## Introduction

Improved healthcare has led to an ageing population and a further decrease in the number of old age homes threatens to severely burden Britain's current meagre provisions for the elderly. It will be no guerrilla attack however; several institutions have warned us of this possibility including writers for the BMC Geriatrics Journal, the RCN and independent market researchers. There are simply not enough spaces. However, leaving this till the crippling need actually arises will only lead to a hasty construction of grim and cramped cubicle-like living spaces that will agitate the elderly who will then have no choice but to live out their dreary but certainly avoidable fates. Their dreams, of a serene life in the classic English countryside where they can relax, will be quashed, as they look out of their assigned broom cupboard-like living quarters, by the view of concrete, the ceaseless honking of cars and the cacophony only a bustling town centre offers. It does not look promising.

The elderly require care, attention and a quiet place to live the next phase of their lives; they do not deserve a scenario as outlined above especially if it is a scenario that is avoidable. To realise this vision, we presented a viable and achievable proposal to build residential homes amidst the serenity provided by the 15 acre site at Little Warley Farm in Brentwood, three years ago to the Brentwood Borough Council Planning Department as part of SHLAA. The plan envisioned a 150 bed nursing home with state-of-the-art facilities along with roughly 70 full time and 60 part-time staff to medically assist the residents around the clock. This document aims to both address the criticisms received before and to consider the implications of constructing this site against the criteria set forward in the upcoming review of the Local Development Plan.

### 1- Capacity of Key Infrastructure

The primary criticism we received was the 'isolated nature of the location'. Surely, a location that isn't restricted in space and isn't due to its huddled up location in the middle of a town would serve as a more tranquil and spacious place where relaxation, recreation and recovery can all merge together to provide a home instead of a boxed space to habituate in. However, as a nursing home, it is undeniable that the facility requires easy access ways and roads for ambulances, other emergency services and delivery lorries. Our plan allows for three separate access routes to and from junction 29 of M25, A127 and B186. We plan to improve one of the existing routes to the highest standards at our own expense to allow for smooth access; undeniably this will both benefit the purpose of access to the nursing home while simultaneously benefiting the local neighbourhood greatly.

Another access route can be gained by extending a minor extension of the existing slip road on the A127 for which any land required will be granted to the highway agency free of charge. Furthermore, provisions for 50 parking spaces are planned for staff and visitors, including two for disabled drivers and a separate parking area for bicycles. All facilities therefore are indisputably accessible and the nature of the proposed usage will generate significantly less traffic than the battery of cars say an office, sport centre or light industry might attract. This will most surely be appreciated by the local community who are currently enjoying the peaceful nature of the area.

Since, the neighbourhood already has numerous houses and a large commercial health club in the vicinity, key utilities like water and electricity will undoubtedly be easy to connect to the facility using existing infrastructure.

Please refer to Appendix 1 for further details.

**2- Transport: public, walking and cycling provision**

Most services and community facilities are available at a walking distance inside the facility itself, as described in the next section, to aid our residents who may not be able to travel to further distances without supervision due to their health conditions. However, for patients who are able to travel outside the facility and willing to do so, there will be a shuttle bus service available that will drive them to the town centre which is a 15 minute journey approximately. These supervised visits will allow them to access any amenities, that aren't available on the site itself, freely. The shuttle bus services can also be extended to nearby train stations, with journey times less than 15 minutes for national rail stations such as Emerson Park, Brentwood and also London Underground stations like Upminster.

The parking area for cycles will also encourage employees to access the facility by bicycle which is possible due to the variety of roads which lead to the facility – by widening the roads suitably, walking may also be a valid and reliable option to access the facility. It is important, however, to reiterate that, since this facility is primarily a nursing home for the elderly, access to cycling and walking routes, while available, aren't entirely necessary due to the shuttle service system which will provide an easier and more comfortable means to access places outside the nursing home.

**3- Access to services, such as schools, shops, GPs and community facilities**

The lack of community facilities is another criticism that emerged. Therefore, it is necessary to reiterate that the considerable dimensions of this site due to its location will allow the nursing home

to be a compact community centre on its own with a wide range of amenities available including shops, GP surgeries, a chemist, post office and even a place of worship. However, the nursing home aims to increase the residents' worth by elevating them from simply passive recipients of care to independent individuals who retain control over their lives by having both immediate access to most amenities and providing a shuttle bus service to the town centre in less than 15 minutes in case they require something that isn't available in the unit itself. There is also a church, a racquet club and a health club which offers further facilities like a gym, swimming pools, group exercise classes, tennis courts and a relaxing café, all easily accessible within walking distance, which the residents can visit without having to rely on the shuttle bus service.

We'd like to provide a unique, inclusive, non-institutional environment for the residents that are self-contained, with a scope for stimulating friendships with other residents and recreational activities in the large space already available on the site itself while offering further freedom to access a different environment for a short period of time.

**4- Availability of land in sustainable locations / Impact on Green Belt**

The currently vacant 15 acre site available beside the peaceful Little Warley Hall Farm is large enough to realistically construct and maintain a 150 bed nursing home with all the extra services and community facilities mentioned above which, as statistics show, is desperately needed in the near future due to Britain's ageing population. However, a major criticism of the location of this proposed site was its designation as a green-belt site. While, the concern over losing 15 acres of empty greenery which currently provides no economic benefit is questionable in itself, surely a small, cramped building in the middle of a busy metropolitan area will only regress the quality of geriatric care to neglect and impasse. This blanket approach of denying all green-belt areas planning permission does not take a sensitive approach to the fact that elderly residents want a home that provides independence and an ability to maintain friendships and family contacts while resting adequately in tranquillity: not simply a box to live in which provides health or social care.

Furthermore, in the current tough economic climate, the original aim of the green belt to prevent urban sprawl is outdated for developing on these opportune lands will create a multitude of economic benefits and opportunities. In our own proposal, we envision that by creating 150 living spaces for the elderly, we also provide approximately 70 full-time and 60 part-time jobs due to the facility's labour intensive nature. The employment opportunities presented by this project encompass a range of occupations from highly professional staff, skilled social workers to manual workers and drivers. However, the opportunities created have no direct negative impact to the land

itself and arguably is a far more sustainable and eco-friendly approach development compared to a concrete jungle of offices or a smoke emitting warehouse or factory. It seems counterproductive therefore for the council to disagree with this proposal when the development of the nursing home incurs these many unequivocal community benefits for Brentwood as a whole.

## 5- Environmental constraints: Flooding

Surface water, or 'pluvial flooding', is likely to be the most significant cause of flooding in Brentwood in the coming years. Due to the large amount of man-made surfaces that are indispensable for the building of this project, a variety of solutions were generated through research to help combat the situation. Firstly, the high infiltration potential of soils makes Sustainable Urban Drainage Systems (SUDS) a possibly effective solution that can be implemented to reduce the effects of flooding in case of intense rainfall. By diverting and managing the storm water run-off from roof tops, roadways and other sealed surfaces to in-ground attenuation tanks to temporarily store the storm water, the complete inundation of the local sewer system is prevented. The water is then released in manageable amounts to ensure that it is absorbed at a possible pace by the soil. The construction of this system is fairly flexible and fast as the facilities are created from pre-formed interlocking lightweight modules which are encapsulated by a water tight geomembrane.

Another possible solution, which may be implemented on the proposed site, is a green roof which is where a roof of a building is partially or completely covered with vegetation planted over a waterproof membrane with a growing medium. While its primary purpose would be to absorb rainwater to avoid a large amount of storm water run-off, it also provides additional benefits like insulation, habitat creation for the wildlife and cooler air temperatures for the surroundings. Currently, Elm Park Library, in Havering, uses this system and has been hailed as a 'community asset' due to its unique mixture of being sustainable and energy efficient along with being visually interesting with the colours naturally changing with the seasons. Thus, by substituting the existing patch of green land with the greenery of this solution, a more visually appealing usage is possible for the currently vacant land; modern buildings no longer have to be synonymous with blocks of monotonous and monstrous buildings that envelop the land and obstruct the greenery.

The installation of SUDS and green roofs are possible and effective solutions and were an important consideration in our project as we are aware that the problem may become more serious as a result of climate change and lead to increasingly intense rainfall events, particularly in winter. However, it is important to consider that currently, the only area that has been highlighted to have a possibly

significant increase in flooding is the area along the Borough's north-western boundary and thus, the area proposed for the nursing home is relatively safe in terms of flooding damage.

## 6- Landscape Sensitivity

Please refer to Appendix 2

## Appendix 1

Topographical Surveys

What We Do - Cornerstone Projects, Underground Services Search**Underground Utilities Plan Provision** is a service for anyone needing to locate buried utilities such as electricity cables, gas pipes, water mains, sewers etc. This may be necessary at the acquisition, feasibility, design or construction phase of a project.

We will collate information from all the relevant utility companies on your behalf and compile a pack of information and plans for each site. This pack will be supplied as a hard copy and emailed .pdf files.

Any organisation that carries out construction or building works involving sub-surface excavation works are required by the Health and Safety Executive to obtain information on buried utilities, services and apparatus that may exist before starting work. (See www.hse.gov.uk).

Knowing the whereabouts of buried plant is important not only from a health and safety viewpoint but is necessary to avoid potentially expensive damage to underground plant as well as the related cost of the delay and disruption.

Our service is of benefit to many different types of companies including:

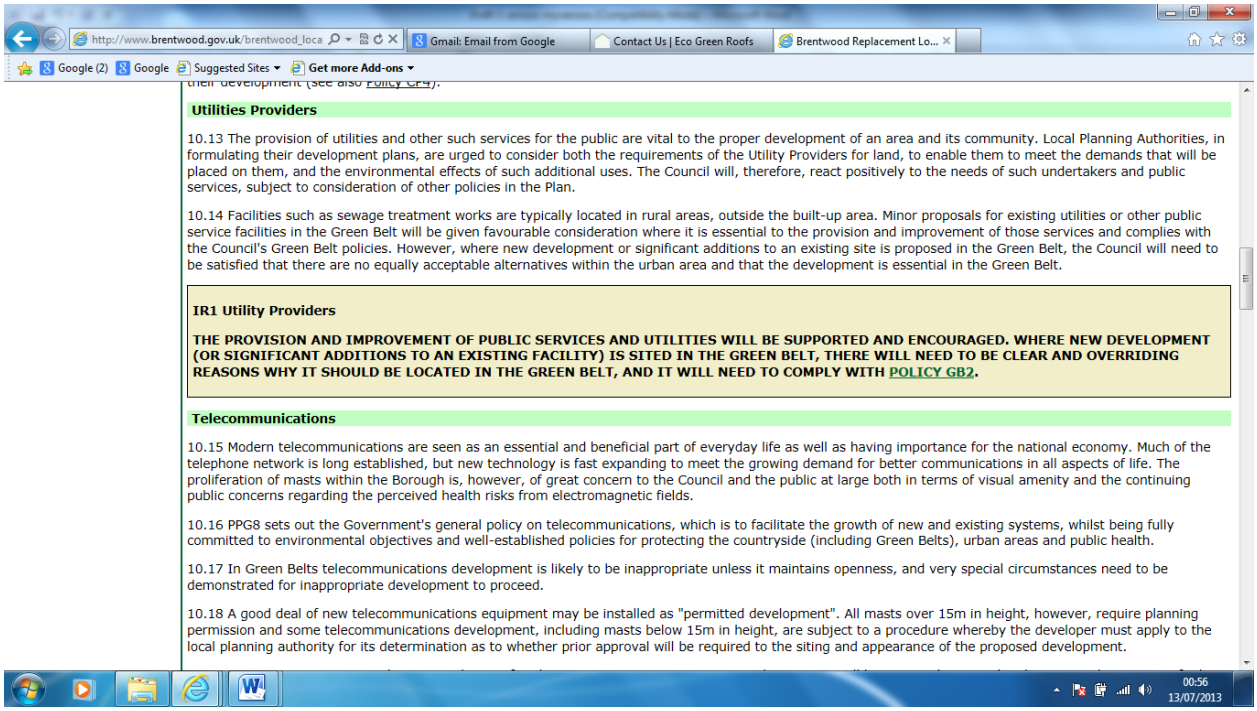
- street works contractors
- highways contractors
- telecommunications acquisition, planning or design contractors
- architects
- builders
- surveyors
- construction companies
- anybody intending to carry out an excavation

Information will be provided for the following services as applicable:

- Water
- Gas
- Electricity
- Sewers
- Telecoms
- Petroleum pipes
- Cable

If you have any special requirements we can also provide these - for example, mining reports

## Brentwood Replacement Local Plan



**Utilities Providers**

10.13 The provision of utilities and other such services for the public are vital to the proper development of an area and its community. Local Planning Authorities, in formulating their development plans, are urged to consider both the requirements of the Utility Providers for land, to enable them to meet the demands that will be placed on them, and the environmental effects of such additional uses. The Council will, therefore, react positively to the needs of such undertakers and public services, subject to consideration of other policies in the Plan.

10.14 Facilities such as sewage treatment works are typically located in rural areas, outside the built-up area. Minor proposals for existing utilities or other public service facilities in the Green Belt will be given favourable consideration where it is essential to the provision and improvement of those services and complies with the Council's Green Belt policies. However, where new development or significant additions to an existing site is proposed in the Green Belt, the Council will need to be satisfied that there are no equally acceptable alternatives within the urban area and that the development is essential in the Green Belt.

