Ryedale District Council

Affordable Housing Viability Study

Final Report

22 July 2010










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Contents

1. Introduction

1.1 Context

Ryedale District Council is preparing a Local Development Framework (LDF) to replace the current Local Plan and so guide development through the planning process up to 2026. The first element of this – the Core Strategy Development Plan Document (DPD), hereafter referred to as the "core strategy" – will respond to the Regional Spatial Strategy (RSS) and set out the broad locations of land allocations. In doing so, a robust evidence base is needed to underpin the articulation of the local policies that will be produced.

The Council has commissioned this study to inform it approach to affordable housing provision against the concerns of Planning Policy Statement 3: Housing (PPS3)[1] and its accompanying document Delivering Affordable Housing. PPS3 stipulates that LDFs should set a plan wide target for the amount of affordable housing to be provided and that this target should reflect an assessment of the likely economic viability of land for housing in the plan area – an issue that is clearly paramount in the current economic downturn. This assessment needs to be not only robust but transparent and up-to-date so that the financial implications of affordable housing provision within developments are understood together with other policy requirements, such as the Code for Sustainable Homes, which will influence economic viability and so delivery.

As development economics vary with location, it is important to provide evidence of the relative viability for the largest settlements of Malton and Norton as well as of Pickering, Kirkbymoorside and Helmsley as well as the rural area. This aspect helps to inform consideration of the choice of broad location and, potentially, the phasing of development also taking into account the cost of local infrastructure needs to be met either through S106 agreements or the Community Infrastructure Levy (CIL).

As the LDF covers the period to 2026, and because the future is uncertain, it is important to consider how economic circumstances may change over this period. This helps inform whether, for development management purposes, a staged approach towards the overall target provision.

This study does not address the area within the boundaries of the North Yorkshire Moors National Park Authority who are the local planning authority (LPA) for this part of Ryedale.

1.2 Objectives

The overarching objective of this study is to evaluate the potential of the LDF to meet affordable housing need up to 2026. Within this, the following objectives and evidence requirements need to be met:

[1] Paragraph 29, PPS3

- To specify and understand the nature and dynamics of the local housing market in terms of house prices, development costs and land values;
- To evaluate the currently viability of development across Ryedale;
- To evaluate recent trends in house prices and land values to understand how Ryedale is performing compared to regional and national trends and to inform reasonable assumptions of how this may change in future;
- To consult, validate and agree the methodology and findings of the study with a range of development stakeholders active in Ryedale;
- To establish, based upon the agreed economic scenarios, how the viability of affordable housing provision could change in the medium to longer term;
- To suggest how the policy provision of the core strategy could best respond to meet the Council's overarching objectives.

These objectives are met through the use of a residual valuation approach that evaluates the residual values (the 'gap' between development revenues and costs) against which the costs of land and S106/CIL are to be met.

1.3 Structure of this Report

The structure of this report is as follows:

- The methodology is outlined at Section 2;
- The application of the methodology is at Sections 3 to 6;
- The findings are set out in Sections 7 to 9; and
- Conclusions are at Section 10.

2. Methodology

2.1 Caveat

Fundamentally, this study is strategic and theoretical that seeks to identify the broad influences upon viability in the potential broad locations across the District. It does not assess individual sites although its findings will inform the Council's assessment of specific proposals in due course.

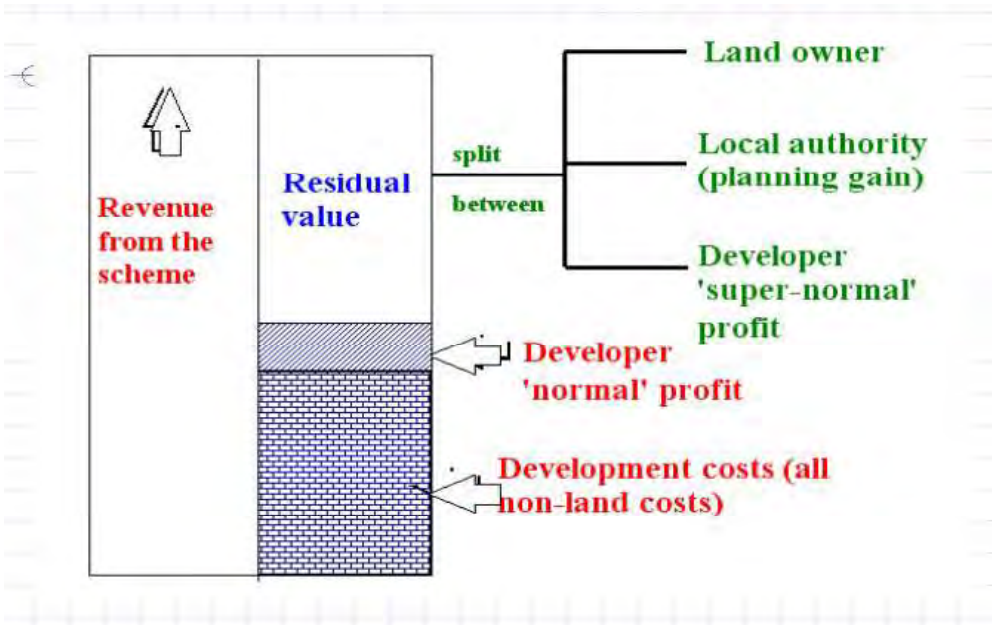
It can be said that the current economic downturn provides a somewhat unhelpful context to the study and it could be argued that it is being undertaken under exceptional and unrepresentative conditions. Nevertheless, the future is inherently unpredictable and there is a policy requirement for the study so current conditions and market responses must be acknowledged within a statement at a point in time so that changes can be monitored and evidence updated to ensure that policy responds effectively.

2.2 Residual Valuation

2.2.1 Theoretical Basis

Viability is assessed through a residual valuation approach. This considers the relationship between the potential revenue from a given scheme ($\mathbf{R^V}$) (sales revenues, rents etc) against the non land costs (**NLC**) (build costs, overheads, S106/CIL requirements, Code level) of delivery. If the residual value ($\mathbf{R^S}$) equates to that sought by the landowner for the land then the development can be said to be viable. **Plate 2.1** shows graphically this basic relationship $\mathbf{R^S = R^V - NLC}$. It is stressed that a residual valuation does not indicate whether development will come forward but it does however indicate whether it would offer sufficient returns to both landowner and developer to be viable.

Plate 2.1 Derivation of Residual Land Value



2.2.2 Current Uncertainty

As, under this approach, residual value is critical, its relevance to any assessment of viability must be established. It has to be acknowledged that the current economic downturn has created complications:

- The downturn has drastically reduced house prices and hence potential revenue yields. As costs are relatively static, the only flexibility is provided by the cost paid for land and this has, nationwide, fallen dramatically over the past two years. Unless there is an imperative to sell, landowners are 'sitting tight' in the expectation that the worth of their asset will be enhanced with economic recovery;
- Implicit in this is that the value of land is established through the 'going rate' based upon past transactions that reflected conditions which may not now apply. For instance, offers are now being made by developers in the knowledge of the cost implications of the Code for Sustainable Homes and affordable housing;
- Related to the above point is the greater imperative upon planning authorities to obtain developer contributions towards the need for enhanced infrastructure (either through the CIL or S106 agreements).

There is therefore a latent tension between landowners and developers at the present time. Depending upon their understanding of emerging costs, landowner expectations may remain high whilst affordable housing and other policy requirements mean that developers will not be able to meet these in future. The downturn serves to blur this picture and it is likely that a degree of economic recovery is required to enable land values to find a new level based upon more realistic, common expectations.

Implicit in any 'going rate' is that development is not considered viable simply because it is more valuable than its existing use. Unless there is an imperative to sell – and this cannot be reliable basis for policy – landowners are unlikely to sell good quality agricultural if it yields just in excess of its current value in Yorkshire of £140,000 per hectare. Similarly, rentals accrued from employment uses means that the relationship between employment and residential land values is not a simple comparison.

In summary therefore, the eventual price paid for residential land will be influenced by specific factors as follow:

- The influence of location expressed through relative house prices;
- Whether developers meet niche markets. For instance, higher costs will be associated with high specification of materials required in, for instance, areas of high environmental quality or conservation areas;
- The nature and mix of the development proposed. Higher density flatted development and small sites generally command different values to 'bulk land' of 2 hectares or more;
- The level of the affordable element and the nature of its tenure – social rental produces less revenue than intermediate tenures such as low cost home buy or shared equity schemes;
- Other options open to the landowner. The competitiveness of a buoyant employment market may deter a change of use especially where the landowner concerned has the strategic ability to fund employment provision and factor in rents throughout the life of the development;
- The nature of purchase agreements and approach to risk. An upfront option payment may be less advantageous to the landowner than an outright sale. Strategic promotion and planning status will also be a factor.

A strategic study cannot take account of all these circumstances although it must acknowledge that the 'going rate' will vary according to site specifics. Consequently, it does not assess the core strategy proposals against a single land value but seeks to establish a 'zone of viability' defined by the range of land values. Section 5 below suggests, that based upon consultations, there is a consensus that between £1M to £1.5M per hectare is currently being paid for residential land in Ryedale.

As far as possible, this addresses current uncertainty and the residual valuation approach provides an appropriate and robust method for assessing development viability.

2.2.3 Assessment Tool

The study uses the Three Dragons Development Appraisal Toolkit (DAT) which is a well known and long established product. The DAT has been used nationwide in over 150 studies for local authorities in a range of urban, commuter belt and rural settings. It offers the facility to incorporate house price, base build, exceptional and other costs that reflect local circumstances. In assessing each scenario, Table 2.1 sets out the elements incorporated into the DAT.

Table 2.1 Factors Incorporated into the DAT

Revenue Items	Cost Items	Policy & Other Costs Items
House Prices within Sub-Markets	Base Development Costs	Code for Sustainable Homes Level
Dwelling Mix	Overhead Costs	Affordable Housing Proportion
Development Density	Abnormal Site Costs	Other Developer Contributions / CIL
Affordable Housing Tenure	Flood Resilience	Utilities
Rental Values	• Contamination	• Highways
Level of Housing Grant	• Demolition and Site Preparation	• Education
		• Leisure (inc Open Space)
		• Health

Guidance notes for the use of the DAT are at **Appendix A**.

2.3 Methodology Summary

Taking these factors into account, the stages of the methodology are summarised below and in **Figure 2.1**.

2.3.1 Gathering of Evidence to Inform the DAT

- An evaluation of the existing housing market to identify and sub-divide the District into housing sub-markets – this identifies areas of relatively high or low house prices and therefore development revenues;
- The specification of the common revenue and costs assumptions used and the methods by which the cost of abnormal items are calculated;
- Compilation and agreement of the potential cost implications of the main infrastructure requirements of highways, education and leisure for development of a given size;
- An evaluation of recent trends in house prices, development costs and land values to establish benchmark values as well as of recent economic predictions.

2.3.2 2009 Assessments

- Production of 2009 DAT assessments under current market conditions to specify current residual values against benchmark land values. These are produced at three assessment levels:

- Post Code Level – to evaluate the impact of sub-markets variations across the District;
- Small Site Level – to evaluate the ability of small sites to deliver off-site, as against on-site, affordable provision; and
- Town and Spatial Option Level – to evaluate the growth options being considered through the evolution of the Core Strategy.

- Validation of 2009 DAT assessments through stakeholder consultation to seek consensus upon assumptions, costs and trends.

2.3.3 Modelling of Scenarios

- Applying a series of agreed economic scenarios to the validated 2009 DAT assessments; and
- Evaluation of the proportion of affordable housing potentially deliverable against benchmark land values over the period up to 2021 together with its likely timing. Again this is undertaken at:
  - Post Code Level;
  - Small Site Level;
  - Town and Spatial Option Level – this also incorporates the impact of the cost of alternative highway measures for Malton and Norton.

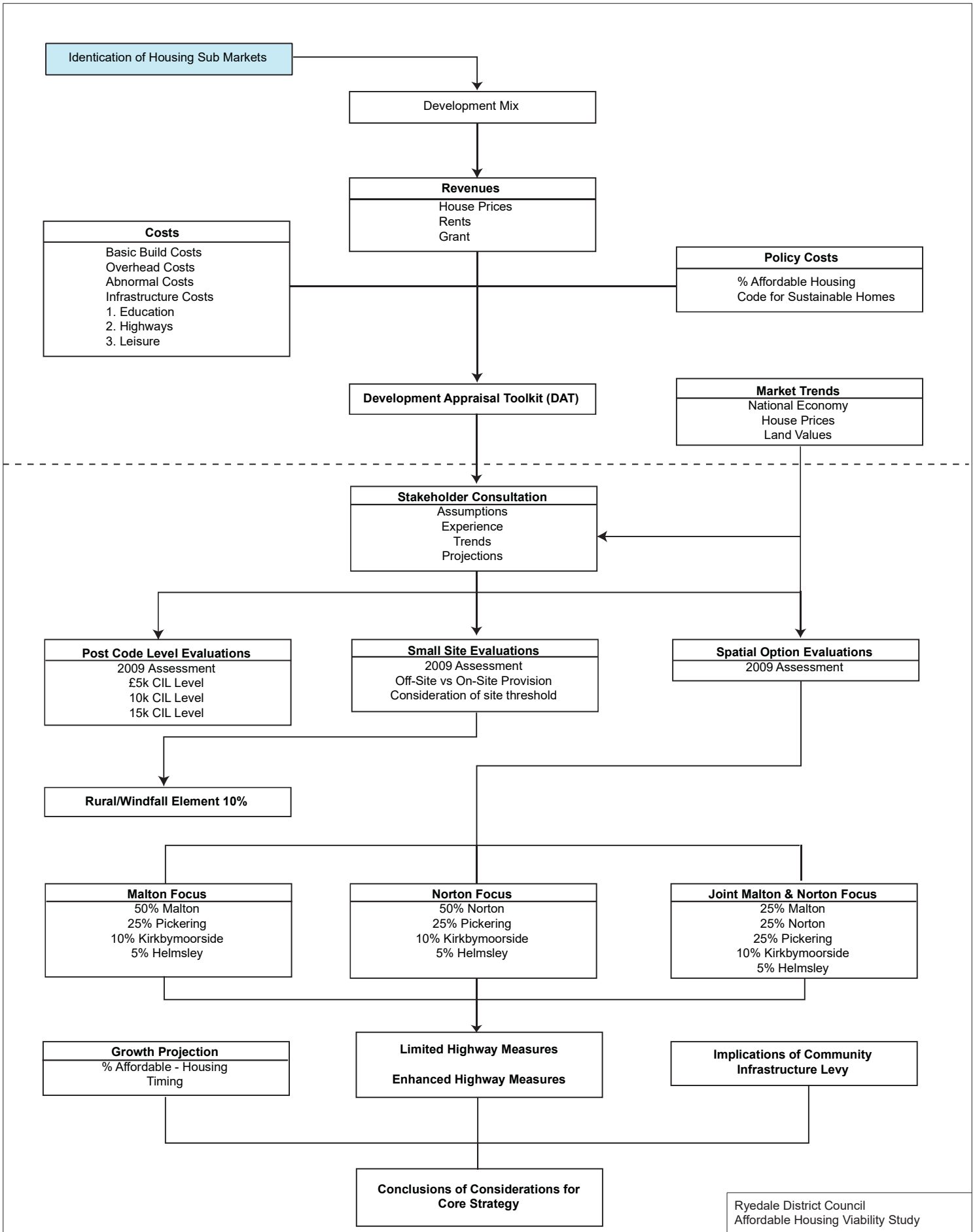


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Figure 2.1
Summary of Methodology

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3. Evidence to Inform the DAT

3.1 Sources and Validation

The assumptions that inform the DAT have been drawn from a combination of the following sources:

- Publicly available data drawn from, for instance, the Office for National Statistics (ONS), the HM Land Registry (HMLR), the Valuation Office (VO) and the Royal Institute of Chartered Surveyors (RICS);
- The application of industry standard assumptions in respect of overhead and developer margins;
- Technical notes and best practice guidance produced by a number of bodies that give informed information in relation to abnormal costs (e.g. flood resilience) and infrastructure provision (e.g. DfEE school place costs). These are validated against real site development examples where appropriate;
- Locally available evidence on the requirement and costs of other required infrastructure (e.g. highways).

These assumptions have been subject to consultation with local developer stakeholders to ensure that they are reasonable and relevant to local conditions. Details are provided in Section 5 below.

3.2 Identification of Housing Sub-Markets

HM Land Registry Data by Post Code Sectors

The main determinant of development revenues is prevailing house prices and their spatial variation. Using data drawn from HM Land Registry data for the second quarter of 2009 at post code sector geography (to 4 figure level eg, YO 64 2) are initially stratified according to the market prices of new three-bedroom terraced dwellings. This is a common product type that has been, and will continue to be, offered in most areas of the District And this provides a robust initial comparator.

The price range across the sixteen post code sectors is then stratified into six sub markets range and the main settlements allocated to each as in Table 3.1. The following should be noted

- That several sectors cross the boundaries of the North York Moors National Park which is not within the scope of this study;
- The geography of the post code sectors do not conform to that of the ward boundaries that formed the basis of the District's 2010 Strategic Housing Market Assessment (SHMA) undertaken by Arc4 Ltd. Despite this both exercises confirm the same pattern in house price decline towards the eastern end of the District.

Table 3.1 Summary of Housing Market Areas

Housing Market Area	Post Code Sector	Large Settlements	Intermediate Settlements	Small Settlements	Wards from SHMA
Prime Ryedale	YO62 4		Hovingham	Ampleforth, Slingsby	Hovingham Ampleforth (part)
National Park West	YO62 7 (South)			Nawton, Wombleton	Helmsby, Sinnington (part), Ampleforth (part)
	YO62 5 (South)	Helmsley		Nunnington, East Newton	
	YO7 2 (East)			Cold Kirby, Scawton	
	Y61 4 (North)			Oldstead, Byland Abbey	
South West Ryedale	YO60 7			Barton-Le- Willows, Coneysthorpe	South West Ryedale, Sheriff Hutton, Hovingham (part), Derwent (part)
	YO60 6		Sheriff Hutton		
Pickering, Malton and NYMNP Hinterland	YO18 7 (South)	Pickering (East)	Thornton-Le-Dale		Amotherley, Malton, Kirkbymoorside, Pickering East, Pickering West, Cropton (part) Sinnington (part), Thornton Dale (part)
	YO18 8 (South)	Pickering (West)		Cropton, Wrelton	
	YO62 6 (South)	Kirkbymoorside		Sinnington, Safton, Spaunton	
	YO17 7	Malton			
	YO17 6			Great Habton, Swinton, Broughton	
Norton on Derwent & Hinterland	YO17 8	Norton on Derwent (East)		Rillington, Duggleby, Sherburn	Norton East, Norton West, Rillington, Derwent (part), Sherburn (part), Wolds (part)
	YO17 9	Norton on Derwent		Leavening, Thixendale, Langton	
East Ryedale	YO 25 3			Foxholes, Butterwick	Sherburn (part), Wolds (part)
	YO12 4			Potter Brompton	

Source: HM Land Registry, 2009

The summarised raw data is at **Appendix B**.

3.3 Revenue and Costs Assumptions

3.3.1 Revenue Assumptions

In addition to the revenues obtained from market sales, the following assumptions are also made:

Development Mix

In the majority of cases, the development mix is based upon the findings of the SHMA detailed in Table 3.2. The study amends these proportions based upon the need for apartments indicated by the needs of newly forming households (Table 4.5 of the SHMA) and the views of developer stakeholders on the likely market response.

Table 3.2 Current and Assumed Development Mix

	Flats	Terraced		Semi Detached		Detached		
No of Bedrooms	**2**	**2**	**3**	**2**	**3**	**3**	**4**	**5**
SHMA % Currently	5%	20%		30%		30% - 45%*		
Assumed %s for Study	10%	15%	15%	10%	15%	10%	20%	5%
Comparison	+5%	+10%		-5%		-10% to +5%		

* Difference mostly equates to 14% bungalows

Contribution of Rents

In respect of social rented units, (two thirds of the affordable element) the assumed weekly rents are set out in Table 3.3. The DAT capitalises the contribution of these rents at 6%.

Table 3.3 Assumed Rental Values

Bedrooms	**1**	**2**	**3**	**4**
Weekly Rents	£65	£80	£85	£94

In respect of new build 'home buy' units, (one third of the affordable element) the DAT assumes that the occupant will purchase 40% of the property and capitalises the contribution of rents on the remainder at 6%.

Availability of Grant

The 2009 Budget announced a package of housing stimuli measures (amounting to some £600m) to be administered by the HCA. The HCA will have a package of measures available including support for delivery of affordable housing such as Homebuy Direct to support sales and equity, infrastructure or gap finance where good quality schemes can move ahead quickly.

Given the current focus of the HCA upon the urban regeneration agenda, Ryedale is unlikely to benefit from this initiative. In addition, and because grant availability will be subject to a bidding process, the DAT 2009 assessments assume no contribution from the HCA.

3.3.2 Basic Cost Assumptions

Base Development Costs

Local base development costs, indexed to 2009, are obtained from the RICS data. Details of the rates (per m^3) for each type of development are at **Appendix C**.

Overhead Costs

The overhead cost assumptions in respect of items such as interest on borrowing, developer margin, consultancy fees etc are also at **Appendix C** and based upon current common market practice. There is a range of practice in the categorisation of the elements of overheads although consultation with the Council's Housing Market Partnership (HMP) – a group of invited local development stakeholders – has confirmed that, in aggregate, the overall uplift is appropriate.

Under current market conditions, banks routinely seek a 20% developer margin as part of any loan agreement and this assumption is used in the study. Whilst over the plan period this may revert to previously required margins of around 15% and have on occasion been recently reported at around 25% market consultation suggests that a 20% margin is more likely to apply during a period of cautious economic recovery.

3.3.3 Abnormal Site Cost Assumptions

Flood Risk

Flood resilience costs are clearly dependent upon the measures required by the Environment Agency of specific developer proposals. For the purposes of this study, costs to accommodate flood considerations in Flood Zone 1 to undertake a flood risk assessment and to provide mitigation measures to achieve greenfield run-off rates. In respect of Flood Zones 2 and 3 the Council intend to conform to PPS25 and avoid development in these areas, hence the costs indicated in Table 3.4 should not apply. These costs are abridged from Entec's work for the Association of British Insurers (ABI) and further details of the derivation of these costs are provided in **Appendix D**.

Table 3.4 Flood Risk Mitigation Costs

		Mitigation Costs per Ha*	
		For Residential Uses	For Non-Residential Uses
Minor	Flood Zone 1	£85,000	£75,000
Medium	Flood Zone 2	£170,000	£150,000
Significant	Flood Zone 3a	£220,000 to £640,000. Unlikely to be acceptable for development	
Significant	Flood Zone 3b	No costs as an unacceptable location for development	

Land Quality and Contamination

The potential for pollution from previous uses (of which there could be several) is clearly site specific and its severity will depend upon the nature of these uses, the extent of pollution and its origin – which may be on neighbouring or nearby land. Estimating costs is difficult if the above factors are unknown, and any precision requires detailed assessments.

Nevertheless, it is important to develop a mechanism to estimate the costs of remediation where they could apply and sites/ areas can be categorised according to their previous use so that a risk factor can be applied to each. Table 3.5 sets out the typical remediation costs contained in the publication by English Partnerships: "Best Practice Note 27 (revised February 2008) Contamination and Dereliction Remediation Costs" together with the sensitivity of the local groundwater environment and the nature of the proposed future development. For instance, homes with gardens will require remediation to a higher standard than flats (with no gardens) or non-residential uses.

Ryedale does not have the industrial legacy that would normally require these costs. As the Core Strategy is for the most part based upon greenfield sites the study does not incorporate remediation costs within its appraisals. If in the event of a contaminated site being proposed for development, then the appropriate mid-range cost from Table 3.5 could be applied. Further details on the derivation of these costs are provided in **Appendix E**.

Table 3.5 Land and Contamination Remediation Costs

	Site Description and Historic Use Increasing cost of remediation (£000's per hectare)…….>……..>……..……>			
	Site Category A Industrial sites, colliery-mine spoil heaps, factories and "works"	**Site Category B** Garages, pit-heads, railways, textiles, timber treatment, and sewage works	**Site Category C** Metal works, scrap yards, shipyards, paint & solvent works	**Site Category D** Gas, iron and steel works, chemical works, refineries, ship breaking and building
Proposed End Use	Low Water Risk Sites			
Residential	75-200 (140)	250-625 (440)	300-725 (515)	325-825 (575)
Mixed Use	50-125 (90)	225-525 (375)	300-650 (475)	325-750 (540)
Proposed End Use	High Water Risk Sites			
Residential	175-400 (290)	350-900 (625)	525-1,425 (975)	700-1,725 (1215)
Mixed Use	125-250 (190)	325-750 (540)	525-1,325 (925)	600-1,375 (990)

Note: Based on English Partnerships BPN 27 (2008). Figures in (brackets) reflect mid-range costs

Demolition Costs

A greenfield lead core strategy also means that demolition costs are unlikely to feature highly within appraisals of viability. In the event of demolition being required to facilitate reuse, the following rates (per m^3) in Table 3.6 have been drawn from SPONS 2009 rates and cross checked to recent tender submissions obtained by Entec.

Table 3.6 Demolition Rates

Method of Construction	Rate for Demolition
Brickwork with timber floor and roof	£6.95 per m^3
Brickwork with concrete floor and roof	£11.43 per m^3
Masonry with timber floor and roof	£8.95 per m^3
Reinforced concrete frame with brick infill	£11.95 per m^3
Steel frame with brick cladding	£6.49 per m^3
Steel frame with sheet cladding	£5.55 per m^3

The most appropriate rate would be selected according to the nature of the existing structures. In the case of complex and diverse building types on the same site (for instance a hospital), then an average rate would be assumed according to the mix of structures.

A calculation of costs can be estimated according to the following formula: Site area (m2) x % of area occupied by structure x no. of storeys (assumed to be an average of 4m tall). The following box contains a worked example:

WORKED EXAMPLE OF DEMOLITION COST CALCULATION

Where half of a one hectare site is occupied by a four storey reinforced concrete framed building with brick infilling the calculation will be:

10,000m^2 (1ha) x 50% plot ratio =	5,000m^2	estimated footprint
x 2 storeys (each 4 m high) =	40,000m^3	estimated volume
x rate for steel frame with brick cladding (£6.49) =	£259,600	assessed cost of demolition

No demolition costs are included where the site has already been levelled.

3.3.4 Policy and Other Cost Assumptions

Developer Contributions

The costs associated with developer contributions are derived from:

- The costs of required highway measures have been provided by Ryedale District Council derived through the application of North Yorkshire County Council's highway model;
- Education costs and leisure costs through the application of established standards of provision and cost estimates/ multipliers;
- It has not been possible to assess the cost implications for utilities and drainage infrastructure. As this is uncertain, the study has incorporated a range of financial contributions based upon the numbers of dwellings.

The Community Infrastructure Levy (CIL) will allow the Council to apply a standard levy to each dwelling delivered to meet the infrastructure requirements that it creates. Given that CIL is voluntary and there is no obligation on the Council to adopt it the study identifies likely location-specific infrastructure costs and it will be a matter for the Council to decide on the method of implementation.

It is worth noting that paragraph 13 of the Draft CIL Regulations would allow the application of differential levies according to location. This would give flexibility to request higher contributions in more buoyant market areas to be used to cross-subsidise development less able to pay for its own infrastructure needs. This provision offers clear potential to deliver a Core Strategy despite an important part of it (e.g. a particular certain location) not being viable in isolation. The potential of this approach in the light of the study findings is commented upon in Section 9.5 below.

Code for Sustainable Homes

The Code became operational in April 2007 and having a code rating for new build homes became mandatory from May 2008; where building regulations apply, compliance is necessary at all times. The previous Government indicated that Level 3 will be a mandatory requirement to all new build housing from 2010 (it is still to be incorporated within the Building Regulations), with higher levels of 4 to 6 becoming mandatory from 2013 and 2016 respectively.

A good deal of uncertainty surrounds the actual development costs of the Code. Nevertheless, it is certainly true that higher performance is more expensive to achieve although the costs of the necessary technologies are likely to fall as suppliers respond to market demands.

For the purposes of this study, it is assumed that the costs contained within the DCLG 2009 publication "Cost Analysis of The Code for Sustainable Homes" apply. These are responsive to development mix and give specific values for developments of differing types and sizes. This study will model the impact varying the levels of Code for Sustainable Homes would have on the viability of the provision of affordable housing. An extract is at **Appendix F**.

These costs will need to be monitored as more information is available from market players and central government.

Highways

The cost implications of highway measures have been agreed between the Council and North Yorkshire CC (as highway authority). These measures were derived from modelling of projected traffic flows associated with each of the residential growth scenarios through the County's recently produced highway model.

At Malton and Norton, the costs of two highway options have been modelled as part of the study.

- A £7.5M package of measures to internal junction improvements in Malton and Norton as well as the A64 junction improvements at Brambling Fields;
- A £23.5M package that includes all the above and also a junction onto the A64 at Broughton Road. This additional scheme is being tested.

The costs of each growth scenario – which may alter as precise measures become known – incorporated into the DAT are in Table 3.7:

Table 3.7 Assumed Highway Infrastructure Costs

	Malton	Norton	Pickering	Kirbymoorside	Helmsley
Costs	£7.5M or £23.5M	£7.5M or £23.5M	£2.5M	£1M	£0.5M

Utilities and Drainage

An early emphasis upon the re-use of land may suggest that, aside from the quality and replacement infrastructure, the capacity of local networks should not form an overriding impediment in the short term.

Nevertheless likely costs of utility infrastructure need to be acknowledged within the study. Whilst the extent and costs of these requirements are not known, the post code evaluation assumes three financial contributions of £5k, £10k and £15k respectively as par of which the cost of utilities can be met. In agreement with the Council, this is considered appropriate to provide a sufficient 'spread' of costs and is a comparable approach with that adopted in Entec's previous work for a Welsh authority in 2008.

Education

To date contributions to education have been through individual negotiation with North Yorkshire County Council on larger sites only. There is currently no adopted policy, SPG or SPD basis for this but this will be addressed through the Local Development Framework.

Although there is some capacity across the District as a whole, closer examination of the five main settlements reveals insufficient capacity in both primary and secondary school provision. The adjustment of catchment areas to match supply to demand is unpopular, contrary to the principle of choice and its impact can be difficult to predict given that school performance, and hence popularity, can alter with time. The study adopts the following approach to the analysis of growth options:

- Demand is based upon North Yorkshire County Council's assumptions that a demand of 25 places for children of primary school age and 19 places for children of secondary school age will arise from any development of 100 new dwellings;
- No demand for education will arise from the development of one bed-roomed flats;
- The cost of each of these places is assumed according to the current rates provided by the Department for Employment and Education. These costs are incorporated into the model.

Open Space and Pitches

The Council generally requires open space and formal sports provision for housing developments, either on-site for developments of 20 houses or off-site through S106 agreements for developments of less than 20 houses.

The Ryedale District Council Open Space, Sport and Recreation Study undertaken by PMP in 2007 recommends provision of 2.05 ha of outdoor sports pitches and a further 1.3 ha of amenity/ greenspace per 1,000 of population. For larger, expansion sites, the Council also require 0.5 hectares of allotments and sports hall provision of 0.27 courts per 1,000 population.

The following formal and informal open space and sports provision has been included in the town and spatial option analyses assuming an average household size of 2.3 people per dwelling (2001 Census):

- Sites that can accommodate less than 20 houses would be required to provide an off-site contribution;
- Sites that can accommodate 20+ houses include a reduction in the net developable area for housing to include on-site provision for amenity/ greenspace;
- Sites that can accommodate 500+ houses include a reduction in the net developable area of housing to include on site provision for amenity/ greenspace and formal sport provision;
- The larger expansion sites, typically 1000+ houses include a reduction in the net developable area of housing to include on site-provision for amenity/ greenspace, formal sport provision and allotments.

The off-site contributions for the smaller developments of less than 20 houses, and the cost of formal sports provision is calculated using the Sport England *Sports Facilities Calculator*. This quantifies the likely additional demand for key facilities (swimming pools and sports halls) generated by new development. The costs of this new demand are derived using a regional building cost index.

4. Recent Market Trends

This section provides some general analysis on the current and future trends in the housing market at both national and local levels. This research draws on publicly available information from central government agencies (HMLR), the banks, house builders, published reports and intelligence as well as websites and newspaper articles.

It then details evidence of current land values against which the residual values produced by the DAT can be compared and examines that the implications of the economic projections upon land values in the medium term.

4.1 Housing Market Predictions

4.1.1 Generally

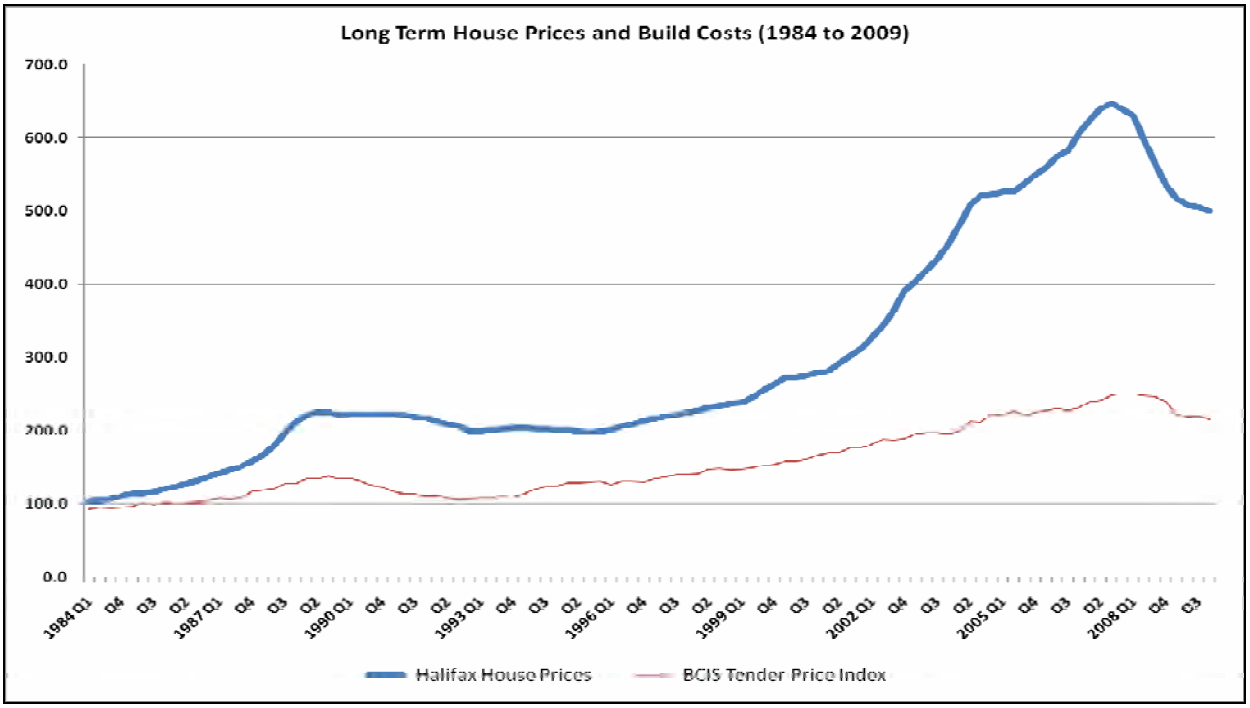
The Governor of the Bank of England Mervyn King's general message in January 2010 for house builders is salutary and that they must expect a slow and weak recovery, as earnings stagnate for what could be a considerable period.

However there is some room for cautious optimism with the market making some slow improvements. The DCLG published its house price index based on mortgage completions in October 2009 and it outlined that UK house prices rose by 2.3 % in the quarter ending October compared with a smaller rise of 2.0 % for the quarter ending July.

The Halifax published its House price index showing a rise of 2.9% in the three months to October compared to the previous three months. In addition, and although change over the past 12 months stands at -3.4%, the Land Registry outlined data for house prices in October which showed a positive monthly change of 0.6%. The Office for National Statistics outlined that private housing orders in the three months to November 2009 rose 56% compared with the previous three months and by 23% compared to the same period a year earlier.

As a gauge to housing trends over the last 50 years a Halifax report in January 2010 showed that house prices rose 273% between 1959 and 2009, an average of 2.7%, but the rise was uneven. The fastest growth occurred between 1999 and 2009 following, in real terms, a fall of 2.4% between 1989 and 1999. It identified four periods when prices rose rapidly (1971-73, 1977-1980, 1985-89 and 1998-2007). Each of these were followed by significant falls and outlines a general 10 year cyclical rotation of house prices with rapid rises coming in 5 year periods. The period covering the last two price rise cycles is depicted in **Plate 4.1**.

Plate 4.1 Halifax Long Term House Prices against BCIS Tender Price Index



A technical note outlining the current national, sub-regional and Ryedale specific evidence is given at **Appendix G**.

4.1.2 North Yorkshire

Taken from Land Registry data, the DCLG's quarterly house price data published in May 2010, Table 4.1 shows that mean houses prices in North Yorkshire have dropped slightly in the last quarter (-1.6%) after somewhat volatile growth over the past year (3.2% increase). However, this has not been borne out in Ryedale where a last quarter drop (-3.3%) forms part of a general trend over the past year (-8.2%).

