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Affordable Housing Viability Study: Assumptions

Thurrock Borough Council

February 2010

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Contents

1 Introduction

1.1.1 This document forms the Appendix of the Thurrock Economic Viability Assessment. It sets out the assumptions behind the Residual Land Value modelling carried out for Thurrock Council to inform their Affordable Housing policy.

1.1.2 The assumptions have been informed by the workshop held for stakeholders in Thurrock. on 20th October 2009. The workshop was attended by stakeholders from the development industry, including house builders and RSLs, as well as the Thurrock Thames Gateway Development Corporation, the HCA and Thurrock Council staff.

2 Site Selection & Approach

2.1 Archetype Site Selection

2.1.1 Our approach is based on modelling a select number of archetype sites from the current Thurrock Strategic Housing Land Availability Study (SHLAA). These archetypes have been selected as representative of all sites in Thurrock and cover the range of variables which will have an impact on the viability of a given site. These variables can be categorised as follows.

- Site type – 2 former use types
  - Greenfield
  - Brownfield (Previously Developed Land).
- Site Size – 4 types
  - Small – 15 – 49 units
  - Medium – 50 – 199 units
  - Large – 200 – 499 units
  - Super – 500+
- Housing Market Demand – 2 types
  - High / Medium Market Demand
  - Low Market Demand

2.1.2 To analyse the viability of delivering affordable housing targets in the borough we have selected sites which most closely match the range of variables listed above. It should be noted that these are representative examples, and should not be treated as specific to the named site.

Site Type	Site Size	Housing Market	Site Selected	Site Name / Address
Brownfield	Small	High / Medium	GRI16	Petrol Station and Land West of Hogg Lane, Grays
		Low	GTH12	Scout Hut & Function Hall, Richmond Road, Grays
		Low	TRV09	Units 2, 3, 5 and 7 Landsdowne Road, Tilbury
		Low	LTR06	Garden Centre, Chadwell Road, Grays
	Medium	High / Medium	SCH03	Bannatynes Health Spa Howard Road Chafford Hundred
		Low	GRI05	Vehicle Depot, Wouldham Road, Grays
		Low	OCK21	Durabella Ltd, Arisdale

				Avenue South Ockenden
	Large	High / Medium	LTB08	Land at Thurrock Technical College, Little Thurrock, Grays
		Low	WTS30	William Ball Site, West Thurrock
		Low	WTS31	Acorn Trading Estate, Gumley Road, Grays
	Super	High / Medium	OCK03	Arisdale Industrial Estate, South Ockendon
		Low	LTR10	Globe Works, Little Thurrock
		Low	WTS08	Former Coal Yard Site, London Road, Purfleet
		Low	WTS32	Fiddlers Reach, Wouldham Rd, South Stifford
Greenfield	Small	High / Medium	COF01	Land rear of Marie Close, Corringham
		Low	COF14	Land north of Thames Haven Road, Corringham
	Medium	High / Medium	OCK09	Land at Brandon Groves, South Ockendon
		Low	AVE07	Land south of Aveley ByPass. Aveley
		Low	WTS14	Sports Ground, North Road, Purfleet
	Large	High / Medium	STC01	Adjacent to A13, Grays
		Low	EAT08	Bata Field, East Tilbury
	Super	High / Medium	HOM01	Land at Williamson Farm, Southend Road, Corringham
		Low	ORS22	Grey Goose Farm, Stifford Clays, Grays, Essex

2.2 Assumptions

2.2.1 To model the selected sites we will use the Homes and Communities Agency's Economic Appraisal Tool (EAT). The assumptions in this document reflect the structure and scope of the EAT.

2.2.2 The assumptions we make will depend upon the variables listed above.

- Phasing – We have developed phasing assumptions for each of the four site sizes.
- Residential Unit mix – Our approach has included developing separate assumptions for affordable and private housing. For both types of housing we have assumed a different unit set unit mix for high, medium and low density schemes.
- Open Market Housing Values – We have developed two sets of assumptions to reflect our market demand types.
- Site Abnormals & Build Fees – We have developed two sets of assumptions to correspond to the former use of the site (i.e. Greenfield or Brownfield). The two sets of assumptions take into account the additional costs likely to be associated in developing derelict Brownfield sites and Greenfield sites. For each site type we have developed a different set of assumptions for each of the four site size categories.

- Finance Costs – Finance costs of a development will depend on the scale of the development, its ability to be phased and consequently the level of expenditure required before sales completions. We have therefore developed cost of finance assumptions for small, medium, large sites and super size sites.

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3 Phasing Assumptions

3.1.1 The EAT requires a number of phasing inputs to calculate the residual land value of a scheme. For the purposes of analysis we have assumed that all 16 sites modelled will have the same project start date of January 2010. This assumption of a standard start date allows us to model the sites on equal and comparable terms.

3.1.2 The length of the development and sales period will be dependant upon the size of the scheme. We have therefore developed 3 sets of phasing assumptions for large, small and medium sized sites.

Large Sites – Assumed Phasing

Phasing	Start Month	End Month
Construction Period	3	39
Timing of Affordable Housing Sales	14	39
Timing of Open Market Sales	14	51

Medium Sites – Assumed Phasing

Phasing	Start Month	End Month
Construction Period	3	27
Timing of Affordable Housing Sales	14	27
Timing of Open Market Sales	14	39

Small Sites – Assumed Phasing

Phasing	Start Month	End Month
Construction Period	3	15
Timing of Affordable Housing Sales	12	15
Timing of Open Market Sales	14	27

Super Sites – Assumed Phasing & Modelling Approach

3.1.3 Arriving at the suitable phasing profile for super sites is a more complex task. The super sites in our study range from 583 units to 876 units. In reality the development of the super sized sites would be broken down into several phases. This approach would be a practical and financial necessity.

3.1.4 For the purposes of modelling super sites we have assumed the following approach to the phasing of the development.