**IR1 Utility Providers**

**THE PROVISION AND IMPROVEMENT OF PUBLIC SERVICES AND UTILITIES WILL BE SUPPORTED AND ENCOURAGED. WHERE NEW DEVELOPMENT (OR SIGNIFICANT ADDITIONS TO AN EXISTING FACILITY) IS SITED IN THE GREEN BELT, THERE WILL NEED TO BE CLEAR AND OVERRIDING REASONS WHY IT SHOULD BE LOCATED IN THE GREEN BELT, AND IT WILL NEED TO COMPLY WITH POLICY GB2.**

**Telecommunications**

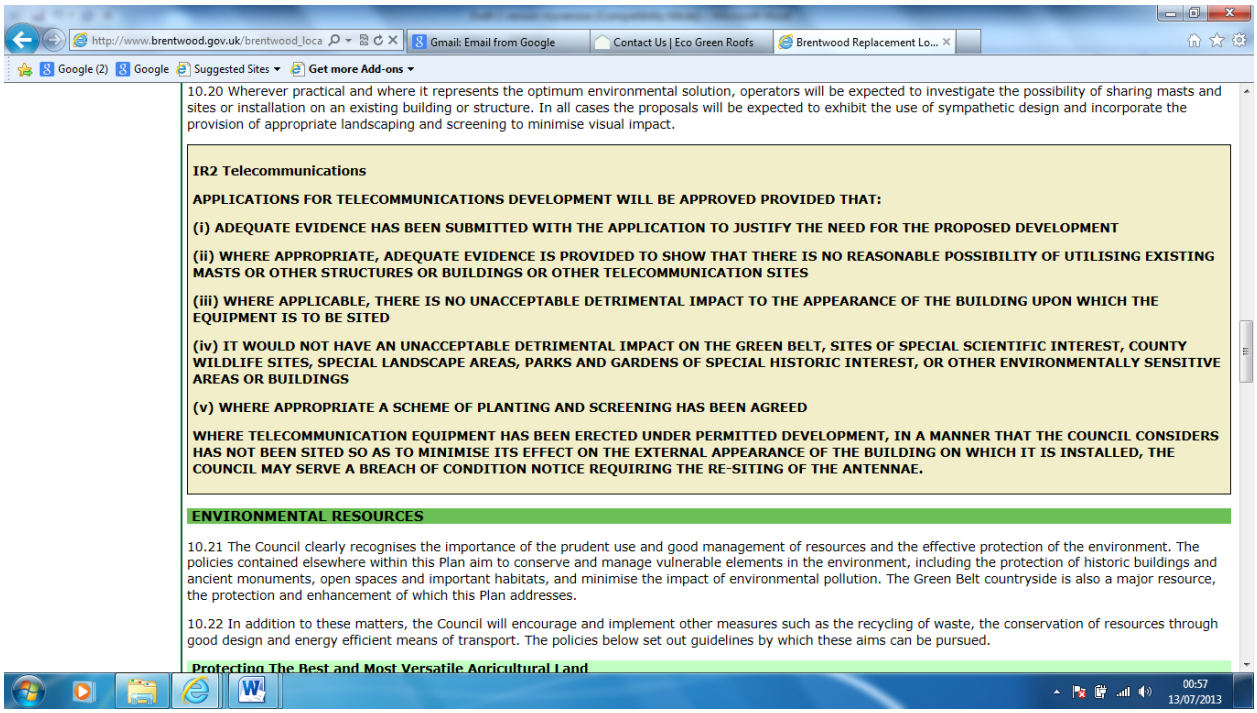
10.15 Modern telecommunications are seen as an essential and beneficial part of everyday life as well as having importance for the national economy. Much of the telephone network is long established, but new technology is fast expanding to meet the growing demand for better communications in all aspects of life. The proliferation of masts within the Borough is, however, of great concern to the Council and the public at large both in terms of visual amenity and the continuing public concerns regarding the perceived health risks from electromagnetic fields.

10.16 PPG8 sets out the Government's general policy on telecommunications, which is to facilitate the growth of new and existing systems, whilst being fully committed to environmental objectives and well-established policies for protecting the countryside (including Green Belts), urban areas and public health.

10.17 In Green Belts telecommunications development is likely to be inappropriate unless it maintains openness, and very special circumstances need to be demonstrated for inappropriate development to proceed.

10.18 A good deal of new telecommunications equipment may be installed as "permitted development". All masts over 15m in height, however, require planning permission and some telecommunications development, including masts below 15m in height, are subject to a procedure whereby the developer must apply to the local planning authority for its determination as to whether prior approval will be required to the siting and appearance of the proposed development.

Information about utilities in green belt areas



10.20 Wherever practical and where it represents the optimum environmental solution, operators will be expected to investigate the possibility of sharing masts and sites or installation on an existing building or structure. In all cases the proposals will be expected to exhibit the use of sympathetic design and incorporate the provision of appropriate landscaping and screening to minimise visual impact.

**IR2 Telecommunications**

**APPLICATIONS FOR TELECOMMUNICATIONS DEVELOPMENT WILL BE APPROVED PROVIDED THAT:**

**(i) ADEQUATE EVIDENCE HAS BEEN SUBMITTED WITH THE APPLICATION TO JUSTIFY THE NEED FOR THE PROPOSED DEVELOPMENT**

**(ii) WHERE APPROPRIATE, ADEQUATE EVIDENCE IS PROVIDED TO SHOW THAT THERE IS NO REASONABLE POSSIBILITY OF UTILISING EXISTING MASTS OR OTHER STRUCTURES OR BUILDINGS OR OTHER TELECOMMUNICATION SITES**

**(iii) WHERE APPLICABLE, THERE IS NO UNACCEPTABLE DETRIMENTAL IMPACT TO THE APPEARANCE OF THE BUILDING UPON WHICH THE EQUIPMENT IS TO BE SITED**

**(iv) IT WOULD NOT HAVE AN UNACCEPTABLE DETRIMENTAL IMPACT ON THE GREEN BELT, SITES OF SPECIAL SCIENTIFIC INTEREST, COUNTY WILDLIFE SITES, SPECIAL LANDSCAPE AREAS, PARKS AND GARDENS OF SPECIAL HISTORIC INTEREST, OR OTHER ENVIRONMENTALLY SENSITIVE AREAS OR BUILDINGS**

**(v) WHERE APPROPRIATE A SCHEME OF PLANTING AND SCREENING HAS BEEN AGREED**

**WHERE TELECOMMUNICATION EQUIPMENT HAS BEEN ERECTED UNDER PERMITTED DEVELOPMENT, IN A MANNER THAT THE COUNCIL CONSIDERS HAS NOT BEEN SITED SO AS TO MINIMISE ITS EFFECT ON THE EXTERNAL APPEARANCE OF THE BUILDING ON WHICH IT IS INSTALLED, THE COUNCIL MAY SERVE A BREACH OF CONDITION NOTICE REQUIRING THE RE-SITING OF THE ANTENNAE.**

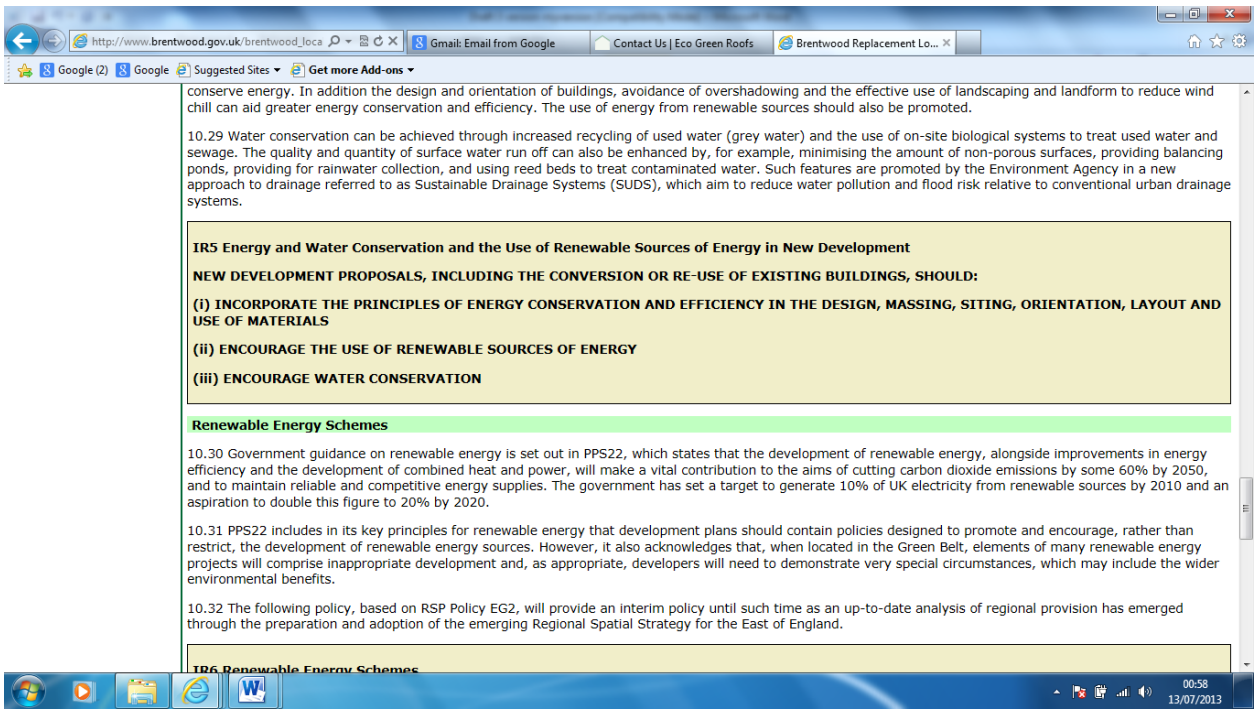
**ENVIRONMENTAL RESOURCES**

10.21 The Council clearly recognises the importance of the prudent use and good management of resources and the effective protection of the environment. The policies contained elsewhere within this Plan aim to conserve and manage vulnerable elements in the environment, including the protection of historic buildings and ancient monuments, open spaces and important habitats, and minimise the impact of environmental pollution. The Green Belt countryside is also a major resource, the protection and enhancement of which this Plan addresses.

10.22 In addition to these matters, the Council will encourage and implement other measures such as the recycling of waste, the conservation of resources through good design and energy efficient means of transport. The policies below set out guidelines by which these aims can be pursued.

**Protecting The Best and Most Versatile Agricultural Land**

Telecommunications applications would be approved



conserve energy. In addition the design and orientation of buildings, avoidance of overshadowing and the effective use of landscaping and landform to reduce wind chill can aid greater energy conservation and efficiency. The use of energy from renewable sources should also be promoted.

10.29 Water conservation can be achieved through increased recycling of used water (grey water) and the use of on-site biological systems to treat used water and sewage. The quality and quantity of surface water run off can also be enhanced by, for example, minimising the amount of non-porous surfaces, providing balancing ponds, providing for rainwater collection, and using reed beds to treat contaminated water. Such features are promoted by the Environment Agency in a new approach to drainage referred to as Sustainable Drainage Systems (SUDS), which aim to reduce water pollution and flood risk relative to conventional urban drainage systems.

**IR5 Energy and Water Conservation and the Use of Renewable Sources of Energy in New Development**

**NEW DEVELOPMENT PROPOSALS, INCLUDING THE CONVERSION OR RE-USE OF EXISTING BUILDINGS, SHOULD:**

**(i) INCORPORATE THE PRINCIPLES OF ENERGY CONSERVATION AND EFFICIENCY IN THE DESIGN, MASSING, SITING, ORIENTATION, LAYOUT AND USE OF MATERIALS**

**(ii) ENCOURAGE THE USE OF RENEWABLE SOURCES OF ENERGY**

**(iii) ENCOURAGE WATER CONSERVATION**

**Renewable Energy Schemes**

10.30 Government guidance on renewable energy is set out in PPS22, which states that the development of renewable energy, alongside improvements in energy efficiency and the development of combined heat and power, will make a vital contribution to the aims of cutting carbon dioxide emissions by some 60% by 2050, and to maintain reliable and competitive energy supplies. The government has set a target to generate 10% of UK electricity from renewable sources by 2010 and an aspiration to double this figure to 20% by 2020.

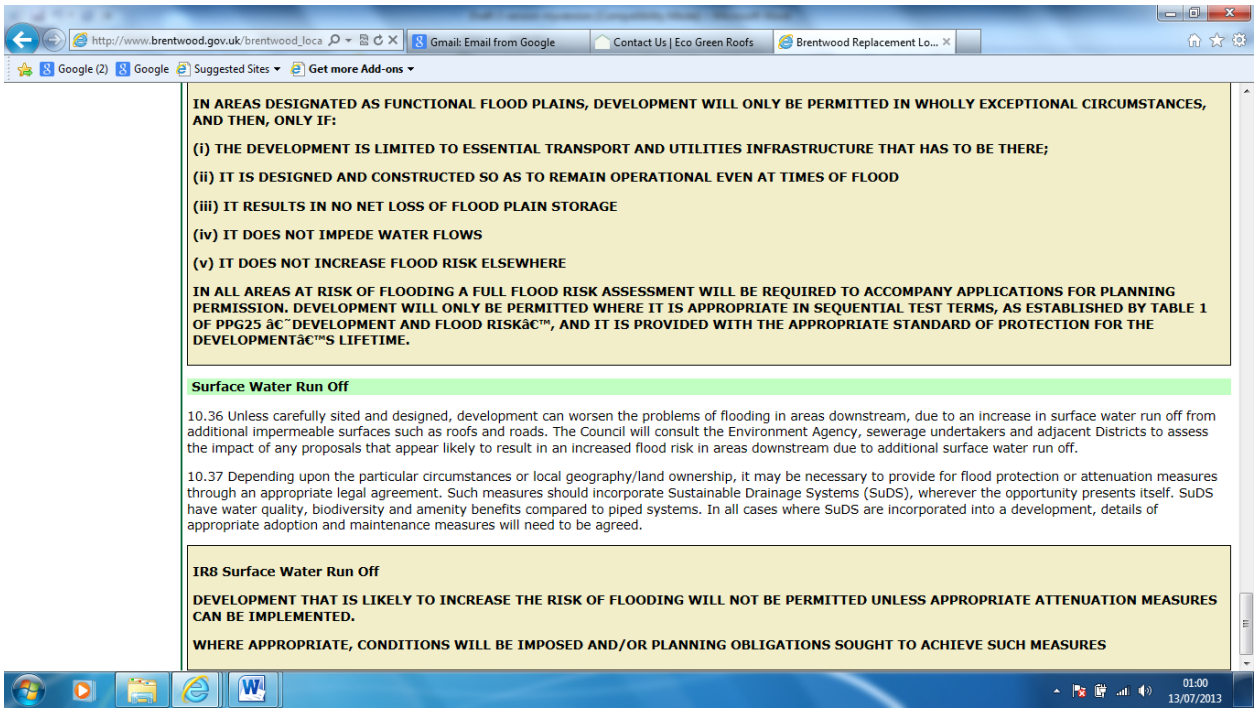
10.31 PPS22 includes in its key principles for renewable energy that development plans should contain policies designed to promote and encourage, rather than restrict, the development of renewable energy sources. However, it also acknowledges that, when located in the Green Belt, elements of many renewable energy projects will comprise inappropriate development and, as appropriate, developers will need to demonstrate very special circumstances, which may include the wider environmental benefits.