Table 4.1 Mean House Prices (£) for Yorkshire Authorities 2008-2009

	2008				2009				% Change over Yr.	% Change over Qtr.
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
ENGLAND	221,270	222,441	227,182	207,372	200,539	205,736	226,487	222,444	7.3%	-1.8%
YORKSHIRE & HUMBER	155,180	159,859	156,608	150,688	140,852	146,191	158,849	161,406	7.1%	1.6%
York	204,209	204,004	200,603	185,531	189,994	186,290	197,340	190,368	2.6%	-3.5%
North Yorkshire	223,812	223,835	223,002	210,287	195,019	194,769	220,493	217,018	3.2%	-1.6%
Craven	206,501	211,979	213,589	202,136	168,367	193,772	204,714	200,970	-0.6%	-1.8%
Hambleton	231,621	248,417	240,533	254,409	197,409	213,912	224,662	231,974	-8.8%	3.3%
Harrogate	280,397	286,204	269,747	244,392	239,973	236,347	272,966	260,521	6.6%	-4.6%
Richmondshire	210,311	230,944	223,971	190,838	208,510	198,978	233,267	229,744	20.4%	-1.5%
Ryedale	**266,365**	**225,208**	**239,240**	**233,013**	**210,153**	**179,771**	**221,301**	**213,924**	**-8.2%**	**-3.3%**
Scarborough	179,150	169,107	167,178	172,640	150,757	146,469	162,225	170,586	-1.2%	5.2%
Selby	185,217	184,721	200,788	174,182	170,288	172,366	189,110	188,429	8.2%	-0.4%

1 Adjusted, 2 Interim
Source:http://www.communities.gov.uk/housing/housingresearch/housingstatistics/housingstatisticsby/housingmarket/livetables

4.2 Land Values – Recent Trends

The residual values resulting from the DAT assessment are then compared with evidence of current housing land values being obtained in the local area. These are drawn from the latest available Valuation Office, Property Market Report, July 2009. This report provides the directly relevant data in Table 4.2:

Table 4.2 Land Value Trends by End Use (2007-2009)

End Use - Type	Geographic Area	Land Values (£Ms)						% Change	
		Jan 07	Jul 07	Jan 08	Jul 08	Jan 09	Jul 09	Since Jan 07	Last 12 months
Residential									
Small Sites (less than 5 houses)	Yorkshire and the Humber	2.86	2.94	2.94	2.39	1.91	1.63	-43.0%	-31.8%
	York*	4.00	4.00	4.00	3.20	2.60	2.10	-47.5%	-34.4%
	Beverley*	2.75	2.75	2.75	2.20	2.00	1.90	-30.9%	-13.6%
Bulk land (over 2 ha.)	Yorkshire and the Humber	2.48	2.55	2.52	2.05	1.67	1.42	-42.7%	-30.7%
	York*	3.50	3.50	3.50	2.80	2.20	1.80	-48.6%	-35.7%
	Beverley*	2.50	2.50	2.50	2.00	1.80	1.70	-32.0%	-15.0%
Sites for Flats or Maisonettes	Yorkshire and the Humber	2.97	3.06	3.06	2.31	1.99	1.67	-43.8%	-27.7%
	York*	4.00	4.00	4.00	3.00	2.60	2.10	-47.5%	-30.0%
	Beverley*	3.00	3.25	3.25	2.40	2.35	2.10	-30.0%	-12.5%
Employment									
Business (B1)	Yorkshire and the Humber	0.76	0.84	0.89	0.77	0.64	0.58	-23.8%	-25.0%
Industrial (B1 / B2 / B8)	Yorkshire and the Humber	0.59	0.64	0.66	0.59	0.48	0.44	-26.1%	-26.3%
	York*	0.50	0.60	0.60	0.50	0.45	0.41	-18.0%	-18.0%
	Hull*	0.60	0.60	0.62	0.62	0.48	0.45	-25.0%	-27.4%
Agricultural		-	-	-	-	0.14	0.14	-	-

* Included as the geographically nearest comparators

The data demonstrates:

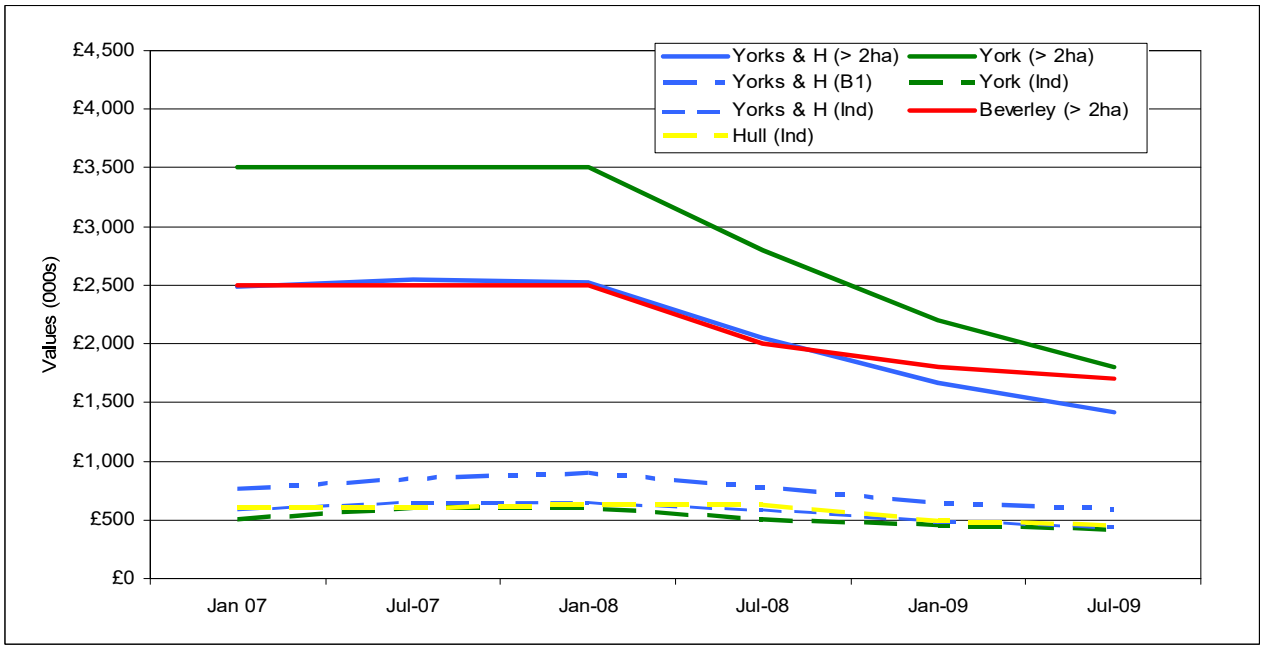
- The premium prices commanded for small sites and sites for higher density flat development. These differentials have been maintained over the past two years;
- Very marked reductions in land values. Region-wide land values have fallen by about 43% for all development types since early 2007. There are however significant variations against this general picture;
  - Values in York have fallen further still by up to nearly 50%;

- Land values in Beverley, although generally lower and also falling, have been more resilient particularly in the last 12-18 months. Since early 2007 values have fallen by under 15%.

- Residential values in all areas are well in excess of those for employment. There should therefore be no impediment to the supply of residential land presented by a buoyant employment market in the foreseeable future. Nor should there be any impediment to a change of use from existing employment areas. Recent market evidence suggests that an uplift of about a third is required to secure a change of use from employment to residential uses.[2]

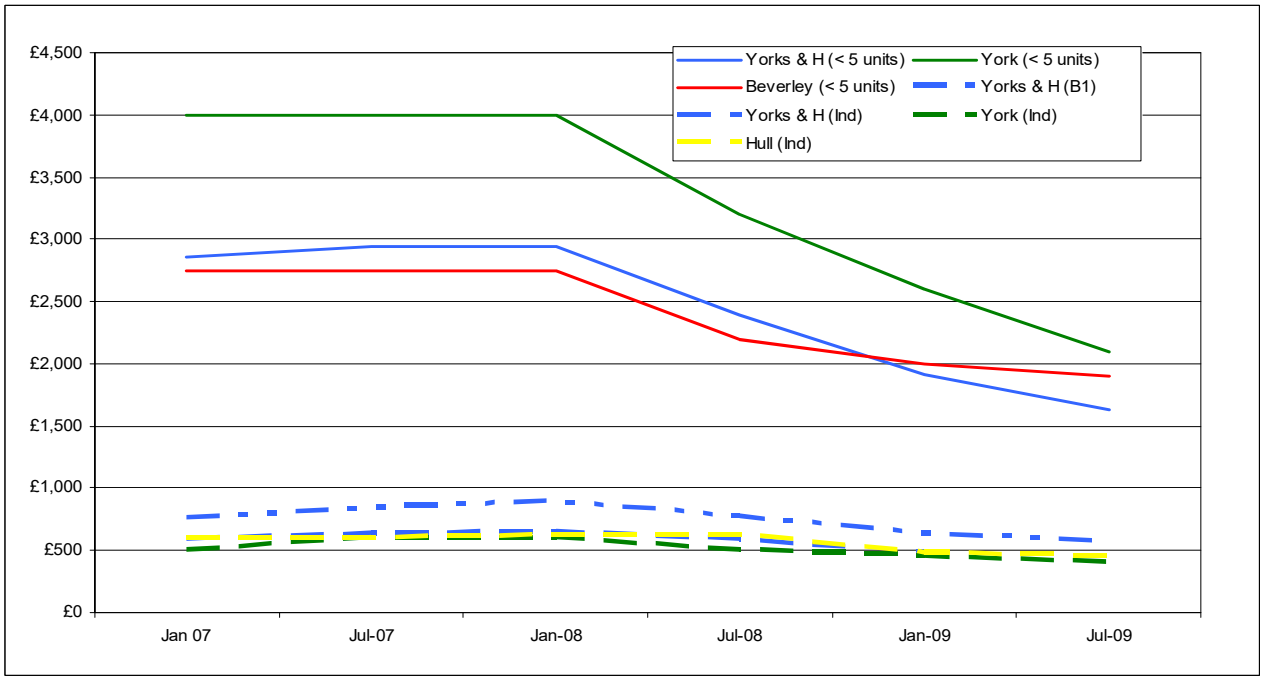
Land values trends for sites of over 2 hectares and for small sites as depicted in **Plates 4.2** and **4.3**. Data specific to Ryedale is not available. The view of Ryedale's HMP is that values are likely to be rather below those for Beverley. There was a level of consensus that current values are in the region of £500,000 per acre or between £1.0M to £1.5M per hectare. This was considered to represent the 'going rate' for land regardless of current use – the value of greenfield land following that normally required to secure the re-use/ change of use of previously developed land in Ryedale. This evidence suggests that the required uplift of about a third is met.

Plate 4.2 Recent Land Value Trends – Bulk Land (> 2 Hectares)



[2] Dr Andrew Golland "Gaining Ground" Planning, 19th March 2010

Plate 4.3 Recent Land Value Trends – Small Sites (less than 5 Houses)



4.3 The Relationship between House Prices and Land Values

Whilst there is a broad correlation between house prices and land values the relationship is not straightforward.

The response of land values to changes in house prices is sluggish but volatile. As development costs are relatively static the main flexibility in any viability analysis is provided by the amount paid for the land. This means that:

- Even minor changes in house prices are largely directly passed onto the residual value and the impact can be dramatic especially where sites are large; and
- Land values are agreed at a point in time and can be 'left behind' by subsequent economic trends prior to development. This depends upon the terms of the sale and can work both ways but it does explain the non-delivery of sites that were 'over bought' at the top of the boom. The lag is typically about 18 months.

Despite these weaknesses, house price is the key determinant of residual value and, for the purposes of prediction, no better proxy exists. This study therefore uses projected change in house prices as a basis for predicting residual values.

4.4 Land Value Predictions

Drawn from the latest available data in the Valuation Office, Property Market Report, July 2009, **Plate 4.4** shows the Regional trend in residential land values since 1983 and helps to suggest how land values may respond to future economic recovery. Overall, the trend line displays an average annual increase of 3% which is comparable to the house price trend in the January 2010 Halifax report. This report adopts a number of house price recovery scenarios which can be expected, following a time lag of about 12 to 18 months, to influence residual values. These scenarios are:

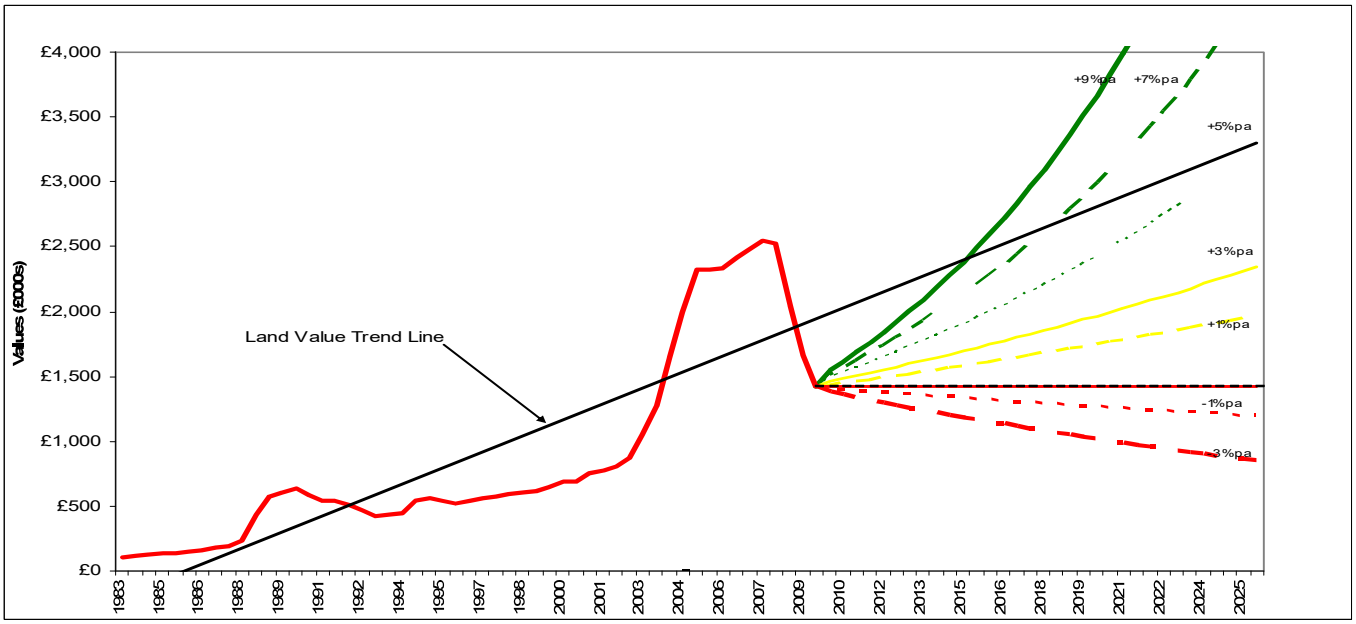
- 3% annual growth. This compares with the long term trend of 2.9% pa since the early 1980s. It is probably pessimistic given that it does not incorporate 'recovery' – the trend line parallel to, rather than converging with, the Regional historical trend – and does not acknowledge the recent marked house price increases. However for the period of a plan strategy, it remains a relevant option;

- 9% annual growth. This assumption more closely matches recent increases in house prices and would see land values return to the Regional historical trend within five years. However long term trends suggest that such dramatic increases (as seen over Qtrs 2 and 3 of 2009) are common but tend to be short lived and are not significantly reflected in longer term trends, say, over 12 to 18 months;

- 5% annual growth. This assumption would project a slow but steady recovery, in line with Mervyn King's predictions, that would bring convergence with the Regional historical trend towards the end of the Plan period. This ten to fifteen year cycle would also be broadly consistent with the profile in values between the peak years of 1989/90 and 2004 to 2007.

It is considered that the 5% growth scenario is likely to be the reliable trend over the whole plan period. For this reason, the remainder of this report – for the most part – provides findings based upon the 5% scenario. Analyses for the 3% and 9% growth assumption are provided in the relevant Appendix.

Plate 4.4 Yorkshire and Humberside – Historical Average Land Values and Recovery



4.4.1 Build Costs – Recent Trends and Projections

Increased values will be accompanied by increases in costs. **Plate 4.1** also demonstrates the relationship between house prices and build costs since 1984. Whilst responsive to trends in house prices, build costs are far less volatile and have generally risen at a rate of about 40% of that of house prices.

Hence it can be expected that a 5% annual increase in values will be accompanied by a 2% annual increase in costs.

4.5 Summary of Findings

At this point it is worth re-iterating the caveats made in Section 2 above. Current economic circumstances and the dramatic fall in house prices land values since 2007 means that land may only change hands where the landowner has an overriding reason to sell and as this has coincided with a period when the impact of future policy costs, associated with affordable housing and climate change, are just becoming apparent, it is difficult to predict how land values and landowner expectations will respond.

Overall the UK economy is showing signs of gradual improvement. This is no better underlined than by the figures published on 26th January 2010 that confirmed that the nation is officially out of the recession, albeit marginally. The improvements are also underlined by the rise of rates of inflation of approximately 3% in last quarter of 2009. This positivity is being picked up in housing market which was showing signs of picking up in the second half of 2009 with houses prices rising also by approximately 3%. There is evidence that this positive trend was also being

felt in North Yorkshire in the last quarter of 2009 albeit at a slightly slower rate. In Ryedale however prices appear to still be falling.

As the future is uncertain, projections are unlikely to be accurate. However, evidence of long term historical Regional trends and in particular the profile of land values after the 1989 peak suggests that values should recover towards the long term trend in about ten to fifteen years. Such a recovery profile would be broadly produced by a 5% annual growth rate.

The impact of this recovery upon land values remains to be seen. With all other things being equal, any increase in house prices will serve to improve residual values and the prospects of higher benefits to landowners although as developers increasingly need to take the costs of future policy requirements into account it is questioned whether these benefits will meet established expectations. Notwithstanding this uncertainty, and the fact that this response will vary according to timescale and location, this study assumes a land value of £1.0M to £1.5M per hectare for residential land. This is considered a robust assumption by members of Ryedale's HMP and represents the 'going rate' for land regardless of current land use.

5. Stakeholder Consultation

The following local stakeholders were invited to engage in the study:

- Barratt Homes
- Beanland Illingworth
- Boulton & Cooper
- Broadacres Housing Association
- Carter Jonas
- Hallam Land Management
- S Harrison Developments Ltd
- Home Housing Association
- MPC Ltd
- Persimmon Homes Yorkshire
- Smith Gore
- Taylor Wimpey
- Wharfedale Homes
- Yorkshire Housing

An exercise conducted in November 2009 consulted with a number of developers on the study assumptions. Responses were received from.

- Beanland Illingworth
- Hallam Land Management
- McBeath Property
- Persimmon Homes Yorkshire
- Taylor Wimpey
- Wharfedale Homes

As a consequence of this exercise changes were made to the assumptions as follows:

- The flatted element in the development mix was reduced from 20% to 10%. There are currently very few flats being demanded or provided in Ryedale. Nevertheless, it was considered appropriate to retain a modest element within the mix to meet needs associated with the growth of small households and the aging population;
- The developers margin was increased from 15% to 20% to take account of the current lending requirements of the financial sector in the current market downturn.

The following members of the HMP have also been consulted on a 'one to one' and group basis to explore how the study should determine the point of viability:

- Beanland Illingworth
- Chevin Homes (RSL)
- Persimmon Homes Yorkshire
- Ryedale DC (Housing)
- Smith Gore
- Taylor Wimpey
- Wharfedale Homes

The views of the HMP were as follow:

- Broad agreement with the overall residual valuation methodology;
- Broad agreement with the identified market areas with a decline in values from west to east;

- Some disagreement with the detailed assumptions on overheads and dwelling mix;
- In respect of the current market price for residential development land in Ryedale some of the HMP were hesitant to be explicit due to the current volatility of the market and the low number of transactions. Nevertheless, others did indicate that landowner expectation ranges between £1M and £1.5M per hectare.

6. Levels of Evaluation

6.1 Rationale

As stated in Section 3, three levels or evaluation have been undertaken at:

- Post Code (Housing Market) Level. To evaluate the impact of sub-markets variations across the District;
- Small Site Level. To evaluate the ability of sites with a capacity of five units or less to provide off-site as against on-site affordable housing;
- Town and Spatial Option Level. This explores affordable housing delivery in the context of a package of developer contributions that relate to planned levels of growth for each settlement. Viability is considered at both settlement and spatial options level.

The assumptions and methodology of each of these exercises are addressed in turn.

6.2 Post Code Level Evaluations

This exercise directly addresses the impact of variations in house prices in the six distinct Housing Market Areas in Table 6.1.

Table 6.1 Common Site Assumptions for Post Code Level Evaluations

Characteristic/ Issue	Assumption
Site Size	0.5 hectares
Development Mix	As assumed in Table 3.2 above
Development Density	40 dph. Considered representative of the achievable density on urban sites over the Plan period
Rental Levels	As assumed in Table 3.3 above
Grant	None assumed
Base Development Costs	As referred in Section 3.3 above and detailed in Appendix C
Overhead Costs	As assumed in Section 3.3 above and detailed in Appendix C. Developers profit margin assumed at 20%
Abnormal Cost – Contamination	None assumed. A site specific issue not representative of Ryedale as a whole
Abnormal Cost – Flood Risk	Flood Risk Area 1
Abnormal Cost – Demolition	Demolition of two storey building (each 6m high) occupying half the site (0.25 ha) at a cost of £6.49 / m^3
Code for Sustainable Homes Level	Level 3 assessment now. Level 4 applies from April 2013 and Level 6 applies from April 2016
Developer Contributions	£5,000 per dwelling initially, with the impact of £10,000 and £15,000 subsequently assessed.

This is undertaken for a notional 0.5 hectare site and informs assessment of the relative strength between and within the urban and rural areas and will be relevant to assessment of non strategic windfall development of the type likely to come forward in the larger settlements or identified in the Council's SHLAA. Table 6.1 sets out the common assumptions that reflect the likely site conditions and costs that apply in Ryedale.

6.3 Small Site Level Evaluations

In apportioning housing provision, the Council has to meet the affordable needs of the rural area which requires an approach to handling the small sites that are likely to form an important part of the housing supply. A range of approaches in LPAs seek provision (on-site or off-site) against either site size or yield criteria – the Council's own policy for rural areas is to seek a contribution where sites yield at least five dwellings.

This report seeks to evaluate the potential to revise the Council's current policy in respect of securing financial contribution to off-site contribution within the context of the current threshold.

For a small site, on-site affordable element accounts for a large proportion of the development (1 dwelling is 20%, 2 dwellings is 40% etc). Under current market circumstances these significant 'steps' in provision can require

significant revenue uplift before a further affordable unit could be delivered. The purpose of this analysis is therefore:

- to assess the economic conditions under which on-site provision of 20% (1 dwelling) and 40% (2 dwellings) could be provided on sites with a capacity of 5 dwellings;
- the extent to which off-site provision in the form of a financial payment can be delivered in advance of a 20% on-site contribution becoming viable.

Four analyses have been undertaken to take account of the variations in house prices and thus development revenues across the District. These are for:

- Malton, Kirkbymoorside and Pickering (for which house prices are similar);
- Norton;
- South West Ryedale; and
- East Ryedale.

Table 6.2 sets out the assumptions used that reflect the site conditions and costs likely to apply in Ryedale.

Table 6.2 Common Site Assumptions for Post Code Level Evaluations

Issue	Assumptions					
Site Size	0.05 hectares	0.10 hectares	0.15 hectares	0.25 hectares	0.25 hectares	0.25 hectares
Development Mix	1 market unit	2 market units	3 market units	5 market units	4 market & 1 social rent unit	3 market & 2 social rent units
Affordable Housing	Off-site contrib.	Off-site contrib.	Off-site contrib.	Off-site contrib.	On site 20%	On site 40%
Development Density	20 dph. Representative of the rural area of Ryedale as a whole					
Rental Levels	As assumed in Table 3.2 above					
Grant	None assumed					
Base Development Costs	As referred in Section 3.3 above and detailed in Appendix C					
Overhead Costs	As assumed in Section 3.3 above and detailed in Appendix C. Developers profit margin assumed at 20%					
Abnormal Cost – Contamination	None assumed. A site specific issue not representative of Ryedale as a whole					
Abnormal Cost – Flood Risk	Flood Risk Area 1					
Abnormal Cost – Demolition	None assumed					
Code for Sustainable Homes Level	Level 3 assessment now. Level 4 applies from April 2013 and Level 6 applies from April 2016					
Developer Contributions	£10,000 per dwelling to address requirements for education, leisure etc..					

6.4 Spatial Option Level Evaluations

The LDF needs to provide for at least 15 years housing supply, equating to 3,000 net additional homes (or 200 per annum) over the plan period.

In June 2009, the Council undertook public consultation upon the suggested distribution of housing across the District. This exercise confirmed a primary focus upon the main towns of Malton or Norton with lesser levels in Pickering Kirkbymoorside and Helmsley together with about 300 dwellings in a selection of larger villages. These options are specified in Table 6.3. This study has taken this further to test the impact of the distribution of housing between Malton and Norton.

Table 6.3 Spatial Options for Evaluation

	Spatial Option		
	1. Malton Focus	**2. Norton Focus**	**3. Joint Malton & Norton Focus**
Malton	50% of RSS Reqt.	-	25% of RSS Reqt.
Dwellings Required	1500 Dwellings	-	750 Dwellings
Norton	-	50% of RSS Reqt.	25% of RSS Reqt.
Dwellings Required	-	1500 Dwellings	750 Dwellings
Pickering	25% of RSS Reqt.	25% of RSS Reqt.	25% of RSS Reqt.
Dwellings Required	750 Dwellings	750 Dwellings	750 Dwellings
Kirkbymoorside	10% of RSS Reqt.	10% of RSS Reqt.	10% of RSS Reqt.
Dwellings Required	300 Dwellings	300 Dwellings	300 Dwellings
Helmsley	5% of RSS Reqt.	5% of RSS Reqt.	5% of RSS Reqt.
Dwellings Required	150 Dwellings	150 Dwellings	150 Dwellings
Rural Area	10% of RSS Reqt.	10% of RSS Reqt.	10% of RSS Reqt.
Dwellings Required	300 Dwellings	300 Dwellings	300 Dwellings

The viability of each level of development in each of the locations can be evaluated to reveal:

- The impact of stronger or weaker housing markets in a location upon viability of a given affordable proportion;
- The impact of the cost of major infrastructure necessary in each location;
- The differences between the ability to deliver, say, identical amounts of development in Malton as against Norton, given differences in both revenues and costs in each location.

The implications for each spatial option can be assessed through aggregation of the particular revenues and costs of each of its elements and apportionments.

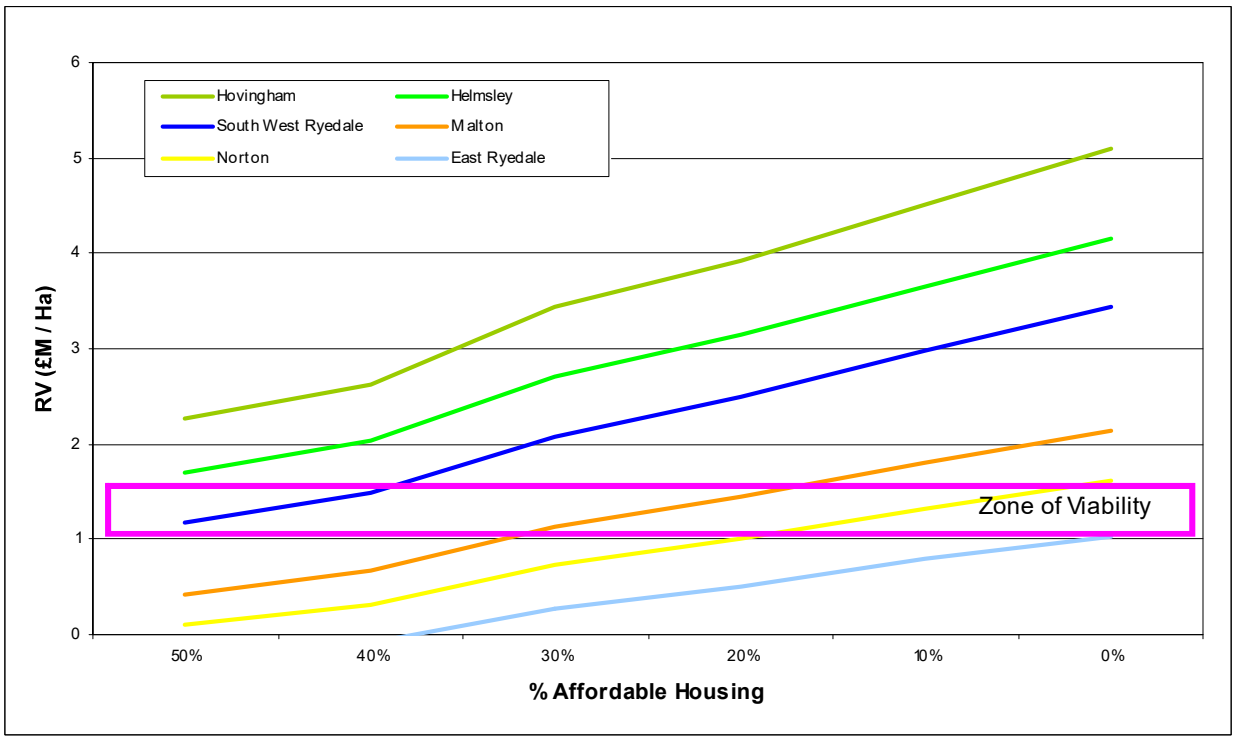
The next three sections address the findings of each of the levels evaluation respectively.

7. Findings - Post Code Level Evaluations

7.1 2009 Assessment

The residual values for each post code area under a number of affordable housing scenarios with a developer contribution of £5,000 per dwelling are graphed in **Plate 7.1** and in detail at **Appendix H**.

Plate 7.1 Post-Code Area Assessment of Affordable Proportions with £5k Developer Contribution per Dwelling – Code Level 3



Assuming a 'zone of viability' of between £1.0M and £1.5M per hectare, **Plate 7.1** demonstrates the relative strength of the west of the District including the town of Helmsley. Viability then declines with distance to the east. The towns of Malton, Pickering and Kirkbymoorside all produce similar results although Norton performs less well due to its weaker market. The least viable area is in the extreme east of the District.

7.1.1 Varying Developer Contribution Levels

Ryedale has the option to obtain developer contributions either through the CIL or through S106 legal agreements. The impact of contributions of £5,000, £10,000 and £15,000 per dwelling are shown in Tables 7.1 to 7.3

respectively. These indicate that, although the level of contribution sought is much less crucial to any assessment of viability than market conditions and rather less crucial than affordable housing proportion, it nevertheless does produce important variations in assessment; each step in contribution of £5,000 has the effect of reducing the residual value by £200,000 per hectare.

Table 7.1 Post Code Area Assessment of Affordable Proportions with £5k Developer Contribution per Dwelling – Code Level 3

	Affordable Proportion					
Post Code Area	**50%**	**40%**	**30%**	**20%**	**10%**	**0%**
YO17 6/7 (Malton)	0.43	0.67	1.14	1.44	1.80	2.14
YO17 8/9 (Norton)	0.11	0.32	0.74	1.00	1.32	1.62
YO62 5 (Helmsley)	1.69	2.03	2.71	3.14	3.66	4.16
YO18 8 (Pickering)	0.43	0.67	1.14	1.44	1.80	2.14
YO62 2 (Kirkbymoorside)	0.43	0.67	1.14	1.44	1.80	2.14
YO62 4 (inc.Hovingham)	2.27	2.63	3.44	3.92	4.52	5.09
YO60/YO41(SW Ryedale)	1.18	1.50	2.07	2.50	2.98	3.44
YO12/YO25 (E Ryedale)	-0.26	-0.09	0.28	0.51	0.79	1.03
RV 'zone of viability'	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50

Viable. RV higher than 'zone of viability'

Likely to be viable. RV within 'zone of viability'

Unviable. RV below 'zone of viability'

The impact of every step of 10% in the affordable element varies with location producing reductions in residual value of between about £150,000 (East Ryedale) and £480,000 (Hovingham) per hectare. In the areas containing the main settlements of Malton, Pickering and Kirkbymoorside this reduction is about £300,000 per hectare.

In respect of the main settlement areas, the analyses indicate that with a £5,000 contribution, a high level of affordable housing (up to 50%) is only deliverable in Helmsley if a land value of £1.5M per hectare is accepted. Elsewhere, 10-30% should be possible in Malton, Pickering and Kirkbymoorside and up to 20% may be possible in Norton.

Under the same assumptions, a £10,000 contribution would mean that up to a 50% affordable element is still deliverable in Helmsley. Again, 20% should be possible in Malton, Pickering and Kirkbymoorside but no more than 10% is likely in Norton.

Under a £15,000 contribution a 40-50% affordable element is deliverable in Helmsley. Up to 10% may be possible in Malton, Pickering and Kirkbymoorside but unlikely in Norton.

Table 7.2 Post Code Area Assessment of Affordable Proportions with £10k Developer Contribution per Dwelling – Code Level 3

	Affordable Proportion					
Post Code Area	**50%**	**40%**	**30%**	**20%**	**10%**	**0%**
YO17 6/7 (Malton)	0.23	0.47	0.94	1.24	1.60	1.94
YO17 8/9 (Norton)	-0.09	0.12	0.54	0.80	1.12	1.42
YO62 5 (Helmsley)	1.49	1.83	2.51	2.94	3.46	3.96
YO18 8 (Pickering)	0.23	0.47	0.94	1.24	1.60	1.94
YO62 2 (Kirkbymoorside)	0.23	0.47	0.94	1.24	1.60	1.94
YO62 4 (inc.Hovingham)	2.07	2.43	3.24	3.72	4.32	4.89
YO60/YO41(SW Ryedale)	0.98	1.30	1.87	2.30	2.78	3.24
YO12/YO25 (E Ryedale)	-0.46	-0.29	0.08	0.31	0.59	0.83
RV 'zone of viability'	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50

Viable. RV higher than 'zone of viability'

Likely to be viable. RV within 'zone of viability'

Unviable. RV below 'zone of viability'

Table 7.3 Post Code Area Assessment of Affordable Proportions with £15k developer contribution per dwelling – Code Level 3

	Affordable Proportion					
Post Code Area	**50%**	**40%**	**30%**	**20%**	**10%**	**0%**
YO17 6/7 (Malton)	0.03	0.27	0.74	1.04	1.40	1.74
YO17 8/9 (Norton)	-0.29	-0.08	0.34	0.60	0.92	1.22
YO62 5 (Helmsley)	1.29	1.63	2.31	2.74	3.26	3.76
YO18 8 (Pickering)	0.03	0.27	0.74	1.04	1.40	1.74
YO62 2 (Kirkbymoorside)	0.03	0.27	0.74	1.04	1.40	1.74
YO62 4 (inc.Hovingham)	1.87	2.23	3.04	3.52	4.12	4.69
YO60/YO41(SW Ryedale)	0.78	1.10	1.67	2.10	2.58	3.04
YO12/YO25 (E Ryedale)	-0.66	-0.49	-0.12	0.11	0.39	0.63
RV 'zone of viability'	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50

Viable. RV higher than 'zone of viability'

Likely to be viable. RV within 'zone of viability'

Unviable. RV below 'zone of viability'

7.1.2 Growth Projections to 2015 including Code Level 4

Although the relationship is not simple, increasing house prices will improve residual values. If a 5% annual increase in sales revenues accompanied by a 2% annual increase in total costs together with the impact of Code Level 4 is modelled then Tables 7.4 to 7.6 model show improved performance at 2015 with developer contributions of £5,000, £10,000 and £15,000 per dwelling respectively.

Table 7.4 Post Code Area Assessment of Affordable Proportions with £5k Developer Contribution per Dwelling at 5% Annual Growth in House Prices by 2015 – Code Level 4

	Affordable Proportion					
Post Code Area	**50%**	**40%**	**30%**	**20%**	**10%**	**0%**
YO17 6/7 (Malton)	1.60	1.95	2.62	3.06	3.59	4.07
YO17 8/9 (Norton)	1.16	1.47	2.06	2.45	2.92	3.35
YO62 5 (Helmsley)	3.35	3.84	4.80	5.42	6.18	6.88
YO18 8 (Pickering)	1.60	1.95	2.62	3.06	3.59	4.07
YO62 2 (Kirkbymoorside)	1.60	1.95	2.62	3.06	3.59	4.07
YO62 4 (inc.Hovingham)	4.15	4.68	5.82	6.51	7.38	8.18
YO60/YO41(SW Ryedale)	2.68	3.14	3.97	4.58	5.27	5.93
YO12/YO25 (E Ryedale)	0.65	0.90	1.43	1.76	2.18	2.52
RV 'zone of viability'	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50

Viable. RV higher than 'zone of viability'

Likely to be viable. RV within 'zone of viability'

Unviable. RV below 'zone of viability'

As the range of developer contribution is fixed, the impact of each additional £5,000 is unchanged at £200,000 per hectare.

As residual value is dependent upon house prices, improved conditions will means that the impact of each additional 10% of affordable element now ranges from about £250,000 (East Ryedale) to £500,000 (Hovingham) per hectare. For Malton, Pickering and Kirkbymoorside this reduction is just over £400,000 per hectare.

If a land value of £1.5M per hectare is accepted, the analyses indicate that with a £5,000 contribution, up to 50% affordable housing could be deliverable in all the main settlements with the exception of Norton where up to 40% appears more realistic. Under the same assumptions, a £10,000 or £15,000 contribution would mean that a 50% affordable element is still deliverable in Helmsley but potential in the main settlements falling to 40% with 30% possible in Norton.

Table 7.5 Assessment of Affordable Proportions with £10k Developer Contribution per Dwelling at 5% Annual Growth in House Prices by 2015 – Code Level 4

	Affordable Proportion					
Post Code Area	**50%**	**40%**	**30%**	**20%**	**10%**	**0%**
YO17 6/7 (Malton)	1.40	1.75	2.42	2.85	3.38	3.87
YO17 8/9 (Norton)	0.96	1.27	1.86	2.25	2.72	3.15
YO62 5 (Helmsley)	3.15	3.64	4.60	5.22	5.98	6.68
YO18 8 (Pickering)	1.40	1.75	2.42	2.85	3.38	3.87
YO62 2 (Kirkbymoorside)	1.40	1.75	2.42	2.85	3.38	3.87
YO62 4 (inc.Hovingham)	3.95	4.48	5.62	6.31	7.18	7.98
YO60/YO41(SW Ryedale)	2.48	2.94	3.77	4.38	5.07	5.73
YO12/YO25 (E Ryedale)	0.45	0.70	1.23	1.56	1.98	2.32
RV 'zone of viability'	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50

Viable. RV higher than 'zone of viability'

Likely to be viable. RV within 'zone of viability'

Unviable. RV below 'zone of viability'

Table 7.6 Assessment of Affordable Proportions with £15k Developer Contribution per Dwelling at 5% Annual Growth in House Prices by 2015 – Code Level 4

	Affordable Proportion					
Post Code Area	**50%**	**40%**	**30%**	**20%**	**10%**	**0%**
YO17 6/7 (Malton)	1.20	1.55	2.22	2.65	3.18	3.67
YO17 8/9 (Norton)	0.76	1.07	1.66	2.05	2.52	2.95
YO62 5 (Helmsley)	2.95	3.44	4.40	5.02	5.78	6.48
YO18 8 (Pickering)	1.20	1.55	2.22	2.65	3.18	3.67
YO62 2 (Kirkbymoorside)	1.20	1.55	2.22	2.65	3.18	3.67
YO62 4 (inc.Hovingham)	3.75	4.28	5.42	6.11	6.98	7.78
YO60/YO41(SW Ryedale)	2.28	2.74	3.57	4.18	4.87	5.53
YO12/YO25 (E Ryedale)	0.25	0.50	1.03	1.36	1.78	2.12
RV 'zone of viability'	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50

Viable. RV higher than 'zone of viability'

Likely to be viable. RV within 'zone of viability'

Unviable. RV below 'zone of viability'

7.1.3 Growth Projections to 2021 including Code Level 6

Should annual growth in house prices at 5% continue until 2021, then even more encouraging assessments are produced. This favourable picture is in spite of the significant costs associated with the introduction of Level 6 of the Code for Sustainable Homes from 2016. Tables 7.7 to 7.9 model the impact of developer contributions of £5,000, £10,000 and £15,000 per dwelling respectively.

