



# South East Maidstone Urban Extension

## Review of cashflow model and viability

Prepared on behalf of

**Golding Homes**

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Final



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## **Status of Report and Limitations**

This report contains information which may be commercially sensitive if released. Circulation should be limited to appropriate individuals within Golding Homes.

The contents of this report are confidential to Golding Homes in the context in which the report is supplied and DTZ expressly disclaims any responsibility towards third parties in respect of the whole or any part of its contents.

The figures reported are subject to various reservations, conditions and assumptions which are clearly set out in the Report and the Appendices.

Nothing contained within this report comprise opinions of Value as described by the Royal Institution of Surveyors (RICS) and whilst we consider the analysis to be sufficient to meet the agreed objectives, the figures and the assessment are not suitable for publication and should not be used in any other context. The comments on indicative residual land value should not be used as a benchmark in negotiations with the landowners.

This report is not suitable for loan security purposes and it should not be used as a basis of making investment decisions or entering into obligations in relation to the project.

It should be recognised that Golding Homes' analysis and DTZ's review have required the adoption of some assumptions about the project which have not yet been fully established. The project is planned to be developed over a 20 year period (and with a 25 year cashflow) and many assumptions are not yet capable of being accurately assessed. This is not unusual for a scheme of this complexity and scale but it does mean that there is inherent risk in any development appraisal of this nature. Whilst DTZ has undertaken our own assessment of the key assumptions provided by Golding Homes, we have assumed that all information provided to us by Golding Homes is as complete as can be reasonably expected at this stage of the project and that such information has been provided in good faith.

We consider that it would be prudent to monitor the key assumptions and any changes in circumstances that might affect viability as details of the scheme are worked up so that the impact of changes can be assessed. Similarly, as Golding Homes begin to formalise the land assembly and profit distribution arrangements with the landowners, it would be prudent to reserve the opportunity to review the scheme's actual financial performance periodically given the range of assumptions which cannot yet be assessed with accuracy at this stage of the project.

# 1 Introduction

## 1.1 Basis of Instruction

DTZ has undertaken an independent review of the Golding Homes' financial model and assessment of viability. This is required as a 'sense check' prior to formal planning discussions. Our review has comprised the following agreed workstreams:

- Review the Structure of Golding Homes' Model; to verify that the model appraises the development logically and that the model is structured soundly and that the formulae and links between sheets function correctly.
- Review of Assumptions; to assess each assumption that Golding Homes' has adopted in the model. This has included cost, revenue, absorption rates and other timing assumptions. Specialists within DTZ teams (including residential agency, cost consultancy and development consultancy) have critiqued these assumptions to provide DTZ's professional opinions of the figures adopted.
- Due diligence; to establish the scope of agreed information which defines the structure of the project, programme, deliverables and cost parameters. This stage comprised a "sense check" of the key information upon which the project strategy and cashflow model has been based.
- Development Programme; to review the development programme to identify critical path, dependencies, risk and key delivery milestones. Consideration has been of those factors which might influence programme and delivery, such as statutory obligations, third party agreements etc. and comment upon the likely risks associated with such dependencies.
- Cost analysis; to consider expenditure anticipated against agreed deliverables; cash flow forecast against programme; risk contingency allowances and payment structures. We have reviewed Golding Homes' cost assumptions in relation to housing build costs, site services and professional fees.
- Sensitivity / Scenario Testing; to undertake assessments of the impacts on viability of some of the key variables.

We consider that our review is fit for the purposes agreed but we draw your attention to the important limitations contained in this report.

## 2 Golding Homes Financial Model Structure

Please note that unless otherwise stated, analysis of Golding Homes' model refers to the 20 years sales option as opposed to the 15 year option.

### 2.1 Key Scheme Details

The scheme currently being assessed by Golding Homes has the following features:

- Market sale units                            3,000 (60%)
- Affordable units                            2,000 (40%)
- 5,000 units**
- Total residential floorspace            375,650 sq m (gross)

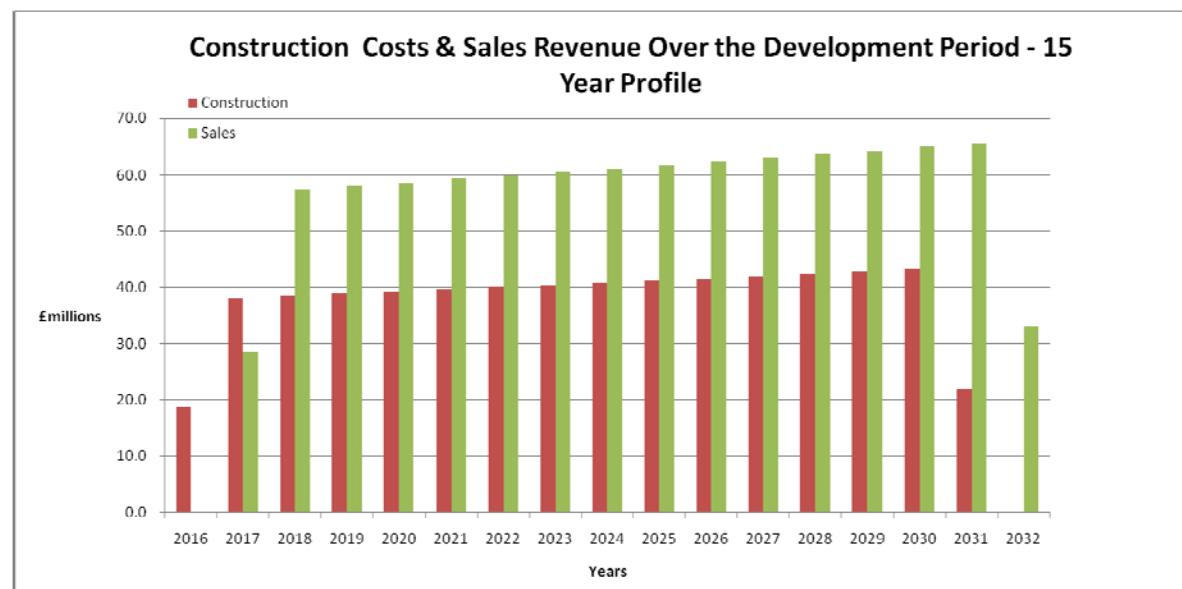
Key timings in the development programme are anticipated as follows:

- 2013 – 2015: Planning & Design
- 2013 – 2015: Growth Fund Loan
- 2013 – 2015: Main Access Road construction
- 2016 – Start of housing construction

The model analyses the scheme with two alternative assumptions for the projected sales period:

