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Infrastructure first

Viability Seminar paper

This paper has been prepared at the invitation of the Inspector to aid discussion at the viability seminar. It includes some diagrams one or two of which may usefully be put on a screen at the seminar. It is structured around his three questions on methodology, inputs and land acquisition assumptions.

1.	A brief explanation of the methodology used in the CAUSE appraisal

Net present value

Our principal output is Net Present Value per acre, calculated by discounting the residual cash flows available for land at 6% (we consider the 6% separately).

We show below a clip from our spreadsheet as an illustration: the pink cell gives the NPV calculated at a 6% discount rate from the 80 columns to the right – too many to show on paper. This generates a realistic value to compare to current land prices.

NPV per acre calculation	NPV	Cash totals	2025	2026	2027
Cash flow before land and finance £m	27.0	762.0	0.0	-1.4	-1.4
Interest charges (cash model only) £m		-592.5			
Available for land purchase (cash model only) £m		169.5			
Hectares	1170.0	1170.0			
NPV per acre s/b 9335	9335	58702			

Our NPV approach shows almost identical values to the 'cash and interest' approach – the differences are very small and could be eliminated entirely with minor adjustments to the interest calculation.

The £58,702 per acre in the table is calculated as the highest land price which can be paid if interest is charged at 6%. It is only higher than the NPV of £9,335 per acre because it assumes that land is bought over 80 years. We argue that it is misleading to compare <u>deferred</u> land purchase figures to <u>current</u> agricultural value.

We propose residual NPV per acre as the primary metric because:
   a) The calculation is simple to do – just one cell in the Hyas model to discount the cash flows available for land purchase at a chosen discount rate.
   b) The figures are more stable – the right hand columns on the spreadsheet generate huge and volatile numbers (note the £592.5m interest charge above) which cause confusion and undermine the credibility of the whole methodology
   c) There is less risk of error – an NPV approach automatically adjusts for the timing of payments and the temptation to compare future values to present ones is reduced.
   d) The result is familiar – it produces a residual value which can be legitimately compared to a benchmark value in line with the Harman and other guidance

We acknowledge other outputs such as IRR, and believe that more than one metric can be studied as well as sensitivities. But we argue that residual NPV per acre is the best starting point.