Table 7.7 Assessment of Affordable Proportions with £5k Developer Contribution per Dwelling at 5% Annual Growth by 2021 – Code Level 6

	Affordable Proportion					
Post Code Area	**50%**	**40%**	**30%**	**20%**	**10%**	**0%**
YO17 6/7 (Malton)	3.15	3.65	4.59	5.21	5.97	6.65
YO17 8/9 (Norton)	2.54	3.00	3.84	4.39	5.07	5.67
YO62 5 (Helmsley)	5.58	6.27	7.62	8.50	9.58	10.57
YO18 8 (Pickering)	3.15	3.65	4.59	5.21	5.97	6.65
YO62 2 (Kirkbymoorside)	3.15	3.65	4.59	5.21	5.97	6.65
YO62 4 (inc.Hovingham)	6.69	7.44	9.02	10.00	11.24	12.36
YO60/YO41(SW Ryedale)	4.71	5.35	6.53	7.38	8.38	9.29
YO12/YO25 (E Ryedale)	1.86	2.23	2.96	3.45	4.05	4.53
RV 'zone of viability'	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50

Viable. RV higher than 'zone of viability'

Likely to be viable. RV within 'zone of viability'

Unviable. RV below 'zone of viability'

As previously, the impact of each addition £5,000 per dwelling of contribution remains at £200,000 per hectare.

Increased house prices to this degree means that the impact of each additional 10% of affordable element now ranges from £400,000 (East Ryedale) to over £1M (Hovingham) per hectare. For Malton, Pickering and Kirkbymoorside this reduction is just over £700,000 per hectare.

Assuming again that a land value of £1.5M per hectare is accepted, the analyses indicate that 50% affordable housing could be deliverable in all parts of the District regardless of the level of developer contribution sought.

Table 7.8 Assessment of Affordable Proportions with £10k Developer Contribution per Dwelling at 5% Annual Growth by 2021 – Code Level 6

	Affordable Proportion					
Post Code Area	**50%**	**40%**	**30%**	**20%**	**10%**	**0%**
YO17 6/7 (Malton)	2.95	3.45	4.39	5.01	5.77	6.45
YO17 8/9 (Norton)	2.34	2.80	3.64	4.19	4.87	5.47
YO62 5 (Helmsley)	5.38	6.07	7.42	8.30	9.38	10.37
YO18 8 (Pickering)	2.95	3.45	4.39	5.01	5.77	6.45
YO62 2 (Kirkbymoorside)	2.95	3.45	4.39	5.01	5.77	6.45
YO62 4 (inc.Hovingham)	6.49	7.24	8.82	9.80	11.04	12.16
YO60/YO41(SW Ryedale)	4.51	5.15	6.33	7.18	8.18	9.09
YO12/YO25 (E Ryedale)	1.66	2.03	2.76	3.25	3.85	4.33
RV 'zone of viability'	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50

Viable. RV higher than 'zone of viability'

Likely to be viable. RV within 'zone of viability'

Unviable. RV below 'zone of viability'

Table 7.9 Assessment of Affordable Proportions with £15k Developer Contribution per Dwelling at 5% Annual Growth by 2021 – Code Level 6

	Affordable Proportion					
Post Code Area	**50%**	**40%**	**30%**	**20%**	**10%**	**0%**
YO17 6/7 (Malton)	2.75	3.25	4.19	4.81	5.57	6.25
YO17 8/9 (Norton)	2.14	2.60	3.44	3.99	4.67	5.27
YO62 5 (Helmsley)	5.18	5.87	7.22	8.10	9.18	10.17
YO18 8 (Pickering)	2.75	3.25	4.19	4.81	5.57	6.25
YO62 2 (Kirkbymoorside)	2.75	3.25	4.19	4.81	5.57	6.25
YO62 4 (inc.Hovingham)	6.29	7.04	8.62	9.60	10.84	11.96
YO60/YO41(SW Ryedale)	4.31	4.95	6.13	6.98	7.98	8.89
YO12/YO25 (E Ryedale)	1.46	1.83	2.56	3.05	3.65	4.13
RV 'zone of viability'	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50

Viable. RV higher than 'zone of viability'

Likely to be viable. RV within 'zone of viability'

Unviable. RV below 'zone of viability'

7.2 Summary of Findings

7.2.1 Caveats

In drawing conclusions it should be borne in mind that these assessments assume that, consistent with national planning policy, development densities of 40dph are achieved in all cases – this is felt to be a reasonable assumption for sites within settlements. Should this not be the case then residual values will be reduced and the deliverability of affordable housing reduced.

For comparison purposes, it is also assumed that land will continue to change hands at values of between £1M and £1.5M per hectare. Historically, land values correlate to house prices, for the reasons set out in Section 3 above, it they are more volatile and tend to lag behind by about 18 months as deals are worked through. Whilst it is thought likely that the costs paid for land will reduce as a proportion of development costs, land values will certainly respond to economic recovery and as evidence of recent transactions emerge, these enhanced values can be compared with the residual values that appear in Tables 7.1 to 7.9.

This findings of this section assume that a 5% annual growth in house prices. Given the current cautious optimism surrounding economic recovery this assumption is considered reasonable although this will need to be monitored and reviewed as necessary.

7.2.2 Currently

Under a requirement for a developer contribution of £5,000 per dwelling, the reliable delivery of affordable housing has most potential in the western area of the District including Helmsley. Assuming that a land value of £1M to 1.5M per hectare is accepted then there may be some potential to deliver more modest provision in Malton, Pickering and Kirkbymoorside with maybe a small contribution in Norton.

This potential is necessarily compromised by the imposition of higher developer contributions. Whilst this does not produce significant variations between the tables, in each case an additional £5k of contribution per dwelling reduces the residual site value by £100,000 (£200,000 per hectare) with a corresponding impact upon the affordable contribution.

7.2.3 Before 2016

If a 5% annual growth in development revenues is applied to the £5,000 per dwelling contribution scenario, the situation would soon improve to a point where by 2015 a 40% affordable element should be possible in Malton, Pickering and Kirkbymoorside against current land values. The weaker housing market in Norton suggests that a lesser level of around 30% should be deliverable by that time.

Increased levels of developer contribution will, as previously, reduce the residual value by the same order as previously although the impact of these contributions (if fixed) become less important as the market steadily improves.

7.2.4 After 2016

Performance in 2016 will be hit by the introduction of Level 6 of the Code. Nevertheless, a continued 5% growth will soon outweigh this to a point where an affordable element of up to 50% should be deliverable in all areas at 2021. The only indicated exception would be in East Ryedale where such a proportion may not be deliverable should a £15k per dwelling contribution be required.

8. Findings - Small Site Level Evaluations

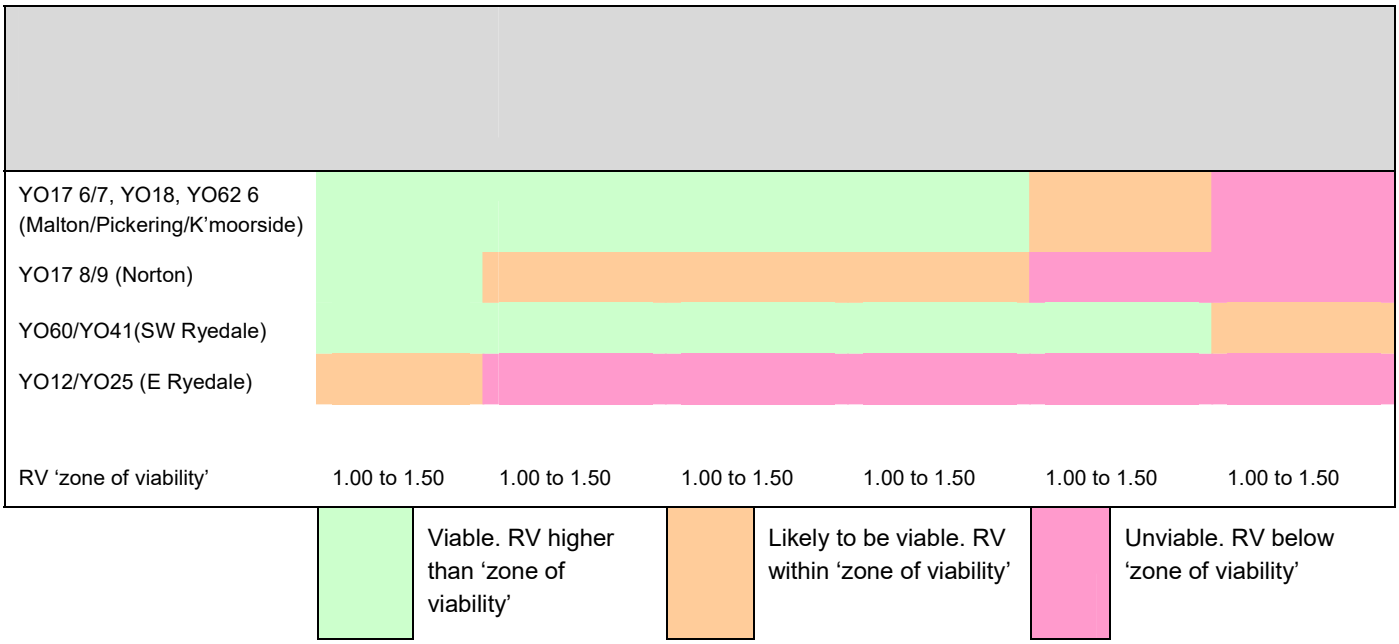
8.1 2009 Assessments

Assessments for the Small Site Level Evaluations are at **Appendix I** whilst Table 8.1 provides an assessment against land values of between £1M and £1.5M per hectare – these assume a developer contribution package of £10,000 per dwelling and a development density of 20 dph which evidence suggests is representative of recent consents on small rural sites.

As this is a strategic study and also for consistency purposes, the same land values are used as in the rest of the report. However, it is acknowledged that in areas or villages of high environmental quality higher values can be commanded for such sites. It is likely that landowner expectations will be higher in these locations despite viability being demonstrated.

Splitting the District into four areas, the relative health of its western area is again evident.

Table 8.1 Assessment of Residual Values (£Ms) on Small Sites – Code Level 3



8.2 Applying Growth Projections to On-site and Off-site Options

Plates 8.1 to 8.4 show how potential improves if an annual house price growth assumption of 5% together and a 2% annual increase in total costs and the impact of Levels 4 and 6 of the Code for Sustainable Homes from 2013 and 2016 respectively are applied to each of the four areas.

Each graph compares the three affordable housing delivery options (off-site, on-site at 20%, on-site at 40%) for a development of five units.

Plate 8.1 Malton, Pickering and Kirkbymoorside - Small Sites (Affordable Options for 5 Units at 5% Annual Growth in House Prices)

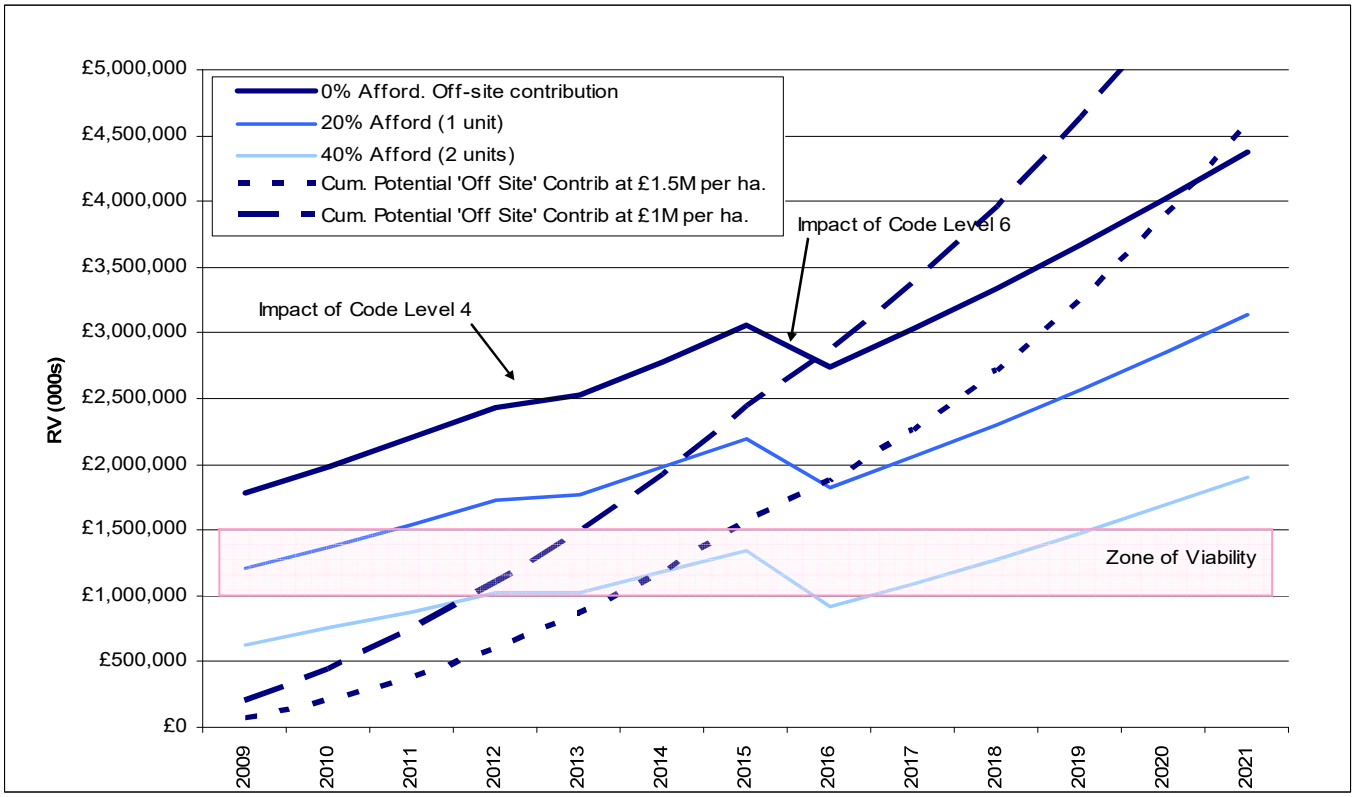


Plate 8.1 for Malton, Pickering and Kirkbymoorside demonstrates the following:

- Schemes of five units providing a single affordable house (mid blue solid line) could begin to deliver reliably from around 2012 should a land value of £1.5M per hectare be accepted. Against a lower value of £1M, on-site provision could already be possible;
- Schemes providing two affordable houses (light blue solid line) perform markedly less well. The graph suggests that a residual value equal to current land values will be achieved by around 2020;

- If no on-site affordable housing (dark blue solid line) is provided residual values will exceed £1.5M. The Council therefore has scope to obtain off-site contributions if more appropriate;

- If it is assumed that one such site is delivered each year, the cumulative variance between residual values and a land value of £1M (denoted by the higher dashed blue line) suggests that financial contributions for off-site affordable housing provision could amount to £1M by 2012 by which time 20% on-site provision should be viable. Beyond 2012 this would then rise by broadly £500,000 per annum;

- Against the same assumptions but against land values of £1.5M, the cumulative variance (denoted by the lower dotted blue line) suggests that contributions could be obtained from 2011 onwards and that just over £1.2M could be accrued by 2014 by which time 20% on-site provision should be viable;

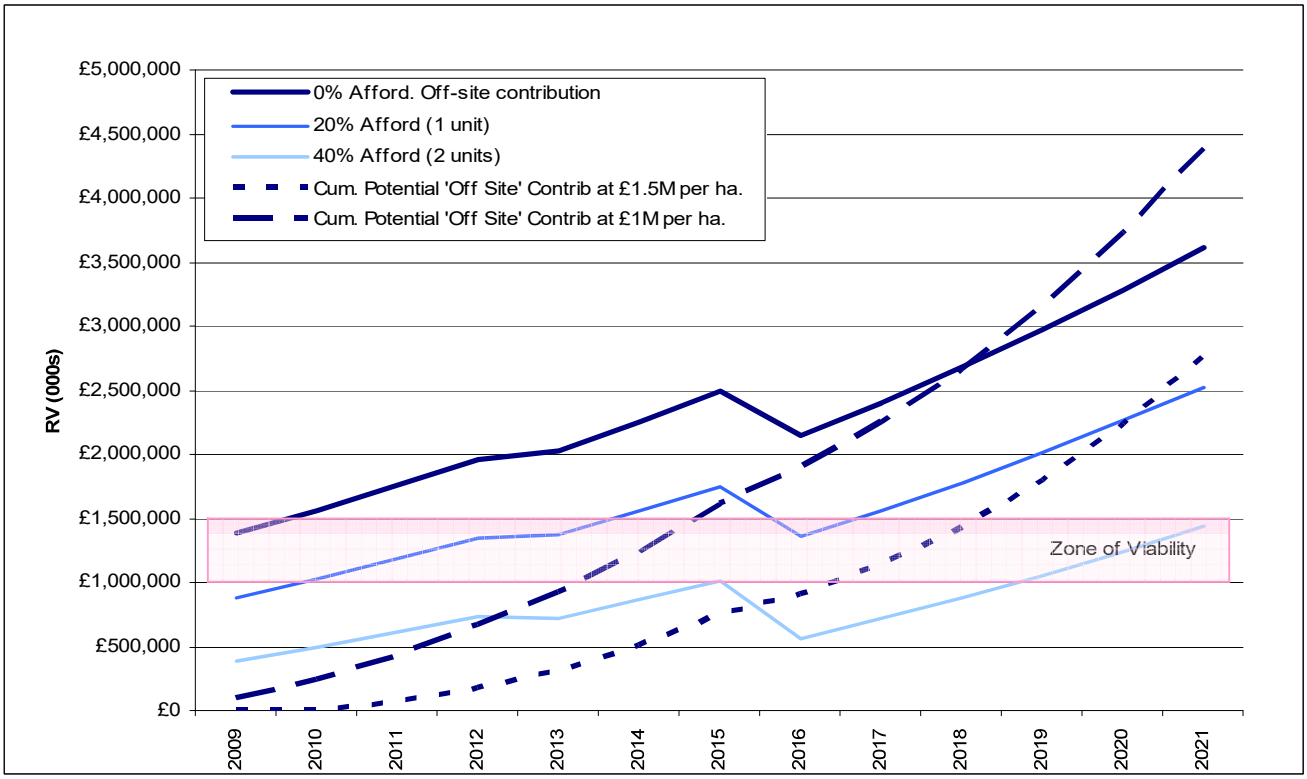
- The impact of step changes in Code Levels in 2013 and 2016 is readily apparent.

Plates 8.2 to 8.4 provide similar analyses of the findings in Norton, South West Ryedale and East Ryedale respectively. These are reproduced in **Appendix J** together with growth projections at 3% and 9%.

In the Norton area and assuming landowners expectations can be met by £1M per hectare, there is potential for an off-site affordable housing contribution of £1.2M by 2014 by which time 20% on-site provision should be viable.

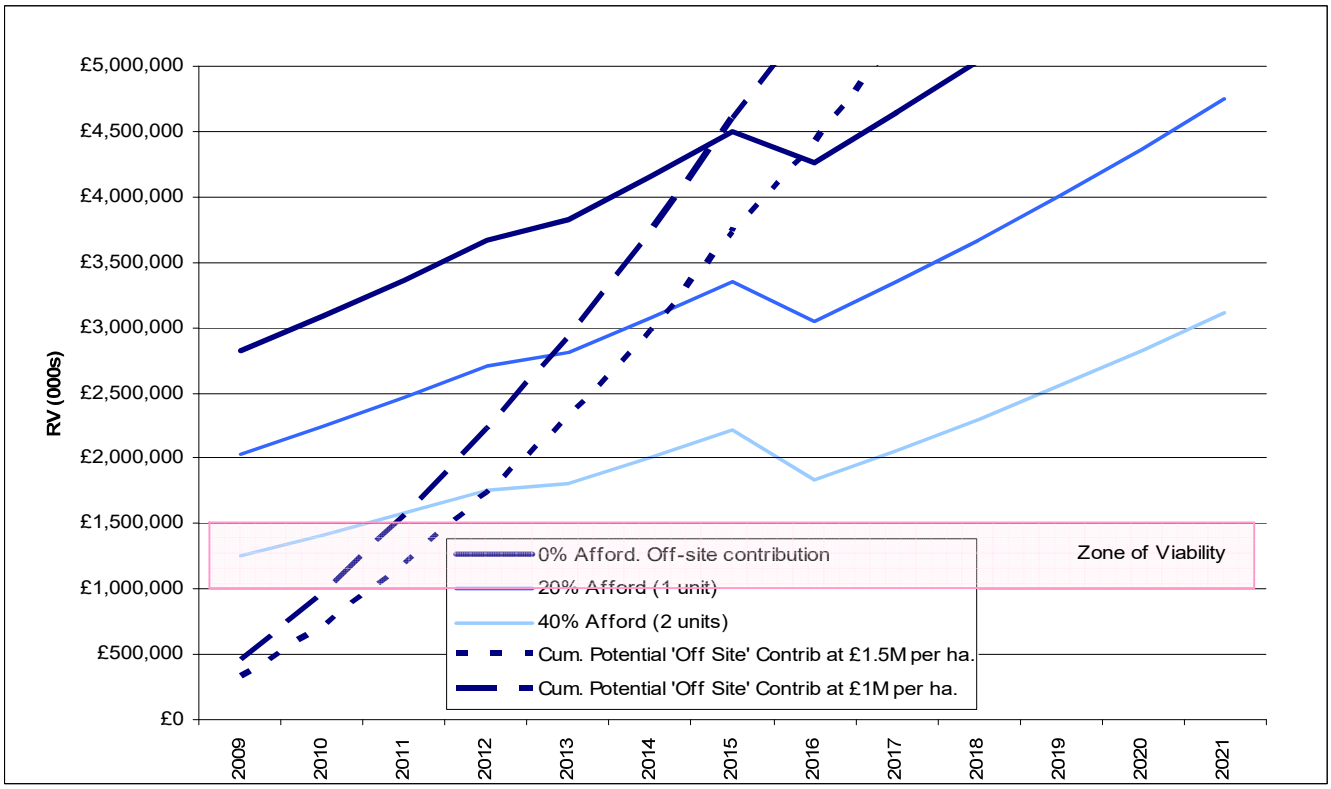
Against a land value of £1.5M per hectare, this figure would reduce to £0.5M by 2014.

Plate 8.2 Norton Area (YO18 8) Small Sites (Affordable Options for 5 Units at 5% Annual Growth in House Prices)



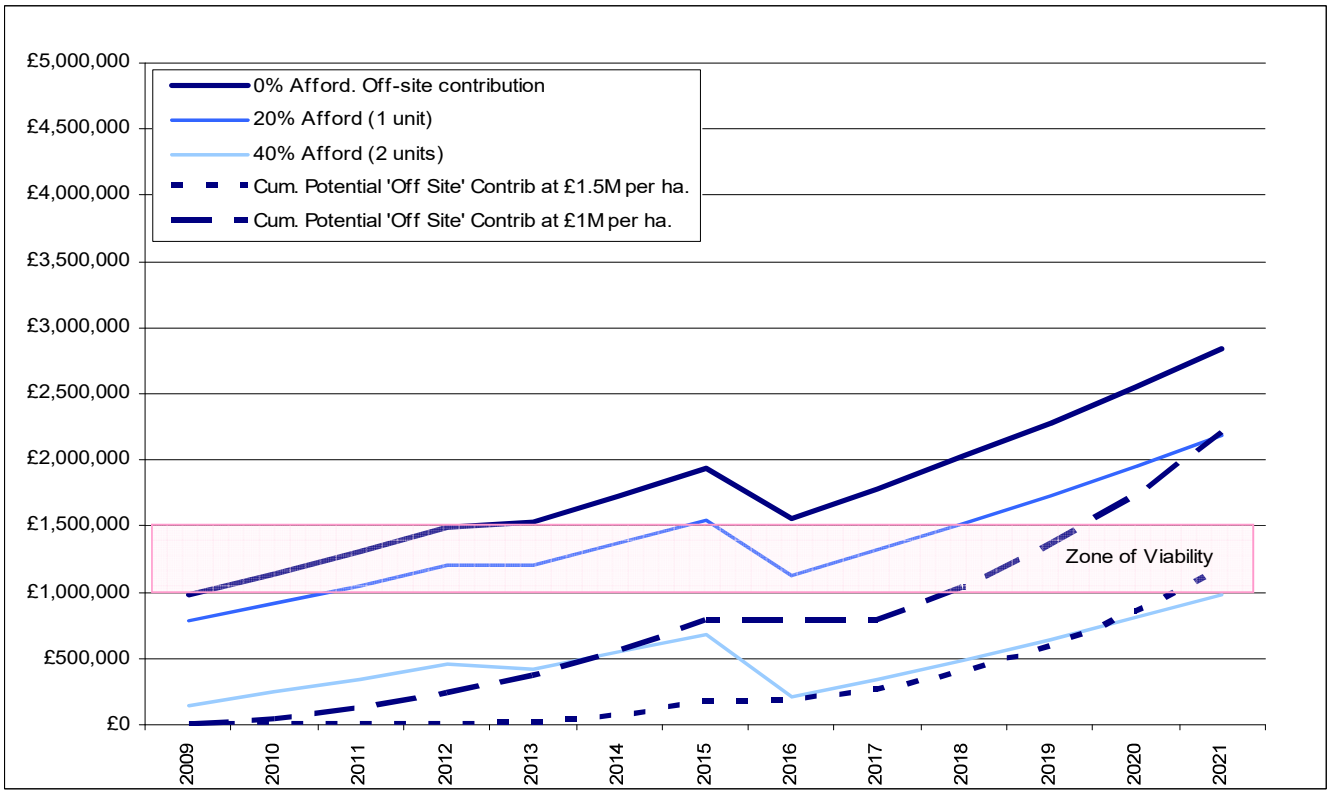
In the South West Ryedale area 20% on-site provision is currently achievable against current land values with 40% expected to be viable by 2012. However, should off-site contributions be preferred then assuming a land value of £1M there is the potential to accrue £1.5M by 2012 rising to £5M by 2015. Against a land value of £1.5M, this figure would be £1M by 2012 rising to £3.5M by 2015.

Plate 8.3 South West Ryedale Area (YO60) Small Sites (Affordable Options for 5 Units at 5% Annual Growth in House Prices)



In the East Ryedale area a 20% on-site contribution will not become reliably viable until 2018. Against a land value of £1.M, an off-site contributions of £800,000 could accrue by 2015 increasing to £2M by 2021. Against land values of £1.5M this would reduce to £200,000 and £1.2M respectively.

Plate 8.4 East Ryedale Area (YO12, YO25) Small Sites (Affordable Options for 5 Units at 5% Annual Growth in House Prices)



Taken from the above plates, Table 8.2 summarises out the projected deliverability of the range of delivery options in the four areas.

Table 8.2 Potential Contributions to Off-site Affordable Provision against Land Values of £1M and £1.5M

Housing Market Area	On-site Provision		Off-site Provision		
	20% On-site viable (yr)	40% On-site viable (yr)	Off-site Contrib. begins (yr)	Off-site Contrib. by 2016 (£M)	Off-site Contrib. by 2021 (£M)
Performance Against Land Value of £1M/Ha					
Malton, Pickering & Kirkbymoorside	Now	2012	Now	£2.8M	>£5.0M
Norton	2011	2019	Now	£1.8M	£4.4M
South West Ryedale	Now	Now	Now	>£5.0M	>£10.0M
East Ryedale	2012	After 2021	2010	£0.8M	£2.2M
Performance Against Land Value of £1.5M/Ha					
Malton, Pickering & Kirkbymoorside	2012	2019	Now	£1.8M	£4.5M
Norton	2015-2017	After 2021	2011	£0.8M	£2.7M
South West Ryedale	Now	2012	Now	£4.5M	>£10.0M
East Ryedale	2019	Well after 2021	2014	£0.2M	£1.2M

8.2.1 On-site Provision

Against a land value of £1M per hectare, a 20% on-site element should already be viable in the western part of the District and also in Malton, Pickering and Kirkbymoorside. A 40% on-site element could also be viable in SW Ryedale now and in Malton, Pickering and Kirkbymoorside from 2012.

Against a higher land value of £1.5M per hectare, a 20% on-site element should already be viable in the western part of the District now. This would likely not be deliverable until 2012 in Malton, Pickering and Kirkbymoorside whereas similar provision in Norton and East Ryedale is between five and nine years away. A 40% on-site element could also be viable in SW Ryedale now and in Malton, Pickering and Kirkbymoorside from 2019.

Progress in all areas is significantly delayed by the impact of Code Level 6 and this is particularly the case in the weaker areas where the increases in revenues take longer to overwhelm its impact. This is notably seen in Norton where a 40% on-site contribution is delayed about eight years. In Malton, higher residual values are more able to accommodate this impact.

8.2.2 Off-site Provision

Against a land value of £1M per hectare, potential exists to pursue financial contributions in lieu of on-site provision – and this potential also extends to Norton.

Against the higher land value of £1.5M, SW Ryedale as well as the main settlements of Malton, Pickering and Kirkbymoorside offer potential. Norton could begin to yield a contribution after 2012 with a small contribution accruing in East Ryedale beyond 2014.

8.3 Summary of Findings

As this is a strategic study, and also for consistency purposes, the same land values are used as in the rest of the report. However, it is acknowledged that such sites can command much higher land values than the District averages. Although viability is demonstrated, should a landowner seek a higher value, this will impact upon the residual value as well as upon the on-site/ off-site affordable element.

Compared with the Post Code evaluations in Section 6 the residual values are lower and this is explained by the lower development density (20 dph) that is more typical of small sites in the rural area. Nevertheless, and in common with the post code evaluations, current potential for the reliable delivery of affordable housing would appear to be restricted to the western area of the District only.

At 2015

If land values of £1M per hectare are accepted, a 5% annual revenue growth assumption could create conditions under which a 20% on-site element should be possible Districtwide from 2012.

A 40% on-site element should also be viable by 2012 in SW Ryedale and in Malton Pickering and Kirkbymoorside.

The prospect for accruing off-site contributions conforms to the same pattern. A policy that secures such payments could yield benefits across most of the District although a contribution in Norton is unlikely before 2012 should upper range land values be sought. The weakest market in the east is unlikely to make a significant contribution by 2015.

At 2021

Performance in 2016 will be hit by the introduction of Level 6 of the Code for Sustainable Homes. Nevertheless, a 40% element can be met in SW Ryedale against a £1.M land value now and a continued 5% growth will outweigh this influence of the Code to a point where a 40% affordable element could be reliably viable in the Malton, Pickering and Kirkbymoorside by 2015. As the impact of the Code has a greater effect in the weaker market areas, sites around Norton may not achieve this until 2019.

Whilst SW Ryedale is unaffected, the aggregate impact of Code and a land value of £1.5M have a significant impact in Malton, Pickering and Kirkbymoorside – delaying viability by about seven years to 2019. Norton is unlikely to perform comparably before 2021 and the east of the District somewhat later.

Improved on-site viability does not however preclude an option to continue to obtain financial contributions towards off-site provision where appropriate and the evaluations suggest ample opportunity to support such a policy.

9. Findings – Town and Spatial Option Level Evaluations

The focus of all three spatial options being considered is upon the settlements of Malton and Norton. In each case the Council has a choice between two highways solutions costing £7.5M and £23.5M respectively.

- Section 9.1 comprises a statement of revenues and infrastructure costs associated with growth options for each town under each spatial option;
- Section 9.2 addresses the impact of education and leisure infrastructure requirements together with a £7.5M package of highway measures on the viability of each spatial option;
- Section 9.3 addresses the impact of education and leisure infrastructure requirements together with an enhanced £23.5M package of highway measures on each spatial option;
- Section 9.4 compares the performance of each strategic option under the two highways solutions and under three house price annual growth scenarios of 3%, 5% and 9%;
- Section 9.5 considers the implication of the introduction of the CIL in addressing disparities in the performance of these options and hence the ability to fund the infrastructure needs of the strategy adequately.

9.1 Statement of Development Revenues and Costs

Against the assumptions set out in Section 3, Table 9.1 summarises the revenues and cost items associated with each of the five main settlements. This analysis includes of a 30% affordable element, Code Level 3 and a £7.5M package of highway measures in Malton/ Norton. The following is evident:

- The low residual values. Only Helmsley achieves values in excess of £1M per hectare;
- The relative health of the Malton market compared with Norton;
- The relatively high implied CIL requirements in Malton and Norton (over £11,000 per unit) when the required highway measures are taken into account. Elsewhere settlement CIL levels are about £9,400 per unit.

Table 9.1 Schedule of Revenues and Costs Associated with each Development Option – 30% Affordable Housing – Code Level 3

	Spatial Option 1	Spatial Option 2	Spatial Option 3		Spatial Options 1, 2 and 3		
Development Specification	Malton 50%	Norton 50%	Malton 25%	Norton 25%	Pickering 25%	K.Moorside 10%	Helmsley 5%
Gross Area (Ha)	50.7	50.7	25.4	25.4	25.4	10.2	5.1
No. of Houses	1500	1500	750	750	750	300	150
Revenues incl. 30% Affordable Element							
At 2009 Prices	£235.5M	£216.9M	£117.8M	£108.5M	£117.8M	£47.3M	£30.3M
Costs							
Base & O/heads	£180.7M	£175.8M	£90.3M	£87.9M	£90.4M	£36.1M	£19.9M
Code Level 3	£7.0M	£7.0M	£3.5M	£3.5M	£3.5M	£1.4M	£0.7M
Flood Risk	£4.3M	£4.3M	£2.2M	£2.2M	£2.2M	£0.9M	£0.4M
Education*	£8.1M	£8.1M	£4.0M	£4.0M	£4.0M	£1.6M	£0.8M
Highways (limited)*	£7.5M	£7.5M	£3.8M	£3.8M	£2.5M	£1.0M	£0.5M
Leisure*	£1.0M	£1.0M	£0.5M	£0.5M	£0.5M	£0.2M	£0.1M
TOTAL COSTS	£208.6M	£203.7M	£104.3M	£101.9M	£103.1M	£41.2M	£22.5M
*Implied CIL / dwelling	£11,048	£11,048	£11,048	£11,048	£9,395	£9,410	£9,447
Evaluation of Residual Land Value							
RV (site total)	£26,9M	£13.2M	£13.5M	£6.6M	£14.7M	£6.1M	£.9M
RV(per hectare)	£0.53M	£0.26M	£0.53M	£0.26M	£0.58M	£0.59M	£1.55M

* Infrastructure items suitable for funding through CIL

9.2 The Viability of the Towns and Spatial Options – Limited (£7.5M) Highway Measures

9.2.1 2009 Assessments of the Towns

The three settlements of Malton, Pickering and Kirbymoorside all perform comparably reflecting their reasonably consistent housing prices. The relative impact of highway costs as a proportion of revenues means that Norton performs least strongly and the residual value produced under a 10% affordable element is very probably below current market expectations. Conversely, the stronger market in Helmsley produces the highest residual values.

Plates 9.1 to **9.4** set out the performance of each town assuming that all the costs in Table 9.1 are met.

