_2-rich flue gas directly into the glasshouses.

Investment is thought to be lower than Thanet Earth and Billingham due to the existing infrastructure that was already in place.

Water is provided by waste water from the evaporation units within the sugar factory and also 11.5 million litres of rainwater is harvested from the glasshouse roofs.

Production is from February to November. Total output is approximately 10,000 tonnes per annum (909 tonnes per hectare) which is more than double the national average. This is due to the available heat which extends the growing season and the taller nature of the glass.

The site provides employment to about 350 workers during the peak summer months.

8.4 Enfield & Peterborough

Although not a case study it is useful and important to note that it is known that there is current interest and development being undertaken regarding large scale protected cropping units in Peterborough and Enfield. The latter could potentially provide useful infrastructure to the Lea Valley, but both areas would be considered as competition to the Valley growers.

8.5 Competition

Any domestic production for protected salad crops is potentially competition for the Lea Valley. However, the more important point is that larger and more efficient units, in a sector where margins are very small anyway, are able to produce higher yields on a lower cost base. Furthermore artificial lighting can extend the growing season and in some case result in year round production which has benefits for securing and maintaining supermarket contracts. Therefore in addition to volume the types of large-scale development discussed in this section are likely to provide significant price competition in the future.

9. Planning Policy Review

Key Points:

- *There are five sites identified which are large glasshouse areas but are outside of the existing E13 and main glasshouse areas. Two of these sites are identified as potential future designations with three sites identified as unsuitable (mainly due to their proximity to the Lee Valley Regional Park) for designation;*
- *The NPPF advises that planning should support sustainable economic development, protect the Green Belt, and support the transition to a low carbon economy. (Agricultural buildings are not inappropriate in the Green Belt.) The NPPF also encourages the re-use of previously developed (i.e. brownfield) land, but continues the exclusion of agricultural buildings from the definition of brownfield land. Planning policies should avoid the long-term protection of sites allocated for employment use where there is no reasonable prospect of a site being used for that purpose. Policies should promote the development and diversification of agricultural businesses. The evidence base of plans should assess the needs of the food production industry and any barriers to investment that planning can resolve. Plans should have a positive strategy to promote energy from renewable and low carbon sources, and new development should normally comply with requirements for a decentralised energy supply. Existing open space should not be built on unless an assessment clearly shows that it is surplus to requirements.*

Epping Forest District Council is preparing an evidence base to inform the development of spatial plans and policies for the District through the preparation of a new local plan. The evidence base will provide the council with robust information on which to develop policies and an approach to managing development issues associated with the District's horticultural glasshouse industry.

A similar study was carried out by Reading Agricultural Consultants in 2003, the results of which informed alterations to the council's Local Plan in the form of a series of glasshouse policies that were adopted in 2006.

9.1 Study Area

This chapter will give an overview of the planning issues of whole District, while focusing on the Roydon and Nazeing areas where the majority of glasshouse development is located. There are also more limited but locally important glasshouse areas within the Waltham Abbey parish. There are also a small number of individual glasshouses sites.

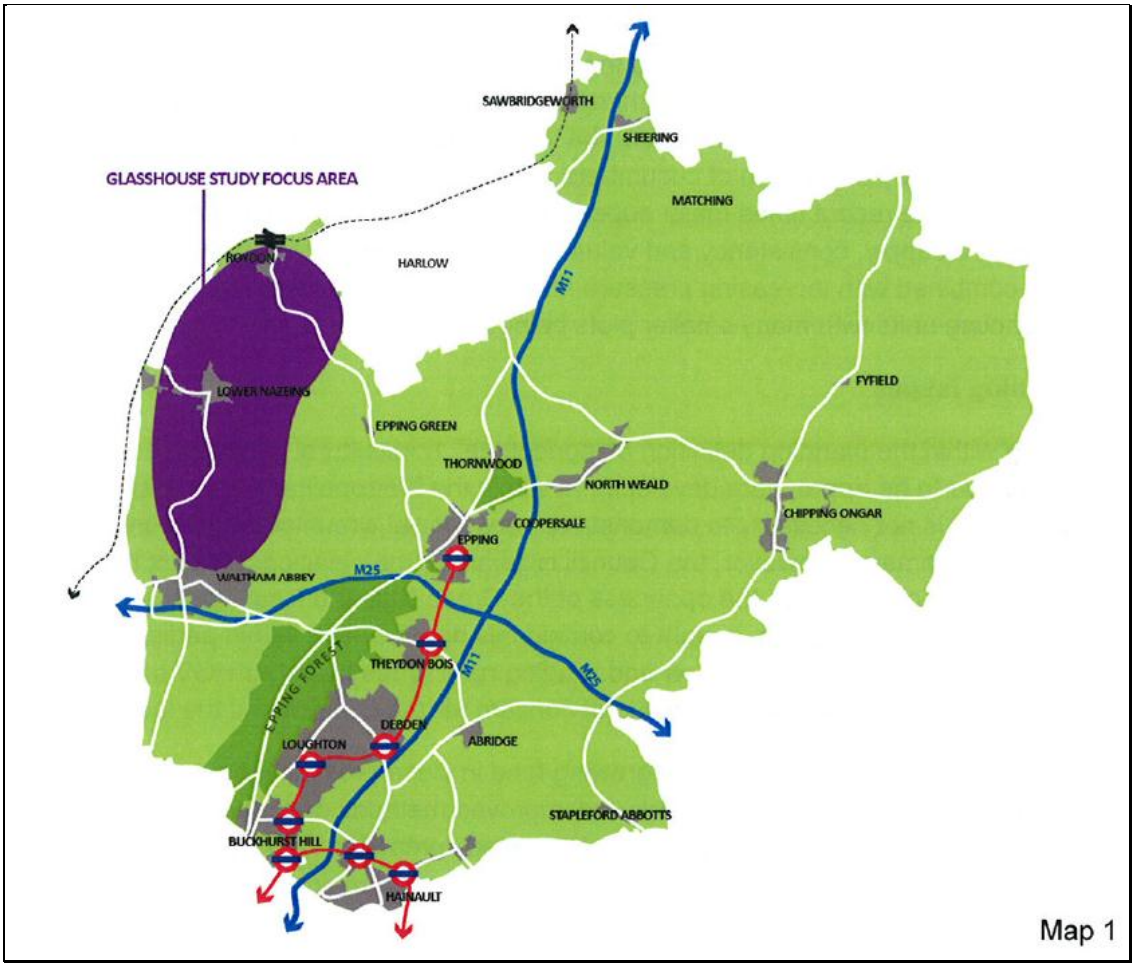


Figure 25 – Map of Study Area

9.2 Additional Areas and Sites

The study is also required to take into account the dispersed glasshouses elsewhere in the district.

The following five additional significant operational glasshouse areas have been identified.

- Lake View and Meadow Lee Nurseries, Dobb's Weir Road, Roydon
- Fernbank Nursery, Nazeing Road, Nazeing
- Three Dees Nursery, Reeves Lane Roydon
- Stubbins Hall Nursery, Holyfield, Waltham Abbey
- Premier Herbs, Vicarage Lane, North Weald

Lake View/Meadow Lee Nurseries, Stubbins Hall Nursery and Fernbank Nursery are all within the Lea Valley Regional Park. Given the policy stance of the Lea Valley Regional Park Authority it would not be appropriate to designate these areas within glasshouses areas.

It may be appropriate to designate Three Dees Nursery and Premier Herbs within Glasshouse Policy areas.

Figure 26 – Lake View and Meadow Lee Nurseries, Dobb's Weir Road, Roydon

Figure 27 – Fernbank Nursery, Nazeing Road, Nazeing

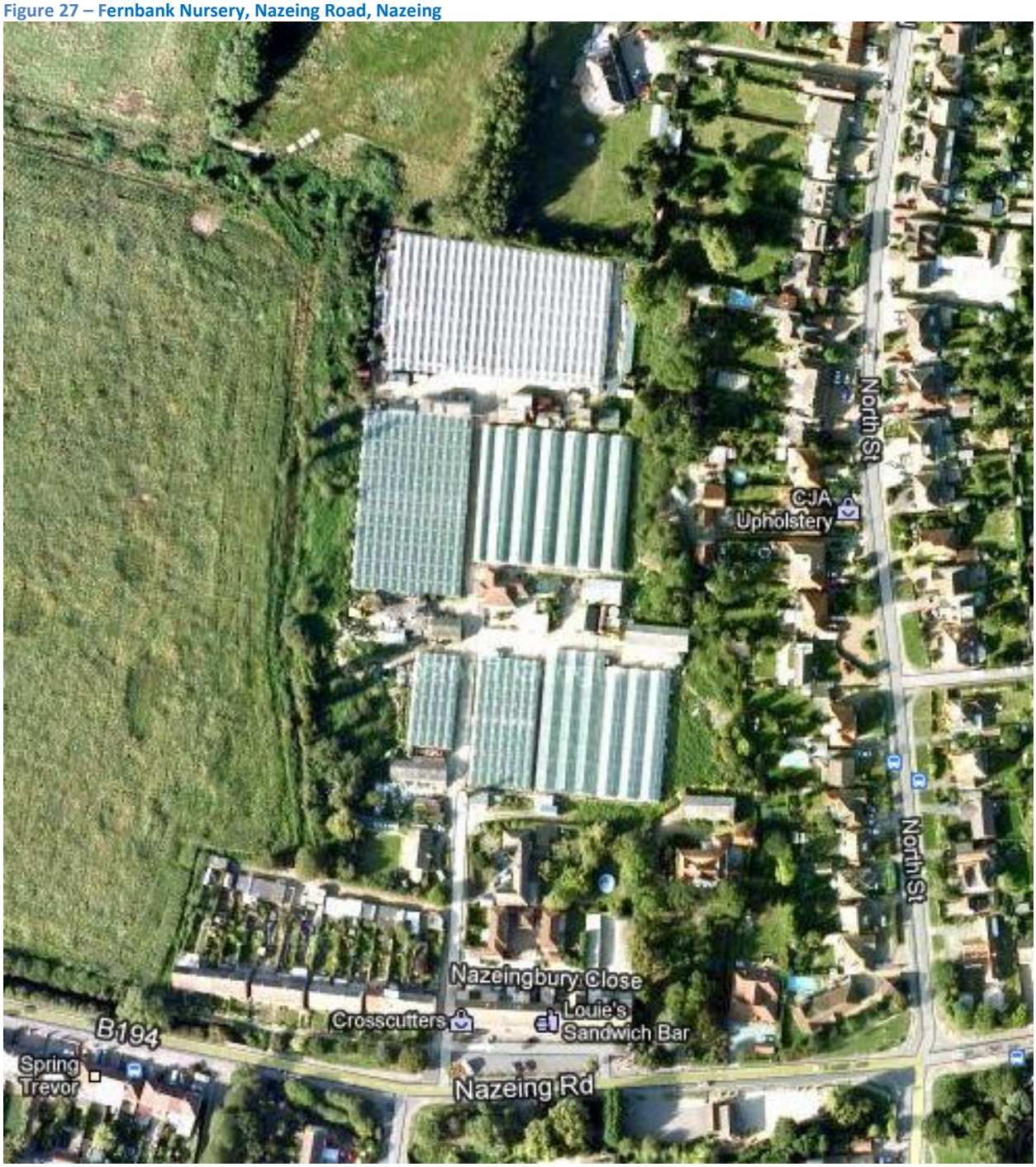


Figure 28 – Three Dees Nursery, Reeves Lane Roydon

Figure 29 – Stubbins Hall Nursery, Holyfield, Waltham Abbey

Figure 30 – Premier Herbs, Vicarage Lane, North Weald

9.3 Policy Context

Definition

Horticulture falls within the definition of 'agriculture' as defined by Section 336 (1) of the Town and Country Planning Act 1990.

National Policy

There is no specific national planning guidance relating to the horticultural glasshouse industry. The following guidance, however is relevant to this study.

9.4 National Planning Policy Framework

This was published in March 2012 and immediately replaced most of the existing Planning Policy Statements (PPSs) and Planning Policy Guidance notes (PPGs).

The NPPF does not change the statutory status of the Local Plan as the starting point for decision making – proposed development that accords with an up-to-date Local Plan should be approved, while proposals that conflict should be refused unless other material considerations indicate

otherwise. What follows is a précis of the points of most relevance to the development of policy for the future of the glasshouse industry.

The NPPF includes a presumption in favour of sustainable development and describes 12 core planning principles (para 17). These latter include the following - that planning should:

- proactively drive and support sustainable economic development ….;
- ….promote the vitality of our main urban areas, protecting the Green Belts around them, recognising the intrinsic character and beauty of the countryside and supporting thriving rural communities within it;
- support the transition to a low carbon future in a changing climate …..;
- encourage the effective use of land by reusing land that has been previously developed (brownfield land), provided that it is not of high environmental value (although the glossary to the NPPF (p55) indicates that land occupied by agricultural or forestry buildings is excluded from the definition of previously developed land).

The Government is committed to ensuring that the planning system does everything it can to support sustainable economic growth. Significant weight should therefore be placed on the need to support economic growth through the planning system. Local planning authorities should plan proactively to meet the development needs of business and support an economy fit for the 21st century (paras 19 and 20).

In drawing up Local Plans, local planning authorities should:

- set out a clear economic vision and strategy for their area which positively and proactively encourages sustainable economic growth;
- set criteria, or identify strategic sites, for local and inward investment to match the strategy and to meet anticipated needs over the plan period;
- support existing business sectors, taking account of whether they are expanding or contracting and …..be flexible enough to accommodate needs not anticipated in the plan and to allow a rapid response to changes in economic circumstances; and
- plan positively for the location, promotion and expansion of clusters or networks of ….. high technology industries (para 21).

Planning policies should avoid the long term protection of sites allocated for employment use where there is no reasonable prospect of a site being used for that purpose (para 22).

Planning policies should support economic growth in rural areas in order to create jobs and prosperity by taking a positive approach to sustainable new development. Local plans should support the sustainable growth and expansion of all types of business and enterprise in rural areas ….(and) promote the development and diversification of agricultural and other land-based rural businesses (para 28).

Plans should ensure developments that generate significant movement are located where the need to travel will be minimised and the use of sustainable transport modes can be maximised (para 34). Para 29 recognises however that "…opportunities to maximise sustainable transport solutions will

vary from urban to rural areas." Plans should protect and exploit opportunities for the use of sustainable transport modes for the movement of goods and people. Developments should therefore be located where practical to accommodate the efficient delivery of goods and supplies (para 35).

Planning policies should be based on robust and up-to-date assessments of the needs for open space, sports and recreation facilities and opportunities for new provision (para 73). Existing open space, sports and recreational buildings and land, including playing fields, should not be built on unless an assessment clearly shows the open space, buildings or land to be surplus to requirements (para 74).

Planning policies should protect public rights of way and access (para 75).

The Government attaches great importance to Green Belts. The fundamental aim of Green Belt policy is to prevent urban sprawl by keeping land permanently open; the essential characteristics of Green Belts are their openness and their permanence (para 79). Green Belt serves five purposes:

- checking the unrestricted sprawl of large built-up areas;
- preventing neighbouring towns from merging into one another;
- assisting in safeguarding the countryside from encroachment;
- preserving the setting and special character of historic towns; and
- assisting in urban regeneration, by encouraging the recycling of derelict and other urban land (para 80).

A local planning authority should regard the construction of new buildings as inappropriate in Green Belt. Exceptions to this are (inter alia) buildings for agriculture and forestry (para 89). Certain other forms of development are also not inappropriate provided they preserve the openness of, and do not conflict with the purposes of including land in, Green Belt. These include the re-use of buildings provided the buildings are of permanent or substantial construction (para 90).

To support the move to a low carbon future, local planning authorities should:

- plan for new development in locations and ways which reduce greenhouse gas emissions; and
- actively support energy efficiency improvements to existing buildings (para 95).

Local planning authorities should expect new development to:

- comply with adopted Local Plan policies on local requirements for decentralised energy supply unless it can be demonstrated that this is not feasible or viable;
- take account of landform, layout, building orientation, massing and landscaping to minimise energy consumption (para 96).

Local planning authorities should:

- have a positive strategy to promote energy from renewable and low carbon sources; and

- design their policies to maximise renewable and low carbon energy development while ensuring that adverse impacts are addressed satisfactorily, including cumulative landscape and visual impacts (para 97).

The planning system should contribute to and enhance the natural and local environment by:

- protecting and enhancing valued landscapes;
- minimising impacts on biodiversity and providing net gains in biodiversity where possible;
- preventing both new and existing development from contributing to, or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution; and
- remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land (para 109).

In preparing plans to meet development needs, the aim should be to minimise pollution and other adverse effects on the local and natural environment (para 110).

Local planning authorities should take into account the economic and other benefits of the best and most versatile agricultural land. Where significant development of agricultural land is demonstrated to be necessary, local planning authorities should seek to use areas of poorer quality land in preference to that of a higher quality (para 112).

Local planning authorities should set criteria based policies against which proposals for any development on or affecting protected wildlife sites will be judged. Distinctions should be made between the hierarchy of international, national and locally designated sites, so that protection is commensurate with their status and gives appropriate weight to their importance and the contribution they make to wider ecological networks (para 113).

Local planning authorities should set out a strategic approach in their Local Plans, planning positively for the creation, protection, enhancement and management of networks of biodiversity and green infrastructure (para 114).

To minimise impacts on biodiversity, planning policies should:

- plan for biodiversity at a landscape-scale across local authority boundaries;
- promote the preservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species populations, linked to national and local targets, and identify suitable indicators for monitoring biodiversity in the plan (para 117).

Planning policies should aim to:

- avoid noise from giving rise to significant adverse impacts on health and quality of life as a result of new development;
- mitigate and reduce to a minimum other adverse impacts on health and quality of life arising from noise from new development; and

- recognise that development will often create some noise and existing businesses wanting to develop in continuance of their business should not have unreasonable restrictions put on them because of changes in nearby land uses since they were established (para 123).

By encouraging good design, planning policies should limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation (para 125).

Local planning authorities should have a clear understanding of business needs within the economic markets operating in and across their area. To achieve this, they should work closely with the business community to understand their changing needs and identify and address barriers to investment, including a lack of infrastructure or viability (para 160).

Local planning authorities should use this evidence base to assess:

- the needs for land or floorspace for economic development;
- the existing and future supply of land available for economic development and its sufficiency and suitability to meet the identified needs; and
- the needs of the food production industry and any barriers to investment that planning can resolve (para 161).

9.5 Local Policy

The Local Plan Alterations (2006) includes policies directly relating to the glasshouse industry as follows:

- **POLICY E13A - NEW AND REPLACEMENT GLASSHOUSES**
- **POLICY E13B - PROTECTION OF GLASSHOUSE AREAS**
- **POLICY E13C – PREVENTION OF DERELICTION OF NEW GLASSHOUSE SITES**

POLICY E13A states that planning permission for new and replacement glasshouses will be granted within areas identified on the Proposals Map. Glasshouses outside these areas will not be permitted unless they meet a list of criteria and do not have an adverse effect on the open character or appearance of the countryside.

POLICY E13B states that applications which are likely to undermine the approach of clustering glasshouses or harm the future vitality and/or viability of the glasshouse industry will be refused.

In order to prevent the dereliction of glasshouse sites through **POLICY E13C,** the council requires that sites are returned to a condition appropriate to their previous use when or if they are no longer used for glasshouse horticulture. Under-used or derelict glasshouses will not be considered suitable sites for non-agricultural uses, at least until a future review of the plan.

POLICIES E13A, **E13B** and **E13C** continued the strategy of concentration but in reaching decisions on planning applications the council now had to consider harm to the overall viability/vitality of the Lea Valley glasshouse industry.

The Local Plan Alterations acknowledged that the Lea Valley glasshouse industry had changed since the Local Plan was adopted in 1998. Some glasshouse sites were identified for immediate de-designation and others were identified for future potential de-designation when the policy was again reviewed.

There are competing pressures for land in the District with high values achievable for housing development if planning permission can be obtained. 'Hope value' for potential future housing development may lead owners of glasshouse and other sites to allow them to deteriorate.

Green Belt

The Local Plan Alterations also a policy in relation to the change of use or adaptation of buildings in the green belt **Policy GB8A**. To conform to this policy buildings have to be *'of permanent and substantial construction'*. The justification for the policy notes explicitly that *'The change of use and adaptation of glasshouses will not be in accordance with this policy.'*

Lee Valley Regional Park

The whole of the western part of the district council's area within the floor of the Valley is in the Lee Valley Regional Park (LVRP) (see sections 3.6 and 3.7) where the Park Authority (LVRPA) generally considers that new glasshouses are inconsistent with the objectives of the Park Plan.

The LVRPA promotes leisure, recreation and nature conservation as the primary uses for the park and, as a planning authority in its own right, prepares its own Development Framework and is a statutory consultee for the district council's plan and for all relevant planning applications. Where planning decisions are made contrary to the Park Authority's aims and objectives it can ask the Secretary of State to call-in the application.

10.Planning Policy Appraisal

Key Points:

- *Demand for glasshouse developments has been much lower since the adoption of the Local Plan Alterations. This is much more a reflection of the current economic outlook rather than planning policy;*
- *The majority of applications are within the E13 designations, although, this rate has fallen from 92.3% to 91.4% since 2006;*
- *The success rate for applications has been much higher since 2006 compared with the previous 5 years;*
- *The current E13 designation policy aimed at clustering glasshouse development has been successful;*
- *The majority of applications have been approved/rejected in line with current policy and this has been demonstrated by the low level of appeals being upheld.*

10.1 Demand for and Supply of Glasshouses

An assessment of current glasshouse industry policies will be informed by the council's Annual Monitoring Report (AMR). The following table illustrates the total area of glasshouse development (new and replacement) permitted for each of the financial years between 2000/2001 to 2011/2012[7].

Year	Area of Glasshouse Permitted (ha.)	Area of Glasshouse Permitted in Designated Areas (ha.)	Glasshouse area permitted in Designated areas (%)
2000/2001	13.41	9.30	69.35
2001/2002	5.00	4.30	86.00
2002/2003	22.59	22.59	100.00
2003/2004	11.40	11.40	100.00
2004/2005	23.97	23.85	99.50
2005/2006	2.93	1.72	58.78
2006/2007	9.53	7.68	80.53
2007/2008	1.93	1.92	99.53
2008/2009	3.53	3.37	95.48
2009/2010	1.38	1.38	100.00
2010/2011	0.92	0.86	93.24
2011/2012[8]	7.65	7.64	99.87
TOTAL	**104.25**	**96.02**	**92.10**
Averages:			
2000-2006	**13.22**	**12.19**	**92.3%**
2006-2012	**4.17**	**3.81**	**91.4%**

SOURCE: Epping Forest District Council Annual Monitoring Reports

Table 10 – Glasshouse Development in Designated Areas

Table 10 illustrates that the overwhelming majority (92.10% by area) of glasshouse developments since 2000 have taken place within the designated areas which is in line with the E13 planning policy. There have been planning permissions for 104.25 hectares of new and replacement glasshouses over the years 2000 to 2012 which represents an annual average approval rate of 8.69 hectares.

Since the Local Plan Alterations in 2006 the average annual area of glasshouses permitted has been 4.17 hectares compared to 13.22 hectares prior to 2006. Growers certainly feel that the potential to expand is limited by available area and the E13 designations. However, some growers admit, and financial analysis indicates that, the decrease in the number of applications (-70%) shown in Table 12 and the decrease in glass area approved (shown above) are mainly related to the poor economic performance of protected salad cropping.

It is interesting to note (but not thought to be significant) that the proportion of glass permitted inside the E13 designations did drop slightly after 2006 but since 2007/2008 the proportion of glass permitted outside of the E13 designations has been less than 10% on average in those 5 years (Table 10).

[7] *Data to 31st December 2011*
[8] *Data to 31st December 2011*

Year	Area (ha.)	Area in Designated Areas (ha.)	Area in Designated areas (%)
2000/2001	6.24	6.03	96.70%
2001/2002	19.75	6.86	34.73%
2002/2003	15.35	12.46	81.18%
2003/2004	10.97	6.00	54.71%
2004/2005	3.50	2.86	82.03%
2005/2006	12.20	10.75	88.14%
2006/2007	9.61	8.74	90.96%
2007/2008	7.30	7.21	98.72%
2008/2009	4.63	3.37	72.77%
2009/2010	1.84	1.06	57.64%
2010/2011	2.19	1.71	78.09%
2011/2012[9]	4.97	4.70	94.47%
TOTAL	**98.54**	**71.57**	**72.63%**
Averages:			
2000-2006	**11.34**	**7.49**	**66.1%**
2006-2011	**5.09**	**4.47**	**87.7%**

This table shows all applications which included the words, 'glass', 'green' 'nursery', 'nurseries' or 'pack'. Applications not relevant to agriculture have been removed.

SOURCE: Epping Forest District Council

Table 11 – Glasshouse related applications in Designated Areas

Table 11 shows that, again, a large majority (72.63% by area) of planning applications for glasshouse related developments (see definition above – Table 11) have also been within the designated areas. Although the proportion of applications approved inside the E13 designations has been much higher since 2006. As with Table 10 the area approved has been much lower since 2006.

Since 2006 there have been 30.54 ha of glasshouse related developments permitted of which 26.82 hectares have been within the designated areas, which average 5.1 hectares and 4.47 hectares per annum respectively.