10.32 The following policy, based on RSP Policy EG2, will provide an interim policy until such time as an up-to-date analysis of regional provision has emerged through the preparation and adoption of the emerging Regional Spatial Strategy for the East of England.

**IR6 Renewable Energy Schemes**

All about renewable energy which needs to be used in all green belt developments

[Brentwood Replacement Local Plan]



**IN AREAS DESIGNATED AS FUNCTIONAL FLOOD PLAINS, DEVELOPMENT WILL ONLY BE PERMITTED IN WHOLLY EXCEPTIONAL CIRCUMSTANCES, AND THEN, ONLY IF:**

**(i) THE DEVELOPMENT IS LIMITED TO ESSENTIAL TRANSPORT AND UTILITIES INFRASTRUCTURE THAT HAS TO BE THERE;**

**(ii) IT IS DESIGNED AND CONSTRUCTED SO AS TO REMAIN OPERATIONAL EVEN AT TIMES OF FLOOD**

**(iii) IT RESULTS IN NO NET LOSS OF FLOOD PLAIN STORAGE**

**(iv) IT DOES NOT IMPEDE WATER FLOWS**

**(v) IT DOES NOT INCREASE FLOOD RISK ELSEWHERE**

**IN ALL AREAS AT RISK OF FLOODING A FULL FLOOD RISK ASSESSMENT WILL BE REQUIRED TO ACCOMPANY APPLICATIONS FOR PLANNING PERMISSION. DEVELOPMENT WILL ONLY BE PERMITTED WHERE IT IS APPROPRIATE IN SEQUENTIAL TEST TERMS, AS ESTABLISHED BY TABLE 1 OF PPG25 â€˜DEVELOPMENT AND FLOOD RISKâ€™, AND IT IS PROVIDED WITH THE APPROPRIATE STANDARD OF PROTECTION FOR THE DEVELOPMENTâ€™S LIFETIME.**

**Surface Water Run Off**

10.36 Unless carefully sited and designed, development can worsen the problems of flooding in areas downstream, due to an increase in surface water run off from additional impermeable surfaces such as roofs and roads. The Council will consult the Environment Agency, sewerage undertakers and adjacent Districts to assess the impact of any proposals that appear likely to result in an increased flood risk in areas downstream due to additional surface water run off.

10.37 Depending upon the particular circumstances or local geography/land ownership, it may be necessary to provide for flood protection or attenuation measures through an appropriate legal agreement. Such measures should incorporate Sustainable Drainage Systems (SuDS), wherever the opportunity presents itself. SuDS have water quality, biodiversity and amenity benefits compared to piped systems. In all cases where SuDS are incorporated into a development, details of appropriate adoption and maintenance measures will need to be agreed.

**IR8 Surface Water Run Off**

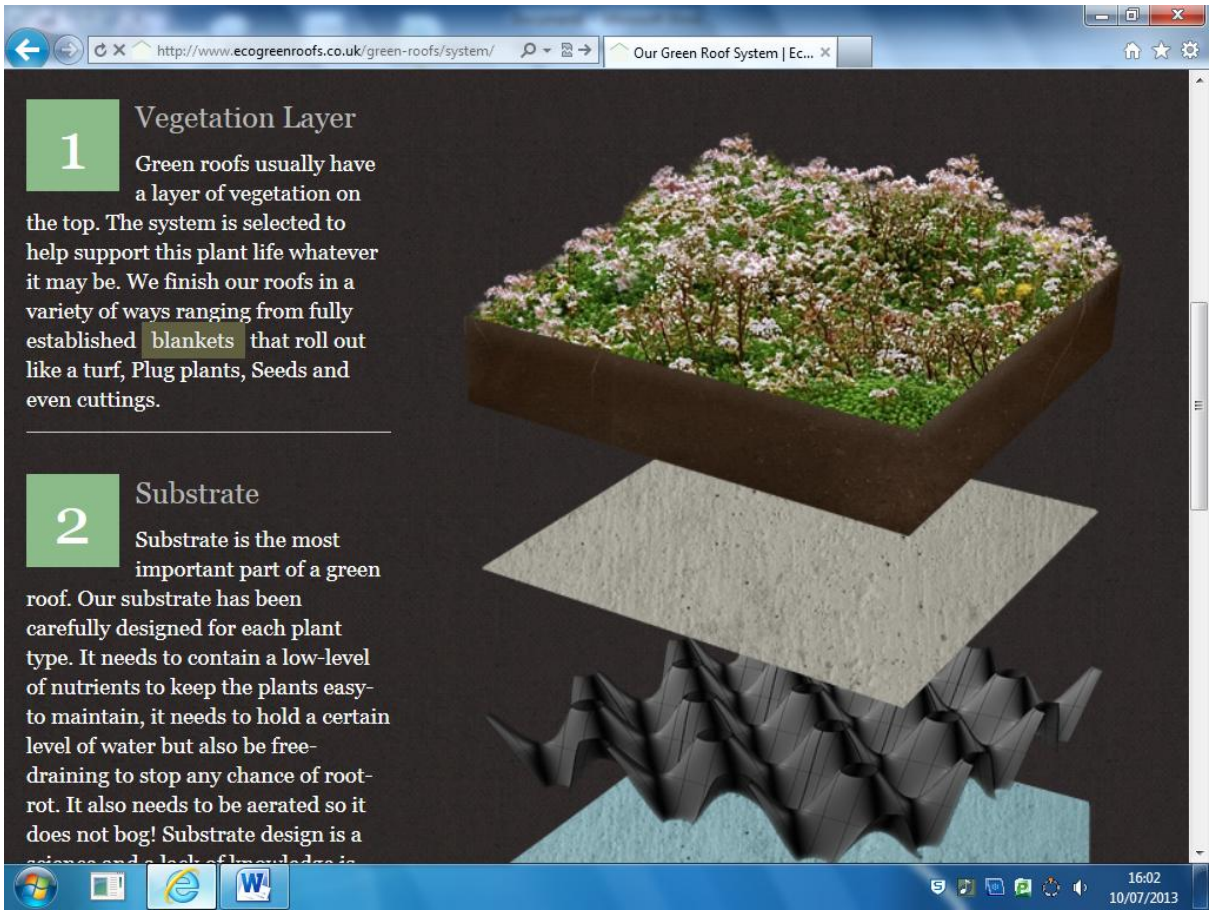
**DEVELOPMENT THAT IS LIKELY TO INCREASE THE RISK OF FLOODING WILL NOT BE PERMITTED UNLESS APPROPRIATE ATTENUATION MEASURES CAN BE IMPLEMENTED.**

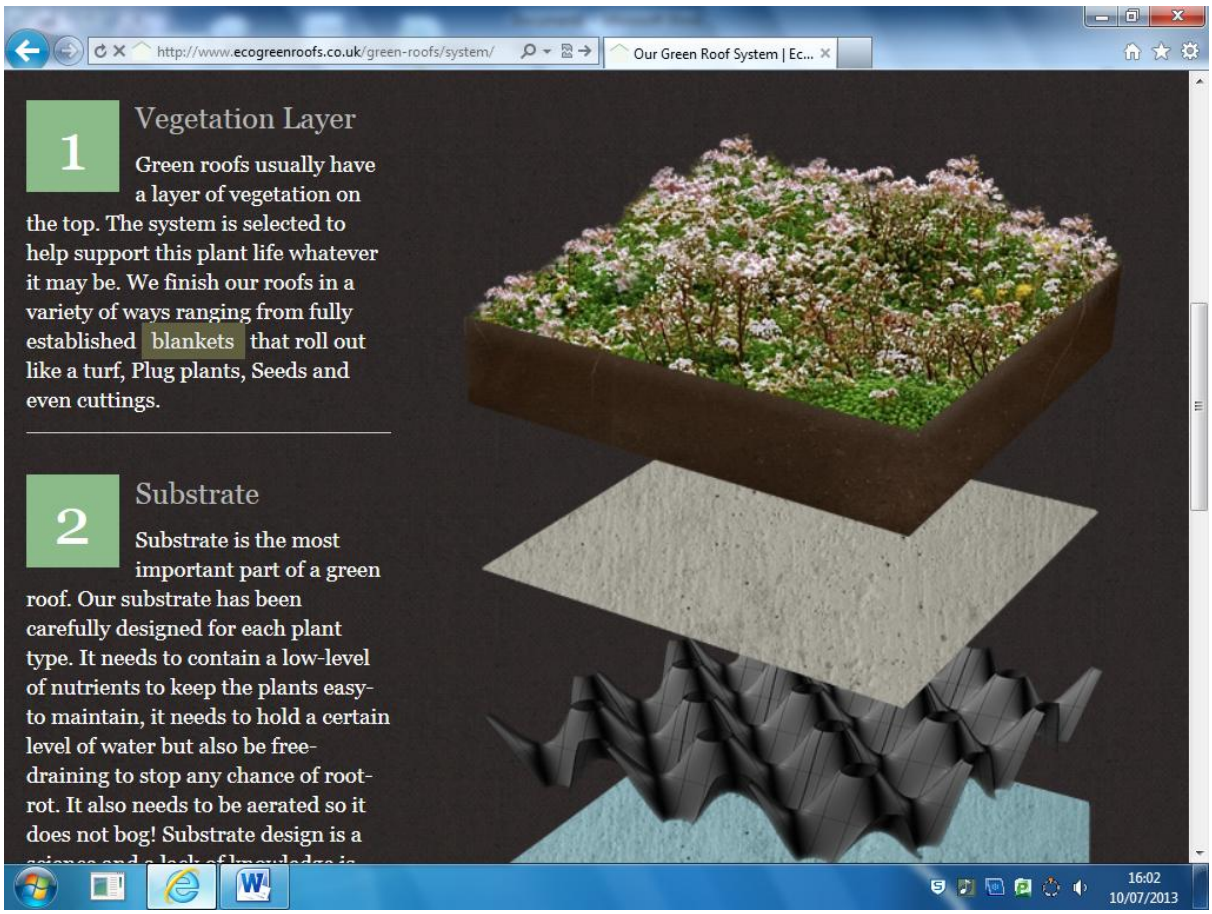
**WHERE APPROPRIATE, CONDITIONS WILL BE IMPOSED AND/OR PLANNING OBLIGATIONS SOUGHT TO ACHIEVE SUCH MEASURES**

**Appendix 2:**

**Landscape Sensitivity**

**This is a company which is actually in Brentwood that specialises in green roofs. It has a lot of information regarding different types and the things that it helps with; for example flooding, eco energy, bio-diversity, appearance etc.**






## Reducing storm-water runoff as part of a sustainable drainage systems (SuDS) strategy

Any built-up area needs to be drained of excess rain water to prevent localised flooding. Traditionally this has been achieved by a series of underground pipes connected to the sewage system. Up to 95% of the ground surface in cities is now sealed due to urban development and this is ground space through which rainwater cannot be lost by permeation. This leads to up to 75% of rainwater becoming run-off in urban areas (Ferguson Introduction to storm water: concept, purpose, design, 1998).

Traditional drainage systems are not built to cope with such instant changes in flow rate and volume, leading to the flooding of the drainage system or areas further down stream. In addition, this runoff carries nutrients, silts and hydrocarbons, chlorinated organics and heavy metals from surfaces of buildings directly into watercourses.

Global warming is leading to climate change that is predicted to cause an increase in the frequency and intensity of rainfall (Atkins et al 1999, DOE 1996, UKCIP 2001). Buildings must be designed to meet these new challenges and introducing ways to mitigate storm water runoff is increasingly becoming a requirement in new developments. The Pitt Report by Sir Michael Pitt into the floods of 2007 states that “new developments should not expect to be automatically connected to the public drainage system” ( Learning Lessons from the 2007 Floods, Sir Michael Pitt25 June 2008) The Flood and Water Management Bill is also nearing implementation. This legislation will provide better, more comprehensive management of flood risk for people, homes and businesses. A heavy focus of the Bill is to encourage the uptake of sustainable drainage systems by removing the automatic right to connect to sewers and providing for unitary and county councils to adopt SuDS for new developments and redevelopments.
SuDS are engineered solutions that aim to mimic natural drainage systems and processes. They use permeable surfaces –soil and vegetation –to filter, absorb and moderate flows of runoff. SuDS help to reduce pollution of watercourses and localised flooding as well as providing amenity and biodiversity benefits. Green roofs are one method of controlling storm-water at source (i.e. closest to the source of the precipitation) under a SuDS strategy. Green roofs are much easier to retrofit in the urban environment than many other SuDS components, so their potential for reducing storm-water problems in the UK’s cities is significant.

Once established a green roof can significantly reduce both peak flow rates and total runoff volume of rainwater from the roof compared to a conventional roof. Green roofs store rainwater in the plants and substrate and release water back into the atmosphere through evapotranspiration.

The amount of water that is stored on a green roof, and then evapotranspired into the atmosphere, is dependent on the depth and type of growing medium, type of drainage layer, vegetation used and regional weather. The FLL Guidelines should be followed to ensure that actual runoff will be in accordance with calculated runoff.

A green roof can easily be designed to prevent runoff from all rainfall events of up to 5 mm and as part of a SuDS strategy, should reduce the volume of surface or underground attenuation required at the site boundary. In summer, green roofs can retain 70–80% of rainfall and in winter they retain 10–35% depending on their build-up (Green roofs benefits and cost implications, Livingroofs.org In association with ecologyconsultancy, March 2004). The difference is due to a combination of more winter rainfall and less evapotranspiration by the plants because growth is not as vigorous during the winter months.