Plate 9.1 Malton – Viability of a 1,500 Dwelling Development – Spatial Option 1

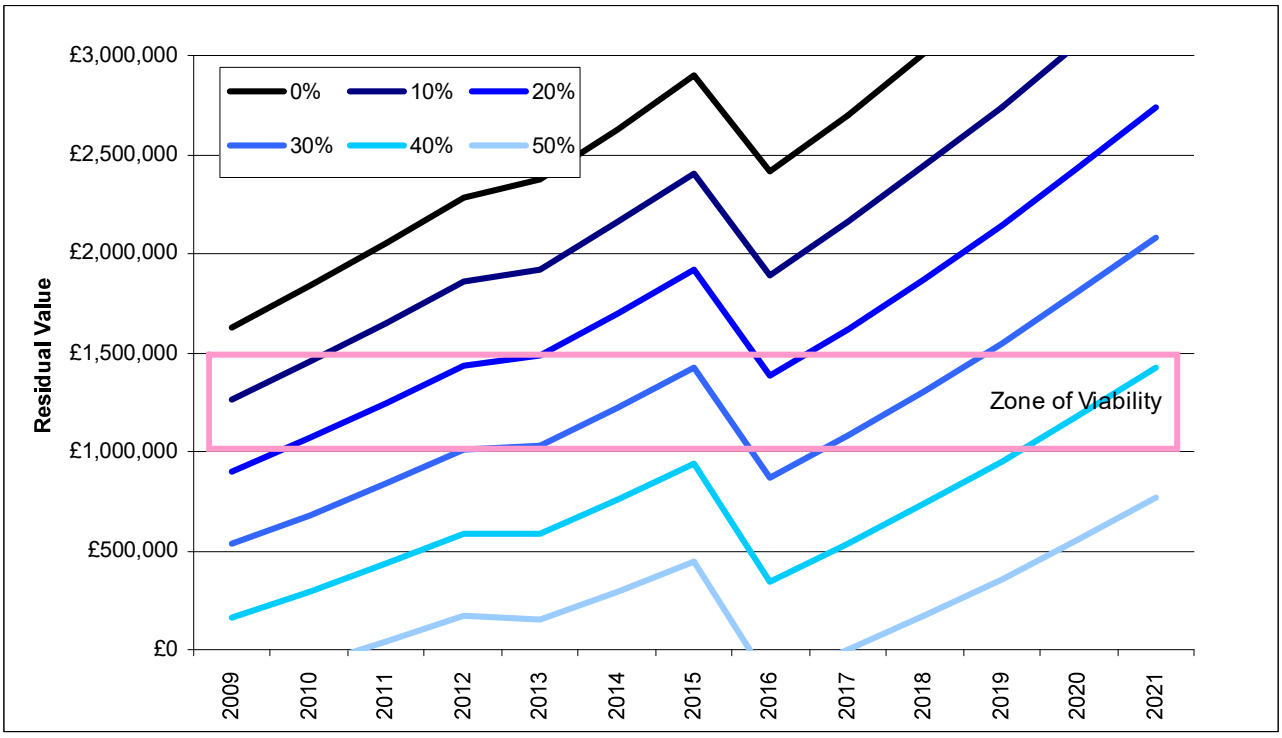


Plate 9.2 Norton – Viability of a 1,500 Dwelling Development – Spatial Option 2

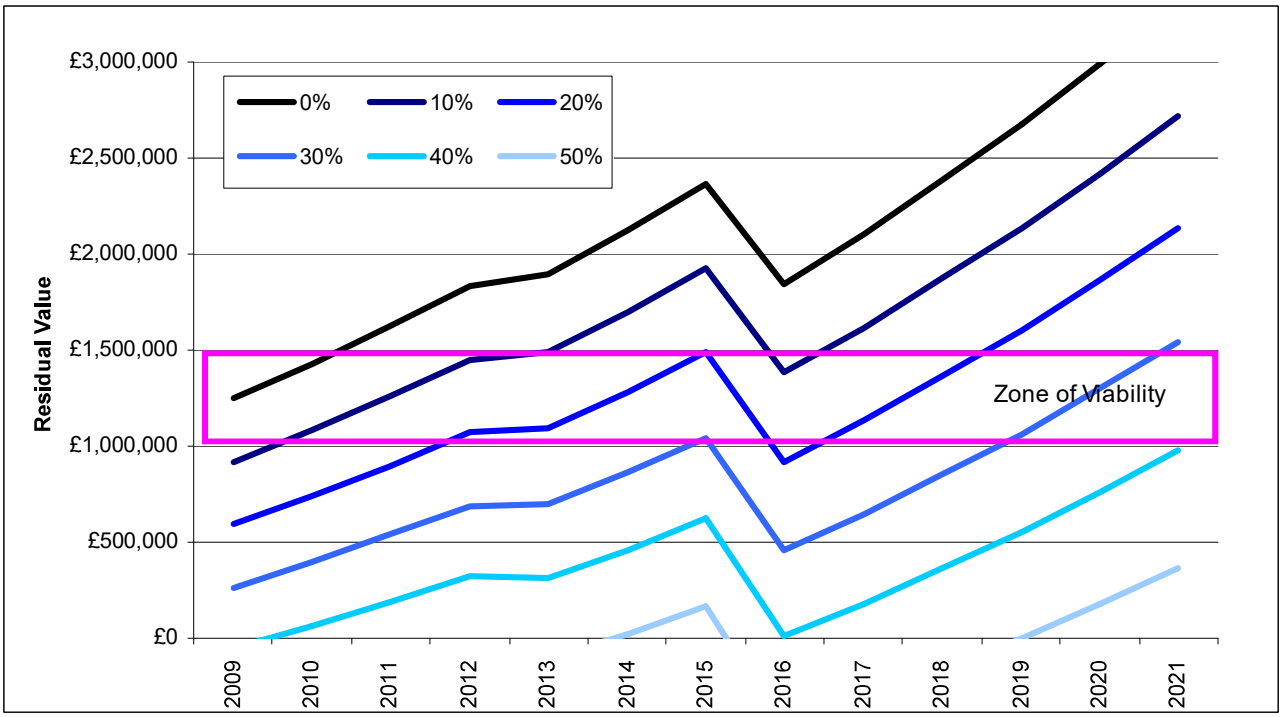


Plate 9.3 Pickering – Viability of a 750 Dwelling Development – Spatial Options 1, 2 & 3

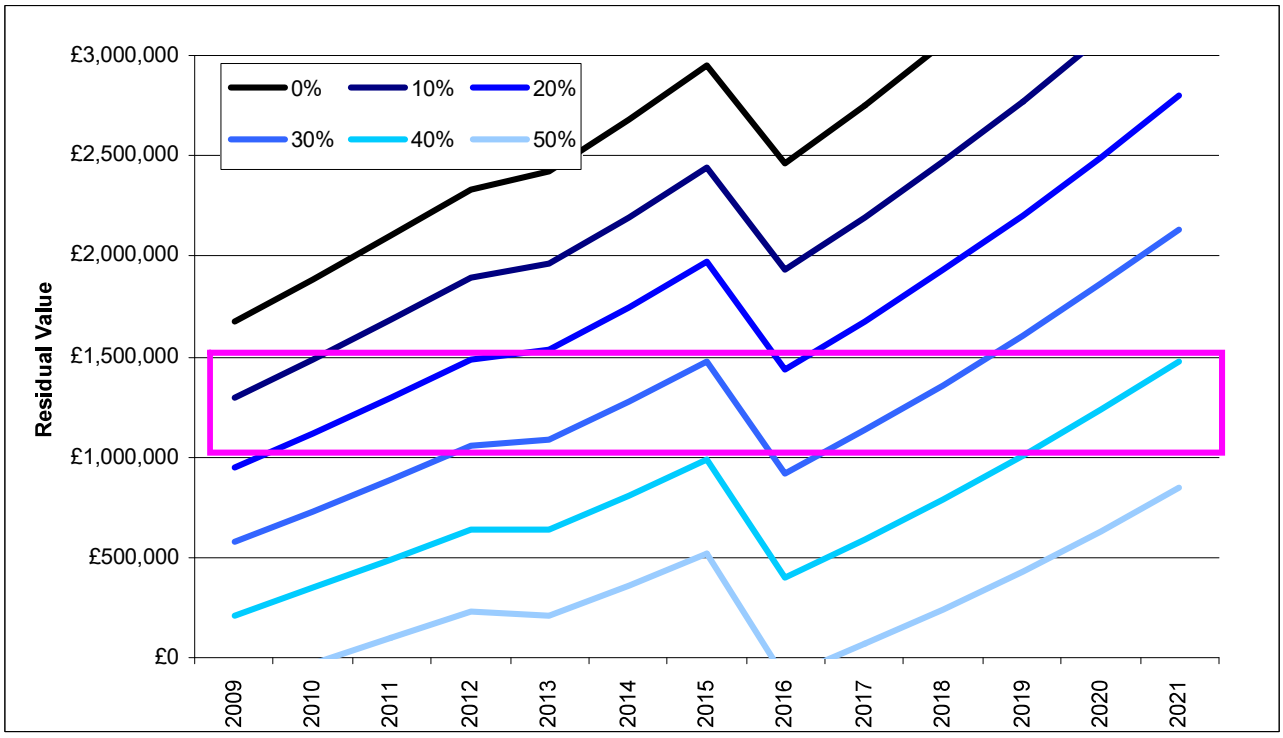


Plate 9.4 Kirkbymoorside – Viability of a 300 Dwelling Development – Spatial Options 1, 2 & 3

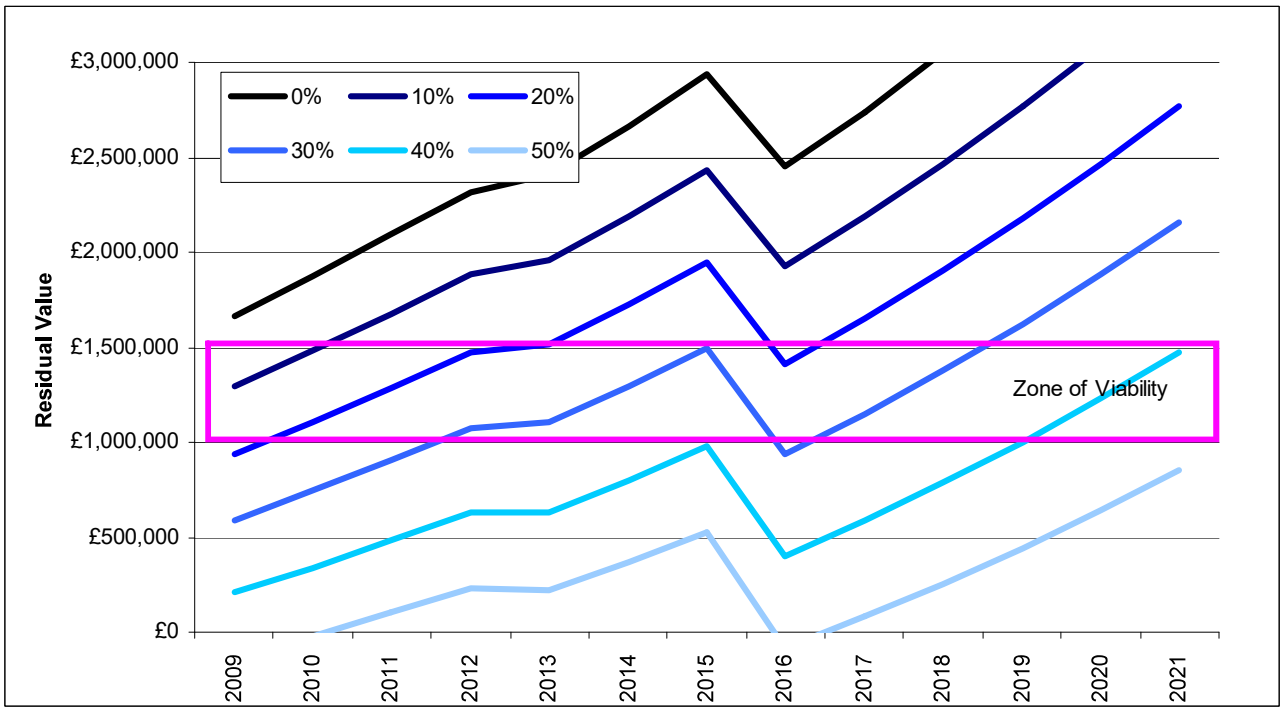
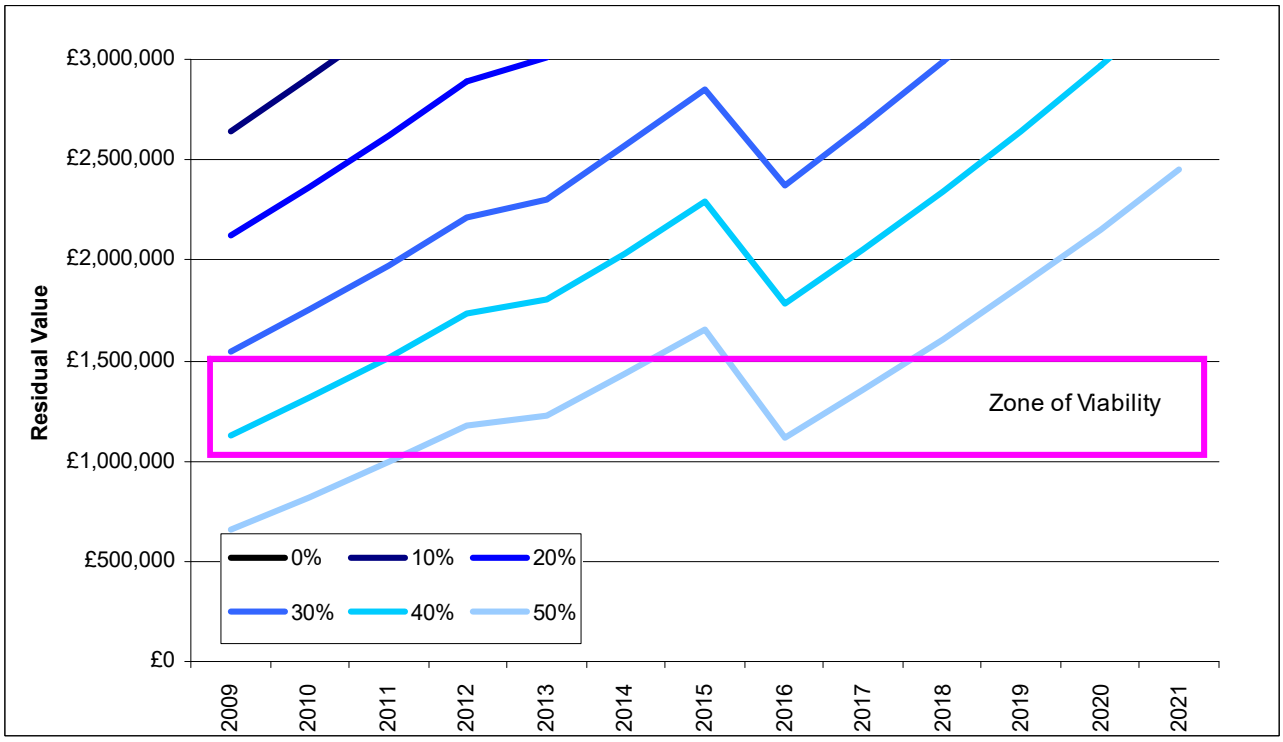


Plate 9.5 Helmsley – Viability of a 150 Dwelling Development – Spatial Options 1, 2 & 3



9.2.2 2009 Assessments of the Strategic Growth Options

Based upon the cost data in Table 9.1, the following Tables 9.2, 9.3 and 9.4 provide assessments of each of the three spatial options together with those of each of the five towns as appropriate.

Table 9.2 Malton Strategic Growth Option – Infrastructure includes £7.5M Highway Measures

	Malton	Norton	Pickering	Kirkbymoorside	Helmsley	TOTAL
RSS Requirement %	50%	0%	25%	10%	5%	90%
Dwellings	1500	0	750	300	150	2700
Affordable Element						
0%	1.63	-	1.68	1.67	3.14	1.73
10%	1.26	-	1.30	1.29	2.64	1.35
20%	0.90	-	0.95	0.93	2.13	0.98
30%	0.53*	-	0.58*	0.59*	1.55*	0.61
40%	0.16	-	0.21	0.21	1.13	0.24
50%	-0.20	-	-0.14	-0.13	0.65	-0.13
RV 'zone of viability'	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50

Viable. RV higher than 'zone of viability'

Likely to be viable. RV within 'zone of viability'

Unviable. RV below 'zone of viability'

NB. 10% (300 dwellings) apportioned to the rural area. *Refer to RVs in Table 9.1 above

Table 9.3 Norton Strategic Growth Option – Infrastructure includes £7.5M Highway Measures

	Malton	Norton	Pickering	Kirkbymoorside	Helmsley	TOTAL
RSS Requirement %	0%	50%	25%	10%	5%	90%
Dwellings	0	1500	750	300	150	2700
Affordable Element						
0%	-	1.25	1.68	1.67	3.14	1.52
10%	-	0.92	1.30	1.29	2.64	1.16
20%	-	0.59	0.95	0.93	2.13	0.81
30%	-	0.26*	0.58*	0.59*	1.55*	0.46
40%	-	-0.55	0.21	0.21	1.13	0.11
50%	-	-0.39	-0.14	-0.13	0.65	-0.24
RV 'zone of viability'	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50

Viable. RV higher than 'zone of viability'

Likely to be viable. RV within 'zone of viability'

Unviable. RV below 'zone of viability'

NB. 10% (300 dwellings) apportioned to the rural area. *Refer to RVs in Table 9.1 above

Table 9.4 Joint Malton and Norton Strategic Growth Option – Infrastructure includes £7.5M Highway Measures

	Malton	Norton	Pickering	Kirkbymoorside	Helmsley	TOTAL
RSS Requirement %	25%	25%	25%	10%	5%	90%
Dwellings	750	750	750	300	150	2700
Affordable Element						
0%	1.63	1.25	1.68	1.67	3.14	1.62
10%	1.26	0.92	1.30	1.29	2.64	1.26
20%	0.90	0.59	0.95	0.93	2.13	0.90
30%	0.53*	0.26*	0.58*	0.59*	1.55*	0.53
40%	0.16	-0.05	0.21	0.21	1.13	0.18
50%	-0.20	-0.40	-0.14	-0.13	0.65	-0.18
RV 'zone of viability'	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50

Viable. RV higher than 'zone of viability'

Likely to be viable. RV within 'zone of viability'

Unviable. RV below 'zone of viability'

NB. 10% (300 dwellings) apportioned to the rural area. *Refer to RVs in Table 9.1 above

The influence of the weaker Norton market is again evident with the Norton focused option being the weakest performer whilst the Malton focused option, without the influence of Norton's poorer housing market, performs better.

Under current conditions, the potential to deliver any affordable element is uncertain. If even a 10% affordable element is included, none of the spatial options produce a residual value of £1.5M; any Core Strategy based upon these options relies upon an increase in house prices to be viable. 2009 evaluations are at **Appendix K**.

The lower house prices in Norton produce a much weaker picture with residual values significantly lower that in the other towns and below probable current market expectations. Conversely, the stronger market in Helmsley produces the highest residual values.

9.2.3 Growth Projections

Plates 9.6 to 9.8 predict the level and timing of a range of affordable proportions. All projections take account of the impact of the impact of enhanced Code Levels at 2013 and 2016.

Plate 9.6 **Malton Strategic Growth Option – Infrastructure includes £7.5M Highway Measures – 5% Annual Growth in House Prices**

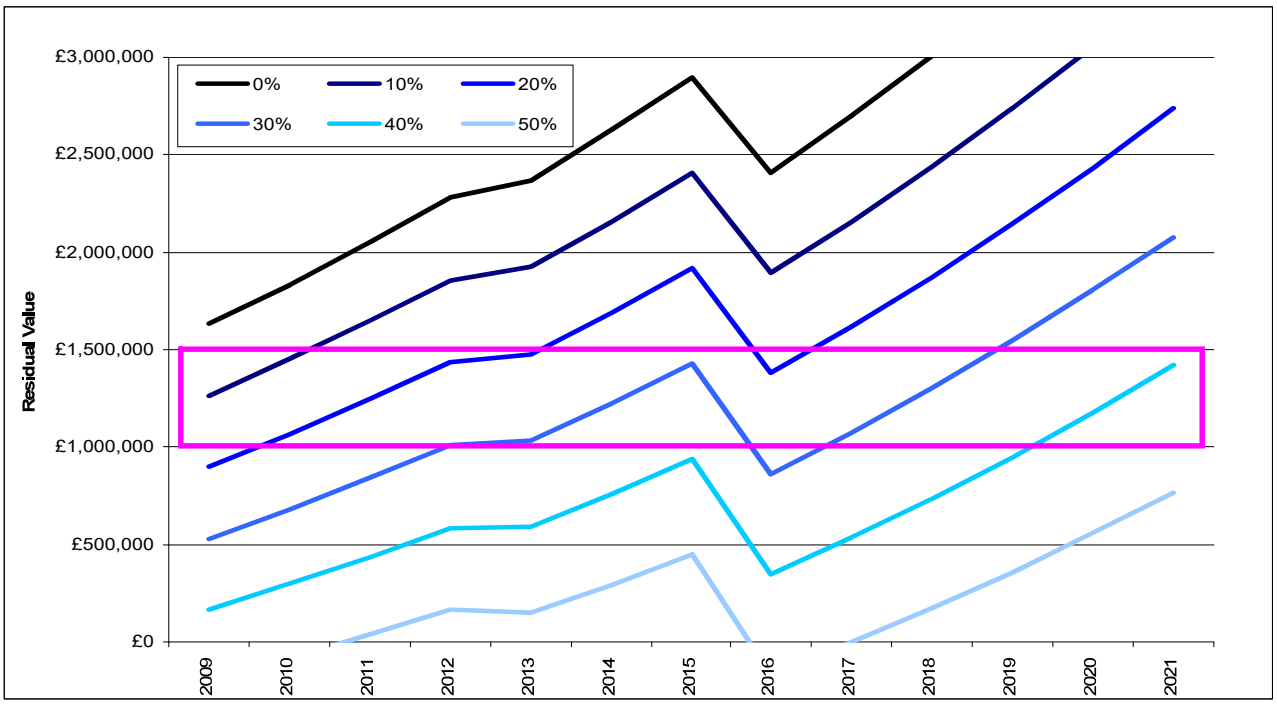


Plate 9.7 Norton Strategic Growth Option – Infrastructure includes £7.5M Highway Measures – 5% Annual Growth in House Prices

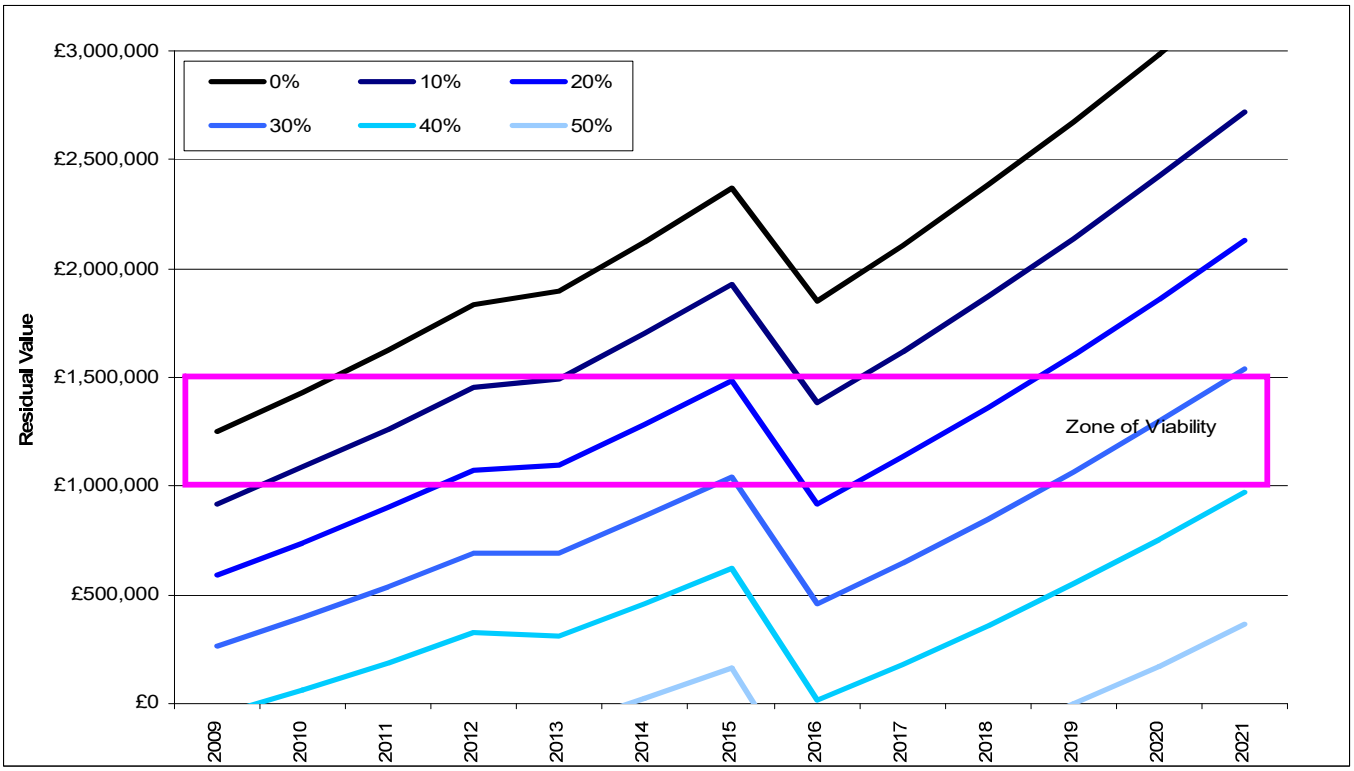
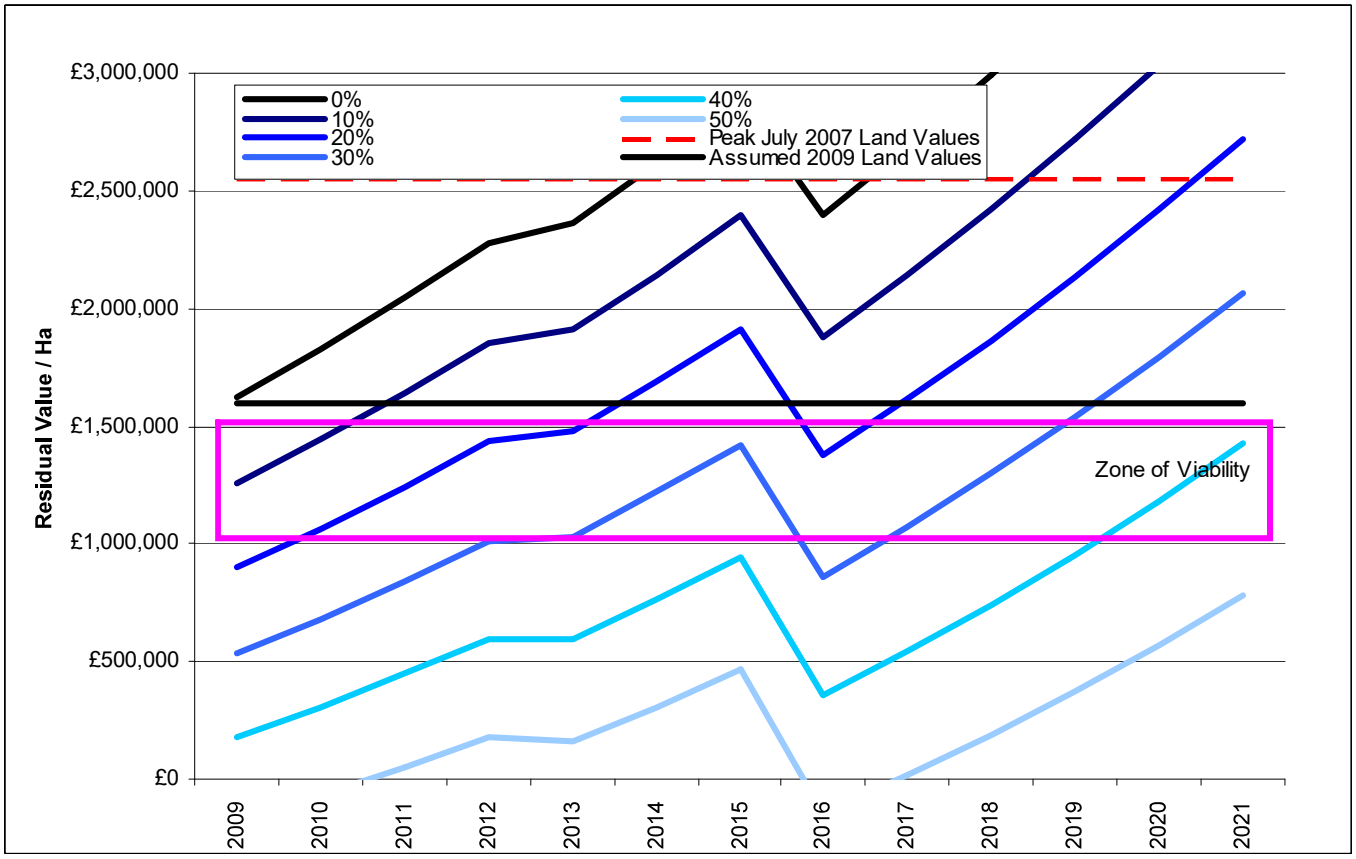


Plate 9.8 Joint Malton and Norton Strategic Growth Option – Infrastructure includes £7.5M Highway Measures – 5% Annual Growth in House Prices



If a 20% affordable housing element is sought against a £1.5M land value, the Council could expect to see this delivered under a Malton focused strategy by 2013 although the introduction of Code Level 6 could mean that this is less reliable for a temporary period around 2016. In Norton, a 20% element would be delayed to 2015 and would not be reliably met until 2019. The impact of the weaker Norton market is also seen in the joint strategy option which performs only marginally better than the Norton option. Against a £1.0M land value, a 20% affordable element is already deliverable in Malton. A Norton based strategy cannot achieve this until after 2011.

Against a £1.5M land value, the 40% proportion sought by the RSS would, under the assessment assumptions, be unlikely to be delivered until after 2021 to varying degrees according to the extent to which development is directed towards Norton. In all cases, the lower land value would advance this performance by two years with the Malton focused option reaching a £1.0M residual value by around 2019.

9.3 The Impact of Enhanced (£23M) Highway Measures

9.3.1 2009 Assessments

Tables 9.5 to 9.7 set out the 2009 assessments of the spatial options incorporating an additional £16M of infrastructure costs associated with the new access onto the A64 at Broughton Road. The detailed assessments are at **Appendix K**.

Table 9.5 Malton Strategic Growth Option – Infrastructure includes £23.5M Highway Measures

	Malton	Norton	Pickering	Kirkbymoorside	Helmsley	TOTAL
RSS Requirement %	50%	0%	25%	10%	5%	90%
Dwellings	1500	0	750	300	150	2700
Affordable Element						
0%	1.31	-	1.68	1.67	3.14	1.56
10%	0.95	-	1.30	1.29	2.64	1.18
20%	0.58	-	0.95	0.93	2.13	0.81
30%	0.22	-	0.58	0.59	1.55	0.43
40%	-0.15	-	0.21	0.21	1.13	0.62
50%	-0.51	-	-0.14	-0.13	0.65	-0.30
RV 'zone of viability'	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50

Viable. RV higher than 'zone of viability'

Likely to be viable. RV within 'zone of viability'

Unviable. RV below 'zone of viability'

Table 9.6 Norton Strategic Growth Option – Infrastructure includes £23.5M Highway Measures

	Malton	Norton	Pickering	Kirkbymoorside	Helmsley	TOTAL
RSS Requirement %	0%	50%	25%	10%	5%	90%
Dwellings	0	1500	750	300	150	2700
Affordable Element						
0%	-	0.93	1.68	1.67	3.14	1.34
10%	-	0.60	1.30	1.29	2.64	0.99
20%	-	0.27	0.95	0.93	2.13	0.64
30%	-	-0.05	0.58	0.59	1.55	0.28
40%	-	-0.37	0.21	0.21	1.13	-0.06
50%	-	-0.71	-0.14	-0.13	0.65	-0.41
RV 'zone of viability'	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50

Viable. RV higher than 'zone of viability'

Likely to be viable. RV within 'zone of viability'

Unviable. RV below 'zone of viability'

Table 9.7 Joint Malton & Norton Strategic Growth Option – Infrastructure includes £23.5M Highway Measures

	Malton	Norton	Pickering	Kirkbymoorside	Helmsley	TOTAL
RSS Requirement %	25%	25%	25%	10%	5%	90%
Dwellings	750	750	750	300	150	2700
Affordable Element						
0%	1.31	0.93	1.68	1.67	3.14	1.45
10%	0.95	0.60	1.30	1.29	2.64	1.08
20%	0.58	0.27	0.95	0.93	2.13	0.72
30%	0.22	-0.55	0.58	0.59	1.55	0.36
40%	-0.15	-0.37	0.21	0.21	1.13	0.01
50%	-0.51	-0.71	-0.14	-0.13	0.65	-0.36
RV 'zone of viability'	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50	1.00 to 1.50

Viable. RV higher than 'zone of viability'

Likely to be viable. RV within 'zone of viability'

Unviable. RV below 'zone of viability'

The enhanced highway measures reduce residual value by about £300,000 per hectare in Malton and Norton and by about £175,000 per hectare for the spatial option overall.

In broad terms these measures delay the achievement of any given affordable element against any given land value by about 18 months. This suggests that a Malton focused strategy will struggle to support a 10% affordable element. The potential for any affordable element is extremely marginal for the other two strategic options.

9.3.2 Growth Projections

Applying a 5% annual growth projection to house prices, **Plates 9.9 to 9.11** predict the level and timing of affordable elements. All projections take account of the impact of enhanced Code Levels.

Plate 9.9 Malton Strategic Growth Option – Infrastructure includes £23.5M Highway Measures – 5% Annual Growth in House Prices

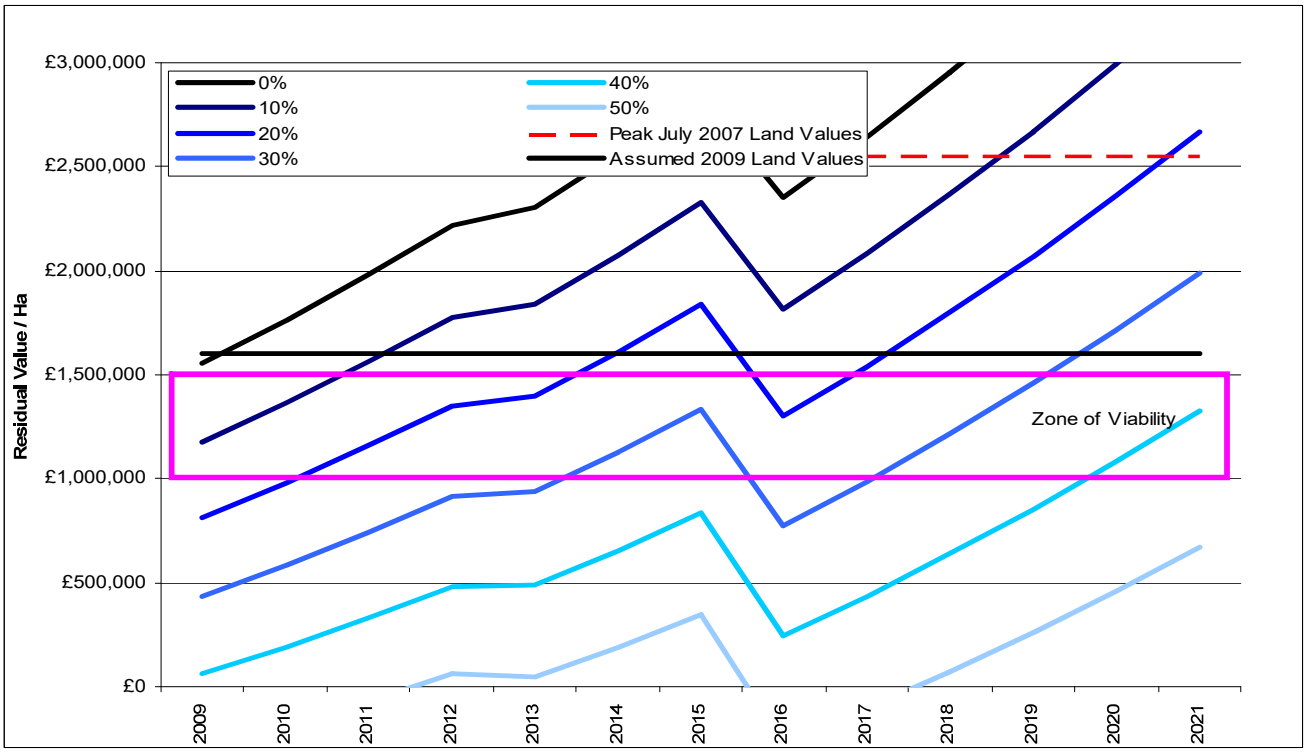


Plate 9.10 Norton Strategic Growth Option – Infrastructure includes £23.5M Highway Measures – 5% Annual Growth in House Prices

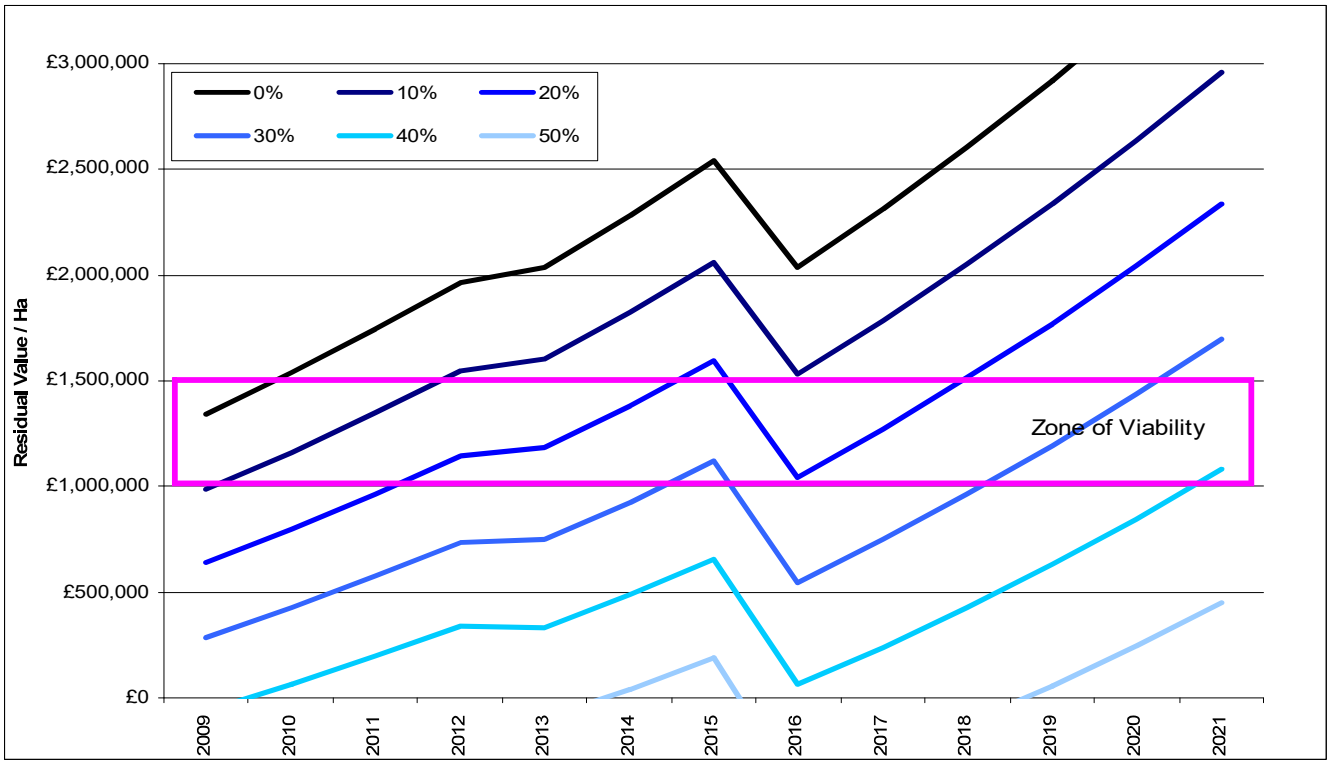
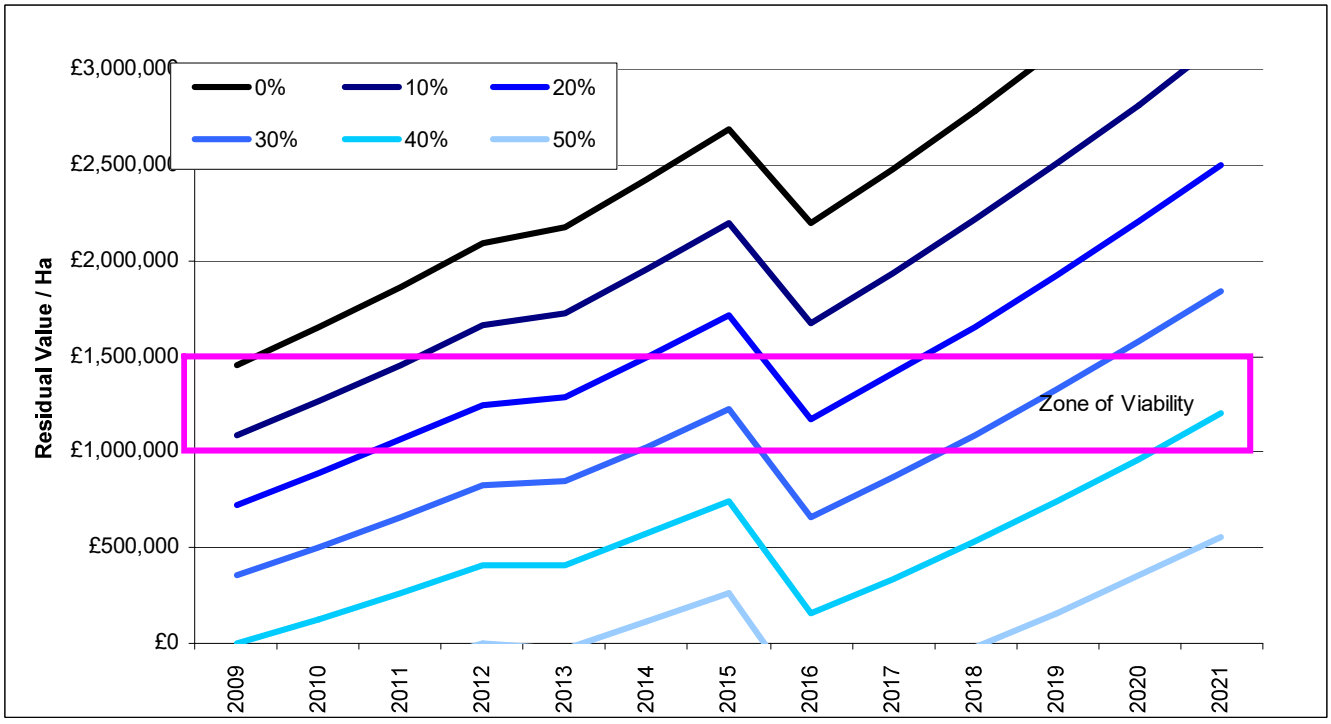


Plate 9.11 Joint Malton and Norton Strategic Growth Option – Enhanced Highway Measures – 5% Annual Growth in House Prices



Against a £1.5M residual value, a Malton based strategic option would be able to deliver a 20% affordable element from 2014 and this would become reliable from 2017 as continued growth in revenues overcomes the impact of Code Level 6. The joint impacts of Code Level 6 and the weaker market suggests that a 20% element cannot be achieved under a Norton based strategic option before 2021. Assessment against a residual value of £1.0M, this performance would be advanced by two years.

