



**Stratford-on-Avon
District Council**



**Development Viability
Assessment Model**



Final Report



September 2009



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1 Background

- 1.1 Baker Associates has been commissioned by Stratford-on-Avon District Council to assess the likely impact of planning obligations policies upon development viability. The purpose of the viability assessment is to provide evidence to underpin the emerging Draft Core Strategy of the Local Development Framework by ensuring that current policy and any future proposals put forward by the Council are not so onerous that they prevent sites from coming forward, and stifle development of both affordable housing and open market housing.
- 1.2 New development has a cumulative impact on infrastructure and often creates a need for additional or improved community services and facilities without which the development could have an adverse effect upon amenity, safety, or the environment. Planning contributions are an important way of providing the physical, economic and social infrastructure required to facilitate development and support the creation of sustainable communities.
- 1.3 One of the most significant items of community gain sought from residential development sites is affordable housing. This reflects both the significant affordable housing need but also the increasing role that planning contributions have taken in delivering new affordable housing stock.
- 1.4 As the importance of planning contributions in funding infrastructure increases, the cumulative effect of the planning contributions can lead, in some circumstances, to the economic viability of a site being called into question. Although the cost of contributions is normally factored into site financial appraisals by developers when land purchase is contemplated, the development industry needs to demonstrate a profit, since no business exists without a profit motive.
- 1.5 It is increasingly important therefore that policy relating to planning obligations is realistic and credible, taking into account the local housing market, the economics of development, including price, supply, demand, need, and profit issues.
- 1.6 The aim of the Council in seeking planning contributions can be summed up as facilitating the development of sustainable and cohesive communities. Obligations help to provide a solution to infrastructure bottlenecks, and hence drive the process of housing delivery, particularly for affordable housing, which in this context can be regarded as a form of social infrastructure. Planning obligations are also a mechanism to secure a net environmental benefit.
- 1.7 To undertake the viability testing, a range of 'typical example' sites has been developed into Development Viability Assessment Models (DVAMs). These were designed to reflect actual sites, the local housing market, emerging Regional Spatial Strategy (RSS), and also to test certain key elements of the market and their impacts on viability. These elements include:
 - category of site
 - type of development
 - dwelling mix
 - dwelling tenure
 - revenue
 - construction costs

- planning obligations
- financing, including profit and fees
- existing use & alternative land value

1.8 The work for this report has been carried out in two stages:

- firstly, an engagement with a group of developers and agents, involving discussions of the factors to be taken into account when carrying out viability studies, particularly relating to the variables which can lead to wide differences in valuation, and looking at example viability assessments and the inputs;
- secondly, the development of a series of DVAMs that consider a range of typical development circumstances likely to be encountered in Stratford-on-Avon District, ranging from small brownfield sites in Stratford town centre, large greenfield urban extensions that are likely to be required as a consequence of the housing provision set in Regional Spatial Strategy (RSS), and smaller 'Local Choice' sites. The detailed DVAMs are included in Appendix 2. The development of the model with variable inputs is intended to be used by the Council to address viability issues for a range of sites that will emerge through the Draft Core Strategy and other LDF documents.

2 Current policy & approach

2.1 Stratford-on-Avon Council published its Draft Core Strategy in November 2008. The Draft Core Strategy sets out the broad level of housing required by RSS, and that this will be met through the concentration on a settlement hierarchy based on functionality, specified through Policy CS.1. The Joint Housing Assessment for South Warwickshire shows a significant need for affordable housing, and Policy CS.8 requires that a minimum of 35% of all floorspace in new housing on sites of 10 dwellings or more (or 3ha+) is provided as affordable.

2.2 The implementation section of the Draft Core Strategy recognises the need for development to be supported by appropriate infrastructure. Development has impacts on the environment and people, and it is therefore reasonable that developers contribute towards schemes that are designed to mitigate these impacts.

National Policy Context

2.3 Circular 05/2005 provides detailed advice in respect of the use of planning obligations to deal with the direct impacts of development. The circular appreciates that the planning system operates in the public interest and should aim to foster sustainable development, providing homes, investment and jobs in a manner which positively intervenes in the quality and condition of the physical and built environment.

2.4 The Secretary of State's policy requires that planning obligations should only be sought where they meet all the following policy tests. The tests state that the obligations must be:

- relevant to planning;
- necessary to make the proposed development acceptable in planning terms;
- directly related to the proposed development;
- fairly and reasonably related in scale and kind to the proposed development;
- reasonable in all other respects.

2.5 PPS1 requires Planning Authorities to ensure that social inclusion, economic development, environmental protection and the prudent use of resources are at the forefront of policy making and implementation. These considerations have formed an important element of producing this document.

2.6 Recent planning legislation proposes that Local Authorities should have the option of introducing a Community Infrastructure Levy (CIL), which will be a standard charge on development to pay for infrastructure to support development of an area. Although the CIL is not expected to be enacted until April 2010, the government is encouraging authorities which have embarked upon this approach to continue and not to wait until legislation for the CIL is in place. Consultation on the draft CIL is taking place between July and October 2009.

2.7 The conventional approach to securing developer contributions has been based on negotiations. This approach has been criticised for being inconsistent and often involves lengthy negotiations. The Council is increasingly moving towards a tariff-

based approach to developer contributions. Such an approach has been applied successfully to transport and open space contributions in recent years and it is expected that it will be extended to other areas of community infrastructure. Until CIL comes into force negotiations will still be required, even if formulas are used to calculate a contribution.

- 2.8 A range of Guidance Notes and Supplementary Planning Documents (SPD) has been prepared to provide detailed guidance on the planning application process, design and sustainability requirements for development, Planning Obligations and how to secure developer contributions towards transport, affordable housing and open space infrastructure.
- 2.9 Accordingly, Policy CS.30 of the Draft Core Strategy requires that all development proposals to provide or contribute to the provision of facilities, infrastructure and services, and other forms of environmental and social requirements that are necessary to make a scheme acceptable in planning terms.
- 2.10 Appendix A of the Draft Core Strategy sets out an assessment of locational options for future development, whilst Appendix B includes summary of policy considerations and planning obligations, together with a schedule of development opportunities and accompanying proposals maps that set out the proposed form of development, its main features, and the specific infrastructure requirements.
- 2.11 In summary the policy considerations and planning obligations seek:
- 35% of residential development, including self-contained accommodation for the elderly, should be affordable housing to meet local needs [Policy CS.8]
 - The range and mix of dwelling types and sizes should follow the principles set out in Policy CS.10
 - All new dwellings should meet or exceed Lifetime Homes standard [Policy CS.10]
 - Schemes should provide increased or improved provision for indoor and outdoor recreation and open space to meet the needs of its future users [Policy CS.19]
 - A detailed Flood Risk Assessment must be prepared to inform site layout [CS.23]
 - Effective Sustainable Drainage Systems (SUDs) and integrated surface water management measures are required [CS.23]
 - Schemes should safeguard any existing habitats with a positive contribution to biodiversity, create and manage additional habitats, and safeguard any features of geological interest [CS.24]
 - Buildings and features of historic, architectural and ecological importance should be protected in order to preserve the heritage and biodiversity of the area. Archaeological and ecological surveys are a pre-requisite of any planning application [Policies CS.26 & 27]

- The layout should create and enhance networks of green infrastructure for public and biodiversity benefit across the site and the wider area, protect existing rights of way, and connect with off-site foot and cycle routes [Policy CS.27]
 - Development should achieve the highest possible standards of sustainable construction, water management and energy efficiency with regard to site-specific opportunities, and in any case at least the standards required by Policy CS.28
 - Schemes should provide or contribute to the provision of facilities, infrastructure and services, and other forms of environmental and social requirements, such as transport, education etc [Policy CS.30].
- 2.12 The purpose of the viability assessment is to provide evidence to underpin the emerging Draft Core Strategy to ensure that current SPD policy, and any future proposals put forward by the Council are not so onerous, particularly in terms of affordable housing requirements, that they prevent sites from coming forward and stifle development of, not only affordable housing, but also open market housing. A growing proportion of affordable housing is delivered via Section 106 Agreements. It is increasingly important therefore that local affordable housing policy is realistic and credible, taking into account the local housing market, the economics of development, including price, supply, demand, need, and profit issues.
- 2.13 The main driver of development viability is the change in residual land value. If the residual land value created by the proposed development is not substantially in excess of the existing use value, then the development will not be considered viable by the market. The provision of planning obligations, particularly affordable housing, inevitably results in a lower site value, since affordable housing produces significantly lower revenues than open market. A key question the study addresses is whether the level of planning obligations, including affordable housing is deliverable, whether they will inhibit development generally, and what level of planning obligation can be delivered whilst maintaining economic viability.

What is economic viability?

- 2.14 Viability, or a lack of viability, is a concept frequently referred to by developers and landowners in negotiating contributions towards the provision of community facilities. The argument put forward is that the overall burden of community gain items can reduce the actual value to the owner below that of its existing or alternative value, or to such a level as to render it 'unviable', or simply not profitable enough to make a sale worthwhile to the owner, taking account of taxation liability and relocation costs.
- 2.15 Understanding viability is crucial in successfully interpreting planning obligations policy and conducting negotiations. Indeed, 'viability' is a central theme of national affordable housing policy contained in PPS3 (para 29), where local authorities are required to develop affordable housing policy supported by a robust evidence base. Policy should reflect an assessment of the likely economic viability of land for housing, taking account of risks to delivery, and be based upon an assessment of housing market demand qualified by an assessment of land value which can

sustain the required proportion and tenures of affordable housing, in the context of all the costs and constraints of development.

- 2.16 Viability has a central role in policy evolution and negotiations but there is little government guidance as to how viability negotiations are to be conducted or how local authorities are to make decisions based upon the outcome of a viability appraisal. The government's aim through planning is to ensure that enough land is identified and brought forward for housing, but it recognises that in order to do so, residual land values must be high enough to encourage landowners to sell land for housing. It therefore requires local authorities not to impose a burden of planning gain and affordable housing that is so great as to depress the land value below that which is sufficient to bring land forward.
- 2.17 The critical question is what is a 'viable' land value? What should be reasonably expected by landowners as a residual value, once all costs have been deducted? The approach we have taken to this concept is that it is rational to assume that if a valuation is arrived at which is in reasonable excess of the current or alternative site value including its current or potential income, taking account of all sale and related costs, the landowner will be targeted by developers, and the site will be delivered through the operation of the market.
- 2.18 What is a 'reasonable excess' in practice? It must be a level sufficiently acceptable, given all the planning circumstances, to persuade the landowner to dispose to a developer.
- 2.19 **The definition of 'viability' for the purposes of this assessment is the attainment of a site value sufficiently in excess of the current site value that all stakeholders, including the purchaser and landowner, all acting reasonably and rationally, would accept, thus securing delivery of the proposed development.**
- 2.20 Clearly, not all landowners will adhere to the same concept of reasonableness and rationality in defining viability. Other studies of economic viability have taken two broad approaches. One relates to the acceptability of residential land prices to existing / alternative non-residential use values ('the economic approach'). The other relates acceptability to expectations based on residential land prices currently being achieved ('the psychological approach').
- 2.21 There are a number of specialist consultancies in this field, in particular 3 Dragons, and Adams Integra. Both tend to favour the psychological approach. A recent study by Exeter City Council highlights the fact that there are no clear cut off points at which development will become viable or unviable. Much will depend both on a site's existing / alternative use value and its owner's needs and aspirations.
- 2.22 The Exeter study has explored landowners' needs and aspirations. The outcome of whether an owner sells a site will depend on landowners' needs and expectations and no hard and fast rules can be set about these. The position of a developer who bought land many years ago with hope value and who wants to keep their business running at a certain level is different from that of a farmer, whose business is farming and is under no pressure to sell, or a college or health authority needing to raise finance. So a site could be viable to one owner and not viable to another.