The diagram below is included to illustrate the dangers of using a 'cash and interest' approach over long periods. It suggests a disproportionate developer profit of £624m from a peak investment of just £96m: but the numbers are misleading because the timings are so different. The blue line shows the same figures discounted at 6% and provides a more balanced picture.
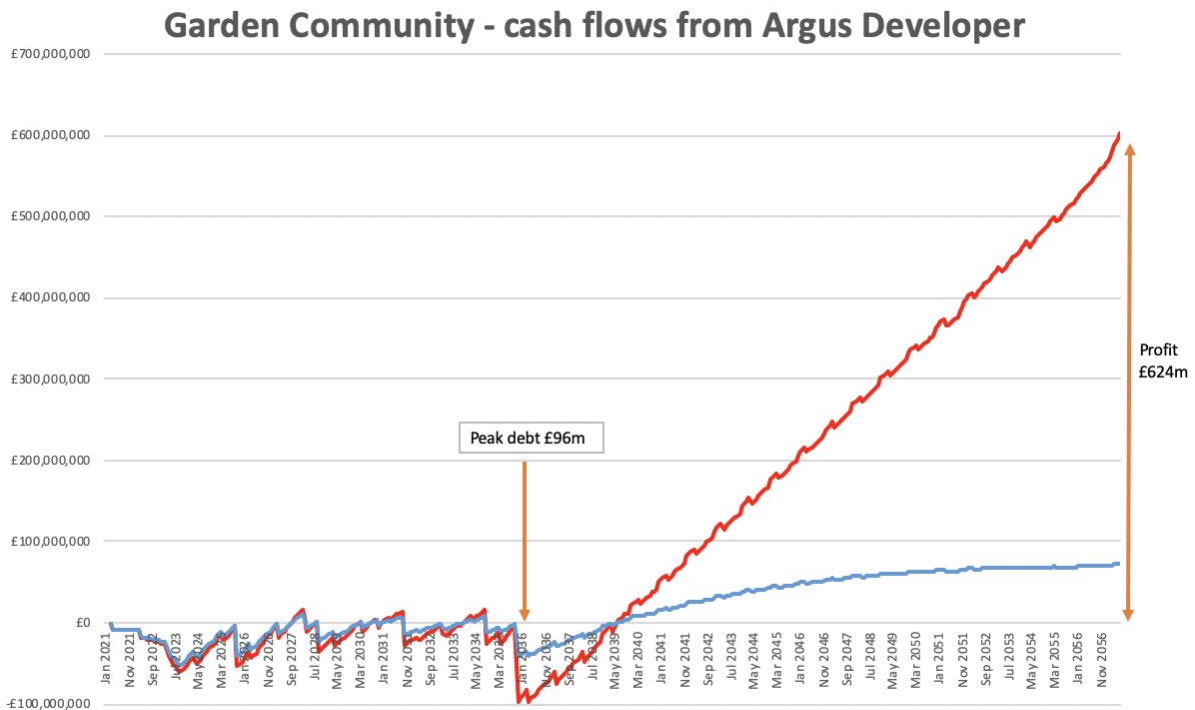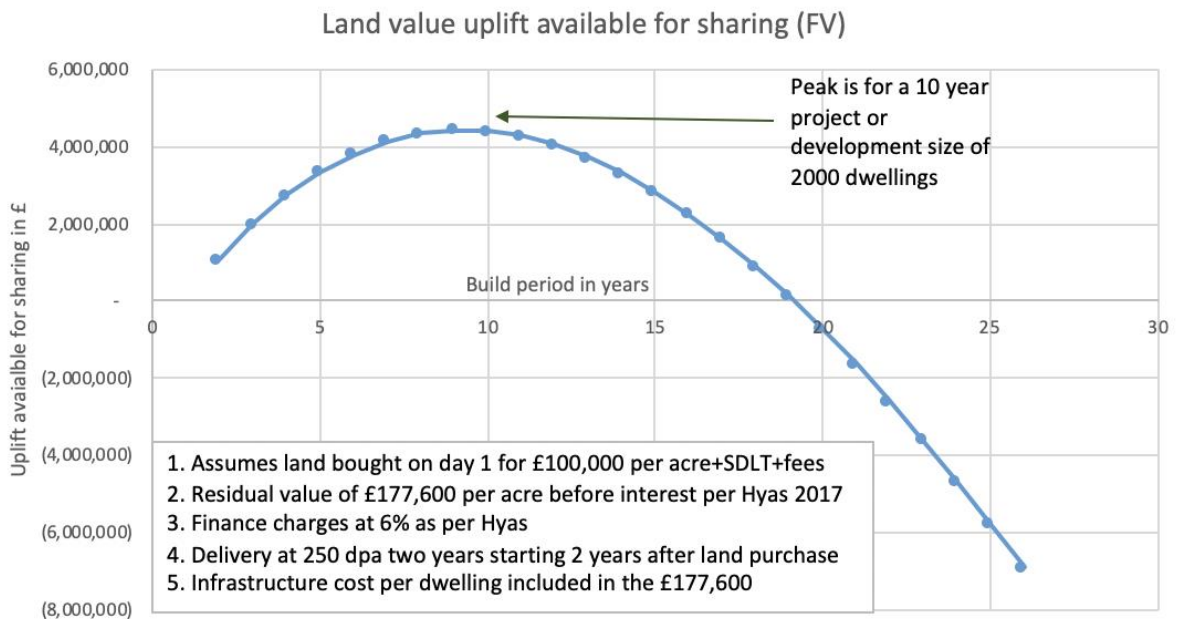

Settlement sizes

In a separate exercise we have modelled[1] housing developments at a number of different sizes using the Hyas 2017 figures. As the size increases so does the surplus over the benchmark. But when it

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[1] See CAUSE's various "Small is Beautiful" papers which are now consolidated into a booklet called "Garden Communities – what cost. The need for a Planning Plimsoll line." http://www.cause4livingessex.com/garden-cities-what-cost-time-for-a-plimsoll-line/

gets to 2000 houses built over 10 years the surplus starts to <u>fall</u> because the funding cost of the extra land increases (see key diagram below).