In respect of the RSS affordable housing target of 40%, a Malton based strategy could only be able to deliver this at around 2020 and only if a residual value of £1.0M is acceptable – neither of the other options can achieve this performance until after 2021.

9.4 A Comparison of the Strategic Growth Options

Although any change in house prices is very unlikely to conform to a steady annual trend, it is important to assess the impact of varying growth rates to indicate the timing of the viability of a given affordable element under a range of economic circumstances.

Table 9.8 compares the performance of the three spatial options to deliver a 30% affordable element under the three house price growth scenarios of 3%, 5% and 9% growth options. Assessments are provided against residual values of £1.0M and £1.5M and distinction is made between the impact of the limited and enhanced highway measures.

Table 9.8 Projected Timing of Delivery of 30% Affordable Element under 3 Growth Scenarios for Limited and Enhanced Highway Measures

Assumed Annual Growth in House Prices	Limited (£7.5M) Highway Measures			Enhanced (£23.5M) Highway Measures		
	3%	5%	9%	3%	5%	9%
Against Land Value of £1M/Ha						
Malton focus	After 2021	2014-2019	2011	Well after 2021	2015-2020	2012
Norton focus	Well after 2021	2020	2012	Well after 2021	After2021	2014-2018
Joint Malton / Norton focus	After 2021	2015-2020	2012	Well after 2021	2021	2014-2017
Against Land Value of £1.5M/Ha						
Malton focus	Well after 2021	2021-2022	2014-2017	Well after 2021	After 2021	2015-2018
Norton focus	Well after 2021	Well after 2021	2018	Well after 2021	Well after 2021	2019
Joint Malton / Norton focus	Well after 2021	After 2021	2015-2018	Well after 2021	Well after 2021	2018

This data is also summarised for each of the three potential spatial options in **Plates 9.12 to 9.14** respectively.

Plate 9.12 Malton Strategic Growth Option – 30% Affordable Element at 3%, 5% & 9% Annual House Price Growth Rates

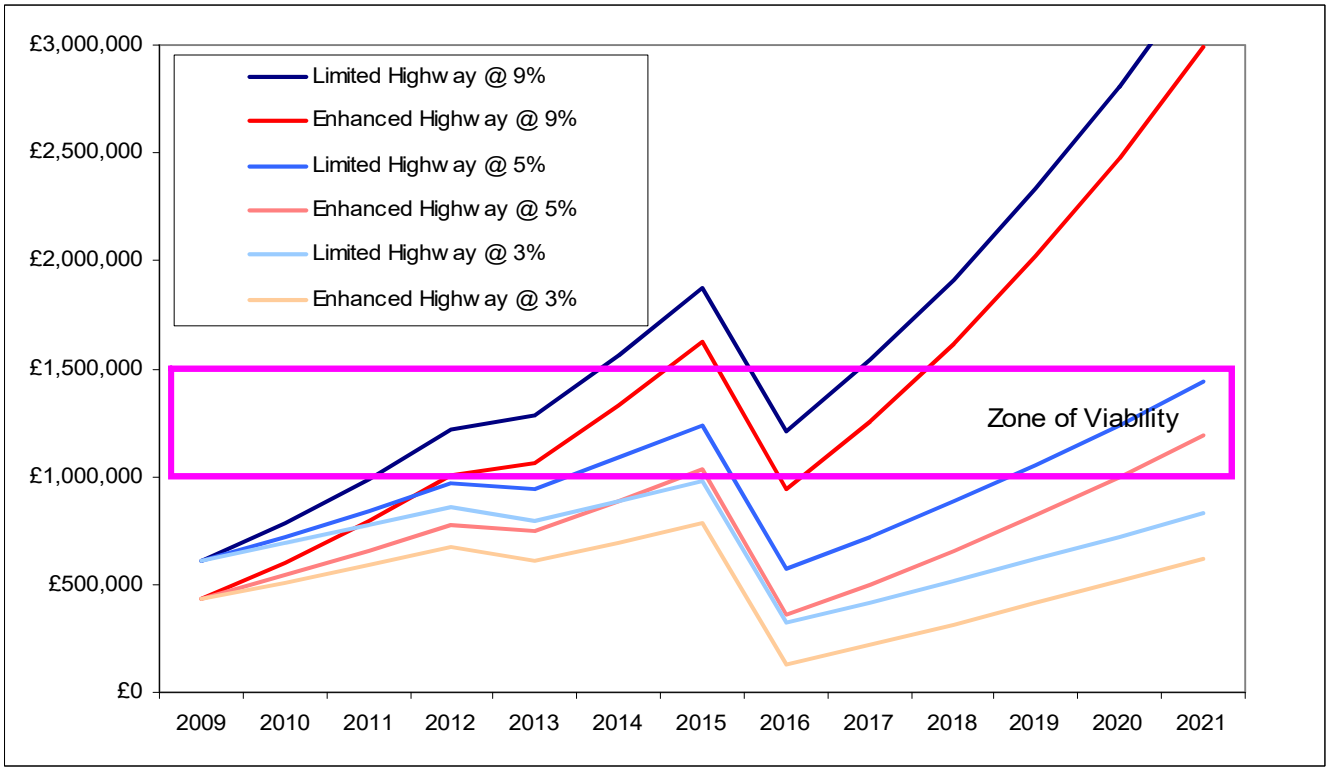


Plate 9.13 Norton Strategic Growth Option – 30% Affordable Element at 3%, 5% & 9% Annual House Price Growth Rates

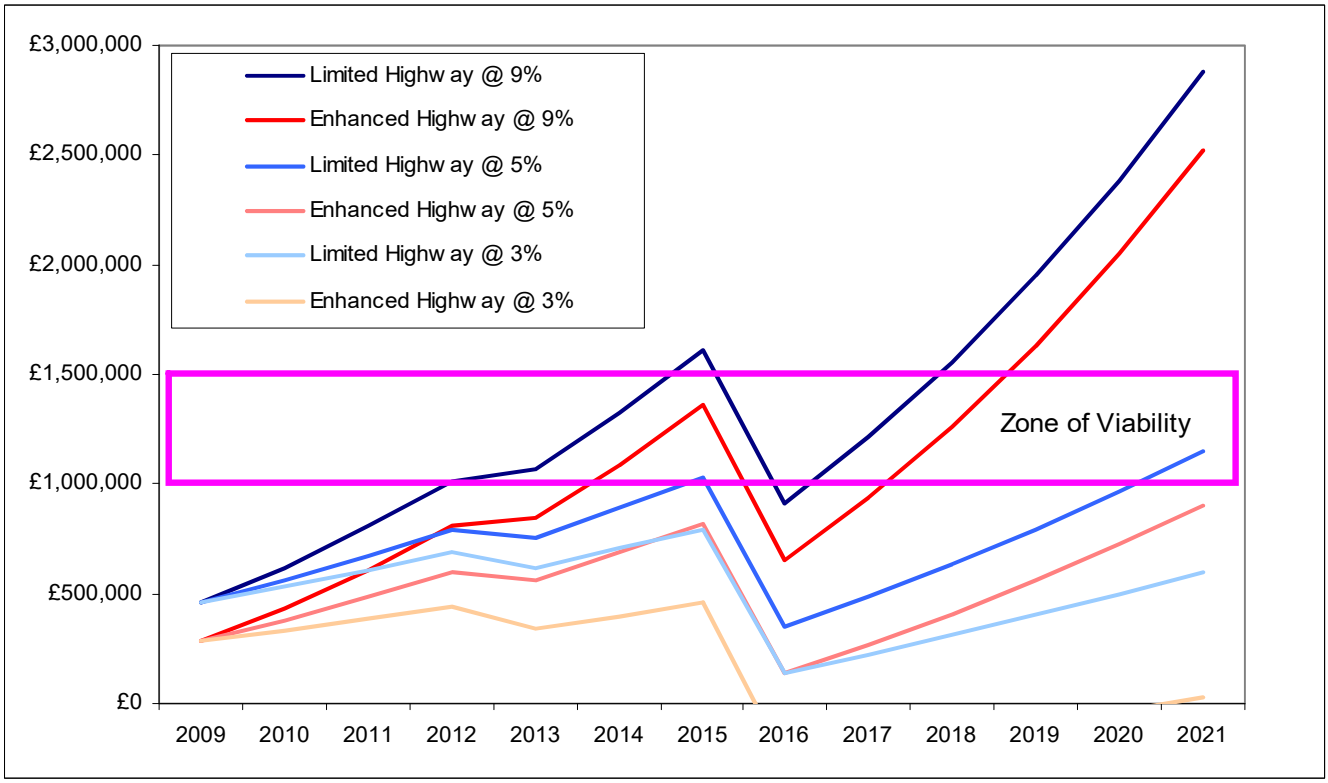
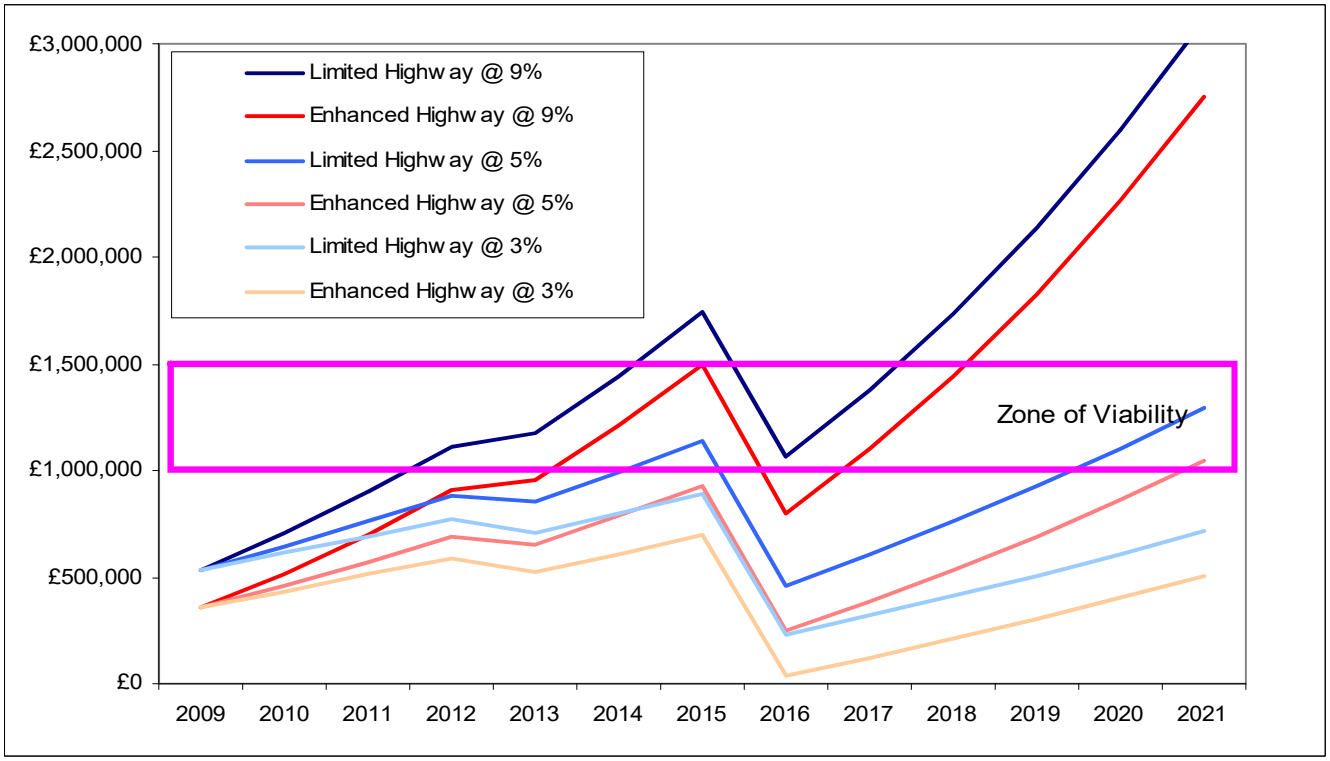


Plate 9.14 Joint Malton and Norton Strategic Growth Option – 30% Affordable Element at 3%, 5% & 9% Annual House Price Growth Rates



9.5 Potential of the Community Infrastructure Levy

As currently drafted the CIL offers Councils some flexibility in addressing infrastructure costs by setting a Districtwide levy to support viability across the District or within certain settlements. As CIL would break the necessity of a specific planning link to a site/ proposal, the CIL could be levied 'across the board' to ensure that costs necessary to the delivery of the strategy are accrued from developments that are not directly dependent upon the infrastructure required.

Table 9.9 sets out a notional CIL tariff for the Core Strategy based upon the infrastructure cost factors associated with education, highways and leisure identified for each location in Section 3 above. Broadly, a District-wide tariff of between £10,000 and £16,000 per dwelling is implied depending upon whether the £16M of additional highway measures at Malton and Norton are included.

Under this District-wide approach, development in the smaller settlements of Pickering, Kirkbymoorside and Helmsley would, in effect, spread the costs of the District's infrastructure and reduce the burden at Malton and Norton by between £800 and £5,500 per dwelling. Without this arrangement, a CIL of between £11,000 and £22,000 per dwelling would be required at Malton and Norton.

Table 9.9 Implied CIL Requirements to Meet Infrastructure Costs for Locations and Spatial Options

£7.5M Highway Measures	£27.86M	£11,048	£11,048	£9,395	£9,410	£9,447	£10,318
£23.5M Highway Measures	£43.86M	£21,715	£21,715	£9,395	£9,410	£9,447	£16,244

This implies, in effect, the 'transfer' of between £1.4M to £10.3M to the less viable areas of the strategy being calculated as follows: (Strategy Infrastructure Costs per Unit – Settlement Infrastructure Costs per Unit) x No. of Units in Pickering, Kirkbymoorside and Helmsley

- Limited Highway Measures = (£10,318 – approx £9,400) x 1,500 dwellings = £1.4M
- Enhanced Highway Measures = (£16,244 – approx £9,400) x 1,500 dwellings = £10.3M

Should the Council consider that infrastructure costs can be reduced from the figures currently assessed, Table 9.10 gives an indication of the financial contribution that could be yielded by varying the District-wide CIL requirement.

Table 9.10 Contribution and Yield of Differential CIL Tariffs against Infrastructure Costs for Spatial Options

CIL Option (£/dwelling)	Infrastructure Costs Reqd for Strategy.	Infrastructure Costs Achieved under CIL Option	% Achieved	Shortfall
Infrastructure Cost incl. £7.5M Highway Measures				
£5,000	£27.86M	£13,50M	48%	£14.36M
£7,500	£27.86M	£20.25M	73%	£7.61M
£10,000	£27.86M	£27.00M	97%	£0.86M
£10,318	£27.86M	£27.86M	100%	-
Infrastructure Cost incl. £23.5M Highway Measures				
£5,000	£43.86M	£13,50M	31%	£30.36M
£7,500	£43.86M	£20.25M	46%	£23.61M
£10,000	£43.86M	£27.00M	62%	£16.86M
£12,500	£43.86M	£33.75M	87%	£10.11M
£15,000	£43.86M	£40.50M	92%	£3.36M
£16,244	£43.86M	£43.86M	100%	-

9.6 Summary of Findings

If it is assumed that a residual valuation of £1.0M is required to demonstrate viability then the following findings are evident:

- If current market conditions persist and if the infrastructure costs associated with education, leisure and highways are met, then none of the spatial options achieve residual values can deliver any element of affordable housing – all options rely upon increases in house prices before any affordable element is viable. The addition of extra infrastructure costs associated, for instance, with more extensive highway measures in Malton and Norton, impact significantly upon the viability of these locations within the wider strategy;

- Assuming a 5% annual growth assumption with limited highway measures, a 30% element can be achieved under a Malton focused strategy from 2012 although Code Level 6 will make this unreliable until about 2018;

- A Norton led strategy produces a weaker performance. A 5% annual growth assumption is unlikely to achieve a 30% affordable element until around 2019;

- The weaker Norton element also compromises the joint strategy. A 5% annual growth assumption may begin to achieve a 30% affordable element from around 2016 before the impact of Code Level 6 will render this unreliable until after 2019;

- A further delay of about twelve to eighteen months would result from the inclusion of the enhanced highway measures.

For any given proportion of affordable housing, the impact of a £1.5M residual value broad implies a five year delay to viability. However, this is not constant in all areas as the impact of Code Level 6 in 2016 will vary according to viability at that time and will have a greater impact upon weaker market areas, albeit that house prices are projected to rise at a similar rate to elsewhere. This means that:

- Asssuming a 5% annual growth assumption with limited highway measures, a 30% element can be achieved under a Malton focused strategy from 2018, however provision should be reliable by this time which represents a delay of just three years over the previous scenario;

- The joint strategy, including the weaker Norton element, should begin to achieve a 30% affordable element at or soon after 2019.

Depending upon the approach preferred by the Council, a CIL approach would allow the Council to support the viability of their chosen strategy by, in effect, spreading the costs the infrastructure needs at Malton and Norton through the application of a District-wide levy.

10. Conclusions

10.1 Caveat

Fundamentally, this study is strategic and theoretical that seeks to identify the broad influences upon viability in the potential broad locations across the District. It has not assessed individual sites although its findings will inform the Council's assessment of specific proposals in due course.

It can be said that the current economic downturn provides a somewhat unhelpful context to the study and it could also be argued that it is being undertaken under exceptional and unrepresentative conditions. Nevertheless, the future is inherently unpredictable and there is a policy requirement for the study so current conditions and market responses must be acknowledged within a statement at a point in time so that changes can be monitored and evidence updated to ensure that policy responds effectively.

10.2 Contextual

The study's residual valuation approach provides a sound basis for assessing viability. Whilst no methodology can predict whether a development option will come forward, it can show that it offers sufficient returns to both landowner and developer to be viable should it do so.

Current economic circumstances is likely to mean that land will only change hands where the landowner has an overriding reason to sell. In addition, there is a latent tension in the relationship between landowners and developers at the present time. The implications of affordable housing and other policy requirements, such a flood resilience and the Code for Sustainable Homes mean that developers will not be able to pay what landowners may see as the 'going rate'. The current downturn probably serves to blur this picture and it maybe that a degree of economic recovery is required to enable land values to find a new level based upon more realistic expectations – clearly the timing of recovery and this response cannot be predicted with any accuracy.

Land values are highly volatile in response to changes in house prices but tend to lag behind by about 12 to 18 months. They also respond a number of other factors and locational, development and site specifics will all affect the 'going rate' for land. To acknowledge this, the study does not assess viability against a single land value but seeks to establish a 'zone of viability' defined by the range of land values. Consultations with the development industry and local agents have established a level of consensus that between £1M to £1.5M per hectare is currently being paid for residential land in Ryedale.

10.3 Market Recovery

Overall the UK economy is showing signs of gradual improvement. This is no better underlined than by the figures published on 26th January 2010 that confirmed the nation is officially out of the recession, albeit marginally. The

improvements are also underlined by the rise of rates of inflation of approximately 3% in last quarter of 2009. This positivity is being picked up in housing market which was showing signs of picking up in the second half of 2009 with houses prices rising also by approximately 3%. There is evidence that this positive trend was also being felt in house prices in North Yorkshire with a similar increase over 2009.

As the future is uncertain, projections are unlikely to be reliable. However, evidence of long term historical Regional trends and in particular the profile of land values after the 1989 peak suggests that values will recover towards the long term trend in about ten to fifteen years. Such a recovery profile would be broadly produced by a 5% annual growth rate. The impact of this recovery upon land values remains to be seen. However, and with all other things being equal, any increase in house prices will serve to improve residual values and the prospect of benefits for landowners.

10.4 Current Viability

Significant variations in the strength of housing markets across the District mean that the viability of any given level of affordable housing varies according to location. In broad terms house prices fall from west to east with the lowest prices closest to Scarborough.

Viability is evaluated at three levels.

10.4.1 Post Code Evaluations

These evaluations are undertaken for notional 0.5 hectare sites at a development density of 40 dph.

If it is assumed that developer contributions will be restricted to £5k per dwelling, the prospects for the reliable delivery of affordable housing would appear to be restricted to the western area of the District. Currently Helmsley is the only significant settlement where residual values suggest that potential may exist. Assuming that a land value of £1.5M per hectare is accepted then there may be some potential to deliver a small element (in the order of 10% on-site provision) in Malton, Pickering and Kirkbymoorside.

This potential is necessarily compromised by the imposition of higher developer contributions. Whilst this does not produce a significant variation, in each case an additional £5k of contribution per dwelling reduces the residual site value for a 0.5 hectare site by £100,000 (£200,000 per hectare) with a corresponding impact upon the affordable contribution.

Before 2016

If a 5% annual growth in development revenues is applied to the £5k per dwelling contribution scenario, the situation would soon improve to a point where by 2015 a 40% affordable element should be possible in Malton, Pickering and Kirkbymoorside against current land values. The weaker housing market in Norton suggests that a lesser level of around 30% should be deliverable by that time.

Increase levels of developer contribution will, as before, reduce the residual value by the same order as previously although the impact of these contributions (if fixed) become less important as the market steadily improves.

After 2016

Performance in 2016 will be hit by the introduction of Level 6 of the Code for Sustainable Homes. Nevertheless, a continued 5% growth will outweigh this influence quickly to a point where an affordable element of at least 40% should be deliverable in all areas at 2021. The only indicated exception would be in East Ryedale where such a proportion may not be deliverable should a £15k per dwelling contribution be required.

10.4.2 Small Site Evaluations

In common with the post code analyses, these evaluations are undertaken for notional sites at a development density of 20 dph which is representative of the rural area of Ryedale.

These evaluations confirm that current potential for the reliable delivery of affordable housing on small sites would appear to be restricted to the western area of the District only.

Before 2016

If 2009 land values are accepted, a 5% annual revenue growth assumption could by 2014 create conditions under which a 20% on-site element may be possible in the Malton, Pickering and Kirkbymoorside post code areas. The weaker housing market in the Norton and East Ryedale areas means that the achievement of a 20% element before 2019 is unlikely.

Provision to this level would be delayed by four years should 2007 ‘peak’ land values be demanded by landowners.

There is also potential before 2016 to pursue financial contributions in lieu of one site provision. Clearly this potential will depend upon landowner expectations. It would however offer a flexible response to ongoing steady economic improvement that would mean that the Council could receive incremental benefits prior to reaching a threshold where a single on-site dwelling becomes viable.

After 2016

Performance in 2016 will be hit by the introduction of Level 6 of the Code for Sustainable Homes. Nevertheless, against 2009 land values a continued 5% growth will outweigh this influence to a point where a 40% affordable element could be viable in the Malton, Pickering and Kirkbymoorside post code areas by 2021.

Again a four year delay would arise should 2007 ‘peak’ land values be demanded. This would mean that a 40% affordable element should be achievable in SW Ryedale in 2019 – elsewhere this level would not be achievable until beyond 2021.

10.5 Towns and Spatial Options

The relative viability of the Helmsley housing market area is a consistent feature of all the evaluations. Conversely, Norton is much less buoyant also lagging behind Malton, Pickering and Kirkbymoorside.

This pattern is compounded by the impact of expected infrastructure costs in the towns. The main distinguishing factor is the level of highway measures required in Malton and/or Norton which means that these towns have higher cost requirements per dwelling. The degree to which these measures are required is still being evaluated by the Council but the identification of these towns as the major growth point in all three spatial options means that these costs will need to be dealt with in the core strategy.

If it is assumed that a residual valuation at the lower end of the 'zone of viability' of £1.0M demonstrates viability then the following findings are noted:

- If current market conditions persist and if the infrastructure costs associated with education, leisure and highways are met, then none of the spatial options achieve residual values can deliver any element of affordable housing – all options rely upon increases in house prices before any affordable element is viable. The addition of extra infrastructure costs associated, for instance, with more extensive highway measures in Malton and Norton, detrimentally impact upon the viability of these locations within the wider strategy;
- Assuming a 5% annual growth assumption with limited highway measures, a 30% element can be achieved under a Malton focused strategy from 2014 although Code Level 6 will make this unreliable until about 2018;
- A Norton led strategy produces a weaker performance. A 5% annual growth assumption is unlikely to achieve a 30% affordable element until around 2022;
- The weaker Norton element also compromises the joint strategy. A 5% annual growth assumption may begin to achieve a 30% affordable element from around 2016 before the impact of Code Level 6 will render this unreliable until after 2019;
- A delay of about twelve to eighteen months would result from the inclusion of the enhanced highway measures.

For any given proportion of affordable housing, the impact of a £1.5M residual value broad implies a five year delay to viability. However, this is not constant in all areas as the impact of Code Level 6 in 2016 will vary according to viability at that time and will have a greater impact upon weaker market areas, albeit that house prices are projected to rise at a similar rate to elsewhere. This means that:

- Assuming a 5% annual growth assumption with limited highway measures, a 30% element can be achieved under a Malton focused strategy from 2021 (a delay of six years), however provision should be reliable by this time which represents a delay of just three years over the previous scenario;
- A 5% annual growth assumption is unlikely to achieve a 30% affordable element until well after 2021;

- The joint strategy, including the weaker Norton element, should begin to achieve a 30% affordable element at or soon after 2021.

10.6 Considerations for the Core Strategy

10.6.1 Predicting Recovery

The currently difficult circumstances give a pessimistic impression of viability. However, and fundamentally, it is highly unlikely that current economic conditions will apply throughout the lifetime the LDF to 2026 and the volatility of land values means that the following, either individually or in combination, could markedly improve the position:

- There is some cautious optimism that the current economic position is improving. House prices are the main determinant of land values and even modest increases can produce marked improvement in residual values;

- As knowledge of the issues facing developers becomes better understood by landowners and their agents, the 'going rate' for land should move to a more viable level. In some cases this may depend upon raised house prices as the current downturn has served to obscure these changes.

The Council also has a number of options should the delivery of affordable housing be considered paramount and this could include use of public sector sites for which a sub-premium land value is accepted. This would depend upon the suitability of the location in terms of its 'fit' with the strategy as well as environmental and policy constraints.

To address this uncertainty, the Council could consider a policy that sets out the overall target for the plan period but also acknowledges an interim target based upon current viability. The target sought could then be reviewed and updated periodically as market circumstances suggest. There is also the possibility to apply a higher target in areas of stronger viability – alternatively this could be effected – although less reliably through a phasing policy that prioritises the more viable areas of the District.

10.6.2 Prioritising Affordable Housing

Affordable housing can be prioritised over other considerations in negotiations with developers. This would need to be carefully applied to ensure that other critical issues (e.g. highway capacity) are addressed. However there may be scope to be flexible on certain issues in particular locations. There could be merit in further evaluation of the highway measures to evaluate the point at which a 'hard threshold' is reached. Could for instance, a proportion of the growth be achieved without unacceptable impacts being created? In the meantime there could be more scope to deliver affordable housing without loading the development with unnecessary cost. This would of course create a potential issue for latter stages of development although this may be mitigated by better market conditions than apply currently.

This implies the phasing of sites so that development in weaker market areas is planned for the latter years of the plan to take advantage of improved economic conditions. In the meantime, consideration could be given to whether demand could be adequately met by urban sites or the development of the less cost-constrained parts of the strategy. This could imply an early focus upon Helmsley, Pickering and the wider rural area. **Figure 10.1** suggests how this might be spatially framed;

It could also be said that the spatial options are 'blunt instruments' as currently framed. Consideration could be given to a strategy that acknowledges area-specific thresholds to derive an optimum solution. This could for instance result in a less equal split, say 80/20, between Malton and Norton.

The Core Strategy could have a role in enhancing values and viability in Norton. This could be achieved by a policy objective to deliver development of exceptional quality that creates a market attraction that it currently does not have. This could be specified by a development brief within the context of the Site Allocations DPD.

10.6.3 Mechanisms and Monitoring

The use of commuted sums on small sites should be considered. This could be best applied on small or other windfall sites where a single on-site unit would account for a significant proportion of the development and would also constitute a flexible, and increasingly profitable, mechanism as recovery progresses. In this way, the Council would receive a useful financial contribution;

Without enactment, the potential of the CIL as a tool remains uncertain. Nevertheless it would contain two aspects that could aid provision:

- The application of a standard tariff could, to an extent, support the viability of Malton and Norton. This study suggests that a District-wide CIL of just over £10,000 per unit would address the infrastructure requirements as currently assessed and support Malton and Norton to the tune of between £800 to £5,500 per unit. In aggregate this would result in the pooling of resources to ensure that the needs of the District are met in the most effective way;

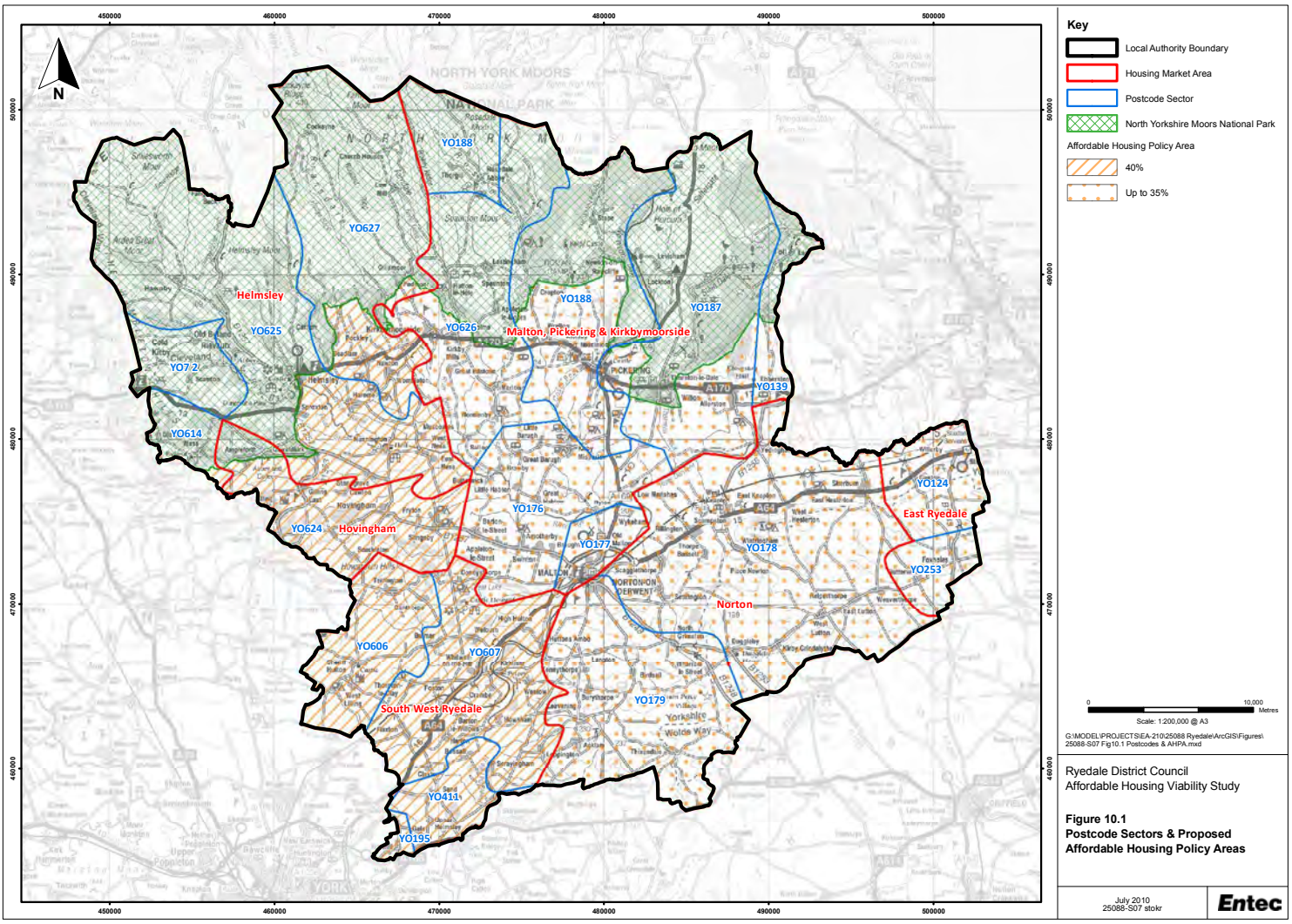
- The CIL may also offer scope to apply differential tariffs to further boost this transfer of resources. Whilst this warrants further assessment it could be an unpopular policy that could create a development impasse in the more viable areas of the District as landowners 'sit tight' to await it's removal before bringing their sites to the market. Whilst this is a potential danger, this option does warrant further evaluation.

There is certainly a need for ongoing consultation with the market upon specific proposals as well as more general trends and conditions within the Site Allocations DPD. The Council's already good relation with local stakeholders will provide a good platform for this.

10.6.4 Summary

In summary, current economic conditions make the delivery of affordable housing problematic. However scenarios based around growth in house prices in response to current optimism indicates that the LDF's policies should anticipate how it will respond to these improved circumstances.

A flexible policy approach is required that allows a range of affordable proportions to be sought according to location. It should also allow the potential for targets to be updated as further evidence adds to the understanding of local viability including the potential of specific sites as these are presented by the market.



Ryedale District Council
Affordable Housing Viability Study

Figure 10.1
Postcode Sectors & Proposed Affordable Housing Policy Areas

July 2010
25088-S07 stokr

Entec

Entec

Creating the environment for business

Appendix A
The Three Dragons Development Appraisal Toolkit (DAT) Guidance

DEVELOPMENT APPRAISAL TOOLKIT (DAT)

Release April 2008

GUIDANCE NOTES

April 2008

Welsh local authorities and partner Housing Associations Consortia

Three Dragons

TABLE OF CONTENTS

Statement of Copyright

1. INTRODUCTION

The Development Appraisal Toolkit (DAT) has been developed on behalf of 13 local authorities and housing associations in South Wales. The participating organisations are:

The following Council's, Blaenau Gwent, Bridgend, Carmarthen, Caerphilly, Cardiff, Conwy, Merthyr, Monmouthshire, Newport, Pembrokeshire (incl the National Park) Rhondda Cynon and Taff, Torfaen, Vale of Glamorgan and the Housing Association Consortia of GENuS, Integrate and Syniad.

The Welsh Assembly Government has participated in the development of the Development Appraisal Toolkit.

The Home Builders Federation has been consulted in developing the Development Appraisal Toolkit at both the initial and final draft stages.

The process for developing the Development Appraisal Toolkit has been guided and supported by a steering group of local authority and housing association representatives.