- 2.23 Expectations about trends in house prices and the direction in which planning policy is moving could both affect the decision to sell, since the landowner could consider whether things will get better or worse in future. A volume house-builder would consider its options in the context of its overall business including the availability of opportunities elsewhere.
- 2.24 Some studies (DTZ for Basingstoke & Deane, Winchester & East Hampshire, 2008) have used the concept of the Internal Rate of Return (IRR) as the benchmark of viability, assuming that all sites with an IRR of more than 10% will be viable. An IRR is an assessment of residual valuation through a discounted cashflow, in which all future cashflows are discounted to give the project a present value.
- 2.25 This study considers that IRR is a complex process and in the interests of greater clarity, it prefers to use the simpler comparison of relative land values, comparing the value achieved on the assumption of a planning consent with the existing use value. If a value with consent is sufficiently in excess of the current site value, taking account of current and potential incomes, then the site can be considered to be viable. The difference in values is measured by a simple **uplift factor**.
- 2.26 As an example, a typical 3 hectare greenfield site adjoining a large settlement with an open market value (OMV) of £200,000 (reflecting a 'hope value' of £66k/ha) without planning permission, might be worth say £2.5 million with a residential consent, having allowed for all development costs and contributions.
- 2.27 The significant increase in value of £2.3 million represents an **uplift factor of 11.5**, and would plainly demonstrate viability. The excess will be different in different circumstances, reflecting current use and taxation levels.
- 2.28 At the other end of the scale, the owner of a brownfield site with an existing use value of £500,000 that could be worth £850,000 with a residential permission would probably consider that the increase of £350,000 (or uplift factor of 1.7), insufficient to persuade the owner to sell, particularly given taxation on capital gains, in addition to sale and possible relocation costs. For most sites, an uplift factor of about 2 to 3 will be required to enable viability, depending on site characteristics and circumstances. These uplift factors have been used in the example site assessments to determine the achievement of viability, and justified in a viability statement for each DVAM.
- 2.29 The fact that viability is not a fixed point or value has been touched upon. The DVAMs find, for example, that a small brownfield site can be viable with an uplift factor of 2.57, (DVAM 4). Here the existing use value is £350,000, and the residential value is £899,000, with an uplift of £549,000. Whilst the uplift factor is only 2.57, the amount of uplift is large compared with the base value, so it has been concluded that the site is just sufficiently viable.
- 2.30 In addition to achieving an acceptable uplift factor taking account of the existing use value, all sites must exceed the opportunity cost of income that could be generated by an alternative use. As an example a 1 ha brownfield site in an appropriate location could theoretically accommodate about 100 cars for parking at £5 per day for say 40 weeks, or 200 days, which would generate an annual income of £100k. At 50% capacity taking account of overall and fluctuating demand, as well as voids, 50 cars would generate £50k per year. The uplift value should take

account of potential for such income, and the potential annual interest that would be generated by the sale and forgone if the site remains a car park should exceed the potential income in an alternative use. This opportunity cost factor has been built into DVAM example 5, a large brownfield site close to the town centre.

- 2.31 Greenfield urban extensions are often subject to option agreements, where the value is calculated at the time planning permission is granted, and where there is frequently a minimum value provision in the agreement. The typical minimum land value is about £250,000 per gross hectare, and sites that achieve less than this are deemed not to be viable. In times of market instability there may be occasions where viability is overturned because the minimum value is not reached because of falling revenues and fixed levels of contributions.
- 2.32 Where there is doubt about viability, this assessment has introduced the concept of **marginal viability**. This happens when it is unclear as to whether an owner would accept the uplift amount, and in these circumstances the 'psychological' approach would determine the outcome. The 'economic' approach finds that the site is strictly economically viable, but the increase in land value is such that it may be insufficient to tempt owners to sell. They may decide to wait for the optimum time in their lives to realise the asset, since the sale of a site by an individual is often a once in a lifetime opportunity that may lead to a life-changing circumstances, such as retirement.

3 The valuation variables

- 3.1 A number of assumptions need to be made about the DVAMs in order to illustrate value and a site's ability to meet community gain, and remain viable. A site can be developed in a myriad different ways, and the variables are so numerous that the valuation permutations are infinite. The DVAMs consider the variables that have the most significant effects on value, to enable the Council to input a real site's characteristics and costs in order to reach viability conclusions. The principal variable factors are explored below:

Dwelling mix

- 3.2 This reflects location and site characteristics, and the particular approach of the developer. Town centre sites are more likely to accommodate a mix of town houses and flats, whilst greenfield urban extensions will have a wide range of family dwellings across the board to reflect the entire range of market demand.
- 3.3 Each example DVAM make reasoned assumptions about the type of dwellings and density that would be appropriate for the location and size of the site.
- 3.4 The Meeting Housing Needs SPD concludes that the housing tenure mix should be 65% open market and 35% affordable, of which a minimum 75% should be social rented, and 25% shared ownership, or sale at a discount to OMV. Overall, this equates to 65% open market, 26% rented, and 9% shared ownership. Furthermore the SPD sets out an optimum dwelling mix of 50% 2-bed units, 30% 3-bed and 20% 4-bed. In rural communities, the tenure mix should be based on actual local needs, determined by housing needs surveys, the prevailing market conditions, and ideally be community led through a Parish Plan.
- 3.5 These conclusions are reached on an idealised basis, matching household composition with the most efficient dwelling unit. In practice, developers will build exactly what purchasers want to buy, subject to the planning permission for the site. Frequently, a purchaser prefers to buy a dwelling with more accommodation than they actually need to provide for flexible and changing lifestyles. The dwelling mixes selected for each of the DVAMs reflect as closely as possible what a developer might choose to build, based on all the relevant factors, but recognising that there are an infinite number of ways to develop a site.
- 3.6 The Local Choice SPD, aimed at meeting the needs of rural communities, is particularly aimed at providing affordable housing for an identified need. It is intended to go beyond the provision of affordable housing on exceptions sites, and can include proposals for a limited amount of local market housing, built for sale only to local residents, that can only subsequently be disposed of in the local market. In this way land values will be restricted, but there is an incentive to landowners to realise significantly higher than agricultural land value, but significantly less than the open market value, effectively bringing forward both tenures to meet a local need where no opportunity would otherwise exist. The DVAMs consider two Local Choice examples, each considered with 60%, 65% and 70% affordable floorspace.

Coverage, or saleable floorspace

- 3.7 In order to value the land for open market housing by the residual method, assumptions need to be made about the likely saleable floorspace. 'Coverage', which measures the efficiency of land use, varies according to individual types of scheme, from around 3300 sq.m. per hectare (smha) for a traditional 2 storey development often with larger detached houses, to about 4250 smha for predominantly 2 - 2.5 storey development, and 4100 - 4800 smha for 2.5 - 3 storey schemes.
- 3.8 Floorspace is also affected by the loss of land given over to other uses than residential. Housing needs to be serviced by roads for instance, and, for larger developments, land is required for public open space, strategic landscaping, community buildings, employment, and possibly schools. The loss of such land uses have been taken into account in reaching net residential areas, and have been considered in the DVAMs. For the large greenfield urban extensions, only just over half of the gross area is assumed to be available as net residential land. Evidently, coverage has a major effect on sales turnover, and in turn, land value, which is a consequence of the relationship between sales turnover and development costs, profit, and overhead. Total turnover is dramatically increased by greater coverage.
- 3.9 For each DVAM an assumption on the amount of floorspace has been made based on the dwelling mix, and informed by different dwelling sizes favoured by private developers, housing associations, and also guided by the minimum space standards set out in key principle MHN14 in the Meeting Housing Needs SPD. As a guide, a range of typical floorspaces for different dwelling types is set out below:

Dwelling type	Typical floorspace range sq.m
1-bed 2 person	40 - 50
2-bed 3 person	60 - 65
2-bed 4 person	70 - 75
3-bed 5 person	80 - 85
3-bed 6 person	90 - 95
4-bed 6 person	110 - 120
4-bed 8 person	130 - 150

Sales value

- 3.10 In order to arrive at a total sales turnover, assumptions need to be made about sales values. These have been sourced from an assessment of the housing market based on discussions with local developers and agents about their current experience, generic websites such as the The Right Move, as well as research into sales prices in the district carried out earlier in 2009 by CBRE for St Modwen in connection with the proposed Eco-Town at Middle Quinton. In this way, a range of values have been established between about £2100/sq.m and £2800/sq.m, depending upon type of development (flats, townhouses, traditional 2-storey etc.) and location (town centre, suburbs, urban extension, village, etc). Evidence carried out early in 2009 by CBRE of transactions and prices in the district achieved per sq.ft is shown in appendix 1.

- 3.11 Sales values are also affected by the specification of the development. A high specification scheme, usually in a high demand location, can lead to premium sale prices. Selling prices for a top quality scheme may achieve up to £4700/sq.m, but to reach such high values, the construction costs will be commensurately higher.
- 3.12 Open market sales values can also be affected by the proportion of affordable housing on a site, as well as the juxtaposition of open market housing with affordable housing, particularly social rented units. When assessing individual sites, and applying the principles of the DVAMs, the Council will need to factor in the actual sales value that will be achieved on the site.
- 3.13 The DVAMs consider different sales value for each example, based on the specified location. Evidently, the higher the sales value, the greater the chance of achieving viability, or the greater the proportion of affordable housing can be borne by the development.

Sales value for affordable housing

- 3.14 Registered Providers of Social Housing (housing associations and other qualified providers) have access to funds from the Homes and Communities Agency in the form of subsidy from public funds, such as Social Housing Grant (SHG) to purchase affordable units from developers through the operation of S.106 agreements, or they may purchase land and build the units themselves. The most common way is that affordable housing is built by the developer and transferred to the RPSH at a price below the full market value. The gap between the full market value and the price paid by a developer represents the level of private subsidy (e.g. developer or landowner subsidy).
- 3.15 In the current economic climate, it is increasingly important to ensure that the most effective use is made of public funds. This generally involves targeting SHG only to those projects that need it. The Meeting Housing Needs SPD anticipates a 'cascade' mechanism to ensure the most efficient and effective use of public funds in delivering affordable housing schemes. Firstly reduced land values will be used as a means to provide affordable units, followed by cross-subsidy, generated from the profits from the sales of open market housing, followed only in exceptional circumstances by the use of grant.
- 3.16 The DVAMs use reduced land values brought about by reduced revenues at about 40% of the open market, and where sites are unviable, or only marginally viable, the proportion of affordable units is reduced, followed by a reduction in standard planning contributions.
- 3.17 There are an infinite number of possible ways to provide affordable accommodation, with or without grant. On instruction from the Council, we have assumed that no social housing grant will be available to support the transfer and acquisition of affordable housing through their delivery by S106 agreements from the private housing developers to housing associations.
- 3.18 The provision of affordable housing through the use of S.106 agreements within the framework of Policy COM.13 will only be considered acceptable where the dwellings comprise units for social rent, or homes for sale under a shared ownership lease. The maximum costs to renters must not exceed the maximum allowable cost calculated in accordance with the Target Rent

Regime, and for purchasers, the maximum cost is to be 3.5 times the average annual household income for a single earner household or 2.9 times the annual household income for dual income households for the District.

- 3.19 Comparing the capital values, the social rented homes are generally 50% of market entry house prices and typically around 70% below Open Market Prices. Shared ownership housing usually varies from about 80% of OMV down to about 40% depending on the proportions purchased and rented, whilst 'staircasing' arrangements enable occupiers to vary these proportions in time, eventually purchasing 100%. However, in the current market, there is little support for shared ownership, and combined sales values have been assumed that merges all affordable incomes.
- 3.20 For this viability assessment, an overall figure needs to be established for use in the DVAMs, and taking into account the various proportions of OMV realised through different tenures, overall sales revenues have been assumed at 40% of open market values across the board. This is a reasonably cautious level of revenue that will not distort viability conclusions, and is significantly less than the 60% assumed by CBRE in the viability assessment for Middle Quinton Eco Town, who assumed a 'blended' rate of £1776/sq.m (60% of open market sales at £2960). The DVAMs in this assessment uses affordable sales prices of between £840 and £1120 depending on location and type of dwelling.

Build costs

- 3.21 The overall build costs, including on-site infrastructure, must be deducted from total turnover to give an interim land value. After wide consultation in May 2009 with the housebuilding industry operating locally a range of build costs have been used. The range quoted was from £750/sq.m up to £1200/sq.m.
- 3.22 The major national housebuilders build at an average of about £750 - £800/sq.m, including normal infrastructure, and the range reflects the ability of the volume housebuilders to achieve significant economies of scale in the purchase of materials and the use of labour. Many small developers are unable to attain these economies, so their construction costs will be higher; however, this can be compensated for by lower overheads, and this often enables smaller developers to acquire sites in competition.
- 3.23 Housing Associations also tend to specify higher build costs than the volume housebuilders. This is because they frequently employ a contractor for the construction of affordable dwellings, as opposed to developers who either employ construction workers, or engage in direct sub-contracting. In this way, the volume builders build at cost, whereas the Housing Associations will be paying a profit element on top of build costs to the contractor. Typically, a Housing Association might have build costs of £1000 - £1100/sq.m. In order to compensate for these higher build costs, a Housing Association will not require the profit levels sought by the private developers, typically 20% of gross turnover, and in addition, part of the building costs fees may be absorbed in the contractor's build cost.
- 3.24 A provider of rural affordable homes operating in the district specifies build costs of £1300 to £1500/sq.m, owing to the additional costs of satisfying the standards for LifeTime Homes, Building for Life, and the Code for Sustainable Homes through

which the organisation is increasingly providing green technologies, for instance, air sourced and ground sourced heat pumps.

- 3.25 This Assessment has concentrated on private developers' build costs. Much of the affordable housing delivered through S.106 agreements is actually built by the volume developers at their lower rates. However, in order to allow for different circumstances, and for the higher build costs associated with conversions, and more sustainable construction techniques, build cost rates have been varied in the DVAMs, using a range of between £850 to £1200/sq.m.