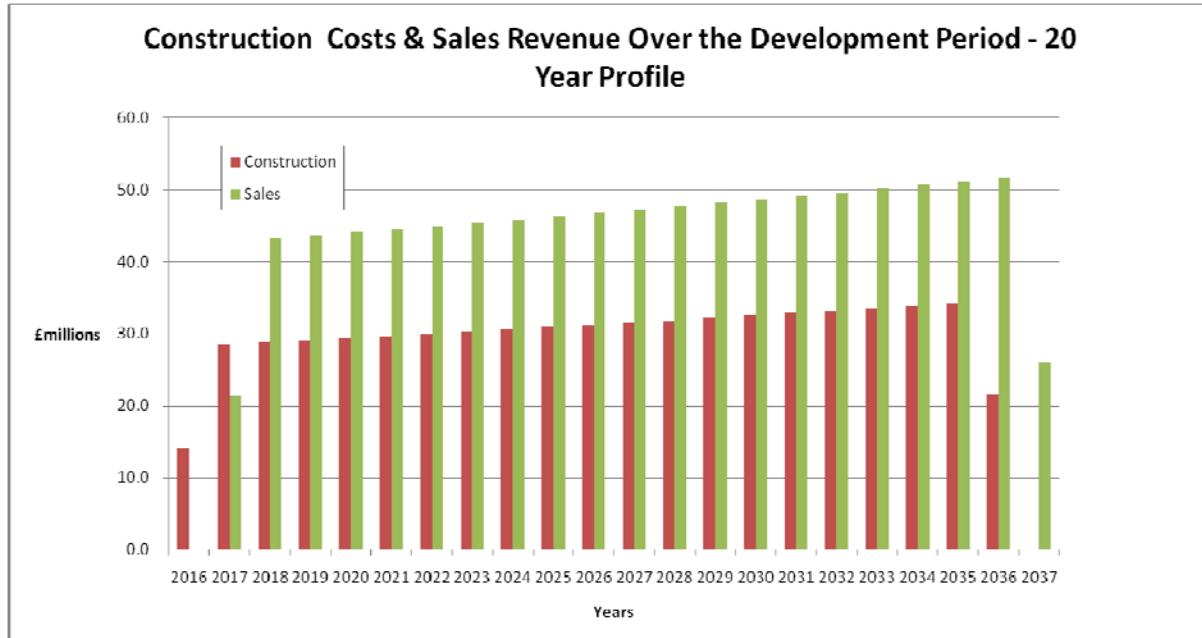
- 15 year sales programme:
  - 2017 – 2032

**Figure 1 – Construction Costs & Sales Profile (15 year cashflow)**



- 20 year sales programme
  - 2017 – 2037

**Figure 2 – Construction Costs & Sales Profile (20 year cashflow)**



## 2.2 The Financial Model

The model allows high level analysis of the scheme on a single phase delivery, scheme level and provides for the testing of key sensitivities. DTZ has undertaken a review of the mechanics of the scheme (although as per the caveat above, this falls short of a full audit) and consider that subject to the commentary on specific items in the report it functions correctly to give NPV outputs.

Moving forward with the scheme, it will be necessary to develop the functionality of the model so that it is able to carry out in particular:

- Phase and structural options

The analysis treats the development as one scheme. This is very unlikely to be the manner in which it is delivered and this will need to be modelled to give revised outputs at a future point in time. The model will need to have the ability to assess the respective potential cashflows and returns for each of the main parties.

- Calculate residual land value

There is no allowance in the model for the purchase of the 400 gross acres which will form part of the development. We understand this is because the landowners propose a 'patient investor' role and seek their returns through deferred sales of serviced development plots or secured against the sales revenues. DTZ considers that the model should have the functionality of assessing viability against a conventional approach

of acquiring the land so that the scheme's viability can be compared with market benchmarks. This could be achieved for example through attributing the residual value from the appraisal as the land value and to split between the relevant plots.

- Split out profit, finance and 'on costs'

The model currently calculates profit by adopting a finance rate of 10% and 'on costs' of 25%; DTZ's view is that it would be prudent of have a commercial finance and finance on equity rate and that developers profit would be generated as priority return as a percentage of costs with the 'on costs' adjusted accordingly.

- Modelling the delivery of non residential property income

Whilst being predominantly a residential scheme, there will be commercial aspects which should be modelled. It is hard to gauge the quantum of non residential floorspace that will be brought forward on an urban extension such as this and some of this requirement is likely to be met on other land which is not part of the urban extension. However, from DTZ's experience of analysing a number of housing schemes of circa 5,000 units, a figure of around 75,000 square feet for retail elements and 100,000 square feet for community facilities (schools, community centre, library, etc) would be prudent to include. Care will need to be taken to ensure no double counting with Section 106/ CIL contributions however. The exact areas likely to be brought forward are highly variable and the suggested areas are strictly indicative; we would not suggest including any element of employment floorspace at this point.

As a minor technical comment, DTZ has discussed with Golding Homes that cell D39 on the 'Base Data' tab calculates the 'on costs' for affordable housing based on the average dwelling size for private houses but Golding Homes have done this to ensure that 'on costs' are not under represented. At a point where greater refinement is required, these costs should be based on a weighted average of the dwelling sizes of private houses and affordable houses.

The model is not fully linked together in some cases (such as cells C9 – C21 on the 'Cash Flow 20yr' tab which don't change when the variables on the 'Base Data' tab are altered). This is not to say that the model is incorrect but it is not as user friendly as it could be and may prove confusing to third parties (obviously, we appreciate that this is not currently the purpose of the model).

**Figure 3– Summary Analysis from Golding Homes' model**

<b>Input to cost model</b>	
<b>Element</b>	<b>Base</b>
<b>Expenditure</b>	
Planning and Design	<b>5,000,000</b>
Main access road	<b>29,985,000</b>
Infrastructure	<b>32,000,000</b>
Sale housing	<b>336,781,786</b>
Affordable housing	<b>206,559,495</b>
Planning contributions	<b>9,000,000</b>
<b>Sub Total</b>	<b>619,326,281</b>
<b>Income</b>	
Sale Housing	<b>567,000,000</b>
Affordable Housing	<b>246,400,000</b>
New Homes Bonus (50%)	<b>23,685,000</b>
<b>Sub Total</b>	<b>837,085,000</b>

This summary table taken from the 'Base Data' tab of the model does not currently automatically calculate updates to the figures based on changing variables (although the cash flow tabs are updated). We consider that it may be advisable to change this in future iterations.

## 3 Review of Revenue Assumptions

### 3.1 Revenue

The revenue assumptions expressed in ‘real’ terms (ie pre inflation) are as per table 4 below.

**Table 4 – Golding Homes Revenue Assumptions**

	Market Sale		Affordable	
Unit Type	Unit Value	Value psf	Unit Value	Value psf
1 Bed Flat	£ 120,000	£ 203	£ 84,000	£ 142
2 Bed Flat	£ 145,000	£ 192	£ 101,500	£ 135
2 Bed House	£ 170,000	£ 211	£ 119,000	£ 147
3 Bed House	£ 200,000	£ 227	£ 140,000	£ 153
4 Bed House	£ 250,000	£ 232	£ 175,000	£ 155
4+ Bed House	£ 300,000	£ 232	£ 210,000	£ 163
	<b>£ 189,000</b>	<b>£ 219</b>	<b>£ 123,200</b>	<b>£ 148</b>

#### 3.1.1 Market Sale Housing

Many regional markets have suffered during the financial crisis and subsequent recession since 2007. Maidstone has not been immune. In many areas the problems have been exacerbated by an oversupply of schemes which have an over-reliance on flats rather than family housing. This is a legacy of the peak of the market in 2007 when developers were building flats with a ready market of owner occupiers and investors to meet the supply. The types of units being delivered at that time were small efficiently sized flats ideal for investors and developers to generate a return, but on the small side for the owner occupier market. A combination of this oversupply, the significant fall in investor demand and the inappropriate units for those owner occupiers currently able to buy, has led to significant falls in values in such areas.