[9] *Data to 31st December 2011*

Year	Number of Applications submitted	Granted	Withdrawn	Refused
2000/2001	3			
2001/2002	10			
2002/2003	7			
2003/2004	6			
2004/2005	3			
2005/2006	1			
Total 2000/2006	**30**	**19**	**3**	**8**
% 2000/2006	*100%*	*63.3%*	*10%*	*26.7%*
2006/2007	5			
2007/2008	1			
2008/2009	2			
2009/2010	0			
2010/2011	0			
2011/2012[10]	1			
TOTAL 2006/2012	**9**	**8**	**1**	**0**
% 2006/2012	*100%*	*88.9%*	*11.1%*	*0%*
TOTAL 2000/2012	**39**	**27**	**4**	**8**
% 2000/2012	*100%*	*69.2%*	*10.3%*	*20.5%*

SOURCE: Epping Forest District Council

Table 12 – Analysis of Planning Applications for New Glass (2000 - 2011)

Table 12 shows that a large majority (69.2%) of applications for new glass (2000-2012) were granted but a higher percentage (88.9%) were granted in the period between 2006 and 2012. The figures show a significant decline in numbers of applications submitted between 2006 and 2012 when compared with the period between 2000 and 2006.

[10] *Data to 31st December 2011*

Year	Number of Applications submitted	Granted	Withdrawn	Refused
2000/2001	1			
2001/2002	2			
2002/2003	0			
2003/2004	3			
2004/2005	6			
2005/2006	2			
Total 2000/2006	**14**	**12**	**2**	**0**
% 2000/2006	*100%*	*85.7%*	*14.3%*	*0%*
2006/2007	2			
2007/2008	1			
2008/2009	0			
2009/2010	1			
2010/2011	2			
2011/2012[11]	2			
TOTAL 2006/2012	**8**	**4**	**1**	**3**
% 2006/2012	*100%*	*50.0%*	*12.5%*	*37.5%*
TOTAL 2000/2012	**22**	**16**	**3**	**3**
% 2000/2012	*100%*	*72.7%*	*13.6%*	*13.6%*

SOURCE: Epping Forest District Council

Table 13 – Analysis of Planning Applications for Replacement Glass (2000 -2011)

Table 13 shows that a large majority (72.7%) of applications for replacement glass have been granted with a higher percentage (85.7%) granted in the period between 2000 and 2006. The figures show a significant decline in numbers of applications submitted between 2006 and 2012 when compared with the period between 2000 and 2006. There is no clear reason for the percentage of replacement being granted falling post 2006 compared to the success rate for new glass applications which improved in the same period.

The trend over the period from 2000 to 2011 for annual number of applications for both new and replacement glass and the annual area of glass permitted (hectares) is downward. The area of glass per application has remained fairly constant.

[11] *Data to 31st December 2011*

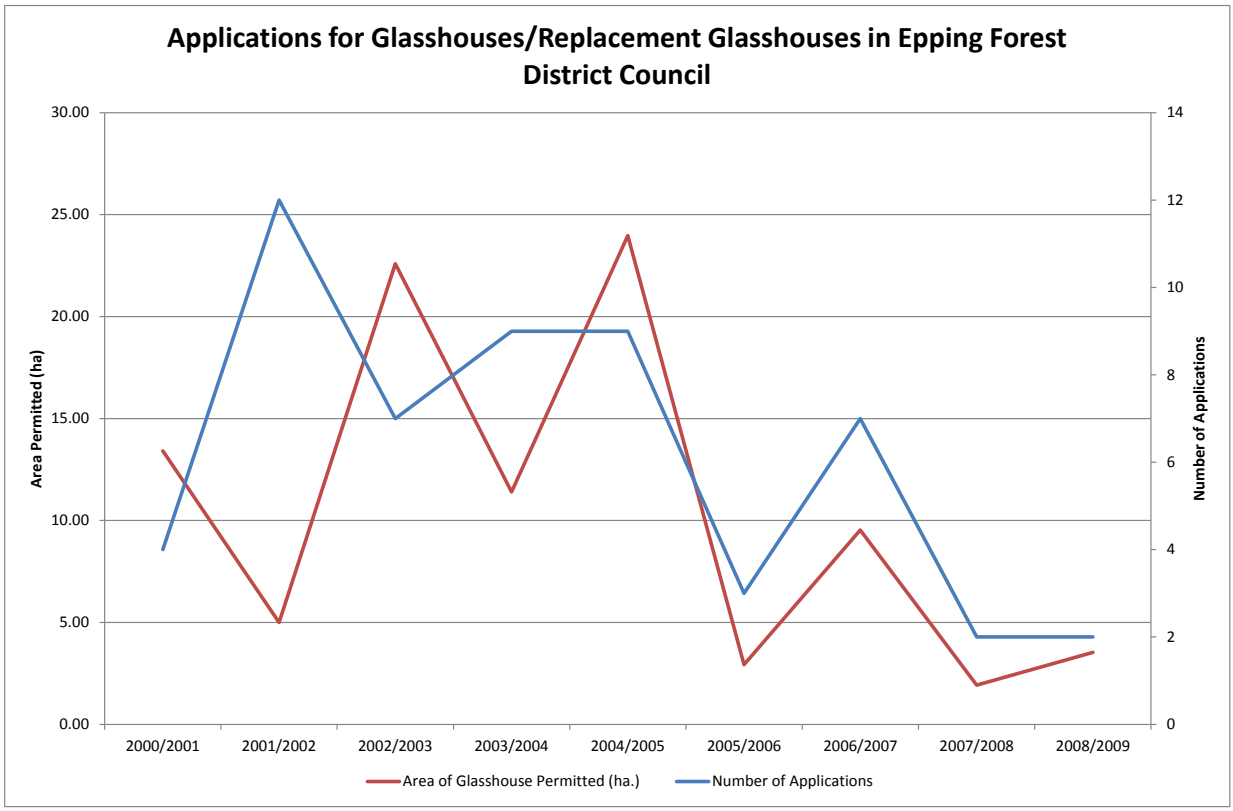


Figure 31 – Glasshouse and Replacement Glasshouse Applications

Year	Number of Applications submitted	Granted	Withdrawn	Refused
2000/2001	2			
2001/2002	3			
2002/2003	2			
2003/2004	3			
2004/2005	2			
2005/2006	5			
Total 2000/2006	**17**	**10**	**3**	**4**
% 2000/2006	*100%*	*58.8%*	*17.6%*	*23.5%*
2006/2007	4			
2007/2008	2			
2008/2009	4			
2009/2010	1			
2010/2011	1			
2011/2012[12]	1			
TOTAL 2006/2012	**13**	**11**	**1**	**1**
% 2006/2012	*100%*	*84.6%*	*7.7%*	*7.7%*
TOTAL 2000/2012	**30**	**21**	**4**	**5**
% 2000/2012	*100%*	*70%*	*13.3%*	*16.7%*

Table 14 – Analysis of Planning Applications for Packhouses/Crop Storage (2000 -2011)

[12] *Data to 31st December 2011*

Table 14 shows that a large majority (70%) of applications for packhouses and crop storage buildings have been granted with a higher percentage (84.6%) granted in the period between 2006 and 2011. In terms of total numbers of applications the figures show a fairly even spread of applications submitted each year but with a noticeable decline in the last three years.

Again although in part due to the restriction on available area the main reason for a falling number of applications is the poor economics of protected salad cropping in recent years.

10.2 Relevant Appeal Decisions

A number of relevant appeal decisions are shown in the following table. These have been chosen as they highlight particular aspects of the interpretation of policy.

Appeal Ref.No.	Address	Description	Decision	Decision Date
APP/J1535/A/06/2007129	Oakleigh Nursery, Paynes Lane,	Change of use of two glasshouses to B8 storage and distribution.	Dismissed	15/05/2006
APP/J1535/A/06/2028592/NWF	Oakleigh Nursery, Paynes Lane,	Demolition of building, change of use of glasshouse to B8 storage, change of use of packhouse to B1/B8 use, change of use of boiler house to B8 storage, and change of use of boiler house to covered in parking.	Dismissed	08/03/2007
APP/J1535/A/06/2029848	Oakley Hall, Hoe Lane,	Outline application for the construction of 24 houses with parking and access road, utilising CHP exchange system with adjacent nursery.	Dismissed	10/05/2007

SOURCE: Epping Forest District Council

Table 15 – Relevant Appeal Decisions in Epping Forest District Council area 2006 – 2011

Appeal (reference APP/J1535/A/06/2007129) for the 'change of use of 2 glasshouses to Class B8 storage and distribution' at Oakleigh Nursery, Payne's Lane was dismissed on 15 May 2006. The Inspector concluded firstly that the glasshouses were in good physical condition with many years of useful service ahead of them. The council argued that the policy provisions which allow for the change of use of buildings in the green belt did not apply to glasshouses are they '*are not of permanent and substantial construction'.* Therefore, the policy provisions (Policy GB8A of Epping Forest Local Plan) which allow for the change of use of buildings in the green belt in certain circumstances were not designed to apply to glasshouses. The Inspector agreed and concluded that the change of use provisions were designed to apply to more substantial and permanent buildings.

He noted that there is a ready second hand market for the (Vento) glasshouses which can be routinely dismantled and re-erected unlike more conventional permanent buildings.

This appeal decision is significant in relation to the provisions in the NPPF relating to the Green Belt. Although the Inspector's conclusions were not tested in the courts, his view is that glasshouses would not benefit from a provision that allows the change of use of buildings in the green belt as they are not sufficiently substantial or permanent.

The Inspector did however note that, although glasshouses do not benefit from the policy provisions referred to and as such represented inappropriate development in the green belt contrary to policy GB8A, the openness of this part of the green belt was unlikely to be damaged if the glasshouses were used for storage purposes.

Appeal (reference APP/J1535/A/06/2028592/NWF) related to a site in horticultural use and involved the demolition of one glasshouse and the change of use of another glasshouse to B8 storage. The site was not in an area to which Local Plan Alterations Policy E13A applied. The appeal was dismissed on 8 March 2007. Again, the Inspector concluded that, although the glasshouses were sufficiently permanent to continue in use for horticultural purposes for some time, the building was not substantial and its change of use would not therefore benefit from the provision of Policy GB8A which allows for the change of use and adaptation of buildings in the green belt in certain circumstances. The Inspector also concluded that the possibility of dereliction, should it come to pass, should not weigh heavily against the actual harm that would arise from the proposed development.

Appeal (reference APP/J1535/A/06/2029848) for erection of 24 houses on a site with *'a ramshackle glasshouse and an array of buildings and sheds'* was dismissed on 10 May 2007. The appeal site lay within an area designated for glasshouse development. The appeal site was sizeable and near to other nurseries. In reaching his decision on the appeal the Inspector could see no reason why it could not potentially make a contribution to future glasshouses requirements. In addition the proposed housing proposal would thwart the objective of concentrating glasshouses in specific locations to avoid harm to other parts of the green belt and to safeguard the vitality of the industry. The Inspector concluded that for these reasons the proposal would be contrary to Policy E13B of the Local Plan as well as causing harm to the green belt and the character and appearance of the area.

This appeal decision provides an example of how an appeal Inspector supported the concentration and safeguarding of the vitality of the industry objectives of the E13 polices.

10.3 Relevant Planning Decisions

Planning application (reference EPF/1181/11) for the construction of 87,119 square metres of glasshouses at Valley Grown Nurseries, Payne's Lane was refused on 24 August 2011. The site lies immediately adjacent to an established nursery, and is within Lee Valley Regional Park. It lies outside but immediately adjacent to an identified Policy E13A area.

As the proposal for 8.7 hectares of glass could not be described as modest it was deemed that the proposal would have an adverse impact on the open character of the countryside due its scale and was therefore clearly at odds with Policy E13A.

The report concluded that the proposal did not respect the wider landscape setting. The report also acknowledged that the proposal was contrary to the aims and policy of Lee Valley Regional Park as it failed to safeguard the amenity and conserve the landscape of the park.

The Council decided to refuse the application. The Council was concerned that the proposal, due to its scale and location, would have a material impact on the openness of the Metropolitan Green Belt, on the amenity of residents through noise and disturbance from traffic. The proposal was considered to be contrary to Policies E13A and E13B(i)

A revised application (EPF/2457/11) on the same site for the same area of glass but with different access was refused on 15 February 2012. An appeal against refusal of the first application was dismissed in May 2012.

In these cases, the applicants looked at whether any existing sites within the designated sites could meet their requirements and they were able to show that there was no reasonably viable location within the designated glasshouse areas for a development of the scale proposed.

Although the proposal was contrary to both the adopted Local Plan and views of the Lee Valley Park Authority officers concluded that the potential benefits in terms of economic development and sustainability outweighed the harm to the character and amenity of the area.

In order to accommodate the requirements of established modern growers such as Valley Grown Nurseries and to avoid the possibility of such companies relocating elsewhere there will have to be a judgement made on the conflicting needs of the growers and the protection of the Green Belt and the objectives of the Regional Park.

The Council has resolved to grant permission for planning application reference number EPF/1907/10 for the demolition of derelict glasshouses and erection of a 50 bed care home subject to the completion of a Section 106 agreement (Oakleigh Nursery, Hoe Lane, Nazeing).

Planning officers recommended refusal as (i) the proposal represented inappropriate development within the Green Belt, (ii) it would be detrimental of the openness of the Green Belt, (iii) as the site lies within an area designated for horticultural glasshouses the proposals result in the loss of a site earmarked for this purpose, and (iv) it would conflict with the expansion, vitality and viability of the glasshouse industry in this locality contrary to the aims and objectives of policy E13B of the Adopted Local Plan and Alterations.

The application was considered by Members to be acceptable on the basis that the local need for dementia care facilities was sufficient to represent very special circumstances to overcome the presumption against development in the Green Belt and loss of glasshouse land. The permission includes a condition stating 'The premises shall be used solely as care accommodation for persons defined medically as in need of care and for no other purpose within Class C2' (i.e. residential institutions). The permission has not been implemented as a S106 Agreement remains unsigned.

The first decision is a further illustration of how the E13 policies are being applied to concentrate provision within certain areas and to resist large scale expansion into the green belt outwith the E13A areas.

The second decision was contrary to the E13 policies but justified on the basis of exceptional need which means that it would not have a prejudicial impact on the operation of the E13 policy regime.

A recent application on the site of Shottentons Farm (EPF/2338/11) has been agreed subject to the completion of a Section 106 Agreement. This is for two further phases of glasshouse development (3.1ha and 6.2ha) on top of the existing 6ha of glass. The application site is part of the "New E13A" area in Sedge Green (see Figure 45 on page 156).

11.Future Developments and Land Requirements

Future Development

Key Points:

In an ideal world where there were no planning or other policy restrictions, Lea Valley Growers would:

- *Develop larger (5 hectares plus), modern and tall (circa 6m) glasshouse sites;*
- *Be situated close to major transport routes/with new larger roads close to the site;*
- *Be supported by renewable energy generation on site (e.g. anaerobic digestion) generating electricity sales, gate fees and beneficial waste heat;*
- *Be producing a wide range of products and crops;*
- *Be recycling large volumes of water with large-scale winter storage reservoirs;*
- *Be packing and distributing home-grown produce on-site directly to the multinationals but also with increased 'farm gate sales';*
- *Be seeking greater integration with the consumer through visitor centre and education programmes and significant local provision of accommodation or permanent on-site accommodation.*

Future Land Requirements

Key Points:

- *There are 59.08 hectares within the current E13 areas which are available for glasshouse development, taking into account land ownership issues, however, a significant block of this is owned by one grower;*
- *If policy directed that a continuation of the recent trend should be supported, there will be a demand for 35-40 hectares of new glass and 10 hectares of replacement glass over the next 10 years;*
- *Evidence suggests that to aid development in this sector a factor of between 2 (minimum) and 4 times the demand area needs to be designated for an area based policy to be effective;*
- *Under the continuation scenario 80 – 160 hectares (gross) would therefore be required for new glass. The net figure (after deducting the available areas within the current E13 designations) would be 20 – 100 hectares of new E13 designation.*
- *However, if the current difficult financial outlook continues demand may be even lower than this projection and certainly would be at the lower end of the scale;*
- *Alternatively a policy of (i) large scale development of a few sites, (ii) medium scale development of some sites and (iii) allowing the rest to continue in line with the current trend could be adopted;*
- *This would result in a likely demand for 90 hectares of new glass and 25 hectares of replacement glass over the next 10 years;*
- *Based on the requirement of more designation than demand, in the region of 120 – 300 hectares of new designation would be required (over and above the existing E13 designations);*
- *A third option would be to support the development of a very large single site development - an area of 100 – 140 hectares (in one block) would be required with the existing E13 designations remaining to allow small expansion and replacement of existing glass;*
- *Under this scenario demand for new glass could be one block of 80 – 120 hectares plus ancillary development. Therefore a demand for 100 – 220 hectares of new designation with 80 – 120 hectares in one block;*
- *A final option would be managed decline with no new designations and policy directing refusal of all glass applications.*

11.1 Analysis of Available Area within Existing E13 Designations

The detailed analysis of each E13 designated area including area plans and basis of the analysis is set out in appendix 3. Table 16 below summarises the findings of this analysis:

E13 Designation Area	Area Available for Glass (hectares)	Area Recommended for De-designation (hectares)
Old House Lane	4.66	0.00
Roydon Hamlet	2.33	3.02
Tylers Cross	0.37	4.25
Netherhall Road	6.50	4.09
Sedge Green/Hoe Lane	32.15	24.92
Paynes Lane	0.00	3.72
Parklands, Waltham Abbey and Galley Hill Road	5.60	3.15
Pick Hill/Breach Barns	0.00	14.88
Avey Lane	0.54	2.91
Sewardstone Road	4.62	0.00
Sewardstone Road (South)	2.31	0.00
TOTALS	**59.08**	**60.94**

Table 16 – Summary of Areas of Glass Available and De-Designated Areas

11.2 Future Development

Recent times have been difficult for the protected cropping sector. Despite a trend for rising farm gate prices, input costs, in particular energy costs, have risen steeply. There has been increased demand and interest in domestically grown produce but some of the potential price benefit from this appears to have been reduced by supermarket competition. In the last three years the economic downturn has impacted on consumer spending which will have, to an extent, affected demand. Currently the weaker pound compared to the Euro has made exports more competitive and imports more expensive but this has been a recent improvement; fresh produce sectors faced significant competition previously to this due to a favourable exchange rate making domestic produce relatively expensive.

In order to mitigate against these challenges the protected cropping sector at a national level has sought greater efficiency in production. This has included:

- Larger scale glasshouses;
- Taller glasshouses;
- Reduced labour input through more efficient labour systems;
- Improved heat efficiency through thermal screens;
- Artificial lighting;
- Reduced water use and water recycling;
- Combined Heat and Power (to generate other incomes and beneficially use waste heat);
- New products (e.g. cherry tomatoes, vine tomatoes, sweet peppers);
- New enterprises (e.g. fruit under glass);
- More efficient/greater integration in the supply chain.

In the Lea Valley not all these options have been available to growers. In particular it appears that glasshouses are much smaller and less tall compared to the rest of the UK (and Europe). Land availability due both to ownership issues and E13 designations has limited expansion of glasshouses. There are no available large blocks within the E13 designations to allow 'new build' large-scale site development. An example of this is the recent (2011) Valley Grown Nurseries application where the scale of the proposed development and the full occupation of their current site meant the proposals had to extend outside the E13 designation. It was this fact that was a key driver to the application being refused.

Another limitation to large-scale expansion of glasshouse sites in the Lea Valley is the road infrastructure (both as a rationale for planning decisions and a consideration for growers). The majority of roads in the Lea Valley glasshouse areas are small and narrow and run through villages. Recent years have seen larger articulated vehicles providing transport and distribution for packing sites. Many of these roads are not suitable/cannot support this scale or volume of traffic (albeit the total number of movements is likely to be lower today due to the increased capacity of the lorries and change in heating systems from coal to gas).

The limitations on site size restrict the potential for greater efficiency of labour, new enterprises and in some cases new products. Growers certainly feel that the site size restrictions have limited their potential to access the relatively new market of fruit under glass production although research for this report found little evidence of this.

The reason for the lower height of glasshouses in the Lea Valley is less clear. There is certainly some localised resistance to taller glasshouses but this is limited. Planning policy does not appear to have been a limiting factor to taller glass being installed. It is more likely that this is related to the site size limitations and therefore, linked with the difficult economic trading situation, a lack of confidence to invest in small sites but taller glass.

Most producers are using or are planning to invest in thermal screening and many (although again generally larger producers) have invested in water recycling.

There do not appear to have been any applications that have been refused on the basis of artificial lighting and the environmental impact. It is not clear if this is due to a perception that it would be refused (there would certainly be local objections) or if this is simply not a route that Lea Valley Growers are considering. It can be stated that in the UK there is a trend towards longer growing seasons through use of artificial lighting.

Those not already involved in packing produce and supplying the supermarkets feel that the limitations imposed by the Green Belt have prevented their entry into this element of the supply chain. There are five large-scale (mostly) grower cooperatives/producer organisations operating in or around the Lea Valley. There are, broadly, 5 major multinational retailers which take the vast majority of UK produce. Even if planning/green belt policy has been the limiting factor, it could be argued that greater competition in the packing sector could drive farm gate prices down further and would not be positive for the sector. One impact of planning policy/green belt policy has been limitations to expansion of existing facilities. This may have had a negative impact on the competitiveness of the Lea Valley supply chain.

Although many of the glasshouses in the Lea Valley will be suitable for production for another 10 – 15 years, if the current economic outlook continues there is likely to be a decline in the production in the Lea Valley. Large scale development, increased efficiency and heat generation through CHP/biomass heating systems may assist the sector in having a long-term future in the Lea Valley.

11.3 Future Land Requirements

Detailed analysis of the existing E13 designated areas (see appendix 3) has identified that, although there is a large area of undeveloped land within the existing E13 designations, not all of this is considered suitable or likely to be suitable for development due to factors such as size, ownership, tenure or location. Investigation has shown that 59.08 hectares is likely to be available and suitable for development in the next 10 years. It is recommended that 60.94 hectares is de-designated (see Table 16). It should also be noted, however, that one significant block of E13 land is owned by one business.

Typically any application for new glass requires an additional 10% of area for ancillary uses – offices, parking, turning areas, storage and working areas. Therefore there is likely, within the current E13 designation, to be sufficient and available area for 53 hectares of new glass.

The current and recent economic performance of the sector means that demand has fallen significantly for new and replacement glass. Between 2000 and 2012 there was an average of 8.69 hectares of glass (new and replacement) permitted (92% within the E13 designation) per annum. Prior to 2006 there was an average of 13.22 hectares permitted (92% within the E13 designation) whilst since 2006 the average has been only 4.17 hectares per annum (91% within the E13 areas).

Given the significant volatility of the sector it is not possible to forecast likely demand for glass and associated developments beyond the next 10 years. Even forecasting the next 10 years requires a range of scenarios due to the level of uncertainty within the sector.

In addition to demand for glasshouse area there will also be growing demand for packing facilities and renewable energy installations (incentivised by the Feed in Tariff regime). In terms of packing facilities there is likely to be (a) a demand for expansion of existing facilities and (b) potential demand for new facilities.

The demand for expanding facilities will be driven by three factors: (i) requirements by the supermarkets (e.g.) loading and unloading undercover and/or in cool chain, (ii) a need to improve efficiency of processes and (iii) a need/desire to increase capacity. It is likely that this demand will be in the region of a 10% increase in the existing area.

It is impossible to project the level of demand for new packing facilities. Several growers interviewed as part of this research (that were not already packing produce) expressed a desire to invest in this sector, however, as discussed in this report it is the view of Laurence Gould Partnership Limited that this should be discouraged within the existing main production area, as it has the potential to increase traffic and damage rather than strengthen the sector through negative competition.

Epping Forest District Council has pursued an area based policy in recent years regarding the glasshouse sector. This policy appears to be working well in terms of achieving what it intended to do so. If this policy is to continue (irrespective of the scenarios detailed below) then the level of designation needs to be considered. Both growers interviewed as part of this research and looking at other areas where a similar policy is used has shown that for an area policy to be successful there needs to be a significant multiplication factor of designation to expected demand.

In Chichester the ratio was 4:1 and this appears to have been successful, however, it is possible that a 2 or 3:1 ratio would be sufficient.

11.4 Continuation of Current Trend

The total area of glasshouses in the District stabilised between 1996 and 2001 at around 75 hectares, the major part of this being in Roydon and Nazeing (59 hectares).

At the time of the 2006 Local Plan Alterations, the consultants' conclusions were that the highest demand would be about 7.5 hectares of new and replacement glass per year, possibly only for the early years of the policy, the industry having been relatively buoyant but cyclical in its trends. Three scenarios for demand were set out for the next 10 years. At the lowest estimate there would be need for 35 hectares of new and 5 hectares of replacement glass. At the highest it would be 65 hectares and 10 hectares, respectively. The most plausible was thought be 50 hectares and 10 hectares, to equate to an annual requirement of 5 hectares for new glasshouses and 1 hectare for replacements. The area of land to be identified would need to be a little greater than 50 hectares, to allow for any necessary infrastructure.

Since 2006 an annual average requirement has been 4 hectares of new glass and 1 hectare of replacement glass. On this basis the area of land which would be required to be identified for new glass for the next 10 years would be estimated at a little more than 40 hectares to allow for associated infrastructure. There is little accuracy when projecting beyond 10 years for the annual demand. If it were arbitrarily estimated that the trend would continue to 2031 then the demand would be 120 hectares of new glass and 30 hectares of replacement glass. In reality what is needed is a review every 5-10 years to consider what is happening within the sector, what demand has been in the previous period, and therefore what the next 5 – 10 years of demand will be.