- Each super site is divided up into phases of a maximum of 200 units.
- Each phase has the same phasing profile as a medium sized site (see above)
- It is assumed that a greater proportion of the infrastructure requirements will be 'frontloaded' into the first phase (see section 5.4).

4 Residential Unit Mix Assumptions

4.1 Affordable Unit Types

4.1.1 The HCA Economic Appraisal Tool (EAT) has the capacity to model 7 different types of units for each of the affordable / intermediate tenure types. The unit types and sizes listed below are suggested averages which comply with the HCA required Housing Quality Indicator scores but which are not at the minimum level.

Social Rented

	Studio	1 Bed	2 Bed Flat	2 Bed House	3 Bed	4 Bed	5 Bed
Unit Size (sq m) – NIA	NA	47	68	76	85	110	130
Habitable Rooms per Unit	NA	2	3	3	4	5	6
Persons per Unit	NA	2	4	4	5	6	7

Source: Housing Quality Indicator & Tribal

Shared Ownership

	Studio	1 Bed	2 Bed Flat	2 Bed House	3 Bed	4 Bed	5 Bed
Unit Size (sq m) – NIA	NA	47	68	76	85	110	130
Habitable Rooms per Unit	NA	2	3	3	4	5	6
Persons per Unit	NA	2	4	4	5	6	7

Source: Housing Quality Indicator & Tribal

Intermediate Rent

	Studio	1 Bed	2 Bed Flat	2 Bed House	3 Bed	4 Bed	5 Bed
Unit Size (sq m) – NIA	NA	47	68	76	85	110	130
Habitable Rooms per Unit	NA	2	3	3	4	5	6
Persons per Unit	NA	2	4	4	5	6	7

Source: Housing Quality Indicator

4.1.2 Our conversations with RSLs active in Thurrock have confirmed that our assumptions reflect their recent experience.

4.2 Private Units

4.2.1 The EAT has the capacity to model a greater variety of unit types for private sale units than affordable units. Again we have used the HCA Housing Quality Indicator as a guide to develop indicative unit sizes. However as it is likely that Private Units will not be built to the same size as any affordable units, we have assumed the minimum size required to comply with the HQI.

Open Market Housing Type 1:	Flats & Apartments					
	Studio	**1 Bed**	**2 Bed**	**3 Bed**	**4 Bed**	**5 bed**
Unit Size (sq m) – NIA	30	47	60	75	100	NA
Habitable Rooms per Unit	1	2	3	4	5	NA
Persons per Unit	1	2	3	5	6	NA

Open Market Housing Type 2:	Terraced Houses					
	Studio	**1 Bed**	**2 Bed**	**3 Bed**	**4 Bed**	**Other**
Unit Size (sq m) – NIA	NA	NA	70	82	105	NA
Habitable Rooms per Unit	NA	NA	3	4	5	NA
Persons per Unit	NA	NA	3	5	6	NA

Open Market Housing Type 3:	Semi – Detached Houses					
	Studio	**1 Bed**	**2 Bed**	**3 Bed**	**4 Bed**	**5 bed**
Unit Size (sq m) – NIA	NA	NA	72	84	105	130
Habitable Rooms per Unit	NA	NA	3	4	5	6
Persons per Unit	NA	NA	4	5	6	7

Open Market Housing Type 4:	Detached Houses					
	Studio	**1 Bed**	**2 Bed**	**3 Bed**	**4 Bed**	**5 bed**
Unit Size (sq m) – NIA	NA	NA	NA	90	115	135
Habitable Rooms per Unit	NA	NA	NA	4	5	6
Persons per Unit	NA	NA	NA	5	6	7

Source: Housing Quality Indicator & Tribal

4.3 Residential Mix

Private Sale Units

4.3.1 The unit mix for each of the 16 selected schemes listed below is based on information in the SHLAA, SHMA, proposed site densities, market information and our knowledge of the area.

4.3.2 We have identified three sets of unit mix assumptions to correspond to different unit densities on the 16 sites selected. The SHLAA give us the potential site density for the sites. The 16 sites selected show a wide range of site densities. We have identified the following bandings.

- High Density – Over 100 units per hectare – We have assumed that on the sites with the highest density most of the units developed will by necessity be flats / apartments.
- Medium Density – 40 – 100 units per hectare – We have assumed that only a small proportion of units developed will be flats. The majority of units will be smaller 3-bed family homes.
- Low Density – Under 40 units per hectare – On the lowest density schemes we will assume that no flats are developed. We have assumed that proportionally more of the larger family units will be developed.

Unit Type	High Density	Medium Density	Low Density
Flats and Apartments			
Studio			
1 Bed Flat	35%	5%	
2 Bed Flat	35%	5%	
3 Bed Flat	10%		
4 Bed Flat			
Terraced Houses			
2 Bed	10%	10%	
3 Bed	10%	20%	
4 Bed		10%	
Semi-detached			
2 Bed			10%
3 bed		40%	10%
4 Bed		10%	15%
5 Bed			
Detached Houses			

3 Bed			30%
4 Bed			30%
5 Bed			5%

Source: Tribal & SHLAA

Affordable Units

4.3.3 The level of affordable housing has been modelled at 0%, 30% and 35% affordable housing and a split of 70:30 of social rented to intermediate tenures. The 0% starting point is not meant to establish a base land value but it used to demonstrate the effect on RLV of the differing affordable housing requirements. Housing needs data from the SHMA indicates that a greater proportion of small units are required for affordable housing than for private housing and we have therefore translated the 30% and 35% affordable housing assumptions into habitable rooms so as to accurately represent the proportion of the development that will consist of affordable units.

4.3.4 Of the intermediate units developed we have assumed that half will be Shared Ownership and half Intermediate Rented.