Generally, the deeper the substrate the greater the average annual water retention. Intensive green roofs with deeper substrates can hold up to 20% of the rainfall absorbed for up to 2 months (Osmundson 1999),

In Germany, it is recognised that a green roof will have a positive effect on storm-water runoff, and figures are provided for various substrate depths at various rainfall rates as. In the UK the Environment Agency recognises the same positive effects, however, there is no commonly agreed method for measuring the amount of attenuation volume that can be offset.

## Roof lifespan increase

Roof surfaces are constantly under attack from ultra-violet light and temperature change. A roof can suffer from huge thermal fluctuations on its upper surface throughout the day and year, in extreme cases these can range over 100°C. (Papadopoulos and Axarli, 1992). The original green roofs in Germany were created in 1880s when it was typical to cover bitumen with 6cm of sand to protect the bitumen from fire. The sand was also found to extend the life of the waterproof layer and was colonised naturally with vegetation. Green roofs have now been shown to double if not triple the life of the waterproofing membranes contained underneath the green roof by creating a barrier which protects the waterproofing from harm.

## Reducing energy use

Green roofs have been shown to impact positively on a building's energy consumption by improving the roofs thermal performance, although the level of difference this makes depends on daily and seasonal weather conditions. Poorly insulated roofs lead to overheating of spaces beneath them during the summer, increasing the need for artificial cooling and excessive heating demand during the winter. By retrofitting green roofs, both air conditioning and heating usage is decreased. Flat un-vegetated gravel roofs may be up to 21ºc hotter than vegetated roofs (Kaiser 1981). Studies carried out at Trent University under British climatic conditions have proved that planted roofs can have markedly lower temperatures throughout the roof layers compared to the unplanted roof.

During the summer, solar energy is utilised by plants for evapotranspiration, reducing the temperature of the green roof and the surrounding microclimate. During the winter months, a green roof can add to the insulating qualities of the roof. However thermal performance is extremely dependent on the amount of water held within the green roof substrate. Water has a negative effect on thermal conductance. So in damp winter climate, such as the UK, a green roof will add little to the overall thermal performance of the roof. Green roofs are not assigned a fixed U-Value as they assumed to hold water.

## Climate change mitigation

In the UK, buildings are responsible for 44 percent of CO2 emissions: 26% of the UK's emissions come from homes, 18% from non-residential buildings (UKQBC). A high proportion of these emissions are from heating and cooling the internal environment. Reducing the energy consumption of the UK's buildings will reduce their contribution to climate change. The IPCC (Intergovernmental Panel on Climate Change) have said that buildings provide some of the greatest, most cost effective and fastest opportunities to tackle climate change. Green roofs can significantly reduce the cooling load of a building, resulting in reduced air cooling requirements and therefore reduced energy consumption and associated output of atmospheric carbon dioxide.

## Climate change adaptation

Even in the most optimistic of scenarios, whereby the emission of greenhouse gases ceased immediately, the associated climatic effects would continue due to the long lifespan of the gases residing in the atmosphere and the thermal inertia of the oceans. This means that summer temperatures and associated urban heat islands are expected to worsen. For this reason buildings must now be 'future proofed' so they are able to cope with these changing conditions. Green roofs are one of the most effective ways of combating the urban heat island effect and will therefore be part of the raft of future measures designed to help cities adapt.

## Lessening the Urban Heat Island Effect (UHIE)

The urban heat island effect is the temperature disparity between urbanised areas and surrounding rural areas. Urban landscapes have a much higher proportion of dense, dark impermeable surfaces which have a low albedo (reflectivity) This means they absorb heat unlike plants which reflect it. This stored heat is re-radiated at night when warming the city more than

the surrounding countryside. This can make city centres up to 7ºc higher than the surrounding countryside due to the heat island effect (USEPA 1992).

The urban heat island effect will increase as summer temperatures increase and will therefore become even more of a problem in the future. During the hot summer of 2003 night-time temperatures in London reached 8–9 °C higher than outlying rural areas on a number of occasions.

## Increasing biodiversity and wildlife

As urbanisation increases, ensuring that biodiversity is retained is a key requirement for local councils and public bodies under the Biodiversity Duty which is a requirement of The Natural Environment and Rural Communities (NERC) Act. It requires all public bodies to have regard to biodiversity conservation when carrying out their functions. This is commonly referred to as the 'biodiversity duty'. (Natural England)

Whilst green roofs do not directly replace ground-based habitats and are not part of a ground level 'green corridor', they can be thought of as green 'stepping stones' for wildlife, and, if well planned, can cater for a variety of flora and fauna unattainable on traditional roofs.

Different types of green roofs support different habitats and species according to the type of vegetation and substrate they contain. Roofs designed to either replicate the habitat for a single or limited number of plant or animal species are often referred to as Biodiverse roofs.

They can be especially important as a tool to recreate the pioneer (wasteland) communities that are sometimes lost to redevelopment. It is often neglected brownfield sites in the urban areas which are most biodiverse. The best biodiverse roofs support a range of habitats for wildlife through a range of substrates, depths and microhabitats.

Green roof designs should be varied regionally to meet the objectives of Local Biodiversity Action Plans. Green roofs can also be used to recreate habitat for some endangered species. For example in Deptford Creek in London, when habitat which was known to support the rare Black Redstart, was threatened by redevelopment, suitable habitat was created on the roofs of new buildings to compensate. Extensive green roofs have similar characteristics to brownfield land as they have well drained and nutrient poor substrate (Gedge and Kadas, 2004).

The skylark, a species listed on the UK Biodiversity Action Plan, has bred successfully on the green roof of Rolls Royce factory near Chichester. Brenneisen studied birds, beetles and spiders associated with green roofs in the Basel area, Switzerland. A sample of 11 roofs were found to support a total of 172 species of beetle with 10% listed in the Swiss red data book (BRENNEISEN, S., 2001. There were a total of 1844 bird sightings on the roof including Wheatear, Skylark, Lapwing, Common Tern and Mallard.

An excellent example of the biodiversity of plant life which can be achieved on a green roof is Sharrow primary School, Sheffield which has recently been declared a Local Nature reserve. Green roof covers 2,000m2 and incorporates a variety of wildlife habitats including limestone grassland, pioneer woodland, urban brownfield meadows and a wetland area with a shallow pond.

## Improving air and water quality

In the UK an estimated 24,000 people die every year from air pollution (GLA, 2001b) and air quality is substantially worse in urban areas (GLA (2001b) Clean air for London – the Mayor's Draft Air Quality Strategy. (Greater London Authority Publications.)

The urban heat island effect exacerbates ground-level ozone production, which is formed by a reaction between volatile organic compounds and nitrous oxides catalysed by heat and sunlight. Ozone is classified as a pollutant and is the principal component of smog. During the heat wave of 2006 the European Environment Agency reported that safe levels of ozone were surpassed often in many places throughout Europe, including the UK. Green roofs can improve local air quality through mitigating the urban heat island effect. Having a living roof can also help to remove airborne particles, heavy metals and volatile organic compounds from the local atmosphere. These contaminants are retained by the green roof itself and so their infiltration into the water system through surface runoff is reduced, improving local water quality. Kohler and Schmidt (1990) found that 60% of cadmium, copper and lead and approximately 16% of zinc can be removed from rainwater on passing through a green roof.

Another study reported a 37% reduction of sulfur dioxide and a 21% reduction in nitrous acid in the air above a green roof when compared to other air samples taken nearby (Yok Tan and Sia 2005). Other studies have estimated that green roofs can remove 0.2 kg of dust particles per year per square meter of vegetated roof (Peck, Kuhn et al. 2003). Doernach (1979) found that climbing plants can filter out dust, pollutants and even viruses.

## Reduced sound transfer

Rain hammer on some deck roofed buildings, in particular schools have caused concern for building designers for some years. Sound escaping from industrial procedure and other processes can also cause issues within local communities. The combination of growing medium, plants and trapped layers of air within green roof systems can act as a sound insulation barrier.

University of Sheffield research shows that a 20-100mm dry growing medium could achieve an extra SPL (Sound Pressure Level) attenuation of 10-40dB, depending on frequency. The effects of adding water in the drainage layer and adding the vegetation layer seem to be insignificant. This compares with a typical reduction of 43dB for a 100mm concrete wall. These figures suggest that a green roof can reduce sound within a building by 8dB or more when compared with a conventional roof. (Experimental study of the sound insulation of semi-extensive green roofs – Kang & Huang 2009)

Green Roofs have been employed successfully as a means of sound abatement along new runway approaches at Frankfurt International airport and Schiphol airport in Amsterdam.

## Amenity space

Greened roof areas can add a great deal of value to buildings, with improved views making buildings easier to let. Accessible roofs designed to allow people to relax, attend events or participate in gardening can make a real difference to how people use and enjoy buildings.

Contact Us | Eco Green Roofs

**The site will back on to the A127 so will not affect any other properties outlook. The addition of green roofs would camouflage the site's appearance from the A127 as well.**

**Biodiversity in the area**

**This report is about biodiversity (may be of interest)**

**http://archive.defra.gov.uk/rural/documents/protected/common-land/biosurvey-essex.pdf**

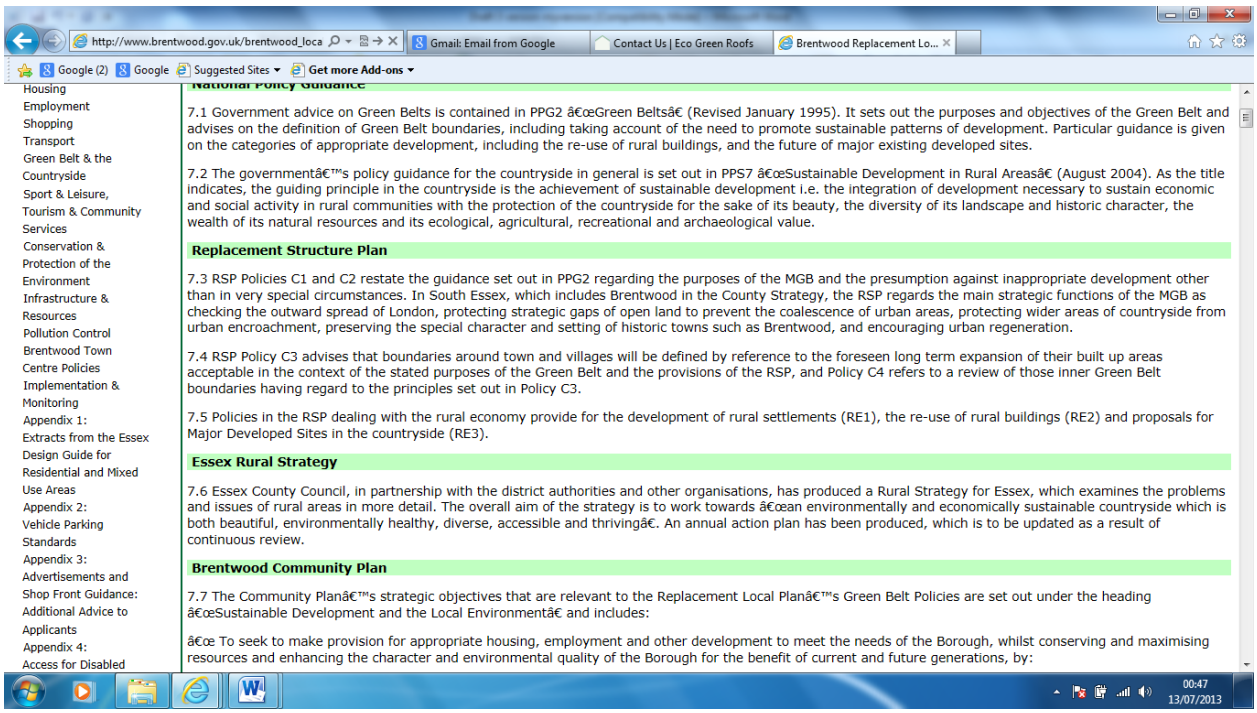
**includes a long list at the end of all species of trees, flowers, wildlife etc**