Through this research growers from the Lea Valley and other glasshouse area have been interviewed. In addition data from planning approvals for both the Lea Valley and the two districts in West Sussex have been analysed. This has shown that for an area based policy to be effective the minimum area of designation should be at least twice that of the anticipated demand and ideally in as few large blocks as possible.

If 40 hectares is required in the Lea Valley in the next 10 years, a minimum requirement would be a factor of 2 (i.e. 80 hectares) to support the anticipated demand. In the Lea Valley there are a number of smaller designated areas rather than 1 or 2 large areas so it would be prudent to consider designating a factor of 3 – 4 times the 40 hectare figure.

If the current trend were therefore to be continued 80 – 160 hectares of total designation would be needed to support anticipated demand for 40 hectares of new glass, 10 hectares of replacement glass and (say) 1 hectare of ancillary infrastructure (i.e. 20 - 100 hectares of new designation).

Forecast Demand for New Glass	40 hectares (a)
Minimum Supply Required (2 times area)	80 hectares (b)
Maximum Supply Required (4 times area)	160 hectares (c)
Less: area available within E13 areas (59.08 hectares – say 60 hectares)	*60 hectares (d)*
Minimum Net Supply Required (b-d)	20 hectares
Maximum Net Supply Required (c-d)	100 hectares

Table 17 – Forecast Demand for New Glass: 'Continuation' Scenario

Based on a projection of demand of an additional 20 – 100 hectares above the current designation one needs to consider potential new designated sites. Any sites in or adjacent to The Park should be discounted as The Park Authority is highly likely to object to these proposals as they would be contrary to the statutory objectives set out in the Lee Valley Regional Park Act 1966. Therefore any additional designations will have to be situated to the east of the Lea Valley. Further research will be required to identify sites that will be suitable taking account of ownership, availability, topography, gas/energy supply and road network. One site that has been proposed is North Weald Airfield.

Based on the current outlook of the industry and the growers' desire to focus development on large-scale single site developments, demand is likely to be the lower end of the scale. However, if the outlook for the protected cropping sector were to significantly improve (thought to be unlikely at the current time) and larger scale development (see sections 11.5 and 11.6) was supported then demand could be at the upper end of the projection.

11.5 Large and Medium Scale Grower Expansion

Given the economic challenges faced by the sector and the growing competition from large scale horticultural developments, the current situation is not sustainable. Unless large scale designations are identified and policy supports large scale development, a long-term viable glasshouse sector in the Lea Valley is considered unlikely.

The grower consultation indicated that they believe that in 10 years' time the minimum economic unit will need to be 5.2 hectares and this will rise to 6.3 hectares in 20 years. There are probably only about 7 growers that are larger than 3 hectares currently. Two of the largest growers operate from a number of sites across the whole Lea Valley area (which impacts on the potential economies of scale).

There are possibly ten growers in the Lea Valley who will have the skills, resources and desire to build/develop large scale units (say 10 hectares). This would equate to new or replacement glass of 70 hectares (assuming the 10 are the larger growers with significant holdings already). In most cases the preference would be new glass on virgin 'ring-fenced' sites.

Some small scale family businesses would be likely to continue despite the challenges faced by growers so it is likely there will still be a demand for circa 1 hectare per annum of replacement glass.

A further 20 – 30 growers (average circa 1.6 hectares in size) would be likely to want to expand to say 3 hectares creating a demand for about 35 hectares of new/replacement glass. These medium sized growers would be more likely to redevelop existing glass therefore it would be likely to be 20 hectares new glass and 15 hectares replacement glass.

However, whilst these unit sizes might be viable at the present time, growers predict that the minimum size unit for financial viability in 20 years will be over 6 hectares, therefore by 2030 this scenario may have resulted in larger but equally unviable units.

If this level of development were to be supported then significant additional E13 designation would be required as well as investment in road infrastructure (funded by S.106 agreements or CIL). New designations may well (in particular to reduce the cost of new roads) need to be in areas to the east of the Lea Valley where this is no historic land use for glasshouses. When identifying potential sites for new designation the council may wish to consider sites already owned by the council and/or the use of compulsory purchase to acquire sites for glasshouse development.

If large/medium scale expansion were supported there would therefore be a demand for in the region of 90 hectares of new glass and 25 hectares of replacement glass. Based on a factor of 2 – 4 times designation to development there would be a requirement for a further E13 designation of 120 – 300 hectares (i.e. 90 hectares times 2 – 4 minus the 59.08 hectares already designated and available).

Forecast Demand for New Glass	90 hectares (a)
Minimum Supply Required (2 times area)	180 hectares (b)
Maximum Supply Required (4 times area)	360 hectares (c)
Less: area available within E13 areas (59.08 hectares – say 60 hectares)	*60 hectares (d)*
Minimum Net Supply Required (b-d)	120 hectares
Maximum Net Supply Required (c-d)	300 hectares

Table 18 – Forecast Demand for New Glass: 'Medium/Large Scale Grower Expansion' Scenario

11.6 Large Scale Single Site Development

An alternative to the expansion discussed in section 11.5 could be large scale development using the Thanet Earth model i.e. one very large scale development with multiple growers benefiting from modern glass, packing facilities, heat generation and scale. Thanet Earth is a 90 hectare site with permission for seven 12-13 hectare glasshouses.

To secure one site of this size in the Lea Valley would almost certainly require use of compulsory purchase powers. The Council would also have to decide if further new glass would still be supported in the existing E13 areas or if this type of development would mean a moratorium on other glass development.

Significant ancillary development would also be required on this type of scale (which might not be considered appropriate for the green belt) including reservoirs, packing facilities, offices, staff facilities, CHP/anaerobic digestion and car parking/loading areas.

The only site that has been identified as potentially suitable for this scale of development is the North Weald Airfield area. Further research will be required as to the suitability of this site in conjunction with other potential uses e.g. continuation/development as an airfield, residential development and commercial development.

A further consideration for this approach is the impact on the existing E13 designations and the cost of relocation. If a number of large growers were to relocate they would vacate their current sites. This potentially would allow other growers to expand into these areas; however, the majority of growers considering relocation would need to sell their current sites for a significant value to fund the move. The level of funding that would be required is likely to be beyond the resources of any growers looking to expand within the current E13 designations.

Some of the cost of relocation could be off-set by grant funding although this is unlikely to be greater than 40 – 50% of the cost and is considered unlikely to be available at the present time.

This approach would require 80 – 120 hectares (7 – 10 x 12 hectare units) of new glass in one block plus circa 20 hectares of ancillary development) i.e. a total designation of 100 – 140 hectares. It is assumed that if the site were identified as a single site to accommodate several growers there would not be a need to have a multiple of the estimated total demand i.e. the requirement for 2-4 times the expected demand to be designated under the area based policy does not apply under this scenario. The demand for existing glass replacement would be likely to be the same (1 hectare per annum) and the existing E13 designation area could be utilised (59 hectares of new glass) for any additional new glass.

Under this scenario expected demand could be for 120 – 160 hectares of new glass (80 – 120 hectares in one site) plus ancillary development and 10 hectares of replacement glass requiring 100 - 220 hectares of new E13 designation (with 80 – 120 hectares in one site).

Forecast Demand for New Glass (outside the large site) (see section 11.4)	40 hectares (a)
Minimum Supply Required (2 times area)	80 hectares (b)
Maximum Supply Required (4 times area)	160 hectares (c)
Less: area available within E13 areas (59.08 hectares – say 60 hectares)	*60 hectares (d)*
Minimum Net Supply Required (b + large site area (100 ha) - d)	120 hectares
Maximum Net Supply Required (c + large site area (140 ha) - d)	240 hectares

Table 19 – Forecast Demand for New Glass: 'Large Scale' Scenario

This approach/scenario offers a lot of benefits. Potentially a Thanet Earth scale development could create 500 – 600 jobs in the area, the benefit to the economy could be in excess of £200 million and this type of development could attract other enterprise/business/investment to the area in addition to the allied industry it would attract. There are, however, potential downsides.

Although there is a high level of water recycling there is a demand for water (circa 25% of total use) and this does produce effluent which needs to be disposed of therefore any potential site would have to take this into consideration.

In terms of heat and energy as discussed in the case studies the ideal is for glasshouses to be situated adjacent to power stations rather than with CHP or AD located at the site. However, if this is not feasible gas CHP will be a requirement therefore the gas availability and grid capacity will be important.

Although creating a lot of employment, it seems unlikely (as with Thanet Earth) that it will benefit the local community therefore any similar development in the Lea Valley will need to consider how jobs can be created for local people and/or what accommodation is required for migrant workers.

11.7 Managed Decline

A final option would be to direct that protected horticulture is not a desired activity within the Lea Valley and as such no further applications for new or replacement glass would be supported. This will result in a significant increase in the issue of dereliction (see section 15) unless policies were adopted by the Council to encourage suitable changes of use. This would also potentially result in the loss of employment and economic activity within the Lea Valley. Whilst other uses for the redundant horticultural areas could be considered there would be issues regarding use within the green belt that would need to be addressed.

11.8 Potential Sites/Designations

The key attributes for suitable sites include:

- Flat;
- Mains gas supply;
- Suitable supply of other services;
- Sufficient water resource capacity (mains supply or reservoir);
- Good road access and communications;
- Absence of local residential housing.

If expansion of the sector is to be supported and expansion of existing E13 designations is the preferred route (either instead of or as well as designation of new sites) then the following should be considered and assessed in greater detail including, most likely, public consultation. It is recognised that some of the following areas may have an impact on the Park, however, these areas would be small but potentially highly beneficial to the sector and therefore should be considered fully. The Park and other interested parties would be able to comment during the consultation process:

- To the south of Old House Lane E13 designation;
- To the north of Roydon Hamlet E13 designation;
- To the west and south west of Tylers Cross E13 designation;

- To the north of the Netherhall Road E13 designation (n.b. in the Lee Valley Regional Park);
- To the north east, south and west (across the road) of Paynes Lane E13 designation (n.b. in the Lee Valley Regional Park);
- To the north of Parklands, Waltham Abbey E13 designation (this is likely to have availability issues and may be too steeply sloped);
- To the north and south of Avey Lane, Sewardstone;
- Premier Herbs, Vicarage Lane, North Weald;
- Three Dees Nursery, Reeves Lane Roydon.

If new E13 designations were to be identified, the following areas should be considered and assessed in greater detail:

- Adjacent to the A1393 north of Epping;
- Areas around Junction 7 of the M11;
- North Weald Airfield;
- North of the A414 between North Weald and Chipping Ongar;
- Areas between Chipping Ongar and Fyfield;
- Areas (ex-Airfield site) near Matching.

12.Planning Constraints and Considerations

Key Points:

- *Given the statutory aims of the Lee Valley Regional Park, glasshouse development is unlikely to be approved in or adjacent to the Park unless within the E13 designations;*
- *The Park Authority is very unlikely to support any expansion or new designations in or around the Park;*
- *Traffic is a significant issue for residents of the Lea Valley but it is unclear (and thought unlikely) that the actual growing of the crops is responsible for many of the traffic issues;*
- *The majority of traffic issues (related to 26 tonne articulated lorries) are more likely to be as a result of the packhouses and adjacent industrial estates;*
- *Packhouses play a vital role in the Lea Valley glasshouse sector. The supermarkets are the only routes to market for salad crops within the UK. The packhouses provide the Lea Valley growers with the critical mass and volume to supply supermarkets;*
- *Packhouses and associated development are unsuitable land uses within the green belt;*
- *Seasonal worker accommodation can be provided under the General (Permitted Development) Order 1995 but, with longer growing seasons and a higher demand for migrant labour on a long-term basis, these provisions are no longer suitable for the Lea Valley. Therefore a review of the policy towards worker accommodation is required;*
- *Many growers would like to be able to provide affordable on-site permanent rental accommodation in order to provide better living conditions and to attract higher quality staff.*

12.1 Lee Valley Regional Park

The whole of the western part of the district council's area within the floor of the Valley is within the Lee Valley Regional Park (LVRP) where the Park Authority generally considers that new glasshouses are inconsistent with the objectives of its Development Framework.

The LVRPA promotes leisure, recreation and nature conservation as the primary uses for The Park and, as set out in the Lee Valley Regional Park Act 1966, prepares its own Plan of Proposals and is a statutory consultee for the district council's Plan and for all relevant planning applications. Where planning decisions are made contrary to the Park Authority's aims and objectives it can ask the Secretary of State to call-in the application.

12.2 Nazeing and South Roydon Conservation Area

The Nazeing and South Roydon Conservation Area to the west of Harlow with its historic field pattern is a feature that modern large areas of glass conflict with. The boundaries of it are shown on Figure 32. The following extract describes the Conservation area in more detail.

> *'The Nazeing and South Roydon Conservation Area is the largest in the District and covers a wide expanse of historic and attractive countryside between Harlow and Lower Nazeing. It includes: the medieval "long green" settlements of Middle Street and Halls Green; Bumble's Green and the medieval "closed field" system to the north; and the medieval settlements of Nazeing, Broadley Common and Roydon Hamlet.*
>
> *The well preserved medieval settlements and "closed field" patterns are important landscape features which form a fundamental part of the character and appearance of the Area. Together with the open or common field systems, these landscape features give each settlement a distinctive setting. Although the field enclosures and patterns are not discernible close to, the area can be clearly distinguished from viewpoints at Nazeing Church and Perry Hill. The area retains its quiet, intimate, small-scale rural qualities characterised by small grassed fields that are dissected by narrow, winding lanes and footpaths and bounded by tall hedgerows and mature trees.'*

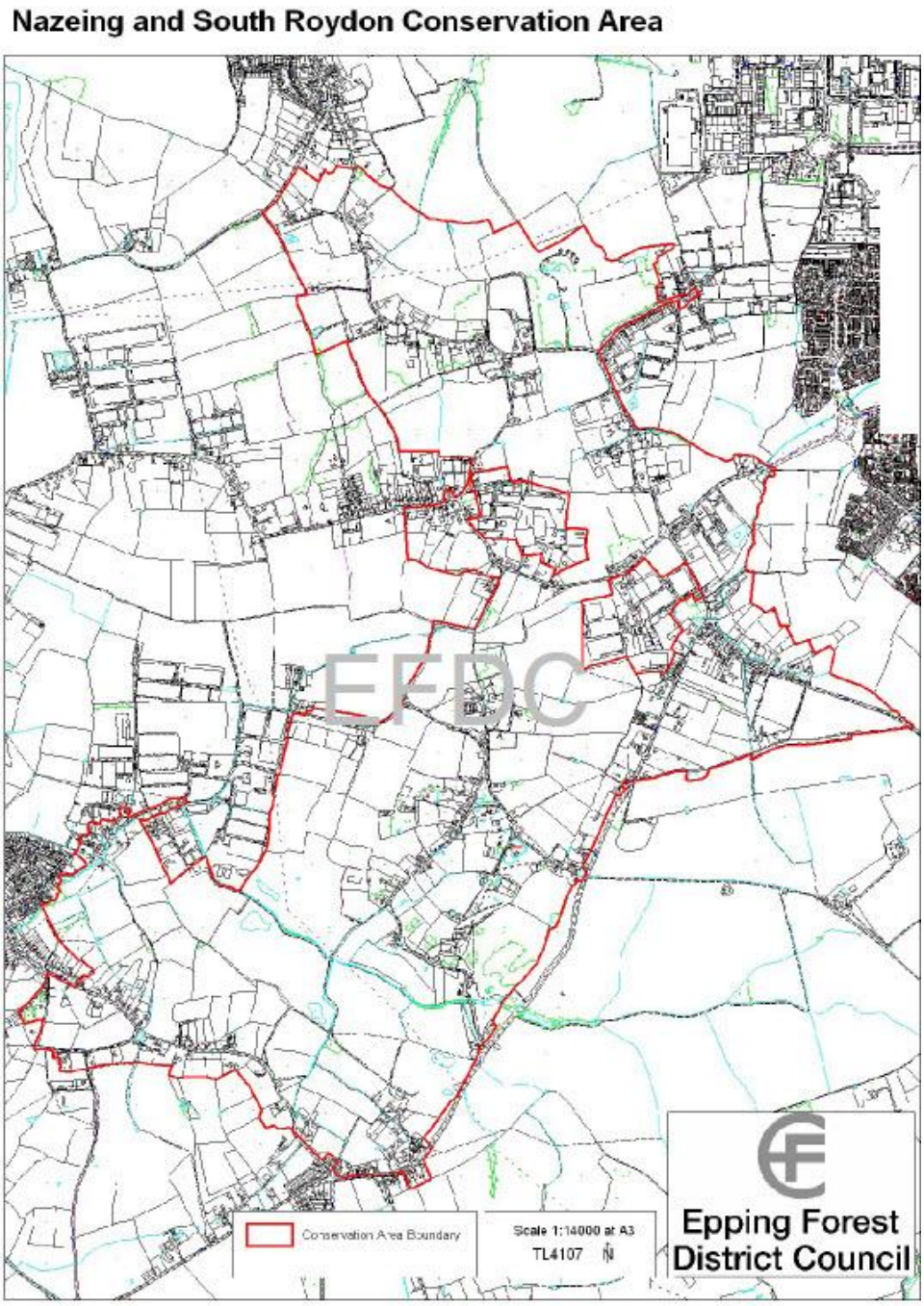


Figure 32 – Nazeing and South Roydon Conservation Area

12.3 Traffic

It is clear that as the industry has developed and changed the number of vehicle movements has decreased. Concern regarding the size of lorries is likely to be related to packhouse activity rather than production horticulture. Most growers will have a maximum of one lorry collection per day (often alternate days) and these will be a maximum of a 16 tonne lorry (i.e. not articulated). Furthermore this will be only during the 22 week growing season.

The local residents have concerns about traffic generated by the glasshouse industry with the number and size of HGVs considered totally inappropriate for narrow, winding rural lanes and roads. Safety of some of these routes and junctions, and congestion in the Nazeing area are issues that have been raised and times of operation also cause disturbance particularly early in the morning or late at night with multiple retailers influencing delivery times.

The 2006 Local Plan Alterations stated at paragraph 10.104f that:

> *'The council will consider the use of legal agreements to achieve junction improvements or other traffic management measures to improve road safety. Growers and nursery owners will also be encouraged to co-operate with each other to improve, or provide shared, access to sites and to reduce HGV traffic on more unsuitable routes. Any proposal for new or replacement glasshouses will need to demonstrate that access, egress and turning for articulated vehicles are adequate for the intended use and that highway safety is maintained in accordance with other policies of the Plan.'*

In February 2006 the Nazeing Action Group was established in response to mounting local concern and Epping Forest District Council agreed to hold a focus day, the purpose of which was to help identify practical solutions to these problems by encouraging relevant stakeholders to discuss the transport and planning related issues in the Nazeing and Roydon parishes.

A report on the Focus Day was produced in June 2007. Five key problems were identified:

1. The amount of HGV/LGV traffic on the narrow winding roads in Nazeing and Roydon;
2. The size of HGV/LGV vehicles on the roads in Nazeing and Roydon;
3. The speed of traffic in the villages;
4. The danger to pedestrians, cyclists and motorists within the villages;
5. The danger to the visitors to the Lee Valley Regional Park;
6. The destruction of roads, verges, trees, walls and street furniture along village roads.

The likely causes identified of additional HGV/LGV traffic were wide and varied but included:

1. The growth in HGV/LGV traffic associated with the Lea Valley glasshouses.
2. The introduction of packhouses/packing sheds in the Green Belt.

A number of residents were dissatisfied with the planning process and they perceived that developments were happening in a piecemeal fashion without much sign of an overall strategy. The cumulative effect of this was to undermine the quality of life locally, spoil the character of the area and cause additional and unnecessary conflicts between residents and local businesses.

Residents did not question the peculiar character of Nazeing and Roydon parishes with horticultural concerns existing right next door to residential properties. There was a genuine acceptance that horticulture had its part to play in the community and a willingness to compromise to avoid unnecessary conflict. The generally tolerant attitude expressed by residents was however clearly under considerable strain.

Residents' concerns relating to planning appeared to fall into three basic categories:

1. The type of developments that were being approved;
2. The scale of the developments that were being approved and the failure to take into account obvious and adverse consequences on local residents and the local road network;
3. The failure to enforce restrictions on existing developments.

It was explained that, as a planning authority, Epping Forest District Council was limited in what it could do because of existing patterns of land use. Land already designated for horticulture could be developed as such. However, the planning authority was asked to consider whether planning policies were adequate to control unsuitable, out of scale and environmentally detrimental developments.

The designation of areas where glasshouse development and redevelopment would be acceptable has tended to simply follow the location of the glasshouse industry.

However, the roads and junctions serving this part of the District have severe limitations. What were originally roads serving a rural area are now used by traffic passing through the area as well as that locally generated. Many of the designated glasshouse areas have inadequate vehicular access, both in terms of highway links and access to the sites, some of which are behind residential frontages.

In topographical terms, the most suitable area for greenhouses is the flat land of the Lea Valley floor. This is now largely within the Lee Valley Regional Park, where the Park Authority views glasshouses as incompatible with the objectives of the Park.

The industry has tended to migrate to the more undulating land to the east of the valley floor, where there has been a conflict with protecting the rural character of the eastern approaches to Epping Forest and the objective of providing a satisfactory visual and wildlife link between the Forest and the Park. At Nazeing, a village within the main concentration of glasshouses, there are important conservation interests to protect, not least in its historic field pattern.

The policy of concentration of glasshouses and of supporting the modest expansion within or adjacent to the glasshouse areas has been generally successful. Decisions have generally been taken by both the council and by the Appeals Inspectorate which support and reaffirm these policies.

Any future applications for packhouse facilities or glasshouses should be required to provide a transport strategy to assess the impact on local roads, the volume of traffic and include provision for alternative access.

Further research is needed to assess if traffic safety is in fact worse in these areas compared to the rest of Epping Forest District Council and wider Essex area. In addition traffic surveys should be undertaken to identify what generates the traffic. Growers believe that packhouses and industrial estates (e.g. Essex Road/Pinder Road Industrial Park) generate the majority of the lorry and traffic movements which residents find unacceptable.

12.4 Packhouses

There are three packhouses in the District all of which are within E13A areas. They are complemented by a number of smaller packing sheds, which are affiliated to individual, or small groups of nurseries. These tend to deal mainly with locally grown produce. Successful glasshouse businesses are more likely to require their own packhouses which suggests that further expansion of packhouse facilities is likely.

In land use planning terms, the nature and scale of activity in packhouses is industrial and commercial and not agricultural and therefore inappropriate development in the Green Belt. Packhouses are also more permanent structures than glasshouses. They may be used for other industrial or commercial uses. Ideally they should therefore not be located in the Green Belt despite their functional association with horticulture.

Applications for new packhouses in the Green Belt will need to demonstrate special circumstances to overcome the presumption against such non-conforming uses, such as being necessary to secure the viability of a glasshouse operation or that the packhouse is an integral component of a glasshouse proposal.

Packhouses may be used to process produce imported to the site from wider afield and from abroad. Conditions may be imposed on any permission limiting the proportion of imported produce that may be handled.

Packhouses attract objections from local residents, due to (i) the level of traffic generated, (ii) hours of operation, and (iii) concerns that packhouses would be used for produce imported to the sites from other growers or from abroad. In these circumstances there would be no special locational need for them to be located in the Green Belt.

No specific policy relating to packhouses is considered necessary. Packhouses are non-conforming uses in the Green Belt and special circumstances need to be demonstrated to allow an exception.

The foregoing paragraphs relating to packhouses to a large extent restate and reaffirm the existing policy position as set out in the 2006 Alterations. There is no evidence to suggest that this policy position needs to be altered.

Most packhouses will be processing a higher volume of imported/non-locally grown produce than Lea Valley produce therefore whilst it might be preferred, there is limited reason why these need to be situated adjacent to glasshouses in the Lea Valley. The relocation of packhouses closer to the Motorway roads would alleviate some of the traffic issues.

It is important to note that the packhouses do play a vital role in the sector. Very few, if any, of the growers are of sufficient scale to directly supply the supermarkets and beyond the supermarkets there are very few outlets for fresh produce. The packhouses collate all stock to a sufficient volume to deal with the supermarkets. Furthermore the marketing organisations have the resources to provide support that the individual growers could not attain on their own.

12.5 Seasonal Worker Accommodation

Under the terms of the Caravan Sites Act 1960 and the General Permitted Development Order (GPDO) 1995 planning permission is granted for seasonal use of agricultural land as a caravan site for agricultural workers. The important points are that the accommodation should be seasonal, and be occupied by people employed on land in the same ownership and involved in the seasonal activities. The purpose of the legislation is to enable farmers to respond to seasonal variations in labour demands, relating to the planting, growing and harvesting periods, and to be able to provide accommodation without needing to apply for planning permission.

Seasonal workers are an important component of the glasshouse industry. The nature of modern horticultural businesses in the Lea Valley, with multi-cropping and rolling planting programmes, results in overlapping crop cycles. Technological advances in glasshouse activities (e.g. supplementary lighting systems and the use of combined heat and power) have enabled the horticultural growing period to be extended into the winter months with some seasonal caravans now being occupied from February to November. This means that many growers may find it difficult to claim the GPDO exemption rights.