In the period from 2007-2009, several residential blocks in Maidstone have been rented, in a change to normal strategy for some developers; this was in order that they may have a better chance of protecting against loss. This oversupply of units had a significant impact on achievable values with new build developments near the town centre achieving sales on 2 bedroom flats of £125,000 - £140,000 (equating to about £164 per square foot (net) up to a maximum of around £200 per square foot). Since this period, there have been a reduced number of developments and prices have stabilised and even started to increase. Whilst we would consider 850 net sq ft to be a large 2 bedroom flat the maximum achievable net per sq foot value would be in the order of £200 per sq ft if the units were more efficiently sized. Since this period, there has been erosion in the oversupply of flats in towns such as Maidstone and a general rebalancing to provide more family housing.

DTZ has sold housing led development sites which have proved very popular in the market in the last few years and achieved offers in excess of those produced by prudent residual appraisals; we understand that there is evidence of similar land deals of a small size in Maidstone. We understand the site was for just 6 houses and achieved £320,000 in an unconditional disposal. The units have subsequently sold at £160,000 for the two bed houses and £180,000 for the 3 bed houses and this was not considered a prime location. The implication of this for the urban extension land is that values of circa £189,000 for the private units does not seem excessive considering the scale and the quality that is sought depending on the exact tenure mix.

DTZ recently advised a major UK land owner on a potential 'infill' site in the area to the east of Maidstone in a very comparable position to this Urban Extension land. This has the potential for around 12 houses and our consideration was that a value of circa £200 per square foot on the private housing units was achievable with an average unit price of £170,000. Whilst this is 10% below the value assumed by Golding Homes we would consider there to be greater opportunity to create a differentiated and higher value product at the urban extension site.

Golding Homes are involved in three sites around Maidstone (all consisted of houses only, with no apartments) where they report that the prices reflect:

- Armstrong Road Depot - £193 per square foot
- Armstrong Road R&R - £204 per square foot
- Sutton Valance - £240 per square foot

The overall average for these properties is circa £200 per square foot; however, the closest development to the urban extension land is the Sutton Valance scheme which has a significantly higher sales value per square foot than the Armstrong Road developments although we understand that the Sutton Valance values are marketed as opposed to achieved at this stage so should be viewed with some caution.

### **3.1.2 Affordable Housing**

The model does not detail the split between Affordable Rent Tenure (ART) and Shared Ownership (or whether there is to be any Social Rent provision). In general, we would presume a mix of 60% ART and 40% Shared Ownership and no Social Rent, the attractiveness of which has obviously been severely impacted by the change to assess on the basis of the Registered Social Landlord (RSL) charging up to 80% of the Local Housing Allowance. Golding Homes have confirmed that they do not expect the development to incorporate any Social Rented housing, and have agreed the assumed split of 60% ART and 40% Shared Ownership.

Golding Homes are obviously well resourced to understand the revenues and timings relating to Affordable Housing provisions; our understanding is that Maidstone is an area which has considerable demand for affordable housing and that take up of 100 – 133 units per annum is achievable.

As a general rule, DTZ would anticipate affordable values to be around 45% (as an aggregate) of private sales values (this would drop further if social rent provision was included). Golding Homes have assumed affordable revenue will be at around 2/3 the value of private revenue at this site. DTZ have discussed this assumption with Golding Homes, who have provided evidence of three active bids/ completed agreements on affordable housing with major house builders; this evidence shows a range from circa 64%-75% of open market value for locations in Tovil (Maidstone) and Ashford. They consider that this relatively high percentage is due to strong demand dynamics in the area (particularly in the semi rural areas around Maidstone, similar in nature to the subject land) and the relatively low level of open market rent (for the calculation of ART receipts).

Based on the information provided to us, we are comfortable that this 2/3 figure can be achieved in this location. We have also investigated the specific assumptions made by Golding Homes with regards to the respective receipts for ART and Shared Ownerships properties:

- Golding Homes have assumed circa 80% of open market rents will be achieved based on their experience on projects in the area. As Golding Homes are a housing association, we understand that there is no cap on what they can charge.

- The shared ownership receipts are based on the full open market value of the completed units being inserted in to the appraisal with a discount applied to take into account the fact that only an element of this amount will be purchased at first, with the rest covered by a Housing Association loan at 2.75%. In reality, the payments will be 'staircased' in that the purchaser will pay an initial 25% of the equity and will have the option to buy further tranches of equity until it fully controls the asset. 25% is a relatively conservative assumption in terms of the initial equity contribution by the purchaser.

The financial model does not go into detail in terms of the assumed timing of payments from the RSL and assumes this follows the private revenues. In refining the financial model the actual phasing of payments will need to be reviewed to match the likely cashflow of funds to the development. Any re-profiling is likely to improve project viability as payments to the developer would commence at the point of the 'Golden Brick' (the point in time when the building structural height is higher than the damp proofing course). RSL's favour this sort of payment structure as they want to avoid VAT and this can only be done when they have an actual 'land interest' in the site (although in many cases there is actually no land value as costs exceed revenue). The payments will usually follow an S-curve profile (mirroring build costs). We understand from Golding Homes that they would anticipate the timing of payments to follow this profile.

## 3.2 Future House Prices, Absorption and Sales Rates

The assumption in Golding Homes' model is that there is a long term 'real' growth rate of 1% in sales rates which mirrors the assumed 1% growth in build costs assumption.

An important part of the modelling process is to test different scenarios for the housing market to examine the effect of various outcomes on the viability of development. Rises or falls in sales values in the future will have an important impact on development viability through their impact on revenues. Sales rates are likely to be as important since the timing of revenues can have a significant impact on overall viability.

Figure 5 presents Savills' forecasts for house price change in the South East and UK over the next 5 years. It is important to state at the outset that forecasting, particularly at this time, is beset with significant uncertainties. Indeed it is also important to note that no forecasting house has a history of accurately predicting house price change, other than the general direction of the market. This is because *expectations* explain a significant proportion of house price growth or falls and expectations of households and investors are difficult, if not impossible, to model. One study estimates that the expectation of future price rises accounted for over 30% of the growth in UK house prices in the 10 years up to 2006<sup>1</sup>.

None of the forecasting houses produce house price forecasts beyond the next 5 years. It may be most practical to assume that house price growth over the 15-20 years of the development will be similar to the long term trend rate of growth over the last 35 years. Data from Nationwide suggests that the long term trend rate of house price growth is around 3% in real terms (adjusted for inflation). Crudely, this can be translated into 5% nominal growth (assuming inflation is at the 2% target rate). It would be useful to test this level of house price growth, alongside the assumption in the base case model, to examine the impact that that this could have on revenues and overall profitability. Our opinion is that, over the next 5 years, this assumption is optimistic and that a 2.5% growth rate should also be tested.