**Brentwood Replacement Local Plan**

**Information on conservation etc in the area**

**Brentwood Replacement Local Plan**

**Regarding green belt land**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Brentwood Replacement Lo...
Google (2)
Google
Suggested Sites
Get more Add-ons
Housing
Employment
Shopping
Transport
Green Belt & the Countryside
Sport & Leisure, Tourism & Community Services
Conservation & Protection of the Environment
Infrastructure & Resources
Pollution Control
Brentwood Town Centre Policies
Implementation & Monitoring
Appendix 1: Extracts from the Essex Design Guide for Residential and Mixed Use Areas
Appendix 2: Vehicle Parking Standards
Appendix 3: Advertisements and Shop Front Guidance:
Additional Advice to Applicants
Appendix 4: Access for Disabled
National Policy Guidance
7.1 Government advice on Green Belts is contained in PPG2 â€œGreen Beltsâ€ (Revised January 1995). It sets out the purposes and objectives of the Green Belt and advises on the definition of Green Belt boundaries, including taking account of the need to promote sustainable patterns of development. Particular guidance is given on the categories of appropriate development, including the re-use of rural buildings, and the future of major existing developed sites.
7.2 The governmentâ€™s policy guidance for the countryside in general is set out in PPS7 â€œSustainable Development in Rural Areasâ€ (August 2004). As the title indicates, the guiding principle in the countryside is the achievement of sustainable development i.e. the integration of development necessary to sustain economic and social activity in rural communities with the protection of the countryside for the sake of its beauty, the diversity of its landscape and historic character, the wealth of its natural resources and its ecological, agricultural, recreational and archaeological value.
Replacement Structure Plan
7.3 RSP Policies C1 and C2 restate the guidance set out in PPG2 regarding the purposes of the MGB and the presumption against inappropriate development other than in very special circumstances. In South Essex, which includes Brentwood in the County Strategy, the RSP regards the main strategic functions of the MGB as checking the outward spread of London, protecting strategic gaps of open land to prevent the coalescence of urban areas, protecting wider areas of countryside from urban encroachment, preserving the special character and setting of historic towns such as Brentwood, and encouraging urban regeneration.
7.4 RSP Policy C3 advises that boundaries around town and villages will be defined by reference to the foreseen long term expansion of their built up areas acceptable in the context of the stated purposes of the Green Belt and the provisions of the RSP, and Policy C4 refers to a review of those inner Green Belt boundaries having regard to the principles set out in Policy C3.
7.5 Policies in the RSP dealing with the rural economy provide for the development of rural settlements (RE1), the re-use of rural buildings (RE2) and proposals for Major Developed Sites in the countryside (RE3).
Essex Rural Strategy
7.6 Essex County Council, in partnership with the district authorities and other organisations, has produced a Rural Strategy for Essex, which examines the problems and issues of rural areas in more detail. The overall aim of the strategy is to work towards â€œan environmentally and economically sustainable countryside which is both beautiful, environmentally healthy, diverse, accessible and thrivingâ€. An annual action plan has been produced, which is to be updated as a result of continuous review.
Brentwood Community Plan
7.7 The Community Planâ€™s strategic objectives that are relevant to the Replacement Local Planâ€™s Green Belt Policies are set out under the heading â€œSustainable Development and the Local Environmentâ€ and includes:
â€œ To seek to make provision for appropriate housing, employment and other development to meet the needs of the Borough, whilst conserving and maximising resources and enhancing the character and environmental quality of the Borough for the benefit of current and future generations, by:
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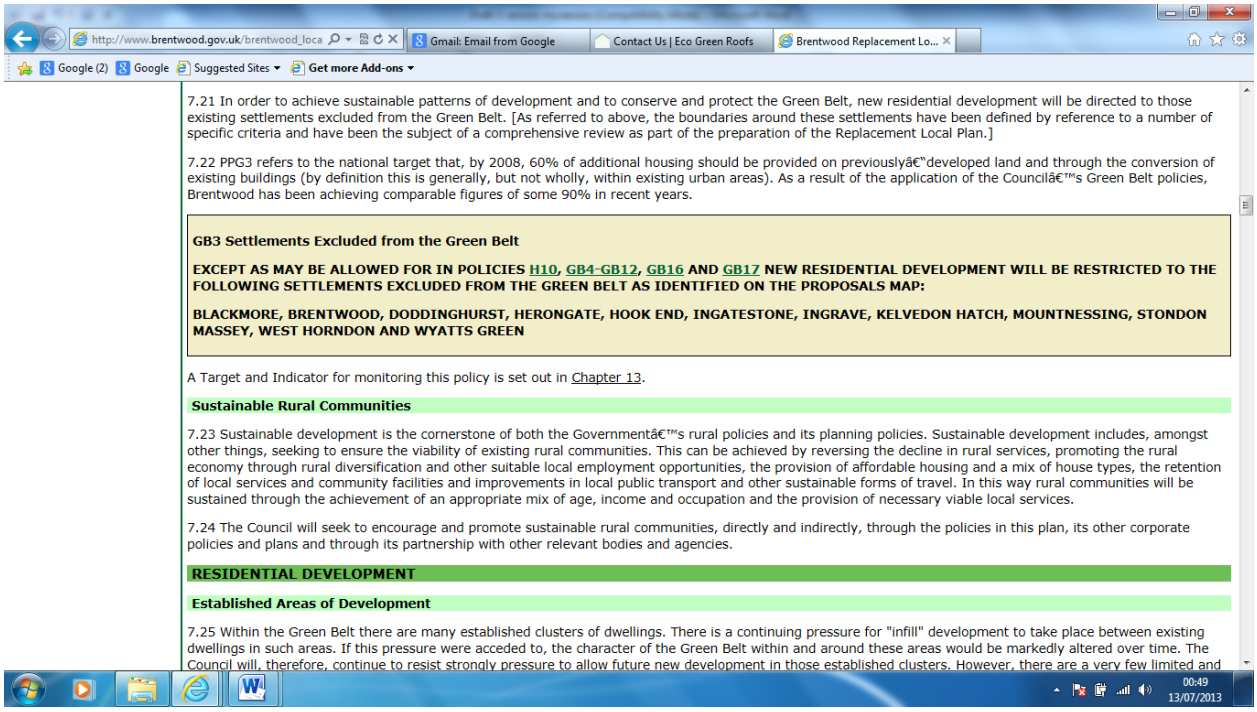
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Gmail: Email from Google
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Brentwood Replacement Lo...
Google (2)
Google
Suggested Sites
Get more Add-ons
7.21 In order to achieve sustainable patterns of development and to conserve and protect the Green Belt, new residential development will be directed to those existing settlements excluded from the Green Belt. [As referred to above, the boundaries around these settlements have been defined by reference to a number of specific criteria and have been the subject of a comprehensive review as part of the preparation of the Replacement Local Plan.]
7.22 PPG3 refers to the national target that, by 2008, 60% of additional housing should be provided on previouslyâ€"developed land and through the conversion of existing buildings (by definition this is generally, but not wholly, within existing urban areas). As a result of the application of the Councilâ€™s Green Belt policies, Brentwood has been achieving comparable figures of some 90% in recent years.
GB3 Settlements Excluded from the Green Belt
EXCEPT AS MAY BE ALLOWED FOR IN POLICIES H10, GB4-GB12, GB16 AND GB17 NEW RESIDENTIAL DEVELOPMENT WILL BE RESTRICTED TO THE FOLLOWING SETTLEMENTS EXCLUDED FROM THE GREEN BELT AS IDENTIFIED ON THE PROPOSALS MAP:
BLACKMORE, BRENTWOOD, DODDINGHURST, HERONGATE, HOOK END, INGATESTONE, INGRAVE, KELVEDON HATCH, MOUNTNESSING, STONDON MASSEY, WEST HORNDON AND WYATTS GREEN
A Target and Indicator for monitoring this policy is set out in Chapter 13.
Sustainable Rural Communities
7.23 Sustainable development is the cornerstone of both the Governmentâ€™s rural policies and its planning policies. Sustainable development includes, amongst other things, seeking to ensure the viability of existing rural communities. This can be achieved by reversing the decline in rural services, promoting the rural economy through rural diversification and other suitable local employment opportunities, the provision of affordable housing and a mix of house types, the retention of local services and community facilities and improvements in local public transport and other sustainable forms of travel. In this way rural communities will be sustained through the achievement of an appropriate mix of age, income and occupation and the provision of necessary viable local services.
7.24 The Council will seek to encourage and promote sustainable rural communities, directly and indirectly, through the policies in this plan, its other corporate policies and plans and through its partnership with other relevant bodies and agencies.
RESIDENTIAL DEVELOPMENT
Established Areas of Development
7.25 Within the Green Belt there are many established clusters of dwellings. There is a continuing pressure for "infill" development to take place between existing dwellings in such areas. If this pressure were acceded to, the character of the Green Belt within and around these areas would be markedly altered over time. The Council will, therefore, continue to resist strongly pressure to allow future new development in those established clusters. However, there are a very few limited and
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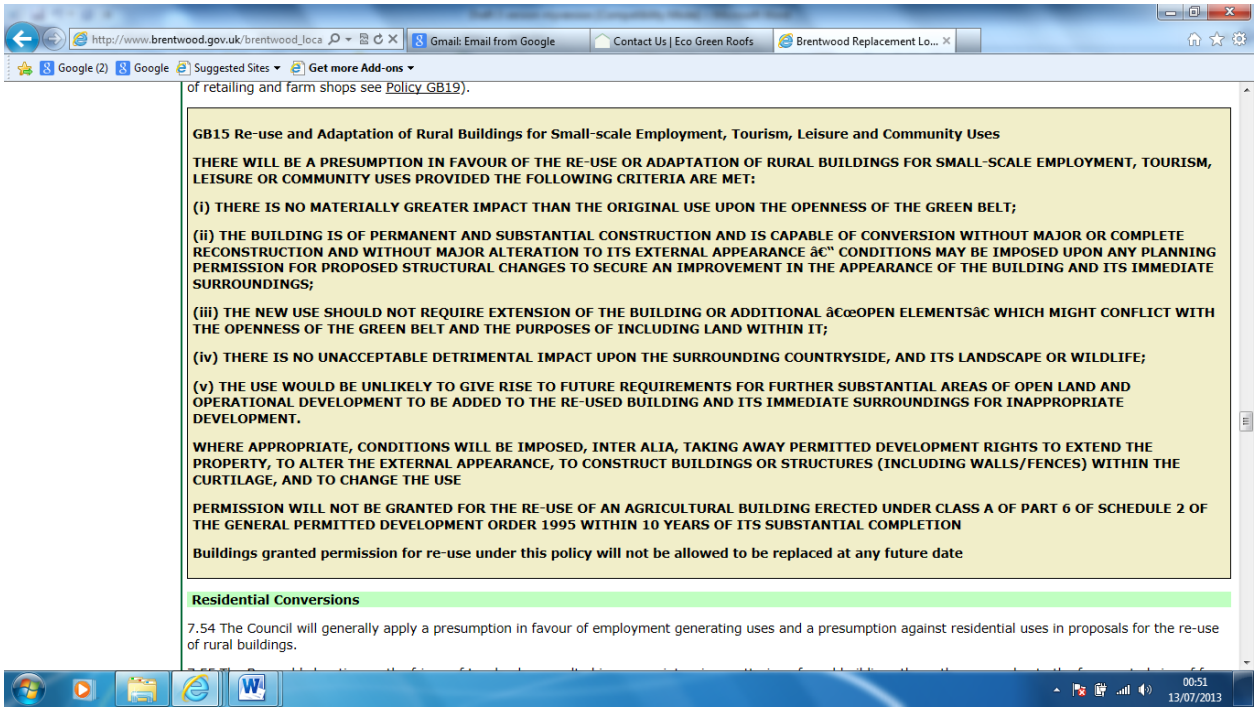


of retailing and farm shops see Policy GB19).

**GB15 Re-use and Adaptation of Rural Buildings for Small-scale Employment, Tourism, Leisure and Community Uses**

**THERE WILL BE A PRESUMPTION IN FAVOUR OF THE RE-USE OR ADAPTATION OF RURAL BUILDINGS FOR SMALL-SCALE EMPLOYMENT, TOURISM, LEISURE OR COMMUNITY USES PROVIDED THE FOLLOWING CRITERIA ARE MET:**

**(i) THERE IS NO MATERIALLY GREATER IMPACT THAN THE ORIGINAL USE UPON THE OPENNESS OF THE GREEN BELT;**

**(ii) THE BUILDING IS OF PERMANENT AND SUBSTANTIAL CONSTRUCTION AND IS CAPABLE OF CONVERSION WITHOUT MAJOR OR COMPLETE RECONSTRUCTION AND WITHOUT MAJOR ALTERATION TO ITS EXTERNAL APPEARANCE â€" CONDITIONS MAY BE IMPOSED UPON ANY PLANNING PERMISSION FOR PROPOSED STRUCTURAL CHANGES TO SECURE AN IMPROVEMENT IN THE APPEARANCE OF THE BUILDING AND ITS IMMEDIATE SURROUNDINGS;**

**(iii) THE NEW USE SHOULD NOT REQUIRE EXTENSION OF THE BUILDING OR ADDITIONAL â€œOPEN ELEMENTSâ€ WHICH MIGHT CONFLICT WITH THE OPENNESS OF THE GREEN BELT AND THE PURPOSES OF INCLUDING LAND WITHIN IT;**

**(iv) THERE IS NO UNACCEPTABLE DETRIMENTAL IMPACT UPON THE SURROUNDING COUNTRYSIDE, AND ITS LANDSCAPE OR WILDLIFE;**

**(v) THE USE WOULD BE UNLIKELY TO GIVE RISE TO FUTURE REQUIREMENTS FOR FURTHER SUBSTANTIAL AREAS OF OPEN LAND AND OPERATIONAL DEVELOPMENT TO BE ADDED TO THE RE-USED BUILDING AND ITS IMMEDIATE SURROUNDINGS FOR INAPPROPRIATE DEVELOPMENT.**

**WHERE APPROPRIATE, CONDITIONS WILL BE IMPOSED, INTER ALIA, TAKING AWAY PERMITTED DEVELOPMENT RIGHTS TO EXTEND THE PROPERTY, TO ALTER THE EXTERNAL APPEARANCE, TO CONSTRUCT BUILDINGS OR STRUCTURES (INCLUDING WALLS/FENCES) WITHIN THE CURTILAGE, AND TO CHANGE THE USE**

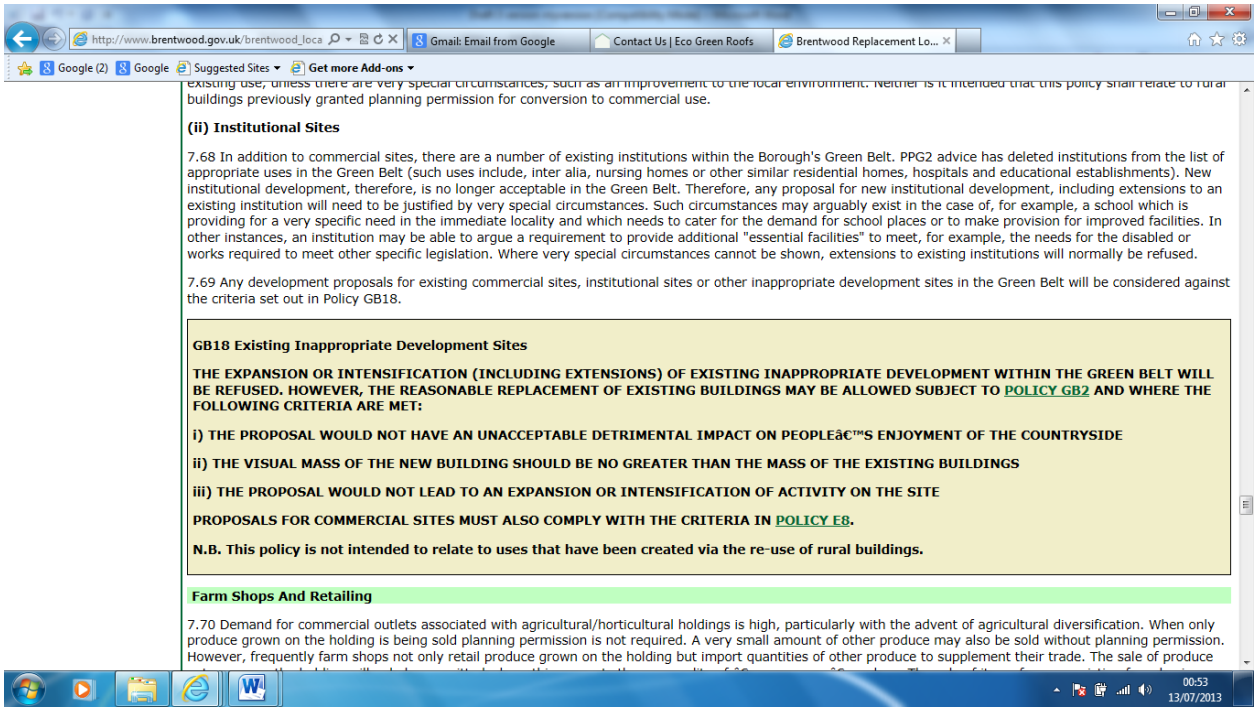
**PERMISSION WILL NOT BE GRANTED FOR THE RE-USE OF AN AGRICULTURAL BUILDING ERECTED UNDER CLASS A OF PART 6 OF SCHEDULE 2 OF THE GENERAL PERMITTED DEVELOPMENT ORDER 1995 WITHIN 10 YEARS OF ITS SUBSTANTIAL COMPLETION**

**Buildings granted permission for re-use under this policy will not be allowed to be replaced at any future date**

**Residential Conversions**

7.54 The Council will generally apply a presumption in favour of employment generating uses and a presumption against residential uses in proposals for the re-use of rural buildings.

