Economic Viability of Affordable Housing Requirements

Report for Stockton Borough Council

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1. Background and Purpose

1.1 This report has been prepared to advise Stockton Council on the economic viability of the affordable housing requirements set out in policy CS8 in the Core Strategy DPD Publication Draft issued for consultation in October 2008. This policy states

> *"Affordable housing provision within a range of 15-20%, depending on the needs of specific areas, whether a site is brownfield or greenfield, will be required on sites of 10 dwellings or more. Figures lower than the standard requirement for a specific area will only be acceptable where robust justification is provided. This must demonstrate that provision at the standard requirement would make a site unviable".*

It further sets out, in relation to tenure mix, that

> *"The mix of affordable housing to be provided will be negotiated on a site-by-site basis but the starting point for negotiations will be 20% intermediate and 80% social rented tenures ... "*

1.2 The affordable housing requirements in the Core Strategy DPD Publication Draft are based upon a policy informed by the Tees valley Strategic Housing Market Assessment. This identified a shortfall of 866 affordable dwellings per year in Stockton, which represents 155% of the annual RSS requirement for new supply. The level of affordable housing requirement established in policy CS8 has therefore been established with a view to the economic viability of the requirements.

1.3 Viability work has been undertaken to demonstrate the realistic levels at which affordable housing can be achieved by examining the levels that have been achieved since 2004. The key finding of this earlier work is that 15% is achievable on brownfield sites and that this is inclusive of sites with significant costs such as remediation. This has been of considerable value in informing the development of Policy CS8. The Council recognises, however, that there is additional value in researching the issue of the economic viability of affordable housing provision in greater depth. Therefore, this research has been commissioned to test the viability of both the level of affordable housing provision and the mix of affordable housing tenures proposed in CS8, and the proposed threshold for affordable housing provision of 10 dwellings.

1.4 The scope and approach of the study has been designed to meet this requirement. In view of the changes since PPS3 was published, the scope of the study is designed to help the Council assess the impact of the major changes in housing market conditions, alongside the long-term implications of affordable housing requirements. This report has been prepared jointly by arc^4 Ltd, Rider Levett Bucknall Ltd and GVA Grimley Ltd.

2. Approach of the Study

Using beacon sites and reflecting market conditions

2.1 Although it is a relatively compact area, the housing market conditions vary considerably between different parts of Stockton. To provide a balanced assessment it is important, therefore, to test the impact of policy in different parts of the market. For this reason fourteen beacons were selected, drawing on the likely range of typical sites with development potential, to provide a mix of location, size and market appeal. The site information has been informed by actual opportunities and real-world market intelligence, but specific site issues have not been taken into account, and the sites should be taken as examples of a typical site rather than reflecting any particular site.

2.2 The beacon locations are also informed by the likely land availability, so that the development opportunities being tested reflect the likely types of development over the period during which the Core Strategy will apply.

2.3 The beacon sites are listed in Table One on the next page.

2.4 The viability assessments are strategic; they are not designed to be specific site viability appraisals. They do not attempt to take account of detailed site conditions, design requirements or planning conditions. The study assumes that any exceptional or abnormal site conditions will be taken into account by way of reduced land values to reflect these specific costs. The beacon sites and their characteristics are shown in the table on the next page.

Property Market Conditions

2.5 The study takes account of changing housing market conditions for different valuation dates. The scenarios for house prices and land values take account of the volatility and uncertainty in the current housing market by proposing that there should be 3 main scenarios, as follows:

- The base scenario reflects the position in December 2007. This was a position when the market was reasonably stable before the “credit crunch” had a major impact.
- A position that reflects about a year later, late 2008 with about average 15% fall in prices.
- A position reflecting a greater fall in prices. Falls of 20% and 30% have been widely predicted so a scenario for a 25% reduction in prices is also modelled.

2.6 We have explored in some detail the relationship between house price changes and land values to inform this study, and the conclusions, which form the basis of that aspect of the assessment, are set out in section 4.

Table One: The Beacon Sites

Site	Site location and character	Developable Site Area	No. of dwellings	Density per Ha
1	Core brownfield large	12.5 Ha	742	59
2	Core brownfield medium	1.7 Ha	114	69
3	Core brownfield small	0.2 Ha	14	70
4	Stockton brownfield large	8.1 Ha	363	45
5	Stockton brownfield medium	1.6 Ha	69	45
6	Stockton greenfield small	0.25 Ha	11	44
7	Ingleby Greenfield large	6.25 Ha	250	40
8	Yarm/Eaglescliffe brownfield medium	1.25 Ha	49	35
9	Yarm/Eaglescliffe brownfield small	0.2 Ha	8	40
10	Yarm/Eaglescliffe Greenfield large	4.4 Ha	153	50
11	Billingham brownfield medium	1.9 Ha	75	30
12	Billingham brownfield small	0.8 Ha	33	40
13	Thornaby brownfield small	0.2 Ha	11	50
14	Rural Greenfield small	0.4 Ha	12	30

Affordable housing options and assessment criteria

2.7 To provide a comprehensive view of the impact of different affordable housing requirements, the study considers the implications for each beacon site of a range of options for the provision of affordable housing as part of the planning obligations. This includes a range of affordable housing requirements ranging from Nil to 25% and a tenure mix of 80/20 social rent/intermediate (the Council's preferred policy) and also a 50/50 tenure split.

2.8 Using our appraisal model, the gross total costs of development are compared to the forecast gross income from the site, taking account of the costs of finance, cash flow and the requirement for a reasonable developers' profit, set at a minimum of 15% of costs.

2.9 The key results of each affordable housing option and each property price scenario is summarised by comparing the calculated residual land values with the market expectation for that value as defined for that scenario. The outcomes have been classified in RAG (Red Amber Green) format as follows:

- **GREEN**. If the residual value is above or not more than 10% below the expected land value, the scheme is considered to be likely to be viable, as there are most likely to be opportunities for "value engineering" to resolve a small gap.
- **AMBER**. If the gap is between 10-30% below the market expectation of value, the scheme is considered marginal as more significant scheme changes are needed, or a significant revision of market land value expectations. In most cases, it is likely that it will be possible to close this gap but an amber "marginal" rating flags that a scheme is on the edge of viability.
- **RED**. Below this level, the option is considered as likely to be unviable at stated expectations of land value. It may be possible to improve the scheme performance, but at this level the assessment is that the development would probably not be able to proceed.

2.10 In all cases, the assessments assume that the developer is able to achieve at least a target 15% profit on the gross development costs

Consultation

2.11 The approach adopted for this study, the definition of beacon sites and all the key data and assumptions applied have been the subject of consultation with development partners. A paper on the approach and assumptions was circulated to 22 partners in the development sector comprising all the developers and RSLs who regularly work in Stockton. We received a composite response from the Home Builders Federation, one other developer and a large RSL. There was a subsequent discussion with the HBF about certain of the valuation points raised.

2.12 The comments received and the responses to them are set out in a separate note accompanying this paper. The content of the work has been developed, and modified in some cases, in response to these comments. The Council and the consultants are grateful to those who responded for their time and attention, which has assisted this study.

3. Methodology of the Study

3.1 Individual development appraisals have been constructed for each of the 14 beacon sites. A consistent methodology and approach has been adopted for each site appraisal as follows: -

- Gross site hectarage provided by Stockton and adjusted to accommodate the proportion of the site that is developable – to give a net developable site area.
- Development densities, based on advice from the Council about density and mix, are applied to calculate the total number of dwellings that can be accommodated on each site (subject to mix of house types covered below).
- Tenure mix in terms of private for sale, social rented and intermediate housing (as appropriate to each option) then apportioned as a percentage of the total on a site by site basis.
- Mix of units (1 bed, 2 bed, etc) then apportioned by percentage to generate a schedule of accommodation.
- Size of each house type complies with English Partnerships Quality Standards and Policy Guidance "Delivering Quality Places", December 2007 in terms of minimum space standards. In most cases, unit house sizes based on our knowledge of the market, are larger than these standards.
- Open Market Property sales valuation advice for each house type and location provided by GVA Grimley at December 2007 levels. Property values are assessed on a sales £value/m2 basis multiplied by the size of each unit to give a sales value per property.
- It is assumed for the purpose of this exercise that affordable housing will be disposed of to an RSL at a discount from OMV of private sale units.
- Intermediate housing market prices valued at 75% of open market value and Social rented accommodation valued at 50% of open market value. These assumptions have been reviewed, as consultation comments suggested that a more detailed approach to estimating values for affordable housing should considered. We have examined the sale values produced by this approach and are satisfied that it produces realistic average prices, given the actual values for social rented and shared ownership properties prevailing in the Stockton market.
- Ground rents of £150 per property applied (assuming freehold is retained by the land-owner) and capitalised at a 5% yield.
- Build costs for housing units applied at £786/m2 (£73/sf) using regionally adjusted BCIS data as at December 2007 levels (including preliminaries, but excluding contingency and site works).
- Uplift applied to allow for "Code For Sustainable Homes" level 3 (see further explanation of the costs in section 5). The impact of Code 4 is also tested.
- No differential is applied between the build cost of private for sale dwellings and affordable dwellings.

- Cost allowances for site works assume 30% of site will be hard landscaped, 70% soft landscaped plus allowances for drainage and statutory service installations.
- No allowance made for abnormal ground conditions or demolition costs (we have assumed that these costs should be netted off the price of land to produce a value that reflects the true value after dealing with ground conditions and other brownfield site costs. These would be calculated on a site-by-site basis). The site values therefore reflect the value of residential building land ready for development. Variations in this assumption are explored in section 5.
- An allowance of 5% for contingency is included.
- Professional fees are included at 7% of build costs.
- Allowances are also included for statutory planning fees, building regulation fees, surveys & site investigation, sale agent, sale legal, marketing costs, NHBC fees and Non-recoverable VAT.
- Allowance is made for other S.106 costs at an average of £767 per dwelling, based on data from the Council about the average cost of planning obligations in recent schemes. Any costs imposed here by the Council will directly reduce the residual land value of each site.
- Finance charges are calculated on a cashflow basis at 6% on debit balances, 2% on credit balances and with a 2% arrangement fee.
- A blanket rate of sale of 4 dwellings per month has been applied to each site, but we have tested the sensitivity of the appraisal variations in this rate of sale (see section 5).
- It is assumed that the rate of build will align with the rate of sale and that there will be a sales lag of 9 months between start on site and the completion of the first sale.
- A 5% deposit is assumed to be paid by the purchaser 9 months prior to each completion.