2. GENERAL PRINCIPLES

2.1 Overview

The Development Appraisal Toolkit (or DAT) provides the user with an assessment of the economics of residential development for specific schemes. It allows the user to test the economic implications of different types and amounts of planning obligation and, in particular, the amount and mix of affordable housing. The user can alter a range of different assumptions including house prices, grant rates, density and build costs and compare the results these generate.

The DAT can be an aid to decision making but it cannot make decisions. It does not say if such and such a residual value is achieved then development can or cannot go ahead. However, it gives the user information about the economics of development, which can be taken into account, along with a range of other factors about the site, in making decisions about proposed schemes, be they at pre-application negotiation stage, an outline planning application or a full/detailed application. The DAT can also be used to help in policy development when the user tests out the impact of different amounts and type of affordable housing on a series of notional schemes in different market areas.

The DAT compares the potential revenue from a site with the potential costs of development **before a payment for land is made**.

In estimating the potential revenue, the income from selling dwellings in the market and the income from producing specific forms of affordable housing are considered. The estimates involve (1) assumptions about how the development process and the subsidy system operate and (2) assumptions about the values for specific inputs such as house prices and building costs. These assumptions are made explicit in the Guidance Notes. If the user has reason to believe that reality in specific cases differs from the assumptions used, the user may either take account of this in interpreting the results or may use different assumptions.

The DAT should not be used in a mechanistic fashion to give results that are taken as inevitably correct. The results depend on the inputs. The results provide information to help make decisions. The results do not provide the decisions.

For some inputs, such as house prices and building costs, the DAT has ‘default’ values. The default values vary by house type and by local authority and, in the case of house prices, take into account different ‘market areas’ within local authorities.

Where the user has scheme specific values these should be used instead of the default values held within the DAT.

The main output of the DAT is the **residual value**. This is the sum of money that is available to be shared between the developer and the landowner. It is a surplus that remains after all development costs, except land costs, have been met from revenue. Development costs include a standard return for the developer and contractor. The residual value will have to cover the costs of land acquisition. Any surplus remaining after land acquisition becomes 'super-normal' profit for the developer. The residual value is thus not the same as the land costs, although land costs will invariably make up the larger part of the residual. For development to be economically viable the residual must be large enough to at least cover the cost of acquiring the site.

Use can be made of the DAT to test the sensitivity of the residual value to different input values. Thus the user can see, for instance, how different amounts of affordable housing, higher or lower house prices or higher or lower build costs influence the residual value. The residual value is estimated at a given point in time. If the user wishes to test for a future situation in which for example house prices have increased by say 5% and build costs by say 3%, then this is possible. If this example is realised in the market in the future, then the scheme will be more valuable than if a simple snapshot is taken, although increases in site value over the longer period should be considered alongside potential holding costs. It is important to stress that the DAT does not predict. However, if one makes assumptions about future input values, the DAT can estimate the effect of these assumptions on the residual value.

2.2 Interpreting results

The way the results of the DAT are used is very important. The DAT does not indicate whether a site will come forward or not. It does not indicate whether a site will come forward with a specific affordable housing contribution or not. The user will need to make a judgement about the residual value generated by the Toolkit.

There are several 'benchmarks' that can be used to assess whether a site is viable at a certain level of affordable housing contribution. First, the user can see if the site is negative in 'value'; that is to say, the costs of developing the site are greater than the revenue generated by it. Under these circumstances, the site would not be expected to come forward under any circumstances.

Second, the user can assess if the site, with the affordable housing contribution (or other planning obligations) is lower in value than the existing use. To ascertain this, we would recommend local authorities establish with their property advisers (either within their authority or using external advisers) the best possible data. Benchmarks (per hectare) can be identified from the Valuation Office website (www.voa.gov.uk – then follow 'Publications – Property Market Report 2006 – Residential Building Land Report').

In most cases, the site value for residential development will be higher than the existing use and this will almost always be the case for agricultural land which does not normally exceed £5,000 per hectare in value. Where the site value does exceed the existing use, then the consideration, when negotiating

affordable housing (and other planning obligations) would normally be the level of uplift.

Residential land values will vary although some benchmarks are provided by the Valuation Office.

It is important that these land value 'benchmarks' are seen in the context of planning policies for affordable housing. Where affordable housing policies are emergent or nascent, then the impacts would not be expected to have begun to 'bite'.

Policies to increase the supply of affordable housing will be best delivered where local authorities build up a record of comparable data that can be used to inform evaluation of new sites that come forward. This data might come directly from DAT appraisals or from developer's own 'open book' submissions.

3. BASIC COMPONENTS OF THE DEVELOPMENT APPRAISAL TOOLKIT (DAT)

3.1 The Scheme

The DAT is designed to analyse the development economics of 'schemes' and to produce scheme-specific residual values. Usually a scheme will have a defined physical boundary (for example, the 'red line' of a planning application) but the DAT will operate provided the user can estimate the site area of the scheme.

3.2 Different Development Situations

A scheme can be new build or conversion/refurbishment of existing buildings – but if used to model a conversion, the user will usually need a lot more information about the scheme than for a new build scheme.

The DAT can be used for mixed use schemes. Mixed use in this context is where development proposed on a site includes other uses (e.g. commercial or retail development) as well as residential. This (Phase II) version of the Toolkit includes a specific page for commercial property inputs.

The DAT is flexible but cannot take into account every possible development situation.

3.3 Unit of Measurement

The basic unit of measurement in the DAT is the dwelling. This dictates how prices are measured and is the basis for the Welsh Assembly Government funding regime.

3.4 Using DAT Default Values

The DAT has default values for a number of variables. Some of these (e.g. professional fees, finance costs) are the same for all locations. Others will vary depending on their location and assumptions made about the density of development. Default values which vary are:

- House prices
- Build costs
- Social rents (SR)
- Market rents from which the user provides intermediate rents (IR)
- Acceptable Cost Guidance or ACG values (including wheelchair supplements)
- Dwelling mixes

Figure 1 below shows, for a specific scheme, what governs the default values used in the DAT (the factors shown in the 'petals' of the diagram).

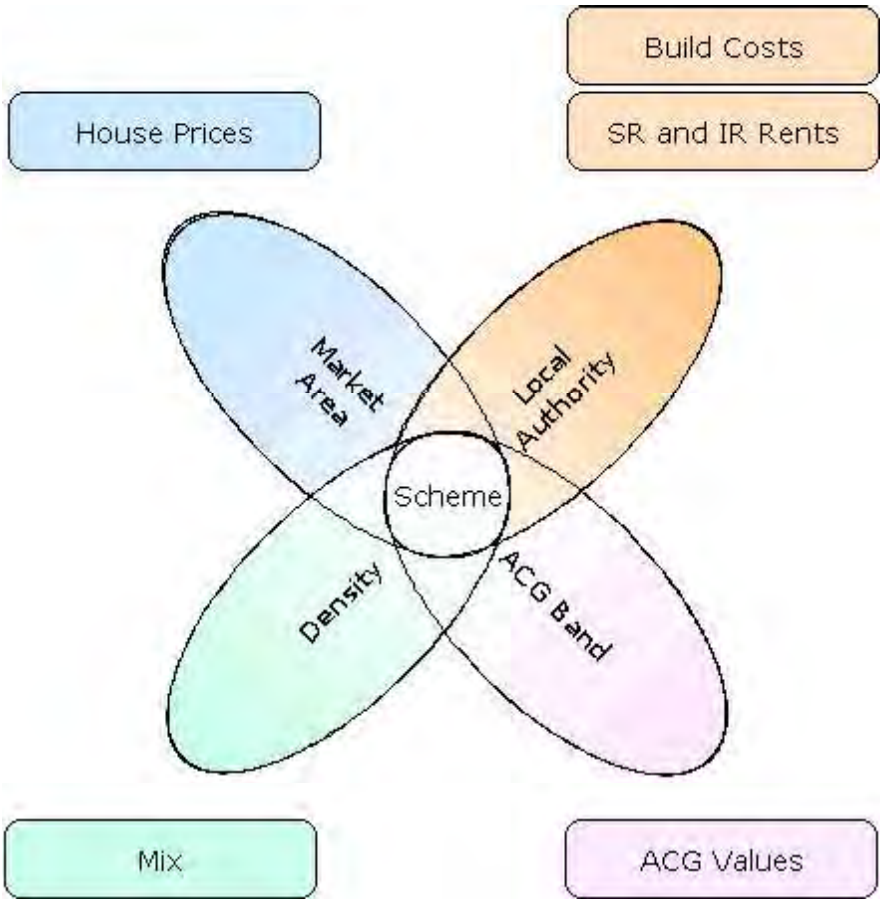


Figure 1: Drivers of Default Values used in the DAT

So, for instance, the DAT will have a different mix of dwelling types for a scheme of 60 dph than for one of 35 dph. It will use different ACG values for a scheme in Band 1 than for Band 3 and will have different house prices for a scheme in e.g. Cardiff Inner Core area or North East Suburban Cardiff.

The accompanying Excel file "DAT defaults.xls" provides a full listing of all default values which apply to each local authority.

3.5 Core Dwelling Types

The DAT operates using a core range of dwelling types as shown below.

Dwelling Name	No. Of Bedrooms
Studio Flat	1
1 Bed Flat	1
2 Bed Flat	2
1 Bed Terrace/Town House	1
2 Bed Terrace/Town House	2
3 Bed Terrace/Town House	3
4 Bed Terrace/Town House	4

2 Bed Semi Detached	2
3 Bed Semi Detached	3
4 Bed Semi Detached	4
3 Bed Detached	3
4 Bed Detached	4
5 Bed Detached	5
2 Bed Bungalow	2
3 Bed Bungalow	3

Where the user has very limited scheme information (for example, at policy making stage or pre-application discussion stage) the core dwelling types provide the basis of operation for the DAT and the use of defaults. The DAT also allows scheme analysis where the user has more detailed information about the site and does not want to be constrained by the core dwelling types.

3.6 Tenures

The tenures used in the DAT are defined as follows:

'Sale housing': housing sold on the open market.

'Social Rent': housing provided by a landlord where access is on the basis of housing need, and rents are no higher than target rents set by the Welsh Assembly for housing associations and local authority rents.

'Homebuy': low cost home ownership housing provided by registered social landlords in which the occupier owns a percentage of the property (normally 30-50% but no less than 25%) and the remainder is owned by the RSL.

'Intermediate Rent': property which is available for rent at a cost which is less than typical market rent in an area but above social rent levels.

'Equity Share': the occupier owns a percentage of the property (typically around 70%) and the remainder is owned by a third party (typically the developer, landowner, employer or their agent). The purchaser may be expected to buy at the market value at a specified date in the future.

For the purposes of the DAT, 'affordable housing' is the collective name given to Social Rent, Homebuy, Intermediate Rent and Equity Share

4. BASICS FOR USING THE DAT

4.1 Valid User

The user should have a valid and licensed copy of this software installed.

The DAT is provided for the operation only by users who have obtained the DAT from Newport City Council on behalf of the other partners. The DAT should not be copied and supplied or in any way made available to any other persons.

4.2 Using Excel

To run the DAT Microsoft Excel 2000 or a more recent version is required.

The DAT contains macros and the appropriate Excel security level ('medium' or 'low') is required for operation of the macros[1]. Users are advised to use the 'medium level'. However, users should take advice from their own IT experts to ensure that the 'medium' security setting is appropriate for them.

4.3 Terminology

These Guidance Notes provide a step-by-step guide through the each part of the DAT. Each part of the DAT is shown as it appears on the screen and guidance given about what the user needs to do along with some further background information and helpful tips.

Users need to be aware that on the screen, the DAT will often show figures as whole numbers or numbers to one decimal place although the underlying figures may be at a much more detailed level.

Important terms used in the Guidance Notes are:

'*Tick a box*': means left click with the mouse above the box to show a tick (which 'turns on' that operation) – left clicking again will remove the tick (and that function is 'turned off').

'*Select an option button*': this instruction will arise where the user has a series of options to choose from, each identified by a button with a description alongside. 'Select an option button' means left click with the mouse above the button to highlight it (which selects the way of working described next to the button).

A '*drop down list*' is a series of options set out in a list. To use a 'drop down list', left click the mouse over the arrow at the right of the list to bring down the full list. Click over the required item from the list.

[1] See the Excel help files for more information.

A test or run of the DAT – refers to the completion of the DAT for a scheme and results shown on the Scheme Results page.

The Guidance Notes also include background information/advice about particular sections of the DAT. These notes are titled 'Advisory'.

4.4 Layout of the DAT

The DAT is made up of a number of pages and the user is required to input information as they move from page to page.

The DAT uses colour coding as follows:

User can only enter or change values in white cells. Certain white cells have a red border (e.g. the 'site area' cell). The user must fill in these cells, as there are no DAT default values for these cells.

On some pages there are DAT default values. These appear in light blue cells. The user cannot change values in the blue cells but can usually 'over-ride' default values by entering their own values in the white cells alongside.

Some pages have menu buttons at the top of the page which give the user options in, for example, access to information and movement between the pages.

NB: Where screenshots appear in these guidance notes, they do not represent a consistent worked example. Instead they reflect a variety of situations.

4.5 View and Go to

For swift navigation round the DAT the user can refer to the Go To menu button at the top of the page. This provides a set of options, which allows the user to go directly to a particular page of the DAT

5. PREPARATORY STAGES

5.1 Data Options

For key variables, the DAT allows the user to choose two different ways of working which are,

Using the DAT default values;
Using the user's own scheme specific values.

Scheme specific values are provided by the user on a scheme-by-scheme basis and are used in place of the DAT default values.

5.2 Data Entry

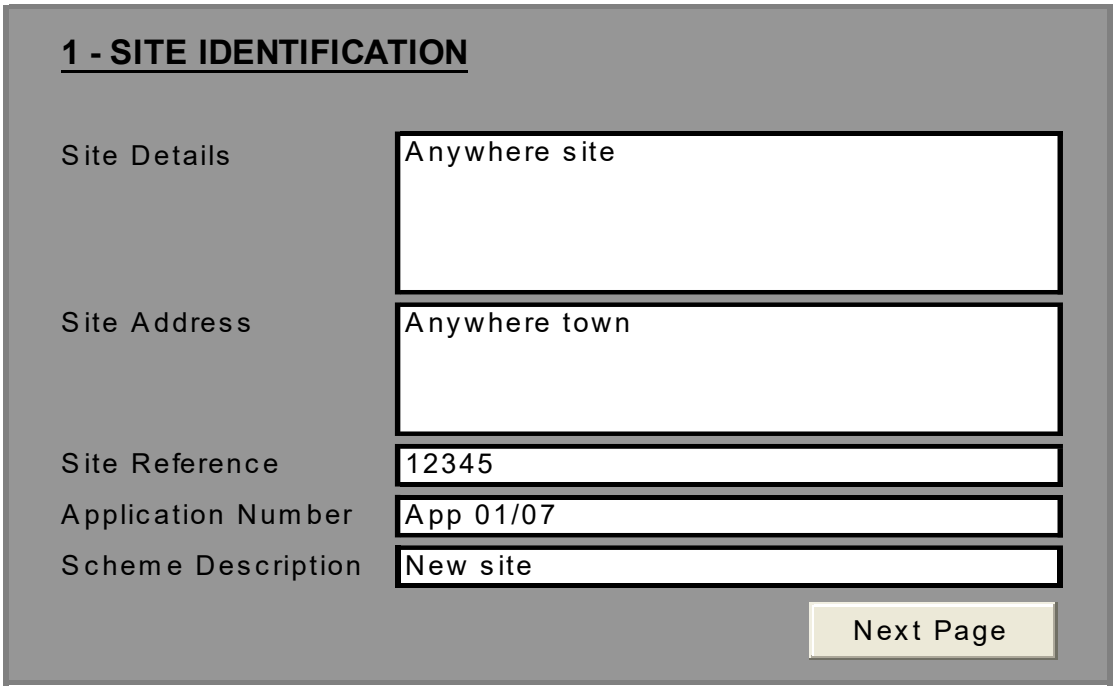
Throughout the DAT, once you have entered a value in a cell press the 'return' key on your keyboard.

In cases where a cell does not require a value, the cell may still refuse to accept a value of zero. If you wish a cell to have no value and there is already a number entered, use the 'delete' key to leave the cell empty. Do not try to enter a zero in the cell.

6. ENTERING INFORMATION IN THE DAT

6.1 Site Identification

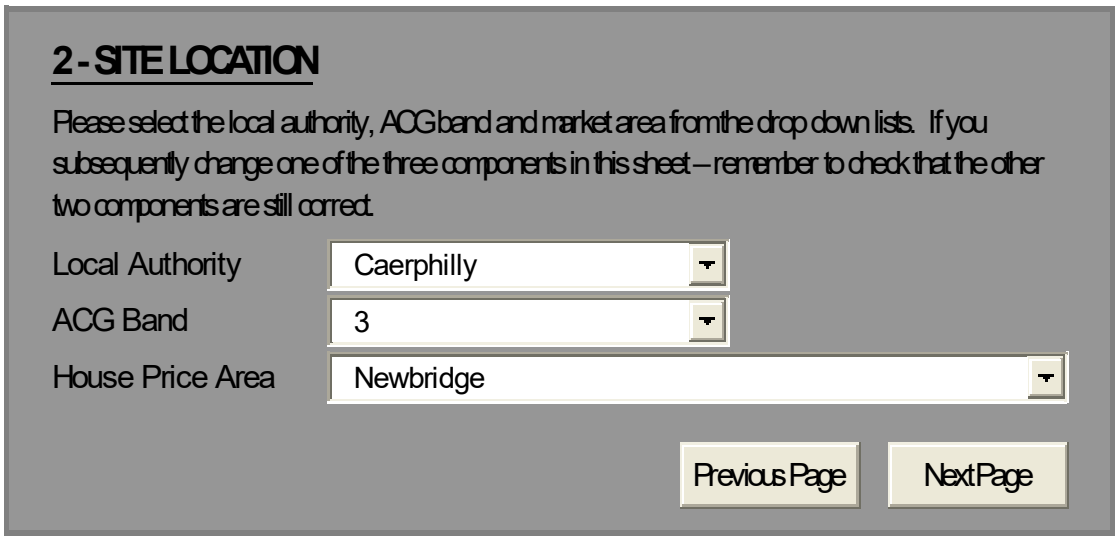
Page 1 of the DAT provides the name and other essential information to identify the scheme. The information should be entered in the white cells.



Press the 'Next Page' button to continue entering information in the DAT.

6.2 Site Location

In page 2 of the DAT, the user provides essential information about the location of the scheme.



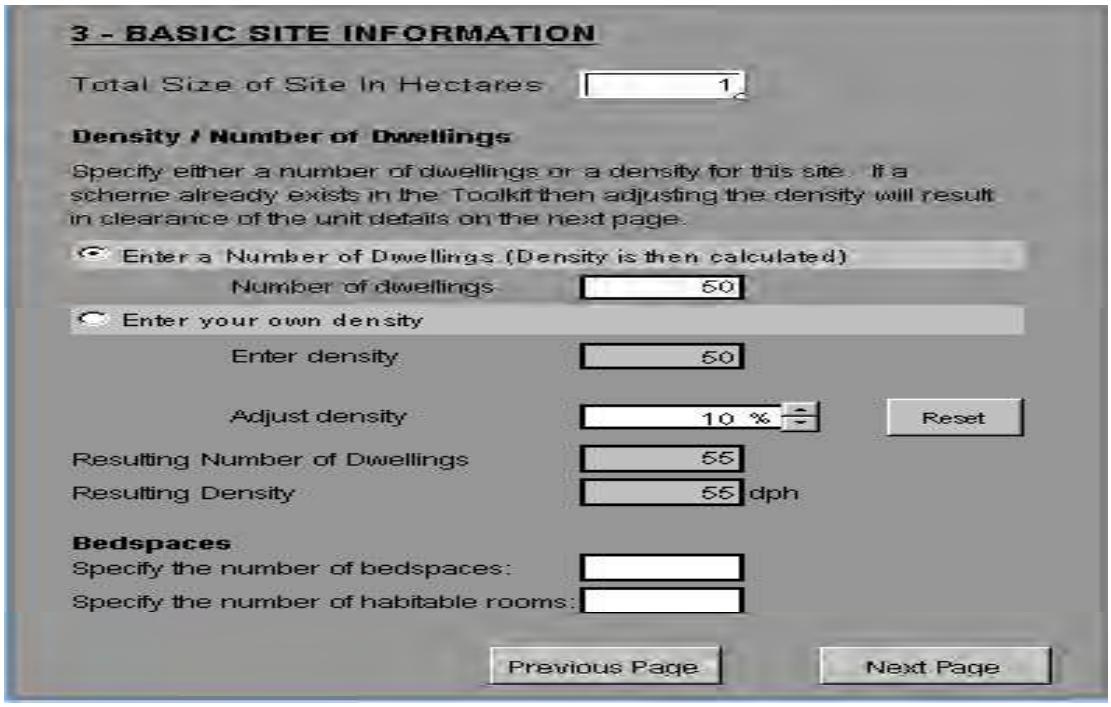
Use the three drop down lists to specify:

The local authority
The ACG band
The house price area

Users must enter information for all three components. If one of the three components is subsequently changed, remember to check that the other two components remain valid.

Press the 'Next Page' button to continue entering information in the DAT. If you need to go back to the ‘previous page’, press ‘Previous Page’.

6.3 Basic Site Information



6.3.1 Site Area

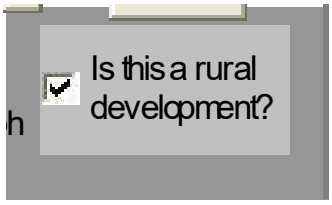
You MUST enter the site area in hectares. Site area includes internal roads and ancillary open spaces, i.e. the planned area to be developed.

6.3.2 Density/Number of Dwellings

If you know the number of dwellings in the scheme, select the first option button called ‘Enter a number of dwellings’ and enter the number in the white box to the right.

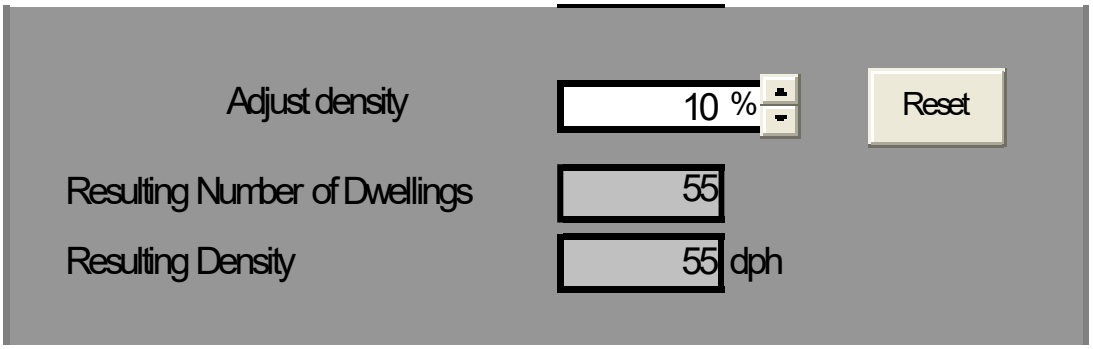
If you do not know the number of dwellings, select the second option button called 'Enter your own density' and enter a density in the white box to the right. Densities are in dwellings per hectare.

For densities of less than 40 dwellings per hectare, the DAT provides the option of calling up a ‘rural mix’ by using the tick box which appears:



By choosing this option, the user calls up a special dwelling mix which includes bungalows as well as houses and flats (See Annex 2 for further details).

The next part of this page allows the user to adjust the density of the scheme.

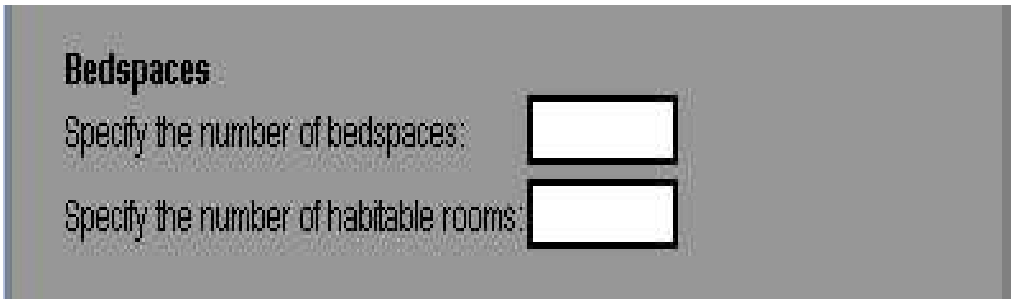


You can test the impact of a percentage increase or decrease in density by selecting a positive or negative percentage in the white box - or by using the arrows. Use the 'Reset' button to remove any density adjustment.

The number of dwellings and density being used in the run of the DAT are shown in the two white boxes below.

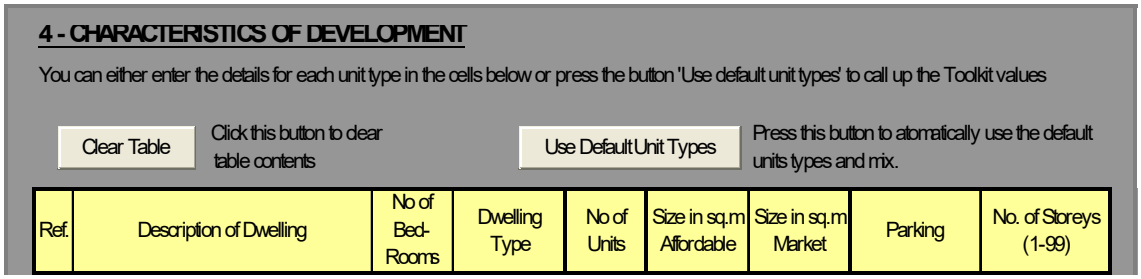
6.3.3 Habitable rooms and bedspaces

The DAT can provide some limited results in terms of bedspaces and habitable rooms. If results are required per habitable room and/or per bedspace, the relevant white cells must be completed. The DAT does not have its own values.



Press the 'Next Page' button to continue entering information in the DAT. If you need to go back to the 'previous page', press 'Previous Page'.

6.4 Characteristics of Development



4 - CHARACTERISTICS OF DEVELOPMENT

You can either enter the details for each unit type in the cells below or press the button 'Use default unit types' to call up the Toolkit values

Clear Table — Click this button to clear table contents

Use Default Unit Types — Press this button to atomatically use the default units types and mix.

Ref.	Description of Dwelling	No of Bed-Rooms	Dwelling Type	No of Units	Size in sq.m Affordable	Size in sq.m Market	Parking	No. of Storeys (1-99)

When entering information about a new scheme, the user should always clear away any data in this page by clicking on the 'Clear Table' button.

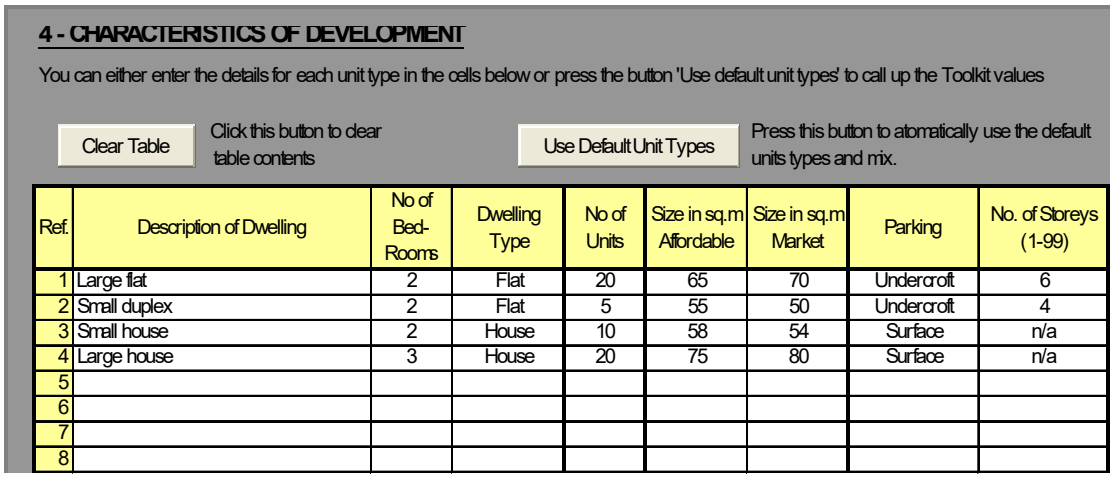
Page 4 of the DAT covers a number of variables which describe the physical characteristics of a scheme:

- The number of different types of dwellings
- The size of dwellings –market and affordable
- The type of parking provided with flats
- The number of storeys of blocks containing flats

The user can choose either to enter their own information about a scheme or to call up the default information held by the DAT.

6.4.1 User entered information

When the user enters their own information, they must complete a row for every unit type in the scheme.



4 - CHARACTERISTICS OF DEVELOPMENT

You can either enter the details for each unit type in the cells below or press the button 'Use default unit types' to call up the Toolkit values

Clear Table — Click this button to clear table contents

Use Default Unit Types — Press this button to atomatically use the default units types and mix.

Ref.	Description of Dwelling	No of Bed-Rooms	Dwelling Type	No of Units	Size in sq.m Affordable	Size in sq.m Market	Parking	No. of Storeys (1-99)
1	Large flat	2	Flat	20	65	70	Undercroft	6
2	Small duplex	2	Flat	5	55	50	Undercroft	4
3	Small house	2	House	10	58	54	Surface	n/a
4	Large house	3	House	20	75	80	Surface	n/a
5								
6								
7								
8								

For both the Dwelling type and Parking, the user is provided with a 'drop down' list.

For dwelling type, the options in the list are:

- House
- Flat
- Bungalow

For parking (which only applies to flats) the options in the list are:

- Underground;
- Undercroft;
- Surface;
- None.

NB: Users should note that if the 'Underground' car parking option is selected, then additional development costs of £15,000 per flat will be added to the appraisal. If 'Undercroft' parking is selected, then £5,000 per flat will be added. If 'surface' parking is selected, then no additional costs will be added (these are deemed to be covered in the external works). Care is needed in using the DAT here. The BCIS costs will pick up average developments (including flats). If therefore, most developments include for example underground parking, then the BCIS costs will implicitly pick up these additional costs and the user should therefore not select 'Underground' in the DAT. To ensure no additional costs are added, select 'none'.

Users are required to enter information about the size of both market and affordable units even if they know that some unit types will only be assigned to one or other 'tenure'. Wherever possible, it is recommended that the user enters unit sizes for **both** market and affordable housing which are as realistic as possible. Then, if later, the user wants to test for alternative tenure mixes, there are appropriate unit sizes for all units and the DAT continues to provide appropriate estimates of residual values.

Advisory

There are 20 rows which users have available to define a scheme. Rarely a scheme may have more than 20 unit types. In this case, the user has two options:

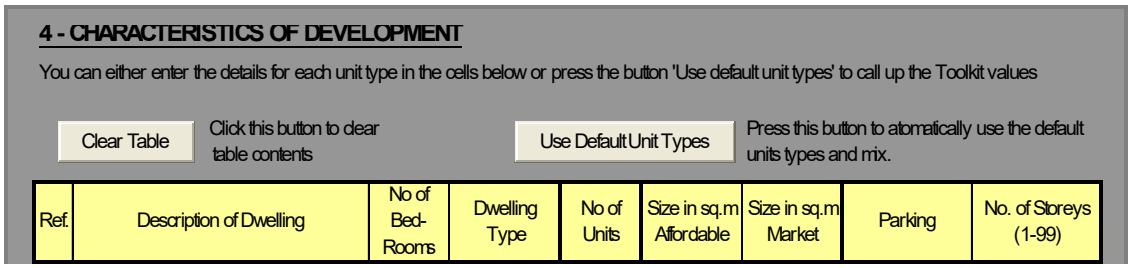
One – amalgamate some of the dwelling types to reduce the number of types to the 20 allowed. It will be a matter of judgement which unit types are combined but, as a general rule, the more alike the dwelling types, the easier it is to amalgamate them. For example, there are 5 x 2 bed duplex units of 50 sq m and 5 x 2 bed duplex units of 60 sq m. These can be amalgamated to provide 10x2 bed duplex units of 55 sq m. Later in the DAT, the user will be asked to provide information about market values for different unit types. Where users have amalgamated units as given in the example above, users need to reflect this in the market value chosen. Using the above example, if the original 50 sq m unit has a market value of £100,000 and the 60 sq m unit

has market value of £120,000, the market value which should be used in the DAT would be £110,000.

The other rule for amalgamation is to combine units which are of one tenure.

Two – users can choose to split the scheme into two or more DAT runs and combine the results. For instance, if the user wants to use 38 dwelling types, they could split the scheme into a run of 20 units and a run of 18 units and combine the results.

6.4.2 Using Default Values



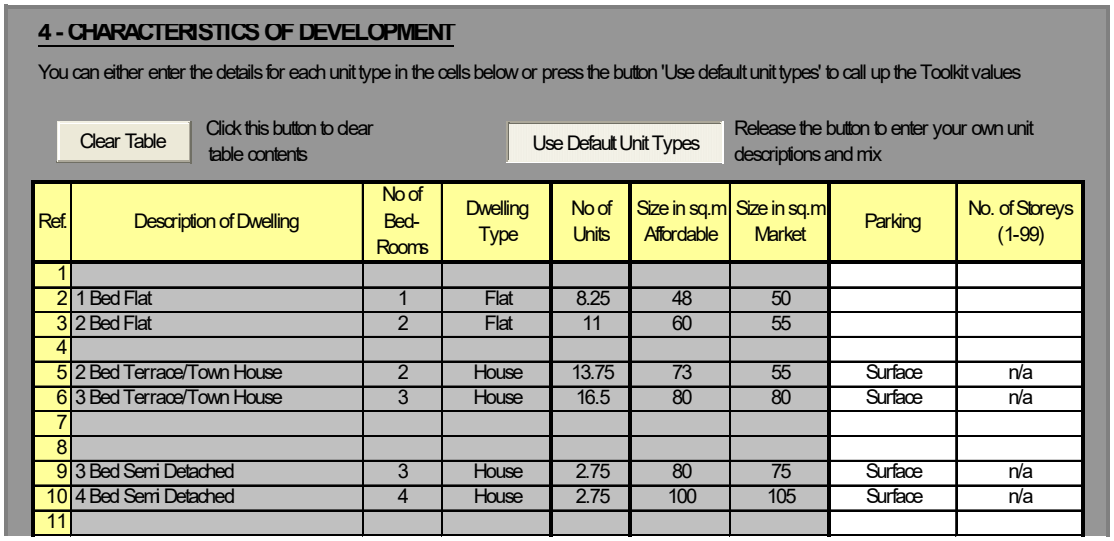
Where the user wants to use the default values contained in the DAT, the 'Use Default Unit Types' button should be pressed.

This will call up a mix of dwelling types. The mix will only include dwellings from the list of 15 default dwelling types used in the DAT and which are set out below.

Dwelling Name
Studio Flat
1 Bed Flat
2 Bed Flat
1 Bed Terrace/Town House
2 Bed Terrace/Town House
3 Bed Terrace/Town House
4 Bed Terrace/Town House
2 Bed Semi Detached
3 Bed Semi Detached
4 Bed Semi Detached
3 Bed Detached
4 Bed Detached
5 Bed Detached
2 Bed Bungalow
3 Bed Bungalow

The composition of each dwelling mix is determined by the scheme density (identified in page 3 – Basic Site Information). Annex 2 sets out the default mixes held in the DAT. Not all 15 dwelling types appear in each mix.

The example below is for a scheme with a density of 55 dwellings per hectare.



4 - CHARACTERISTICS OF DEVELOPMENT

You can either enter the details for each unit type in the cells below or press the button 'Use default unit types' to call up the Toolkit values

Clear Table — Click this button to clear table contents

Use Default Unit Types — Release the button to enter your own unit descriptions and mix

Ref.	Description of Dwelling	No of Bed-Rooms	Dwelling Type	No of Units	Size in sq.m Affordable	Size in sq.m Market	Parking	No. of Storeys (1-99)
1								
2	1 Bed Flat	1	Flat	8.25	48	50		
3	2 Bed Flat	2	Flat	11	60	55		
4								
5	2 Bed Terrace/Town House	2	House	13.75	73	55	Surface	n/a
6	3 Bed Terrace/Town House	3	House	16.5	80	80	Surface	n/a
7								
8								
9	3 Bed Semi Detached	3	House	2.75	80	75	Surface	n/a
10	4 Bed Semi Detached	4	House	2.75	100	105	Surface	n/a
11								

As well as providing a dwelling mix, when using the default unit types, the DAT calls up values for the size of units. Annex 3 sets out the DAT default unit sizes.

For flats, the user needs to provide information about the parking type (using the drop down lists provided) and the number of storeys.

Press the 'Next Page' button to continue entering information in the DAT. If you need to go back to the ‘previous page’, press ‘Previous Page’.

Advisory

As a general rule, if there is doubt whether there is sufficient information about a scheme to complete all the rows for the different unit types, users should use the DAT default values.

6.5 Market Values

The DAT must have information about market value of the sale units to provide its estimates of the revenue from the scheme.

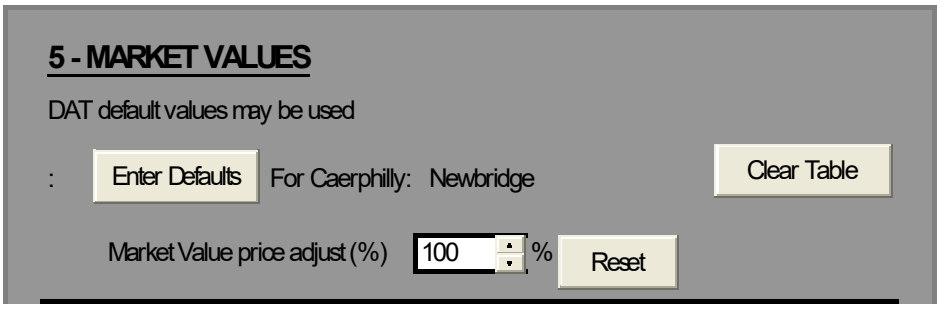
There are two ways in which the DAT can operate:

i) With scheme specific values identified by the user;

ii) With the DAT default values.