This looks promising; the idea of agricultural land /buildings for small sacel employment, leisure and community use



buildings previously granted planning permission for conversion to commercial use.

**(ii) Institutional Sites**

7.68 In addition to commercial sites, there are a number of existing institutions within the Borough's Green Belt. PPG2 advice has deleted institutions from the list of appropriate uses in the Green Belt (such uses include, inter alia, nursing homes or other similar residential homes, hospitals and educational establishments). New institutional development, therefore, is no longer acceptable in the Green Belt. Therefore, any proposal for new institutional development, including extensions to an existing institution will need to be justified by very special circumstances. Such circumstances may arguably exist in the case of, for example, a school which is providing for a very specific need in the immediate locality and which needs to cater for the demand for school places or to make provision for improved facilities. In other instances, an institution may be able to argue a requirement to provide additional "essential facilities" to meet, for example, the needs for the disabled or works required to meet other specific legislation. Where very special circumstances cannot be shown, extensions to existing institutions will normally be refused.

7.69 Any development proposals for existing commercial sites, institutional sites or other inappropriate development sites in the Green Belt will be considered against the criteria set out in Policy GB18.

**GB18 Existing Inappropriate Development Sites**

**THE EXPANSION OR INTENSIFICATION (INCLUDING EXTENSIONS) OF EXISTING INAPPROPRIATE DEVELOPMENT WITHIN THE GREEN BELT WILL BE REFUSED. HOWEVER, THE REASONABLE REPLACEMENT OF EXISTING BUILDINGS MAY BE ALLOWED SUBJECT TO POLICY GB2 AND WHERE THE FOLLOWING CRITERIA ARE MET:**

**i) THE PROPOSAL WOULD NOT HAVE AN UNACCEPTABLE DETRIMENTAL IMPACT ON PEOPLEâ€™S ENJOYMENT OF THE COUNTRYSIDE**

**ii) THE VISUAL MASS OF THE NEW BUILDING SHOULD BE NO GREATER THAN THE MASS OF THE EXISTING BUILDINGS**

**iii) THE PROPOSAL WOULD NOT LEAD TO AN EXPANSION OR INTENSIFICATION OF ACTIVITY ON THE SITE**

**PROPOSALS FOR COMMERCIAL SITES MUST ALSO COMPLY WITH THE CRITERIA IN POLICY E8.**

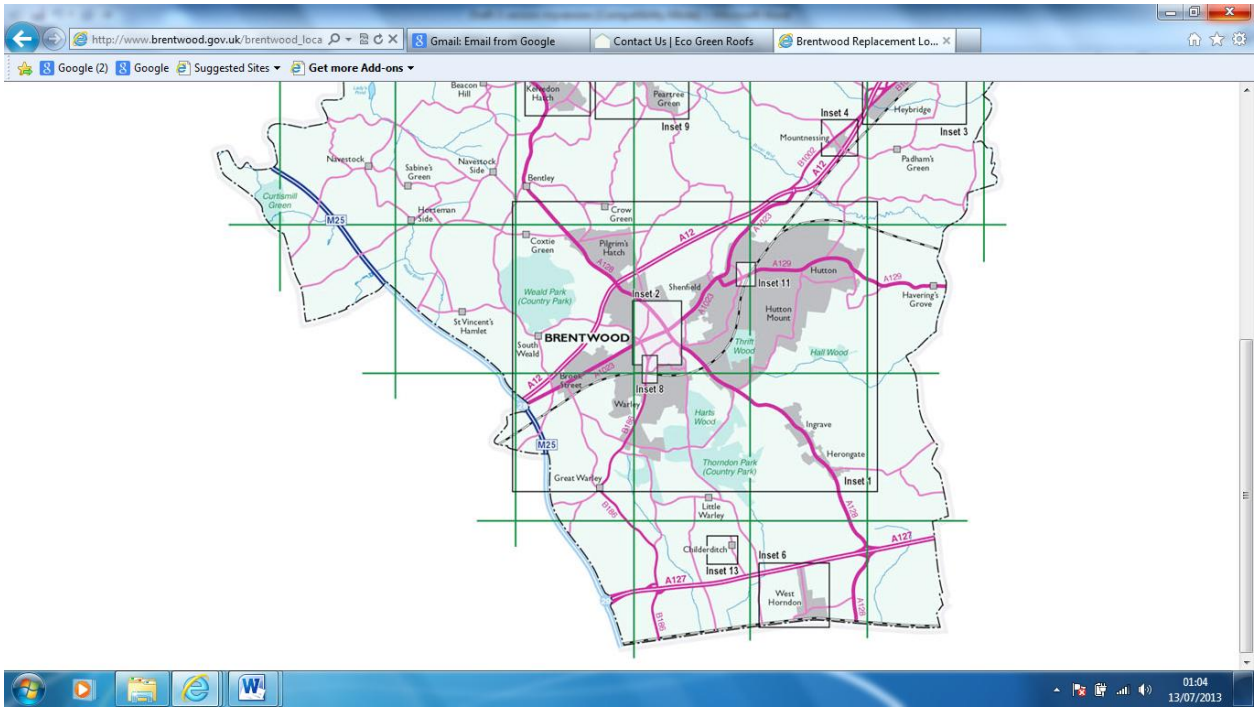
**N.B. This policy is not intended to relate to uses that have been created via the re-use of rural buildings.**

**Farm Shops And Retailing**

7.70 Demand for commercial outlets associated with agricultural/horticultural holdings is high, particularly with the advent of agricultural diversification. When only produce grown on the holding is being sold planning permission is not required. A very small amount of other produce may also be sold without planning permission. However, frequently farm shops not only retail produce grown on the holding but import quantities of other produce to supplement their trade. The sale of produce

## Brentwood Replacement Local Plan

**All employment developments criteria**




Proposal's map taken from same source

**Brentwood Replacement Local Plan**

## Green waste disposal

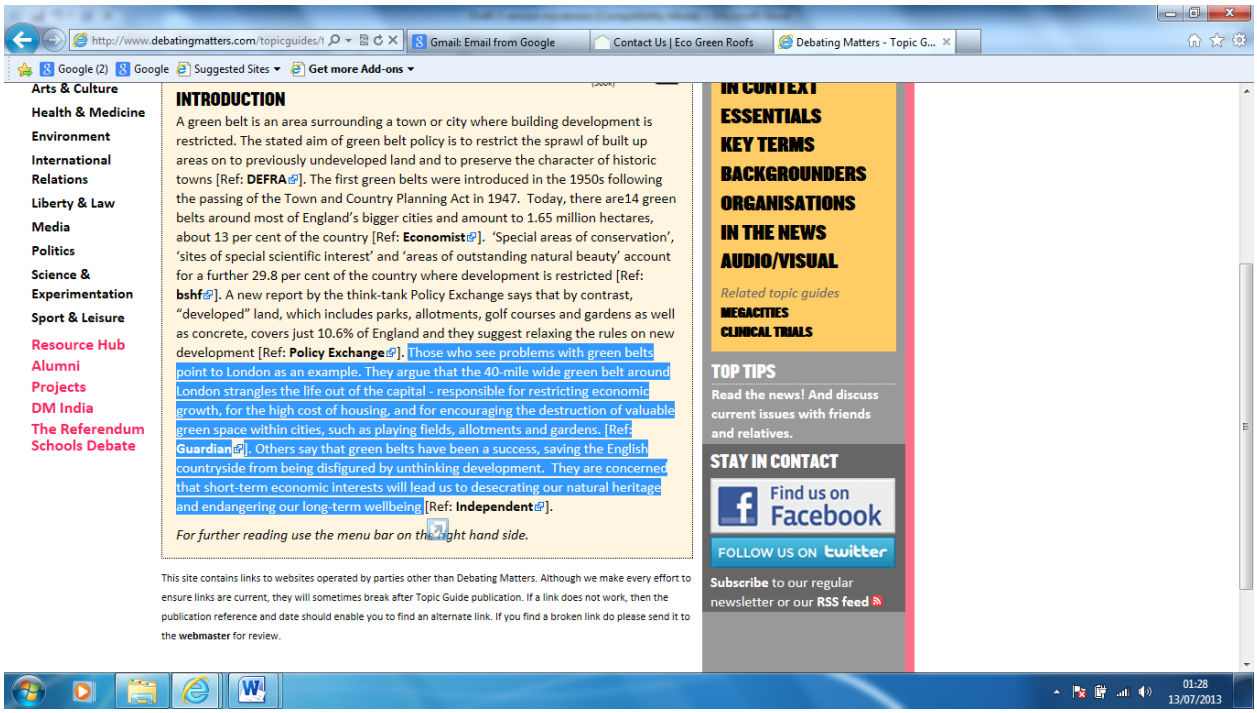
**Cleanaway Ltd**
Tel 01277 234567 Fax 01277 230067
The Drive, Warley, Brentwood, ESSEX CM13 3BE

*Integrated company with over 60 UK sites. Bulk composting facility at Pitsea landfill near Basildon includes green waste collected from Essex CC civic amenity sites and recycles approaching 20,000 tonnes per year. Some is bagged and available to the public at Essex civic amenity sites; some is marketed through other contracts to the horticulture trade.*