3.2 The appraisal of viability is then made as follows:

- Total development costs are deducted from total sales revenue to identify a development surplus.
- 15% (of development costs, including the residual land values) is then deducted as a developers profit
- No allowance is made for Building Cost Inflation (BCI) or House Price Inflation (HPI). In the baseline options, costs and values are at fourth quarter 2007 levels.
- Deducting the developers profit from the development surplus thus leaves a residual land value.

3.3 The key results of each affordable housing option and each property price scenario is summarised by comparing the calculated residual land values with the market expectation for that site at December 2007 levels. The outcomes have been classified in RAG (Red Amber Green) format as outlined above.

3.4 To become viable, current expectations of land value – on a site-by-site basis - would therefore need to be lowered to a point where, in residual terms, a developer is still able to take out a minimum development profit. Beyond this point (lower than nil value), developments are unlikely to come forward without some form of intervention by the public sector. Alternatively, owners may defer a land sale in the expectation that values will recover when the market turns upward.

3.5 The land values used in the assessment (market expectations at December 2007) are given at Appendix A.

4. Scenarios for a falling market

4.1 One of the most difficult aspects of this study is to assess the likely effect of the recession, and lower house prices, on the viability of affordable housing provision. This section summarises how the study tackles this issue and sets out the key assumptions.

4.2 The current position, at the time of preparing this report, is that there are few transactions in the residential land market. This reflects the hiatus in new housing development, the lack of development finance and great uncertainty about market prospects. However, at some point the market will begin to stabilize and significant numbers of land transactions will resume. The land price levels will reflect expectations about house prices and development costs at that time.

4.3 This study cannot anticipate the price levels at which stability will return, so we have modelled various alternatives. This provides a basis for assessing the viability of affordable housing targets in a range of different market conditions, given that market conditions can be expected to change during the period of the LDF Planning policies.

4.4 The relationship of land values and house prices is crucial to the assessment. There is no recognised “formula” to define this relationship so we have examined the evidence about changes in land values in some detail to inform this study. This has involved

- Reviewing the evidence of the relationship of changes in land values and house prices in the last recession 1989-1995;
- Reviewing the pattern of increasing land values and house prices leading up to the recent peak in prices in 2007;
- Modelling the effect of reduced house prices on residual land values in the appraisal tool being applied for this study.
- The findings from each of these three elements are detailed in Appendix D.

4.5 The conclusion is expressed in terms of the level of **reductions** in house and land prices from the December 2007 levels, used as a baseline for this study. The figures built in to the modelling are shown in the table below.

House price fall from Dec '07 levels	Estimated reduction in land values
5%	10%
10%	30%
15%	50%
20%	60%
25%	70%

4.6 The evidence of historical trends and the results of modelling, as set out in the Appendix, provide a firm basis for these estimates. We do have to be aware, however, that the market for land is strongly influenced by expectations, as well as current conditions. This could result in the actual relationships being significantly different due to the state of the market at particular points in the future.

4.7 To illustrate the effect of these different levels of values we have modelled and presented the impact of 15% and 25% reductions in house prices from the December 2007 levels. These scenarios are presented as part of the findings in the next section.

5. Key findings

5.1 This section now sets out the main results of applying the scenarios about values and varying levels of affordable housing requirements. For all the summaries of the results, the beacon sites are numbered as shown in Table One. The results are also set out in tabular form, with more detail, in Appendix C. The colour coding for the viability assessment of each site is as shown on the box below. An explanation of these viability ratings is given at 2.9 above.

- Viable at December 2007 expectations of land value
- Marginal at December 2007 expectations of land values
- non-viable at December 2007 expectations of land values

A: The baseline position at December 2007 values

5.2 To confirm the viability of development for the beacon sites, the first task in the modelling is to test the results using the assumptions detailed in section 3, using December 2007 baseline prices and values, but with no affordable housing provision. This modelling shows the following viability results:

5.3 One of the beacon sites is assessed not to be viable, even with no affordable housing requirement. The detailed information in the appendix shows that the shortfall is substantial, with the development generating only 34% of the expected £217K value placed on the site. The issue on this site appears to be that it is a small site (0.22 ha) in a relatively low value area. The proposed development is flats, but this type of property would not command sufficient value to achieve viable development. The valuation advice has confirmed the expected market value. This example demonstrates the difficulty often experienced with small sites in lower value areas.

5.4 This initial baseline scenario shows that

- Residential development will not always be viable, whatever the requirements of the planning authority. There will need to be flexibility to respond to specific site circumstances.
- Small sites often pose particular challenges.

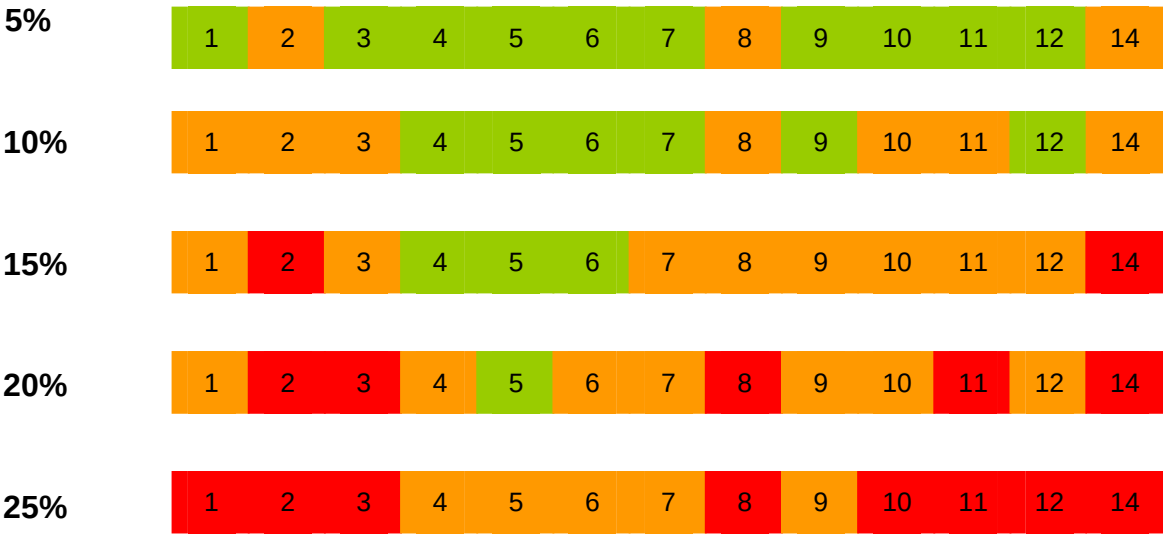
5.5 The performance of site 13 has been calculated in the subsequent assessments and is shown in Appendix C, but inevitably, it continues to show as non-viable under all options. It is therefore not relevant to consideration of the viability of affordable housing targets, so we have not included it in the reporting the performance of beacon sites in subsequent scenarios.

B: Scenarios based on December 2007 values with varying affordability targets

Based on Stockton BC preferred tenure split of 80/20 (social rent/shared ownership)

5.6 We now examine the effect of increasing levels of affordable housing target, assuming this applies across all the beacon sites. The affordable housing provision is applied as 80% social rented housing and 20% shared ownership (with 50% initial tranche sale). All the other assumptions remain as set out in section 3.

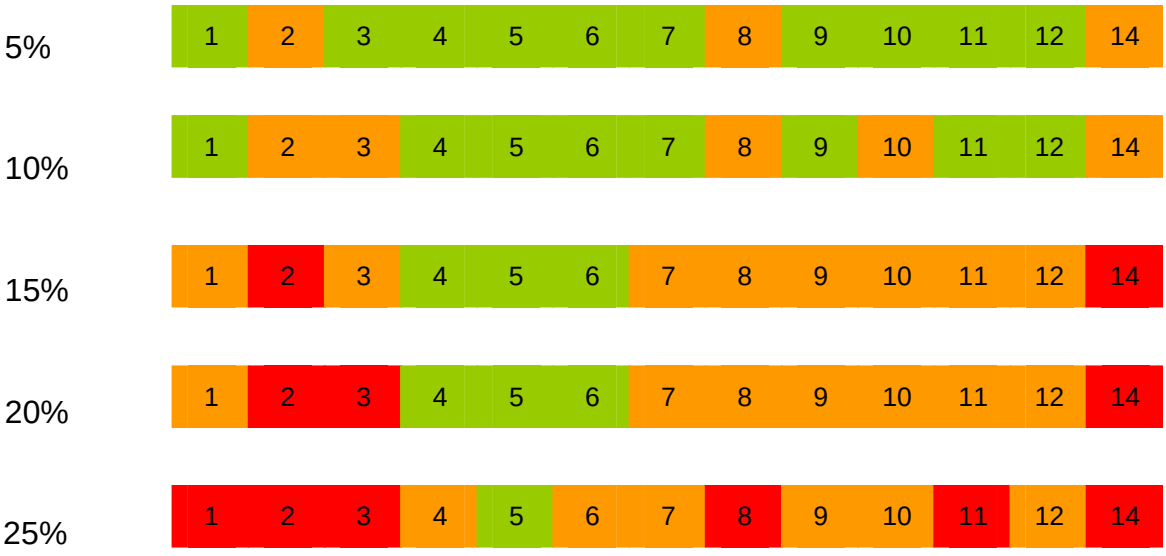
5.7 The diagrams below show the viability of each site for each target level of affordable housing provision, increasing in 5% steps. The non-viable site 13 is excluded, as explained above.