The Code for Sustainable Homes

- 3.26 This range is not just to test the costs of different types of developers. Emerging government policy requires that from 2011 all new and refurbished buildings achieve at least Code for Sustainable Homes Level 5. From 2016, all developments of 50+ in urban extensions should meet Level 6 (zero emissions from heating, hot water, ventilation or lighting). The Council, in the Meeting Housing Needs SPD, policy MHN15, and in the Draft Core Strategy, requires that all new dwellings should achieve at least Level 3 of the Code for Sustainable Homes, and from 2012 should achieve at least Level 4.
- 3.27 The consequence for construction costs has yet to be fully assessed, but the new standards may result in higher build costs, that could affect viability. The possible increased costs for implementing the new Code have been estimated in a recent report by English Partnerships and the Housing Corporation, entitled 'A cost review of the Code for Sustainable Homes'.
- 3.28 The estimates vary significantly from site to site (e.g. depending whether site-wide combined heat and power generation is possible, whether small-scale wind-turbines could be used etc). The report suggests that Level 3 can be achieved for no more than a couple of thousand pounds per home in some instances, whereas the scenarios modelled for Level 4 show cost increases of between 4.8% and 16.6% for a detached house.
- 3.29 For the most widely applicable site/solution combination the report concluded that achieving Level 4 of the Code for Sustainable Homes would cost between 12% and 20% extra. For Level 5, the average increased cost per dwelling will be about £24,500, and taking the average house size as 90 sq.m, the HMA dwelling type requirements) the increased cost is £280/sq.m.
- 3.30 The range across dwelling types is between £180/sq.m - £370/sq.m, which if added to a volume builder's unit cost of £750/sq.m, would result in £1120/sq.m. Accordingly, it is sensible to consider a range of build costs to address the Code for Sustainable Homes in the DVAMs. The model variables allow the user to input the appropriate build cost to allow for sustainable construction techniques.
- 3.31 As developers embrace the new standards, they will develop new technologies and become more efficient, leading eventually to lower costs. The Council will need to factor in actual build costs at the time a viability assessment is prepared, taking account of any new standards. The new standards may result in higher sale prices to reflect greater demand from the public for these enhanced products, which would have the effect of partially off-setting higher construction costs.

Developer's profit and professional fees

- 3.32 All developers have a slightly different approach to levels of profit and overhead. Profits are derived from turnover across a number of sites, some of which may have been held long-term in land banks, and others acquired as a result of option agreements where price is established at a discount to OMV. The most appropriate profit level is that which most developers assume when appraising sites for purchase for immediate development.
- 3.33 Other viability studies have reported a typical figure of 15% of gross turnover: (Three Dragons for Greater London Assembly, Adams Integra for Worthing, Horsham and Arun, Atis Real for the GLA Development Toolkit, adopted by Exeter City Council for its assessment). A recent viability study of October 2008 of the Northern Peninsula Housing Market Area Partnership (North Devon and North Cornwall) points to the cyclical nature of profit margins. Profits are a function of the property cycle, where profits can be squeezed in a falling market and rise at an increasing rate in a rising market. Empirical evidence attests to this cyclical behaviour in that the Barker Report [2003] cites the average rate of profit [%] based on a ratio of trading profits to turnover for the main house builders in the table below.

Year	Profits as a % of turnover	Profit as a % of Costs [Equivalence]	Position in the property cycle
1989/90	23%	30%	Peak
1992/93	10%	11%	Falling market; point of inflection
1994/95	13%	15%	Slow recovering market
2000/01	15%	18%	A rising market
2002/03	16%	19%	A continuing rising market

Source: Barker Review, Interim Report – Analysis, 2003, p.65.

- 3.34 Another consideration is the concept of normal profit, where each economic sector is presented as having a 'normal' or acceptable rate of return that needs to be achieved to keep them interested in staying in that sector or country. Consequently, if house builders are squeezed and find their returns falling much below, say, 15% they might resort to other development or related activities.
- 3.35 Economists would explain the transfer of resources to alternative activities as an opportunity cost, and our discussion with local developers would suggest that companies see the housing market as potentially less restrictive and more lucrative as a means of diversifying and spreading risk, but that they need to retain flexibility as markets change.
- 3.36 Our discussions with developers reveal an acceptable profit margin of between 15% and 25% on turnover. In some cases, higher margins might be justified given the range of contingencies and higher risks associated with some sites. One developer contended that since the current recession worsened in December 2008, the Board will only approve land purchase at a minimum of 25% profit on turnover to minimise the risk of further weakening in sales prices. In the longer

term, developers may purchase land at lower profit margins, particularly in competitive situations or perceived rising local markets, but this rarely goes below 15% of turnover.

- 3.37 It is also recognised that though the presence of affordable housing can be seen as potentially reducing the value of market homes, it can also introduce an element of lower risk, as pre-sales to RPSHs improve developers' cash flows. This has been a feature of the current recession as volume housebuilders offload units intended for the open market to RPSHs. One RPSH operating in the district allows for 7% to 10% for profit and overhead for its contractors providing affordable units.
- 3.38 An appropriate rate of profit might lie between 20% and 25% of turnover. Ultimately, this depends on a number of factors, including competition, demand, and position on the property cycle. Following discussions with individual large and small developers, and surveyors, an overall industry average of 20% of gross turnover has been used for the DVAMs. The profit margin is a variable in the model, and can be altered to suit individual circumstances and changes in the economic cycle.
- 3.39 In addition, building cost fees, including the fees of architects, engineers, planning, survey, project manager and insurances, add up to 3 - 5% of the gross construction cost. These costs have been factored into the DVAMs at a rate of 4%, in addition to allowances for marketing and legal fees, as well as financing and land acquisition costs.
- 3.40 For complex sites, particularly for the larger urban extensions, there will be additional planning promotional, and associated holding costs, that might increase these fees to about 8%. Fees can also be higher for rural affordable schemes since small RPSHs typically have little in-house expertise and rely on a greater level of service from contractors, of up to 15% of gross development costs. Each individual circumstance should be factored into calculations when dealing with real sites.

Additional or 'abnormal' development costs

- 3.41 The next stage in the consideration of land valuation and variables is an examination of development costs, beyond those accounted for in the overall build costs. These will include physical items such as improvements to highway access, off-site highway improvements, additional drainage requirements, strategic landscaping, increased costs associated with development on excessive gradients, and costs of demolition and abnormal foundations.
- 3.42 There will be different levels of development costs according to the type and characteristics of each site. The approach taken is to allow for a relatively low level of abnormal development costs for small sites, and higher costs for the largest sites, where urban extensions will require considerable investment in new infrastructure.
- 3.43 The DVAMs allow a figure equivalent to about £100,000/ha for standard abnormal costs associated with the provision of improved highway access and junctions, and standard drainage provision. This has been arrived at after discussions with developers and agents reflecting typical development sites. In the DVAMs these costs are allowed for in setting £1500/dwelling against additional highway costs, and £1000/dwelling for off-site drainage works. Demolition and site remediation is set at £15/sq.m, and is allowed in each brownfield DVAM, but not in the greenfield

examples. Any other known abnormal cost can be factored into a DVAM when the Council is considering an actual site.

Community gain package

- 3.44 The Draft Core Strategy Appendix B includes summary of policy considerations and planning obligations, set out in para 2.6. In most developments, in addition to physical costs, a community gain package will normally be required to cover such items as sustainable transport and education contributions. For large urban extensions, the community gain package will be substantial. For instance, new schools will be required to cater for the children generated by the development, in addition to buildings for community use. As a broad guide, a new 1-form entry primary school is required for a development of 800 - 1000 dwellings.
- 3.45 The Draft Core Strategy recognises that most development has impacts on the environment and the community, and it is reasonable that impacts are mitigated. Contributions towards this mitigation is governed by Circular 05/2005 which requires developer contributions to be sought only where they are:
- necessary
 - relevant to planning
 - directly related to the proposed development
 - fair and reasonably related in scale and kind to the proposed development
 - reasonable in all other aspects.
- 3.46 A range of SPDs has been prepared to provide guidance on requirements for planning obligations and developer contributions towards transport, affordable housing and open space infrastructure. The Council is also working on other infrastructure requirements to assist with the preparation of emerging LDF documents, which considers utility provision, and community resources such as additional policing.
- 3.47 The published guidance in Stratford comprise SPGs on the provision of Open Space (2005), Transport (2007), and Meeting Housing Needs (2008), discussed earlier in this section. The Open Space SPG sets out open space standards to be achieved on site, and contributions in lieu in exceptional circumstances if provision is made off-site. The DVAMs assume in all cases that provision is made on site, and therefore only includes a figure equivalent to about £40,000/ha (£1000/dwelling) based on developer experience.
- 3.48 The Transport SPD requires developer contributions towards transportation schemes, which fall into two categories:
- towards strategic transport measures specifically in Stratford-on-Avon, which are calculated at £224/daily vehicle trip generated by the development, at 5.5 daily trips/dwelling, so generating £1120/dwelling.
 - towards site specific measures for public transport, walking and cycling needs. This is based on the current level of accessibility to these services, so a site close to the town centre with good accessibility to public transport, and in a location that made walking and cycling a popular option, would be required to contribute a relatively low contribution. For a site in a relatively inaccessible location, the contribution sought would be higher, and for the

purposes of this viability assessment a sum of £1380/dwelling has been allowed as an average to respond to all circumstances.

- 3.49 Since the costs of the strategic transport measures are related specifically to Stratford-on-Avon, they are not applied to sites in the Main Rural Centres. Accordingly, the DVAMs allow a total of £2500 per dwelling for all sites in Stratford, £1400 per dwelling in the Main Rural Centres, and £1000 for Local Choice sites. Providers of affordable housing in rural areas have emphasised that demands for S106 contributions for all aspects of community gain could make already expensive rural affordable schemes unviable, exacerbated by the high construction costs set out earlier. This should be recognised by the County and District Council as a possible impediment to the provision of affordable housing where it is needed to be delivered, which justifies the lower level of planning obligation sought for the Local Choice sites.
- 3.50 The Council also requires that developments respond to education requirements generated by it, but has yet to publish any supplementary guidance to developers. The County Council is responsible for negotiating contributions, and these are usually based on the same principles enshrined in the Planning Obligations SPD published by Rugby Borough Council a neighbouring LPA, which also addresses the requirement for library facilities. Warwickshire CC confirm that it would apply the Rugby principles to any relevant site in Stratford on Avon.
- 3.51 In Rugby education contributions are only requested where there is pressure on school places that would be created or exacerbated by a proposed development. It should be noted that relevant dwellings are those dwellings with two or more bedrooms but excluding those two bedroom dwellings designed specifically for use by the elderly. The contribution is calculated as follows:

Primary Contribution.

$N \times 2.4 \times 0.0104 \times 7 = E$ rounded up or down to give $P \times PM$
= The Primary Contribution

Secondary Contribution.

$N \times 2.4 \times 0.0104 \times 5 = E$ rounded up or down to give $P \times SM$
= The Secondary Contribution

Sixth Form Contribution.

$N \times 2.4 \times 0.0104 \times 1.2 = E$ rounded up or down to give $P \times 6FM$
= The Sixth Form Contribution

Where:

- N = The permitted number of "Relevant Dwellings".
- 2.4 = The average number of occupants per house as per the 2001 Census.
- 0.0104 = The Birth Rate as per the 2001 Census.
- 7 = The number of year groups in Primary Education.
- = The first five year groups in Secondary Education.
- E = The effective number of additional places.
- P = The rounded number of additional places.
- PM = The DfES Primary Pupil Place Cost Multiplier.
- SM = The DfES Secondary Pupil Place Cost Multiplier.
- 6FM = The DfES 6th Form Pupil Place Cost Multiplier

- 3.52 The DfES Cost Multiplier for quarter 4 of 2008, adjusted by a local factor of 0.98 to reflect circumstances in Stratford-on-Avon, was £12,012 per Primary Pupil Place, £18,100 per Secondary Pupil Place, and £19,629 per 6th Form Pupil Place. When this is applied to a typical development, the calculated contribution sought is £5245/qualifying dwelling. After allowing for the 15% non-qualifying dwellings, this would reduce to about £4500 for every dwelling, for the purposes of the DVAMs.
- 3.53 An allowance is also made for library facilities, including the provision of buildings, terminals, furniture, books, films and CDs, which works out at just over £200 per dwelling. In order to allow for this, and for other community resources such as additional policing, and public art, an allowance of £5000 per dwelling is set to cover education, libraries, policing and public art.
- 3.54 The overall allowance included in the DVAMs for all planning obligations is set at £8500 per dwelling in Stratford-upon-Avon town, £7400 for sites in Main Rural Centres, and £1000 for Local Choice sites, to cover transport, education, libraries, policing and public art, and the provision and maintenance of equipment for public open space. This is set out in the following table:

Planning obligation	Cost/qualifying dwelling £		
	S-O-A	Main Rural Centres	Local Choice sites
Public open space equipment	1000	1000	
Transport	2500	1400	
Education, including library facilities, additional policing, and public art	5000	5000	
total	8500	7400	1000

- 3.55 For a large urban extension of say 1000+ dwellings, the unit cost will increase to reflect the need for completely new physical and community infrastructure, and therefore for large sites a higher figure of £15,000 per dwelling has been used, to allow for education, transport, library, police, public art, open space equipment /maintenance, local centre, etc. This allowance is in line with other districts, and it should be noted that in Milton Keynes, a figure of £20,000 per dwelling is used to cover a similar range of community gain items.
- 3.56 The Stratford-on-Avon figure of £8500 is appropriate because the Council's aspirations are clearly set out in the Draft Core Strategy, recently adopted SPDs, in emerging work on infrastructure requirements, and standards set by the County Council. Until the Council decide to apply a CIL, and at what level, this is the most appropriate figure to use in the context of this viability assessment.
- 3.57 In the future, if the Council wants to test infrastructure costs and the overall community gain package according to individual and actual circumstances, the level can be varied in DVAMs for specific sites.
- 3.58 All of the valuation variables are addressed in the individual DVAMs which are set out in Appendix 2, and discussed in section 5.