4.3.5 The SHMA gives a breakdown of the requirement for affordable housing by unit size. The table below shows our interpretation of this table. Some data on housing need has also been provided by the local authority which confirms the requirement for smaller units, however it is suggested that this data is examined further, to ensure that it will meet the local authority's requirements in the long term. As with the Open Market housing unit mix we have produced three sets of assumptions to represent high, medium and low density developments.

	Studio	1 Bed	2 Bed Flat	2 Bed House	3 Bed	4 Bed	5 Bed
High Density		45%	30%	15%	10%		
Medium Density		40%	25%	10%	15%	10%	
Low Density		35%	10%	25%	10%	15%	5%

Source: SHMA, RSLs and Tribal

5 Residential Values

5.1 Social Rented Units

5.1.1 We have assumed rent levels based on published CORE Data for new lettings in 2007/08 in Thurrock and adjusted them to account for inflation.

5.1.2 We have also received feedback from a number of RSLs who operate locally to provide us with realistic rents for newly built units. The feedback and subsequent discussions suggested that our rents calculated using CORE data were consistent with their expectations and recent experience.

5.1.3 The CORE data does not provide rent information for 4 bed units. In this instance we estimated the likely rent for a 4 bed based on our conversations with the RSLs and extrapolating the existing data for 3 bed units.

Type of Unit	CORE Data – Rent per Unit per Week (£)	Inflation since 2007/08[1]	Rent per week 2009/10 (£)
Studio	N/A	N/A	£65
1 Bed	£69	9.4%	£75.4
2 Bed	£77	9.4%	£84.2
3 Bed	£87	N/A	£95.1
4 Bed	N/A	N/A	£104
Other	N/A	N/A	N/A
Other	N/A	N/A	N/A

Source: CORE 2007/2008 and Tribal

5.1.4 The approach values social rented units by capitalising the net rental value of a unit. The gross rental levels are listed above. We have assumed the following costs per annum to generate a net rental value (all are calculated as a % of gross rent per annum).

- Management Costs -12.00%
- Voids / bad debts - 4.00%
- Repairs Fund - 18.00%

5.1.5 The yield rate we have assumed is 6.25% based on the HCA recommended levels and our experience of recent similar housing projects.

5.1.6 It is assumed (see section 2 of this document 'timing of affordable housing sales') that the payment for social rented units would be made on practical completion of the units.

5.1.7 RSL rent levels are adjusted by RPI plus 0.5% p.a. It is anticipated that, based on this formula, rent levels for 2010/11 will decrease by 2% then increase by 1.25% for 2011/12 and increase by 2 -2.5% year on year after this.

5.1.8 For small sites practical completion is up to 1 year after the project's start date (project start date is always 2010/11), for medium size sites it is up to 2 years and for large sites it is up to 3 years after project start date. To allow for the inflationary uplift in social rents we have assumed an annual RPI of 2%. Therefore, by site size we have modelled the following.

- Small – 1 year of inflation – 2% uplift from 2010/11 levels
- Medium – 2 years of inflation – 4% uplift from 2010/11 levels
- Large – 3 years of inflation – 6% uplift from 2010/11 levels

5.1.9 On super sites we have calculated the uplift on a phase by phase basis using the same RPI assumptions as above.

5.2 Intermediate Tenure

5.2.1 The Housing Needs Survey shows that 30% of affordable housing should be intermediate tenure in Thurrock. Of the intermediate units developed we have assumed that half will be Shared Ownership and half Intermediate Rented.

5.2.2 The EAT however has the capacity to model a number of intermediate tenure types. In the first instance we will model the sites assuming that any intermediate tenure developed will be split 50:50 between Shared Ownership and Intermediate Rented.

Shared Ownership

5.2.3 The value of the shared ownership units is calculated in the EAT as follows.

Value = Predicted equity stake sold to buyer + Capitalised value of rental income on retained equity.

- Owner-occupied share (%) – 40% based on our consultations with the RSLs.[2]
- Unsold Equity Rent Per Annum (%) – 2.75% based on our conversation with the RSLs and guidance accompanying the EAT. This is the current HCA upper limit on unsold equity rent.
- Management Costs (% of rent) – 7%
- Voids / bad debts (% of rent) – 2.5%

[2] Our conversations with RSLs suggested that first tranche sales are currently as low as 25-30% of open market value. However our approach to modelling the sites is based upon the assumption that the development of the majority of the sites will not begin until the market has improved to level approximately 20% below its peak in 2007. At which point Shared Ownership will be a more viable tenure and first tranche sales are likely to be higher.

- Repairs Fund (% of rent) – 0%
- Yield (%) - The yield rate we have assumed is 6.25% based on the HCA recommended levels and our experience of recent similar housing projects.

Intermediate Rent

5.2.4 We have spoken to local agents to arrive at open market rental values per week. In our experience of modelling Intermediate rent type tenures it is reasonable to expect rental levels at 80% of open market rent.

Type of Unit	Open Market Rent per Unit per Week (£)	Discounted Market Rent per Unit per Week (£)
Studio	NA	NA
1 Bed	130	104
2 Bed	173	138.4
3 Bed	184	147.2
4 Bed	207	165.6
5 Bed	219	175.2
Other		

Source: Tribal - Local Estate Agents

5.2.5 The approach values discounted market rented units by capitalising the net rental value of a unit. The gross rental levels are listed above. We have assumed the following costs per annum to generate a net rental value (all are calculated as a % of gross rent per annum).

- Management Costs -12.00%
- Voids / bad debts - 4.00%
- Repairs Fund - 18.00%

5.2.6 The yield rate we have assumed is 6.25% based on the HCA recommended levels and our experience of recent similar housing projects.

5.2.7 It is assumed (see section 2 of this document 'timing of affordable housing sales') that the payment for intermediate rented units would be made on practical completion of the units. For small sites practical completion is up to 1 year after the projects start date, for medium size sites it is up to 2 years and for large sites it is up to 3 years after project start date. To allow for the inflationary uplift in intermediate rents we have assumed an annual RPI of 2%. Therefore, by site size we have modelled the following.