5.8 This shows that at 5% and 10% levels some sites become marginal. At a 15% affordability requirement, two sites of the thirteen are assessed to become non-viable, whilst at 20% affordability provision this increases to five of thirteen. At a 25% affordability provision eight sites are non-viable. This suggests that, on an 80/20 tenure split, an affordability target of more than 20% would be a significant problem for the delivery of new housing on many sites. The "tipping point" appears to be around 15-20%.

Based on an alternative tenure split of 50/50 social rent/shared ownership

5.9 The assessment was repeated, but with an alternative 50/50 tenure split. The diagrams below show the viability of each site for each target level of affordable housing on this revised 50/50 basis of provision, increasing the affordability provision in 5% steps.

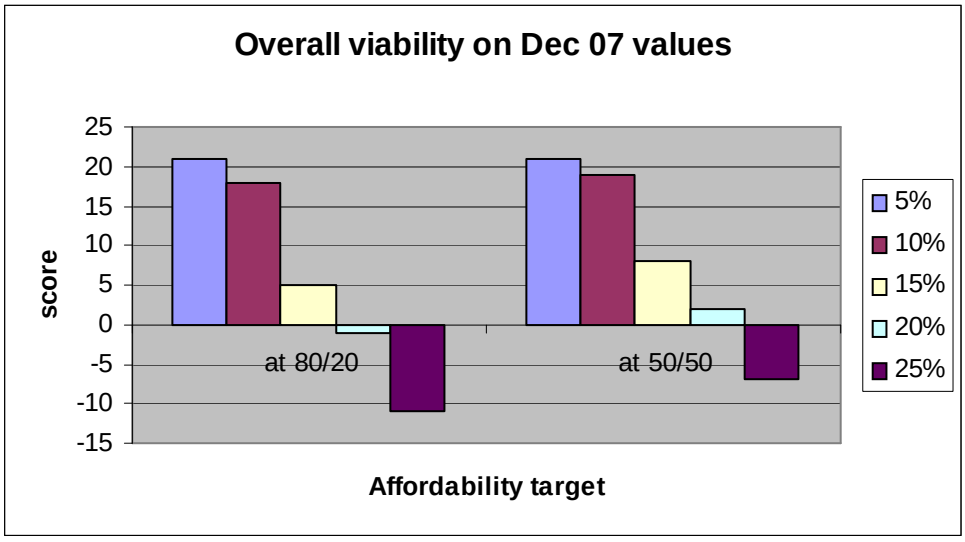


5.10 This shows slightly less impact on viability as two sites of thirteen still become non-viable at 15%, but only 3 sites at 20%. There are six non-viable sites at 25% requirements, and all but one of the remaining seven are then marginal. The overall pattern on this 50/50 tenure split option is that the "tipping point" is at about 20% affordable housing provision.

5.11 The pattern of the results for both tenure splits, on December 2007 values, is summarised in the table below, using a simple scoring system. This applies a viability score to each beacon site as follows

- Viable: 2 points
- Marginal: 1 point
- Non-viable: minus 2 points

5.12 This results in an overall viability score for each level of affordable housing provision, for both of the tenure options. This demonstrates visually the concept of a "tipping point".



Note: The chart shows an overall viability score for each level of affordable housing provision. The scoring basis is described at para 5.11. If the overall score is above 0, the weighted majority of sites are viable.

5.13 It is also worth noting that the results show that the most viable sites, even at a 25% affordable housing provision, are sites 4-6 in the main residential areas of Stockton. This suggests that affordable housing requirements are most likely to be deliverable in certain areas, where the house price/land value relationships are most positive. This finding also confirm the experience that it has proved possible, in recent years, to achieve 15% levels of affordable housing provision as part of schemes in these areas of Stockton, in accordance with the Planning Obligations SPD.

C: Sensitivity testing

5.14 A series of alternative assumptions have been tested to explore how sensitive are the results to possible or likely variations. These include testing the effects of

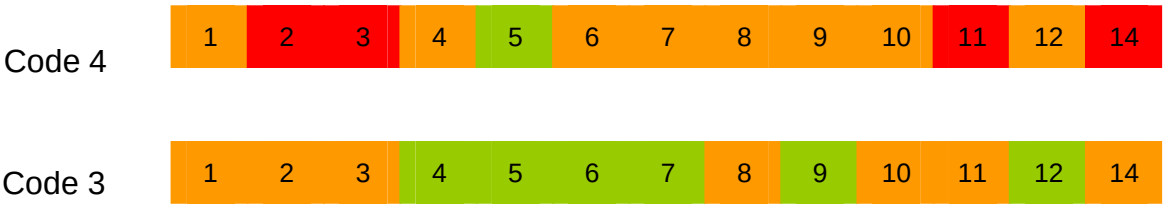
- Implementation of the Code for Sustainable Homes level 4;
- A different assumption for brownfield land
- Deferred payments for land purchase
- A reduced rate of property sales

The key findings on each of these issues is summarised below. Each of these variations has been modelled compared to a mid-point scenario of 10% affordable housing with an 80/20 tenure split.

Code for sustainable homes, levels 3 and 4

5.15 Level 4 of the Code for Sustainable Homes is due to be introduced in 2013. Research undertaken on behalf of the Homes and Communities Agency suggests that this is likely to add a premium to construction costs of around 12.7% above current building regulation compliance. Code 3 (which forms the datum in our "base scenario") represents a 5.1% increase above current building regulation compliance. In other words the move from code 3 to code 4 corresponds to a 7.6% increase in build costs. Market feedback suggests this is unlikely to result in an increase in "for sale" values.

5.16 The model shows the following impact on viability, compared to the baseline Code 3 option at 10% affordable housing provision:-



5.17 This is a significant change, with four sites becoming non-viable and a further four moving to marginal. It indicates that the introduction of these more demanding requirements, in Code 4, could impact significantly on the viability of development. In the absence of any other compensatory changes, such as higher sale values or greater build efficiency (to reduce the development cost), it suggests that a 10% affordable housing target may be the most that could reasonably be achieved, assuming market conditions as at late 2007.

5.18 We do not consider it would be appropriate to set a planning policy for 2013 and beyond at this stage, based on a forecast subject to a number of uncertainties. Assuming that the introduction of Code 4 still occurs as planned, there might be a number of market responses in anticipation of this change. For example:

- Some commentators suggest that the costs will decrease as the necessary products and methods are adopted as standard practice, and economies are achieved;
- There may be an overall adjustment in land value expectations in response to the Code requirement;
- Changes in public attitudes may persuade purchasers to pay a premium for more sustainable dwellings.

5.19 We therefore suggest that the Council should review the position and possible implications for affordable housing much nearer to the date of introduction.

Brownfield land

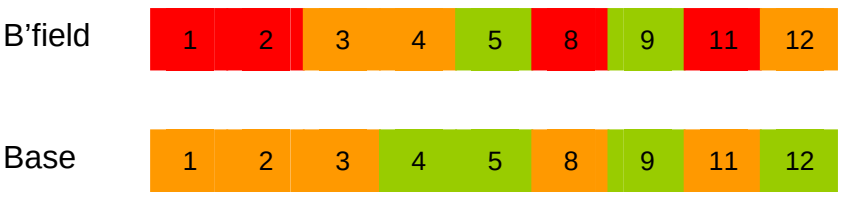
5.20 A number of the beacon sites are identified as "brownfield" and are therefore likely to require some form of remediation. As set out in the methodology, we have carried out the baseline assessments on the basis that the site values reflect the value of residential building land ready for development. The costs of works required to brownfield sites would be deducted from these values.

5.21 We have no details at this stage of the likely degree of contamination or therefore the likely costs of dealing with each of the sites. Even if these details were available, such costs should be regarded as hypothetical as it is likely that different developers will have different solutions to addressing site remediation works and are also likely to adopt differing site densities, and mix of dwellings. To test the sensitivity of the assessments to this issue, we have attempted to demonstrate the impact on residual land values for every £100,000 spent per acre in remediating each site. We have also reduced the expected site values by a corresponding amount, but the model also generates corresponding increases in professional fees, survey costs, finance charges and the developers' expectation of profit to cover this additional work.

5.22 The average residual site value in the base scenario across all 14 sites equates to £463,200 per acre. After allowing for remediation costs at £100,000 per acre for all sites, the average residual value falls to £327,900 per acre (around £135K per acre reduction). This is a result of the compounded effect of professional fees, additional site investigation works, finance charges and allowances for profit on net cost.

5.23 The purpose of the exercise here is to demonstrate the sensitivity of the financial modelling to abnormal / remediation costs that are not fully taken into account in the negotiation of land acquisition. This is to alert the council and development partners to initial expectations of land values. Site abnormals and remediation costs should be netted off both December 2007 expectations of land value and any residual land values.

5.24 The effect on the baseline viability on the brownfield beacon sites, again using the mid-point 10% affordable housing provision is shown below.



5.25 The additional costs on brownfield sites can have a significant and negative impact on viability, and experience is that this will occur in some cases. But we underline that these should be taken into account in setting land acquisition prices.

Deferred payments for land purchase

5.26 In keeping with current trends in a number of financial transactions conducted recently, there appears to be a growing trend (in an attempt to combat the current economic climate) in deferring payments for land to the back end of the development programme in order to optimise cash flow, reduce borrowing requirements, enhance profitability and ultimately allow projects to proceed.

5.27 We have modelled this scenario to demonstrate the sensitivity in economic terms. It may be particularly applicable in the context of sites that are in SMBC's ownership, where they are prepared to take a deferred receipt.

5.28 The average residual site value in the base scenario across all 14 sites equates to £445,000 per acre. After allowing for a deferral in the land sale payment across all sites, the average residual value rises to £593,000 per acre (around £148K per acre increase).