If caravans are not able to claim permitted development exemption then planning permission is required and applications would be assessed against Green Belt polices controlling temporary caravan or mobile home accommodation. These polices provide the council with adequate powers to control workers' accommodation which may not meet the permitted development criteria. Growers find it difficult to recruit workers where the only accommodation offered is a caravan, however, the cost (for both the grower and the worker) of accommodation in the Lea Valley is prohibitive. Some growers would like to see a more relaxed approach to permitting permanent agricultural dwellings for seasonal workers. The Council might wish to review the specific policy for seasonal and horticultural worker accommodation in light of the comments included in this section.

13.Planning Policies within Other Planning Authorities

Key Points:

- *Chichester District Council employs a similar area based policy to Epping Forest District Council. This is based around the development of two major (ex. airfield) sites although further designations are now required;*
- *Arun District Council (adjacent to Chichester District Council) employs a criteria based policy;*
- *The success rate for applications is much higher in Arun District although the total area is much lower;*
- *Both Districts have problems regarding artificial light and traffic;*
- *Broxbourne Borough does not have a specific policy on glasshouses due to the low number of application received.*

13.1 Chichester District

In Chichester, four Horticultural Development Areas (HDAs) were defined in the **Chichester District Local Plan – First Review (1999).** Two of these are sizeable areas (at around 180 hectares and 130 hectares) located on former airfields at Tangmere and Runcton. The other two designated areas are drawn tightly around existing nurseries on the former Land Settlement Association (LSA) areas, and amount to about 65 and 80 hectares. The HDA policy has been saved until the completion of the Local Development Framework.

Policy RE11A sets out the following criteria that must be met by applications for new glasshouses and packhouses in an HDA. Proposals are only acceptable where they:

- Would not generate noise levels which would disturb residential properties or cause harm to enjoyment of the countryside;
- Would not generate unacceptable levels of soil, water or air pollution;
- Would not be likely to result in an unacceptable impact of artificial lighting;
- Would not affect the safety of road users or cause unacceptable harm to the amenities of residential properties or the surrounding countryside;
- Would not be of a height and bulk which would damage the character or appearance of the surrounding landscape;

The policy also requires that the local planning authority is satisfied that:

- adequate access arrangements exist from the HDA to the strategic road network; and that the proposed means of access uses roads capable of accommodating the vehicles to be used (with legal agreements sought to secure these routes);
- appropriate screening will be provided to prevent any noise nuisance or visual intrusion to local residents and the surrounding area;
- appropriate facilities are available for the disposal of surface water.

Policy RE11B allows for horticultural development outside the HDAs as a replacement of or in association with existing glasshouses, but not in areas of open countryside where glasshouses are currently absent. Such proposals will also be considered against the criteria included in **RE11A**.

When consulted in 2002/03, as part of the Report by Reading Agricultural Consultants in 2003, officers at Chichester District Council considered that, although there was still room for further horticultural development on all the HDAs, these new areas for horticultural development on the former airfields had been particularly successful. The key to the success of the former airfield sites was considered to be the new access roads that had been created from these sites to the strategic highway and away from surrounding residential areas. The Land Settlement Association areas were acknowledged to be characterised by a large number of smallholdings, many of which had been derelict for some time. The HDAs were intended to encourage the larger businesses to amalgamate some of these smallholdings and to regenerate the industry in these locations. However, problems of widespread dereliction still remained and the areas were severely disadvantaged in terms of access to the strategic highway network compared to the former airfield sites.

Chichester District Council also indicated at that time that all recent glasshouse development had been contained to the HDAs. The council added that some operators on the former airfield sites had begun to add value by processing rather than merely packing produce, by including other (non-horticultural) ingredients. The district council was intending at that time to produce supplementary planning guidance to encourage these processing activities on certain parts of the sites.

When consulted in 2009, for the report by Reading Agricultural Consultants into the 'Viability of the Horticultural Glasshouse Industry in West Sussex' officers of the district council indicated that, although they acknowledged that there continued to be difficulties in making land available to horticultural businesses in some of the HDAs, it was likely that the HDA policy would continue into the Core Strategy of the Local Development Framework. Both policies 11A and 11B are regularly used and described as useful policies by the development control section. They are also considered to provide a degree of certainty to the glasshouse horticultural industry and can act as focal points for new glasshouse development.

In 2011 Chichester District Council indicated that the HDA policy continues to be relatively successful and are looking at continuing the policy into the Core Strategy of the Local Development Framework. Prices in the HDAs at Tangmere and Runcton are high and space is becoming limited. The industry in West Sussex is on a much greater scale compared to the Lea Valley. The council is considering introducing an 'Area of Search' for new glass with proposals assessed on a criteria basis. Dereliction

in the smaller LSA area is not a major problem. Smallholdings remain with a number of applications for associated individual houses being granted.

Total Number of Applications	Number of *New* Glass/Polytunnel Applications	Total area (ha) - new	Number of *Replacement* Glass/Polytunnel Applications	Total area (ha) - replacement	% approval
101	89	87.65	12	4.98	84%

Table 20 – Planning Applications Received for Glass and Polytunnels by Chichester DC (1993 -2008)

	Area Applied for (hectares)					
	0 < 0.2	0.2 < 0.4	0.4 < 0.8	0.8 < 2	2 < 5	5+
No. of applications	21	10	6	11	4	6
No. permitted	18	9	6	8	3	1
% permitted	86	90	100	73	75	17

Table 21 – Size Distribution of Glass Applied for and Permitted in Chichester DC (1993 – 2008)

13.2 Arun District

Saved **Policy DEV3** of the **Arun District Local Plan 2003** indicates that new glasshouse and polytunnel development will usually be permitted provided that:-

- there is no adverse impact on the surrounding environment and landscape;
- long views across substantially open land are retained;
- adequate water resources are available; and
- adequate surface water drainage capacity exists or can be provided as part of the development.

The policy also indicates that under-used or derelict glasshouses or polytunnels will not be considered as suitable sites for the introduction of non-agricultural uses.

The supporting paragraph 3.03 explains that horticulture forms an important part of the agricultural economy in Arun District and glasshouse crops have historically been grown on the coastal plain. However, the large buildings required for the indoor cultivation of crops are often intrusive and dominant in the landscape. New development should therefore, as far as possible, be grouped with existing glasshouses and avoid intrusion into open, attractive landscapes.

When consulted in 2002/03 and again in 2009, the Arun District Council indicated that there had been a large number of planning applications for glasshouse development on the coastal plain in the District, mainly on Grade 1 and 2 agricultural land. The council indicated that the need for such developments has usually been justified, with the consequence that most developments have been permitted.

The district council described the permitted glasshouses as usually extremely large, with the largest being over 7 hectares (at Newlands Nursery, Pagham). The council has determined that a current application for the development of about 12 hectares of glass at Lagness required an Environmental Impact Assessment (EIA).

There are four main development control issues that have arisen from these developments.

- The first is drainage. The coastal plain is obviously low-lying and susceptible to flooding. Applicants have had to submit details on the means of discharging surface water drainage without exacerbating existing flooding problems to the satisfaction of the Environment Agency, as a statutory consultee. This has usually been resolved by the construction of large reservoirs which, as well as being used to irrigate crops, hold water until it can be discharged into the local ditch system when not at or near capacity.
- The second issue is landscaping, and the need for the local planning authority to be satisfied that glasshouses are adequately landscaped to mitigate their impact on the rural character of the area.
- The third is lighting. Many of the larger glasshouses are in use 24 hours a day and, at night-time, the lighting over such a large area glows in the night sky. In recent cases, the local planning authority has placed conditions on planning permissions requiring details to be submitted and approved to demonstrate how lights are to be shielded from the night sky.
- The fourth issue is traffic, in particular the effect of large vehicles using country lanes.

Total Number of Applications	Number of *New* Glass/Polytunnel Applications	Total area (ha) - new	Number of *Replacement* Glass/Polytunnel Applications	Total area (ha) - replacement	% approval
61	53	24.64	8	11.82	93

Table 22 – Planning Applications Received for Glass and Polytunnels by Arun DC (1993 -2008)

	Area Applied for (hectares)					
	0 < 0.2	0.2 < 0.4	0.4 < 0.8	0.8 < 2	2 < 5	5+
No. of applications	22	3	2	5	4	1
No. permitted	20	3	2	3	4	1
% permitted	91	100	100	60	100	100

Table 23 – Size Distribution of Glass Applied for and Permitted in Arun DC (1993 – 2008)

13.3 Broxbourne Borough

This covers most of the western side of the Lea Valley, abutting Epping Forest District Council. Officers from Broxbourne have indicated that there have been no applications within the last five years for glasshouse development in the Borough. Consequently, there are no specific policies covering glasshouse developments in the current First Deposit Borough Plan.

In the 1994 Borough-wide adopted plan, three areas of former glasshouses were allocated for housing development, following the direction in the Hertfordshire Structure Plan to release significant areas of derelict glasshouses for residential purposes. As a counter to this policy and to discourage further dereliction, the 1994 plan designated a number of Main Horticultural Areas that were intended to encourage existing nurseries. However, officers of the council cannot recall any

applications based on this policy. Instead, many nursery owners are still seeking to promote their land for housing development in the current local plan process.

13.4 Conclusions from Other Planning Authorities

The main conclusions that can be drawn are:

- An area based policy has worked in Chichester because;
    - A large suitable area was available;
    - The was good road access to the designated areas;
    - The designations were away from residential areas;
    - Dereliction has not increased despite businesses moving to the new designations.
    - There has been an increase in smallholding glasshouse 'businesses' associated with a large number of applications for residential dwellings on each site;
    - The designated area has become close to full and there have been problems identifying new designations.

- Problems associated with larger-scale development have included:
    - Effluent and surface water disposal;
    - Landscape impact and mitigation;
    - Light pollution from artificial lighting;
    - Increased traffic movement/problems associated with traffic.

- In the Arun district a policy specifically against non-agricultural uses for derelict glass has not reduced the number of applications;

- A criteria based policy (Arun) appears to result in fewer applications but a higher proportion of approvals compared to an area based policy (Chichester).

14.Environmental Considerations

Traffic

- This is a significant issue in the Lea Valley. Despite being very close to major transport routes many of the roads around the glasshouse areas are not suitable. Any expansion will require significant investment in transport routes.

  The primary issue appears to be the suitability of the roads to maintain the level and size of traffic which is using them. This is a particular problem in Roydon and Nazeing. What is not clear (and it may be a traffic survey is required to answer this question) is what extent of the traffic issues are the responsibility of the growing activities in the Lea Valley.

  Articulated (i.e. 26 tonne) lorries cannot collect produce from the majority of growers. Most (if not all) HGVs which collect produce from growers to transport to the packhouses are 16 tonne fixed wheel vehicles. Any articulated lorries are almost certainly directly serving the packhouses, either transporting imported produce, or moving packed produce to supermarket distribution centres.

  Furthermore there are a number of large industrial estates (e.g. Hoddesdon Business Park) adjacent to the growing areas of the Lea Valley. Some of the traffic issues could be caused by freight associated with these areas.

  Although it is accepted that the traffic from the packhouses is related to the growing of the crop the two elements are separate considerations from a planning point of view.

Landscape impact

- Glasshouses will have an impact on the landscape. There is a trend towards taller glasshouses which has significant benefits for the efficiency of production but this will potentially lead to greater landscape impact. Clustering will help mitigate the landscape issue.

  The Lea Valley is historically an area of glasshouse production therefore glasshouses are a long-established part of the landscape character of the area. Given its statutory responsibilities, future development of new glasshouse areas should be away from the LVRP.

  In order to address some of the traffic concerns, clustering of glasshouses adjacent to major roads is one solution. This will also limit some of the landscape impact as there is typically development close to these areas already.

Water conservation

- Water is an increasing cost to businesses and may become a limiting factor in the future therefore growers want to reduce water use wherever possible. Winter storage reservoirs will also reduce the water use impact.

More modern glass will have a lower water 'footprint' due to recycling of irrigated water within the system, more efficient systems and water harvesting from roof tops.

Energy use

- Glasshouse businesses are significant users of energy for heat. Situating units next to heat supplies will reduce the environmental impact. Gas CHP is a clear synergy but requires a suitable gas supply. Gas supply may become a limiting factor in the Lea Valley.

  With the increasing cost of energy all growers are looking to reduce their energy demands through greater efficiency. In particular this is being done through the use of thermal screens and as such growers' use of energy is reducing.

  Many growers are looking at the potential of renewable energy including CHP, biomass heating and anaerobic digestion (AD). The benefits of this are two fold – in Holland most glasshouses are net exporters of energy in addition to making beneficial use of waste heat and CO_2 flue gases. Additionally in terms of AD it can be used to make a beneficial use of food and other organic wastes.

Carbon

- Glasshouse units adjacent to CO2 sources (e.g. Cornerways Nursery at the Wissington British Sugar plant) can use waste CO2 thus helping to reduce greenhouse gas (GHG) emissions.

Food miles

- The Lea Valley has significant potential to reduce food miles. It is situated within the largest populated area in the UK and therefore can efficiently supply salad crops to London and the South East.

Food security

- The UK is not self-sufficient in food. With the rising cost of food transport, food safety scares such as the E coli outbreak in 2011 and for environmental reasons the UK should try to produce as much food as possible. The protected cropping sector and in particular with the use of artificial lighting and thermal screens can increase domestic food production.

  Efficient systems and new cropping will extend the growing seasons and therefore will increase the domestic food supply. Use of thermal screens and artificial lighting will increase the supply further.

Use of lighting

- The use of artificial lighting is becoming a more common practice in the UK. Thanet Earth claims the level of light pollution is very low. The Lea Valley is more heavily populated therefore this may be a more significant issue.

15.Dereliction

Key Points:

- *Any policy supporting alternative uses of glasshouse sites is likely to incentivise dereliction;*
- *The lack of profitability is one factor which drives dereliction;*
- *Support for site expansion will help avoid dereliction due to ceased production;*
- *The Council should consider ways to facilitate the transfer of sites to other growers when they become redundant;*
- *The Council should use Section 215 Amenity Notices to deal with the worst cases of dereliction;*
- *The current obligation on new consents to return sites to green field if horticulture ceases should continue;*
- *Compulsory purchase powers could be used to acquire sites to provide community assets, renewable energy sites and affordable housing.*

Dereliction was a particular problem of the industry in the 1980s, and this was one of the reasons for introducing the designated glasshouse areas, because it encouraged redevelopment within them. Derelict or unused glasshouses still exist, so the problem is not entirely resolved even although it is greatly reduced. There is public concern that 'hope value' (i.e. eventually receiving planning permission for housing or another financially beneficial use) encourages dereliction and certainly restricts if not threatens the vitality and viability of the industry.

Dereliction does not appear, at least currently to be a great concern to local residents. Growers consider that some people have purposely allowed dereliction to occur to secure alternative uses for their sites due to the poor financial returns from growing. Given the negative financial outlook of the sector and the likelihood that without a change in policy the sector will decline, dereliction may become a greater issue in the future.

Policy E13C was introduced to address the issue of dereliction. When glasshouses become redundant they are in danger of becoming derelict. This arises from their form of construction and their general unsuitability for other uses. Clearing them can be expensive and they are often left to deteriorate once horticultural use ceases, becoming an eyesore. The foundations of the glasshouses make a return to agriculture difficult if they are not cleared.

Through this policy the council requires that the sites of all new and replacement glasshouses, packhouses and other ancillary buildings are returned to a condition appropriate to their previous use when no longer used for horticulture. The policy also states that underused or derelict

glasshouses and other buildings including packhouses will not be considered suitable for non-agricultural uses (at least until a future review of the plan).

Through Policy E13C the council requires that, when the use for horticulture ceases, all buildings and their bases are broken up and fully removed from the site, broken glass contamination of the soil is rectified and the land returned to a condition appropriate to its previous use. The Local Plan Alterations state that a legal agreement is likely to be required to secure this, and an index-linked performance bond may also be necessary to ensure this happens. When granting planning permission for new glasshouses, where the grower is moving from an existing site, the Alterations state that the council may use discontinuance orders to ensure the removal of buildings on the vacated site where this is considered appropriate.

Policy E13C was the subject of considerable scrutiny at the time of the 2006 Alteration and its terms and justification remain valid.

Dereliction is caused by uneconomic sites coming out of production. The council can do little about the financial outlook of the sector but planning policy to support expansion (thus improving the financial viability of sites) may help to reduce dereliction. When sites cease production initially, other growers may be interested in taking them over to expand. However, after a period of redundancy sites will cost too much to bring back into production. The council may wish to consider compulsory purchase powers (and/or conditions on new planning consents) to facilitate the availability of sites immediately after production ceases.

Activities which are considered inappropriate in the Green Belt (e.g. renewable energy/anaerobic digestion) could help sites remain viable and therefore remain in production.

The worst sites could be served Amenity Notices to minimise the negative impact. S.215 of the Town and Country Planning Act (1990) provides local authorities with a discretionary power requiring landowners to clean up 'land adversely affecting the amenity of the neighbourhood'. Local authorities also have powers to undertake clean up works themselves under s.215 and to recover costs from the landowner. The local authority may even wish to consider compulsorily purchasing the worst sites for development, however, given that the law requires the site to be purchased at market value (including hope value) this may limit the council's ability.

During the consultation events several people made very interesting suggestions regarding the use of derelict glasshouses as energy generation sites for the community. This would require quite detailed feasibility research but the sites could, again, be acquired via the council's compulsory purchase powers. Generally in Southern England there is a demand for housing and in the Epping Forest District Council area a significant demand for affordable housing. Derelict sites could also be used for this use.

Compulsory Purchase powers could also be used to acquire sites for, or on behalf of, community groups who wish to improve their community and area. This would be in line with the Big Society concept being developed by Government. Uses could include growing schemes, renewable energy schemes and community centres.

At the consultation events there was a feeling that the approach by the council towards uses contrary to planning consent in relation to derelict sites was too relaxed. There does not appear to be evidence to support this position, however, a simpler enforcement reporting process could assist.

Given the demand for residential accommodation, industrial sites and energy generation, alternative uses must form part of any solution to dereliction. Any policy in relation to alternative uses of derelict sites is likely to incentivise dereliction unless it has clear criteria. The planning authority should make every endeavour to facilitate the transfer of sites to existing growers to avoid dereliction. A policy for alternative uses might include:

- Sites which are already causing an amenity issue will not be considered for alternative uses (Amenity Notices should be used in these cases);
- Glass which has been replaced or built within the last 15 years will not be considered for alternative uses;
- Derelict sites within the E13 designation will not be considered for alternative uses;
- Applications for alternative uses must be able to demonstrate the site has been offered to other growers at market rates before alternative uses will be considered.

15.1 Compulsory Purchase & Amenity Notices

The Local Plan Alterations 2006 has the following paragraph...

> ***10.104g*** *The Council may also consider the use of compulsory purchase powers where land ownership is causing an unreasonable obstacle to glasshouse development within the E13A areas.*

It would be appropriate for the Council to consider use of Compulsory Purchase and Amenity Notice powers. Compulsory powers could bring suitable land back into use, including that occupied by derelict glass or where owners have put on onerous conditions on the sale or lease of land.

It is understood that EFDC has made no use of the CPO powers for this purpose. This may be indicative of the general reluctance of authorities to get involved with CPOs. Having CPO action in reserve does however enable Councils to negotiate by agreement. The majority of purchases by local authorities are by agreement in the shadow of/under threat of compulsory purchase powers.

The timetable for processing a compulsory purchase order is invariably protracted and uncertain; this can adversely affect both land owners and acquiring authorities. There is a lack of finance and expertise in local authorities to undertake CPOs. Compensation may be above market value. In the case of Lea Valley glass the Council would also have to reach an agreement with a developer to pass on the land for development. Having said all of that, our role may be just to refer to the powers that are available and the use that could be made of them to implement the policies. Whether or not these powers are ever used is of course down to the Council.

15.2 Amenity Notices

The service of an Amenity Notice can be effective in securing the actions required by the local authority to clean-up sites and as a 'threat' or informal mechanism for cleaning up sites. Principal obstacles to the use of s.215 powers relate to the definition of 'amenity', the identification of the owner and problems of cost recovery.

16.Findings and Conclusions

This section summarises the findings under each of the research objectives.

To focus on the current state of the glasshouse industry in the Lea Valley area

- This research objective is mainly covered in sections 4, 5 and 6;
- The total area of protected cropping has been in decline across the UK for a long-period of time. This decline has also been identified in Eastern England (including the Lea Valley). The level of decline specifically in the Lea Valley may have been higher than the rest of the UK.
- In recent years the trend in declining areas has stopped and in the ornamental sector the total area has in fact increased. This is due to the move towards a small number of 'super glasshouse' sites.
- Since 2008 the average size of a glasshouse unit has increased from 1.27 hectares to 3.45 hectares. In the Lea Valley the average size has also increased but at 1.25 hectares per unit is much lower than the national average. The growers' survey also indicates there are a large number of growers with units of 1 hectare or less.
- The height of glasshouses is generally higher outside the Lea Valley (average circa 4 metres) and most recent developments have been 6 metres plus. Growers in the Lea Valley plan to invest in increased glass height in the next 10 years.
- During this period of decline, output from protected cropping has increased significantly with yield per hectare almost doubling for tomatoes and cucumbers. As a result, for tomatoes, despite a 50% decrease in cropped area, total UK production has fallen by just 4%.
- Since 1995 there has been a significant increase in the area of fruit grown under glass but none of this increase has been in the Lea Valley.
- The value of the UK fruit and vegetable market has increased by 151.7% to £6.09 billion since 1988 but the vast majority of this growth has been in the import sector rather than domestic production.
- The Lea Valley glasshouse sector employs an estimated 1,100 workers and the whole agriculture and horticulture sector employs 2,700 workers. This is much higher than other parts of Eastern England.
- Both in the UK and abroad the protected cropping sector has experienced significant financial pressure in recent years. Although farm gate prices and the value of production per hectare have been increasing, price competition between the major retailers is resulting in price pressure on growers at a time of significantly increasing costs of production.
- Although all inputs costs have risen by 15% in the last 5 years, fuel (a significant cost on the glasshouse sector) has risen at a faster rate. In the Lea Valley it is forecast that gas prices will have risen by 150% between 2009 and 2012.

- Although profit was shown by the DEFRA horticultural business survey to have improved between 2009 and 2010, it is forecast most businesses in the Lea Valley glasshouse sector will see profits fall by 18% between 2010 and 2012.
- Most growers in the Lea Valley will target a net profit of 7% of turnover (£2,670 per 1,000m^2). However, in the last few years this has been much lower at around 2-3% of turnover.
- The impact of the 2011 E coli outbreak is still being felt by growers. Many saw their returns fall, eroding most or all profit in 2011 due to low prices as a result of falling demand. The EU support scheme did not compensate growers as stock was sold at a price just below the cost of production. Some growers, due to the losses in 2011, may struggle to fund planting in 2012.
- Although there is an element of seasonality affecting the trade balances of protected salad cropping, there is significant potential for increased output in the UK to offset imports, particularly at a time when the relative weakness of the pound and consumer demand for local produce give home production a competitive edge.
- The typical structure of a business in the Lea Valley is an owner-occupier sole trader or partnership which means owners' remuneration will be 'below the line' i.e. they will need to take a wage and reinvest from any profits. With many sites less than 1 hectare this does not allow for much reinvestment.
- The glasshouse sector in the Lea Valley makes a significant contribution to the economy both in terms of economic activity and by providing employment.

Set out the likely development of the industry over the next 10-15 years having regard to the development since the previous report on the sector in 2003

- This research objective is mainly addressed in section 11;
- Between 2000 and 2012 104.25 hectares of glass (including replacement glass) was permitted by Epping Forest District Council of which 92% was within the current E13 designations.
- However, the level of glass applications and approvals has been much lower since 2006. In the period 2006 – 2011 the area of glass permitted was 4.17 hectares per annum and the percentage permitted within the E13 designations was 91%. This compares to a rate of 13.22 hectares per annum between 2000 and 2006 and of those 92% were within the E13 designations.
- The number of applications fell by 70% in the period 2006-2012 compared to 2000-2006. However, the number of applications granted increased from 63% (2000-2006) to 89% (2006-2011).
- The primary reason for the lower number of applications and approvals is the poor economics of protected salad cropping. Many growers see increased glasshouse size and height as a route to address some of the economic issues.

- In the period 2000 – 2011 a total of 30 applications were received for packhouses/crop storage developments. 4 applications were withdrawn, and EFDC permitted 21 of the remaining 26, (an approval rate of 81%).
- Demand (albeit a demand which is reduced by other factors) has broadly been in line with the projections in the 2003 report. If the current trend were to continue there is likely to be a demand for 40 hectares of new glass and 10 hectares of replacement glass in the next 10 years.
- Looking at planning policy both in the Lea Valley and other major glasshouse areas in the UK, the area based policy appears to work well. It provides clarity which growers favour and in the Lea Valley information showed the majority of applications are for development in the designations.
- Where a criteria based policy is used the number of applications is lower but the rate of approvals higher. Generally (although not unanimously) growers prefer the clarity that an area based policy provides.
- Information shows that the number of applications and approvals has dropped significantly in the last 5/6 years and the level of approvals inside the designations is also falling. Analysis shows there are approximately 59.08 hectares of land available within the E13 designation (taking account of designation boundaries and ownership).
- However, in the current economic situation few growers will be able to continue their businesses without significant change. Most growers consider there to be a need to expand significantly. The majority of Lea Valley growers plan /hope to invest in their businesses in the next 10 years and 25% hope to expand.
- Without additional designations to allow expansion, and unless there is a significant improvement in the economic prospects for protected cropping in the UK, the number and area of glass applications is likely to remain low.
- Consultation with growers in the Lea Valley showed that they expect the minimum size unit to be financially viable will increase from 2.60 hectares today to 5.2 hectares in 10 years' time and 6.3 hectares in 20 years' time.
- The average size of a glasshouse unit in the Lea Valley is lower (1.25 v. 2.60 hectares) than the minimum size unit growers believe they need to be viable. In addition a large number of growers are less than 1 hectare.
- Expansion of the glasshouse sector in the Lea Valley would have significant economic benefits.
- There is a national trend towards much taller glasshouses and larger flat sites, situated close to major transport links, with water recycling, energy generation and packing facilities all on one site. The current trend in the UK glasshouse sector is one organisation bringing a number of growers to operate sites in cooperation.
- The Lea Valley has many of the attributes that would fit with this model including high light levels, close proximity to major markets and distribution centres, a concentration of

glasshouse businesses, access (albeit poor in places) to the motorway network and (again in places) flat sites.