We believe that anyone who does a similar exercise is likely to reach broadly similar results and that our conclusion is supported by market evidence from the real world as well as financial modelling. This "small is beautiful" evidence is explained in more detail in CAUSE's booklet entitled "The need for a planning Plimsoll line". We submit the following diagram for discussion:

Land value uplift available for sharing (FV)

Peak is for a 10 year project or development size of 2000 dwellings

1. Assumes land bought on day 1 for £100,000 per acre+SDLT+fees
2. Residual value of £177,600 per acre before interest per Hyas 2017
3. Finance charges at 6% as per Hyas
4. Delivery at 250 dpa two years starting 2 years after land purchase
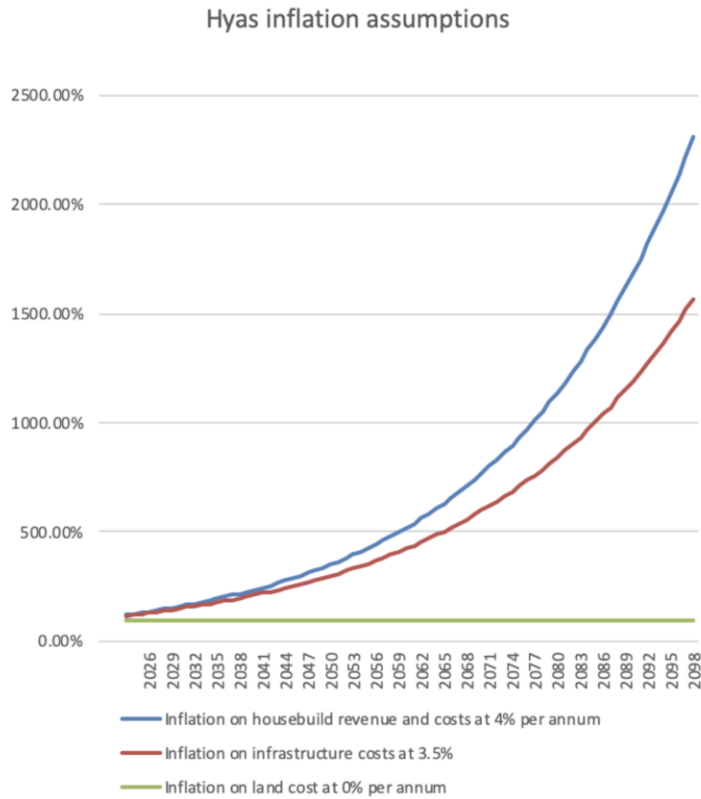5. Infrastructure cost per dwelling included in the £177,600

Inflation

Inflation doesn't (over the long term) add value. Our inflation modelling starts by replicating the Hyas model producing a residual land value of £500,912 per acre. It then identifies the adjustments needed to bring it back close to our figure of £9,335 per acre – in this context £10,976 below is close enough to £9,335—we haven't found the last few pounds of difference.

Sensitivities with inflation - all figures for CBB only		Inflation model £ per acre	Non-inflation model £ per acre
Hyas residual value with deferred land purchase		500912	58702
Bring land purchase forward to 2020 or adjust to NPV		-422446	
Increase infrastructure inflation from 3.5% to 4%		-33117	
Adjust discount rate for 4% inflation		-68701	
Re-instate HIF funding (removed by Hyas from inflation case)		37454	
Deduct inflation on professional fees (omitted by Hyas in error)		-3126	
Residual land value available for land purchase now		10976	9335

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The diagram below applies the Hyas inflation assumptions over 80 years, illustrating the big misalignments created by even small differences in the inflation assumptions.