5.29 The diagrams below show the effect in terms of the viability of the beacon sites. This is of significant impact on the economic viability of residential development sites and demonstrates the potential for changes in the terms of the development.

5.30 This change in the timing of payments has a dramatic effect in improving the viability of schemes. All but one of the seven marginal sites move to being viable. This demonstrates that financial options for development can be very important to the viability of schemes, and that there may be ways of achieving viability for difficult sites.

A reduced rate of property sales

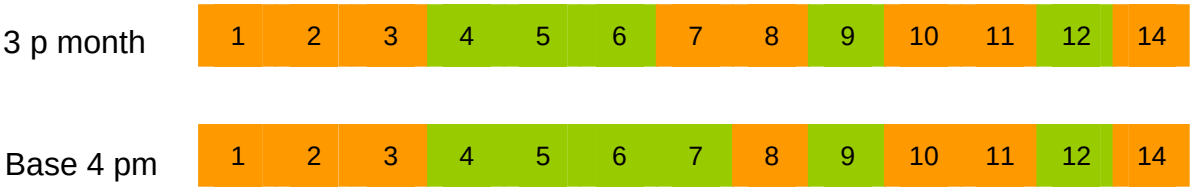
5.31 In the current economic climate, housing developments are susceptible to a whole range of factors, all of which are likely to affect the number of sales achieved on site. In such circumstances, it is likely that the developer will slow (or stop) the rate of build to match the rate of sale. This will incur additional build costs in the form of preliminaries costs and will have a detrimental effect on profitability and rate of return.

5.32 For the purpose of this financial modelling exercise, we have adopted a rate of sale of 4 dwellings per month across all sites. For illustrative purposes only,

however, we have modelled the impact of a reduction by one dwelling per month (to 3 per month) to demonstrate the sensitivity of the appraisal to this factor.

5.33 The average residual site value in the base scenario across all 14 sites equates to £445,000 per acre. After allowing for a reduction in the rate of sale across all sites, the average residual value falls to £436,000 per acre (around £9K per acre reduction).

5.34 The reduction from 4 to 3 sales per month affects the relative viability of only one of the sites, which moves from viable to marginal. This is shown below. Overall the slow-down reduces the residual land values by around 2.5% across the board.



Commentary on sensitivities

5.35 This analysis shows that the viability of development and the affordable housing targets is sensitive to changes that would increase development costs, such as the introduction of Code 4. Reductions in development costs would, of course, have a positive effect. Perhaps less immediately obvious is the very significant impact on economic viability of changes in the timing of payments for land, showing how important the financial arrangements are for schemes financial performance.

D: Impact of lower house prices and land values

5.36 In the current market conditions, the dramatic changes are those being experienced in house prices and the consequent level of land values. We now examine the effect of these changes in more detail.

5.37 The scenarios for lower house prices and land values are now examined on the basis described in section 4. Firstly, we test the effect of a 15% fall in house prices with a corresponding 50% fall in land values, that being the level at which we predict land values would then stabilise. Then we test the more severe scenario of a 25% fall in prices with a consequent 70% reduction in land values.

House prices 15% less than December 2007 levels

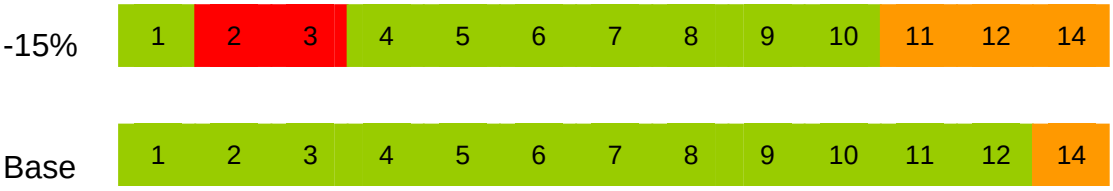
5.38 The first assessment looks initially at the impact on viability with no affordable housing requirement. This tells us whether the schemes for the beacon sites remain viable, irrespective of affordable housing targets.

5.39 The results below indicate that two sites cease to be viable and two become marginal. We should qualify this by commenting that the operation of the market will be more complex than we have assessed. The modelling does not include

possible changes in the specification of schemes that may be considered appropriate in a lower-priced market; such changes may

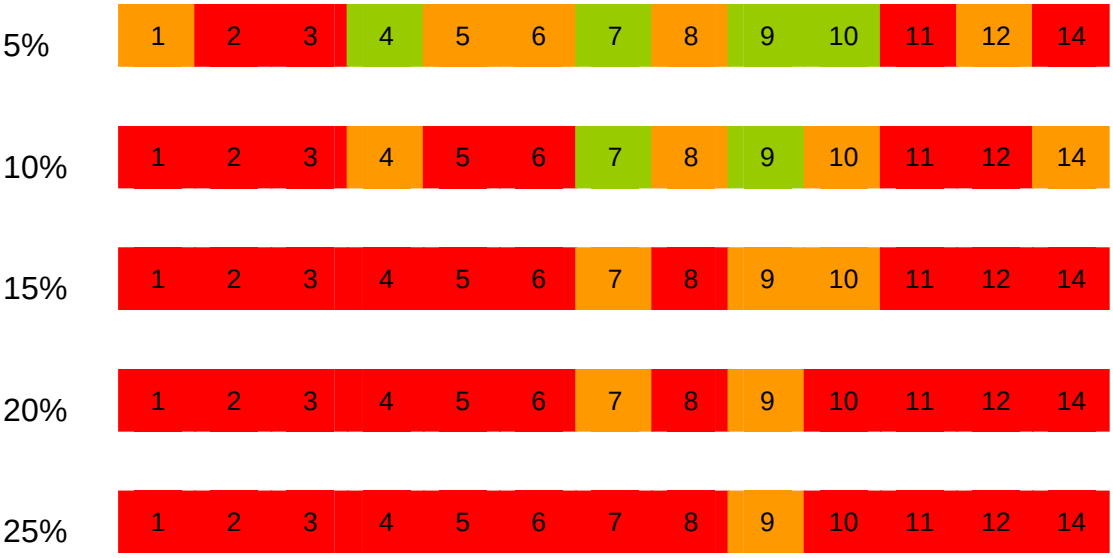
- make schemes more viable if they, for example, reduced the size or specification
- or make schemes less viable, for example if houses were substituted for flats and this substantially reduced densities.

5.40 Nonetheless, the results below show that a falling market is likely to have a significant impact on viability, especially in the lower value locations.



5.41 We now look at the look at effect on viability of affordability targets at this lower price level. These results below show that, of the 11 sites that remained viable or marginal with no affordable housing requirement,

- a further 2 become unviable at a 5% requirement, and 2 more become marginal.
- and a further 3 become non-viable at a 10% requirement. This leaves 6 sites, mainly in the higher value areas, as the only ones then viable at a 10% affordable housing requirement.
- At a 15% requirement, just 3 sites are marginal, all in the higher value areas.



5.42 We have further examined whether this impact changes materially in the level of fall in land values were greater, as our assessment of a 50% fall may be too cautious. If it were a 60% fall in values, no further changes occur.

5.43 A 15% fall in house prices, **with the market then stabilising at that level**, can therefore be expected to have a significant impact on the overall viability of development. Some sites will cease to be viable at all, unless big changes can be made in the development proposals. On other sites, it may prove difficult to meet an affordable housing target as high as 10% (with an 80/20 tenure split). But some sites that remain viable may still be able to provide affordable housing at approximately a 10% level. These are likely to be the higher value areas.

5.44 A summary comparison of the viability assessments for the scenario based on a reduction of 15% in house prices, and the baseline December 2007 position, is shown in the table below. Both assessments assume an 80/20 tenure split for affordable housing provision.

Note: The chart shows an overall viability score for each level of affordable housing provision in the two scenarios. The scoring basis is described at para 5.11. If the overall score is above 0, the weighted majority of sites are viable.

If building costs reduced alongside a 15% fall in prices?

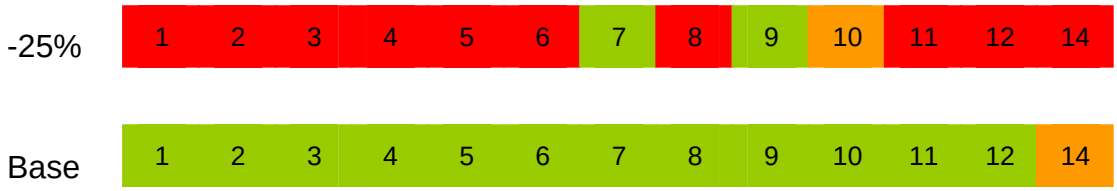
5.45 A further possibility is that building costs may fall significantly as a result of the overall recession and increased competitiveness in the construction sector. We have examined the effect if a 5% fall in building costs on the outcomes. This improves the position significantly. At a 10% affordable housing requirement there would be 3 unviable sites, 2 marginal and 8 viable. At a 15% affordable housing requirement there would be 9 unviable sites, 1 marginal and 3 viable.

5.46 Therefore if there were to be a reduction of 5% in building costs, an affordable housing target of 10% would be achievable on most of the sites that are economically developable at this lower house price level. But 15% would be achievable only for a minority of sites, mainly in the higher value areas.