4 The current housing market in 2009

- 4.1 A consideration of the current state of the housing market, and an engagement with the development industry was considered essential for the purposes of this development viability assessment, especially because it is being carried out at a time of serious downturn in the housing market.
- 4.2 Due to the recession which first became evident from the reduced availability of credit apparent since September 2007, developers, agents and private housing developers confirm a significantly downturned local housing market. The three largest volume housebuilders have (with very few exceptions) stopped land acquisition in response to reduced demand for new housing, preferring instead to rely on their current land banks.
- 4.3 Currently, developers are in particular wary of large schemes of flats, volume sales of which were highly dependent upon the buy to let market that relies on short-term capital growth, and which were frequently financed by mortgage schemes that would no longer be viable. No one can predict the length or severity of the current downturn, but its effect will evidently be to limit market capacity in the short term.
- 4.4 Property experts predict that after a period of re-adjustment underlying demand will return to recent levels, albeit at re-structured prices. The market emphasises that there must be a balanced delivery of a mix of house types, and an over-reliance on one type of dwelling, creates over-supply and low demand problems.
- 4.5 Because of these recent market difficulties, there is now evidence that residential land values have decreased by around 55% since September 2007, depending on individual and local circumstances. By then, land values had reached an unsupportable level partly due to intense competition, driving prices up because of a combination of low supply and high demand. The most obvious change in the land market is that developers have no immediate reason to acquire sites, as well as having little finance available, so 2009 has seen a further softening of land prices due to this reduction in demand.
- 4.6 A number of recent nationwide research reports corroborate this position: Savills reported in May 2009 that nationally house prices have fallen 18.7% from the peak in September 2007. In the West Midlands the equivalent figure is 17.5%. Transaction levels in all markets are at an all time low, down by between 60% and 65% from the peak of September 2007. In the new build market, this figure could be as much as 80%, unless very substantial price cuts have been made.
- 4.7 The consequence of this is that the price of new homes has fallen faster and further than the secondhand market, and new build prices have typically fallen by 20% to 25%. In some markets, an overhang of unsold stock means values have fallen even further. Knight Frank's Residential Development Land Index for March 2009 showed similar falls in the value of residential sites over the past year, of 50% nationally, 55% for West Midlands greenfield sites, and 48% for brownfield land.
- 4.8 The position with regard to sales prices in Stratford-on-Avon district appears to be broadly similar to national and regional trends. Overall prices have fallen by 7.7% over the past year to March 2009, (source - Land Registry of England and Wales,

May 2009). Average house prices are the highest in the area, at £251,000, 159% of the West Midlands average.

- 4.9 There is little evidence of local land values since there have been so few transactions, but developers and agents are united in estimating a fall of 55% - 60% from the peak on late 2007. Land values peaked at around £5 million per net developable hectare for open market housing, and might be worth around £2m/ha in June 2009.
- 4.10 Land trading has, with few exceptions, completely halted, as buyers for standard development sites with planning permission have all but disappeared. However, deals have been salvaged by restructuring to include joint ventures, build licences and phased payments, thus minimising the loss of overall value.
- 4.11 Property experts still expect a gloomy 2009, with a recovery possibly starting in late 2010 - 2011. In the West Midlands, Savills predict a 1% price fall in 2010, followed by a 1% increase in 2011, so the market is likely to be very flat for at least two more years. The government's rescue package may not have averted recession, but intervention and policy initiatives look set to ease liquidity slowly. This will improve mortgage availability and increase residential market turnover towards levels more usually seen in a downturn, rather than the historic lows currently being experienced. Interest rates have already fallen sharply. The base rate was cut from 2% to 1.5% in January, to 1% in February, and to 0.5% in March 2009.
- 4.12 Whilst short-term demand in Stratford-on-Avon has fallen, medium and long-term demand is still considered by the market to be strong. This is underpinned by government policy to deliver a much increased level of housing to meet a national shortage, arising from a continuing high level of new household formation. In the medium term, the housing land market will continue to be comparatively strong for most house types in all parts of the district, whilst housebuilders and private vendors will adjust prices to align with demand. The difference between this and previous recessions is that it was largely caused by a lack of available financing, as opposed to a dramatic fall in actual demand.
- 4.13 It is considered that, due to the reasonably strong land values in the area, it is unlikely that many sites will remain unviable in the medium term because of abnormal development costs or competing land uses, although some flat schemes may be delayed for some time, or abandoned in favour of other house types.
- 4.14 No-one can predict accurately how long a recovery in the market will take, but most accept that markets operate in cycles. The last housing recession started in 1990 and did not recover until about 1995, but was caused by different economic circumstances. Most experts consider that within about two years, a recovery will be under way. In those circumstances, land values will start to recover, and most abnormal development costs and community gain packages to be absorbed without falling below the value for alternative uses, such as general employment and warehousing land. Whilst economic viability is currently a significant issue, over the medium term there is unlikely to be delivery problems for the housing sites identified in this study. Viability issues and likely revised start dates have been built into site assessments and completion programmes.

- 4.15 The ability to deliver affordable housing and a planning obligations package is largely driven by high land values derived from high sales prices. Stratford-on-Avon district is fortunate in that respect, having the highest average sales prices in the West Midlands.
- 4.16 This assessment has indicated that 35% affordable housing together with the other specified planning obligations is achievable in most circumstances and there appears to be no good reason why this proportion should not continue to be sought through policy in the Draft Core Strategy. Because of the fragile state of the housing market, policy needs to retain some flexibility so that in circumstances where a lack of viability can be demonstrated an alternative proportion may be negotiated.
- 4.17 The development of the model with variable inputs is intended to be used by the Council to address viability issues for a range of sites that will emerge through the Draft Core Strategy and other LDF documents. The DVAMs have standard variables that can be adjusted to suit individual site circumstances, which will produce automatic uplift factors and lead to viability conclusions.
- 4.18 At the time this report was compiled, the District Council was applying a moratorium on planning permission for housing development in the district, with the exception of certain types of scheme seen as having local benefits, e.g. affordable housing to meet local needs. The details of the moratorium were set out in an adopted SPD "Managing Housing Supply", November 2006.
- 4.19 The moratorium was seen as a means of preventing significant over-provision of housing in this part of the region which could have undermined the RSS's development strategy which placed emphasis on the need to achieve urban renaissance and the avoidance of out-migration from the West Midlands Conurbation. The moratorium is likely to be reviewed in the short-term in the light of new strategic housing requirements emerging from the RSS Phase Two Revision.
- 4.20 Such a planning policy approach could result in house price and land value inflation, but the effects have been muted by the recession. There is no evidence that the moratorium is in itself affecting the viability of the example housing sites considered in the assessment. There could be a short to medium term impact on the delivery of affordable housing as a result of the moratorium since there will be no S.106 sites coming through the system.
- 4.21 Coming out of recession, and assuming that the moratorium will be lifted in regard to the sites allocated in the Draft Core Strategy, there should be no impact on the delivery of all housing tenures in the longer term.

Engagement with the development industry

- 4.22 The development of the viability model has taken place against the background of wide ranging discussions with the house building industry and with agents active in the land sale and purchase process. Meetings and discussions have focussed on the variables that affect land values and viability, exploring the concept and measurement of viability, the state of the current market and variables such as developers' profit is affected by recession, levels of planning obligations, and the

need to consider value generated from alternative uses for land against uplift values.

- 4.23 The main findings of a preliminary draft of the viability assessment were circulated to a group of developers and agents, whose assistance has been invaluable and much appreciated. The group included Jo Hanslip of Redrow, Neil Gilliver of Midlands Rural HA, John Acres of Catesby Properties, David Joseph of Bloors, Ian Mercer of Bruton Knowles, and Andrew Munton of Bellway. The main specific issues highlighted are set out below, together with our responses to these issues.

Issues raised	response
The housing tenure mix in rural areas should be based on local needs rather than the proportion specified in the Meeting Housing Needs SPD	Agree, amendment made to para 3.4
RPSH build costs can be significantly higher in addressing new government requirements such as those contained in the Code for Sustainable Homes.	Agree, acknowledged in para 3.24
The provision of planning obligations can in some circumstances render schemes unviable, particularly for small rural schemes that are expensive to build.	Agree, recognised in para 3.49 and in DVAM examples 2, 3 and 8
The DVAMs must recognise that all sites must exceed the opportunity cost of income that could be generated by an alternative use, as well as the consideration of an uplift value.	Agree, recognised in para 2.30, and built into DVAM example 5
Greater recognition required of promotional and associated holding costs	Agree, recognised in para 3.40, and in DVAM example 6
Little support for shared ownership tenure in current market	Agree, recognised in para 3.19, combined sales values used
DVAMs too conservative in estimating costs for building costs fees, including architects, planning permission costs, @ 4% of construction cost, should increase to 7%	Agree, all DVAMs amended to 7%
DVAMs too conservative in estimating costs for land acquisition fee at 2% of RLV, should be 5% including Stamp Duty	Agree, all DVAMs amended to 5%

5 The approach to the valuation process and DVAMs

- 5.1 In order to demonstrate the effects of variable levels of affordable housing and planning obligations on land values and viability, 'typical' sites have been used as models, reflecting the characteristics of actual sites identified in the Draft Core Strategy. The proportion of affordable housing for all the DVAMs initially follows Draft Core Strategy policy, at 35%, with 65% open market, which can be adjusted if the models indicate that sites are unviable or marginally viable. Different levels of development costs are considered to reflect different types of housing and specification, whilst sales revenues are adjusted to respond to different locations where higher or lower selling prices are anticipated.
- 5.2 For each DVAM example, a conclusion has been reached about viability, and hence the likelihood of the site being delivered through the operation of the market. In order to inform these conclusions, a comparison has been made with the current land value to give a 'value added' figure, an uplift factor to justify to the conclusion. As discussed earlier, an uplift factor of at least 2 will be required to achieve viability. Each viability conclusion has to be judged not only against the 'economic' test but also against the 'psychological' approach.
- 5.3 Deliverability is not just a question of viability. What is acceptable to one landowner could be unacceptable to another. A sense of built-up expectation of land value is a complicating factor in the housing market, and landowners with a certain expectation may choose not to sell a site if that expectation is not reached. The psychology of landowner behaviour is a real issue that the Council will need to consider so that deliverability rates for both open market and affordable housing are not adversely affected.
- 5.4 The Council may want to ensure that overall development requirements are not so onerous, particularly in terms of affordable housing requirements, that they thereby prevent sites from coming forward and stifle development. The Council may consider that a reasonable proportion of a large number of dwellings delivered as affordable units is preferable to a higher proportion of a much reduced number caused by the non-delivery of sites. This is particularly relevant in 2009 when many developers are postponing site development because of the collapse in the new homes market; if developers cannot build homes that will sell on the open market, they will not build the accompanying affordable homes either.
- 5.5 There is an almost infinite number of variables that could be modelled. The reduction of a particular cost will evidently increase profitably and viability. However, the one variable factor that makes the greatest difference to viability is the proportion of affordable, and therefore, open market dwellings. Build costs are relatively constant, all sites have an element of abnormal development costs, whilst profits and overheads are relatively similar. A lower proportion of affordable units and a correspondingly increased share of open market dwellings immediately adds turnover that translates directly to the bottom line land value and improved viability.
- 5.6 The 'typical' sites were intended to be representative of a range of sites to be found in Stratford-on-Avon district. All the DVAMs appear in full in Appendix 2, and are summarised as follows:

5.7 DVAM example 1

- a small greenfield site of 1.25 ha located on the edge of Stratford. The capacity is assessed at 50 dwellings (40dph). The viability conclusion is that there is a £2,169k uplift in value, 35 times the current value, which is sufficient to motivate a landowner to dispose. Therefore the site is concluded to be viable.

5.8 DVAM example 2

- a medium sized greenfield site on the edge of Alcester of 4 ha. The capacity is assessed at 140 dwellings (35dph). The viability conclusion is that because there is a £7,787k uplift in value (x 40), this is sufficient to motivate a landowner to dispose. Therefore the site can be concluded to be viable.

5.9 DVAM example 3

- a small brownfield site of 0.5 ha located in suburban Stratford. The capacity is assessed at 30 dwellings (60dph). The viability conclusion is that there is a £217k negative uplift in value (x 0.38), which is obviously not sufficient to motivate a landowner to dispose. Therefore the site can be concluded to be unviable. The assessment needs to consider an adjustment of planning obligation package, so DVAM example 4 reduces affordable housing to 10%.

5.10 DVAM example 4

- a small brownfield site of 0.5 ha located in suburban Stratford. The capacity is assessed at 30 dwellings (60dph). The viability conclusion is a £241k uplift in value (x 1.7), which is not a sufficient uplift to motivate a landowner to dispose. Therefore the site can be concluded to be unviable, so DVAM example 5 reduces the planning obligations package from to £8,500 down to £300/unit.