- Three scenarios have been identified:
    1. Continuation of current trend = demand: 35-40 ha (10 ha replacement);
    2. Mostly medium scale development of existing sites = demand: 90 ha (25 ha rep.);
    3. Very large single site development = demand: 100-140 ha (10 ha rep.).
- However, any significant demand for new glass will be dependent on an upturn in the economic outlook for protected salad crop production.
- In addition to larger and taller glasshouses most growers hope to invest in water storage, energy (especially renewable energy) generation, thermal screens, new cropping and heat dump storage. More growers hope to invest inside the parishes of Roydon, Nazeing and Waltham Abbey than outside these parishes.
- If the large single site option is considered, further detailed investigation will be required on the potential site (it would need to have (i) gas supply and (ii) good access, and be (a) flat and sufficient in size; (b) ideally away from residential areas; and (c) affordable).
- Large sites similar to Thanet Earth have a number of environmental considerations which will require investigation if this option is progressed.
- If large scale expansion is identified as the future strategy for the Lea Valley glasshouse sector, the growers' ability to fund such investment would need to be considered in addition to the impact on the existing E13 designated areas.

Understand what the requirements are from the industry in terms of planning policy to assist the sector's long-term viability

- This research objective is mainly addressed in section 11;
- The majority of growers want to invest in larger glasshouse areas with taller glasshouses. In addition many growers would like to move towards the Thanet Earth/green ports model of grouping new glasshouses together with significant infrastructure on site (e.g. packing, energy generation and support services).
- Very few growers see their businesses remaining the same size or glass the same height. More growers want to remain in the Lea Valley than would look to invest away from the Lea Valley. The largest barrier (even more than planning policy) to expansion/business investment is the size constraints of current sites. This is apparently preventing investment in protected fruit production which is expanding in the UK, but not in the Lea Valley.
- If their sites were sold for significant capital uplift, more than half of growers surveyed (65%) would reinvest in their businesses and nearly half (48%) would like to reinvest in the Lea Valley.
- Case studies of similar glasshouse areas show that, for an area based policy to be effective, an area of 2-3 times the likely demand needs to be designated to give sufficient options for growers and create enough competition between landowners for prices to be realistic.

- Even under a policy to continue the current trend, a minimum of 40 hectares of additional designation would be needed to meet the likely demand. If the sector is to remain viable, demand is likely to increase significantly.
- Under the medium and large scale development scenarios significant areas would need to be designated and this is likely to need designation of new sites.
- Some councillors and interest groups have expressed a concern over the hope/intention to increase glass height. In other areas e.g. Thanet and West Sussex there is less of an issue in respect of glasshouse height as the areas are less populated (although in West Sussex there are issues in respect of landscape impact). A clear policy on glasshouse height (possibly on a criteria rather than area basis) would be beneficial for all parties.
- In the UK and Holland there is a trend towards artificial lighting to extend the growing season. Some growers are interested in investing in this but this is also an area where significant objections are likely to be received from the public. A clear policy on artificial lighting (and possibly research on the levels of light pollution, reportedly less than 5% at Thanet Earth) is needed for both growers and the public. This might also be relevant in terms of selecting new designations away from populated areas i.e. the more historic growing areas in the Lea Valley.
- Many growers would like to invest in renewable energy generation and in particular there has been interest in anaerobic digestion. This type of development is incompatible with the green belt and therefore could only be approved under 'special circumstances'. Growers are seeking greater clarity on the criteria that would deem 'special circumstances'.
- Similarly the growers with packing facilities would almost unanimously like to expand their operations and a few growers indicated an interest in investing in this. Again this is contrary to green belt policy but could and has been approved under exceptional circumstances. Greater clarity of the criteria for this would help growers. A strategy of moving packing facilities out of the Lea Valley may be needed. This would not be popular with growers but would address both the traffic and the green belt policy issues.
- Both the public and growers consider there to be issues with the current policy on agricultural dwellings. The public feel that the allowance for 'seasonal' work accommodation (i.e. caravans) is being abused due to the longer growing 'seasons'. However, the growers feel that provision of a caravan is not sufficient to attract the quality of workers they require and therefore would prefer a policy towards permanent dwellings (which could be protected by an Agricultural Occupancy Condition (AOC) or even a condition to remove). Thanet Earth and Billingham are good examples of how growers can work closely with the local authority early on in a project resulting in a better outcome for all parties. If the District is to support the glasshouse sector in the future greater collaboration and management of the development process is needed.

Determine how planning policy can meet the industry's objectives taking into consideration other external factors

- This research objective is mainly addressed in sections 4 and 11;

- Although the planning officers are clearly supportive of the sector (and this research has proven beneficial in evidencing this) there is a general feeling that the decision makers are not supportive. The level of approvals suggest that this might be more of a perception (possibly even dis-incentivising applications) than a reality, however, several large scale applications have been rejected, and these types of applications are thought likely to increase in the future.
- The Epping Forest District Council objectives are very much focused on quality of life rather than economic growth. It is thought that this is possibly a reflection of relatively high affluence in the area and a high level of employment within London. Given the current economic circumstances this might change in the future. The Lea Valley glasshouse sector provides a significant level of employment (currently high levels of migrant workers) and this could increase at a time when unemployment is rising.
- Growers feel that there is a lack of understanding of business generally within the council (generally rather than specifically officers or specifically elected officials) and also that the glasshouse sector is not understood. Greater engagement is needed from both sides. Growers can be criticised for not informing and educating their local Members and officers but there is also a responsibility on the side of the Authority to understand the benefit of the significant trade to the District.
- When growers were asked what they would most like to change about the planning system a large proportion stated that a simpler system and/or a quicker decision time would be beneficial.
- The Park broadly supports applications for glass within the E13 designations but does not support glass applications outside these areas or non-conforming applications (e.g. packhouses and renewable energy) inside the E13 designations.
- Glasshouses (and in fact economic activity) are not part of The Park's statutory objectives.
- It seems likely that any expansion or new designations near to The Park would not be supported and there is a question of how much area could actually be available.
- The NPPF (March 2012) includes a presumption in favour of sustainable development and advises that planning should proactively drive and support sustainable economic development.
- Setting aside green belt policy, a large scale glasshouse development which could be a net electricity exporter, which undertakes all logistics on site and then delivers to a local distribution centre, which creates employment and economic growth and improves the UK's food security (also a Government objective) should be considered to be sustainable development.
- All external factors and current planning policies suggest that, if the council is supportive of the sector and supports medium or large scale development, this will have to be on new designated sites to the east of the Lea Valley close to the M11.
- One site which has emerged as a potential consideration is North Weald Airfield.

- If expansion of the sector is to be supported and expansion of existing E13 designations the preferred route (either instead of or as well as designation of new sites) then the following should be considered and assessed in greater detail. Although some of these sites may have an impact on the Park they should still be considered given that these would only be small but beneficial expansions of the designations:
    - To the south of Old House Lane E13 designation;
    - To the north of Roydon Hamlet E13 designation;
    - To the west and south west of Tylers Cross E13 designation;
    - To the north of the Netherhall Road E13 designation;
    - To the north east, south and west (across the road) of Paynes Lane E13 designation;
    - To the north of Parklands, Waltham Abbey E13 designation (this is likely to have availability issues and may be too steeply sloped);
    - To the north and south of Avey Lane, Sewardstone.
- The objectives of maintaining the openness of the Green Belt and landscape, recreation and wildlife conservation have to be balanced against the needs of the glasshouse horticultural industry. There are obvious difficulties in the way of ensuring that every grower has convenient room to expand, but to do so would mean abandoning the adopted approach with serious implications for the other objectives. Movement to new sites to the east of the Lea Valley seems the only viable way of achieving this.

Evaluate the level of glass house dereliction and opportunities for use by the industry

- This research objective is mainly addressed in section 15;
- At present dereliction seems to be an isolated problem which does not greatly concern the public. In fact the consultation events suggested that generally the public prefer dereliction (i.e. no use) compared to alternatives uses which are often contrary to planning policy and undertaken without consent.
- Dereliction typically occurs where the economic viability of a unit is questionable. In light of (i) the current economic outlook for the sector, (ii) the relatively small nature of the businesses in the Lea Valley and (iii) the barriers under current policy on expansion, it is possible that dereliction will increase in the future.
- Even where conditions are attached to a planning consent, the cost of returning sites to green field are prohibitively high and realistically (especially where the site ceases production due to economic difficulties), this is not going to be a common outcome.
- Some residents consider the dereliction to be a problem and many see the solution as either the provision of affordable housing and/or renewable energy generation (specifically photovoltaic energy generation). The primary concern for the Council is that any policy which says that dereliction should result in alternative uses is going to incentivise dereliction.

- The worst sites could be served Amenity Notices to minimise the negative impact. S.215 of the Town and Country Planning Act (1990) provides local authorities with a discretionary power for requiring landowners to clean up 'land adversely affecting the amenity of the neighbourhood'. Local authorities also have powers to undertake clean up works themselves under s.215 and to recover costs from the landowner.
- The local authority may even wish to consider compulsorily purchasing the worst sites for development, however, given that the law requires the site to be purchased at market value (including hope value) this may limit the council's options.
- The council may use discontinuance orders to ensure the removal of buildings on the vacated site where this is considered appropriate. Policy E13C was the subject of considerable scrutiny at the time of the 2006 Alterations and its terms and reasoning remain valid. There is no justification for relaxing the green belt to allow redundant glasshouses to be redeveloped for otherwise non-conforming uses.
- A policy towards large-scale relocation of glasshouses to a single site, possibly to the east of the Lea Valley, may result in increased levels of dereliction, however, in Chichester District this has not happened but the number of smallholdings has increased along with an increasing number of applications for dwellings on these sites.

17.Recommendations

Recommendation 1	*Epping Forest District Council should adopt a clear strategic vision for the glasshouse sector. The current position of support for the sector within E13 designations but with E13 designations insufficient to allow large-scale expansion is not viable for the sector in the long-term.*
Recommendation 2	*The glasshouse sector makes a significant contribution to the local economy and employment. Support for large-scale expansion of the sector would be a positive economic step. Large-scale expansion will require new designations of E13 areas. To reflect the traffic issues and the incompatibility of glasshouses and the Regional Park, designations should be considered to the east of Epping.*
Recommendation 3	*To support small to medium sized growers, the Council should consider expansion of the existing E13 designation outside the Park Authority boundary. Large-scale growers moving to new designated sites would also create opportunity for smaller growers. However, expansion of the existing E13 areas within the Park Authority boundary would be resisted.*
Recommendation 4	*Both growers and the Council should look to work closer together in developing new sites. Thanet Earth is an excellent example of what can be achieved through positive partnership.*
Recommendation 5	*The Council should consider using Section 215 amenity notices and discontinuance orders to avoid dereliction. In extreme cases compulsory purchase powers could be used. Where compulsory purchase powers are used the Council should look to communities to develop acquired sites for renewable energy, community projects and affordable housing.*

Appendices

Appendix 1 – Glossary of Terms

Community Infrastructure Levy (CIL)	The Community Infrastructure Levy is a new levy that local authorities in England and Wales can choose to charge on new developments in their area. The money can be used to support development by funding infrastructure that the council, local community and neighbourhoods want - for example new or safer road schemes, park improvements or a new health centre. The system is very simple. It applies to most new buildings and charges are based on the size and type of the new development.
Feed in Tariffs (FiTs)	Feed-In Tariffs (also known as FITs) are the electricity part of a Government backed scheme that pays people for creating their own green electricity. The tariffs were introduced by the Government to help increase the level of renewable energy in the UK towards our legally binding target of 15% of total energy from renewables by 2020 (up from under 2% in 2009). The Tariffs give three financial benefits: a payment for all the electricity produced, an additional bonus payment for electricity exported into the National Grid and a reduction on the standard electricity bill (from using the energy produced).
Glasshouse horticulture	The production of edible crops (vegetables, salad crops and fruit) on a commercial scale under glass.
Gross output	Total revenue inclusive of marketing charges, where known, adjusted for changes in valuation of crops and tillage, and less purchases of livestock, or produce for resale. Gross output per hectare reflects the intensity of the system as well as the yields and prices obtained
Heat Dump Storage	The process of storing heat (in hot water) generated from CHP engines/boilers used to enrich CO_2 during periods when the heat is not used and then using that heat during a period of demand i.e. storing heat during the day and then releasing that heat during the night when CO_2 demand is lower.
Moveable thermal screens	Moveable screens of aluminium designed to protect crops from irradiation damage to crops, to ensure the glasshouse does not become too hot during the summer and to conserve heat at night and during the winter.

Net margin	Sales turnover less direct and indirect trading costs i.e. the profit from the business before personal drawings, taxation, capital investment and repayment of loans.
Producer prices	Price received by the food producers after any deductions for transport, handling, packaging and commission.
Protected cropping	Any cropping undertaken underneath plastic or glass structure (permanent, semi-permanent or temporary) to control or improve the growing conditions.
Protected salad cropping	Salad cropping (typically tomatoes, cucumbers, peppers and aubergines) undertaken underneath plastic or glass structure (permanent, semi-permanent or temporary) to control or improve the growing conditions.
Renewable Obligation Certificates (ROCs)	Renewables Obligation Certificates (ROCs) are green certificates issued by the Government to operators of accredited renewable generating stations for the eligible renewable electricity they generate. Operators can then trade the ROCs with other parties, with the ROCs ultimately being used by suppliers to demonstrate that they have met their obligation. Where electricity suppliers do not have sufficient number of ROCs to meet their obligation, they must pay an equivalent amount into a 'buy-out' fund. The administration cost of the scheme is recovered from the fund and the rest is distributed back to suppliers in proportion to the number of ROCs they produced in respect of their individual obligation.
Rockwool	Rockwool is made from basalt rock and chalk. They are melted at very high temperatures and blown into a large spinning chamber to turn it into fibres which then make the growing medium. It is then compressed into a mat which is cut into slabs and cubes. Since rockwool is heated to such high temperatures (1600 degrees centigrade) the product is chemically and biologically inert and creates the ideal growing medium for hydroponics. Rockwool is the main vegetable and flower production medium throughout Europe.
Section 106 agreements (s106)	A legal agreement attached to a planning consent which requires the applicant to undertake specific actions before planning permission is deemed to be fulfilled.

Specialist glass sector	Any cropping undertaken underneath a glass structure to control or improve the growing conditions.

Appendix 2 – Summary of the Epping Forest District Council Corporate Plan

Long-term Strategy (21 years):

'Making our District [Epping Forest District] a great place to live, work, study and do business'

Long-term strategic themes:

1. **Safe:**
   To be a place where there is low crime and where communities are free from the fear of crime
2. **Sustainable**
   *To enhance the green and unique heritage of Epping Forest and provide homes, **jobs,** services and transport for future needs but in an environmentally sensitive manner*
3. **Health**
   To be a healthy society across the whole community
4. **Aspiring**
   To be a beacon of learning excellence for children and young people

Medium-term Aims (2012 – 2015)

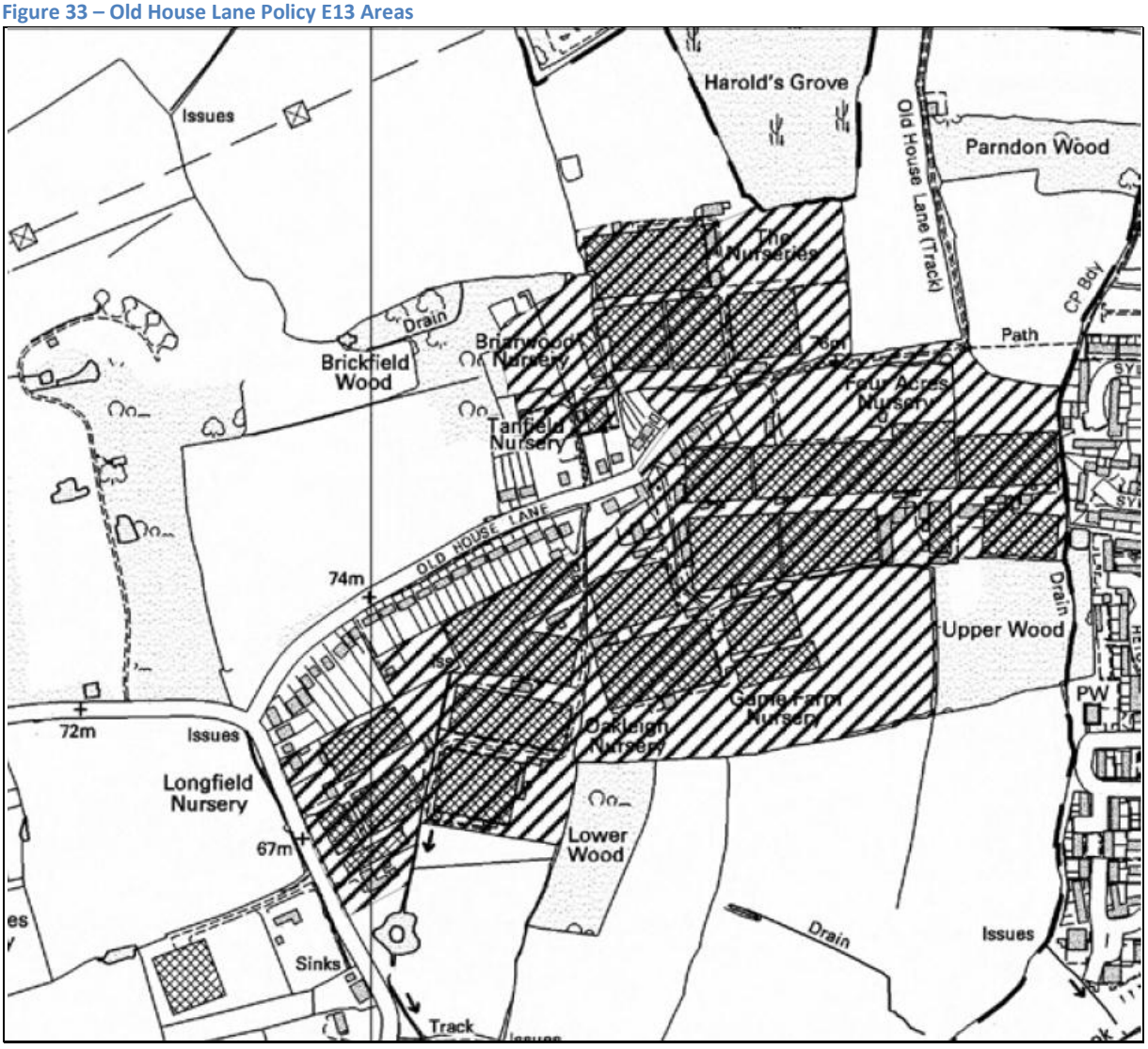
a. Endeavour to safeguard frontline services that our local residents tell us are important against a background of diminishing resources;
b. Have the lowest district council tax in Essex
c. Be recognised as an innovative and transparent council involving residents in our decisions;
d. Continuously improve efficiency by adopting new ways of working with our partners and maximising revenue from our assets;
e. Provide clear community leadership and be a strong advocate, championing the interests of the people of Epping Forest and protecting the special character of the District.

Short-term Objectives (2011/2012): To:

1. Review the council's assets;
2. Utilise existing resources to support Government's 'Big Society' policy;
3. Ensure effective safeguarding of children and young people;
4. Improve the council's performance and efficiency;
5. Make savings to maintain the council's financial position;
6. Maximise the provision of affordable housing;
7. Help to mitigate the impact of the current economic climate on local people and **businesses**, *where resources permit and value for money can be achieved* from the council's activities;
8. Deliver a sound Core Planning Strategy.

Appendix 3 – Analysis of Available Area within Existing E13 Designations

Figure 33 – Old House Lane Policy E13 Areas



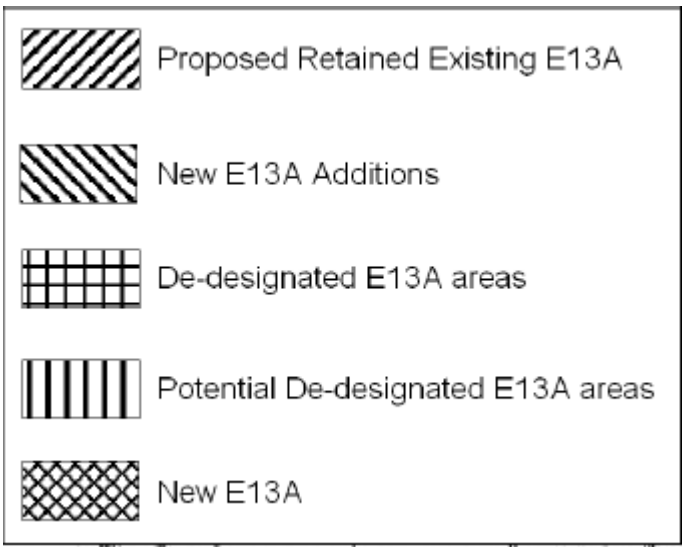


Figure 34 – Old House Lane Vacant/Unused Policy E13 Areas

Existing E13A Area

Vacant/Unused Land

Area A Part of Nursery and may be developed in the future**. Area 0.36 hectares**

Area B Owned by adjoining nursery and could be developed for glass. Planning permission granted for glass. **Area 0.58 hectares**

Area C Ideal flat site for glass expansion. **Area 2.07 hectares**

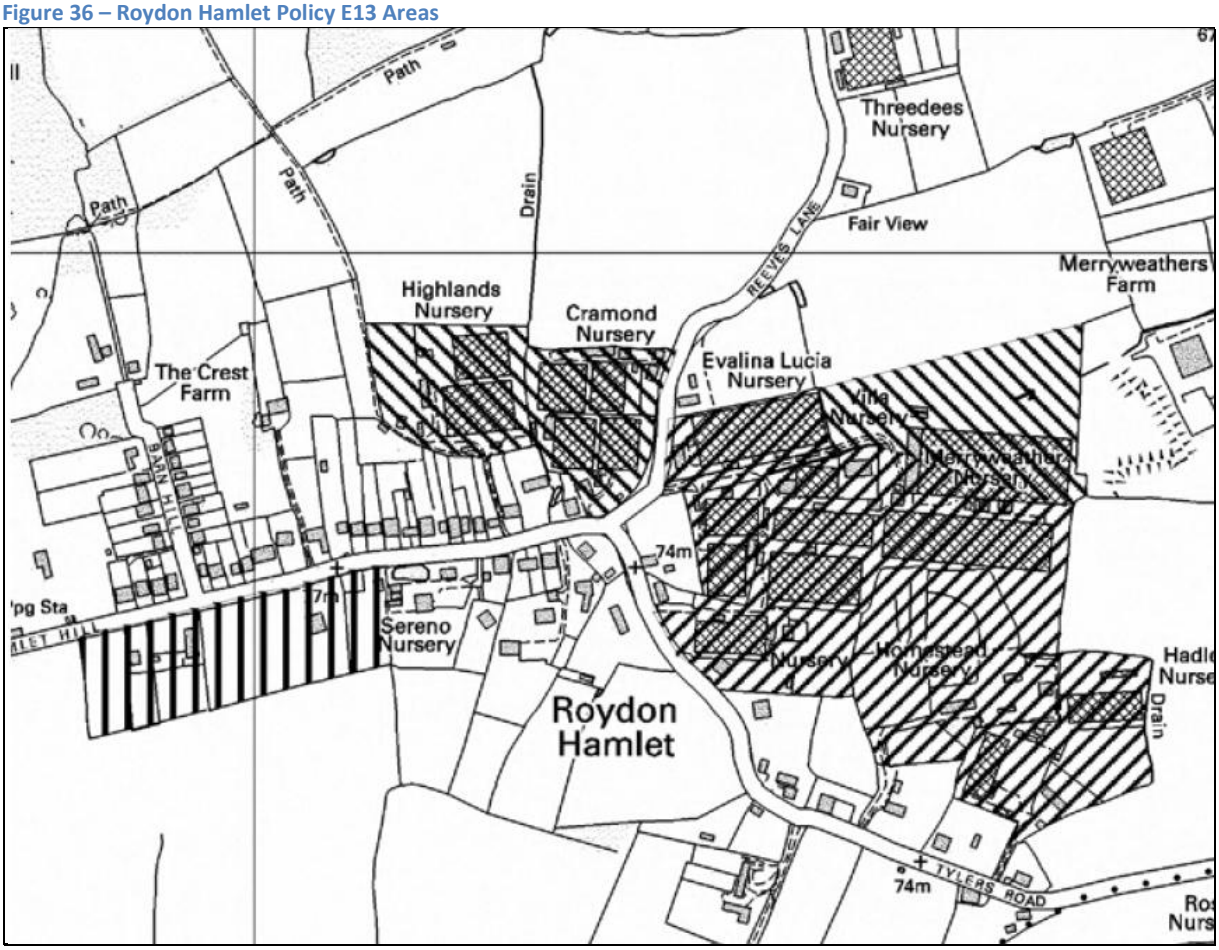
Area D Planning permission for glass on this area. **Area 0.63 hectares**