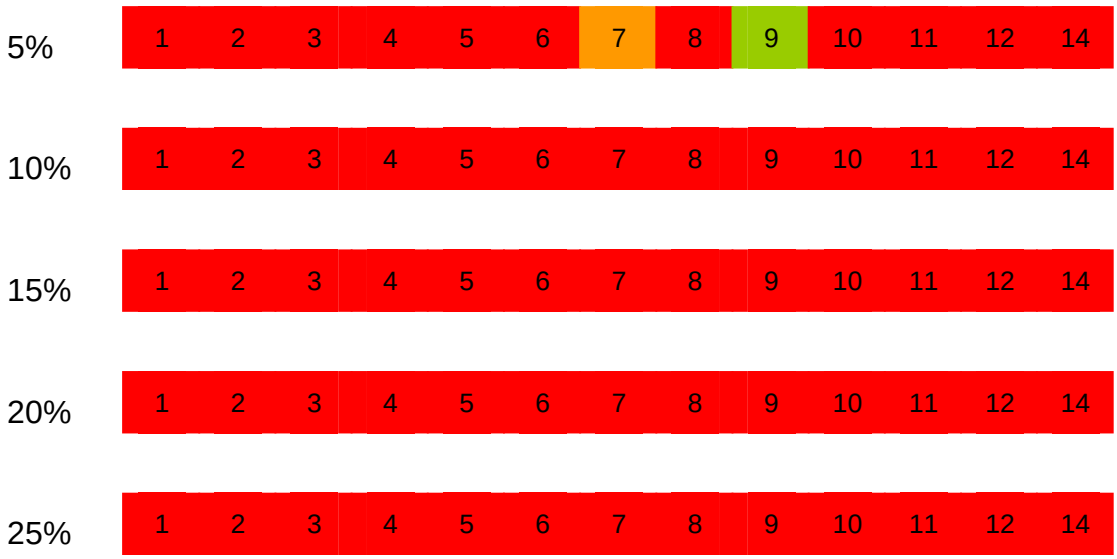
House prices 25% less than December 2007 levels

5.47 We now make a similar assessment of the effect of a 25% fall in house prices, and the market then stabilising with a corresponding 70% fall in land values.

5.48 The impact on baseline viability with no affordable housing requirement is, as we would expect, much more severe than for the 15% price reduction. Ten of the 13 sites become unviable, leaving only three sites in the higher value areas as viable or marginal.



5.49 We then look at effect of affordability targets on viability at this lower price level.



5.50 This suggests that at house prices 25% below December 2007 levels, it would be very difficult to achieve viable development proposals, unless there are changes in market conditions more fundamental than we have assumed. Even for the few sites that may be developable, it is unlikely that affordable housing provision, through planning obligations, would be viable at a level above 5%, even in the higher value areas.

If building costs reduced further alongside a 25% fall in prices

5.51 Again, we have tested the sensitivity of this finding to reductions in building costs. A more severe drop in prices would be likely to intensify competition and lead to a bigger fall in prices. We therefore test a fall of 10% in building costs for this scenario of a 25% fall in house prices. The impact is that only 2 sites would

then be unviable at 0% affordable housing provision, as compared to 10 in the scenario without reduced building costs; a further 6 would be marginal.

5.52 The viability of most sites is sensitive to increasing affordable housing requirements at this level. At a 5% affordable housing provision, 6 sites are unviable and at 10% affordable housing provision, 9 of the 13 sites are unviable. The most viable sites, and those with the greatest potential to provide affordable housing, are still in the higher value areas. Affordable housing provision is likely to be viable at only a 5-10% level, and not for all sites.

5.53 We consider these scenarios with some allowance for reduced building costs, are probably the most plausible. They produce a model of a housing market where development would be able to proceed on many sites in Stockton, although the higher density regeneration sites in the urban core no longer appear to be viable. The margins are tighter and this shows in a more limited scope for affordable housing provision. This would probably prevail until such time as the market starts to grow, with prices rising again.

E: Small sites

5.54 One of the issues we were specifically asked to consider is the appropriate site size threshold, at which affordable housing would be required. A threshold of 10 dwellings is being considered.

5.55 The assessment includes five beacon sites with a capacity of 15 dwellings or less (0.4ha or less). There is no consistent pattern of results from these small sites. One proved to be unviable for development at the outset but others are amongst the sites that show the strongest viability. There does not therefore, seem to be a simple conclusion about the viability of smaller as compared to larger sites.

5.56 During the course of the work, we have noted a number of other aspects of the issues relating to smaller sites that are relevant to the decision about the threshold. These issues would affect the administration of the policy and in turn, may influence the willingness of developers to come forward with development proposals for smaller sites.

5.57 Firstly, the viability performance of smaller sites is much more variable than for larger sites. This is not surprising: the options for smaller sites are more constrained and specific site issues may increase costs (although we have not factored this into the appraisal). Problems about the viability of affordable housing provision can therefore be expected on a proportion of smaller sites.

5.58 The impact of affordable housing requirement can change their viability at the size thresholds where the requirements increase. For example, consider the table below.

Example of the impact of affordable housing requirements on smaller sites.

No of aff. Homes req'd	Site size at which this applies	
	@ 15% req't. (actual %)	@ 20% req't (actual %)
1	4 (25%)	3 (33%)
2	11 (18%)	8 (25%)
3	17 (17%)	13 (23%)
4	24 (17%)	18 (22%)

For small sites, an increase in affordable housing requirements from 1 to 2, or 2 to 3 can have a significant impact on viability. The actual requirement (working to the nearest whole number) can be significantly above the policy requirement.

5.59 It is also relevant to note that the administrative work involved in delivering one or two affordable dwellings on small sites could be substantial for the developer, the RSL and the Council. For sites that a developer may already consider marginal, the requirement may deter schemes from progressing.

5.60 There is no clear-cut conclusion on this issue. Our opinion is that there is not a strong argument for reducing the threshold below the national indicative figure (in PPS3) of 15 dwellings. We base this opinion on our assessment of the practical issues arising for smaller sites and the likely disincentive to new development this would cause.

6. Conclusions

Scope of the Study

6.1 This study aims to present a rounded view of the economic viability of affordable housing targets as part of the requirements of the statutory planning system in Stockton. The assessment addresses the great uncertainties arising from the current volatile housing market and other changes that may arise. It aims to provide evidence that will underpin long-term planning policies.

6.2 There can be no doubt that the application of affordable housing policies will need to be responsive to the market conditions anticipated at the time of development.

6.3 We have taken a baseline of the market conditions at the end of 2007. The practical reason is that this was the last point when there was any stability in the housing and land markets. We recognise that these price levels no longer apply but they probably will return during the life of the planning policies. It is therefore appropriate to take account of this baseline set of prices and values.

6.4 To reflect the fall in house prices that has already occurred, and further falls that are widely predicted, the assessment examines the impact house prices at 15%

and 25% below the December 2007 baseline. We have examined in some detail the likely parallel reductions in land values and consider these lower house prices would result in 50% and 70% reductions in land values. We have to qualify this by commenting that there is no recent comparable experience of a housing market recession as severe as that currently being experienced. These are therefore uncharted waters!

Affordable housing targets: economic viability at baseline prices

6.5 In the still relatively favourable market conditions of late 2007, our assessment is that affordable housing provision, delivered through planning obligations, would be viable as follows:-

- with a tenure split of 80% social rent and 20% shared ownership: on most sites at a level of 15-20% affordable housing provision, and
- with a tenure split of 50/50: the viability of provision improves slightly, and more schemes would work at 20% affordable housing provision.

6.6 There is a significant variation between areas of Stockton, which the Council may wish to consider in applying these targets. A review of the sensitivity of these targets to other potential factors shows that

- The introduction of Level 4 of the Code for Sustainable Homes seems likely on present estimates to reduce the viability of development. A 10% affordable housing target may become the most that can reasonably be achieved on most sites. However, we do not consider it would be appropriate to set a planning policy for 2013 and beyond at this stage, based on this forecast, which is subject to a number of significant uncertainties.
- The costs associated with brownfield land development could seriously affect viability. On some relatively pessimistic assumptions, we find that achievement of the targets would be difficult. This arises because the full costs of remediation are sometimes not taken fully in account when land prices are being negotiated. The policy should, however assume that additional costs arising from brownfield sites are correctly taken into account in determining land prices. Nonetheless, there may need to be some flexibility on sites with high remediation costs.
- A delay in the phasing of payments for land purchase can significantly improve the economic viability of schemes. This highlights the potential for positive as well as negative impacts on viability.

Effect of reduced price levels

6.7 At a 15% reduction in house price levels, we are estimating that land values will fall by 50%. At this level, two sites will cease to be viable at all, unless big changes can be made in the development proposals. The viability of others is substantially reduced once affordable housing provision is required. It may

prove difficult on many sites to achieve an affordable housing target of more than 10%. Some sites remain viable and, on these, it should still be able to provide affordable housing at 10%, possibly 15% levels. These sites are likely to be in the higher value areas.

6.8 At a 25% reduction in price levels, we are estimating a 70% fall in land values. The impact is severe with 10 of 13 sites becoming non-viable. Affordable housing provision is not viable other than at 5% on 2 or 3 sites.

6.9 We also considered the effect of reductions in building costs due to the recession and a highly competitive market. It is uncertain how much reduction there may be, so we modelled 5% and 10% building reductions to match the two lower price scenarios. It is likely the greater reduction in prices and a deeper recession would result in a greater fall in building costs. These reductions would result in most sites still being viable for development if there were no affordable housing requirement.

6.10 These scenarios, with reductions in building costs, would probably mean that

- At the 15% house price reduction, a 10% affordability provision would be achievable on most of the sites that remain economically developable; 15% may be achievable on a minority of sites in higher value areas.
- At the 25% house price reduction, affordable housing provision seems likely to be viable at a 5-10% level, but not for all sites.

6.11 We consider these scenarios with some allowance for reduced building costs, are probably the most plausible. They produce a model of a housing market where development would be able to proceed on most sites in Stockton, although certain higher density regeneration sites in the urban core no longer appear to be viable.

6.12 If the market were to stabilise with house prices at a level as low as 25% below that in December 2007, there will have to be a significant re-shaping within the development industry. We have to conclude that margins will be tight and that this will drive out substantial surpluses on development. These surpluses have been funding affordable housing provision and until the market starts to rise again, affordable housing provision will be difficult. It is likely that consideration on a site-by-site basis will often be appropriate.