- Small – 1 year of inflation – 2% uplift
- Medium – 2 years of inflation – 4% uplift
- Large – 3 years of inflation – 6% uplift

5.2.8 On super sites we have calculated the uplift on a phase by phase basis using the same RPI assumptions as above.

5.3 Open Market Housing Values

5.3.1 Open market values for new build property in Thurrock have reduced substantially from a peak in around 2007, which also coincided with the most recent significant newbuild activity.

5.3.2 There are a number of new developments being marketed across Thurrock where asking prices remain relatively high, although we have uncovered significant anecdotal evidence of offers being accepted up to 20% below the asking price, as well as a range of other incentives, including legal fees, cashback and stamp duty paid. In most cases some sales have been agreed but sale prices have not yet been recorded in land registry data, so a picture has been built up from a consideration of asking prices and discussing progress with sales staff. In particular we have looked at:

- Orsett Village, Orsett (in an area of high demand in 2009)- 195 2 and 3 bed houses by Taylor Wimpey (formerly Bryant Homes) with an average asking price of £300,000. Evidence suggests that offers above £275,000 are being accepted.
- Watts Wood Park, Purfleet (in an area of medium demand 2009)- 163 2-bed houses by Bellway with an average asking price of £200,000. Unknown what level of offer below the asking price is being accepted.
- Colliers Court, Crammavill Street, Grays (area of medium demand 2009)- 45 retirement apartments by McCarthy and Stone, with an average asking price of £190,000. Offers of £175,000 and over are apparently being accepted.
- Tensquared, Hogg Lane, Grays (area of medium demand 2009) an award-winning development by Bellway. Most flats are 1 bed units and the asking price was £150,000. Evidence suggests that offers of £120,000 are being accepted.
- Cavendish Gardens, Aveley. This slightly smaller development by an unknown (small) local housebuilder is in an area of medium demand in 2009. It is a six-unit block of 2-bed flats completed in 2005. In 2009, flats here were selling for £165,000.

Development Name	Demand Type	Location	Units	No. Beds	Unit Type	Developer	Target Price	Achieved Price
Orsett Village	High	Orsett	195	3	Houses	Taylor Wimpey	£300,000	£275,000
Watts Wood Park	Medium	Purfleet	163	2	Houses	Bellway	£200,000	Unknown
Colliers Court	Medium	Grays	45	1	Flats	McCarthy and Stone	£190,000	£175,000
Tensquared	Medium	Grays	100	1	Flats	Bellway	£150,000	£120,000
Cavendish Gardens	Medium	Aveley	6	2	Flats	Unknown	£165,000	Unknown

5.3.3 The target and achieved prices above represent sales value at the time of writing this report (June 2009). These values represent a snapshot of the housing market at what is arguably its lowest ebb. It is unlikely that many of the sites being analysed in this study would be developed under such market conditions. To meaningfully test the viability of the sites we need use a set of values that reflect where the market will be when the sites are actually developed.

5.3.4 The housing market in the UK peaked in August 2007. The advice we are receiving suggests that housing development will begin to pick up again when values are between 10% and 20% off this peak (in our analysis we have used a notional mid-point of 15% off peak to reflect the range of estimates).

5.3.5 Based on the above we have conducted research into values in Thurrock around the time of the peak in the housing market. Land registry data for that time shows very few new build sales, and at that time there would have been a premium paid for new build. Once the market starts to recover we would expect the new build premium to be reinstated to reflect the improved quality over second hand stock. We have therefore adjusted these figures to find a suitable set of benchmark values for modelling the viability of the sites.

5.3.6 In summary, the following table, based on peak new build prices less 15%, shows our assumptions for the value of units developed in high / medium demand and low demand areas of Thurrock on a £ per sq m basis.

5.3.7 The two 'demand areas'(high / medium and low) are based on land registry data and housing market research carried out as part of the SHLAA. The two demand areas are based loosely on a north – south split in the borough, with the band of low demand in the south of the borough from West Thurrock and South Stifford to East Tilbury. The higher demand area is largely in the north of the borough, including parts of Aveley and Ockenden, Orsett, Stanford and Corringham as well as parts of Chafford, Little Thurrock and Chadwell St Mary.

Unit Type	Low Demand Areas - Value (£ per sqm)	High / Medium Demand Areas - Value (£ per sqm)
Flats & Apartments (Less than 5 storeys)	1790	3,090
Terraced Houses	1885	2900
Semi-detached Houses	2,025	2900
Detached Houses	1925	2970

Source: Land registry & Tribal

5.4 Social Housing Grant & other funding

Social Housing Grant (SHG)

5.4.1 We have calculated average grant rates in the East of England from allocations to RSLs made in April 2008 under the 2008-11 NAHP programme: For new build rented developments the following table summarises the grant allocation.

Tenure	Grant per unit (£)
Social Rented	£44,500
Shared Ownership	£16,200
Intermediate Market Rents	£16,200

Source: 2008 – 2011 NAHP programme

5.4.2 We have spoken to RSLs active in the local area. They have confirmed that on average the grant levels in the table above are approximately correct.

6 Costs

6.1 Building Costs

Private Units

6.1.1 Build costs are based on BCIS data and provide costs as the rate per sq m gross internal floor area for the building excluding external works and contingencies and with preliminaries apportioned by cost. The build costs have been adjusted to location index for Thurrock. They have then been upgraded by 15% to allow for external works.

Tenure	BCIS - Building Costs - Gross (£ / sq m)	Assumed Build Cost to include external works	Net to Gross Ratio for Building Costs (%)*
Flats & Apartments (Less than 5 storeys)	973	1,119	80%
Terraced Houses	750	863	100%
Semi-detached Houses	802	922	100%
Detached Houses	886	1,019	100%

Source: BCIS 2009 & Tribal

Affordable Units

6.1.2 We have assumed that all affordable units developed on the sites will be built to a minimum of Sustainable Homes Code 4 standard. The build costs per sq m below include the cost of building to Code 3. The cost of building to Sustainable Homes Code 4 are outlined in section 5.5 of this document.