5.11 DVAM example 5

- a small brownfield site of 0.5 ha located in suburban Stratford. The capacity is assessed at 30 dwellings (60dph). Since the planning obligations package is reduced from £255,000 down to just £9,000, the viability conclusion is £462k uplift in value (x 2.32), which is just sufficient to motivate a landowner to dispose. Therefore the site can be concluded to be marginally viable.

5.12 DVAM example 6

- a large brownfield site of 3 ha close to Stratford town centre. The capacity is assessed at 200 dwellings (66 dph). The viability conclusion is for a £1,851,792,000 uplift in value (x 1.9), which is a low uplift, but a reasonably high quantum increase against the current site value as an employment site, which is may be just sufficient to motivate a landowner to dispose, depending on individual circumstances. Therefore the site can be

concluded to be only marginally viable. Moreover, the owners may have paid more for the site than it is currently worth, as a result of the fall in land values during the current recession. It might never be viable set against this background, which is why many developers have been forced to write down the value of land banks over the past two years.

5.13 DVAM examples 7, 7a, and 7b

- a large greenfield urban extension site of 50 ha (27 ha net residential) adjacent to the built-up area of Stratford. The capacity is assessed at 1000 dwellings (37 dph). As set out earlier, the allowance for planning obligations costs are increased from £8500 per dwelling for normal sites, to £15,000 per dwelling to allow for completely new physical and community infrastructure in the form of education, transport, library, police, public art, open space equipment /maintenance, local centre, etc. In addition, a figure of £7 million has been set aside for major distributor roads that could perform a relief road function, at £3000/m, for local highway and junction improvements, and for drainage schemes. The total infrastructure and planning obligations allowance equates to £22 million or £22,000 per dwelling, or £800,000/ha, which is an expected figure in the context of large urban extensions.

The viability conclusion is for a £28.8 million uplift in value (x 12.5), which is sufficient to motivate landowners to dispose, and therefore the site can be concluded to be viable. The gross value over the 50 ha site is £31.3 million, or £627k/ha, in line with landowner and developer expectations, where minimum land values are often set in option agreements at about £350k/gross ha.

Two alternative scenarios, 7a and 7b, are tested for greater proportions of affordable housing. 7a considers 40% affordable and the viability conclusion is a £24m uplift in value (x 10.7), which is just sufficient to motivate the landowners to dispose. This generates a value of about £535k/gross ha, which is sufficient to satisfy the minimum land values usually contained in development agreements between owners and developers. Therefore the site can be concluded to be viable.

Example 7 looks at 50% provision. The loss of revenue results in a different viability conclusion, a £15m uplift in value (x 7), which is probably insufficient to motivate a landowner to dispose. Land values of about £350k/gross ha are required to meet minimum land values usually contained in development agreements between owners and developers. Therefore the site can be concluded to be at the limit of viability.

5.14 DVAM example 8

- a 'Local Choice' greenfield village site of 0.7 ha, accommodating 22 dwellings adjacent to a village in a relatively low sales value area. The development assumptions are for the following dwelling mix, with 60% of the units being affordable. In order not to burden the site viability, planning obligations have been eliminated. The resulting land value of £287,000, compared with the current agricultural value of £14,000, gives an uplift of

£287,000 (x 21), which is sufficient to motivate a landowner to dispose. Therefore the site can be concluded to be viable.

5.15 DVAM example 9

- as example 8, but with 65% affordable units. The viability conclusion is a £180k uplift in value (x 14), less than that achieved with 60% affordable housing. Whilst the uplift factor is healthy, it achieves only about £9k/plot, which is a low residential land value even for 100% affordable 'exceptions' sites, but probably still just sufficient to motivate a landowner to dispose, depending on individual circumstances. Therefore the site can be concluded to be marginally viable.

5.16 DVAM example 10

- as example 9, but with 70% affordable units. Here the viability conclusion is a £74k uplift in value (x 6), which is considered not to be sufficient to motivate a landowner to dispose. Owners of 'exceptions' sites for 100% affordable housing can expect about £10k/plot, and this works out at less than £4k/plot. Therefore the site can be concluded to be unviable, and these three DVAMs illustrates the point at which a site becomes unviable, with 60% affordable being viable, 65% marginally viable, and 70% definitely not viable.

5.17 DVAM example 11

- a 'Local Choice' brownfield village site of 1 ha, accommodating 50 dwellings in a relatively high sales value area. The units include a conversion of a former mill into 10 2-bed flats. The development assumptions are for the following dwelling mix, with 60% of the units being affordable. In order not to burden the site viability, planning obligations have been eliminated. The resulting land value of £601,000, compared with the current value as an agricultural retailer with open storage of £250,000, gives an uplift of £351,000 (x 2.4), which is just sufficient to motivate a landowner to dispose. Therefore the site can be concluded to be marginally viable.

5.18 DVAM example 12

- as example 11, but with 65% affordable units. The viability conclusion is a £69k uplift in value (x 1.28), which is not sufficient to motivate a landowner to dispose. Therefore the site can be concluded to be unviable. There is therefore no point in illustrating 70% affordable.

Development Viability Assessment Models summary

DVAM example	area ha	dwellings	Planning obligations £	build costs/sq.m	open market sales value/sq.m	uplift factor	viability conclusion
1	1.25	50	425,000	850	2500	33	viable
2	4.0	140	1,036,000	850	2650	39	viable
3	0.5	30	255,000	1000	2100	0.38	not viable
4	0.5	30	255,000	1000	2100	1.7	not viable
5	0.5	30	9,000	1000	2100	2.32	marginally viable
6	3.0	200	1,360,000	1000	2400	1.88	marginally viable
7	50	1000	15,000,000	850	2500	12.5	viable
7a	50	1000	15,000,000	850	2500	10.7	viable
7b	50	1000	15,000,000	850	2500	7.0	marginally viable
8	0.7	22	22,000	1000	2100	21.5	viable
9	0.7	22	22,000	1000	2100	13.9	marginally viable
10	0.7	22	22,000	1000	2100	6.3	not viable
11	1.0	50	50,000	1200 1000	3000 2800	2.4	marginally viable
12	1.0	50	50,000	1200 1000	3000 2800	1.28	not viable

6 Viability conclusions

- 6.1 The DVAM summary table at the end of the previous section illustrate the effects on viability of different types of site, in different locations, varying proportions of house types, and varying build costs and sales revenues.
- 6.2 The overall conclusion is that where there is a combination of favourable circumstances of high sales values and low build costs, the planning obligations package including the delivery of 35% affordable housing can be considered to be viable.
- 6.3 Where sales prices are low and build costs increase, some sites (examples 3 - 5) are unviable unless the affordable housing proportion is significantly reduced, and the planning obligations package is modified. Some sites in between these extremes are found to be marginally viable, and developers will take a view as to whether to adjust profit margins in order to deliver these developments.
- 6.4 The measurement of viability by an uplift factor is a reasonable guide, and most developments with an uplift factor of at least 2 to 3 can be considered viable. However, the uplift factors need to be considered in parallel with the quantum of the uplift. Example 6 is considered to be marginally viable with only a 1.88 uplift factor, since the value of the site with consent is almost £4 million, and in its existing use is £2.1 million. The increase in value is £1.85 million which is probably sufficient to motivate an owner to sell, even taking account of sales expenses and taxation liability.
- 6.5 Previously developed sites tend to have higher overall development costs, partly because of demolition and remediation, and partly because they are generally more complex urban sites that need to fit in with their surroundings, adjoining buildings, and frequently involve refurbishment of existing buildings. However, the DVAMs for large brownfield sites show that 35% affordable is probably just viable when sales values are high and build costs do not exceed £1000/sq.m (example 6). However, the Council may need to be flexible in negotiations on sites like this so that development is not discouraged.
- 6.6 For small brownfield sites (examples 3 - 5), the difference between the existing or alternative value and the value added by a permission for residential is often insufficient to motivate an owner to sell, especially in low value sales areas, and when tax liability and disposal expenses are taken into account.
- 6.7 The ability to deliver affordable housing and a planning obligations package is largely driven by high land values derived from high sales prices. Stratford-on-Avon district is fortunate in that respect, having the highest average sales prices in the West Midlands.
- 6.8 This assessment has indicated that 35% affordable housing together with the other specified planning obligations is achievable in most circumstances and there appears to be no good reason why this proportion should not continue to be sought through policy in the Draft Core Strategy. Because of the fragile state of the housing market, policy needs to retain some flexibility so that in circumstances where a lack of viability can be demonstrated an alternative proportion may be negotiated. Some DVAMs have considered increased levels of affordable housing, to 40% and 50% (7a and 7b), and to 65% and 70% for the Local Choice sites.

Viability quickly reduces in these circumstances, and it is not recommended that higher levels of affordable housing are sought, particularly in the current recession.

- 6.9 Accordingly, the proposed policies in the Draft Core Strategy that relate to the provision of 35% affordable housing (CS8), and the requirement for planning obligations (CS30), are found to be generally sound in the context of a viability assessment, provided that the Council retains a flexible approach in cases of proven marginal viability. Moreover, in those circumstances, there is no reason why all the housing sites contained in Appendix 2 of the Draft Core Strategy should not be viable, assuming the economy continues to show signs of moving out of recession.
- 6.10 For the Local Choice sites (8 - 12), alternative DVAMs have been produced, illustrating the effects of providing 65% and 70% affordable housing. It is evident that once 60% affordable units is passed, a site quickly becomes marginally viable then unviable, so it is not recommended that more than 60% affordable is sought on such sites.
- 6.11 The development of the model with variable inputs is intended to be used by the Council to address viability issues for a range of sites that will emerge through the Draft Core Strategy and other LDF documents. The DVAMs have standard variables that can be adjusted to suit individual site circumstances, which will produce automatic uplift factors and lead to viability conclusions.

APPENDIX 1

Evidence of district property sales values, CBRE 2009

Evidence of district property sales values, CBRE 2009

In terms of residential supply, there are a limited number of new developments in the pipeline in and around the District of Stratford on Avon, a reflection of the weaker economic and property market environments and also strict planning policy within the area due such as heritage considerations. However the prominent new build developments that characterise the current new-build market in the area are as follows:

• The Stalls, Payton Street, Stratford-on-Avon, Warwickshire

Situated in close proximity to Stratford town centre this development consists of six contemporary apartments: two duplex apartments (2,000 sq ft) and four apartments with canal side views. Set in a landscaped courtyard accommodation comprises three bedrooms, one reception room and two bathrooms, finished to the highest specification and benefit from secure parking. Of the six apartments, two have sold both in April 2008 achieving sales rates of £379 and £440 per sq ft respectively.

Sequoia Mews, 51 - 53 Shipston Road, Stratford-on-Avon, Warwickshire

Sequoia Mews is situated in a prime location adjacent to the River Avon with views of the Royal Shakespeare Theatre, Holy Trinity Church and the cricket ground. Access to Stratford-on-Avon's shops, restaurants and theatres is provided by tramway. Knight Frank provided us with information on eight properties, all of which were detached family homes ranging from three to five bedrooms and built to a high specification. Of the eight properties five had been sold in late 2008, with sales rates achieved between £325-380 per sq ft.

Sandpipers, Birmingham Road, Stratford Upon Avon, Warwickshire

A George Wimpey development of 89 properties incorporating 1 and 2 bedroom apartments and also 3 bedroom mews homes, all benefiting from a parking space. Of the 89 units, 9 remain on the market, whilst 9 units have sold in 2009 to date. Three bed mews houses totalling 1089 sq ft have been sold at an average sale price of £195,000 per unit, equating to £179 per sq ft. Two bed apartments totalling 630-650 sq ft have been sold at £135,000 – £140,000, equating to £215 per sq ft. One bed apartments totalling 415 sq ft sold for £118,000 - £120,000 in winter 2008, equating to £289 per sq ft.

Loxley Court, Birmingham Road, Stratford-on-Avon, Warwickshire.

The development undertaken by Barratt Homes comprises one, two and three bedroom houses and apartments. Of the 145 units, 21 remain on the market and to date within 2009 there have been three sales of two bed units, each totalling 677 sq ft. The developer is offering various incentives, with the net sales rate calculated to range between £212 and £227 per sq ft.

Trinity Mead, Stratford-on-Avon, Warwickshire.

A consortium of developers including Bryant Homes, Westbury Homes, George Wimpey, Barratt Homes, Kings Oak, Persimmon Homes and Charles Church were involved in this 700 unit development in north Stratford upon Avon. Construction on site began in 2002

with residential sales commenced in early 2003.

Two detached family properties in estate locations have been sold subject to contract, second hand, in January 2009 achieving £152 per sq ft and £164 per sq ft respectively.

The Eco-town and other recent transactions

It is essential to understand that the site proposed for the Eco-town on the former MoD depot at Long Marston is 5 miles to the south of Stratford upon Avon, whilst the strategically the regional population centres for both population and business activity, Birmingham and Coventry, as well as the motorway links, are located to the north of the town.

Whilst the proposed development plans explicitly consider the infrastructure provision, it is apparent that significant improvements to the current provision would be necessary in order to increase demand within the local property market, sufficient to achieve capital values equivalent to those within Stratford upon Avon.

In addition, further consideration is required of the premium attached to capital values in Stratford on Avon, resulting from the historical heritage, and recreational drivers that underpin demand for property within the town.