Overall policy advice

Affordable housing targets

6.13 As the market conditions will change during the currency of the Local Development Framework, it will be desirable for the Council to have policies in place for affordable housing provision that are designed to apply to a broad range of house prices and land values. It also seems appropriate that the policies should be able to take advantage of positive market conditions, as existed in late 2007. Whilst the market is in recession, however, policies will need to be applied with considerable flexibility, otherwise housing development may be substantially discouraged.

6.14 We therefore suggest that

- The baseline policies for affordable housing provision should be established in the context of the market conditions in late 2007. In those circumstances, a target of 15-20% affordable housing provision would be economically viable for most sites.
- There will need to be flexibility in applying this policy whilst the forecast sale prices for new houses remain significantly below these late 2007 levels. The commentary above has indicated how far lower house prices levels may reduce the potential to provide affordable housing.
- The viability of inner urban regeneration sites is likely to under the greatest pressure; this underlines that certain sites are likely to need specific assessment to establish how far affordable housing can be provided.

Site thresholds

6.15 Our opinion on the level of the threshold for affordable housing targets is that there is not a strong argument for reducing the threshold below the national indicative figure (in PPS3) of 15 dwellings. We base this opinion on an assessment of the practical issues arising for smaller sites and the likely disincentive to new development this would cause.

Appendix A

Site development assumptions and December 2007 land values.

SubArea	SiteNo	Green/Brown	Area(ha)	Developable Area	Developable Area	Density	Yield	Gross Green Field Land Value	Gross Green Field Land value Per Hectare	Housing mix	Detached, Semi or Terrace	Building height
Core	1	Brown	20	50-75%	62.5%	59.3	741	£15,444,073	£1,235,526	20% Flats 20% 2B Housing 60% 3B+ Housing	All	2 and 3
	2	Brown	2	75-90%	82.5%	69.1	114	£2,038,618	£1,235,526	40% 1B Flats 60% 2B Flats	N/A	4
	3	Brown	0.2	100%	100.0%	70.0	14	£247,105	£1,235,526	20% 1B Flats 80% 2B Flats	N/A	4
Stockton	4	Brown	13	50-75%	62.5%	44.9	365	£8,030,918	£988,421	10% Flats 20% 2B Housing 70% 3B+ Housing	All	2 and 3
	5	Brown	2.5	50-75%	62.5%	44.8	70	£1,158,305	£741,315	20% 2B Housing 80% 3B+ Housing	All	2
	6	Greenfield	0.4	50-75%	62.5%	44.0	11	£247,105	£988,421	100% 3B+ Housing	Detached	2.5
Ingleby	7	Greenfield	10	50-75%	62.5%	40.0	250	£10,810,851	£1,729,736	100% 3B+ Housing	Detached/ Semi	2
Yarm and Eaglescliffe	8	Brown	2	50-75%	62.5%	39.2	49	£2,162,170	£1,729,736	20% 2B Flats 80% 3B+ Housing	Semi/ Detached	2
	9	Brown	0.2	100	100.0%	40.0	8	£345,947	£1,729,736	20% 2B Housing 80% 3B+ Housing	Semi/ Detached	2
	10	Greenfield	7	50-75%	62.5%	35.0	153	£7,567,596	£1,729,736	100% 3B Housing	Semi/ Detached	2
Billingham	11	Brown	3	50-75%	62.5%	39.5	74	£1,853,289	£988,421	40% 2B Housing 60% 3B Housing	Terraced/ Semi	2
	12	Brown	1	75-90%	82.5%	40.0	33	£815,447	£988,421	60% 2B Housing 40% 3B Housing	Terraced/ Semi	2
Thornaby	13	Brown	0.22	100%	100.0%	50.0	11	£217,453	£988,421	100% 2B Flats	N/A	3
Rural	14	Greenfield	0.4	100%	100.0%	30.0	12	£593,052	£1,482,631	100% 3B+ Housing	Detached	2

House prices at December 2007

UNIT PRICES

Type	Detached	Detached	Detached	Semi Detached	Semi Detached	Semi Detached	Semi Detached	Terrace	Terrace	Terrace	Terrace	Bungalow	Bungalow	Bungalow	Bungalow	Apartment	Apartment	Apartment
Bedroom	5	4	3	4	3	2	2	4	3	2	2	4	3	2	2	2	2	1
Sq Ft	1,280	1,140	1,000	1,140	1,000	826	710	1,140	1,000	828	710	1,140	1,000	828	710	828	710	650
Core	£0	£0	£190,000	£0	£180,000	£144,550	£0	£0	£165,000	£136,620	£117,150	£0	£0	£0	£0	£149,040	£127,800	
	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£149,040	£127,800	£117,000
	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£149,040	£127,800	£117,000
Stockton	£0	£0	£200,000	£0	£190,000	£152,810	£0	£0	£175,000	£144,900	£124,250	£0	£0	£0	£0	£149,040	£127,800	£117,000
	£0	£0	£190,000	£0	£185,000	£148,680	£0	£0	£160,000	£132,480	£113,600	£0	£0	£0	£0	£0	£0	
	£0	£0	£190,000	£0	£185,000	£0	£0	£0	£175,000	£0	£0	£0	£0	£0	£0	£0	£0	
Ingleby	£0	£0	£220,000	£0	£210,000	£165,200	£0	£0	£195,000	£0	£0	£0	£0	£0	£0	£0	£0	
Yarm and Eaglescliffe	£0	£0	£220,000	£0	£210,000	£165,200	£0	£0	£195,000	£0	£0	£0	£0	£0	£0	£157,320	£134,900	
	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	
	£0	£0	£220,000	£0	£210,000	£165,200	£0	£0	£195,000	£0	£0	£0	£0	£0	£0	£0	£0	
Billingham	£0	£0	£190,000	£0	£200,000	£148,680	£0	£0	£175,000	£0	£0	£0	£0	£0	£0	£0	£0	
	£0	£0	£190,000	£0	£200,000	£148,680	£0	£0	£175,000	£0	£0	£0	£0	£0	£0	£0	£0	
Thornaby	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0	£136,620	£117,150	
Rural	£0	£0	£210,000	£0	£200,000	£156,940	£0	£0	£185,000	£0	£0	£0	£0	£0	£0	£0	£0	

PRICE PER SQUARE FOOT

Type	Detached	Detached	Detached	Semi Detached	Semi Detached	Semi Detached	Semi Detached	Terrace	Terrace	Terrace	Terrace	Bungalow	Bungalow	Bungalow	Bungalow	Apartment	Apartment	Apartment
Bedroom	5	4	3	4	3	2	2	4	3	2	2	4	3	2	2	2	2	1
Sq Ft	1,280	1,140	1,000	1,140	1,000	826	710	1,140	1,000	828	710	1,140	1,000	828	710	828	710	650
Core			£190		£180	£175			£165	£165	£165					£180	£180	
																£180	£180	£180
																£180	£180	£180
Stockton			£200		£190	£185			£175	£175	£175					£180	£180	£180
			£190		£185	£180			£160	£160	£160							
			£190		£185				£175									
Ingleby			£220		£210	£200			£195									
Yarm and Eaglescliffe			£220		£210	£200			£195							£190	£190	
			£220		£210	£200			£195									
Billingham			£190		£200	£180			£175									
			£190		£200	£180			£175									
Thornaby																£165	£165	
Rural			£210		£200	£190			£185									

Appendix B

Summary of Scenario Data

A number of "what if" sensitivity scenarios have been modelled to assess their impact on economic viability. All scenarios compare the residual land value (RLV) as a consequence of the various changing sensitivities with the expected site value (ESV) as at December 2007.

We have adopted a Red Amber Green (RAG) coding methodology as follows:-

Green: Where the RLV is 90% or higher than the ESV

Amber: Where RLV is between 70% - 90% of ESV

Red: Where RLV is lower than 70% of ESV

Key Sensitivities

The following variables have been adjusted in each of the scenarios:-

1. Increase in sales values +/-% – a plus or minus % adjustment is made here whereby the sales price per dwelling is capable of being adjusted by, say, a 10% increase or a 25% decrease.
2. Rate of Sales per month – the default scenario is 4 dwellings per month per site. This can be varied up or down.
3. Deposits % - a default position of a 5% deposit is assumed whereby purchasers are assumed to pay a cash deposit 6 months prior to taking occupation of a dwelling. The deposit percentage can be varied up or down.
4. Base build costs (excluding siteworks and contingency) – a default position of £73/sf / £786/m2 is adopted. This figure can be varied up or down.
5. Abnormals per acre – the default scenario is £0 (nil). However, this figure can be varied incrementally to demonstrate the resultant impact on economic viability and residual site values.
6. Contingency % - a default position of 5% of build costs is adopted.
7. Professional fees % - a default position of 7% is adopted.
8. Code for Sustainable Homes – code level 3 is adopted as a default position. The impact on economic viability of increases to codes 4, 5 and 6 can be assessed. Source data is from CLG's "Cost Analysis of the Code for Sustainable Homes – Final Report", July 2008.
9. Finance rate % - a default rate of 6% is assumed.
10. Developer's profit on cost % - a default position of 15% is assumed.
11. Expected Site Value at December 2007 – the default position is based on valuation advice provided by GVA Grimley. Land value is a function of expected sales values and we have incorporated the ability to vary the GVA values by plus or minus a % adjustment.

12. Pay for site at Start or End – by default, it is expected that the land sale transaction will take place at the beginning of each development phase. The option to pay at Practical Completion is also modelled.
13. Affordable % - This allows the key variable of the % of affordable units to be delivered on a site-by-site basis to be varied. We have adopted 5% increments from 0% to 25%.
14. Shared ownership % / Rented % - it is assumed that the affordable units will be made available either for rent or for shared ownership. This allows the mix to be varied. The default position is 80% rented and 20% shared.
15. £ shared value as a % of £private OMV – by default, disposal to an RSL is assumed at a discount to OMV of 25% (i.e. 75% of OMV)
16. £ rented value as a % of £private OMV – by default, disposal to an RSL is assumed at a discount to OMV of 50%.
17. Adopt "blanket" density per acre – this is a yes/no toggle and allows a single development density to be applied across all sites. The default is "no" with site-specific densities pre-established by SCC.
18. Adopt "blanket" rate of sale – this is a yes/no toggle, which allows a blanket rate of sale across all sites. The default is "yes".
19. Adopt blanket affordability % - this again is a yes/no toggle, which allows the application of a single affordability % (or not) across each site uniformly. The default is "yes"

Scenarios 1 to 6

Using all the default scenarios above, scenarios 1 through 6 apply an affordability % starting at 0% rising by 5% increments to 25% affordability.