Tenure	Assumed Building Costs - Gross (£ / sq m)	Net to Gross Ratio for Building Costs (%)*
Social Rented	1,121	100%
Shared Ownership	1,121	100%
Shared Equity	1,121	100%
Intermediate Market Rented	1,121	100%

Source: Tribal and CLG cost analysis of the Code for Sustainable Homes, July 2008

6.2 Build Fees

6.2.1 The model assumes build fees covering architects, QS costs and any other additional fees associated with the build programme. Build contingencies are typically around 5%.

Cost	% of build costs
Build Fees	10%
Build Contingencies	5%

6.3 S106 Costs

6.3.1 For each scheme we have assumed S106 contributions on a per unit basis, informed by our discussions with Thurrock Council and Thames Gateway Development Corporation (TTGDC) about possible tariff levels.

6.3.2 The TTGDC (Developing a Planning Obligations Strategy for Thurrock Thames Gateway Development Corporation, March 2009) have produced a report outlining likely S106 requirements the TTGDC will have in connection with those planning applications for which it is the determining authority.

Cost	Cost per Unit (£)
Infrastructure / Public Transport	£2,699
Community Facilities	£3,865
Public Realm / Environment	£633
Health & Education	£9,007
Land for facilities	£4,457
Total	£20,661

Source: Thurrock Thames Gateway Development Corporation, Developing a Planning Obligations Strategy for Thurrock Thames Gateway Development Corporation, March 2009.

6.3.3 This contribution would amount to of £20,661 cost per unit. The consultants commissioned to produce the TTGDC Planning Obligations Strategy (ERM) explain that

> 'it needs to be acknowledge from the outset that planning contributions alone cannot meet the full cost of all infrastructure required to support development. Based on the development viability analysis undertaken, ERM would recommend an initial discounted standard charge of £5,000 be applied on a per dwelling basis to all residential developments'[3].

6.3.4 For the purposes of modelling the sites we have agreed with the Council to apply a standard cost of £5,000 per dwelling. However, because the TTGDC's strategy has not been adopted by Thurrock Council we have also been asked to test 16 sites using two alternative scenarios of £10k and £15k per unit tariff levels. For modelling purposes, this has been applied as a Habitable Room rate based on an average unit size of 2.94 HR per unit as below.

[3] TTGDC / ERM Draft Planning Obligations Strategy March 2009

Tariff per unit (£)	Equivalent Tariff per Habitable Room (£)
£5,000	£1,700
£10,000	£3,400
£15,000	£5,100

Source: Thurrock DC / ERM Draft Planning Obligations Strategy March 2009 / Tribal

6.4 Site Abnormals

6.4.1 The above assumptions do not take into account any of the site specific assumptions relating to site abnormals on the sites selected. Such costs will vary significantly depending on the specifics of each individual site. We have conducted some research into the likely costs of such site specific site abnormals.

6.4.2 It is difficult to identify assumptions to account for any site abnormals, as each site will have different technical issues to be resolved. For example, a green field site may require expensive infrastructure works to gain access and provide services, whereas a Brownfield site may have additional issues in relation to contamination.

6.4.3 It is apparent that the site abnormal costs are likely to be greater on sites in inner urban areas than the more rural sites. The HCAs Best Practice Note 28 from Feb 2008 gives us the best indication of such site abnormal costs.

6.4.4 On Brownfield sites we have assumed there will be costs relating to the remediation of contaminated land and in preparing land affected by dereliction.

- Remediation - According to the HCA Best Practice Note remediation costs can be anything from £75,000 - £825,000 depending on the historic use of the site. The key to this study is a modelling approach that allows us to compare each site on a fair and equitable basis. It is not possible to identify individual sites with particularly high or low remediation costs. We have therefore assumed on average, given the range of sites being analysed, that typically there will be some remediation costs. On this basis we have assumed a remediation cost of £75,000 per hectare (lowest end of the range provided in the HCA best practice note) on all Brownfield sites.

- Derelict Land Preparation – The HCA guidance shows that there is little variation between to cost per hectare between small and large sites. The distinguishing factor is whether the site is 'complex' or 'non-complex'. As we know some of the Brownfield sites being appraised will have a degree of complexity. To ensure a fair comparison of the sites, as with remediation costs, we have taken the range of numbers provided in the guidance and taken a cost towards the lower end of the range.

Brownfield Site Abnormals

.Cost	Small	Medium	Large	Super
Contamination Costs (cost per hectare)	75,000	75,000	75,000	75,000
Dereliction Costs (cost per hectare)	120,000	120,000	120,000	120,000
Infrastructure Costs (cost per unit				£5,000

Source: HCA Best Practice Note 2008 & Tribal

6.4.5 Greenfield sites will not require the same level of site abnormal costs. It is unlikely that there will be any issues with regards to contamination and derelict land preparation. It is however probable that there will be additional infrastructure costs on Greenfield sites given the fact they involve development on previously undeveloped land. Principally these will be the costs of providing connecting transport and utilities to the site.

Greenfield Site Abnormals

.Cost	Small	Medium	Large	Super
Infrastructure Costs (cost per unit)	£3,000	£3,000	£3,000	£8,000

Source: HCA Best Practice Note 2008 & Tribal

Super Sites

6.4.6 In order to model super sites using the EAT we have divided them into phases (each phase producing no more than 200 units). We have assumed that there will be additional Infrastructure costs on super size sites to account for the scale of development and subsequent requirement for infrastructure. On super sites we have assumed an additional infrastructure requirement of £5,000 per unit.