There is very little transactional evidence for properties in the immediate vicinity of the proposed Eco-town site. The lack of transactions is reflective of the wider market conditions, however in addition local agents draw attention to the negative sentiment derived from the Middle Quinton eco-town proposal. Reduced demand for properties, it is contended, is a result of concerns over increased local population, reducing rural lifestyle quality, with increased demands roads and other infrastructure, along with local amenities and services. Local agent Sheldon Bosley stated that whilst market conditions were responsible for a 15% reduction in capital value over the last year, an additional 10% fall was evident for properties in close vicinity to the proposed Eco-town site.

Two current transactions were reported to us by local agent Dixons in the village of Lower Quinton. 34 Millfield Close, a four bedroom detached property has sold subject to contract in January 2009 for £245,000. The agent reported that the asking price for the property had reduced from £320,000 in early 2008 to £280,000 in August 2008 prior to the recent agreed sale. In addition, 3 The Fordaway, a four bedroom detached property sold subject to contract in January 2009 for £249,950.

APPENDIX 2

The Development Viability Assessment Models

EXAMPLE 1 - small greenfield site, edge of Stratford, 1.25 ha, 50 dwellings - 65% open market, 35% AH (75% social, 25% intermediate)				model variables	
assumptions: (1) 5 2-bed flats @ 64 sq.m, 17 2-bed houses @ 65 sq.m, 18 3-bed houses @ 90 sq.m, 10 4-bed houses @ 140 sq.m. 2) total coverage = 4,445 sq.m. 3) Mix is 65% open market 2890 sq.m, 35% AH = 1555 sq.m. (2) Medium sales prices open market £2500/sq.m, £1000/sq.m for affordable (40% of open market) 3) Build costs £850/sq.m				total floorspace sq.m	4445
element	floorspace sq.m	sales value £/sq.m	turnover	sales value £/sq.m	2500
TURNOVER				build cost £/sq.m	850
open market housing 2890 sq.m	2,889	2,500	7,223,125	demolition floorspace sq.m	0
affordable - 1555 sq.m @ £1000/sq.m (RSL capability to purchase from developer)	1,556	1,000	1,555,750	developer profit % of gross turnover	20
gross turnover			8,778,875	qualifying dwellings for S.106 contributions	50
less marketing/legal costs @ 2% of open market turnover			144,463	existing land value £	62200
NET TURNOVER			8,634,413		
total floorspace	4,445				
BUILD COSTS		£850/sq.m			
all housing units	4,445	850	3,778,250		
developer's profit @ 20% of gross turnover			1,755,775		
building costs fees, including architects, planning permission costs, @ 7% of construction cost			264,478		
demolition/remediation costs @ £15/sq.m			0		
TOTAL DEDUCTIONS			5,798,503		
INTERIM LAND VALUE [ILV] ie, NET TURNOVER LESS TOTAL DEDUCTIONS			2,835,910		
DEVELOPMENT COSTS		COST £			
highway access, eg, junction improvements, £1500/unit		75,000			
off-site drainage improvements, £1000/unit		50,000			
planning obligations/dwelling					
transport	2500				
education, library, police, public art	5000				
open space equipment /maintenance	1000				
planning obligations total/unit	8500				
planning obligations costs @ £8500/unit		425,000			
TOTAL ABNORMAL AND DEVELOPMENT COSTS [TADC]		550,000	550,000		
RESIDUAL LAND VALUE , ie, ILV minus TADC			2,285,910		
financing costs @ 5% of RLV			114,296		
land acquisition fee 5% of RLV inc SDLT			114,296		
NET LAND VALUE			2,057,319		
£50k/ha		62,200			
value added by consent			1,995,119		
uplift factor			33.08		
viability conclusion - £2169k uplift in value (x 35) is sufficient to motivate a landowner to dispose. Therefore the site can be concluded to be viable					

EXAMPLE 2 - medium greenfield site, edge of Main Rural Centre, 4 ha, 140 dwellings - 65% open market, 35% AH (75% social, 25% intermediate)				model variables		
assumptions: (1) 10 2-bed flats @ 64 sq.m, 30 2-bed houses @ 65 sq.m, 55 3-bed houses @ 90 sq.m, 40 4-bed houses @ 140 sq.m, 5 5-bed houses @ 180 sq.m. 2) total coverage = 14040 sq.m. 3) Mix is 65% open market 9126 sq.m, 35% AH = 4914 sq.m. (2) Medium/high sales prices open market £2650/sq.m, £1060/sq.m for affordable (40% of open market) 3) Build costs £850/sq.m				total floorspace sq.m		14040
element	floorspace sq.m	sales value £/sq.m	turnover	sales value £/sq.m	2650	
TURNOVER				build cost £/sq.m	850	
open market housing 2890 sq.m	9,126	2,650	24,183,900	demolition floorspace sq.m	0	
affordable - 4914 sq.m @ £1060/sq.m (RSL capability to purchase from developer)	4,914	1,060	5,208,840	developer profit % of gross turnover	20	
gross turnover			29,392,740	qualifying dwellings for S.106 contributions	140	
less marketing/legal costs @ 2% of open market turnover			483,678	existing land value £	200000	
NET TURNOVER			28,909,062			
total floorspace	14,040					
BUILD COSTS		£850/sq.m				
all housing units	14,040	850	11,934,000			
developer's profit @ 20% of gross turnover			5,878,548			
building costs fees, including architects, planning permission costs, @ 7% of construction cost			835,380			
demolition/remediation costs @ £15/sq.m			0			
TOTAL DEDUCTIONS			18,647,928			
INTERIM LAND VALUE [ILV] ie, NET TURNOVER LESS TOTAL DEDUCTIONS			10,261,134			
DEVELOPMENT COSTS		COST £				
highway access, eg, junction improvements, £1500/unit		210,000				
off-site drainage improvements, £1000/unit		140,000				
planning obligations/dwelling						
transport	1400					
education, library, police, public art	5000					
open space equipment /maintenance	1000					
planning obligations total/unit	7400					
planning obligations costs @ £7400/unit		1,036,000				
TOTAL ABNORMAL AND DEVELOPMENT COSTS [TADC]		1,386,000	1,386,000			
RESIDUAL LAND VALUE , ie, ILV minus TADC			8,875,134			
financing costs @ 5% of RLV			443,757			
land acquisition fee 5% of RLV inc SDLT			443,757			
NET LAND VALUE			7,987,621			
existing use value - edge of small town hope value - 4 ha @ £50k/ha		200,000				
value added by consent			7,787,621			
uplift factor			39.94			
viability conclusion - £7787k uplift in value (x 40) is sufficient to motivate a landowner to dispose. Therefore the site can be concluded to be viable						

EXAMPLE 3 - small urban brownfield site, Stratford, 0.5 ha, 30 dwellings flats/townhouses - 65% open market, 35% AH (75% social, 25% intermediate)				model variables	
assumptions: (1) 20 2-bed flats @ 60.5 sq.m, 10 3-bed townhouses @ 90 sq.m 2) total coverage = 2,110 sq.m. 3) Mix is 65% open market 1370 sq.m, 35% AH = 740 sq.m. (2) Low sales prices open market £2100/sq.m, £840/sq.m for affordable (40% of open market, RSL capability to purchase from developer) 3) build costs £1000/sq.m				total floorspace sq.m	2110
element	floorspace sq.m	sales value £/sq.m	turnover	sales value £/sq.m	2100
TURNOVER				build cost £/sq.m	1000
open market housing	1,372	2,100	2,880,150	demolition floorspace sq.m	500
affordable	739	840	620,340	developer profit % of gross turnover	20
gross turnover			3,500,490	qualifying dwellings for S.106 contributions	30
less marketing/legal costs @ 2% of open market turnover			57,603	existing land value £	350000
NET TURNOVER			3,442,887		
total floorspace	2,110				
BUILD COSTS		£1000/sq.m			
all housing units	2,110	1,000	2,110,000		
developer's profit @ 20% of gross turnover			700,098		
building costs fees, including architects, planning permission costs, @ 7% of construction cost			147,700		
demolition/remediation costs @ £15/sq.m			7,500		
TOTAL DEDUCTIONS			2,965,298		
INTERIM LAND VALUE [ILV] ie, NET TURNOVER LESS TOTAL DEDUCTIONS			477,589		
LESS TYPICAL ABNORMAL AND DEVELOPMENT COSTS		COST £			
highway access, eg, junction improvements, £1500/unit		45,000			
off-site drainage improvements, £1000/unit		30,000			
planning obligations/dwelling					
transport	2500				
education, library, police, public art	5000				
open space equipment /maintenance	1000				
planning obligations total/unit	8500				
planning obligations costs @ £9500/unit		255,000			
TOTAL ABNORMAL AND DEVELOPMENT COSTS [TADC]		330,000	330,000		
RESIDUAL LAND VALUE , ie, ILV minus TADC			147,589		
financing costs @ 5% of RLV			7,379		
land acquisition fee 5% of RLV inc SDLT			7,379		
NET LAND VALUE			132,830		
existing use value - edge of town hope value - 1.25 ha @ £50k/ha		350,000			
value added by consent			-217,170		
uplift factor			0.38		
viability conclusion - £217k negative uplift in value (x 0.38) is not sufficient to motivate a landowner to dispose. Therefore the site can be concluded to be unviable. Need to consider adjustment of planning obligation package example 4 reduces affordable housing to 10%					

EXAMPLE 4 - small urban brownfield site Stratford, 0.5 ha, 30 dwellings flats/townhouses - 65% open market, 35% AH (75% social, 25% intermediate). Since example 3 was unviable, planning obligation package has been adjusted - example 4 reduces affordable housing to 10%				model variables	
assumptions: (1) 20 2-bed flats @ 60.5 sq.m, 10 3-bed townhouses @ 90 sq.m 2) total coverage = 2,110 sq.m. 3) Mix is 90% open market 1900 sq.m, 10% AH = 210 sq.m. (2) Low sales prices open market £2100/sq.m, £840/sq.m for affordable (40% of open market, RSL capability to purchase from developer) 3) build costs £1000/sq.m				total floorspace sq.m	2110
element	floorspace sq.m	sales value £/sq.m	turnover	sales value £/sq.m	2100
TURNOVER				build cost £/sq.m	1000
open market housing	1,899	2,100	3,987,900	demolition floorspace sq.m	500
affordable	211	840	177,240	developer profit % of gross turnover	20
gross turnover			4,165,140	qualifying dwellings for S.106 contributions	30
less marketing/legal costs @ 2% of open market turnover			79,758	existing land value £	350000
NET TURNOVER			4,085,382		
total floorspace	2,110				
BUILD COSTS - all housing units	2,110	1,000	2,110,000		
developer's profit @ 20% of gross turnover			833,028		
building costs fees, including architects, planning permission costs, @ 7% of construction cost			147,700		
demolition/remediation costs @ £15/sq.m			7,500		
TOTAL DEDUCTIONS			3,098,228		
INTERIM LAND VALUE [ILV] ie, NET TURNOVER LESS TOTAL DEDUCTIONS			987,154		
LESS TYPICAL ABNORMAL AND DEVELOPMENT COSTS		COST £			
highway access, eg, junction improvements, £1500/unit		45,000			
off-site drainage improvements, £1000/unit		30,000			
planning obligations/dwelling					
transport	2500				
education, library, police, public art	5000				
open space equipment /maintenance	1000				
planning obligations total/unit	8500				
planning obligations costs @ £8500/unit		255,000			
TOTAL ABNORMAL AND DEVELOPMENT COSTS [TADC]		330,000	330,000		
RESIDUAL LAND VALUE , ie, ILV minus TADC			657,154		
financing costs @ 5% of RLV			32,858		
land acquisition fee 5% of RLV inc SDLT			32,858		
NET LAND VALUE			591,439		
existing use value - edge of town hope value - 1.25 ha @ £50k/ha		350,000			
value added by consent			241,439		
uplift factor			1.69		
viability conclusion - £241k uplift in value (x 1.7) is not a sufficient uplift to motivate a landowner to dispose. Therefore the site can be concluded to be unviable. Example 5 reduces the planning obligations package to £300/unit					