Area E Adjacent to glasshouse area. Potential for new glass. **Area 1.02 hectares**

OLD HOUSE LANE: AREA FOR NEW GLASS 4.66 hectares

Figure 35 – Old House Lane Recommended Policy E13 Area

Figure 36 – Roydon Hamlet Policy E13 Areas



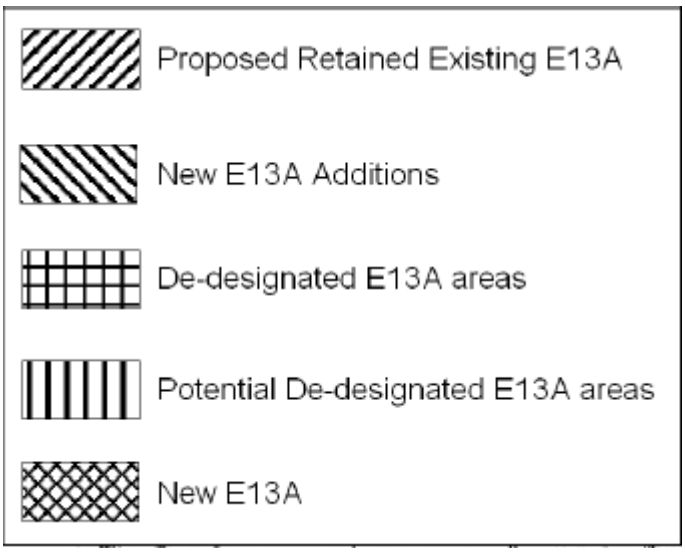
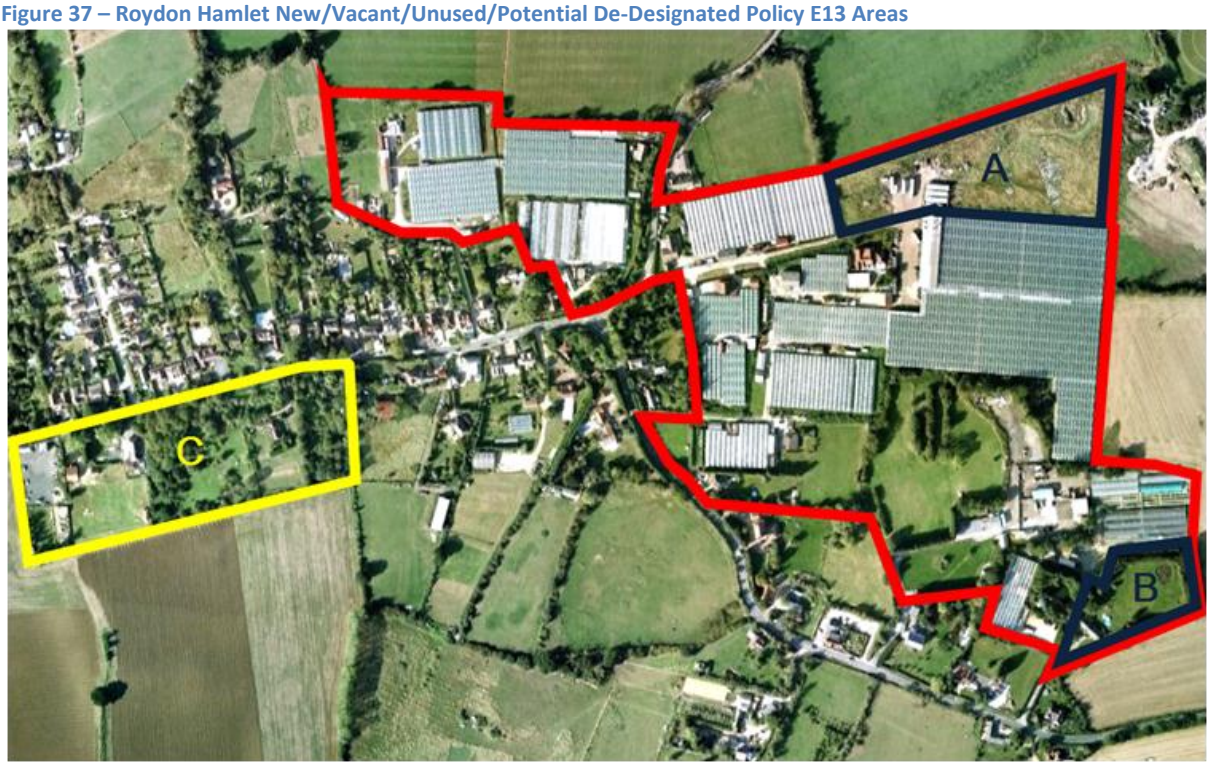


Figure 37 – Roydon Hamlet New/Vacant/Unused/Potential De-Designated Policy E13 Areas



Existing E13A Area

Vacant/Unused Land

Potential De-designated E13A Area (2006)

Area A. Unimplemented outline planning permission for further expansion. **Area 2.33 hectares**

Area B. Agricultural occupancy dwelling with garden. Too small and isolated. **Area 0.24 hectares (RECOMMEND DE-DESIGNATE)**

Area C Potential de-designated 2006. Although some glass is shown on old Ordnance Survey maps, now not developed for glass. Sloping site not readily suitable for glass. Deletion would bring it under Green Belt policy constraint. **Area 2.78 hectares (RECOMMEND DE-DESIGNATE)**

AREA FOR NEW GLASS 2.33 hectares

Figure 38 – Roydon Hamlet Recommended Policy E13 Area

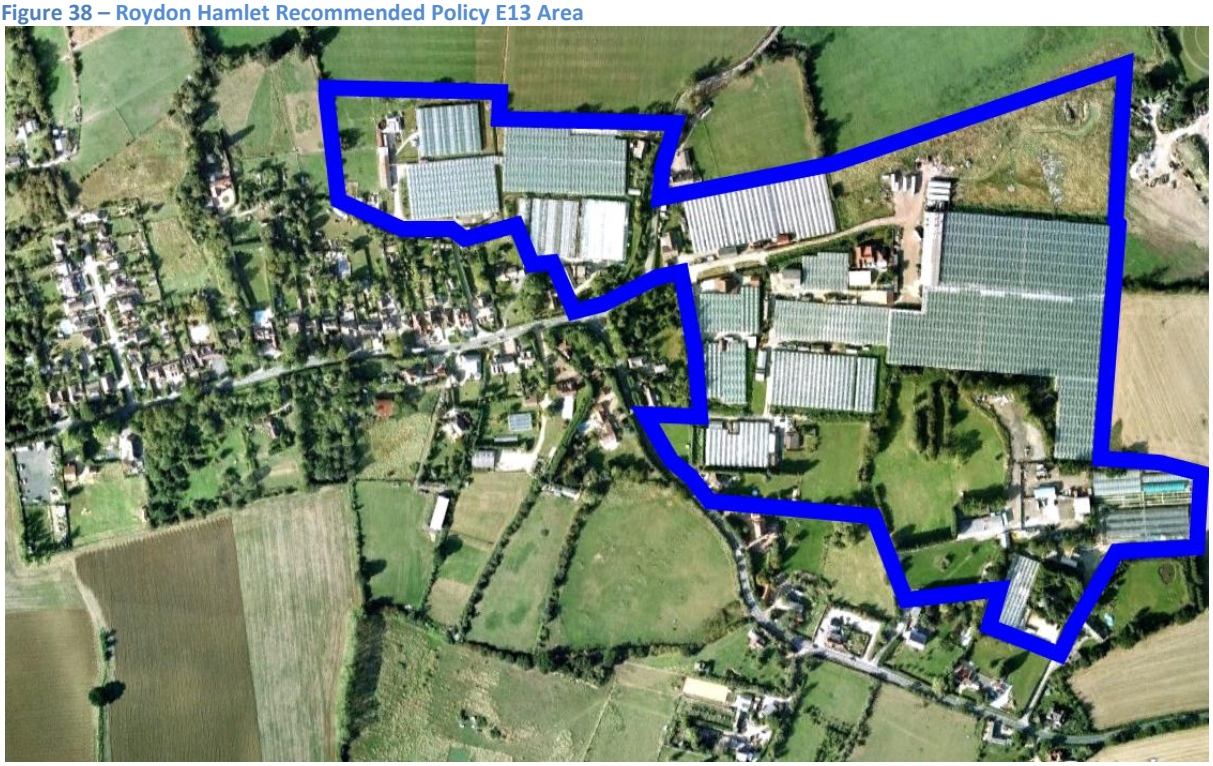


Figure 39 – Tylers Cross Policy E13 Areas

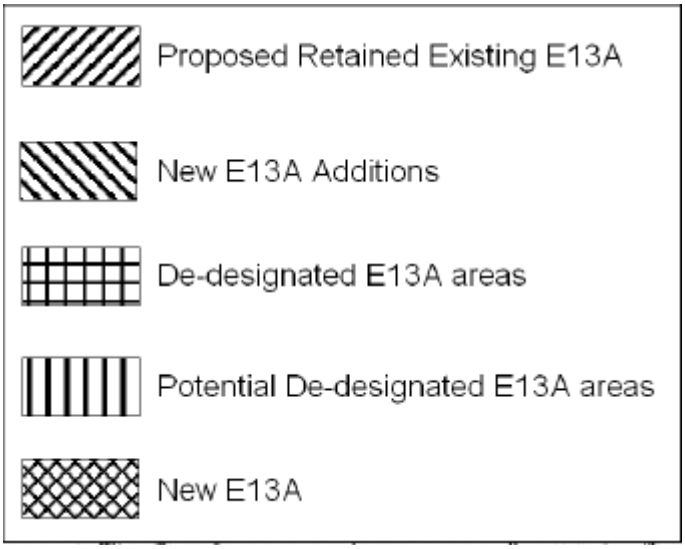


Figure 40 – Tylers Cross Vacant/Unused Policy E13 Areas

Existing E13A Area

Vacant/Unused Land

Area A. Open land next to existing nursery. Suitable for glass. **Area 0.37 hectares**

Area B. In use as a Pack House. **Area 1.39 hectares**

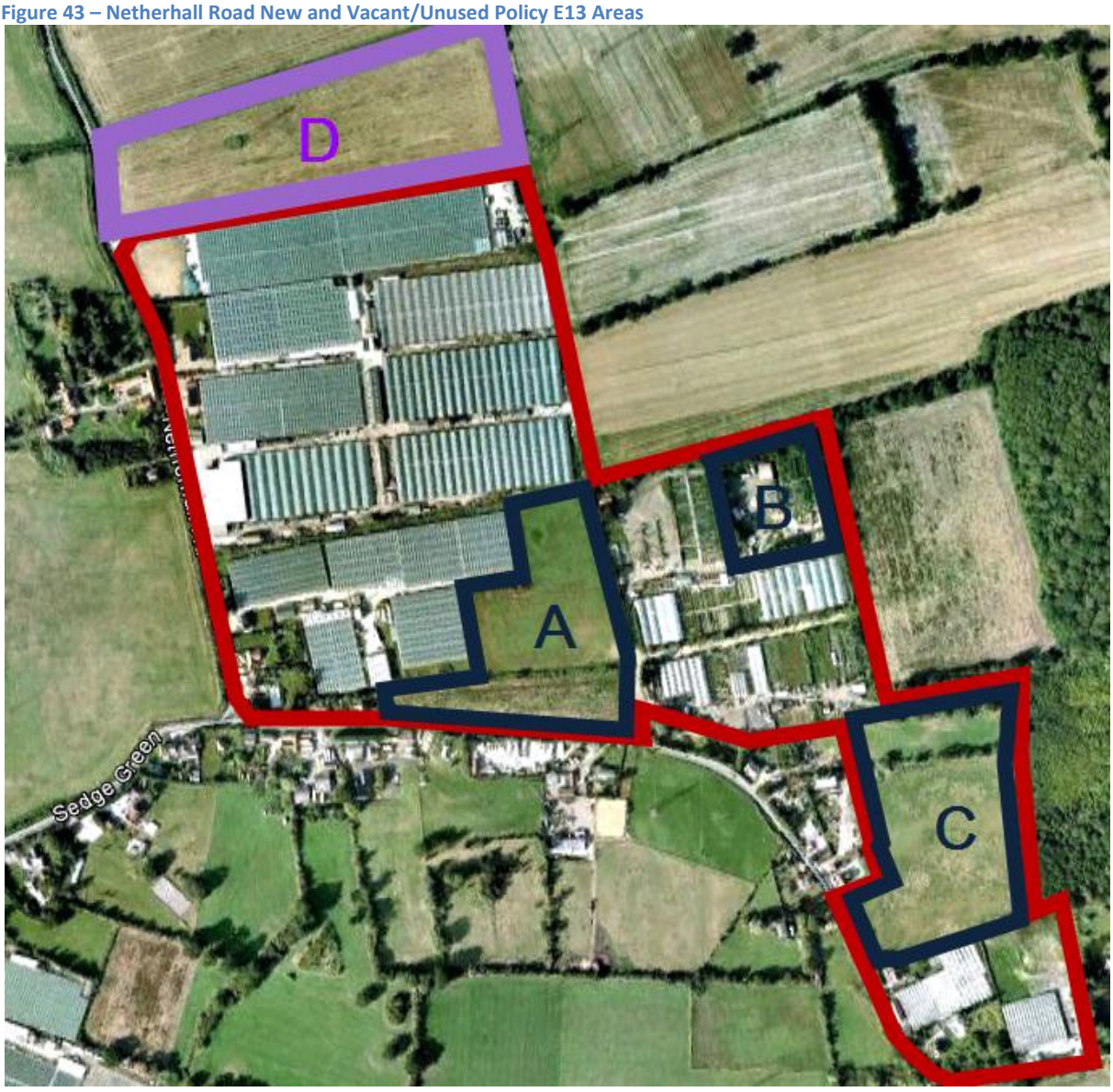
Area C. Area is partly an established travellers' site and also has planning permission for occupation by a traveller. The former glasshouses on the site were subject of successful Enforcement Notice action against unauthorised business uses but they have now burnt down. Improbable that the travellers' sites will be developed for glass. Glass to the west is accessed the site from Epping Road. **Area: 4.25 hectares (RECOMMEND DE-DESIGNATE)**

AREA FOR NEW GLASS 0.37 hectares

Figure 41 – Tylers Cross Recommended Policy E13 Areas

Figure 42 – Netherhall Road Policy E13 Areas

Figure 43 – Netherhall Road New and Vacant/Unused Policy E13 Areas



Existing E13A Area

Vacant/Unused Land

Additional E13A Area

Area A. Adjacent to and suitable for glasshouse expansion. **Area 1.98 hectares**

Area B. Logical small extension to existing E13A area accessed through adjacent nursery. **Area 0.82 hectares**

Area C. Northern section used by non-conforming use; Southern section open fields and part of Paradise Farm is on sloping land and not considered suitable for glass**. Area 4.09 hectares (RECOMMEND DE-DESIGNATE)**

Area D. Suitable flat site for northern expansion. **Area 3.7 hectares**

AREA FOR NEW GLASS 6.50 hectares

Figure 44 – Netherhall Road Recommended Policy E13 Area

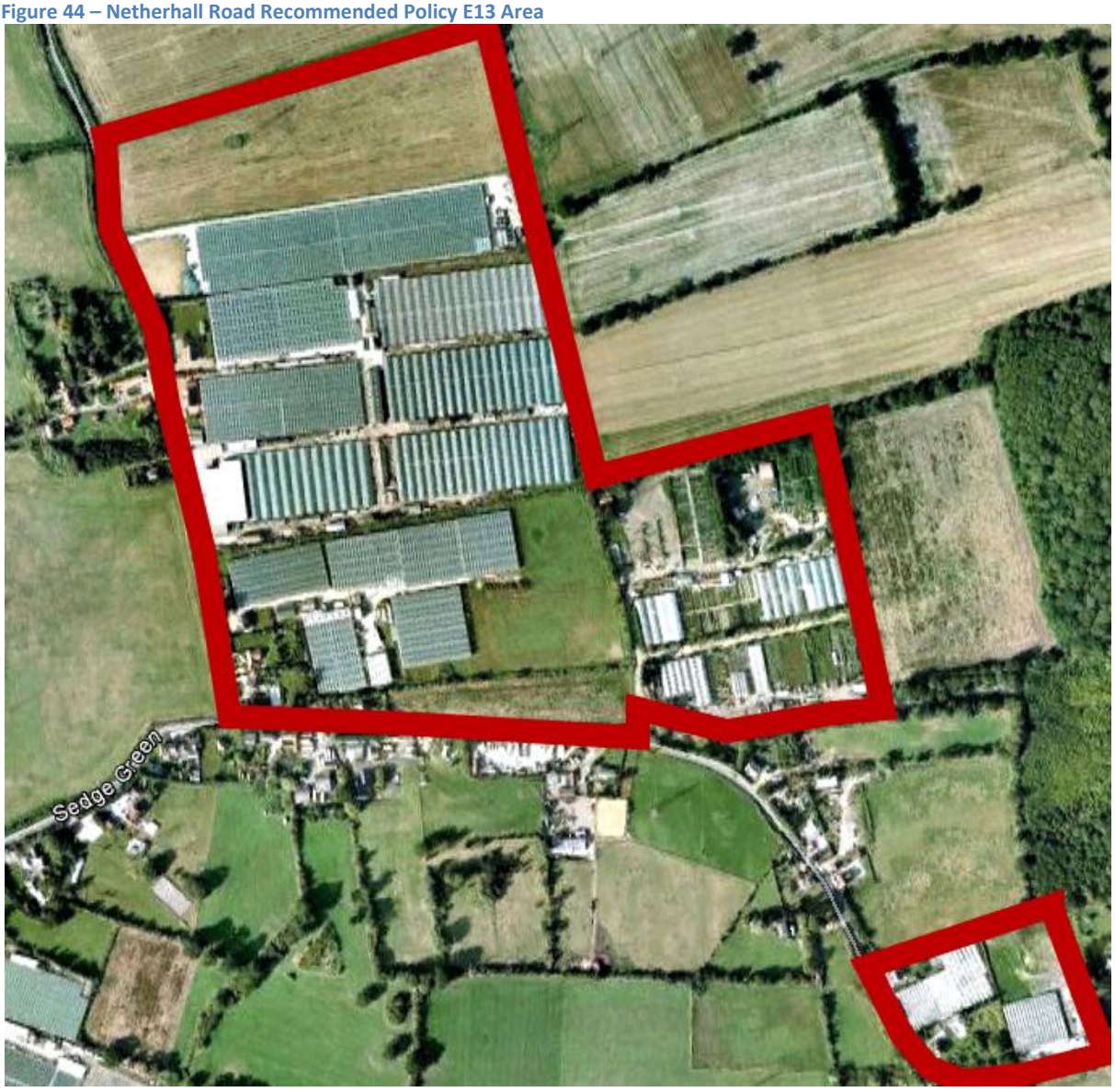


Figure 45 – Sedge Green Policy E13 Areas

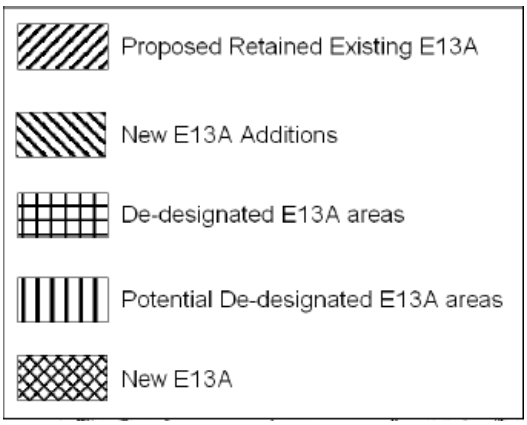


Figure 46 – Hoe Lane Policy E13 Areas

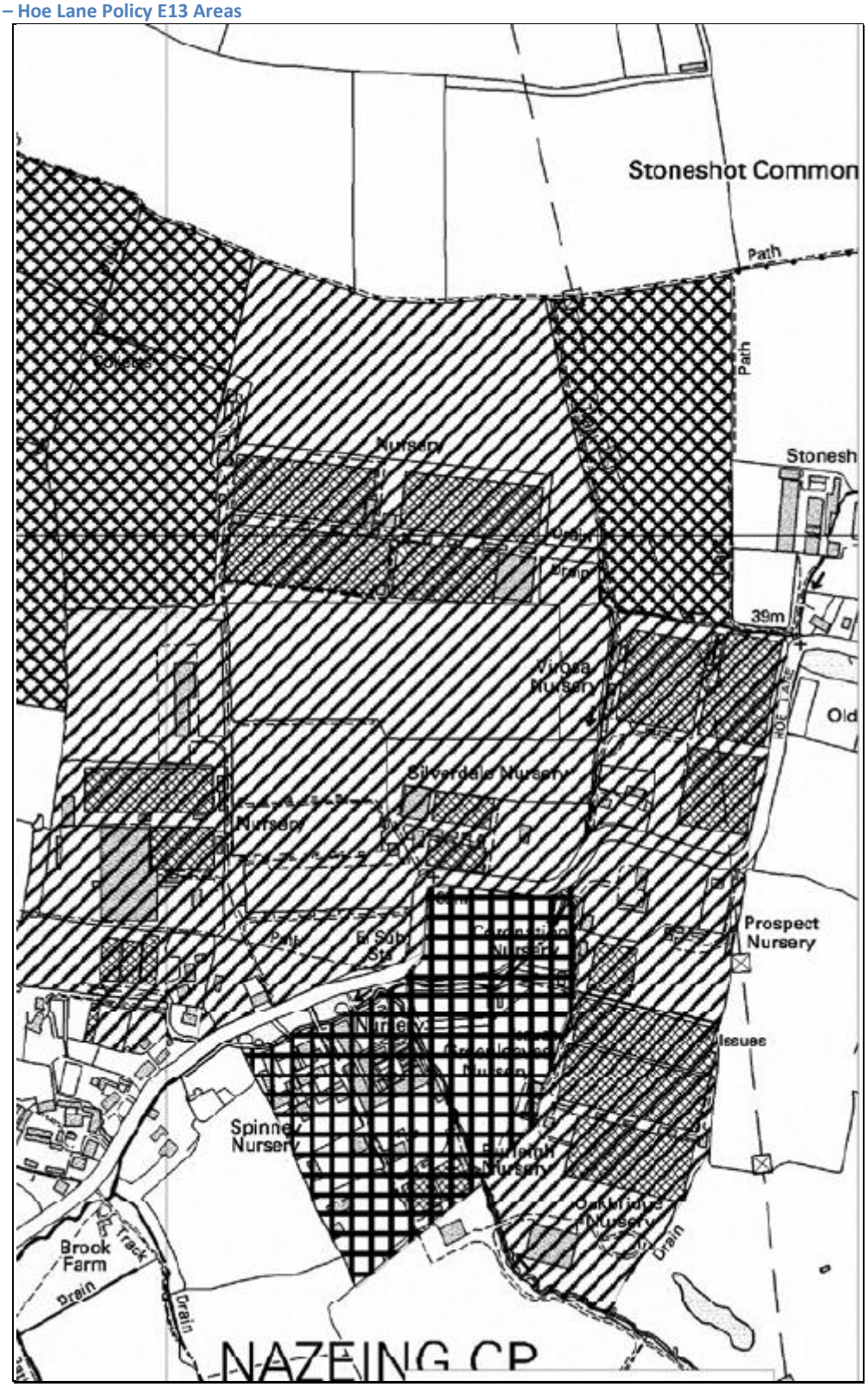


Figure 47 – Sedge Green/Hoe Lane New and Vacant/Unused Policy E13 Areas

Existing E13A Area

Vacant/Unused or Potential de-designated areas

Area A. (Area 24.7 ha.) was designated as a new E13A site to encourage/investigate vehicular access to the Hoe Lane Area from Sedge Green.

The site (known as **Shottentons Farm)** was bought last year by Glinwell PLC, one of the country's largest growers. Since purchasing the site they have converted an existing 2.8 hectares glasshouse to tomato production and intend to build a further 2.8 hectares at the end of this year. Planning permission was granted in 2012 for 2 further phases of glasshouse development (3.1 ha and 6.2 ha respectively) subject to the completion of a Section 106 Agreement. The permission also includes a

reservoir of 18,500 cubic metres capacity. It is intended to build this over the next 2 -3 years. There is the possibility, therefore, of entering into an agreement with the owners, to allow for vehicular access through **Area A** to **Area F** in Hoe Lane and to serve the rest of the Hoe Lane Area.

Area B. Flat land ideal for glass to rear of existing glasshouses. **Area 0.91 ha.**

Area C. Occupied by a non-conforming motor repair/coach business in the southern section and residential dwellings (with poor vehicular access to Sedge Green) in northern section. Glass could be developed on, at least, the southern section. **Area 3.85 ha.**

Area D. Flat land ideal for glass to rear of existing glasshouses. **Area 2.69 ha.**

Hoe Lane

There are a number of viable nurseries active in the area (although there are some derelict glasshouses at Coronation Nursery to the south of Hoe Lane). The former CWS Nursery, comprising **Areas F** and **G**, is suitable for glass and represents a substantial area of 18.67 ha. **Area E** represents 5.62 ha. i.e. a total of 25.7 ha. suitable for glass.