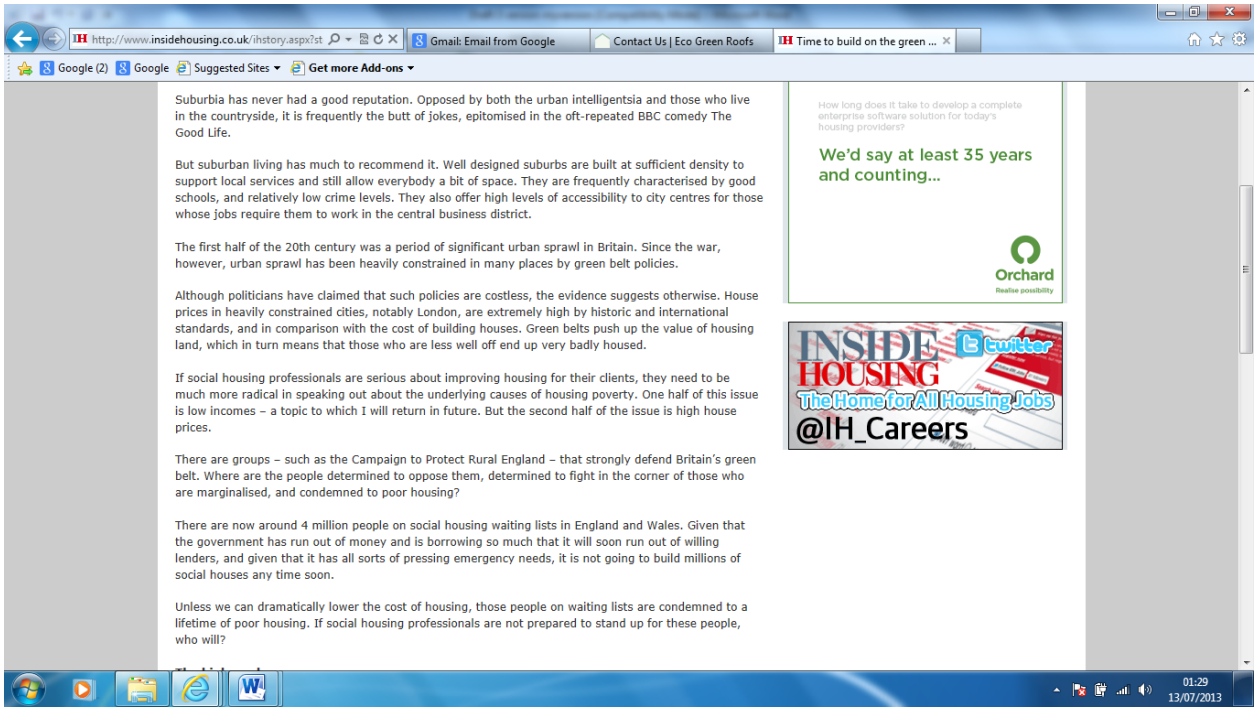
Green waste and composting

Debating Matters - Topic Guide - Green BeltTopic Guide - Green Belt

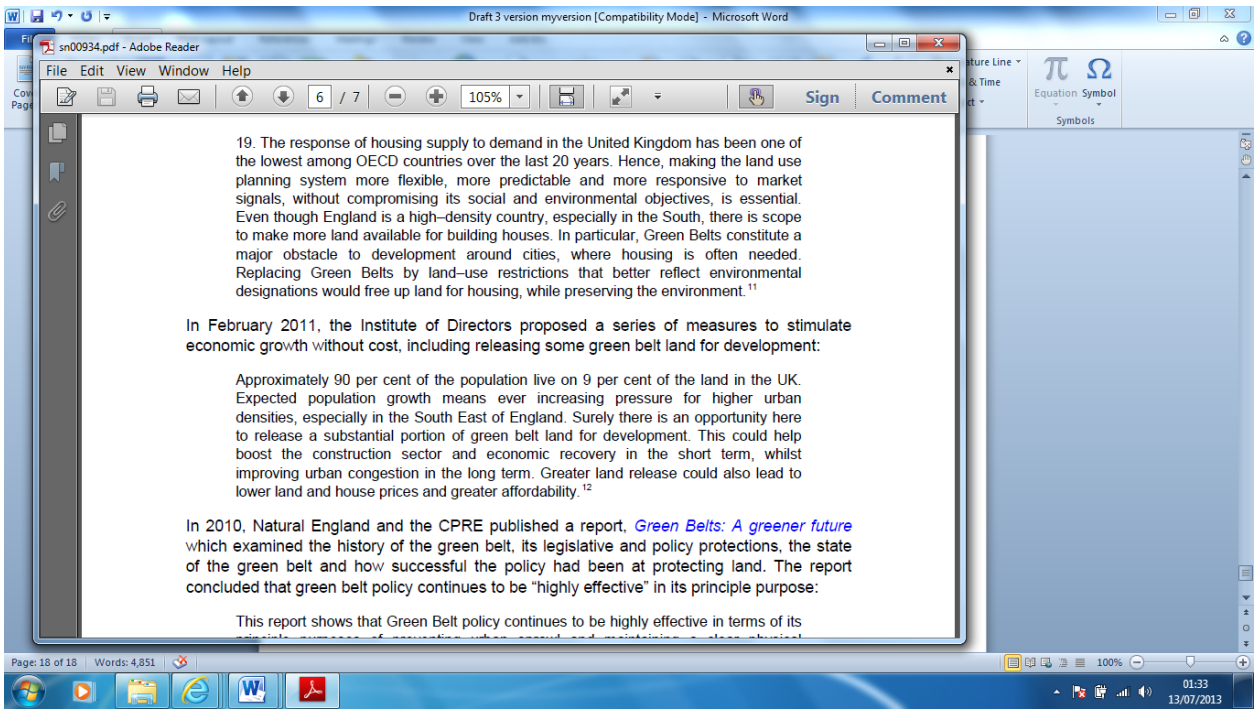
Those who see problems with green belts point to London as an example. They argue that the 40-mile wide green belt around London strangles the life out of the capital - responsible for restricting economic growth, for the high cost of housing, and for encouraging the destruction of valuable green space within cities, such as playing fields, allotments and gardens. [Ref: Guardian]. Others say that green belts have been a success, saving the English countryside from being disfigured by unthinking development. They are concerned that short-term economic interests will lead us to desecrating our natural heritage and endangering our long-term wellbeing




[Time to build on the green belt | Opinion | Inside Housing]



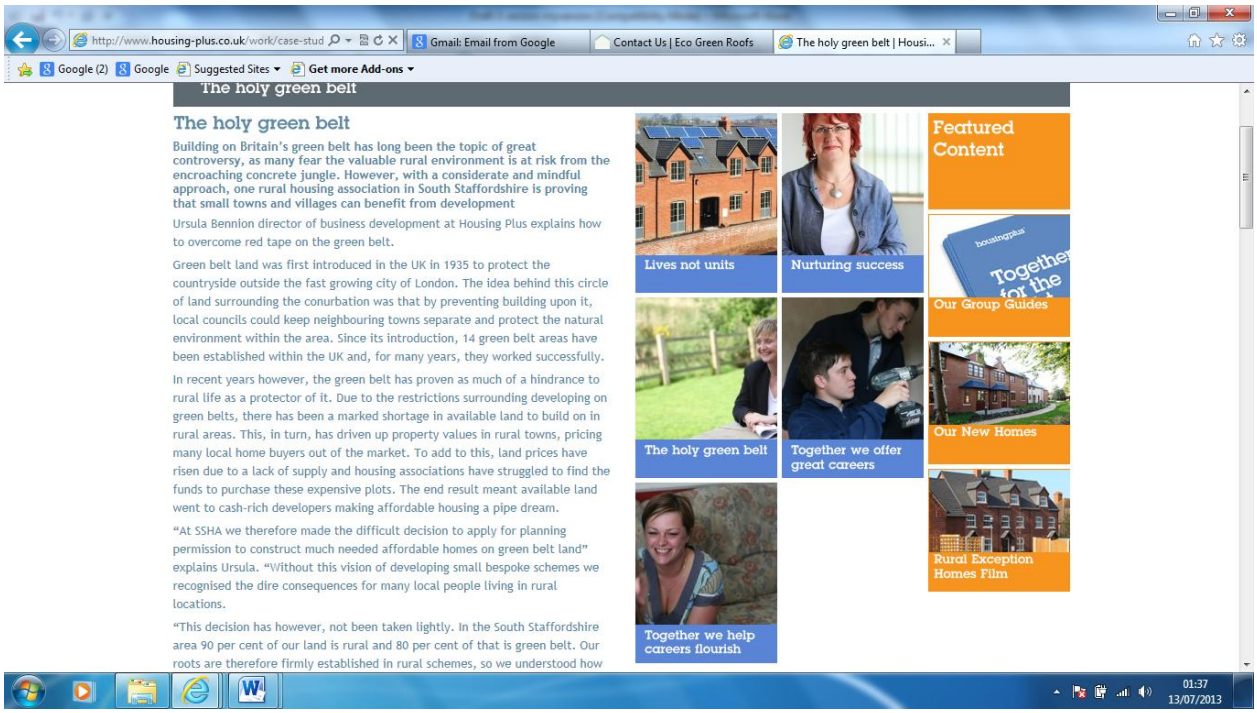

*www.parliament.uk/briefing-papers/sn00934.pdf*





[BBC News - Open land can solve housing shortage, says minister]


[Build thousands of homes on the green belt, says think-tank founded by new planning minister | Mail Online]



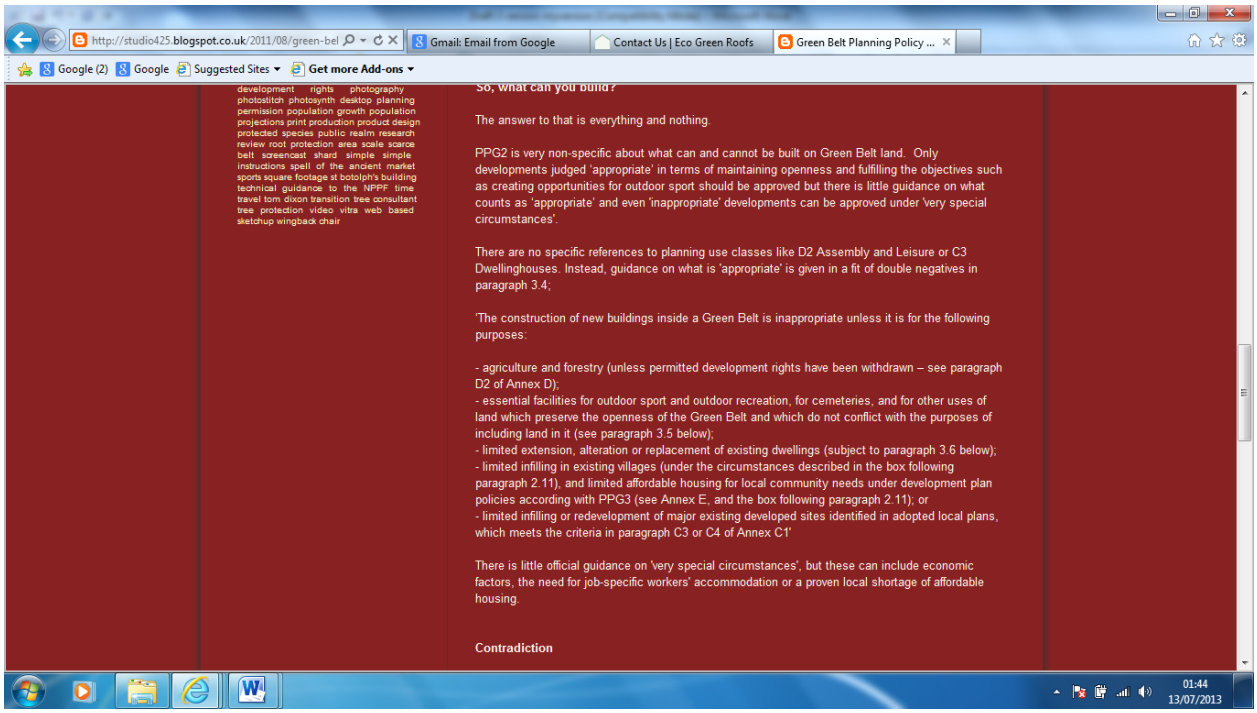

[The holy green belt | Housing Plus]

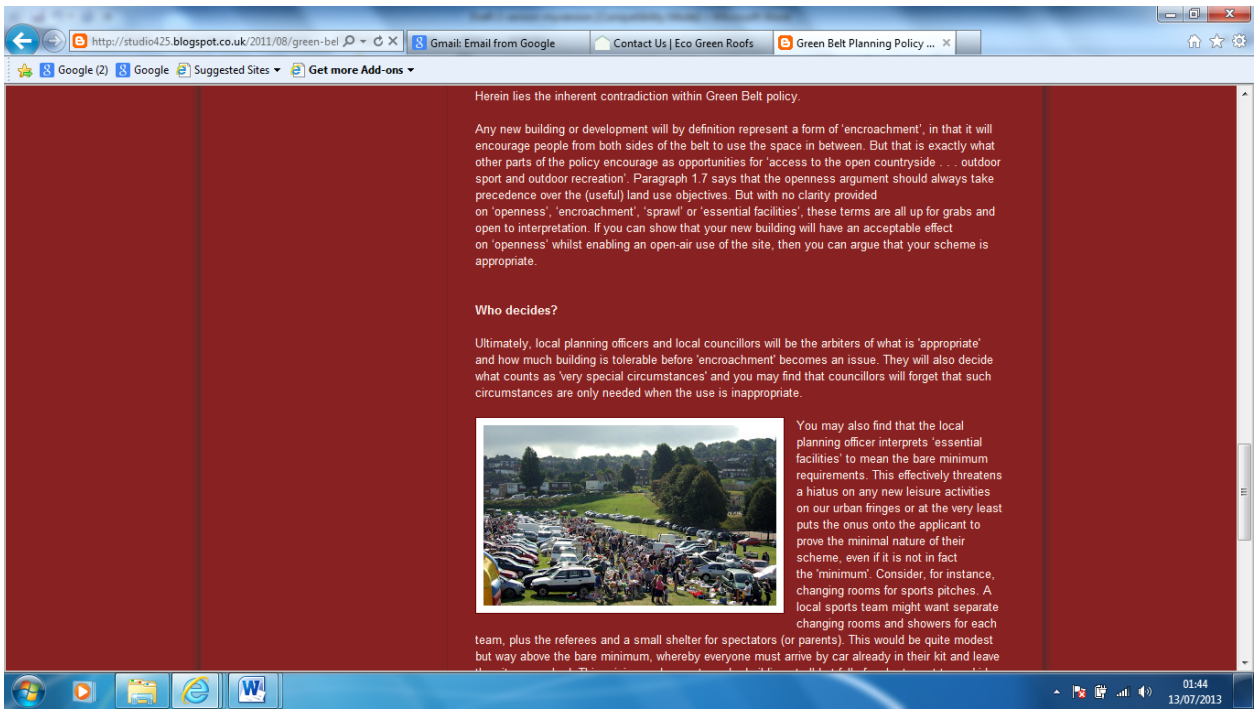
Green belt land was first introduced in the UK in 1935 to protect the countryside outside the fast growing city of London. The idea behind this circle of land surrounding the

conurbation was that by preventing building upon it, local councils could keep neighbouring towns separate and protect the natural environment within the area. Since its introduction, 14 green belt areas have been established within the UK and, for many years, they worked successfully.

In recent years however, the green belt has proven as much of a hindrance to rural life as a protector of it. Due to the restrictions surrounding developing on green belts, there has been a marked shortage in available land to build on in rural areas. This, in turn, has driven up property values in rural towns, pricing many local home buyers out of the market. To add to this, land prices have risen due to a lack of supply and housing associations have struggled to find the funds to purchase these expensive plots. The end result meant available land went to cash-rich developers making affordable housing a pipe dream.

[Green Belt Planning Policy – PPG2 Explained in Plain English | Studio 425]





Herein lies the inherent contradiction within Green Belt policy.