The two options are not mutually exclusive and it is possible to use a combination of 'scheme specific' and 'default' values.

When entering information about a new scheme, users should first press the 'Clear Table' button.



6.5.1 Using Default Unit Types

The 'Enter Default' button will **only** appear if the user has selected the Default Unit Types' at Page 4. The screenshot below, shows the above example when the Enter Defaults button has been used

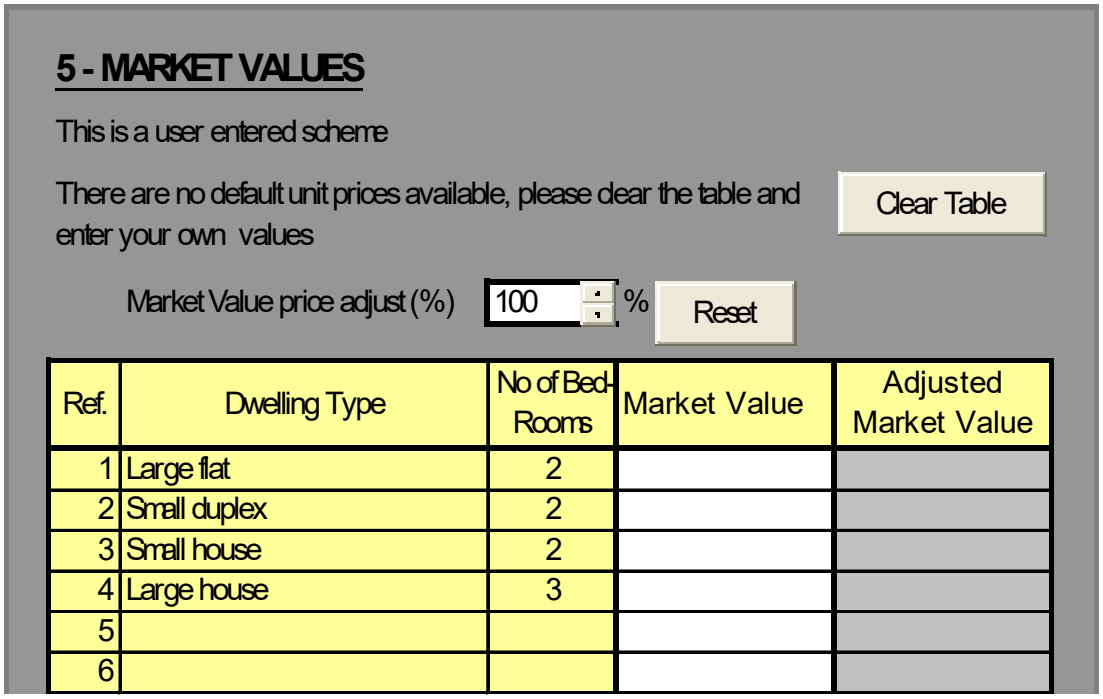
Market Value price adjust (%) 100

Ref.	Dwelling Type	No of Bed-Rooms	Market Value	Adjusted Market Value
1				
2	1 Bed Flat	1	£55,000	£55,000
3	2 Bed Flat	2	£82,000	£82,000
4				
5	2 Bed Terrace/Town House	2	£90,000	£90,000
6	3 Bed Terrace/Town House	3	£126,000	£126,000
7				
8				
9	3 Bed Semi Detached	3	£143,000	£143,000
10	4 Bed Semi Detached	4	£164,000	£164,000
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

Users can amend default market values by over-writing the values shown in the white cells.

6.5.2 User defined scheme

If the DAT is using a user defined scheme, having used the 'Clear Table' button, the screen shown below will appear.



Ref.	Dwelling Type	No of Bed-Rooms	Market Value	Adjusted Market Value
1	Large flat	2		
2	Small duplex	2		
3	Small house	2		
4	Large house	3		
5				
6				

The user must provide their own market values for all the dwelling types shown in the left hand column.

6.5.3 Adjusting Market Values

The DAT allows the user to test the impact of a percentage reduction or increase in market values. To do this, enter the percentage increase or decrease. You can use the 'up' and 'down' arrows to adjust the percentage figure. To clear a figure from here, use the button marked 'RESET'.

Values shown in the column called 'Price with % change applied' are the basic values plus the percentage increase or decrease specified by the user. It is these figures that the DAT will use in its analysis.

Press the 'Next Page' button to continue entering information in the DAT. If you need to go back to the 'previous page', press 'Previous Page'.

Advisory

The Default Market Areas

Background:

The DAT bases market values on 'market areas. Typically there are between five and seven market areas within each local authority. These are not functional market areas as defined in some of the strategic housing market assessments, where 'market areas' are derived from patterns of migration and their relations with travel to work areas. The market areas used in the DAT are really a proxy for house price areas within a local authority

A full list of the market areas is shown in the accompanying information file. This shows the market area descriptor and the relevant postcode sectors that fall within that market area.

Use of market areas:

Local authorities are encouraged to use these market areas to test policy options as well as to negotiate affordable housing and other planning obligations. They provide a starting point for policy making in that it will be clear from using the DAT's other default data (in particular development mix), that affordable housing will not usually be equally viable across all areas of the local authority. .

The market areas are a starting point for negotiations with developers. Default house prices are indicative prices only and local authorities are encouraged to provide their own more local data where relevant or, where the figures can be properly justified, to use those submitted by the developer. The defaults cannot replace this type of information, although the defaults can usefully be used where bespoke information is not available.

Because house prices are so critical to the appraisal, local authorities should beware of situations in which developers want to use the default and do not provide site specific information. The defaults should be used as benchmarks and as a way for authorities to come to a realistic but broad planning policy stance.

At site specific level house prices should always be validated with the local authority's property advisers and with local estate agents.

Technical information about the defaults

House price data is based on HM Land Registry data. The default values are based on a very large sample of transactions in the existing stock. It is not realistic to derive default values for a market area based on new sales, since these are relatively few in number and hence unreliable as a sample. The default values are however calculated by using an 'existing to new' conversion

factor, ensuring that they emulate, in so far as possible, new selling prices. The 'existing to new' conversion is calculated on an annual basis to ensure accuracy.

The market areas have been developed from the geographical unit of postcode sectors. Where postcode sectors that are in geographical proximity exhibit similar house prices, then together, they can be taken as a market area. Data has been aggregated upwards from the postcode sectors to arrive at average indicative prices for the market areas.

These prices provide a reasonable guide level for analysis at a sub-authority area, although it should be noted that prices presented in this form are average prices, which may differ from the price of new or existing housing. Local authorities who wish for a more precise break down of prices between different market sectors should contact HM Land Registry direct, who can provide bespoke housing market data

Ultimately for development control purposes, the best and most robust data will come from comparable selling prices for developments in the locality where the proposed scheme is located. To this end, it may prove to be a valuable exercise to commission research (in-house or with, for example, local surveyors) to establish the most likely selling prices. Information should also be sought from the developer, although this would probably need to be externally verified.

.

Adjusting Market Values

Using the percentage increase or decrease facility allows the user to test the impact of varying house prices for comparison with current development costs.

It is not recommended that a simple increase (or decrease) in basic market value is used to represent anticipated changes in a scheme over time (e.g. to 'forecast' the possible value of later phases of a scheme which may come on stream X years in the future). The DAT default values only apply to schemes for approval/start on site in 2008. Longer-term developments would require periodic reappraisal of house prices, build costs and subsidy availability and this could be referred to in the S106 agreement.

6.6 Tenure Mix

Screen 6 of the DAT offers users the facility to vary percentages of different tenures. As well as sale housing, there is social rent and the 3 types of intermediate tenure (Homebuy, Intermediate Rent and Equity Share). Housing for key workers is not identified separately since the term does not refer to a particular tenure.

6.6.1 Using Default Unit Types

In the example below, the DAT is using a default mix and the user **must** use the 'Input by Percentage' method.

6 - TENURE MIX

Entering units by quantity is not possible as a default mix has been selected. Please enter the percentage distribution of units across the tenures.

(•) Input by Percentages ( ) Input by Quantity

		SALE	AFFORDABLE				
			Social rent	Homebuy	Intermediate rent	Equity Share	No of Units
Ref.	Description	70%	15%	5%	5%	5%	
1							
2	1 Bed Flat	5.8	1.2	0.4	0.4	0.4	8.3
3	2 Bed Flat	7.7	1.7	0.6	0.6	0.6	11.0
4							
5	2 Bed Terrace/Town House	9.6	2.1	0.7	0.7	0.7	13.8
6	3 Bed Terrace/Town House	11.6	2.5	0.8	0.8	0.8	16.5
7							
8							
9	3 Bed Semi Detached	1.9	0.4	0.1	0.1	0.1	2.8
10	4 Bed Semi Detached	1.9	0.4	0.1	0.1	0.1	2.8
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
	Total	38.5	8.3	2.8	2.8	2.8	55.0

Percentage purchased by purchaser for Homebuy	Default:	70%	User:	
Percentage purchased by purchaser for Equity Share	Default:	70%	User:	

The number of dwellings may be expressed as fractions for the purposes of financial calculations

Previous Page Next Page

A notice will appear if the figures entered do not add to 100%. The DAT will automatically calculate the number of dwellings by type and tenure.

6.6.2 User Defined Scheme

When the scheme in the DAT is user defined, screen 6 will offer the user the option of distributing the dwellings by percentage or as 'Input by Quantity'. By using the buttons at the top of the page, the user selects tenure mix by type of dwelling. In the example below the user has selected, Input by Quantity and distributed each type of dwelling (e.g. Large flat) across the tenures, by entering information in the white cells.

6 - TENURE MIX

You may decide the distribution of the units across the tenures in two ways. By Percentage: In which case you enter a percentage of the total number of units to assign to each tenure. These percentages are applied equally across all unit types. By Quantity: In which case enter the exact number of units of each type to assign to each tenure in the table below.

○ Input by Percentages ◉ Input by Quantity

			AFFORDABLE				
		SALE	Social rent	Homebuy	Intermediate rent	Equity Share	No of Units
Ref.	Description	55%	18%	9%	9%	9%	
1	Large flat	10.0	5.0	5.0			20.0
2	Small duplex	5.0					5.0
3	Small house	5.0			5.0		10.0
4	Large house	10.0	5.0			5.0	20.0
5							
6							

6.6.3 Share purchased for Low Cost Home Ownership

The bottom part of this page refers to Homebuy and Equity Share. If these tenures are relevant to the scheme being tested, then the user must fill in the white boxes.

Percentage purchased by purchaser for Homebuy	Default:	70%	User:	
Percentage purchased by purchaser for Equity Share	Default:	70%	User:	

For Homebuy – a default value of 70% is used by the DAT. This represents the average percentage of the equity (market value) to be purchased by purchasers of the Homebuy units. If the user wants a different percentage, a value should be entered in the white cell to the right.

For Equity Share – a default value of 70% is used by the DAT. This represents the average percentage of the equity (market value) to be purchased by purchasers of the Equity Share units. If the user wants a different percentage, a value should be entered in the white cell to the right.

The DAT can only deal with a single percentage for each tenure category and this percentage will be applied to all unit types of this tenure.

Press the 'Next Page' button to continue entering information in the DAT. If you need to go back to the 'previous page', press 'Previous Page'.

Advisory

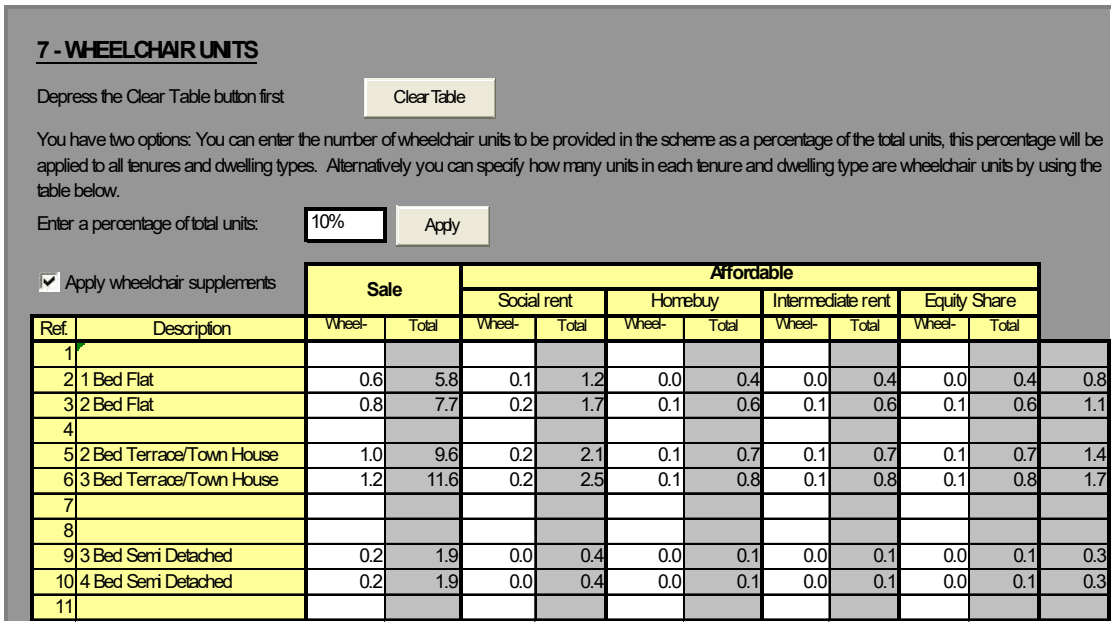
For Homebuy and Equity Share, the DAT does not provide information about whether a dwelling will be affordable for purchasers at a particular share size. Users of the DAT should consider what % share purchased will be affordable – given the market values being used in the DAT and their knowledge of income levels of potential purchasers

Users are recommended to test the impact on revenue and residual of variations in percentage size share.

6.7 Wheelchair Units

Page 7 of the DAT (whether the user has worked by percentage or quantity up to this point) allows the user to specify the amount of wheelchair housing in the scheme.

The shorthand of 'wheelchair units' shown in the DAT refers to dwellings which are usable by wheelchair users. Wheelchair units are larger and more expensive to develop. They may also have different market values from comparable sale units which are not wheelchair adaptable and users should bear this in mind when identifying market values for a scheme.



7 - WHEELCHAIR UNITS

Depress the Clear Table button first — Clear Table

You have two options: You can enter the number of wheelchair units to be provided in the scheme as a percentage of the total units, this percentage will be applied to all tenures and dwelling types. Alternatively you can specify how many units in each tenure and dwelling type are wheelchair units by using the table below.

Enter a percentage of total units: 10% — Apply

Apply wheelchair supplements

		Sale		Affordable								
				Social rent		Homebuy		Intermediate rent		Equity Share		
Ref.	Description	Wheel-	Total	Wheel-	Total	Wheel-	Total	Wheel-	Total	Wheel-	Total	
1												
2	1 Bed Flat	0.6	5.8	0.1	1.2	0.0	0.4	0.0	0.4	0.0	0.4	0.8
3	2 Bed Flat	0.8	7.7	0.2	1.7	0.1	0.6	0.1	0.6	0.1	0.6	1.1
4												
5	2 Bed Terrace/Town House	1.0	9.6	0.2	2.1	0.1	0.7	0.1	0.7	0.1	0.7	1.4
6	3 Bed Terrace/Town House	1.2	11.6	0.2	2.5	0.1	0.8	0.1	0.8	0.1	0.8	1.7
7												
8												
9	3 Bed Semi Detached	0.2	1.9	0.0	0.4	0.0	0.1	0.0	0.1	0.0	0.1	0.3
10	4 Bed Semi Detached	0.2	1.9	0.0	0.4	0.0	0.1	0.0	0.1	0.0	0.1	0.3
11												

When a new scheme is being entered, users should first depress the 'Clear Table' button.

Users can specify the percentage of dwellings that are wheelchair units. This will be automatically applied equally to unit types in all tenures. To apply a percentage of wheelchair units, enter the percentage (include the % sign) in the white box at the top of the page and click the 'Apply' button.

If a different number of wheelchair units are required for a particular tenure and unit type combination, then the user can enter the number of wheelchair units in the appropriate cell in the table.

The grey cells are for reference and show the total number of units of that type and tenure in the scheme. It is only possible to enter a whole number of units up to the value shown in the adjacent grey cell. It is not possible to enter fractional wheelchair units even where a default mix results in fractional units.

If the scheme will attract wheelchair supplement for social rent and Homebuy units, the user should tick the ‘Apply wheelchair supplements’ box.

Press the 'Next Page' button to continue entering information in the DAT. If you need to go back to the ‘previous page’, press ‘Previous Page’.

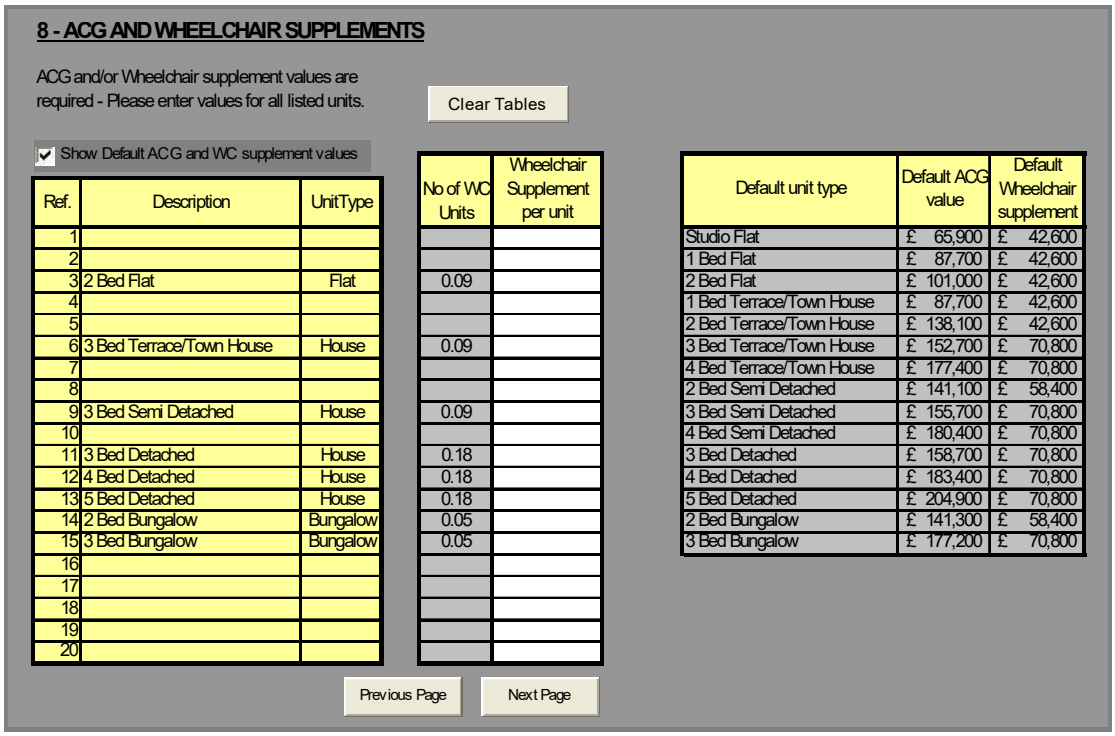
Advisory

The Welsh Assembly Government’s funding requirements require that all wheelchair units are let to households that have a specific requirement for wheelchair designed housing and that the unit is fully designed and built to the Development Quality Requirement Standard for wheelchair users. This includes in dwellings of more than one storey that vertical lifts are installed so that a unit is fully wheelchair accessible. Therefore when entering the percentage of wheelchair units for social rent or shared ownership the percentage used should reflect housing need and the nomination requirements of the area.

The public funding regime does not provide specific subsidy to RSLs to develop properties which can subsequently be adapted for wheelchair use. It is more cost-effective to ensure that a unit is suitable for wheelchair use (and occupied by an appropriate household) from day one. This should be borne in mind when considering the amount of social rented and shared ownership wheelchair housing which is to be provided.

6.8 Acceptable Cost Guidance (ACG) and Wheelchair Supplement Values

Where a scheme is using the DAT default mixes and unit types, the DAT uses default Acceptable Cost Guidance (ACG) figures. If the scheme contains wheelchair units for either Social Rent and/or Homebuy units and the user has previously indicated that Wheelchair Supplements will apply, Page 8 of the DAT will be called up. The user is asked to enter their own values for Wheelchair Supplements. They will only be asked for dwelling types which have already been identified as being either Social Rent and/or Homebuy units.



8 - ACG AND WHEELCHAIR SUPPLEMENTS

ACG and/or Wheelchair supplement values are required - Please enter values for all listed units.

Clear Tables

☑ Show Default ACG and WC supplement values

Ref.	Description	UnitType	No of WC Units	Wheelchair Supplement per unit
1				
2				
3	2 Bed Flat	Flat	0.09	
4				
5				
6	3 Bed Terrace/Town House	House	0.09	
7				
8				
9	3 Bed Semi Detached	House	0.09	
10				
11	3 Bed Detached	House	0.18	
12	4 Bed Detached	House	0.18	
13	5 Bed Detached	House	0.18	
14	2 Bed Bungalow	Bungalow	0.05	
15	3 Bed Bungalow	Bungalow	0.05	
16				
17				
18				
19				
20				

Default unit type	Default ACG value	Default Wheelchair supplement
Studio Flat	£ 65,900	£ 42,600
1 Bed Flat	£ 87,700	£ 42,600
2 Bed Flat	£ 101,000	£ 42,600
1 Bed Terrace/Town House	£ 87,700	£ 42,600
2 Bed Terrace/Town House	£ 138,100	£ 42,600
3 Bed Terrace/Town House	£ 152,700	£ 70,800
4 Bed Terrace/Town House	£ 177,400	£ 70,800
2 Bed Semi Detached	£ 141,100	£ 58,400
3 Bed Semi Detached	£ 155,700	£ 70,800
4 Bed Semi Detached	£ 180,400	£ 70,800
3 Bed Detached	£ 158,700	£ 70,800
4 Bed Detached	£ 183,400	£ 70,800
5 Bed Detached	£ 204,900	£ 70,800
2 Bed Bungalow	£ 141,300	£ 58,400
3 Bed Bungalow	£ 177,200	£ 70,800

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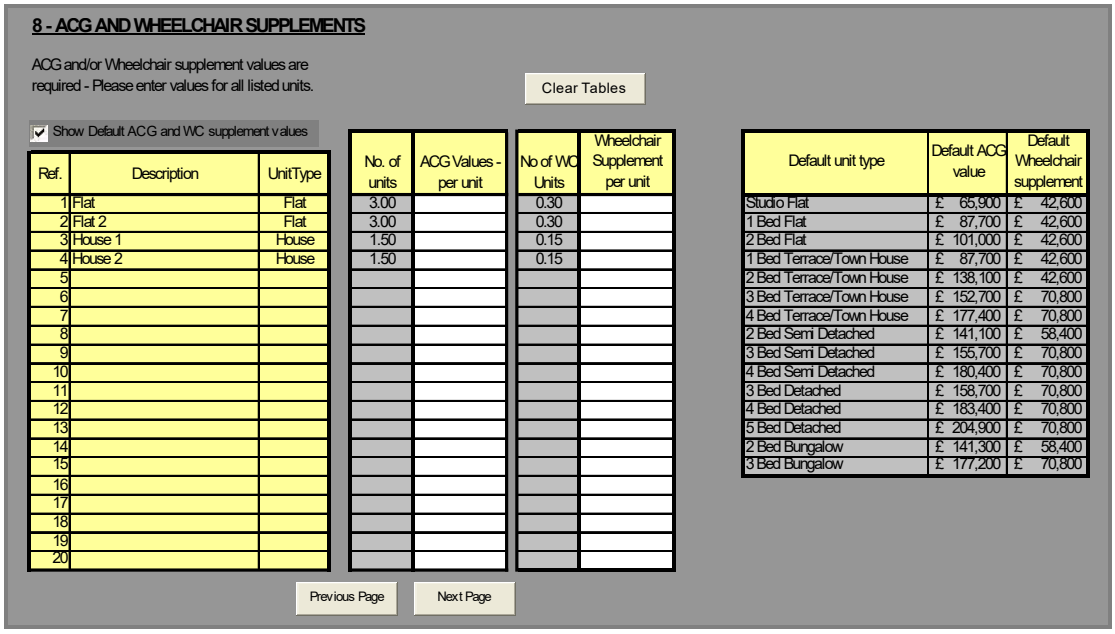
By ticking the button – "Show default ACG and Wheelchair Supplement values" – the ACG and wheelchair supplement values for DAT default dwelling types are shown (as on the right hand side of the screenshot above). These values are for reference for the user, to help guide selection of appropriate values for the Wheelchair Supplements. In the case of default unit types, users can ignore information about default ACG values.

Where the DAT is running a user entered scheme, Page 8 of the DAT will also be called up but this time, users must enter their own ACG values and Wheelchair Supplements.



8 - ACG AND WHEELCHAIR SUPPLEMENTS

ACG and/or Wheelchair supplement values are required - Please enter values for all listed units.

Clear Tables

Show Default ACG and WC supplement values

Ref.	Description	UnitType	No. of units	ACG Values - per unit	No of WC Units	Wheelchair Supplement per unit
1	Flat	Flat	3.00		0.30	
2	Flat 2	Flat	3.00		0.30	
3	House 1	House	1.50		0.15	
4	House 2	House	1.50		0.15	
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

Default unit type	Default ACG value	Default Wheelchair supplement
Studio Flat	£ 65,900	£ 42,600
1 Bed Flat	£ 87,700	£ 42,600
2 Bed Flat	£ 101,000	£ 42,600
1 Bed Terrace/Town House	£ 87,700	£ 42,600
2 Bed Terrace/Town House	£ 138,100	£ 42,600
3 Bed Terrace/Town House	£ 152,700	£ 70,800
4 Bed Terrace/Town House	£ 177,400	£ 70,800
2 Bed Semi Detached	£ 141,100	£ 58,400
3 Bed Semi Detached	£ 155,700	£ 70,800
4 Bed Semi Detached	£ 180,400	£ 70,800
3 Bed Detached	£ 158,700	£ 70,800
4 Bed Detached	£ 183,400	£ 70,800
5 Bed Detached	£ 204,900	£ 70,800
2 Bed Bungalow	£ 141,300	£ 58,400
3 Bed Bungalow	£ 177,200	£ 70,800

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By ticking the button – “Show default ACG and wheelchair supplement values” – the ACG and wheelchair supplement values for DAT default dwelling types are shown (as on the right hand side of the screenshot above). These values are for reference for the user, to help guide selection of appropriate values when scheme specific information is limited.

For the DAT to function, it needs values for both ACG and wheelchair supplements (where applicable). In the case where there are wheelchair units, but supplements do not apply (i.e. the Apply Wheelchair Supplement tick box has not been ticked, section 6.7), enter a nominal £1 for the supplement.

Press the 'Next Page' button to continue entering information in the DAT. If you need to go back to the ‘previous page’, press ‘Previous Page’.

Advisory

There are ACG values and Wheelchair Supplements for each of the 15 default dwelling types and for the 6 ACG bands. These values can be found in the accompanying data set “DAT defaults.xls”.

Some of the dwelling types in the DAT do not directly correspond to dwelling types shown in the guidance on ACGs provided by the Welsh Assembly Government. The values used in the DAT have been agreed with the Assembly as the best estimates for use in the DAT. However, the values shown should not be taken as ‘approved’ Assembly figures for use in grant applications and further advice from the Assembly should be sought with reference to applicable ACG values.

Wheelchair supplements will not affect revenue calculations but will be picked up as part of the DAT calculation of the grant for the scheme. Wherever possible, users are advised to seek guidance from a locally active housing association both about whether Wheelchair Supplements should be used and appropriate values.

6.9 Social and Intermediate Rent

The DAT needs information about social rents and intermediate rents.

6.9.1 Using Default Unit Types

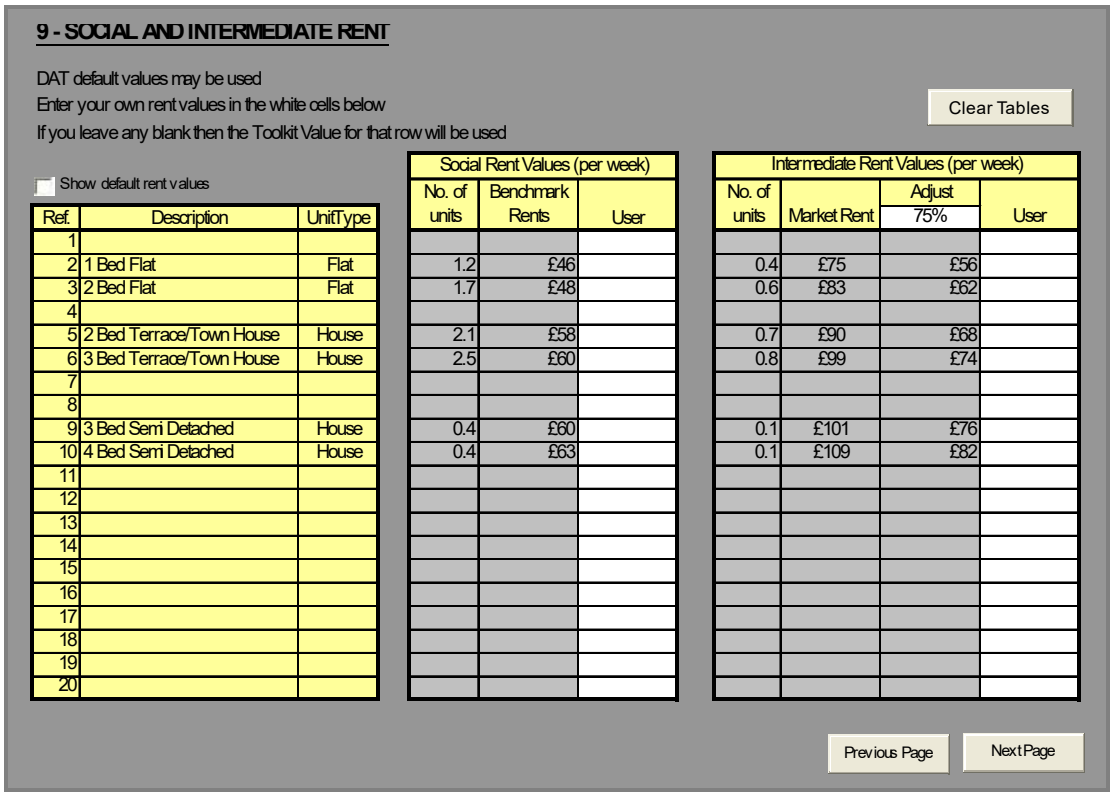
When entering a new scheme, press the Clear Table button first.

Where default unit types are being used, the DAT provides default benchmark rents in the grey cells. The user can over-ride these, by entering their own values in the white cells.

For intermediate rent, the DAT provides default market rents for each dwelling type in the scheme. The user has two options to derive the intermediate rent values the DAT will use.

One – insert a percentage in the white box called 'Adjust'. The DAT calculates the intermediate rents as that percentage of market rents. This is the case in the example shown below where the user has specified that intermediate rents are to be 75% of market rents.

Two – the user inserts their own values in the white cells.



9 - SOCIAL AND INTERMEDIATE RENT

DAT default values may be used
Enter your own rent values in the white cells below
If you leave any blank then the Toolkit Value for that row will be used

Clear Tables

Show default rent values

Ref.	Description	UnitType	Social Rent Values (per week) No. of units	Benchmark Rents	User	Intermediate Rent Values (per week) No. of units	Market Rent	Adjust 75%	User
1									
2	1 Bed Flat	Flat	1.2	£46		0.4	£75	£56	
3	2 Bed Flat	Flat	1.7	£48		0.6	£83	£62	
4									
5	2 Bed Terrace/Town House	House	2.1	£58		0.7	£90	£68	
6	3 Bed Terrace/Town House	House	2.5	£60		0.8	£99	£74	
7									
8									
9	3 Bed Semi Detached	House	0.4	£60		0.1	£101	£76	
10	4 Bed Semi Detached	House	0.4	£63		0.1	£109	£82	
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

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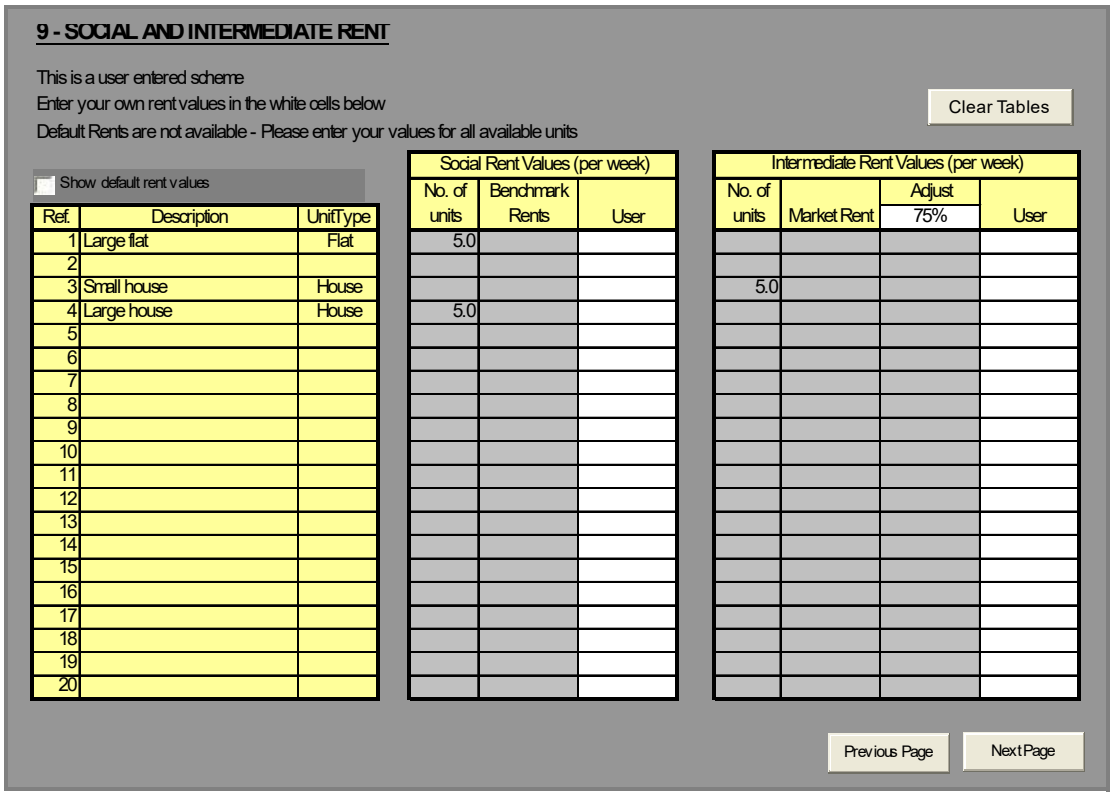
6.9.2 User Defined Scheme



9 - SOCIAL AND INTERMEDIATE RENT

This is a user entered scheme
Enter your own rent values in the white cells below
Default Rents are not available - Please enter your values for all available units

Clear Tables

Show default rent values

Ref.	Description	UnitType	Social Rent Values (per week) No. of units	Benchmark Rents	User	Intermediate Rent Values (per week) No. of units	Market Rent	Adjust 75%	User
1	Large flat	Flat	5.0						
2									
3	Small house	House				5.0			
4	Large house	House	5.0						
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
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16									
17									
18									
19									
20									

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The user must enter their own values for social rents and intermediate rents in the white cells in the relevant rows.

By ticking the button – "Show default rent values" benchmark and market rents for DAT default dwelling types are shown (as in the screenshot below). These values are for reference for the user, to help guide selection of appropriate values when scheme specific information is limited.

Default unit type	Default ACG value	Default Wheelchair supplement
Studio Flat	£ 65,900	£ 42,600
1 Bed Flat	£ 87,700	£ 42,600
2 Bed Flat	£ 101,000	£ 42,600
1 Bed Terrace/Town House	£ 87,700	£ 42,600
2 Bed Terrace/Town House	£ 138,100	£ 42,600
3 Bed Terrace/Town House	£ 152,700	£ 70,800
4 Bed Terrace/Town House	£ 177,400	£ 70,800
2 Bed Semi Detached	£ 141,100	£ 58,400
3 Bed Semi Detached	£ 155,700	£ 70,800
4 Bed Semi Detached	£ 180,400	£ 70,800
3 Bed Detached	£ 158,700	£ 70,800
4 Bed Detached	£ 183,400	£ 70,800
5 Bed Detached	£ 204,900	£ 70,800
2 Bed Bungalow	£ 141,300	£ 58,400
3 Bed Bungalow	£ 177,200	£ 70,800

Press the 'Next Page' button to continue entering information in the DAT. If you need to go back to the 'previous page', press 'Previous Page'.