EXAMPLE 5 - small urban brownfield site, Stratford, 0.5 ha, 30 dwellings flats/townhouses - 65% open market, 35% AH (75% social, 25% intermediate). Since example 4 was unviable, example 5 reduces the planning obligations package to £300/unit				model variables	
assumptions: (1) 20 2-bed flats @ 60.5 sq.m, 10 3-bed townhouses @ 90 sq.m 2) total coverage = 2,110 sq.m. 3) Mix is 90% open market 1900 sq.m, 10% AH = 210 sq.m. (2) Low sales prices open market £2100/sq.m, £840/sq.m for affordable (40% of open market, RSL capability to purchase from developer) 3) build costs £1000/sq.m				total floorspace sq.m	2110
element	floorspace sq.m	sales value £/sq.m	turnover	sales value £/sq.m	2100
TURNOVER				build cost £/sq.m	1000
open market housing	1,899	2,100	3,987,900	demolition floorspace sq.m	500
affordable	211	840	177,240	developer profit % of gross turnover	20
gross turnover			4,165,140	qualifying dwellings for S.106 contributions	30
less marketing/legal costs @ 2% of open market turnover			79,758	existing land value £	350000
NET TURNOVER			4,085,382		
total floorspace	2,110				
BUILD COSTS - all housing units	2,110	1,000	2,110,000		
developer's profit @ 20% of gross turnover			833,028		
building costs fees, including architects, planning permission costs, @ 7% of construction cost			147,700		
demolition/remediation costs @ £15/sq.m			7,500		
TOTAL DEDUCTIONS			3,098,228		
INTERIM LAND VALUE [ILV] ie, NET TURNOVER LESS TOTAL DEDUCTIONS			987,154		
LESS TYPICAL ABNORMAL AND DEVELOPMENT COSTS		COST £			
highway access, eg, junction improvements, £1500/unit		45,000			
off-site drainage improvements, £1000/unit		30,000			
planning obligations/dwelling					
transport	100				
education, library, police, public art	100				
open space equipment /maintenance	100				
planning obligations total/unit	300				
planning obligations costs @ £300/unit		9,000			
TOTAL ABNORMAL AND DEVELOPMENT COSTS [TADC]		84,000	84,000		
RESIDUAL LAND VALUE, ie, ILV minus TADC			903,154		
financing costs @ 5% of RLV			45,158		
land acquisition fee 5% of RLV inc SDLT			45,158		
NET LAND VALUE			812,839		
existing use value - edge of town hope value - 1.25 ha @ £50k/ha		350,000			
value added by consent			462,839		
uplift factor			2.32		
viability conclusion - £463k uplift in value (x 2.32) is just sufficient to motivate a landowner to dispose, depending on individual circumstances. Therefore the site can be concluded to be marginally viable					

EXAMPLE 6 - large urban brownfield site 3 ha, close to Stratford-upon-Avon town centre, 200 dwellings flats/townhouses - 65% open market, 35% AH (75% social, 25% intermediate)				model variables	
assumptions: (1) 120 2-bed flats @ 56.6 sq.m, 40 3-bed townhouses @ 80 sq.m, 40 4-bed townhouses @ 120 sq.m. 2) total coverage = 14,800 sq.m. 3) Mix is 65% open market 9620 sq.m, 35% AH = 5180 sq.m. (2) Medium sales prices open market £2400/sq.m, £960/sq.m for affordable (40% of open market, RSL capability to purchase from developer) 3) build costs £1000/sq.m				total floorspace sq.m 14800	
element	floorspace sq.m	sales value £/sq.m	turnover	sales value £/sq.m	2400
TURNOVER				build cost £/sq.m	1000
open market housing	9,620	2,400	23,088,000	demolition floorspace sq.m	0
affordable	5,180	960	4,972,800	developer profit % of gross turnover	20
gross turnover			28,060,800	number of qualifying dwellings for S.106 contributions	160
less marketing/legal costs @ 2% of open market turnover			461,760	existing land value £	2100000
NET TURNOVER			27,599,040		
total floorspace	14,800				
Build costs - all housing units	14,800	1,000	14,800,000		
developer's profit @ 20% of gross turnover			5,612,160		
building costs fees, including architects, planning permission costs, @ 7% of construction cost			1,036,000		
demolition/remediation costs @ £15/sq.m			0		
TOTAL DEDUCTIONS			21,448,160		
INTERIM LAND VALUE [ILV] ie, NET TURNOVER LESS TOTAL DEDUCTIONS			6,150,880		
LESS TYPICAL ABNORMAL AND DEVELOPMENT COSTS		COST £			
highway access, eg, junction improvements, £1500/unit		240,000			
off-site drainage improvements, £1000/unit		160,000			
planning obligations/dwelling					
transport	2500				
education, library, police, public art	5000				
open space equipment /maintenance	1000				
planning obligations total/unit	8500				
planning obligations costs @ £8500/unit		1,360,000			
TOTAL ABNORMAL AND DEVELOPMENT COSTS [TADC]		1,760,000	1,760,000		
RESIDUAL LAND VALUE, ie, ILV minus TADC			4,390,880		
financing costs @ 5% of RLV			219,544		
land acquisition fee 5% of RLV			219,544		
NET LAND VALUE			3,951,792		
existing use value - commercial premises/yard - 3 ha @ £700k/ha		2,100,000			
value added by consent			1,851,792		
uplift factor			1.88		
opportunity cost factor - potential annual income as alternative use as a car park - 3ha x £50k = £150k	150,000				
annual interest on net land value @ 5%	197,590				
viability conclusion - £1851k uplift in value (x 1.9) is probably not sufficient to motivate a landowner to dispose, depending on individual circumstances. Annual interest on opportunity cost exceeds alternative use value by 67%. Therefore the site can be concluded to be only marginally viable.					

EXAMPLE 7 - large greenfield site on edge of Stratford 50ha gross, 1000 dwellings - 65% open market, 35% AH (75% social, 25% intermediate)				model variables	
assumptions: (1) 100 2-bed flats @ 56 sq.m, 300 2-bed houses @ 65 sq.m, 400 3-bed houses @ 90 sq.m, 200 4-bed houses @ 140 sq.m. 2) total coverage =89,100 sq.m. 3) Mix is 65% open market 57,900 sq.m, 35% AH = 31,200 sq.m. (2) Medium sales prices open market £2500/sq.m, £1000/sq.m for affordable (40% of open market) 3) Build costs £850/sq.m				total floorspace sq.m	
89100					
element	floorspace sq.m	sales value £/sq.m	turnover	sales value £/sq.m	2500
TURNOVER				build cost £/sq.m	850
open market housing	57,915	2,500	144,787,500	demolition floorspace sq.m	0
affordable	31,185	1,000	31,185,000	developer profit % of gross turnover	20
gross turnover			175,972,500	number of qualifying dwellings for S.106 contributions	960
less marketing/legal costs @ 2% of open market turnover			2,895,750	existing land value £	2500000
NET TURNOVER			173,076,750		
total floorspace	89,100				
Build costs - all housing units	89,100	850	75,735,000		
developer's profit @ 20% of gross turnover			35,194,500		
building costs fees, including architects, planning permission costs, @ 7% of construction cost			5,301,450		
demolition/remediation costs @ £15/sq.m			0		
TOTAL DEDUCTIONS			116,230,950		
INTERIM LAND VALUE [ILV] ie, NET TURNOVER LESS TOTAL DEDUCTIONS			56,845,800		
LESS TYPICAL ABNORMAL AND DEVELOPMENT COSTS		COST £			
distributor road 2km @ £3000/m plus roundabouts/junctions etc		6,000,000			
local highway access, junction improvements		500,000			
drainage improvements		500,000			
S.106 costs @ £15000/unit allowing for new primary school, local centre, transport, other education, library, police, public art, open space equipment /maintenance etc.		15,000,000			
TOTAL ABNORMAL AND DEVELOPMENT COSTS		22,000,000			
RESIDUAL LAND VALUE , ie, ILV minus TADC			34,845,800		
financing costs @ 5% of RLV			1,742,290		
land acquisition fee 5% of RLV inc SDLT			1,742,290		
NET LAND VALUE			31,361,220		
existing use value - edge of town hope value - 50 ha @ £50k/ha		2,500,000			
value added by consent			28,861,220		
uplift factor			12.54		
viability conclusion - £28.8m uplift in value (x 12.5) is sufficient to motivate a landowner to dispose. Therefore the site can be concluded to be viable					

EXAMPLE 7a - large greenfield site on edge of Stratford 50ha gross, 1000 dwellings - 60% open market, 40% AH (75% social, 25% intermediate)				model variables	
assumptions: (1) 100 2-bed flats @ 56 sq.m, 300 2-bed houses @ 65 sq.m, 400 3-bed houses @ 90 sq.m, 200 4-bed houses @ 140 sq.m. 2) total coverage =89,100 sq.m. 3) Mix is 60% open market 53,460 sq.m, 40% AH = 35,640 sq.m. (2) Medium sales prices open market £2500/sq.m, £1000/sq.m for affordable (40% of open market) 3) Build costs £850/sq.m				total floorspace sq.m	89100
element	floorspace sq.m	sales value £/sq.m	turnover	sales value £/sq.m	2500
TURNOVER				build cost £/sq.m	850
open market housing	53,460	2,500	133,650,000	demolition floorspace sq.m	0
affordable	35,640	1,000	35,640,000	developer profit % of gross turnover	20
gross turnover			169,290,000	number of qualifying dwellings for S.106 contributions	960
less marketing/legal costs @ 2% of open market turnover			2,673,000	existing land value £	2500000
NET TURNOVER			166,617,000		
total floorspace	89,100				
Build costs - all housing units	89,100	850	75,735,000		
developer's profit @ 20% of gross turnover			33,858,000		
building costs fees, including architects, planning permission costs, @ 7% of construction cost			5,301,450		
demolition/remediation costs @ £15/sq.m			0		
TOTAL DEDUCTIONS			114,894,450		
INTERIM LAND VALUE [ILV] ie, NET TURNOVER LESS TOTAL DEDUCTIONS			51,722,550		
LESS TYPICAL ABNORMAL AND DEVELOPMENT COSTS		COST £			
distributor road 2km @ £3000/m plus roundabouts/junctions etc		6,000,000			
local highway access, junction improvements		500,000			
drainage improvements		500,000			
S.106 costs @ £15000/unit allowing for new primary school , local centre, transport, other education, library, police, public art, open space equipment /maintenance etc.		15,000,000			
TOTAL ABNORMAL AND DEVELOPMENT COSTS		22,000,000			
RESIDUAL LAND VALUE , ie, ILV minus TADC			29,722,550		
financing costs @ 5% of RLV			1,486,128		
land acquisition fee 5% of RLV inc SDLT			1,486,128		
NET LAND VALUE			26,750,295		
existing use value - edge of town hope value - 50 ha @ £50k/ha		2,500,000			
value added by consent			24,250,295		
uplift factor			10.70		
viability conclusion - £24m uplift in value (x 10.7) is sufficient to motivate a landowner to dispose. This generates a value of about £535k/gross ha, which is sufficient to satisfy the minimum land values usually contained in development agreements between owners and developers. Therefore the site can be concluded to be viable					

EXAMPLE 7b - large greenfield site on edge of Stratford 50ha gross, 1000 dwellings - 50% open market, 50% AH (75% social, 25% intermediate)				model variables	
assumptions: (1) 100 2-bed flats @ 56 sq.m, 300 2-bed houses @ 65 sq.m, 400 3-bed houses @ 90 sq.m, 200 4-bed houses @ 140 sq.m. 2) total coverage =89,100 sq.m. 3) Mix is 60% open market 53,460 sq.m, 40% AH = 35,640 sq.m. (2) Medium sales prices open market £2500/sq.m, £1000/sq.m for affordable (40% of open market) 3) Build costs £850/sq.m				total floorspace sq.m	89100
element	floorspace sq.m	sales value £/sq.m	turnover	sales value £/sq.m	2500
TURNOVER				build cost £/sq.m	850
open market housing	44,550	2,500	111,375,000	demolition floorspace sq.m	0
affordable	44,550	1,000	44,550,000	developer profit % of gross turnover	20
gross turnover			155,925,000	number of qualifying dwellings for S.106	960
less marketing/legal costs @ 2% of open market turnover			2,227,500	existing land value £	2500000
NET TURNOVER			153,697,500		
total floorspace	89,100				
Build costs - all housing units	89,100	850	75,735,000		
developer's profit @ 20% of gross turnover			31,185,000		
building costs fees, including architects, planning permission costs, @ 7% of construction cost			5,301,450		
demolition/remediation costs @ £15/sq.m			0		
TOTAL DEDUCTIONS			112,221,450		
INTERIM LAND VALUE [ILV] ie, NET TURNOVER LESS TOTAL DEDUCTIONS			41,476,050		
LESS TYPICAL ABNORMAL AND DEVELOPMENT COSTS		COST £			
distributor road 2km @ £3000/m plus roundabouts/junctions etc		6,000,000			
local highway access, junction improvements		500,000			
drainage improvements		500,000			
S.106 costs @ £15000/unit allowing for new primary school , local centre, transport, other education, library, police, public art, open space equipment /maintenance etc.		15,000,000			
TOTAL ABNORMAL AND DEVELOPMENT COSTS		22,000,000			
RESIDUAL LAND VALUE ie, ILV minus TADC			19,476,050		
financing costs @ 5% of RLV			973,803		
land acquisition fee 5% of RLV inc SDLT			973,803		
NET LAND VALUE			17,528,445		
existing use value - edge of town hope value - 50 ha @ £50k/ha		2,500,000			
value added by consent			15,028,445		
uplift factor			7.01		
viability conclusion - £15m uplift in value (x 7) is not sufficient to motivate a landowner to dispose. Land values of about £350k/gross ha are required to meet minimum land values usually contained in development agreements between owners and developers. Therefore the site can be concluded to be only marginally viable or unviable					