It is important to bear in mind that there is scope for considerable variability in price changes at the local level. In practice, different localities may experience a faster recovery depending on how demand and supply varies across different housing markets. However, on the basis of house price change over the last 35 years, different regions are likely to follow the same path, even though the depth of up turns and down turn and the timing of these may vary slightly.

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<sup>1</sup> David Miles (2006) UK Housing: How Did We Get Here?

**Figure 5 - Forecasts for House Price Change 2012-2016 (Savills)**

Year	South East	UK
2012	-1%	-2%
2013	1%	0.5%
2014	4%	1%
2015	5%	2%
2016	6%	4.5%
<b>2016 onwards (DTZ assumed)</b>	<b>5%</b>	<b>3%</b>

Source: Savills Residential Property Focus Q4 2011

### 3.2.1 Assumptions about Sales/ Build Out Rates

The model assumes 3,000 market units will be built and sold over a 15-20 year period. This would require sales rates of 150-200 dwellings per annum. Generally, developers build at the rate they can sell and so build out rates of market housing are likely to be close to sales rates. Affordable housing will of course be additional to this.

DTZ held discussions with the development industry (and HBF) during the housing market downturn for a piece of research for the HCA. This research suggested that the long run average (largely pre-credit crunch market conditions) for sales rates per sales outlet on a development site is around 40 per annum (just less than 1 dwelling sold each week). Sales rates can be increased on large sites where more than one house builder is operating i.e. there is more than one sales outlet and they are selling different products, but it does not necessarily increase in proportion to the number of developers on a site.

In DTZ's experience, sales rates of 100-200 dwellings per annum are fairly typical on large strategic sites where there are likely to be multiple house builders operating and able to sell to different segments of the market from different sales outlets. One strategic site within Kent, which delivered over 2,000 homes over the last decade, has sustained sales of 100-130 dwellings per annum including in the years up to 2011. A number of different house builders/ brands were present on site which is likely to have increased the size of the market.

However, data on transactions from the Land Registry shows that the volume of transactions fell around 50% from the peak in 2007 and has remained at this reduced level since. Transaction levels in Maidstone have followed the same pattern. In each of the last 3 years, transactions have totalled around 1,800 per annum in Maidstone. This compares to levels of 2,500 - 3,500 in the decade up to 2007. Part of the explanation for this is that the volume of mortgage approvals has halved, which is unsurprising since, on average, half of UK banks' mortgage funding was raised from the money markets which have effectively been closed since the end of 2007. Transactions have also been affected by confidence amongst buyers and sellers and to this extent they may recover as house price growth is re-established in the long term.

In practice, sales rates may not fully return to historic levels even when house prices growth re-establishes itself. Sales rates will be critically dependent on two factors:

- The extent to which sales rates can be expected to return to pre credit crunch levels will depend on the mortgage market and whether the *availability* of credit improves. Many commentators do not expect the availability of mortgages to return to pre-credit crunch levels. However, with very depressed levels of activity in the market, there may be pent up demand in the market that comes forward when mortgage availability and confidence return.

- Sales rates also depend on whether investors (e.g. buy to let) return to the market. Anecdotal evidence suggests investors have purchased 60% of new properties on some sites prior to the downturn. The extent to which they return to the market will depend on their ability to secure finance and also their confidence in the market (since a significant motivation for investment has been capital gain) and this may take some time to improve.

For apartment type developments there is a different dynamic in operation. Generally, pre-credit crunch, developers expected to secure 30-40% pre-sales before starting to build out. This served to de-risk the development, since apartment developments have to be built out all at once, and allowed developers to secure funding from banks on the basis of healthy levels of pre-sales. The combination of falling house prices, oversupply in some areas, loss of investor confidence, rising interest rates and credit constraints has hit the economics of apartment developments. The current unit mix assumed by Golding Homes is for 600 apartment units; if these are developed over 20 years then this would mean 30 units per annum (and, as we understand it, small blocks to keep in with the grain of family housing) which would make pre-sales relatively less important than on larger schemes.

DTZ's experience on major strategic sites suggests that differentiation between building types and developments within wider developments can allow for higher absorption rates. This is as purchasers consider different developments as almost separate entities, even if this is within one overall development.

The significance of sales rates is that they impact on scheme cash flow, and hence on the requirement for working capital and hence affects interest costs. With the increase in borrowing costs and constraints on the availability of credit in recent years this has a significant impact on scheme viability. It may be sensible therefore to test a scenario where sales rates are lower than those anticipated in the baseline model.

### 3.3 New Homes Bonus

The model assumes that half of the new homes bonus will be received by the development as income. This might happen (for instance, if the Council agree they have some role in funding the infrastructure), however, we have significant reservations on this as a baseline assumption due to:

- Many Council's are taking the view that the new homes bonus has been top sliced from their budgets from central Government and many of them will just reabsorb the money when it is received – there's no guarantee whatsoever that it will go towards housing development/ objectives, let alone a specific site.
- It was only introduced a couple of years ago and there is some scepticism whether it will last forever, especially if the pressure to cut public spending continues. It would be prudent to assume that it may not remain in the next 2-3 years.

### 3.4 Current Housing Land Supply

Whilst the purpose of this document is not primarily to review the competing supply to an urban extension to Maidstone, it is worth noting a number of large strategic sites in the Maidstone area (identified in local planning policy) as well as the major sites in Tonbridge and Malling to the south of the site:

- Kent Garden Centre, Allington; circa 110 dwellings have been built out
- Furfield Quarry, Broughton Monchesea; circa 330 dwellings have been built out
- Fountain Park, Maidstone; permission for 150 dwellings
- Langley Park Farm West, Broughton Monchesea; permission for 390 dwellings, but we understand that this has been deferred and is likely to be converted to an employment site

- East of Hermitage Lane, Maidstone; permission for up to a potential 380 dwellings but cross border site requiring access from adjoining site in Tonbridge and Malling area, with significant enabling costs
- Hayle Place, Tovil; permission for 100 dwellings and recently acquired by Taylor Wimpey who are about to commence build
- South of Hart Street, Maidstone; permission for 195 dwellings which have been mostly built out with one section left (the agent has confirmed that this is not viable as it is all flats).
- Kings Hill; 500 additional homes by 2021
- Holborough Quarry; 800 additional homes by 2021
- Leybourne Grange; 650 additional homes by 2021
- Peters Pit; 1000 homes by 2021

## 4 Review of Cost Assumptions

### 4.1 Cost

Cost consultancy and development consultancy experts within DTZ have reviewed the costs incorporated in the Golding Homes financial model to establish the reasonableness of the assumptions. It should be noted that Golding Homes have indicated that the costs used are generic and therefore ball-park in nature, with average costs applied to the whole development.

#### 4.1.1 Unit Sizes

The model sets out unit sizes by type for private and affordable, as set out in the table below. While we acknowledge that you are comfortable with these figures and will have greater knowledge of the size of units you plan to build in the context of the local market, we make the following observations based on our experience elsewhere. We assume that these unit sizes are averages, with the individual units in each category built to different sizes. Given this, the 3 bed and 4 bed average unit sizes appear a little small. With 3 and 4 bed unit sizes varying quite widely (which means making an assumption on an average for these is difficult), we would expect these figures to be at the lower end of the size range of units provided.