6.4.7 This additional cost will be frontloaded, with the majority of costs assumed to apply to phase 1 of the development. For modelling purposes we have assumed that 50% of the total site abnormal infrastructure costs required are payable in phase 1 of the development. The remaining infrastructure costs are split proportionally across the remaining phases of the development.

6.5 Build Cost % Increase

6.5.1 Our build costs for the affordable units assume they are built to sustainable homes code 3 to be included in updated build costs. The model has the capability to allow for additional costs to be included and applied as either a cost per unit or as a % of build costs. The EAT has the capacity to include the cost of:

- Site specific sustainability issues;
- Wheelchair provision; and
- Code for sustainable homes (level 4 and above).

6.5.2 Our research based on the guidance produce by the CLG (CLG cost analysis for the Code for Sustainable Homes, July 2008) suggests that the median cost costs of achieving the Sustainable Code 4 per unit are given £11,700 for a detached house, £9,500 for an end terrace and £6,000 for a flat. There is of course more detail behind the analysis and exact cost will depend on the units being developed. Using this research as a base we have assumed that on average it will cost an additional 13% on build costs per unit to bring the affordable homes up to Code 4 standard.

6.5.3 Currently, affordable housing must meet code for sustainable homes level 3, and whilst a code calculation must be carried out for private housing, there is no minimum requirement applicable. The requirement for affordable housing is likely to increase to level 4 from 2010/11. Private developers are likely to be required to build to code level 3 from 2010 and level 4 from 2013. The target for reaching level 6 (zero carbon) is 2015 for affordable housing and 2016 for private housing. These standards are likely to be enforced via the building regulations so the code level applicable is likely to be set at start on site stage, which will mean a delay to completed units achieving the timetable set out above.

We have yet to see how the building industry will respond to these requirements, however it is likely that the costs of compliance will reduce from the levels in the CLG report as manufacturers and developers devise cost effective, innovative building solutions. It is therefore difficult to predict which sites will have which level of code applied when, at what the cost of achieving it at that stage will be.

It is clear, however, that the requirement for RSLs is more onerous than for the rest of the development industry and therefore, for modelling purposes, we have assumed that all affordable units will be built to Code 4 and have included a cost for this based on the CLG guidance.

6.6 Site Acquisition Costs

6.6.1 In order to arrive at an accurate Residual Land Value the EAT include a number of fees and costs that would be associated with site acquisition. These fees / costs are in effect netted off the overall return / deficit to produce the RLV.

Fees	% of Site Value
Agents Fees	1%
Legal Fees	0.75%
Stamp Duty	4%
Other Acquisition Costs	0

Source: Tribal HMRC

6.7 Finance Costs

6.7.1 We have assumed that the arrangement fee and surveyors' fee will vary according to the size of the site and therefore the size of the financing package. We have assumed the following Interest and finance costs – based on current market data.

	Small	Medium	Large	Super
Arrangement Fee (£)	10,000	60,000	100,000	150,000
Interest Rate (%)	7.5%	7.5%	7.5%	7.5%

Misc Fees – Surveyors etc (£)	12,000	40,000	70,000	100,000

Source: Market data and Tribal Treasury Team

6.8 Marketing Costs

Affordable Housing Marketing Costs

6.8.1 RSL on costs include employers agent fee, RSL development administration fee, legal fees, shared ownership marketing costs and associated interest costs (assuming stage payments to the developer are made).

6.8.2 Based on our recent experience and conversations with RSLs active in the area we have assumed the following set of costs.

Cost	Cost per unit
Developer cost of sale to RSL (£)	1,000
RSL on-costs (£)	9% of affordable housing GDV
Intermediate Housing Sales and Marketing (£)	2,000

Source: Tribal

Open Market Housing Costs

6.8.3 In our experience the sales and legal fees for the sale of new build units are usually between 4% and 7%. In the EAT these are broken down as follows.

Cost	Cost
Sales Fees (as a % of sales value)	6%
Legal Fees (£ per unit)	£650

Source: Tribal

Developer's 'Profit' (before taxation)

6.8.4 The developers of the most recent version of the EAT have identified a developer profit of 17.5% to be used as a default value. The level of developer profit on affordable units is more difficult to estimate. However in our experience between 5%-7% is an acceptable assumption.

Cost	% of sales value
Open Market Housing	17.5%
Affordable Housing	6%

Source: HCA toolkit and Tribal

7 Establishing benchmark land values

7.1 Landowner expectations

7.1.1 An affordable housing policy has to be designed to take into account the willingness of landowners to release sites – if the effect of the policy is to depress the value of many of the sites to the point where the owner will not be willing to release them, there may be a real conflict between the affordable housing policy and the other key issue of housing delivery.

7.1.2 Our modelling shows what the Residual Land Value (RLV) will be after the impact of the Affordable Housing Policy is taken into account. However, whether that RLV will be acceptable to the owner of the land will depend on the expectations of the landowner, which is in part influenced by existing and alternative use values.

7.2 Benchmark Land Values

7.2.1 The key value we need to identify is the average land value which will persuade the landowner to sell his/ her site for development. This 'Benchmark' land value will be a threshold below which there is a likelihood that the landowner may not release their site, and as a consequence development will be prevented.

7.2.2 'Benchmark' land values must be selected to reflect the expectations of land owners with regard to value, and these are generally based upon existing or alternative use values for the sites in question. These may be agricultural, residential or business/ industrial values. This value will generally be a price in excess of existing use value (EUV). However, existing use values vary enormously.

7.2.3 The main difficulty in this is that landowner's situations vary widely, and much depends on whether the land has already been bought by a developer at development land value, and when it was bought. A further considerable difficulty is the considerable instability of land prices over the last two years, so that there is a much less settled view on values and on expectation of value.