Scenarios 7 to 11

This is the same as scenarios 1 to 6, but changes the mix of affordable units from 80:20 (rented: shared) to 50:50. Affordable housing percentage sensitivities from 0% to 25% are tested in 5% increments.

Scenarios 22 to 27

This is the same as scenarios 1 to 6, but reduces expected sales values by 5% and expected site value at December 2007 by 10%. Affordable housing percentage sensitivities from 0% to 25% are tested in 5% increments.

Scenarios 18 to 19D

As scenarios 22 to 27, but adopting a 15% reduction in sales values and corresponding 50% reduction in expected site values at December 2007 levels. Affordable housing percentage sensitivities from 0% to 25% are tested in 5% increments.

Scenarios 20 to 21D

As scenarios 22 to 27, but adopting a 25% reduction in sales values and corresponding 70% reduction in expected site values at December 2007 levels. Affordable housing percentage sensitivities from 0% to 25% are tested in 5% increments.

Scenario 12

As scenario 3 (10% affordable), but adopting Code level 4 (in lieu Code 3)/

Scenario 13

As scenario 3 (10% affordable), but deferring the land payment to Practical Completion.

Scenario 14

As scenario 3 (10% affordable), but allowing assumed abnormal development costs of £100,000 per acre. A corresponding reduction of £100,000 per acre is also made to the ESV.

Scenario 15

As scenario 3 (10% affordable), but adopting an assumed rate of sale of 3 dwellings per month (a reduction of 1 dwelling per month).

Appendix C

Affordable Housing / Financial Viability - Summary

Scenario Summary	S1 0% AH	S2 5% AH 80:20	S3 10% AH 80:20	S4 15% AH 80:20	S5 20% AH 80:20	S6 25% AH 80:20	S7 5% AH 50:50	S8 10% AH 50:50	S9 15% AH 50:50	S10 20% AH 50:50	S11 25% AH 50:50	S22 -5% sale -10% ESV 0% AH	S23 -5% sale -10% ESV 5% AH	S24 -5% sale -10% ESV 10% AH	S25 -5% sale -10% ESV 15% AH	S26 -5% sale -10% ESV 20% AH	S27 -5% sale -10% ESV 25% AH
Changing Cells:																	
Increase on sales values +/-	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-5%	-5%	-5%	-5%	-5%	-5%
Rate of sales per month	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Deposits %	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Base build cost (excl siteworks)	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73
Abnormals per acre	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Contingency %	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Professional fees %	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%
Code For Sutainable Homes	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
S.106 cost per dwelling	767	767	767	767	767	767	767	767	767	767	767	767	767	767	767	767	767
Finance rate %	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%
Developer's Profit on cost %	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
ESV Dec'07 +/-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-10.0%	-10.0%	-10.0%	-10.0%	-10.0%	-10.0%
Pay for site at [s]tart / [e]nd	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
% affordable	0.0%	5.0%	10.0%	15.0%	20.0%	25.0%	5.0%	10.0%	15.0%	20.0%	25.0%	0.0%	5.0%	10.0%	15.0%	20.0%	25.0%
% shared ownership	20%	20%	20%	20%	20%	20%	50%	50%	50%	50%	50%	20%	20%	20%	20%	20%	20%
% rented	80%	80%	80%	80%	80%	80%	50%	50%	50%	50%	50%	80%	80%	80%	80%	80%	80%
£/shared value as % £private	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%
£/rented value as % £private	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
Adopt "blanket" density/acre ? (y/n)	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n
Adopt "blanket" rate of sale ? (y/n)	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y
Blanket_affordability	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y
Result Cells:																	
Site_1_RLV	105%	96%	88%	80%	72%	63%	98%	91%	84%	77%	69%	94%	85%	77%	68%	59%	51%
SIte_2_RLV	97%	85%	76%	65%	54%	42%	87%	79%	70%	60%	50%	79%	67%	57%	46%	34%	22%
Site_3_RLV	101%	103%	83%	72%	53%	36%	101%	85%	74%	62%	50%	83%	83%	63%	52%	31%	12%
Site_4_RLV	126%	116%	106%	96%	85%	76%	118%	109%	100%	92%	83%	113%	103%	92%	82%	70%	60%
Site_5_RLV	159%	142%	127%	114%	98%	84%	144%	132%	121%	107%	95%	136%	119%	103%	89%	72%	57%
Site_6_RLV	140%	117%	114%	93%	90%	76%	117%	123%	100%	102%	79%	122%	101%	96%	74%	69%	54%
Site_7_RLV	105%	99%	92%	86%	79%	73%	100%	94%	89%	83%	77%	100%	93%	86%	79%	72%	65%
Site_8_RLV	96%	88%	82%	74%	69%	60%	89%	84%	78%	73%	66%	89%	80%	75%	66%	60%	51%
Site_9_RLV	114%	114%	99%	77%	77%	77%	114%	98%	76%	88%	88%	108%	108%	92%	72%	72%	72%
Site_10_RLV	99%	92%	86%	80%	73%	67%	93%	88%	82%	77%	72%	93%	86%	80%	73%	66%	60%
Site_11_RLV	106%	95%	88%	76%	69%	54%	97%	90%	81%	74%	63%	92%	80%	72%	60%	52%	37%
Site_12_RLV	112%	106%	93%	82%	79%	66%	108%	99%	87%	83%	73%	99%	92%	79%	68%	65%	50%
Site_13_RLV	34%	23%	13%	2%	0%	0%	23%	13%	2%	2%	0%	11%	1%	0%	0%	0%	0%
Site_14_RLV	85%	75%	75%	63%	63%	57%	75%	80%	68%	68%	62%	79%	68%	73%	61%	66%	54%

Notes: Current Values column represents values of changing cells at time Scenario Summary Report was created. Changing cells for each scenario are highlighted in gray.

Scenario Summary	S18 -15% sale 50% ESV 0% AH	S19 -15% sale 50% ESV 5% AH	S19A -15% sale 50% ESV 10% AH	S19B -15% sale 50% ESV 15% AH	S19C -15% sale 50% ESV 20% AH	S19D -15% sale 50% ESV 25% AH	S20 -25% sale 70% ESV 0% AH	S21 -25% sale 70% ESV 5% AH	S21A -25% sale 70% ESV 10% AH	S21B -25% sale 70% ESV 15% AH	S21C -25% sale 70% ESV 20% AH	S21D -25% sale 70% ESV 25% AH	S12 10% AH code 4	S13 10% land payment at end	S14 10% AH £100K brownfield	S15 10% AH rate of sale 3/month
Changing Cells:																
Increase on sales values +/-	-15%	-15%	-15%	-15%	-15%	-15%	-25%	-25%	-25%	-25%	-25%	-25%	0%	0%	0%	0%
Rate of sales per month	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	3
Deposits %	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Base build cost (excl siteworks)	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73
Abnormals per acre	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100,000	-
Contingency %	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Professional fees %	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%
Code For Sutainable Homes	3	3	3	3	3	3	3	3	3	3	3	3	4	3	3	3
S.106 cost per dwelling	767	767	767	767	767	767	767	767	767	767	767	767	767	767	767	767
Finance rate %	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%
Developer's Profit on cost %	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
ESV Dec'07 +/-	-50.0%	-50.0%	-50.0%	-50.0%	-50.0%	-50.0%	-70.0%	-70.0%	-70.0%	-70.0%	-70.0%	-70.0%	0.0%	0.0%	0.0%	0.0%
Pay for site at [s]tart / [e]nd	S	S	S	S	S	S	S	S	S	S	S	S	S	E	S	S
% affordable	0.0%	5.0%	10.0%	15.0%	20.0%	25.0%	0.0%	5.0%	10.0%	15.0%	20.0%	25.0%	10.0%	10.0%	10.0%	10.0%
% shared ownership	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
% rented	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%
£/shared value as % £private	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%
£/rented value as % £private	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
Adopt "blanket" density/acre ? (y/n)	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n
Adopt "blanket" rate of sale ? (y/n)	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y
Blanket_affordability	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y
Result Cells:																
Site_1_RLV	90%	76%	63%	51%	39%	22%	17%	0%	0%	0%	0%	0%	72%	186%	70%	77%
SIte_2_RLV	43%	23%	7%	0%	0%	0%	0%	0%	0%	0%	0%	0%	51%	99%	63%	75%
Site_3_RLV	36%	36%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	55%	95%	78%	83%
Site_4_RLV	108%	91%	74%	56%	38%	22%	20%	0%	0%	0%	0%	0%	86%	171%	86%	100%
Site_5_RLV	101%	74%	50%	25%	0%	0%	0%	0%	0%	0%	0%	0%	96%	158%	107%	127%
Site_6_RLV	102%	72%	57%	26%	11%	0%	0%	0%	0%	0%	0%	0%	90%	132%	97%	114%
Site_7_RLV	117%	106%	94%	84%	72%	61%	91%	75%	58%	42%	24%	9%	81%	135%	80%	89%
Site_8_RLV	97%	83%	74%	60%	50%	37%	57%	38%	23%	2%	0%	0%	70%	100%	68%	82%
Site_9_RLV	130%	130%	103%	73%	73%	73%	105%	105%	62%	26%	26%	26%	86%	114%	98%	99%
Site_10_RLV	108%	97%	87%	76%	65%	55%	82%	66%	51%	35%	19%	4%	76%	116%	73%	84%
Site_11_RLV	71%	53%	38%	20%	5%	0%	0%	0%	0%	0%	0%	0%	68%	110%	62%	88%
Site_12_RLV	88%	74%	55%	36%	29%	5%	0%	0%	0%	0%	0%	0%	73%	111%	82%	94%
Site_13_RLV	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15%	0%	13%
Site_14_RLV	84%	70%	75%	59%	64%	44%	42%	24%	26%	8%	10%	0%	63%	86%	68%	74%

Notes: Current Values column represents values of changing cells at time Scenario Summary Report was created. Changing cells for each scenario are highlighted in gray.