**Table 6 - Unit Sizes by Unit Type**

Unit Type	Private (sq m)	Affordable (sq m)
1 Bed Flat	55	55
2 Bed Flat	70	70
2 Bed House	75	75
3 Bed House	82	85
4 Bed House	100	105
4+ Bed House	120	120

#### 4.1.2 Build Costs

Base build costs have been assumed in the model at £950 per sq m. These are assumed to be average costs across all unit types and assumed to be in line with Code for Sustainable Homes (CSH) Level 3.

The latest mean base build costs by unit type from BCIS are set out in the table below, along with the unit types in the model that these have been assumed to equate to. Applying the development mix to these costs reveals an average base build cost of £899 per sq m. The costs assumed in the model are therefore close to 5.5% higher than those from BCIS.

**Table 7 - BCIS Base Build Costs (mean costs, based on GIA and including preliminaries)**

Unit Type	Assumption in Model	Development Mix	Cost (£ per sq m)
Estate Housing – detached	4 & 5 bed houses	15%	£885
Estate Housing – semi-detached	3 bed houses	40%	£855
Estate Housing – terraced	2 bed houses	25%	£881
Flats – apartments	1 & 2 bed flats	20%	£1,018

It should be noted that the BCIS base build costs do not necessarily include any specific element of the additional costs associated with the Code for Sustainable Homes. The BCIS costs are derived from a sample of schemes over time (with this time period varying depending on the sample size available for the unit type required). Consequently, the different samples are likely to include varying degrees of CSH compliance, depending both on the type and size of scheme, as well as its age.

Cautious build costs would assume that there is little or no CSH uplift included in BCIS costs. As discussed below, a medium case uplift from CSH Level 1 to CSH Level 3 is between 4-5%. Therefore, applying a 5% uplift to the base build costs to ensure that these are at least at CSH Level 3 would mean an average build cost of £944 per sq m – very close to the £950 assumed in the model.

#### 4.1.3 Code for Sustainable Homes

An uplift on base build costs of 18% has been assumed to achieve Code for Sustainable Homes (CSH) Level 5, compared to CSH Level 3 (which is assumed within the model's base build costs and discussed above). The assumption for this is the percentage difference between the CSH 5 uplift and CSH 3 uplift from Table 4.1 in the CLG 2008 CSH Cost Analysis Guide. This document continues to be considered as the most up to date and relevant detailed analysis of CSH Costs. The 18% figure used is for a detached house under the best and medium case scenarios (which are identical). The CLG guide also sets out relevant data for flats for both case scenarios (as in the table below).

**Table 8 - CSH Uplifts from Base Build Costs**

CSH Level	Detached House	Flat	
	Best & Medium Case	Best Case	Medium Case
1	1%	1%	0%
2	2%	2%	2%
3	5%	4%	4%
4	13%	7%	8%
5	24%	13%	15%

Source: Cost Analysis of the Code for Sustainable Homes (CLG, 2008)

Given the Greenfield nature of the site and the scale of development, the worst case scenario is unlikely to be realistic and is therefore not presented. The uplift from CSH Level 3 to 5 on flats under the medium case scenario equates to an additional 11% on base build costs. Given that unit mix of the scheme is for around 75% houses and 25% flats, applying these proportions to the respective medium case uplifts would equal an overall average uplift of 16.3%. A figure of 18% is therefore likely to be a slightly conservative figure based on the CLG report. Over time the costs required to meet these standards are likely to reduce, however, the standards required are also likely to increase over time. This 18% figure therefore allows room for contingency and future CSH requirements.

#### 4.1.4 Cost Inflation

As discussed in the revenue section, the Golding Homes' model has assumed a long term build cost inflation rate of 1% which mirrors the 1% growth in sales values assumption. It is important to test different scenarios on build costs to examine the effect of various outcomes on the viability of development. Rises in costs in the future will have an important impact on development viability through their effect on financing and interest costs. The table below sets out the BCIS Tender Price Index forecasted change to 2016, based on the latest

data (as at March 2012). This is also adjusted for retail price inflation so that cost inflation is comparable with real house price inflation (to test the assumption that revenue and cost inflation will equate at 1% each). Over the next 4 years from Q2 2012 to Q2 2016 this represents an anticipated increase in build costs of 12.5% (or with RPI stripped out, a decrease of 3.8%).

**Table 9 - BCIS Tender Price Index Forecast Change to 2016**

Date	BCIS TPI Change (year on year)	BCIS TPI Change with RPI subtracted
Q2 2012	-0.4%	-3.1%
Q2 2013	+0.4%	-1.9%
Q2 2014	+3.1%	-0.1%
Q2 2015	+3.9%	+0.5%
Q2 2016	+5.0%	+0.8%
2012-2016	+12.5%	-3.8%

Given the difference in anticipated change over the next 4 years compared to the anticipated revenue change, a continued difference between these inflation amounts could have a major impact on scheme viability over the 25 year cashflow period. It is therefore worthwhile to test a scenario where build cost inflation is higher than that anticipated in the baseline model, and higher than revenue inflation.

## 4.2 On Costs

The financial model assumes a rate on top of construction costs of 15% for affordable units and 25% on private units. We understand that this is to cover the below:

- Financing
- Overheads
  - We assume that this relates to any internal development management fee
- Developers profit (on private residential profit)
- On costs
  - No breakdown is provided but we assume that this includes at least the following items:
    - Architects fees
    - M&E consultants
    - Transport consultants
    - Highways engineers
    - Quantity surveyor
    - Legal fees
    - Agency fees

We have commented on DTZ's view of what the profit level should be in section [4.7] and the 10% which has been allowed (based on the difference between the 25% applied to private units and the 15% to affordable units) seems low in general. The profit margin within the model is assumed at the same level throughout the scheme whilst in reality we would expect relatively higher margins on the earlier plots to reflect the risk and relatively lower margins on later profits, reflecting the schemes evolvement to be a prestige site. Within section [4.7] we have discussed the timing of profit drawdown from the scheme and it should be noted that as well as the actual percentage, this phasing of profit drawdown has a crucial impact on viability as early withdrawals of income from the scheme will likely increase financing requirements and costs.

The 15% figure applied (net of the assumed 10% profit allowance) for the project is broadly reasonable at this stage of project evolution but we would separate out finance costs from this calculation as they are a key

consideration that should be modelled separately; we note that the infrastructure costs has separate allowances within the total figure inserted within this model. From our discussions with Golding Homes, we understand that the average on costs on their recent projects has been 13-14% with about 4% of this accounting for finance costs. Based on this information, it would suggest that there is significant margin to reduce these costs as finance costs are separately applied at 10%. If the professional fees are reduced to reflect this, then a figure of 12%, based on DTZ's experience would be a reasonable assumption and would lead to a reduction in costs of at least £5 million.