7.2.4 While the value of development land in the South East has fallen by around 50% from its peak in 2007, house builder developers who bought close to the peak may be reluctant to accept a lower current valuation. As the HCA makes clear in its Guidance Note on this and other related matters[5]

In the current market downturn, developers who have purchased land at high historic values may be unwilling or unable to use residual land values as the basis of for renegotiating and assessing the viability of planning obligations. In the absence of comparable open market transactions to provide an alternative benchmark to the residual valuation method, land value assumptions in re-negotiated viabilities are likely to be contentious.

7.2.5 However, HCA have made it very clear that in matters of affordable housing viability, they will not accept the use of grant to support high historic land values, and that grant will only be given if a revised land value is used. So, for sites which have already passed into the ownership of the development industry, and where there is a requirement for grant, a written down value is the appropriate assumption for the RLV that the developer would hope to achieve.

[5] Investment and Planning Obligations: Responding to the Downturn. July 2009

7.2.6 In our view, that is also appropriate for developer owned sites where no grant is required – it would not be appropriate for the affordable housing policy (or indeed the tariff) to be adjusted or scaled to allow for the value at which the land was acquired, if that was a peak value. (Although we note that most of the land transactions in Thurrock were not at the actual peak of the market.) We know that accounting standards have required house builders to write down their land, to the lower of historic cost or to a residual valuation that reflects present day sales value prospects.

7.3 The Impact of Policy on Values

7.3.1 It is our view, supported by the VOA, that it is not just historic evidence that should be taken into account. Tariffs, S 106 agreements and affordable housing policies all impact on residual value. Historic values which did not reflect such requirements are therefore not wholly relevant. Going forward, the price of development land may be expected to reflect the nature and scale of planning obligations.

7.3.2 With regard to Thurrock, the VOA has said that:

It should be noted that transaction values are likely to be affected by s.106 requirements, and Social Housing requirements (these obligations are likely to have become more onerous over time.....

In light of the above I think it is not possible through the use purely of comparable evidence to produce the extensive list of historic land valuations for the Thurrock district as requested in your initial instruction, and that valuations more accurate, and better suited to your purposes would be obtained through the use of a residual valuation model, adjusted to take account of the historic movement in development costs, and values over the required reference period.

7.3.3 This point has also been made in expert advice to the Planning Inspectorate with regard to affordable housing viability studies. [6]

7.4 Historic evidence on existing and alternative use values

Land previously in agricultural use

7.4.1 The lowest existing use values are found when the site is in agricultural use. The limited evidence on agricultural land with vacant possession in Thurrock suggests a range from £9,600 to £13,500 per hectare in the period 2003-2005. In the neighbouring authority of Basildon, values in 2006/2007 were slightly lower – between £3.5k and £7k per ha.[7].

7.4.2 A comfortable margin over existing use value is always expected before a landowner will make the once and for all decision to give up land. Each landowner will have a different expectation, with the size of the site having an influence on that. On a very large strategic housing site, even £50k a hectare will give a substantial uplift over agricultural value.

Urban land with an existing residential or business use

7.4.3 This might be for example an existing house on a large plot or business premises (factory or office) for which there is current market demand. In each of these cases, there is a current value, against which the residual value can be measured. This will be highly specific to the use and the location. A house on a large plot might have a value of £500k

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[6] [6] Stockton Borough Council: Economic Viability of Affordable Housing Requirements: Review by Anthony Lee for the Planning Inspectorate, August 2009

[7] Property Market Report January 2009, Valuation Office Agency

or several £million, depending on the location. The value of a business site will depend on its potential rental value and the appropriate yield.

Urban land with an alternative industrial/ business use

7.4.4 In many urban areas, the planning policy context is such that a site which is suitable for housing use could be used for say a business or office use, or indeed may have been in an industrial or business use. This is the case with many sites in Thurrock.

7.4.5 If there is a strong enough demand for business use in that location, the site value as a business site may exceed that for housing, if the residual value is depressed by planning gain demands on the housing use.

7.4.6 The value of business/ warehousing land is highly variable in different parts of the UK, with very low demand and very low values in some regions. In the North East, the mean value for industrial/ warehouse land was £178k, in the South West £703k but in the East, South East and London, average values for business/ industrial use were £1.1m, £1.3m and £2.1 m respectively.[8]

7.4.7 The evidence in Thurrock is limited. In the period 2006- 2008, most transactions of industrial land were at values of between £110k and £1.3 m. However, there were three transactions of industrial sites at over £2m per ha, two of which were thought by the VOA to reflect some residential potential.

7.4.8 In neighbouring Basildon, values for industrial sites in 2006/2007 were in the range £550-£600k, based on a very small number of transactions.

Residential Development Land

7.4.9 The average value of larger allocated residential sites over the 2003-2006 period was around £2.1m per hectare. The sites ranged in size from 2-7ha, and with many of them, a degree of contamination was suspected.

7.4.10 There were no bulk residential land sales made at the peak of the market, but two smaller transactions for sites of less than a hectare made in Feb and May 2007 for £4.3 mill and £2.6 m per hectare.

7.4.11 In neighbouring Basildon, bulk land ranged from £1.8 to £3m over the 2006-2008 period. Non bulk sites ranged from £660k up to £6m per ha for one very small site.

7.4.12 In Thurrock, the mean historic value since 2003 appears to be around £2.1m per ha. ,with the maximum paid for smaller sites over £4m

7.5 Recent Market Change

7.5.1 We know that in the recent past, residential land values have dropped significantly. Knight Frank have estimated that development land values have fallen by an average of 50 - 55% from the 2007 peak to the first quarter of this year in parts of the UK[9], although there

[8] Valuation Office Agency, op cit

[9] See How the Land Lies, Financial Times, June 20/ 21 2009

are some indications that prices are starting to rise again[10]. There have been small rises in Qs 2 and 3, but prices still remain at c. 50% of peak 2007 values.