Appendix D

House prices and land prices: the effect of a falling market

1. To establish the likely relationship between falling house prices and land values, we have

   - Reviewed the evidence of changes in land values and house prices in the recession of 1989-1995
   - Reviewed the pattern of increasing land values and house prices leading up to the peak in prices in 2007
   - Modelled the effect of reduced house prices on residual land values using the appraisal tool being applied for this study.

   This Appendix sets out the findings of this work.

2. A key assumption for this modelling is that a stable market is established at the lower price levels defined. The review of historical trends tries to take account of the effect of expectations in rapidly rising or falling market conditions.

Experience of last recession

3. House prices peaked in the second half of 1989 and dropped until the first half of 1993. The overall fall in house prices for the UK were 12%. The rate of price reduction was not as severe as we have experienced in 2007-2008 but the evidence of the impact on land prices is valuable practical evidence.

4. We have applied national figures rather than ones for the North East. The 1980's boom in prices did not affect the NE region at a level similar to the national experience. However, the recent experience up to 2007 has been that price movements in the North East have reflected national trends during this boom, and the statistics support this view.

5. The data used is the UK House Price Index from the Halifax, applying Q1 and Q3 price level for each year. For land prices, we have used the VOA Property Market Report "Residential building land index" for England and Wales excluding London. This provides data for the Spring and Autumn each year. The choice of these data sets was conditioned by the sources available over the time series required, whilst noting they are not exactly comparable.

6. The table below shows the house and land price indices from the house price peak in the second half of 1989.

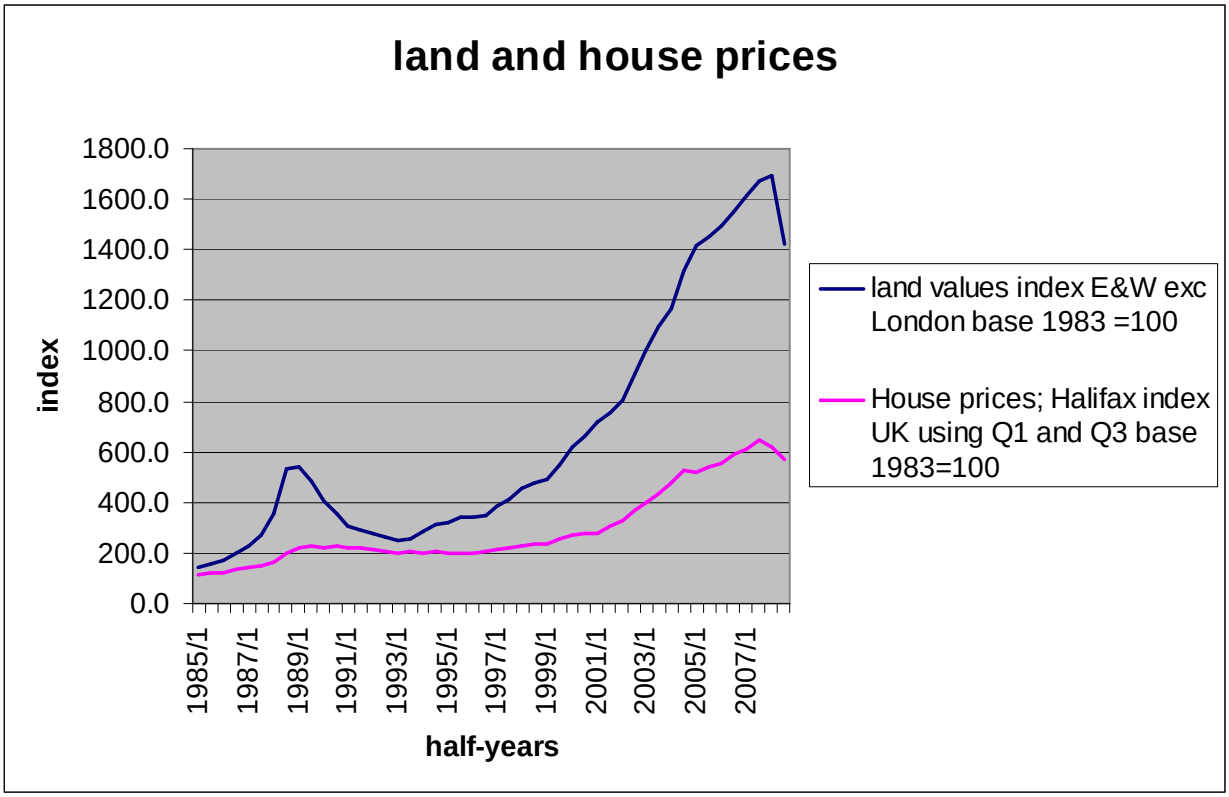
	Residential Land Value Index	House Price Index
1989 / 2	480.9	227.3
1990 / 1	405.7	220.7
1990 / 2	356.8	224.2
1991 / 1	304.0	220.2
1991 / 2	289.6	220.8
1992 / 1	277.5	210.6
1992 / 2	264.3	208.4
1993 / 1	251.7	196.9
1993 / 2	258.6	204.2
1994 / 1	284.4	202.3
1994 / 2	310.3	204.3
1995 / 1	321.8	200.3
1995 / 2	338.4	199.0

Note. Both indices have base 1983 level = 100.
Sources, see text.

7. The data shows that the market reached a floor in the first half of 1993 and then stabilised over the next 2-3 years. The data suggest that land values may have over-compensated for the recession in 1993, as they then recovered faster than house prices. To show the overall impact, we have taken the average house and land prices over 1993-1995 and compared to the peak in the second half of 1989. This shows that:

   - House prices stabilised at a 12% reduction
   - Land prices settled over the 3-year period at a 39% reduction.

8. The pattern of house prices and land value changes is shown in the chart below.



Experience of the "boom" to 2007

9. For this more recent experience, we have examined the data specifically for the North. This is the Halifax house price index for the North region (NE and Cumbria) and the VOA Residential Building Land index for the standard North East region.

10. For this review, it is desirable to take account of the high expectations of land value growth that existed during the boom conditions. Land prices were pushed upward by anticipated growth in house prices and we have attempted to build this in to the review.

11. The data about land and house prices is set out below:

Res. Land prices (NE) £'000		House Price Index (North)	
2003 / 1	1,150	2003	370.6
2003 / 2	1,230		
2004 / 1	1,490	2004	490.3
2004 / 2	2,210		

Res. Land prices (NE) £'000		House Price Index (North)	
2005 / 1	2,210	2005	533.3
2005 / 2	2,210		
2006 / 1	2,210	2006	567.3
2006 / 2	2,490		
2007 / 1	2,590	2007	601.8
2007 / 2	2,590		
2008 / 1	2,590	2008	547.2
2008 / 2	2,060		

The land price index shows changes in large step increases. The relationships can therefore be established only at a broad level; therefore we have used the annual figures for house prices.

12. Our view is that the land prices in 2003 probably already anticipated an increase in house prices, given the rapidly rising market. So we have assumed land prices in 2003 anticipated the actual 2004 house price level. Land prices in 2003 (first half) were 44% of the 2007 level. House prices in 2004 were by comparison, 81% of their 2007 level. If as a result of the recession, this boom were then reversed, we could expect to see:

    A reduction in house prices of 19%

    Leading to reduction in land values of 56%

    It is important to note that this conclusion takes account of the extent to which the land market anticipated house price increases in 2003.

13. The limited evidence from the above data suggests that in 2008

    A reduction in house prices of 9%%

    Was matched by a land value fall by the second half of 2008 of 21%

    The 2008 land price figures should be heavily qualified as there were few transactions in the year.

The Results from the Model

14. The viability assessment model calculates residual land values by calculating gross development values and deducting gross development costs, taking account of cash flow and the cost of finance. The outcome of the model is a residual land value. We have used the model to assess the impact of falling house prices on residual land values for the bundle of 14 sites in Stockton. The results are:

Fall in house prices	Modelled fall in residual land values per acre (across all sites)
-5%	-9%
-10%	-28%
-15%	-57%
-20%	-78%
-25%	-88%

This modelling was applied on the assumption that there was no affordable housing requirement. If this were added, the fall in land values would be greater.

15. In the modelling, it was noted that the residual value of certain sites dropped to nil as house prices reduced. This means that the costs of development exceed the estimated sales proceeds. In practice, the more marginal sites cease to be viable for residential development as prices fall. This mirrors the experience of the past decade when many previously non-viable locations have become attractive for residential use. The consequence of these changes in the viability of more marginal sites is that the modelling **overstates** the effect on the values of transactions that would actually occur, especially when house price reductions reach 15% or more.

Conclusion

16. We have pulled together all the above findings in the chart below.

Summary of evidence about land value changes

House Prices reduction from peak	Land value reductions			
	Modelled results	Other evidence		Modelling assumptions
-5%	-9%			-10%
-9%		-21%	Land value fall in 2008	
-10%	-28%			-30%
-12%		-39%	Land value fall in 1989-1995 recession	
-15%	-57%			-50%
-19%		-56%	Equivalent increase in land values 2003-7 (see para 10)	
-20%	-78%			-60%
-25%	-88%			-70%

17. Based on this evidence, we propose the modelling assumptions as set out in the table above. These represent a best fit to the available evidence.