### **4.3 Planning Contributions (CIL & s106)**

There is currently uncertainty as to the extent that the Council's emerging CIL policy will cover the proposed infrastructure costs on site. We have therefore assumed that the access road is deemed as non-site specific and therefore covered under the CIL remit. This would mean that the road could be provided as an in-kind contribution to CIL. Site specific s106 contributions would be payable on top of this.

A review of the published draft charging schedules for the South East reveals an average CIL per sq m for residential development of £130 (including London boroughs but excluding the Mayoral CIL) or £120 (excluding the London boroughs). Assuming an average unit size of 79 sq m (as in the model), this would equate to a planning contribution per private dwelling of c. £9,500-£10,300, and a total CIL contribution of around £30m i.e. roughly the same cost as the access road. This CIL level is three times that applied in the model. The residual s106 level applied in the model of £3,000 per dwelling (applicable to market dwellings only) therefore appears reasonable to cover site specific / residual s106 costs under this scenario – although there is continued uncertainty as to whether the cost of the access road would be deemed 100% CIL applicable.

For this reason, we have tested other scenarios:

- CIL / s106 at £0 per market dwelling
- CIL / s106 at £3,000 per market dwelling
- CIL / s106 at £9,000 per market dwelling

The results of this indicate that if the access road is considered as a CIL contribution in kind and no further s106 costs are needed, NPV would equal £70.2m. If site specific costs on top of the access road cost were £3,000 per market dwelling then NPV would equal £49.8m. If however, CIL was deemed not to include the costs of the access road, and/or substantial further residual s106 costs were required on the site, then adopting the figure of the average CIL cost seen elsewhere in the south east (£9,500), would reduce the NPV to £6.5m.

**Table 10: NPVs for varying levels of CIL/s106**

CIL Cost per market dwelling	NPV
£0	£70.2m
£3,000	£49.8m
£9,500	£2.9m

## 4.4 Finance Rate

We have analysed the finance assumptions made within the model and have the following comments:

- The 10% that has been applied within the model is not a commercial finance rate for a potentially relatively 'medium to low risk' project such as this. We have discussed this with Golding Homes and understand that this figure includes an element of equity return and that the pure financing rate is assumed to be closer to 6.5%.
  - Ultimately, the difference comes down to the methodology of the model but we would normally reflect the equity return to the developer(s) through priority residual profit as opposed to an ongoing charge throughout the cashflow and a percentage added to 'on costs' (this is covered in section [4.7] in our consideration of developer return). It is very common to include a base finance charge on the equity funds inserted however but we would anticipate this to be at a similar (but usually slightly lower) rate to the debt finance.
- DTZ's view of the funding market is that a commercial finance rate of circa 6.5% would be reasonable for this project. In addition, we would anticipate:
  - Arrangement fees of circa 1% of the total finance requirement
  - Commitment fees of circa 0.8% per annum on finance not drawn down.

There is also an element of double counting of finance costs in Golding Homes model as it is included here but also as part of the 20% (private)/ 15% (affordable) 'on costs' as discussed in section [4.2].

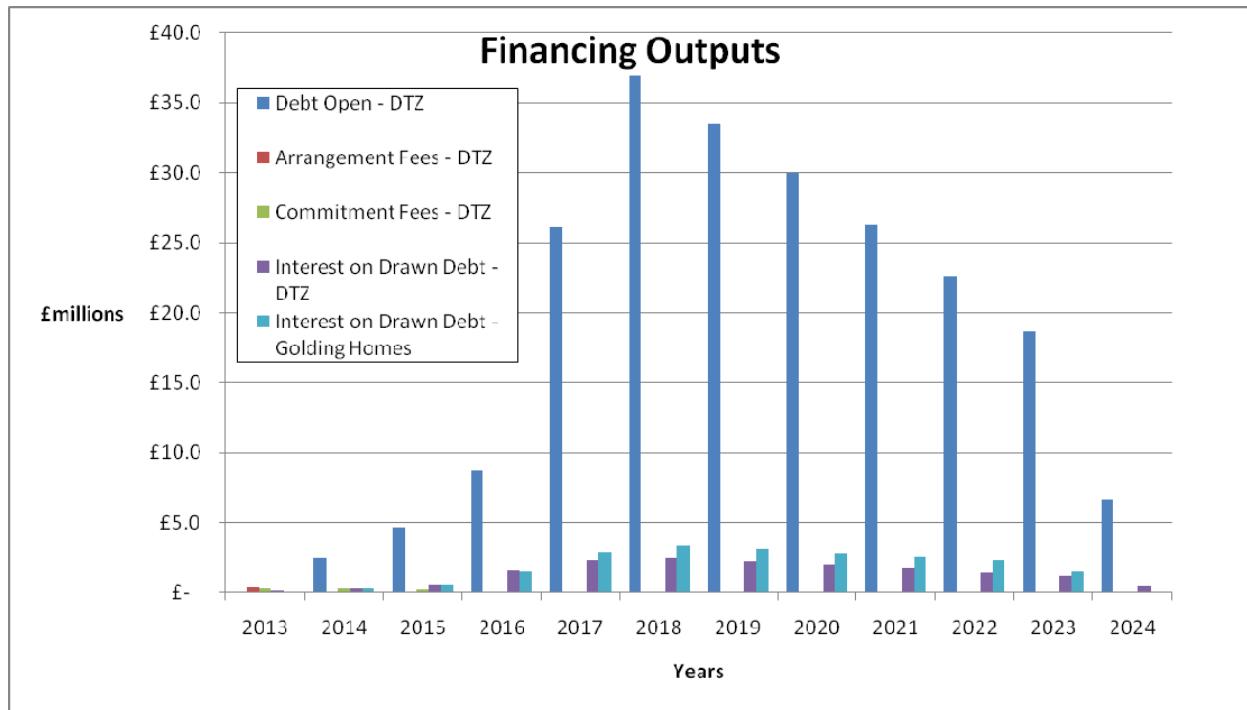
Note that at this stage we have not taken into account other potential funding streams in our analysis of the finance rate. If additional public sector funding or an equivalent was available then this finance rate would be reduced.

As the projects becomes more detailed it is likely to be necessary to have more detailed time periods in the cashflow (i.e. moving from annual to quarterly or even monthly cashflows).

DTZ have undertaken a high level review of the finance costs (using the Golding Homes assumption of a 20 year sales and construction period). Using a commercial rate of 6.5%, arrangement fees of 1% and commitment fees of 0.8%. The comparison in calculation between this and Golding Homes' assumption is illustrated in table [11] below and also figure [12] which maps the impact over time. Note the below tables assume the scheme to be 100% debt funded which in the current market a developer would find very difficult to achieve. An equity input of at least 30% is likely to be required; however, for the purposes of this analysis, we have assumed that any equity input would have the same rate of return as the debt element so in practice calculates the same total. All other inputs are the same.

**Table 11 – Finance Calculations**

	Golding Homes	DTZ
<b>Total CAPEX requirement</b>	£36.3 Million	£36.9 Million
<b>Headline funding rate</b>	10%	6.5%
<b>Arrangement fees</b>	0%	1%
<b>Commitment fees</b>	0%	0.8%
<b>Total funding costs</b>	£20.9 Million	£17.4 Million

**Figure 12 – Financing Comparison**

We have analysed the potential finance costs (including on the equity element) using standard commercial assumptions. Another potential way to structure an agreement (assuming the various land owners worked together to bring a development forward) is to consider that the equity input is actually the parties' land interests. This would mean the land owning partners not receiving any upfront payment for their land but receiving their return as part of profit (calculated as a residual after the application of all other costs).