Hyas inflation assumptions

Legend:
- Inflation on housebuild revenue and costs at 4% per annum
- Inflation on infrastructure costs at 3.5%
- Inflation on land cost at 0% per annum

Cost of capital

A proper discussion on the cost of capital is needed. Views range from 10%+inflation [2] to the suggestions that it is only 2.5%-5% [3].

The Homes England table quoted by NEGC (below) <u>strengthens</u> our case for a high cost of capital. A MEOP appraisal will need to consider the specifics of the GCs - the leverage (100% debt), the duration of the loans needed (up to 80 years), the realisation of security if the project fails (agricultural value) and the cyclical nature of the housing market and consequent need for a flexible repayment schedule. An LLDC, or contracted master-developer with its own SPV [4], will score poorly on both axes without an explicit government guarantee.

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[2] See our Matter 4 hearing statement for analysis of legal structure and cost of capital
[3] See Avison Young consultation response para 33
[4] No quoted private developer would take the £200m - £3.3bn debt required for CBB fully onto its own balance sheet, and would instead use a separate limited liability company or "Single Purpose Vehicle" with careful structuring of liabilities.

6. The combination of the Creditworthiness and Collateralisation generates a Margin to be added to the EC base rate (see below). The following table sets out the range of Margins to be applied (in basis points):

Creditworthiness	Collateralisation		
	High	Normal	Low
Strong (AAA-A)	60	75	100
Good (BBB)	75	100	220
Satisfactory (BB)	100	220	400
Weak (B)	220	400	650
Bad/Financial Difficulties (CCC and below)	400	650	1000

2.	**A list of input values to the Hyas June 2019 Viability Assessment Update [VAU] [EB/086] which we believe should be amended**

Our base case uses the same inputs as Hyas and we vary them one by one. We list below some of the items where have run sensitivities:

1. Delivery rate: we assume delivery of 250dpa starting on site in 2030 with housing ready for occupation in 2032.

2. Land purchase assumption: we assume that all land is purchased before work starts on site.

3. Contingency: 40% on all costings is needed at this early stage of project definition.

4. Developer margin: 20% on GDV remains an appropriate plot developer margin for market housing. This is needed in addition to the master developer margin of 15% on cost.

5. Inflation assumptions: we assume 2% (the BoE target) for all expenditure. We have done sensitivities showing what happens if build costs escalate slightly faster (2.5%): and if Government achieves below inflation house price rises until, in 50 years time, house price/income ratios revert to their long-term mean.

7. Finance cost in inflation scenarios: in any long-term model (ie long enough to allow financial markets and government to react to serious misalignments) inflation should be added to the discount rate: ie. if the inflation assumption is 4% and the no inflation discount rate is 6%, the with inflation discount rate should be 10%. Our modelling shows that, correctly done, an inflation model will produce much the same residual land value as a fixed price one.

9. NEGC overhead: £3m a year should be provided for the cost of running a development corporation of some type.

3.	**An account of the approach we have taken to land value. For residual valuation appraisals, what benchmark land value (in £/acre) is assumed and what is the evidence base for it? For appraisals in which land value is an input, what is the input land value (in £/acre) and what is the evidence which supports that land value?**

Our model can accommodate any pattern of land purchases. A low figure (e.g £9,335) paid up front generates the same residual value per acre as a higher figure (e.g. £58,702 per acre) spread over the project period.

We assume a benchmark of at least £100,000 per gross acre + acquisition costs paid up front and note that this view is supported in several developer hearing statements as well as by the CBRE report written for Fareham Borough Council in relation to Welborne. It is not contradicted by the new Viability Guidance or the possibility of a compulsory purchase approach. Our views are laid out more fully in our hearing statements and Counsel's opinion.

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