7.5.2 Knight Frank suggest that currently typical residential development land values outside London now range from around £250,000 per acre for more peripheral sites in cheaper regions to over £1m per acre for the best sites in the South East and East of England. London prices are far more variable – over £3m per acre is typical in inner boroughs, but over £15m per acre is achievable in prime locations.

7.6 Stakeholder Views on Land Values

7.6.1 At the stakeholder workshop, several property industry representatives commented on the dramatic fall in land values. The 'decoupling' of house prices and land values was commented on – the tendency for land prices to be considerably more volatile than house prices.

7.6.2 Reference was made to reports by CB Richard Ellis[11] and by Savills Research[12] which suggested that:

- Land values in the 2nd quarter of 2009 were nearing and may have even reached the bottom of the cycle, with some signs of housebuilders looking to bolster their land banks and a number of funds looking for a good investment (CBRE)
- That the shape of the land price curve has tended historically to accelerate rapidly - almost exponentially - in the run up to a house price boom, and then to crash much more sharply than the fall in house prices, staying relatively low until the next house price boom, when they then soar again. This trend was illustrated by an extract from Savills Greenfield Development Land Index, which showed such a pattern.
- Savills predict that bulk land values will not reach 2007 levels until after 2024, although house prices are predicted to reach 2007 levels by 2014, (Serviced plots are predicted to recover earlier, reaching peak 2007 values by 2020.

7.6.3 This is the projected trend for land with outline planning permission, serviced to the periphery. Savills also report on 'strategic land' which is the description they use for sites without planning permission or an allocation in a RSS or Local Development Framework, often in agricultural use but purchased at a modest multiple of agricultural value to reflect hope value.

7.6.4 This type of land often takes decades rather than years, to become readily developable – ie to be included in an LDF or RSS or obtain planning permission. Savills' view is that the value of this type of land will tend to stay low, closer to existing use value, so that the gap between the value of this type of land and land with a planning designation will fluctuate considerably over time.

7.6.5 Savills recognise too the impact on land values of what it describes as the Government's objective of extracting as much planning gain as possible from land development via Section 106 agreements, in order to fund the deliverty of affordable housing affordable housing and infrastructure (potentially via the CIL), but recognising the potential for a different emphasis if there is a change of government.

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[10] Residential Land Prices Spur Confidence, Financial Times, 18/19 July 2009

[11] Market View- Further Signs of Stabilisation , CBRE Q2 2009

[12] Residential Research UK Residential Development Land Market: Taking Stock, June 2009, Savills

7.6.6 In South Essex values are felt to be particularly low - 78% below the peak, and even at that level, attracting very little interest from the market. Some parts of Thurrock are felt to be virtual 'no go 'areas, with land values as low in East Tilbury as £50k-75k per acre, with the true value closer to £50k per acre (£120- 180k per ha), There was considerable agreement that there were parts of Thurrock where housing development was not viable in the current market.

7.6.7 These very low values are consistent with our own residual value modelling, which suggests that there are parts of Thurrock where modelled land values are in fact negative. What we see in Thurrock is a highly variable geography of development value, with some parts of the borough apparently reasonably viable for development and others where there is little interest in the type of sites available.

7.6.8 The key issue for this type of appraisal is a set of appropriate benchmark values that will be regarded as acceptable by landowners, both now and over the plan period.

7.6.9 We have based our benchmark value on:

- Our modelled RLVs, with tariff and allowance for a 30 or 35% affordable housing policy range from negative values to a broad range of positive values, generally around the £1.0m per ha mark , depending on the sales values and density. When land value per plot is considered, a more consistent picture emerges with values at £15-000 to £33 000 per plot in high demand areas and -£26 000 to £4000. Sites with higher sales values generally have a RLV in excess of £1m per ha, and sites with low sales values generate negative values.

- Historic evidence, which suggests a mean residential land value of £2.1 m per ha, outside the peak of 2007, and 'pure' industrial land values of up to £1m per ha. In some cases, these were values obtained for sites which appeared likely to have a degree of contamination

- the residential land price trend, which has shown a sustained fall in land prices since 2007, and which is now as much as 78% below peak values

- The more recent evidence of some limited upward trend, and the undoubted probability of a longer term rise in expectations, against which the impact of policy must be considered.

7.6.10 In Thurrock, the main distinction appears to be between sites in low sales value areas and sites in higher value areas. Values appear to reflect to some degree the likelihood of contamination, and are generally lower than in neighbouring Basildon, where sites are less likely to be subject to contamination. We would suggest that the benchmark values should reflect this distinction.

7.6.11 The very low prices referred to in paragraph 7.6.6 may be well below the price paid by some residential developers, but that is not the key issue. The key issue is what is a reasonable expectation on the part of landowners for the value of the land going forward, and thus an appropriate benchmark.

7.6.12 Thus, Knight Frank noted in their September 2009 residential land market commentary very thin volumes of sales, with little land coming out of receiverships and a 'stand-off' between land-owners, who expect values to rise still further over the next 12 months as builders try to acquire land and to rebuild stocks, and purchasers who are finding development financing still in short supply.

7.6.13 A benchmark value is the price required to persuade land owners to release their site. Landowners are influenced not just by current value but by expectations of future rises in

value. At this point, we have not built in a margin above the current very low values, to take into account that expectation, but that can be adjusted as necessary in future. .

7.6.14 We suggest the following benchmark values.

- Higher value areas - £800,000 per hectare.
- Lowest value areas - £300,000 per hectare.

7.6.15 These Benchmarks are comparable with the current level the Valuation Office Agency has suggested (February 2010) for sites with an allocation in a RSS or Local Development Framework, probably in agricultural use - a range of values of £100k to £500k per acre, or £250,000 - £1,2 million per ha.

7.6.16 There will however be sites which will have a higher Existing Use or Alternative Use value – for example sites which are in commercial or industrial use, or have the potential for such use, and sites which are currrently already in residential use, The policy should make allowance for sites which fall into that category.