## 4.5 Infrastructure Costs

Planning contributions have been discussed in section [4.3] but looking at the infrastructure cost as a whole (including planning contributions) and comparing them to a generic benchmarking report undertaken by EC Harris the costs appear to be relatively low.

**Table 13 – Infrastructure Cost Comparison**

	Golding Homes	EC Harris South East England Strategic Infrastructure Analysis
Cost per acre	£475,000	£600,000

Sites are intrinsically different which makes the generic EC Harris figure useful only up to a point; we do not consider the differential to be unrealistic at this stage although further benchmarking would be useful and this cost clearly needs to be monitored going forward as more details become available.

## 4.6 Land Value

No land value is included within the financial appraisal at this stage. There are two ways to approach the calculation of this figure:

- Review comparable land values in the area and fix a price within the appraisal. This would leave any 'residual' funds to contribute to developer profit.
- Have a target profit level (as outlined in section [4.7]) and consider any 'residual' funds to be the land value.

For a scheme with some planning uncertainty and a variety of landowners, DTZ consider that calculating a residual land value is the most realistic way to analyse the project as the profit level that developers require is known (within a certain band) whilst the land value is highly variable.

Analysing the project with regards to the 20 year sales period, we consider that the land price will be paid on plots of 250 units (the same assumption as we have applied to the drawdown of profit). The drawdown of the land from owners has been presumed to take place in the year prior to construction on that phase. Each plot consists of 20 acres and in a scenario where all of Golding Homes' assumptions are retained (and we assumed 0% land price change throughout the period), the residual allows for a land cost of £11 million per annum or £550,000 an acre. This analysis does not show the knock on impact on finance costs which would increase due to this.

Note - The drawdown of land will have to be considered within the context of the strategic infrastructure to be put in place. For example, DTZ's analysis assumes that the drawdown of land is even over time when in fact, significant proportions of land are likely to be required at an early stage for the strategic road infrastructure. Partners within the development may seek to receive payment for this element of their sites at the time it is drawn down as opposed to accepting an even split over the housing development period. Golding Homes are assuming that a land equalisation agreement will be put in place to balance the interests of landowners and reflect the need for major and local infrastructure; DTZ agree that this would be a sensible way to proceed.

## 4.7 Profit

As discussed in section [4.4], the financial model does not currently include an explicit allowance for profit; this has been deemed to be included within the 10% financing costs and the 25% 'on costs'. DTZ's experience on major developments is that developers will seek both a percentage return on their equity investment (DTZ view is that a rate of 6.5% as per the finance rate is realistic) and a 'profit' return to reflect the risk etc.

This return can be calculated by way of an IRR, profit as a percentage of costs or profit as a percentage of Gross Development Value. The rate of return varies based on the projects risk, but in this instance we have assumed that 15% profit on cost would be a reasonable or 'par' return.

DTZ have analysed (as per figure [4.7.1] below) a return to the developer of 15% profit on cost which will be drawn down annually on the sale of properties (this is all based on the 20 year sales scenario). This return is assumed to be a 'priority profit' and not a residual (and therefore, will increase finance charges if this drawdown causes additional debt funding to be required).

Obviously, this early drawdown of profit is a drag on scheme viability and it would be beneficial if developers return could be delayed. However, on a project of this longevity, we would expect developers to seek significant proportions of their return prior to project completion; therefore, whilst the drawdown above could

be improved, we do not believe it to be feasible to push the majority of developers profit to final stages of the development.

**Figure 14 Cashflow Position Including Profit**

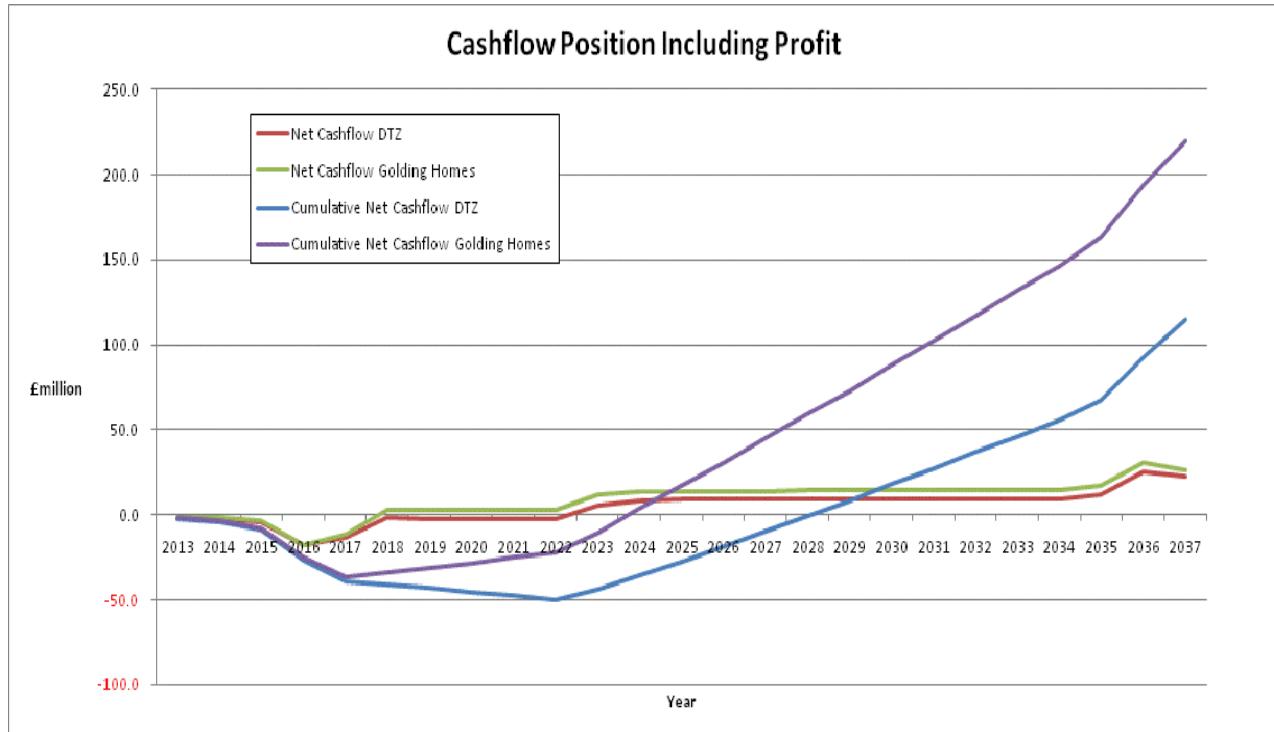


Table 15 below details the impact on the NPV figures (note, the discount rate on DTZ's Assessment is 6.5% as opposed to the 10% used by Golding Homes). Note – all other variables apart from finance and the addition of profit have been retained from Golding Homes' financial appraisal, including the 25% on costs. As per the commentary in section [4.4].