This is the eastern part of the designated land. Vehicular access is from Hoe Lane. In the centre of this site is a block of existing glasshouses with a total area of about 5 hectares, which is currently in horticultural production. There are four blocks of designated open land around these glasshouses. (**Areas E, F, G and H**) On the western side of the vehicular access from Hoe Lane are existing dwellings and an existing active nursery. To the north of this is a former compost manufacturing site, now in use for industrial purposes. These sites are unavailable. Apart from being a bad neighbour, the industrial site separates the land at the southern end of the allocation from the land in the north-western part of the allocation.

Due to the Council's previous refusal of planning permission on part of the Hoe Lane land for a relatively small glasshouse area in 1997 it is very probable that an application for a larger area of glasshouses would be opposed for similar reasons. Any development would therefore need to take access through Shottentons Farm, which is in the ownership of a rival grower. It is not considered a practical possibility to achieve access by this means.

Areas F and G are the former CWS Nursery and the owners have put forward onerous conditions on the sale/lease of that land. This information was set out in support of the application approved in September 2004 on **Area E** and was summarised in the Committee Report as follows:-

> *"The applicants have also submitted information explaining why no other land within the designated glasshouse area identified on the Proposals Map of the adopted Local Plan is suitable. They have provided evidence that demonstrates that in 1999 they attempted to buy adjacent land within the glasshouse area but the owner insisted on retaining an option to apply for and obtain planning permission in respect of all or part of the land and buy back the land with the benefit of any permission within a period of 21 years. In exercising the option the owner would not have to take into account any capital improvements that have been made to the land. Because this*

> *arrangement would not give sufficient security of tenure it was not acceptable to the applicants and the sale could not proceed. In effect, therefore, that adjacent land is unavailable to the applicants".*

If Sites F and G remain unavailable for glass they could be considered for de-designation. Due to the issues above the areas F and G are not included as available in the calculations of Table 16, however, further consideration of the issues is required before this can be recommended for de-designation

Area E. Hoe Lane. New addition 2006. Planning permission was granted on the southern part of area on 29 September 2004 (EPF/777/04) for 1.21 ha of glass. Any further glass could only be granted planning permission once vehicular access was obtained to Sedge Green. Alternatively review designation in conjunction with the potential de-designation of **Areas F** and **G**. **Area 3.42 ha.**

RECOMMEND DE-DESIGNATE E13 AREA

Area F. Hoe Lane. Vacant/unused. Former CWS Nursery. Flat land ideal for glasshouse use. There are difficulties with any sale agreement as owners hope for future residential development. Served via Hoe Lane with poor vehicular access. **Area 6.21 ha.**

RECOMMEND DE-DESIGNATE E13 AREA

Area G. Hoe Lane. Vacant/unused. **Area 12.46 ha.** Again former CWS Nursery. The Planning Committee reversed an officer recommendation for approval for the erection of 2.72 hectares of new glass on 4 October 1997 (EPF/897/97) for the following reason:-

> *"The proposed scale and the operational need for the development are likely to be severely detrimental to the character of Hoe Lane and to the safety and amenities of occupiers of nearby properties contrary to Policy T18 of the Deposit Draft of the Districtwide Local Plan".*

RECOMMEND DE-DESIGNATE E13 AREA

Area H. Hoe Lane. Vacant/unused. In commercial use. Planning permission granted for present use on appeal 1995. **Area 2.83 ha.**

RECOMMEND DE-DESIGNATE E13 AREA

SEDGE GREEN/HOE LANE AREA FOR NEW GLASS 32.15 HECTARES

Figure 48 – Sedge Green/Hoe Lane Recommended Policy E13 Area

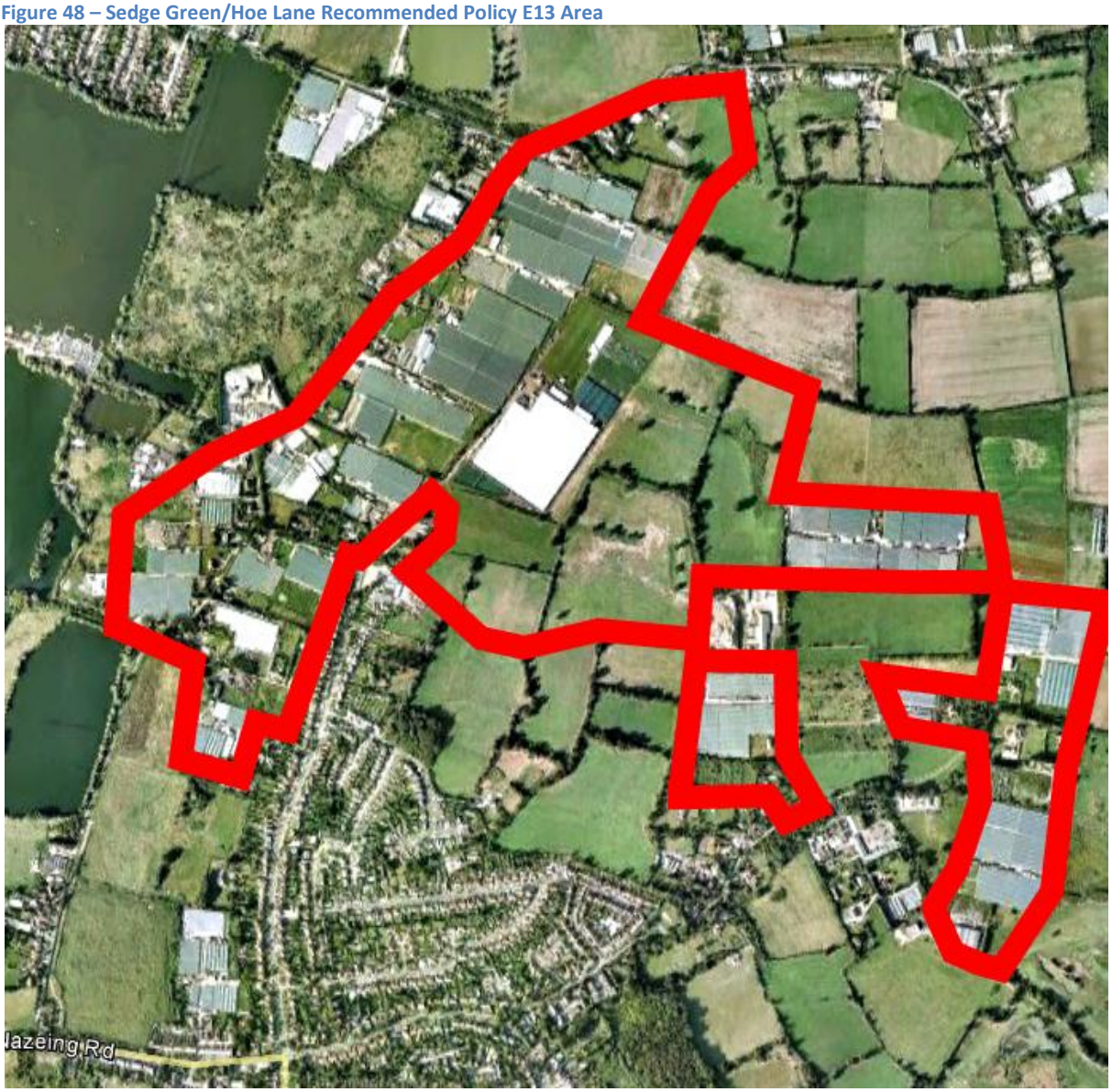


Figure 49 – Paynes Lane Policy E13 Areas

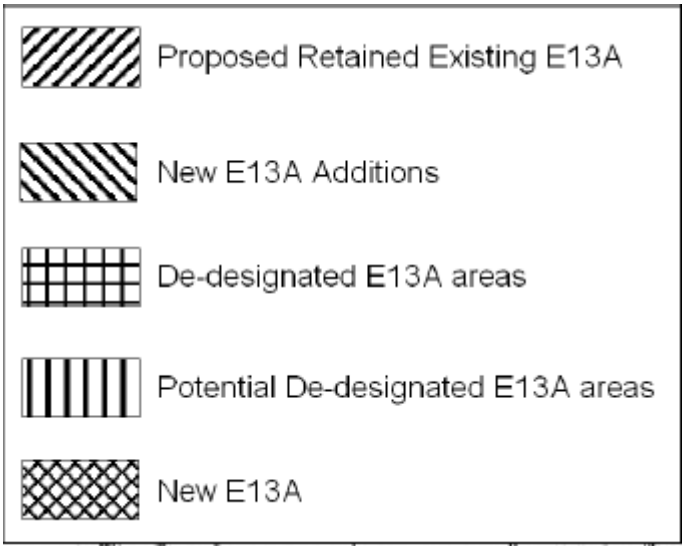
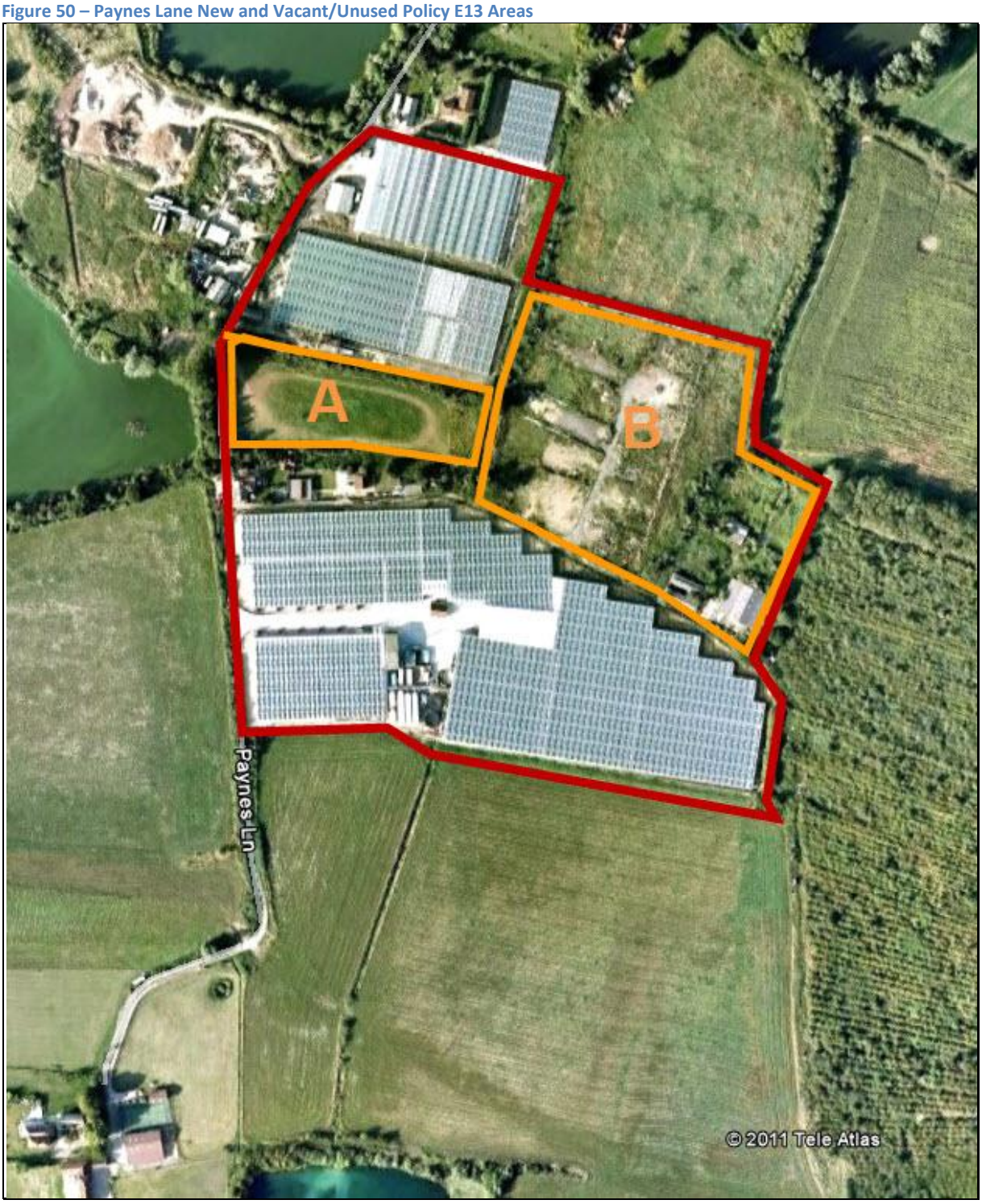


Figure 50 – Paynes Lane New and Vacant/Unused Policy E13 Areas



Area A. Area 0.72 hectares and Area B. Area 3.00 hectares

RECOMMEND DE-DESIGNATE E13A AREAS

Whilst there are about 4 hectares of land that is designated glasshouse land this land is unsuitable for a number of reasons.

The land is in two sections - a western field of about 1 hectare of which about 0.72 hectares could be built and an eastern section of about 3 hectares of which only about 1.8 hectares could be built. Therefore only about 2.5 hectares of glass could be built.

In addition the western field is separated from the glasshouse site to the south by six separately registered land parcels and two strips with no registered title. It would be extremely unlikely that the applicant would be able to successfully connect a glasshouse development on this field to his existing glasshouse development.

A land registry search shows that the eastern section has 9 registered titles and one parcel with no registered title. On enquiry the applicant was told this was in perhaps as many as 25 different ownerships and that there would be difficulties identifying the owners, many of whom had returned to Ireland. On this basis it is not considered that this area to the north of the site has any real prospect of becoming available for development.

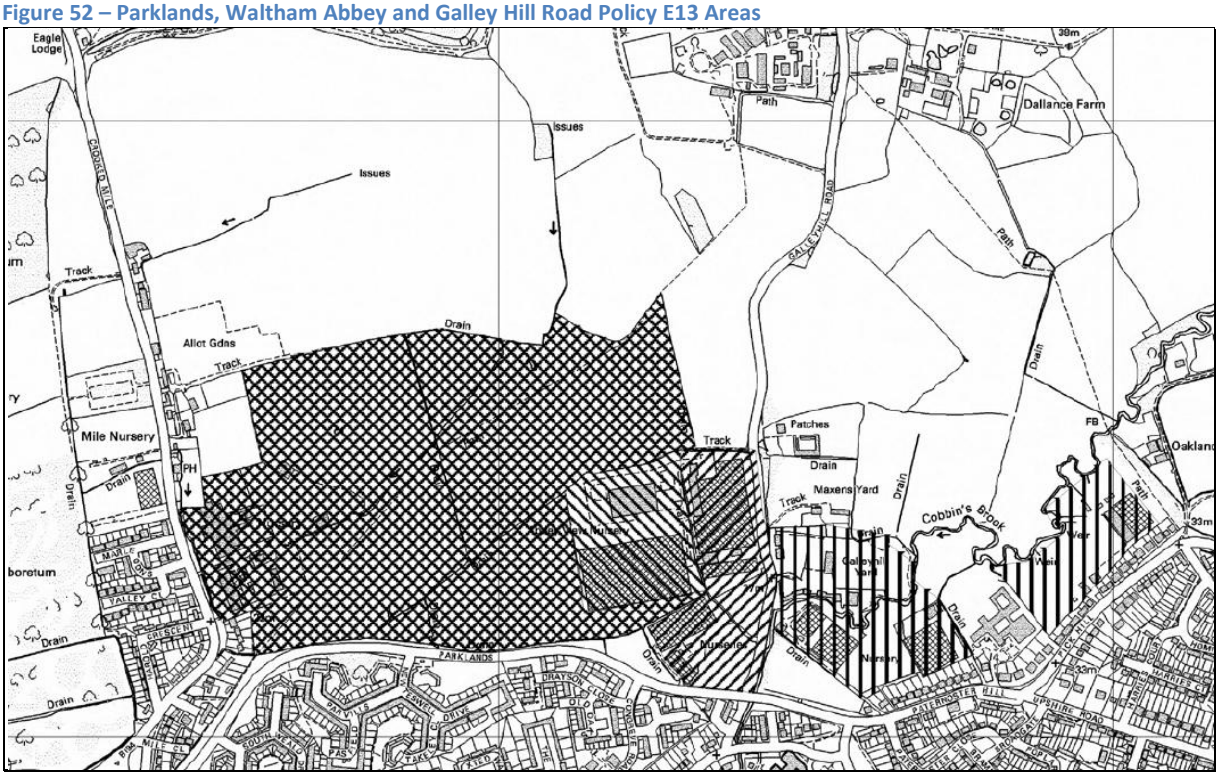
The field to the south was the subject of a planning application for an additional 8.5 ha of glass. Planning application (reference EPF/1181/11) for the construction of 87,119 square metres of glasshouses at Valley Grown Nurseries, Payne's Lane was refused on 24 August 2011. As the proposal for 8.7 hectares of glass could not be described as modest it was deemed that the proposal would have an adverse impact on the open character of the countryside due its scale and was therefore clearly at odds with Policy E13A.

The Council decided to refuse the application. The Council was concerned that the proposal, due to its scale and location, would have a material impact on the openness of the Metropolitan Green Belt, on the amenity of residents through noise and disturbance from traffic. The proposal was considered to be contrary to Policies E13A and E13B(i)

A revised application (EPF/2457/11) on the same site for the same area of glass but with different access was refused on 15 February 2012. The first application was unsuccessfully appealed in May 2012.

Figure 51 – Paynes Lane Recommended Policy E13 Areas

Figure 52 – Parklands, Waltham Abbey and Galley Hill Road Policy E13 Areas



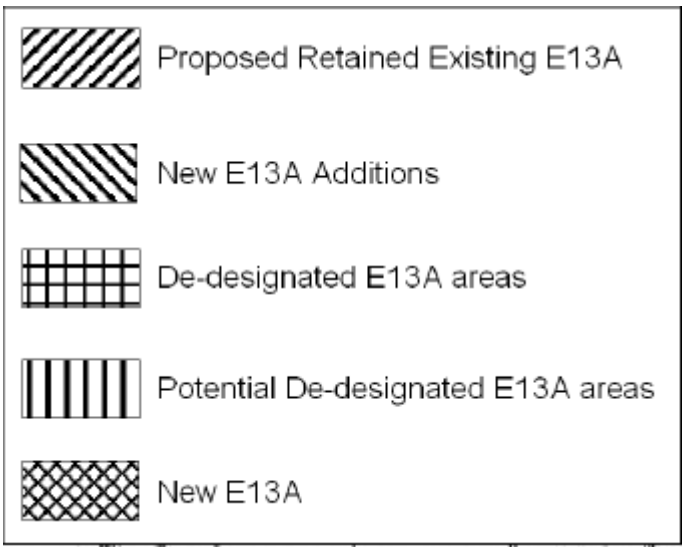
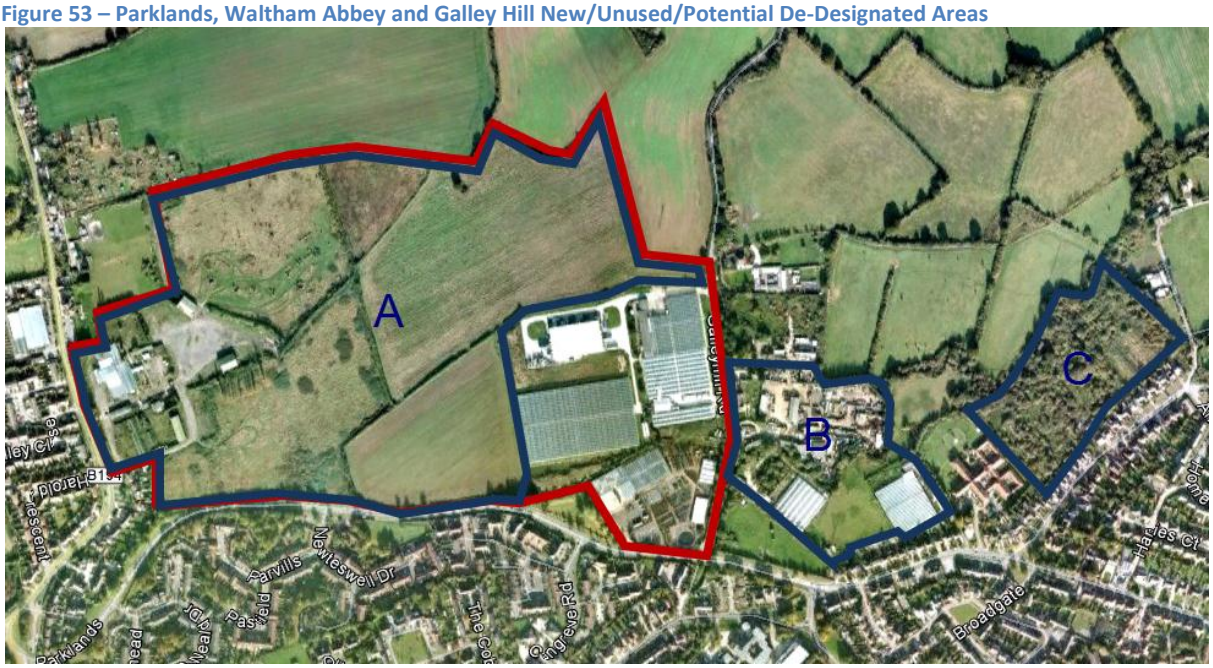


Figure 53 – Parklands, Waltham Abbey and Galley Hill New/Unused/Potential De-Designated Areas



Existing E13A Area

Vacant/Unused or Potential de-designated areas

Area A. Area would be suitable for new glass development. It is large enough, relatively flat with good access. The owner has ambition to secure residential planning consent (being adjacent to Waltham Abbey) and much of the land is let under an Agricultural Holdings Act 1986 tenancy with security of tenure and the tenant would want significant compensation to relinquish the site therefore unlikely to be available, however, this is not recommended for de-designation as, despite the lack of availability it is a logical area for glasshouse expansion. **Area 25.5 hectares**

Area B. Potential de-designated 2006. A local grower has recently acquired the small nursery in the south east of this area and is at present pursuing permission to build in the small area to the north west of the existing glass - to fill in the existing land - and may wish to look for further expansion in adjoining land. There has been substantial investment on site with a gas supply being added and also improved boiler and computer facilities - it is expected that expansion will be pursued to make the investment since site purchase more worthwhile. **Area 5.6 hectares**

Area C. Pickfield Nursery, Pick Hill. Potential de-designated 2006. Site overgrown. Site also has poor access from Pick Hill. **Area 3.15 hectares (RECOMMEND DE-DESIGNATE)**