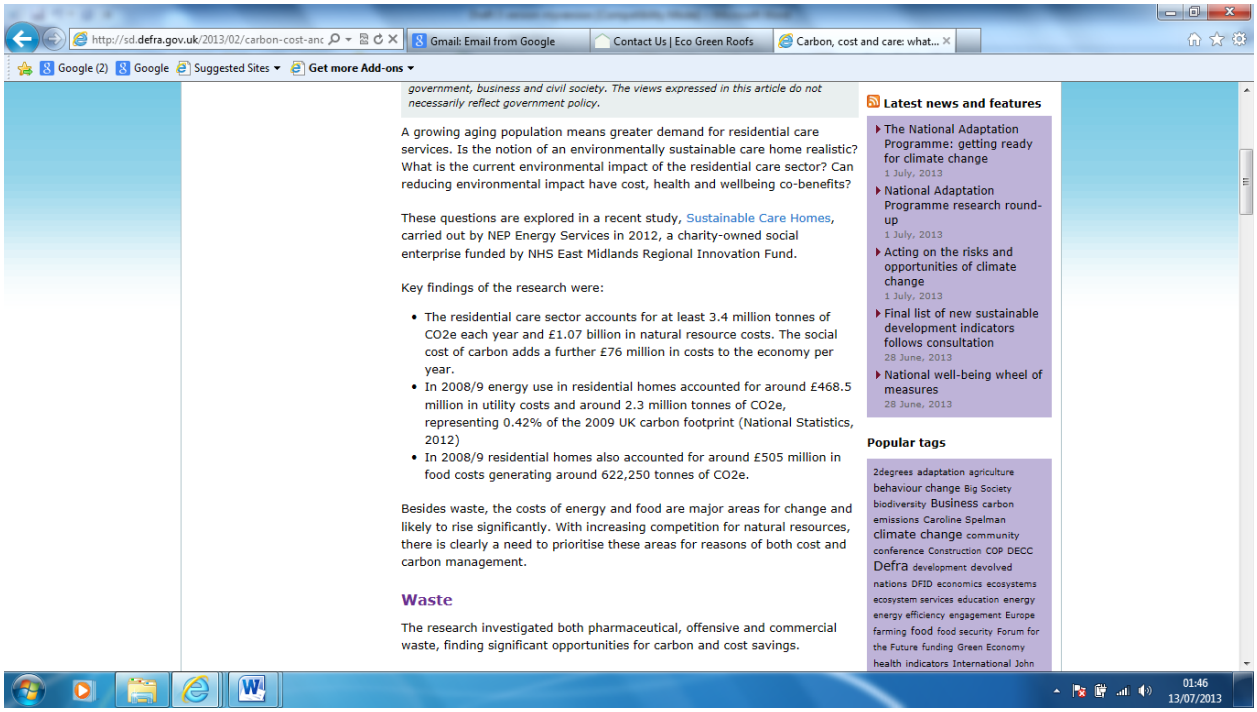
Any new building or development will by definition represent a form of 'encroachment', in that it will encourage people from both sides of the belt to use the space in between. But that is exactly what other parts of the policy encourage as opportunities for 'access to the open countryside . . . outdoor sport and outdoor recreation'. Paragraph 1.7 says that the openness argument should always take precedence over the (useful) land use objectives. But with no clarity provided on 'openness', 'encroachment', 'sprawl' or 'essential facilities', these terms are all up for grabs and open to interpretation. If you can show that your new building will have an acceptable effect on 'openness' whilst enabling an open-air use of the site, then you can argue that your scheme is appropriate.

**Who decides?**

Ultimately, local planning officers and local councillors will be the arbiters of what is 'appropriate' and how much building is tolerable before 'encroachment' becomes an issue. They will also decide what counts as 'very special circumstances' and you may find that councillors will forget that such circumstances are only needed when the use is inappropriate.



You may also find that the local planning officer interprets 'essential facilities' to mean the bare minimum requirements. This effectively threatens a hiatus on any new leisure activities on our urban fringes or at the very least puts the onus onto the applicant to prove the minimal nature of their scheme, even if it is not in fact the 'minimum'. Consider, for instance, changing rooms for sports pitches. A local sports team might want separate changing rooms and showers for each team, plus the referees and a small shelter for spectators (or parents). This would be quite modest but way above the bare minimum, whereby everyone must arrive by car already in their kit and leave



*government, business and civil society. The views expressed in this article do not necessarily reflect government policy.*

A growing aging population means greater demand for residential care services. Is the notion of an environmentally sustainable care home realistic? What is the current environmental impact of the residential care sector? Can reducing environmental impact have cost, health and wellbeing co-benefits?

These questions are explored in a recent study, Sustainable Care Homes, carried out by NEP Energy Services in 2012, a charity-owned social enterprise funded by NHS East Midlands Regional Innovation Fund.

Key findings of the research were:

- The residential care sector accounts for at least 3.4 million tonnes of CO2e each year and £1.07 billion in natural resource costs. The social cost of carbon adds a further £76 million in costs to the economy per year.
- In 2008/9 energy use in residential homes accounted for around £468.5 million in utility costs and around 2.3 million tonnes of CO2e, representing 0.42% of the 2009 UK carbon footprint (National Statistics, 2012)
- In 2008/9 residential homes also accounted for around £505 million in food costs generating around 622,250 tonnes of CO2e.

Besides waste, the costs of energy and food are major areas for change and likely to rise significantly. With increasing competition for natural resources, there is clearly a need to prioritise these areas for reasons of both cost and carbon management.

## Waste

The research investigated both pharmaceutical, offensive and commercial waste, finding significant opportunities for carbon and cost savings.

**Latest news and features**

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  1 July, 2013
- National Adaptation Programme research round-up
  1 July, 2013
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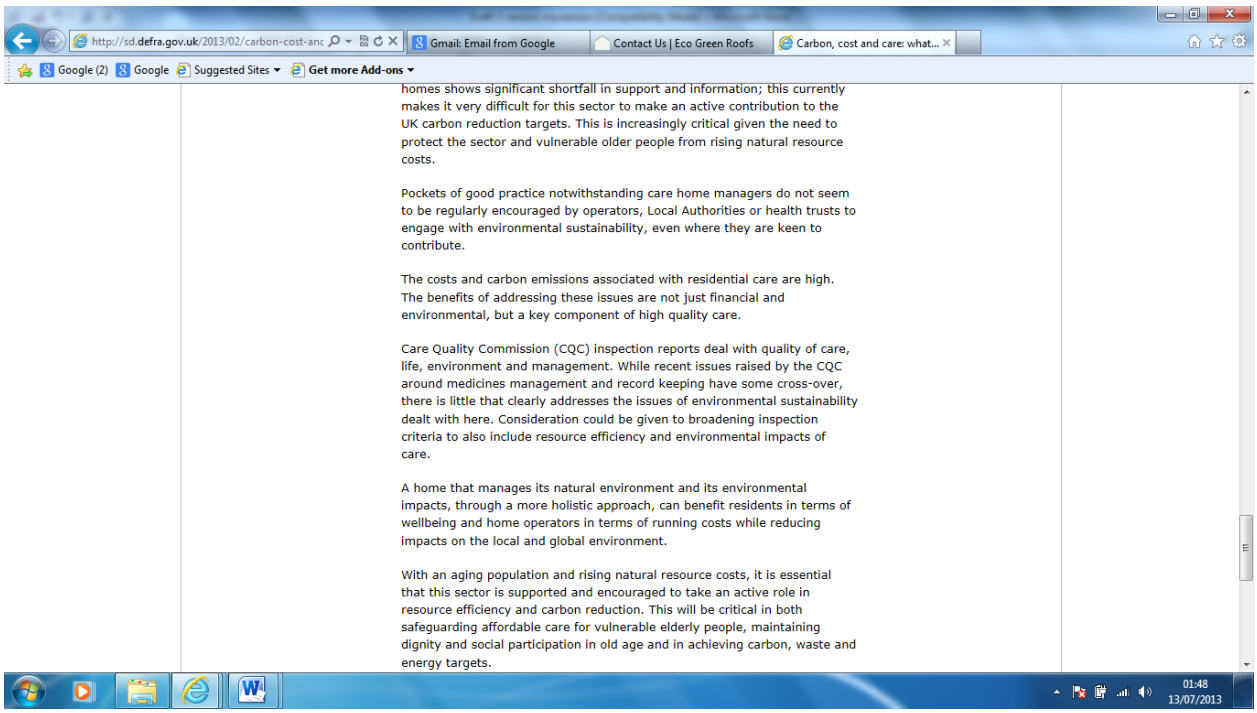
[Carbon, cost and care: what makes a sustainable care home? « Sustainable Development in Government]




Sustainability issues
This article mentions citiy farms and growing own produce;  as you intend to have this in your development you should probably talk about sustainability as a key factor , energy saving, alternative energy sources, sun roofs, wind turbines, and grwoing own produce etc.

## Community, environment and food

The links each home formed with their local community were found to have helped improve the care home grounds and their local environment, and ensured residents had regular and varied external contact, improving the capacity to carry out activities that kept residents physically and mentally active. These sorts of relationships play a critical part of a healthy sustainable care home and should be valued and encouraged.

The use of care home grounds to grow food, particularly in raised beds, animals and use of suitable tools provides both diversion and stimulation for residents, helping them to maintain an active lifestyle. Three of the homes visited were growing food on-site. This approach involved engaging residents, staff and external community groups. In one case a city farm supported the home by cultivating the grounds. The cost savings are fairly small but the health and wellbeing benefits more significant. Producing food on-site also provides an incentive to compost uncooked food wastes rather than dispose of them to landfill or incineration.

Sustainability - Willmott Dixon Group

Information from a builder about sustainability

for sustainability as early as the initial design phase.

The idea of a building that would be highly energy efficient and also deliver a significantly enhanced environment for patients and staff was the result of cross-party working.

The building itself provides traditional healthcare services alongside operations previously accessed only through hospitals, including X-ray, minor surgery and a 24-bed rehabilitation unit.

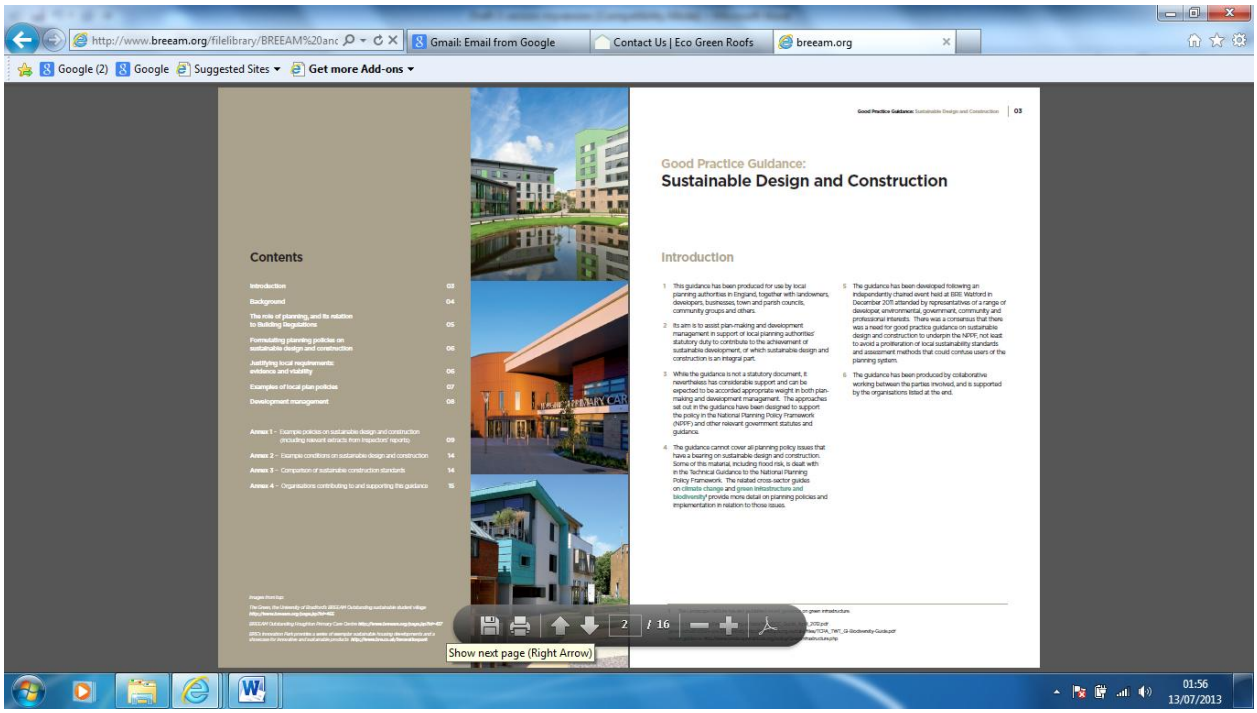
Located adjacent to an existing leisure centre, which was also refurbished as part of the overall scheme, the facility creates a landmark for community healthcare and, externally, the site offers wide-ranging exercise options, from skateboarding and a trim trail to games pitches and bowling greens.

With the BREEAM top rating as the target from the outset, decisions relating to sustainability were considered very early on, extending to the choice of site, the selection of a cohesive team with relevant experience, and the

of the project until 2014, meaning that evidence can be gathered to inform future healthcare designs.

**The judges said:** "This was a client that demanded that sustainability and environmental performance were paramount from the very earliest stage of the design process, leading to this development being the first to get a BREEAM 'outstanding' rating. The building also meets the

Case study from the site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Good Practice Guidance:
Sustainable Design and Construction
Introduction
1 This guidance has been produced for use by local planning authorities in England, together with landowners, developers, businesses, town and parish councils, community groups and others.
2 Its aim is to assist plan-making and development management in support of local planning authorities' statutory duty to contribute to the achievement of sustainable development, of which sustainable design and construction is an integral part.
3 While the guidance is not a statutory document, it nevertheless has considerable support and can be expected to be accorded appropriate weight in both plan-making and development management. The approaches set out in the guidance have been designed to support the policy in the National Planning Policy Framework (NPPF) and other relevant government statutes and guidance.
4 The guidance cannot cover all planning policy issues that have a bearing on sustainable design and construction. Some of this material, including flood risk, is dealt with in the Technical Guidance to the National Planning Policy Framework. The related cross-sector guides on climate change and green infrastructure and biodiversity provide more detail on planning policies and implementation in relation to those issues.
5 The guidance has been developed following an independently chaired event held at BRE Watford in December 2011 attended by representatives of a range of developer, environmental, government, community and professional interests. There was a consensus that there was a need for good practice guidance on sustainable design and construction to underpin the NPPF, not least to avoid a proliferation of local sustainability standards and assessment methods that could confuse users of the planning system.
6 The guidance has been produced by collaborative working between the parties involved, and is supported by the organisations listed at the end.
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