**Table 15 - Financial Outputs based on profit and finance assumptions**

	Golding Homes	DTZ Assessment
<b>NPV</b>	£49.8 Million	27,679,039
<b>NPV per acre</b>	£124,000	£69,000
<b>Peak cashflow deficit</b>	£36.2 Million	£49.9 Million

## 5 Scenario Analysis

In line with our observations above, we have run analysis on a series of scenarios and sensitivities to examine the impact on the scheme's NPV through changes to key assumptions. The first three sensitivity tests alter one variable only, holding all other variables constant. A fourth test (described in more detail below), tests combined scenarios of increased build costs and changes in house price inflation.

### Individual Sensitivity Testing

For the first three tests we have altered the following assumptions, with results presented in the tables below:

- Increases in Build Cost (in line with the aspiration of Golding Homes for a higher quality product) of 5% and 10%
- Build Cost inflation (long term rate) of -1%, 0%, 2%, 2.5%
- House Price inflation (long term rate) of -2%, 0%, 2.5%, 5%

The build cost sensitivity analysis reveals that with a 7.5% increase in build costs, the profit on cost figure drop below 20%. With a 10% increase, profit on cost decreases by nearly half to 16%, with the RLV dropping from £220m to £136m and the NPV from £49m to -£132m.

**Table 16- Build Cost Increase Sensitivity Analysis**

Build Cost Increase	NPV (£m)	RLV (£m)	Profit on Cost
	£49.8	£220.0	28.6%
2.5%	£6.9	£200.6	25.5%
5.0%	-£37.3	£180.4	22.3%
7.5%	-£83.3	£159.3	19.2%
10.0%	-£131.6	£136.6	16.0%

Turning to build cost inflation, an increase in the long term rate to 2% would result in a profit on cost of just 11.8% and a RLV of £104m, whereas a drop in the rate to effectively long term static costs would result in a profit on cost of over 46%, a RLV of £311m and an NPV of £195m.

**Table 17 - Build Cost Inflation Sensitivity Analysis**

Build Cost Inflation	NPV (£m)	RLV (£m)	Profit on Cost
1.0%	£49.8	£220.0	28.6%
-1.0%	£322.6	£389.2	65.0%
0.0%	£195.7	£311.8	46.1%
2.0%	-£129.7	£104.5	11.8%
2.5%	-£252.9	£2.6	0.3%

The results of the house price inflation sensitivity reveal that the scheme is more sensitive to this than to changes in build cost inflation. With long term static house prices, the profit on cost would be just 8.2%, with a RLV of £65m and a negative NPV of £166m. However, with an increase in house price inflation of 2.5%, this would result in a profit on cost of over 62% and a RLV of £473m. Adopting the more optimistic scenario of 5% annual nominal house price inflation, profit on cost would reach 138%, with a RLV of £1,049m.

**Table 18 - House Price Inflation Sensitivity Analysis**

<b>House Price Inflation</b>	<b>NPV</b>	<b>RLV (£m)</b>	<b>Profit on Cost</b>
1.0%	£49.8	£220.0	28.6%
-2.0%	-£661.8	-£459.3	-41.5%
0.0%	-£166.8	£65.0	8.2%
2.5%	£369.5	£473.3	62.4%
5.0%	£997.5	£1,046.9	138.8%

In the model, there are a number of discrepancies between the main static tables in the 'Base Data' tab, used to calculate the performance measures for the base case, and the 20 year cashflow (we have only examined sensitivities on the 20 year scenario). These are:

- The total in 'Cashflow (20 year)' cell C10 (i.e. the data from the inputs) does not match the total apportioned in the cashflow i.e. cells D10 to M10 (when inflation is stripped out)
- The same applies to cells: D11 to M11, D19 to F19 (i.e. the Growth Fund) and H20 to AB20 (the New Homes Bonus)

This consequently causes a discrepancy between the total cost and revenue figures shown in the base case in the model, with those used to calculate the performance measures in the tables above. The exact cashflow position in relation to total input assumptions therefore need to be clarified, and the above performance measure results should be treated as draft.

### Combined Sensitivity Testing

The fourth sensitivity test sets out the results that include both changes to build cost inflation and house price inflation. For this test, the following scenarios have been tested:

- Build cost inflation of 2.5% with house price inflation of -2%
- Build cost inflation of 2.5% with house price inflation of 1%
- Build cost inflation of 2.5% with house price inflation of 3%
- Build cost inflation of -1% with house price inflation of -2%
- Build cost inflation of -1% with house price inflation of 3%

The results of the combined sensitivity analysis confirm the importance of changes to house price inflation to scheme viability, with this having a more substantive impact on results than build cost inflation. As the table below indicates (for the scenarios tested), if house price inflation is negative, then the scheme is negative – even with negative build cost inflation. However, the scheme remains positive even with 2.5% build cost inflation provided there is some house price inflation (i.e. at 1%).

**Table 19 – Combined Build Cost and House Price Inflation Sensitivity Analysis**

<b>Build Cost Inflation</b>	<b>House Price Inflation</b>	<b>NPV</b>	<b>RLV (£m)</b>	<b>Profit on Cost</b>
1.0%	1.0%	£49.8	£220.0	28.6%
2.5%	-2.0%	-£1,040.3	-£868.6	-57.3%
2.5%	1.0%	-£252.9	£2.6	0.3%
2.5%	3.0%	£246.4	£409.0	44.5%
-1.0%	-2.0%	-£237.3	-£20.9	-3.1%
-1.0%	3.0%	£732.5	£732.2	122.9%

## 6 Summary

### 6.1 Delivery Structure

At this stage, the financial model looks at the project as one entity. In reality, a project of this size is going to be brought forward by a large number of developers with one master developer, delivering key infrastructure elements.

### 6.2 Financial Returns

Following from the commentary throughout the report and our assessment on a number of variables, we have assumed the following in order to give an overall viability view compared to Golding Homes' figure. This is in order to reach a residual land value for the site:

- Finance rate at 6.5%
- Independent profit rate at 15% profit on all costs
- On costs reduced to 15% on private residential units to remove the assumed profit element; for clarity, although we believe there is justification to reduce this (and the affordable on costs percentage) to 12%, we have retained this level to allow a reasonable contingency for the project
- No new homes bonus assumed

We have retained Golding Homes' assumptions on the following at this stage:

- Revenue
- Build Cost
- Code for Sustainable Homes uplift
- Infrastructure Cost
- CIL [we do have reservations about the CIL amount inserted but we require clarification from Golding Homes as to the apportionment between local infrastructure and CIL/residual S106 before we can analyse this any further]
- Cost inflation; although sensitivity testing around this need to be undertaken given the risks of forecasting in the long term and this should eventually be considered on a variable annual figure.
- Revenue Inflation; although we generally view these as conservative.
- Unit sizes; although our view is that the 3 and 4 homes are relatively small.
- Infrastructure costs.

Using these assumptions the residual land value reached is **£220,000 per acre** to give an NPV of £0 as indicated by Figure [20].

**Figure 20 - Net Cashflow for DTZ and Golding Homes**