PARKLANDS: AREA FOR NEW GLASS 5.6 hectares

Figure 54 – Parklands, Waltham Abbey Recommended Policy E13 Areas

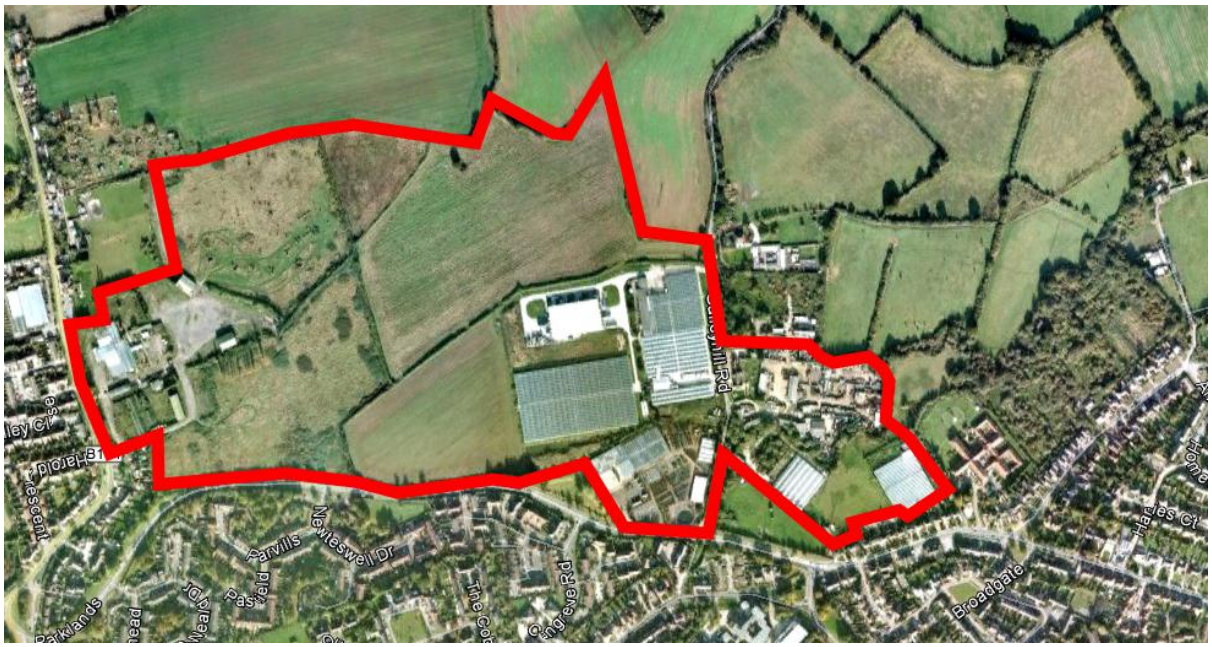
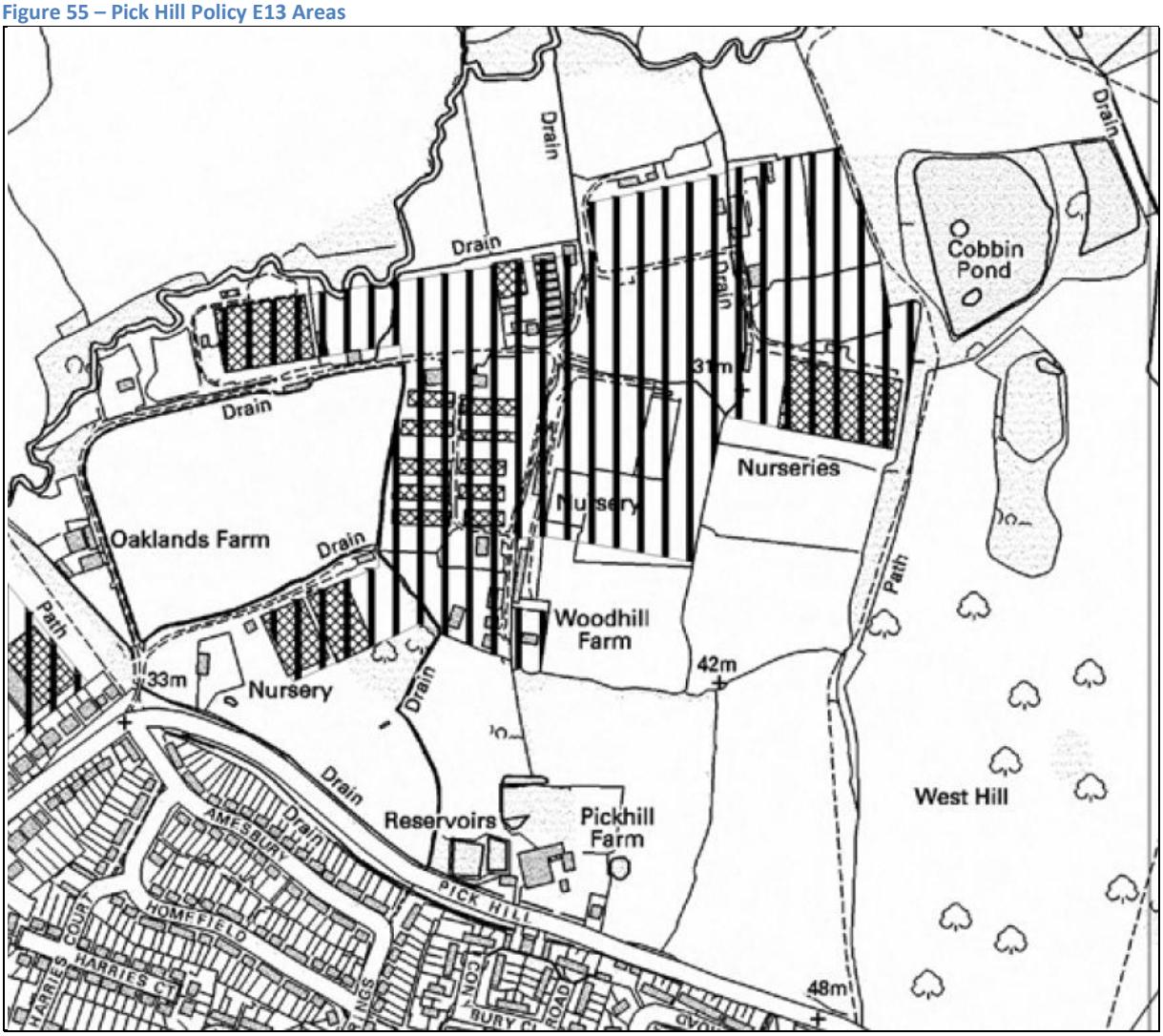


Figure 55 – Pick Hill Policy E13 Areas



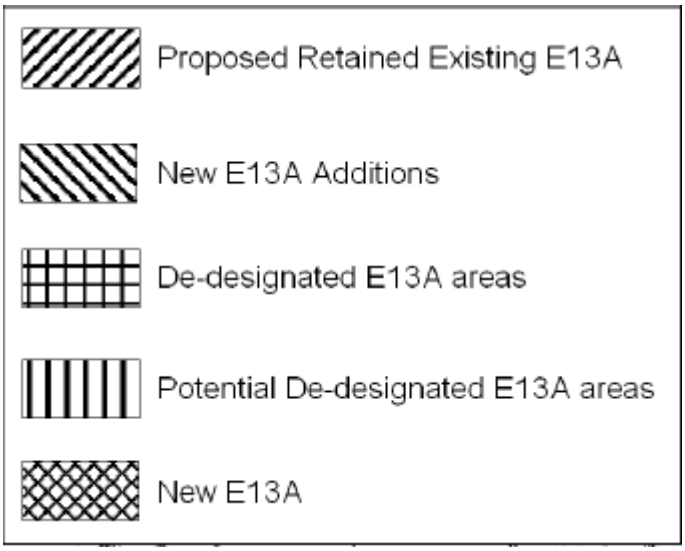
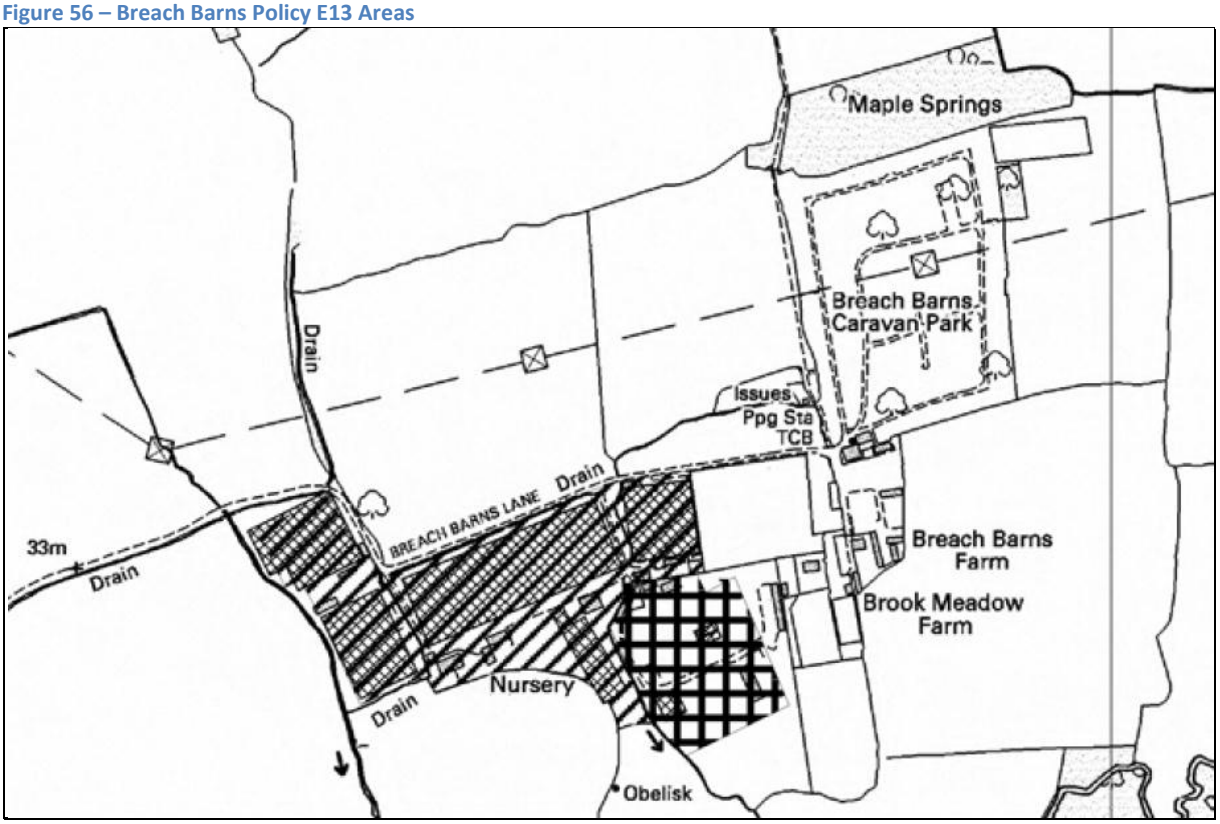


Figure 56 – Breach Barns Policy E13 Areas



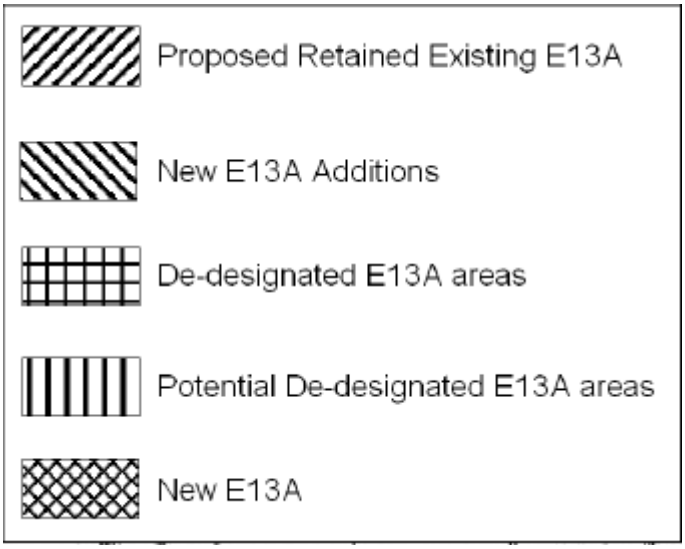
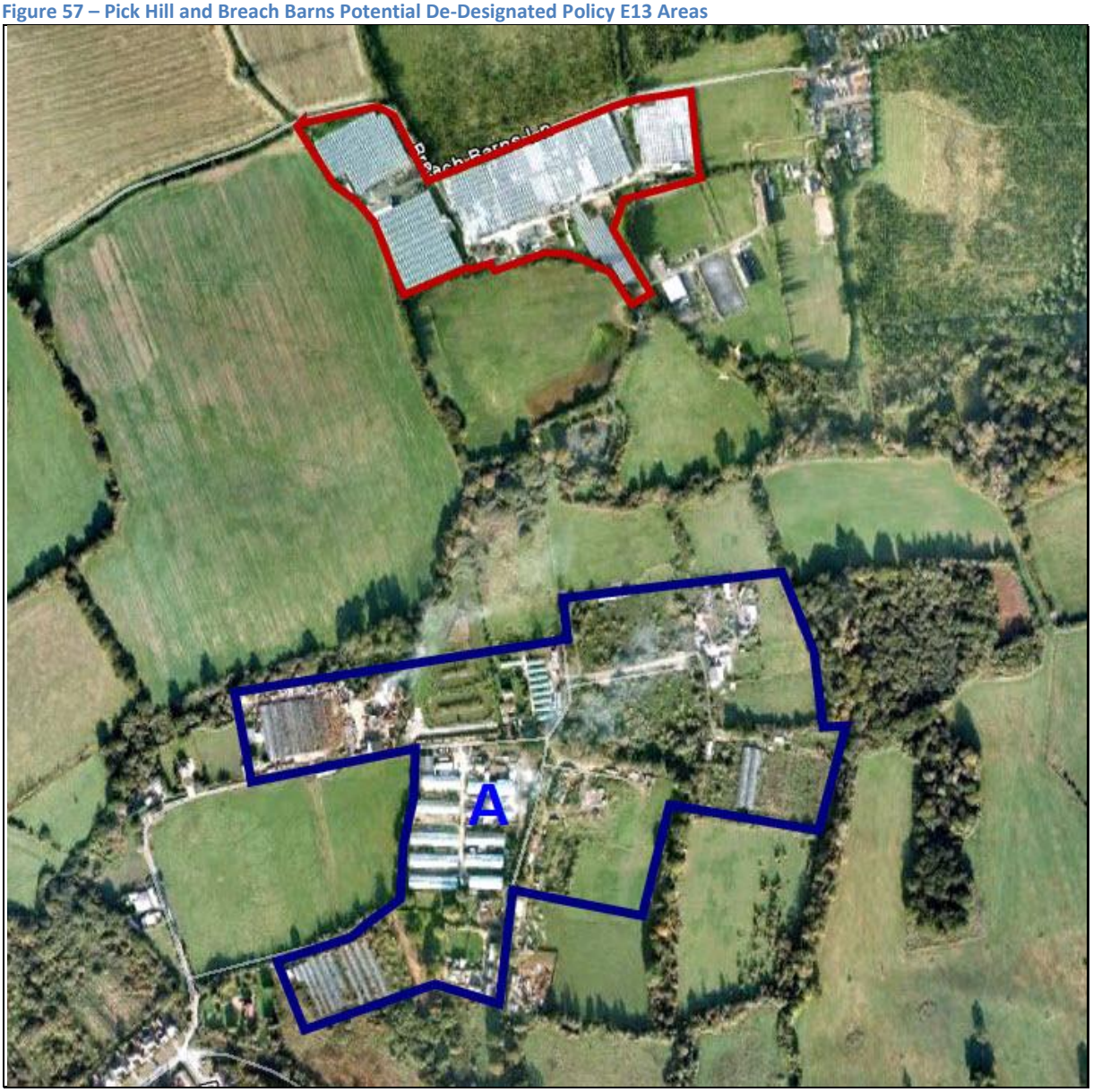


Figure 57 – Pick Hill and Breach Barns Potential De-Designated Policy E13 Areas



Area A. Pick Hill. Potential de-designated 2006. Area contains mostly unauthorised or non-conforming uses and large tracts of abandoned nurseries, now overgrown. Although there are plants in the old glasshouses they are apparently for hire. Planning permission for replacement glass on this site was granted but not implemented. Also, the area has severe vehicular problems through the residential area of Pick Hill itself**. Area 14.88 hectares**

RECOMMEND DE-DESIGNATE E13 AREA

There is no additional available area around Breech Barns, however, as it is currently in use for glasshouses it is not recommended for de-designation.

Figure 58 – Sewardstone (Avey Lane) Policy E13 Area

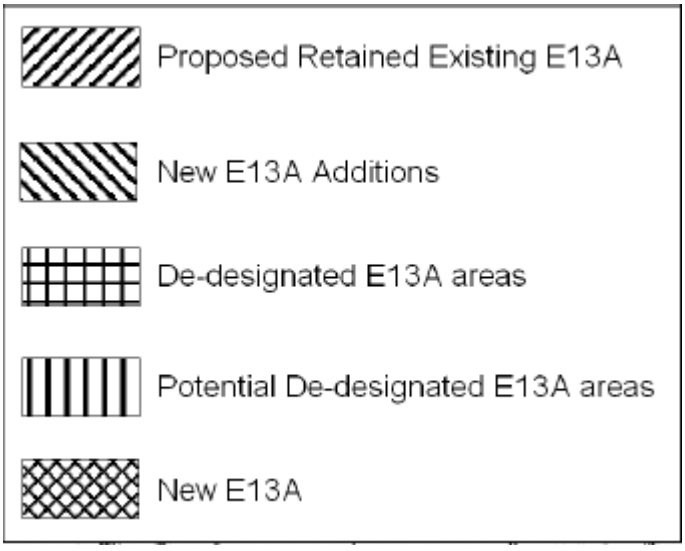


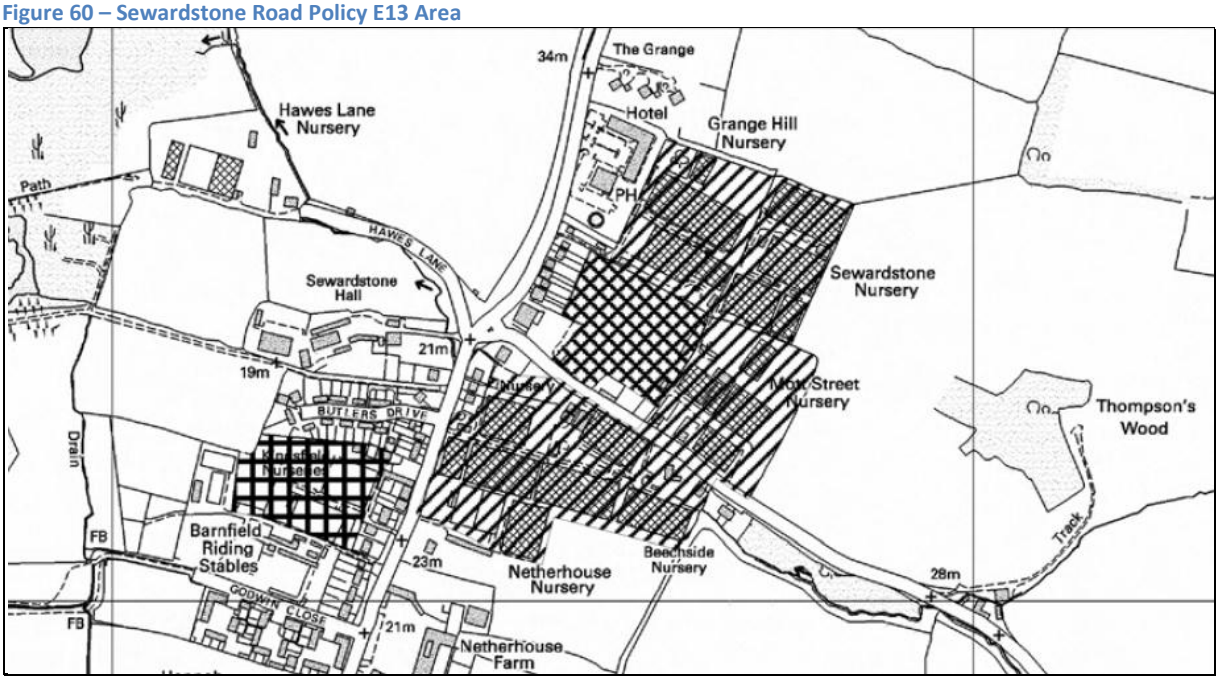
Figure 59 – Sewardstone (Avey Lane) New and Potential De-Designated Policy E13 Areas

Area A. Possible for small scale use by adjacent owner**. Area 0.54 hectares**

Area B. Avey Lane. Potential de-designated site. 2 no. former nurseries in non-conforming use. **Area 2.91 hectare. (RECOMMEND DE-DESIGNATE)**

AREA FOR NEW GLASS 0.54 hectares

Figure 60 – Sewardstone Road Policy E13 Area



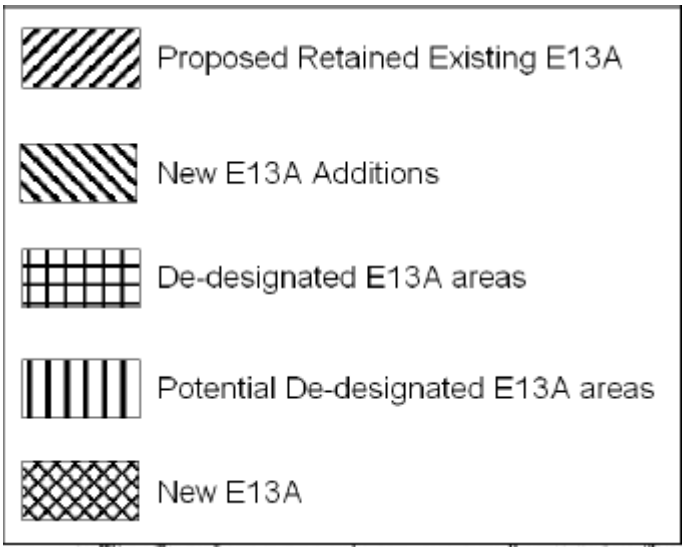


Figure 61 – Sewardstone Road New/Vacant/Unused Policy E13 Areas

Area A. May be subject of objection by Highways. Not occupied by glass, Used by a firm producing turf which might be available for glasshouses. **Area 1.77 hectares**

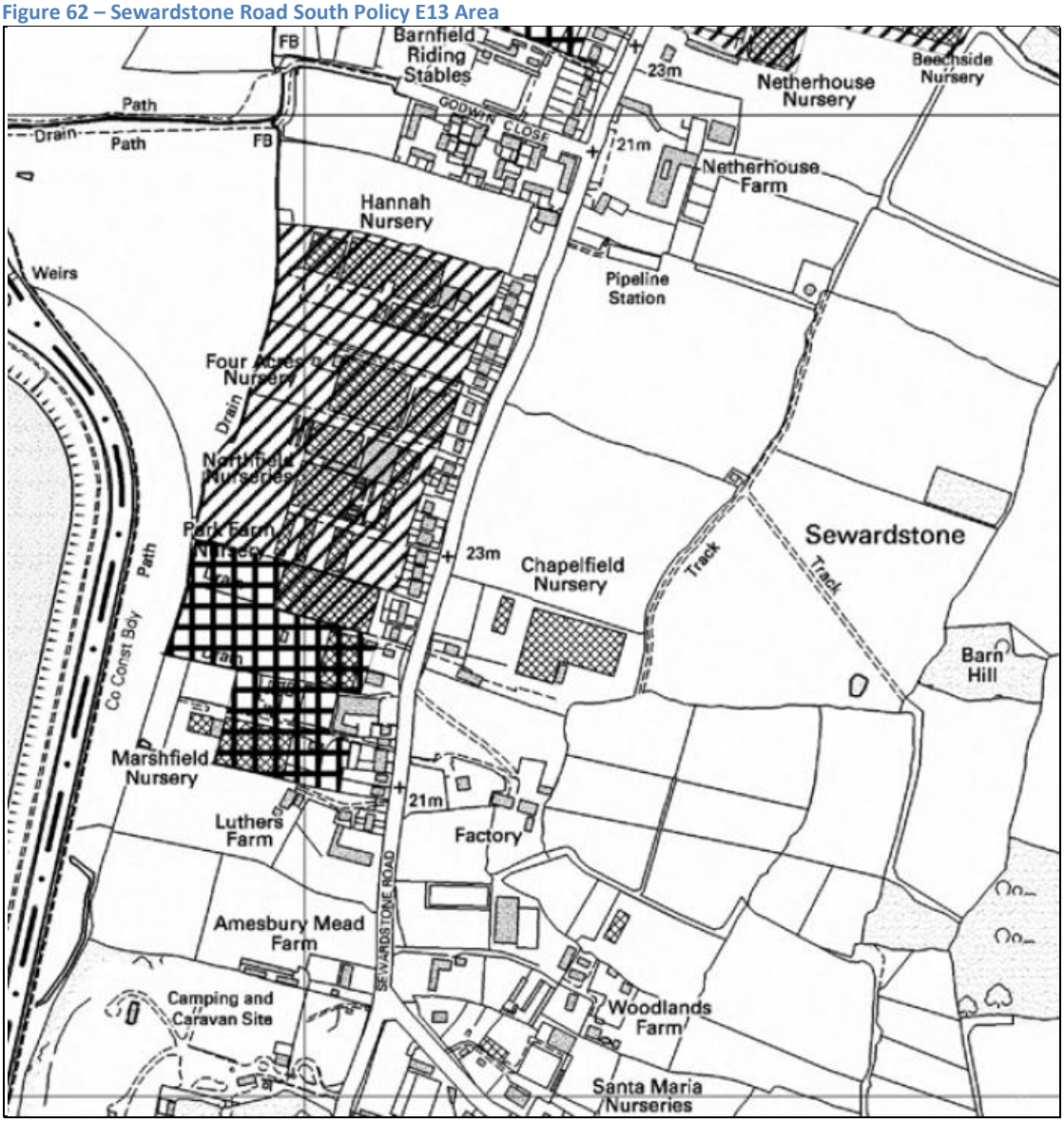
Area B. Northern part of derelict nursery. However, suitable for glass. Would allow expansion to existing glasshouses to the east. Site was not being made available; apparently in the hope of obtaining residential permission. **Area 0.63 hectares**

Area C. Former glasshouses on this area but now open. Suitable for glass. **Area 0.52 hectares**

Area D. Derelict. Suitable for new glass. Could be combined with adjacent areas**. Area 1.70 hectares**

AREA FOR NEW GLASS 4.62 hectares

Figure 62 – Sewardstone Road South Policy E13 Area



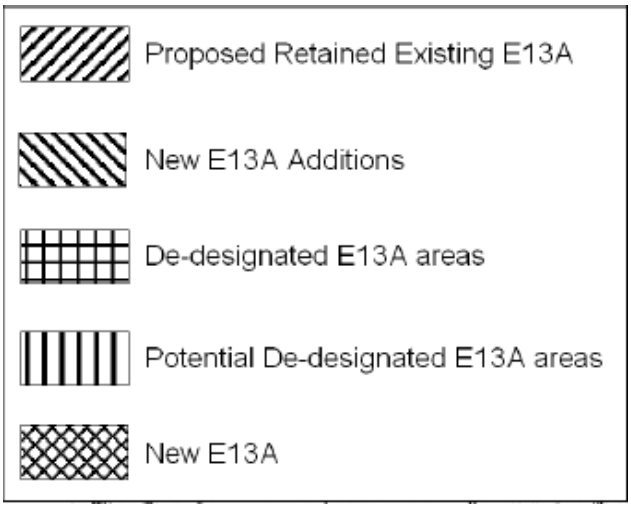


Figure 63 – Sewardstone Road Vacant/Unused Policy E13 Areas

Area A. Sewardstone Road (South). Vacant/unused. Former nursery now demolished. Situated between Northfield Nursery to the south and Hannah Nursery to the north. Nurseries have vehicular access between residential properties fronting Sewardstone Road. **Area 2.31 hectares**

AREA FOR NEW GLASS 2.31 HECTARES