EXAMPLE 8 - Local Choice greenfield village site 0.7 ha, 22 dwellings - 40% local market, 60% AH (75% social, 25% intermediate)				model variables	
assumptions: (1) 9 2-bed houses @ 75 sq.m, 9 3-bed houses @ 95 sq.m, 4 4-bed houses @ 130 sq.m. 2) total coverage = 2050 sq.m. 3) Mix is 40% local market 820 sq.m, 60% AH = 1230 sq.m. (2) Low sales prices local market £2100/sq.m, £840/sq.m for affordable (40% of open market) 3) Build costs £1000/sq.m, no planning obligations				total floorspace sq.m	2050
element	floorspace sq.m	sales value £/sq.m	turnover	sales value £/sq.m	2100
TURNOVER				build cost £/sq.m	1000
local market housing	820	2,100	1,722,000	demolition floorspace sq.m	0
affordable	1,230	840	1,033,200	developer profit % of gross turnover	5
gross turnover			2,755,200	number of qualifying dwellings for S.106 contributions	22
less marketing/legal costs @ 2% of open market turnover			34,440	existing land value £	14000
NET TURNOVER			2,720,760		
total floorspace	2,050				
Build costs - all housing units	2,050	1,000	2,050,000		
RSL profit @ 5% of gross turnover			137,760		
building costs fees, including architects, planning permission costs, @ 7% of construction cost			143,500		
demolition/remediation costs @ £15/sq.m			0		
TOTAL DEDUCTIONS			2,331,260		
INTERIM LAND VALUE [ILV] ie, NET TURNOVER LESS TOTAL DEDUCTIONS			389,500		
LESS TYPICAL ABNORMAL AND DEVELOPMENT COSTS		COST £			
highway access, eg, junction improvements, £1500/unit		33,000			
off-site drainage improvements, £1000/unit		22,000			
planning obligations/dwelling transport					
education etc					
open space equipment /maintenance					
planning obligations total/unit	1000				
planning obligations costs @ £1000/unit		22,000			
TOTAL ABNORMAL AND DEVELOPMENT COSTS [TADC]		77,000	77,000		
RESIDUAL LAND VALUE, ie, ILV minus TADC			312,500		
financing costs @ 5% of RLV			15,625		
land acquisition fee 5% of RLV inc SDLT			15,625		
NET LAND VALUE			281,250		
existing use value - edge of village agricultural value - 0.7 ha @ £20k/ha		14,000			
value added by consent			267,250		
uplift factor			20.09		
viability conclusion - £267k uplift in value (x 20) is sufficient to motivate a landowner to dispose. Therefore the site can be concluded to be viable					

EXAMPLE 9 - Local Choice greenfield village site 0.7 ha, 22 dwellings - 35% local market, 65% AH (75% social, 25% intermediate)				model variables	
assumptions: (1) 9 2-bed houses @ 75 sq.m, 9 3-bed houses @ 95 sq.m, 4 4-bed houses @ 130 sq.m. 2) total coverage = 2050 sq.m. 3) Mix is 35% local market 718 sq.m, 65% AH = 1333 sq.m. (2) Low sales prices local market £2100/sq.m, £840/sq.m for affordable (40% of open market) 3) Build costs £1000/sq.m, no planning obligations				total floorspace sq.m	2050
element	floorspace sq.m	sales value £/sq.m	turnover	sales value £/sq.m	2100
TURNOVER				build cost £/sq.m	1000
local market housing	718	2,100	1,506,750	demolition floorspace sq.m	0
affordable	1,333	840	1,119,300	developer profit % of gross turnover	5
gross turnover			2,626,050	number of qualifying dwellings for S.106 contributions	22
less marketing/legal costs @ 2% of open market turnover			30,135	existing land value £	14000
NET TURNOVER			2,595,915		
total floorspace	2,050				
Build costs - all housing units	2,050	1,000	2,050,000		
RSL profit @ 5% of gross turnover			131,303		
building costs fees, including architects, planning permission costs @ 7% of construction cost			143,500		
demolition/remediation costs @ £15/sq.m			0		
TOTAL DEDUCTIONS			2,324,803		
INTERIM LAND VALUE [ILV] ie, NET TURNOVER LESS TOTAL DEDUCTIONS			271,113		
LESS TYPICAL ABNORMAL AND DEVELOPMENT COSTS		COST £			
highway access, eg, junction improvements, £1500/unit		33,000			
off-site drainage improvements, £1000/unit		22,000			
planning obligations/dwelling transport					
education etc					
open space equipment /maintenance					
planning obligations total/unit	1000				
planning obligations costs @ £1000/unit		22,000			
TOTAL ABNORMAL AND DEVELOPMENT COSTS [TADC]		77,000	77,000		
RESIDUAL LAND VALUE , ie, ILV minus TADC			194,113		
financing costs @ 5% of RLV			9,706		
land acquisition fee 5% of RLV inc SDLT			9,706		
NET LAND VALUE			174,701		
existing use value - edge of village agricultural value - 0.7 ha @ £20k/ha		14,000			
value added by consent			160,701		
uplift factor			12.48		
viability conclusion - £160k uplift in value (x 12.5) is less than that achieved with 60% affordable housing, but at almost £9k/plot is probably still just sufficient to motivate a landowner to dispose, depending on individual circumstances. Therefore the site can be concluded to be marginally viable					

EXAMPLE 10 - Local Choice greenfield village site 0.7 ha, 22 dwellings - 30% local market, 70% AH (75% social, 25% intermediate)				model variables	
assumptions: (1) 9 2-bed houses @ 75 sq.m, 9 3-bed houses @ 95 sq.m, 4 4-bed houses @ 130 sq.m. 2) total coverage = 2050 sq.m. 3) Mix is 30% local market 615 sq.m, 70% AH = 1435 sq.m. (2) Low sales prices local market £2100/sq.m, £840/sq.m for affordable (40% of open market) 3) Build costs £1000/sq.m, no planning obligations				total floorspace sq.m	2050
element	floorspace sq.m	sales value £/sq.m	turnover	sales value £/sq.m	2100
TURNOVER				build cost £/sq.m	1000
local market housing	615	2,100	1,291,500	demolition floorspace sq.m	0
affordable	1,435	840	1,205,400	developer profit % of gross turnover	5
gross turnover			2,496,900	number of qualifying dwellings for S.106 contributions	22
less marketing/legal costs @ 2% of open market turnover			25,830	existing land value £	14000
NET TURNOVER			2,471,070		
total floorspace	2,050				
Build costs - all housing units	2,050	1,000	2,050,000		
RSL profit @ 5% of gross turnover			124,845		
building costs fees, including architects, planning permission costs, @ 7% of construction cost			143,500		
demolition/remediation costs @ £15/sq.m			0		
TOTAL DEDUCTIONS			2,318,345		
INTERIM LAND VALUE [ILV] ie, NET TURNOVER LESS TOTAL DEDUCTIONS			152,725		
LESS TYPICAL ABNORMAL AND DEVELOPMENT COSTS		COST £			
highway access, eg, junction improvements, £1500/unit		33,000			
off-site drainage improvements, £1000/unit		22,000			
planning obligations/dwelling					
transport					
education etc					
open space equipment /maintenance					
planning obligations total/unit	1000				
planning obligations costs @ £1000/unit		22,000			
TOTAL ABNORMAL AND DEVELOPMENT COSTS [TADC]		77,000	77,000		
RESIDUAL LAND VALUE , ie, ILV minus TADC			75,725		
financing costs @ 5% of RLV			3,786		
land acquisition fee 5% of RLV			3,786		
NET LAND VALUE			68,153		
existing use value - edge of village agricultural value - 0.7 ha @ £20k/ha		14,000			
value added by consent			54,153		
uplift factor			4.87		
viability conclusion - £54k uplift in value (x 4.9) is considered not to be sufficient to motivate a landowner to dispose. Owners of 'exceptions' sites for 100% affordable housing can expect about £10k/plot, and this works out at less than £4000/plot. Therefore the site can be concluded to be unviable					

EXAMPLE 11 - Local Choice green/brownfield small town site 1 ha, 50 dwellings - 40% local market, 60% AH (75% social, 25% intermediate)				model variables	
assumptions: (1) 10 2-bed flats in conversion @ 65sq.m, 20 2-bed houses @ 75 sq.m, 20 3-bed houses @ 95 sq.m, 2) total coverage = 4050 sq.m. 3) Mix is 40% local market 1620 sq.m, 60% AH = 2430 sq.m. (2) High sales prices local market conversion, £3000/sq.m, new build £2800/sq.m, £1120/sq.m for affordable (40% of open market) 3) Build costs £1200/sq.m for conversion, 1000 for new build, no planning obligations				total floorspace sq.m	4050
element	floorspace sq.m	sales value £/sq.m	turnover	sales value £/sq.m	2800
TURNOVER				build cost conversion £/sq	1200
local market housing conversion	650	3,000	1,950,000	build cost new build £/sq.m	1000
local market housing	970	2,800	2,716,000	demolition floorspace sq.m	3000
affordable	2,430	1,120	2,721,600	developer profit % of gross turnover	5
gross turnover			5,437,600	number of qualifying dwellings for S.106 contributions	50
less marketing/legal costs @ 2% of open market turnover		4,666,000	93,320	existing land value £	14000
NET TURNOVER			5,344,280		
total floorspace	4,050				
Build costs - conversion	650	1,200	780,000		
build costs - new build	3,400	1,000	3,400,000		
RSL profit @ 5% of gross turnover			271,880		
building costs fees, including architects, planning permission costs, @ 7% of construction cost			54,600		
demolition/remediation costs @ £15/sq.m			45,000		
TOTAL DEDUCTIONS			4,551,480		
INTERIM LAND VALUE [ILV] ie, NET TURNOVER LESS TOTAL DEDUCTIONS			792,800		
LESS TYPICAL ABNORMAL AND DEVELOPMENT COSTS		COST £			
highway access, eg, junction improvements, £1500/unit		75,000			
off-site drainage improvements, £1000/unit		50,000			
planning obligations/dwelling					
transport					
education etc					
open space equipment /maintenance					
planning obligations total/unit	1000				
planning obligations costs @ £1000/unit		50,000			
TOTAL ABNORMAL AND DEVELOPMENT COSTS [TADC]		175,000	175,000		
RESIDUAL LAND VALUE , ie, ILV minus TADC			617,800		
financing costs @ 5% of RLV			30,890		
land acquisition fee 5% of RLV			30,890		
NET LAND VALUE			556,020		
existing use value - agricultural retailer & open storage - 1 ha @ £250k/ha		250,000			
value added by consent			306,020		
uplift factor			2.22		
viability conclusion - £306k uplift in value (x 2.2) may be just sufficient to motivate a landowner to dispose, depending on individual circumstances. Therefore the site can be concluded to be marginally viable					

EXAMPLE 12 - Local Choice green/brownfield small town site 1 ha, 50 dwellings - 35% local market, 65% AH (75% social, 25% intermediate)				model variables	
assumptions: (1) 10 2-bed flats in conversion @ 65sq.m, 20 2-bed houses @ 75 sq.m, 20 3-bed houses @ 95 sq.m, 2) total coverage = 4050 sq.m. 3) Mix is 35% open market 1417 sq.m, 65% AH = 2633 sq.m. (2) High sales prices local market conversion, £3000/sq.m, new build £2800/sq.m, £1120/sq.m for affordable (40% of open market) 3) Build costs £1200/sq.m for conversion, 1000 for new build, no planning obligations				total floorspace sq.m	4050
element	floorspace sq.m	sales value £/sq.m	turnover	sales value £/sq.m	2800
TURNOVER				build cost conversion £/sq	1200
local market housing conversion	650	3,000	1,950,000	build cost new build £/sq.m	1000
local market housing	767	2,800	2,147,600	demolition floorspace sq.m	3000
affordable	2,633	1,120	2,948,400	developer profit % of gross turnover	5
gross turnover			5,096,000	number of qualifying dwellings for S.106 contributions	50
less marketing/legal costs @ 2% of open market turnover		4,097,600	81,952	existing land value £	14000
NET TURNOVER			5,014,048		
total floorspace	4,050				
Build costs - conversion	650	1,200	780,000		
build costs - new build	3,400	1,000	3,400,000		
RSL profit @ 5% of gross turnover			254,800		
building costs fees, including architects, planning permission costs, @ 7% of construction cost			54,600		
demolition/remediation costs @ £15/sq.m			45,000		
TOTAL DEDUCTIONS			4,534,400		
INTERIM LAND VALUE [ILV] ie, NET TURNOVER LESS TOTAL DEDUCTIONS			479,648		
LESS TYPICAL ABNORMAL AND DEVELOPMENT COSTS		COST £			
highway access, eg, junction improvements, £1500/unit		75,000			
off-site drainage improvements, £1000/unit		50,000			
planning obligations/dwelling					
transport					
education etc					
open space equipment /maintenance					
planning obligations total/unit	1000				
planning obligations costs @ £1000/unit		50,000			
TOTAL ABNORMAL AND DEVELOPMENT COSTS [TADC]		175,000	175,000		
RESIDUAL LAND VALUE, ie, ILV minus TADC			304,648		
financing costs @ 5% of RLV			15,232		
land acquisition fee 5% of RLV inc SDLT			15,232		
NET LAND VALUE			274,183		
existing use value - agricultural retailer & open storage - 1 ha @ £250k/ha		250,000			
value added by consent			24,183		
uplift factor			1.10		
viability conclusion - £24k uplift in value (x 1.1) is not sufficient to motivate a landowner to dispose. Therefore the site can be concluded to be unviable					

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