Advisory

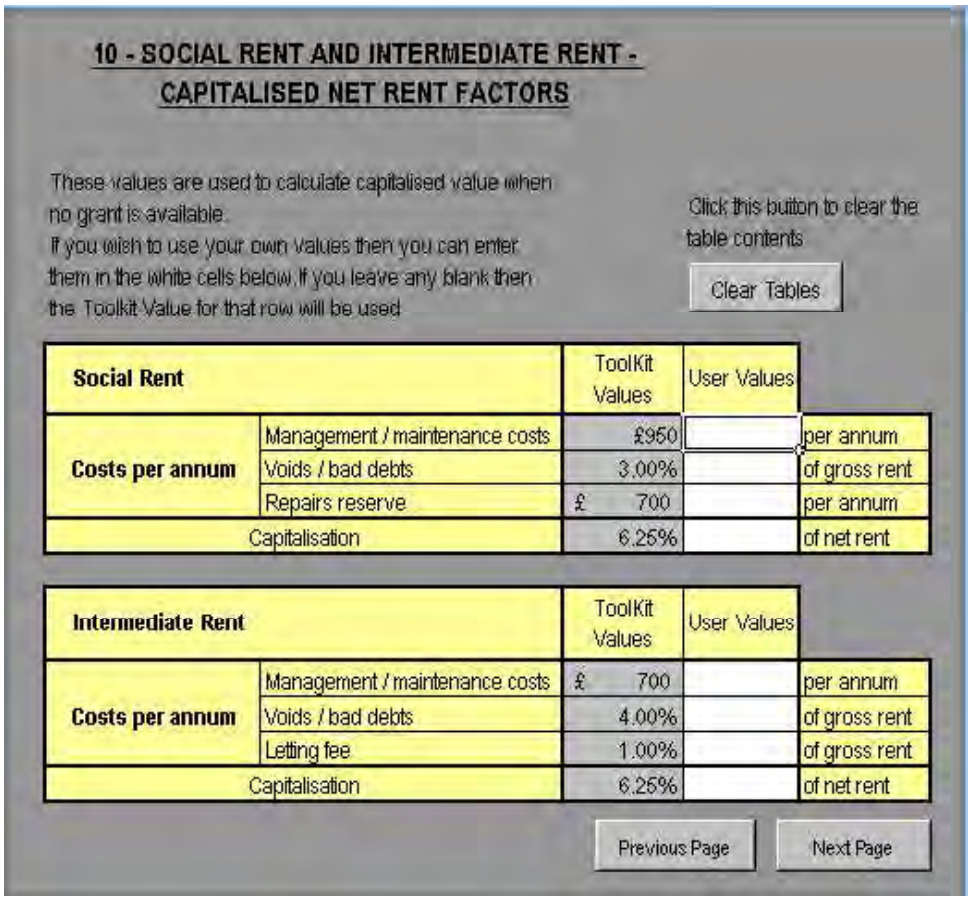
Benchmark social rents are based on averages of housing association benchmark rents for individual local authority areas. As with house prices, these are averages and the user should check scheme specific social rents with the appropriate housing associations.

Market rents, which can be adjusted to an intermediate level, were derived from data collected by the Rent Officer Branch of the Welsh Assembly Government.

6.10 Social Rent and Intermediate Rent – Capitalised Net Rent Factors

This page will appear only if the scheme has Social Rent or Intermediate Rented units.

When entering information for a new scheme, press the Clear Table button first.



10 - SOCIAL RENT AND INTERMEDIATE RENT - CAPITALISED NET RENT FACTORS

These values are used to calculate capitalised value when no grant is available.
If you wish to use your own values then you can enter them in the white cells below. If you leave any blank then the Toolkit Value for that row will be used

Click this button to clear the table contents

Clear Tables

Social Rent		ToolKit Values	User Values	
Costs per annum	Management / maintenance costs	£950		per annum
	Voids / bad debts	3.00%		of gross rent
	Repairs reserve	£ 700		per annum
Capitalisation		6.25%		of net rent

Intermediate Rent		ToolKit Values	User Values	
Costs per annum	Management / maintenance costs	£ 700		per annum
	Voids / bad debts	4.00%		of gross rent
	Letting fee	1.00%		of gross rent
Capitalisation		6.25%		of net rent

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The user can enter their own values for any of the items included in the page by entering their own number into the white cell(s) in the user value column. If any white cells are left blank then the DAT values (in blue cells) are used.

Press the 'Next Page' button to continue entering information in the DAT. If you need to go back to the ‘previous page’, press ‘Previous Page’.

Advisory

For both Social Rented and Intermediate Rented units the DAT shows the assumptions used to calculate net rents (gross rents minus costs) and the capitalisation ratio used to calculate the capital value of the scheme, derived from net rents. The capitalised value[2] is assumed to be the payment made by the RSL to the developer.

The net rent is the gross rent minus management and maintenance costs, voids and bad debts. For flats (and some housing schemes) a service charge may also be appropriate. In the case of Intermediate Rent there may also be a letting fee to cover administrative costs. The net rent produces an annual sum which will service a loan on the basis of which an RSL can make a capital payment to a developer. The default factor used to 'capitalise' the net rental payment is set out in the DAT. Users can insert an alternative value if required.

At the time of the release of the DAT, the default capitalisation rate was set at the Bank of England base rate plus 1%. Users may wish to change this rate in line with changing base rates.

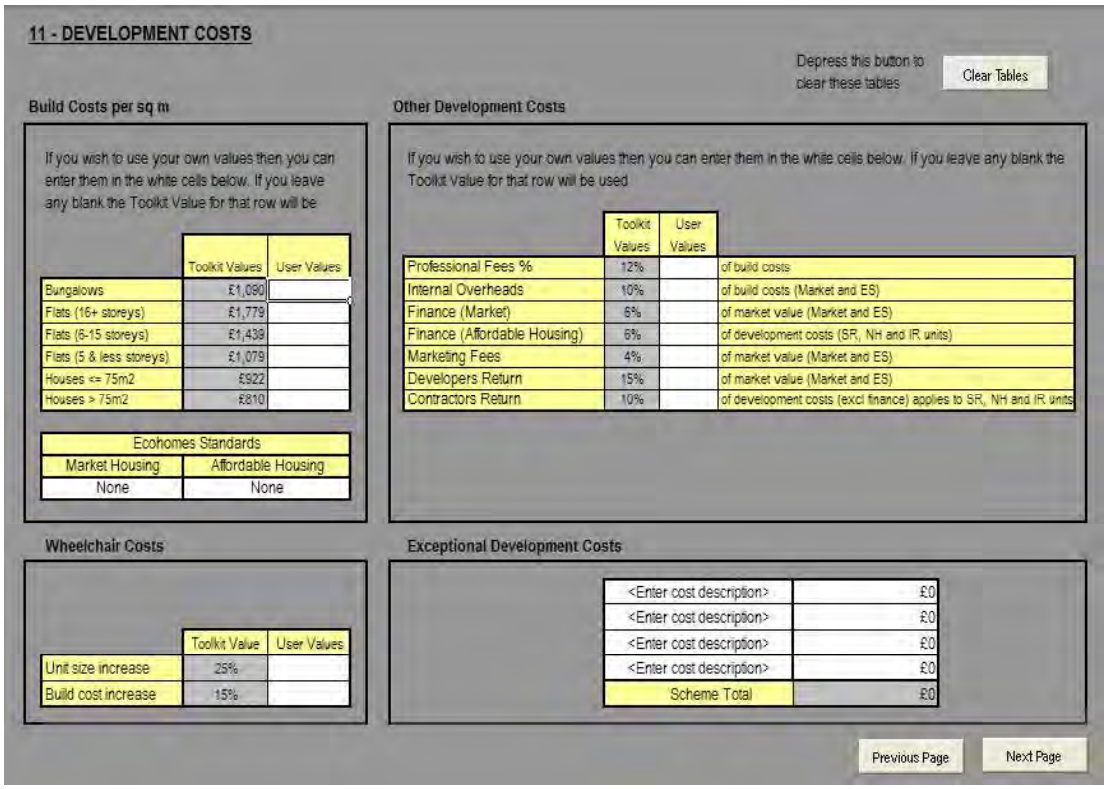
There is no published guidance which defines appropriate the appropriate costs used in the DAT. For both social rent and intermediate rent, the default values have been derived in discussion with the housing associations participating in the development of the DAT. For different housing associations and for individual schemes, these values may vary and DAT users are advised to consult with their local housing association on the most appropriate values to use in the DAT.

6.11 Development Costs

When entering a new scheme, press the Clear Table button first.

The DAT divides development costs into a number of components. It provides default values for these and also allows the user to provide their own values if better information is available and to test the sensitivity of DAT results to changes in these variables. If, for example, a professional fee of 12% is considered invalid, alternative values can be used.

[2] The revenue is also less on costs.



6.11.1 Build costs

In the area of the page called ‘Build Costs per sq m’, there are six categories of building types which reflect the different costs associated with these types.

The DAT values are in the blue cells. If the user wants to provide alternative costs, these are entered in the white cells. Users need only provide their own costs for the types of units found in a scheme. For instance, if the scheme only contains flats, the second pair of rows (for the two sizes of houses) can be ignored.

If the scheme is a conversion then users should provide their own build costs, since the DAT does not provide default values for conversions.

6.11.2 Other Development Costs

The area of the page called ‘Other Development Costs’ sets out other costs used in the DAT. Those in the blue cells are DAT values. If the user wants to use their own values, these should be entered in the white cells.

6.11.3 Wheelchair Costs

Wheelchair units are both larger (for the same unit type) and cost more per square metre to build. The DAT provides default values for both factors, which can be over-ridden by the user, by entering their own value in the white cells.

6.11.4 Exceptional Costs

The section of the page called ‘Exceptional Development Costs’ allows the user to specify development costs specific to the scheme which are considered unusually onerous. The user can enter up to four different types of cost. The left hand column is for a description of the costs e.g. Decontamination; the right-hand column is for the user to enter the total scheme cost for this exceptional cost. In the example above, a cost of £100,000 has been entered for decontamination.

A note on ‘Exceptional Development Costs’ and their interpretation within the DAT has been prepared in the Advisory Note below.

Users should note that the default base build costs include an allowance for external works and estate roads that would normally be considered integral to the site.

Press the 'Next Page' button to continue entering information in the DAT. If you need to go back to the ‘previous page’, press ‘Previous Page’.

Advisory

i) Terminology: 'Development' and 'Build' costs.

The DAT provides an estimate of total 'development costs'. These are established from 'base build' costs (derived from the BCIS data)3[2]. To arrive at total 'development costs' a further series of costs are added.
To make sense of this, we identify what is included in 'build' and 'other development' costs.

Definition of 'build costs'

'Build costs' are taken directly from the secondary data source, namely the BCIS Quarterly Review. These 'costs' are based on tender price/m2. The sample schemes from which these costs are drawn are, according to the BCIS, predominantly social housing or RSL development.

The base build costs per square metre in the DAT include, in essence, the 'bricks and mortar' costs – including sub and super structure. The BCIS base costs do not include, in their raw form, an element for external infrastructure/special landscaping; they also do not include an allowance for professional fees (they are usually paid separately by the client to the contractor); and although there is an element of 'profit' for the contractor, this is a minimal working profit, and not one which reflects a reasonable return to a developer engaged in speculative housing production (where there is a special risk of not selling the housing units). The DAT build costs have been adjusted to include an additional 15% for external works to cover the basic costs of the build.

Definition of 'development costs'

'Development costs' are 'build costs plus all other costs'. They include, the base build cost plus professional fees, finance costs and developer return. In addition, there are marketing fees for sale housing..

The DAT sets out the assumptions made about these which the user can vary.

ii) Location adjustment at the local authority level

The BCIS 'Survey of Tender Prices' provides adjustments at the local authority level to reflect the differences between average build costs between authorities. These adjustments are included in the default data that has been used.

3[2] Source: BCIS Quarterly Review of Building Prices

iii) Exceptional or 'abnormal' costs

The BCIS location factors adjust build costs from one local authority to the next if costs vary. BCIS costs are quoted nationally (at 100%) and then adjustments made according the particular locality. Costs tend to be higher in dense urban areas reflecting labour costs as well as difficulties in accessing sites. The costs of developing housing in rural areas however can be also costly. In large measure, the BCIS costs will 'pick up' difficult building conditions, for example foundation works for sloping sites. Hence it might be reasonable to expect that costs in a locality having many sloping sites would be higher than for a locality where sites are mainly flat. Similarly the BCIS tender prices will implicitly pick up additional development costs necessary to develop sites in that area. The survey which underpins the Tender Price Index does not however interrogate in a way which separates out the special or exceptional costs of particular development operations relating to ground conditions and/or clearance.

There is an element of uncertainty here and local authorities should request specific information from developers on what they consider to be exceptional development costs. Users should not automatically assume that because a site is brownfield or previously used that exceptional costs will be incurred. The question the user must ask is '*Are the development costs associated with this site significantly more onerous than are found on most sites in the local authority?'* If the answer is 'yes', and evidence provided, then allowance can be made for this. In estimating the appropriate amount which the user considers to be exceptional, they can take evidence directly from the developer, rely on previous similar cases and/or seek advice from their own experts, for instance, from their own estates and valuation colleagues.

iv) Conversions

The BCIS data relating to the conversion of buildings to residential shows a huge range of build costs associated with different schemes.

In principle, conversion schemes can be assessed for viability in the same way as for new build, but underpinning data is more difficult to come by. To use the DAT to model building conversions, the user **must** provide per square metre build costs which are relevant to the site. In estimating appropriate build costs users can take advice directly from the developer, rely on previous similar cases and/or seek advice from their own experts, for instance, from their own estates and valuation colleagues.

v) Use of development cost data and the measurement of buildings incorporating residential units

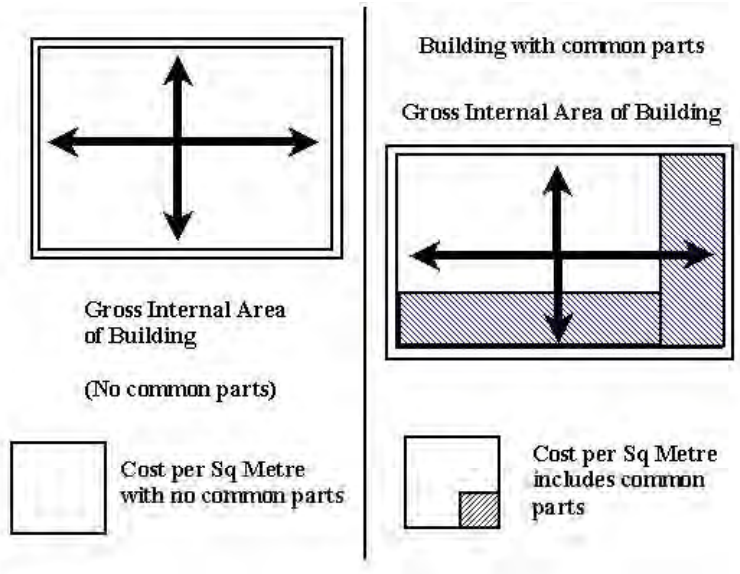
It is important that users reflect development costs as accurately as possible taking into account the assumptions underlying the BCIS base development costs data. The BCIS development costs are based on Tender Prices which:

"*Are quoted on a Gross Internal Area (GIA) basis, in terms of cost per unit area. GIA is measured to the internal face of the external walls of a building in line with the Standard form of Cost Analysis. BCIS data is quoted in £/square metre. This cost reflects all the costs of producing a square metre (GIA) which implicitly includes living accommodation and common parts of the building"*

In the case of flats and buildings with common parts, all (GIA) should be included. For example, if a building has a GIA of 500m2 with 400m2 living accommodation and with 100m2 common parts and has a price of £1000 per m2 then total build costs are £500,000.

NB: When preparing development appraisals using the DAT, users should consider carefully the relationship between gross internal area and net internal area (within dwellings). Whereas for low rise construction and houses, the relationship between GIA and NIA may not differ significantly, with apartment development this is unlikely to be the case and with tall buildings the loss of living space is likely to be significant as the need for service space and access becomes more costly. In very tall buildings, efficiency (Gross to Net) may be reduced by up to 35%.

The diagram below shows how the cost per square metre is made up in the case of buildings with common parts and buildings without common parts.



When appraising a development scheme, it is important that the user is satisfied that all costs are included. This can be done either on a 'gross to gross' basis, where costs are expressed on a cost per metre (gross) basis and multiplied by the GIA. Or, on a 'net to net' basis, where costs are expressed on a cost per square metre (net) basis and multiplied by the total NIA.

vi) Strategy for using development cost information in the DAT

The 'framework' for assessing and entering development cost information to the DAT results from two operations: first, examining and exploiting the BCIS secondary data, and second, liasing with private developers and in-house valuer's to establish that the variables included are correct, and that the assumptions made about values are correct.

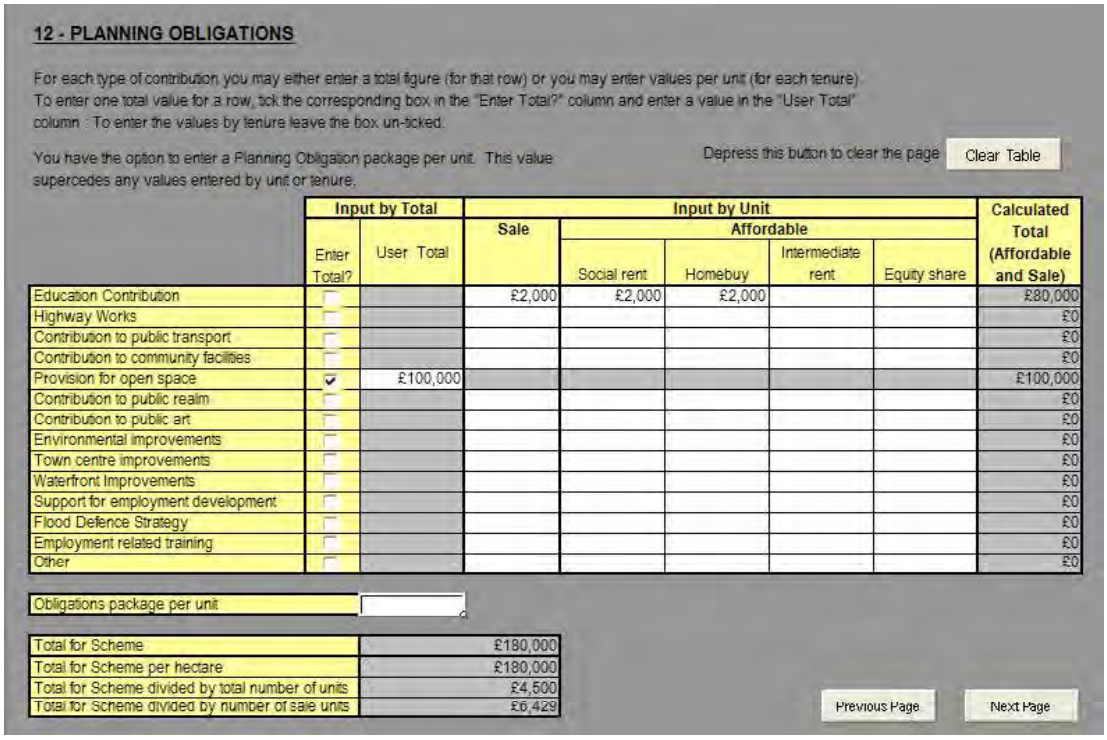
Thus, it should be emphasised that the process of arriving at eventual development costs, involves both quantitative and qualitative operations. Local authorities should follow this approach in coming to a conclusion about development costs. It is suggested that authorities utilise the secondary (BCIS) data initially, understanding fully what it represents, and then adjust these base build costs around empirical evidence gained from their in-house knowledge of site specific conditions. Where this 'in-house' information is not available, then it may be necessary to engage the help of bespoke professionals.

6.12 Planning Obligations

The DAT allows the user to consider the impact of a range of different planning obligations There is a list of typical obligations and a category called 'other' for items not covered by the list.

The DAT does not provide any default values for this page.

When entering a new scheme, press the Clear Table button first.



12 - PLANNING OBLIGATIONS

For each type of contribution you may either enter a total figure (for that row) or you may enter values per unit (for each tenure). To enter one total value for a row, tick the corresponding box in the "Enter Total?" column and enter a value in the "User Total" column : To enter the values by tenure leave the box un-ticked.

You have the option to enter a Planning Obligation package per unit. This value supercedes any values entered by unit or tenure.

Depress this button to clear the page — Clear Table

	Input by Total		Input by Unit					Calculated Total (Affordable and Sale)
			Sale	Affordable				
	Enter Total?	User Total		Social rent	Homebuy	Intermediate rent	Equity share	
Education Contribution	☐		£2,000	£2,000	£2,000			£80,000
Highway Works	☐							£0
Contribution to public transport	☐							£0
Contribution to community facilities	☐							£0
Provision for open space	☑	£100,000						£100,000
Contribution to public realm	☐							£0
Contribution to public art	☐							£0
Environmental improvements	☐							£0
Town centre improvements	☐							£0
Waterfront Improvements	☐							£0
Support for employment development	☐							£0
Flood Defence Strategy	☐							£0
Employment related training	☐							£0
Other	☐							£0

Obligations package per unit	

Total for Scheme	£180,000
Total for Scheme per hectare	£180,000
Total for Scheme divided by total number of units	£4,500
Total for Scheme divided by number of sale units	£6,429

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For each type of contribution you may either enter a total figure (for that row) or you may enter values per unit (for each tenure). If you choose the second option, the DAT will calculate the total obligation 'cost' for the scheme.

To enter one total value for a row, tick the corresponding box in the 'Enter Total?' column and enter a value in the 'User Total' column: To enter the values by tenure leave the box un-ticked

Users can also enter a single amount for a planning obligations package. This amount will be applied to all dwellings in a scheme. It would normally be expected that, where there is an obligations package, there would be no other obligations for the scheme.

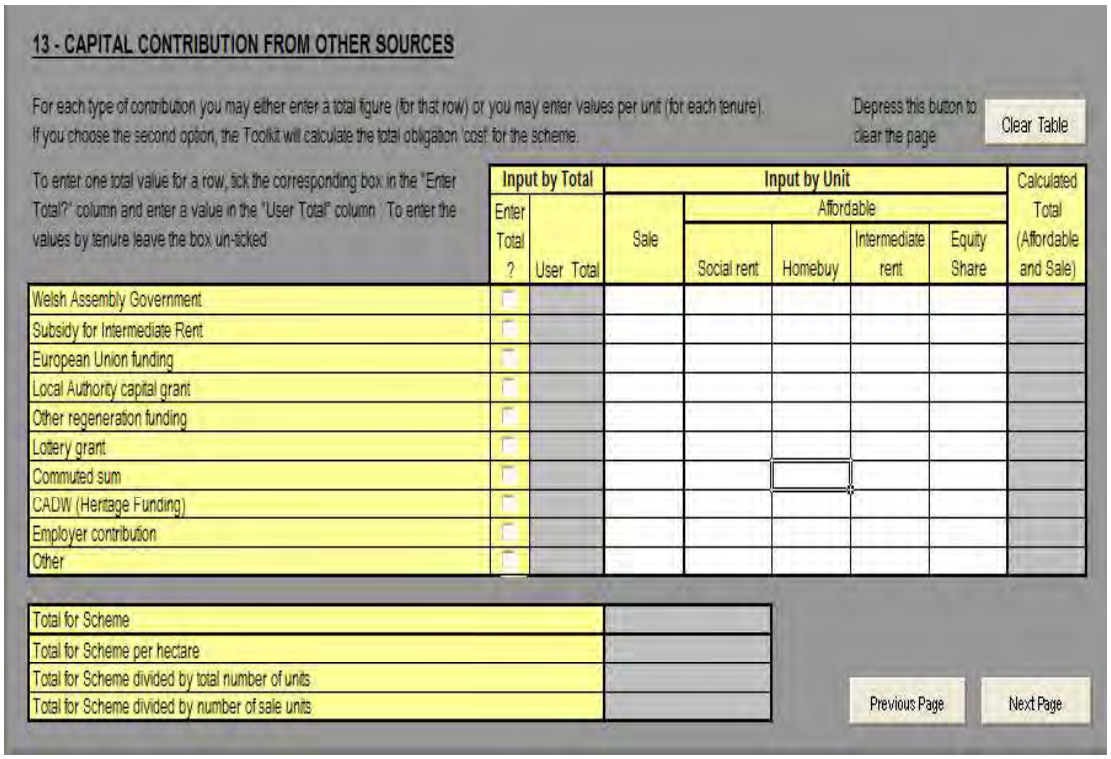
Press the 'Next Page' button to continue entering information in the DAT. If you need to go back to the 'previous page', press 'Previous Page'.

6.13 Capital contribution from Other Sources

The DAT allows the user to consider sources of revenue to the residential scheme from a range of different capital contributions. There is a list of typical contributions and a category called 'other' for items not covered by the list.

The DAT does not provide any default values for this page.

When entering a new scheme, press the Clear Table button first.



For each type of capital contribution you may either enter a total figure (for that row) or you may enter values per unit (for each tenure). If you choose the second option, the DAT will calculate the total contribution for the scheme.

To enter one total value for a row, tick the corresponding box in the 'Enter Total?' column and enter a value in the 'User Total' column: To enter the values by tenure leave the box un-ticked

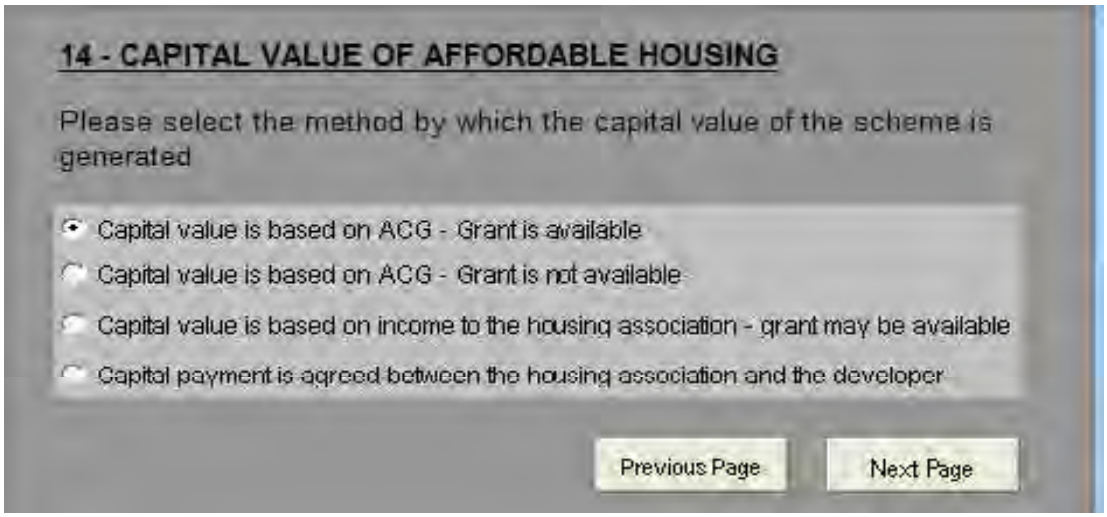
Press the 'Next Page' button to continue entering information in the DAT. If you need to go back to the 'previous page', press 'Previous Page'.

6.14 Capital Value of Affordable Housing

Scheme revenue calculated by the DAT includes revenue from the market housing and from the affordable housing. For the affordable housing, the underlying principle of the DAT is that there is a capital value for each unit and that the provider of the affordable housing (typically a housing association) will pay the developer this capital value. The sum of these values counts towards total scheme revenue.

There are four options in the DAT for calculating the capital value of the affordable housing. These are described mathematically in Annex 4.

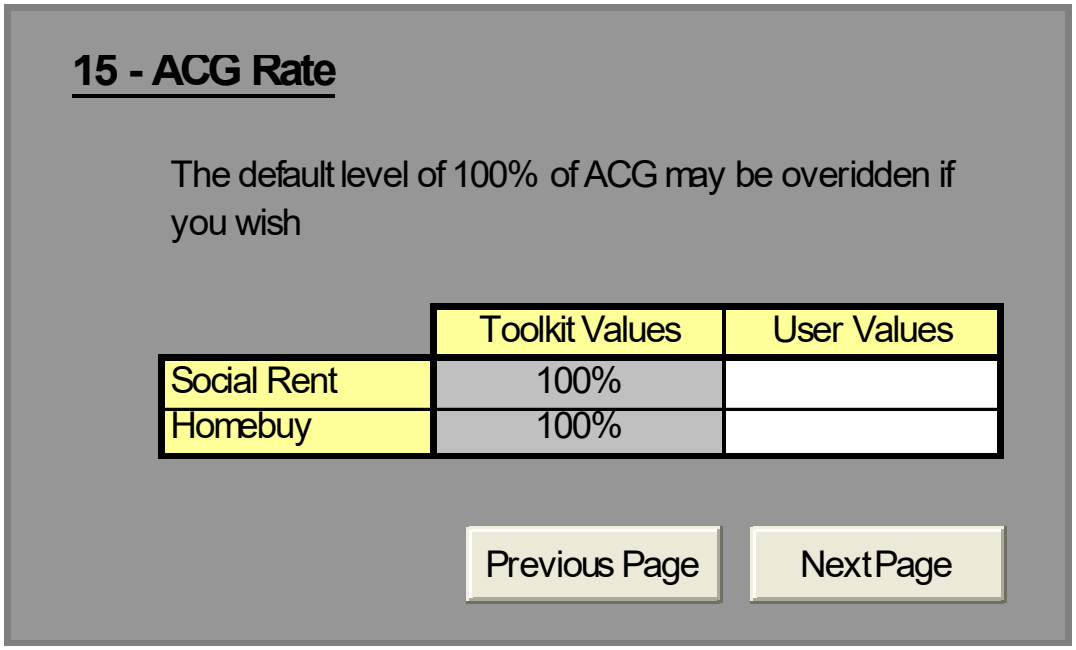
DAT users must select one of the options shown at page 14 of the DAT.



Press the 'Next Page' button to continue entering information in the DAT. If you need to go back to the ‘previous page’, press ‘Previous Page’.

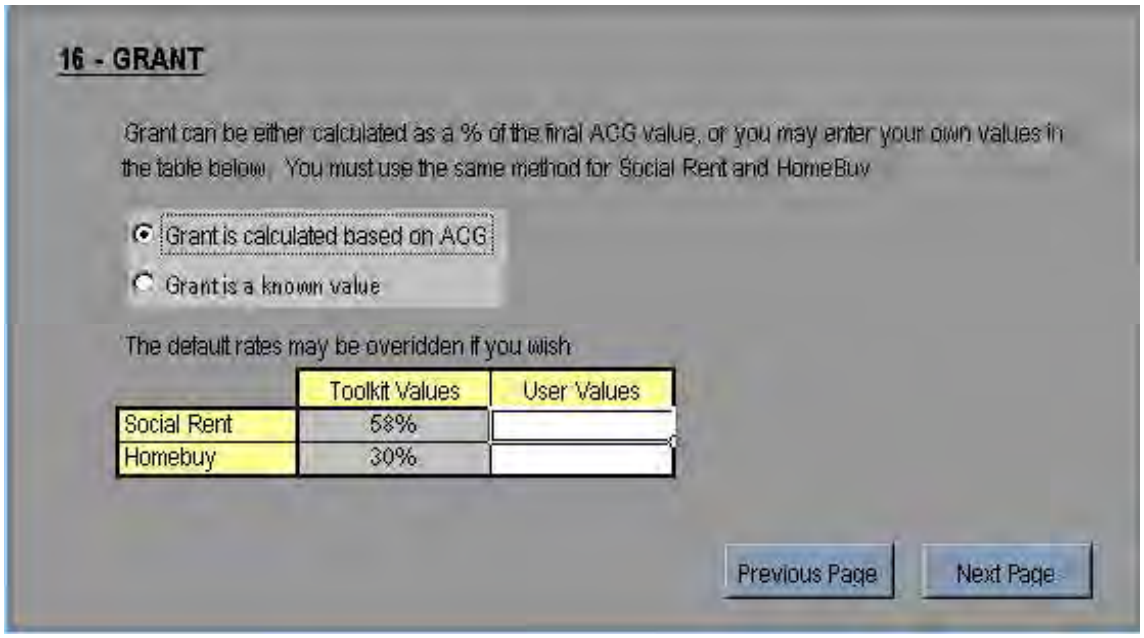
6.14.1 Capital value is based on ACG – grant is available

This option deals with social rent and Homebuy. It assumes that payment from the housing association to the developer is calculated on the basis of the appropriate ACG values (whether DAT default ACG values are used or the user has earlier specified scheme specific ACG values).

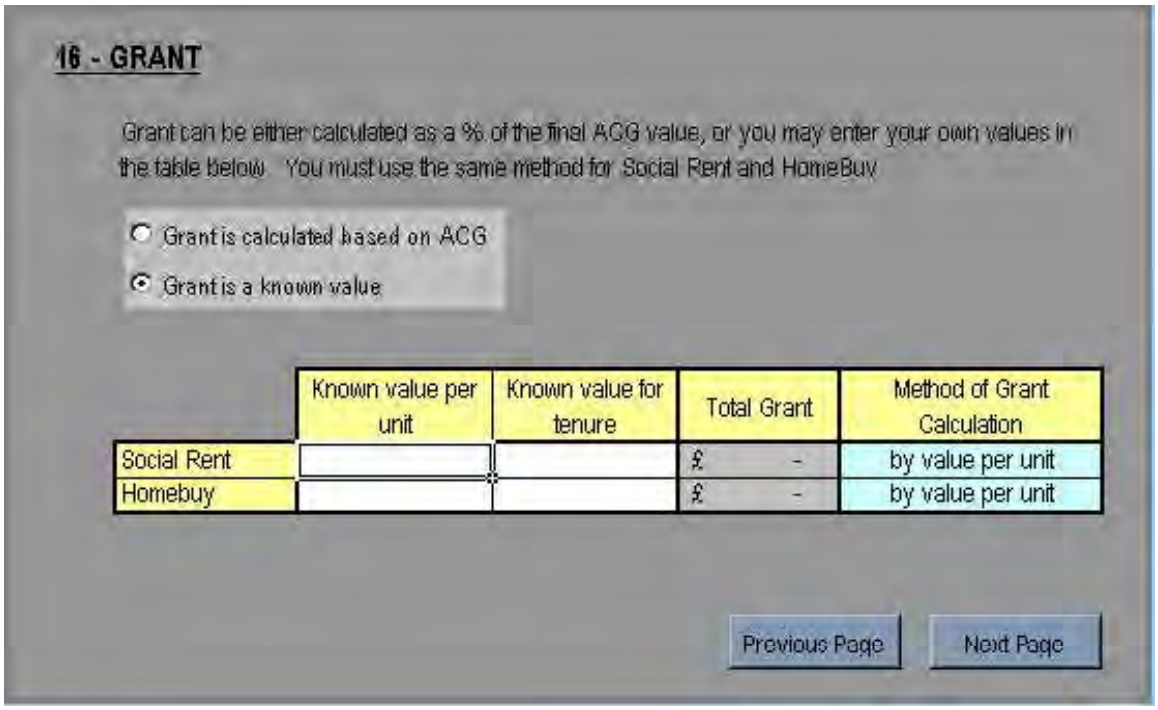


The default ACG rate is 100%. If you wish to vary this, enter the appropriate % in the white cells.

With this option, the expectation is that the grant payable by the Welsh Assembly Government would also be based on the ACG values, but the DAT also allows for the possibility that grant may be a known value, calculated in some other way. The user ticks whichever method for calculating grant is appropriate.

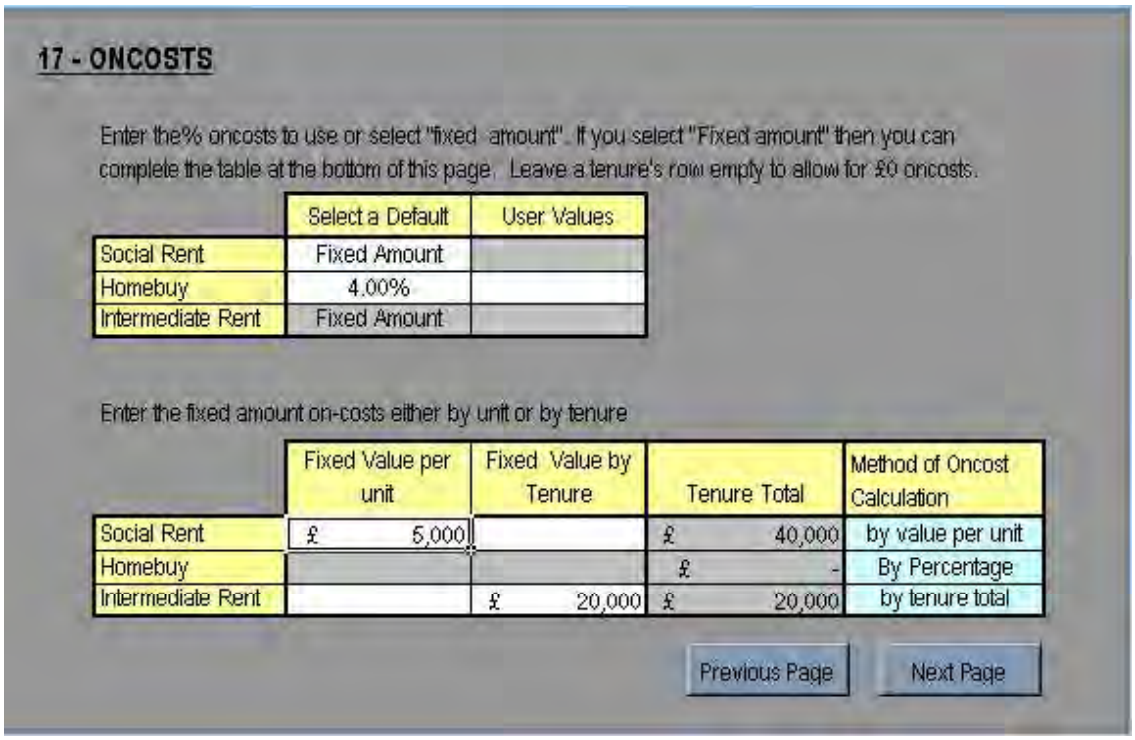


In the above example, the user wants the DAT to calculate the amount of grant, on the basis of ACG. Users can enter their own values in the white cells.



In the above example, the user wants to enter a known value for grant for social rent and Homebuy. The information can be entered by unit or by tenure.

Press the 'Next Page' button to continue entering information in the DAT. If you need to go back to the ‘previous page’, press ‘Previous Page’



On costs are deducted from the revenue paid to the developer. On costs are costs which a housing association incurs when they are the end-provider of affordable housing in a mixed tenure scheme[4].

For social rent and Homebuy, the user has four options for entering on-costs which are selected using drop down lists under 'Select a Default'. One of the options is 'Fixed Amount' and takes the user to the bottom half of the page, where the user can enter an on-cost value either as an amount per unit or by tenure.

The other three options are alternative percentages of the ACG values being used for the scheme. The three values are:

4%
9%
10.5%

(See Advisory Note for further information about these percentages)

Users can enter a nil on-cost for either and/or Social Rent and Homebuy by selecting the 'Fixed Amount' option and *leaving the appropriate 'by unit' cell empty*.

The on-costs page allows the user to enter an on-cost for Intermediate Rent units if they are included in the scheme but this has to be a user defined value, either on a per unit or per tenure basis.

[4] The exception is equity share where it is assumed the developer markets equity share units in the same way as they do other market units and sell directly to the purchaser.

Press the 'Next Page' button to continue entering information in the DAT. If you need to go back to the ‘previous page’, press ‘Previous Page’.

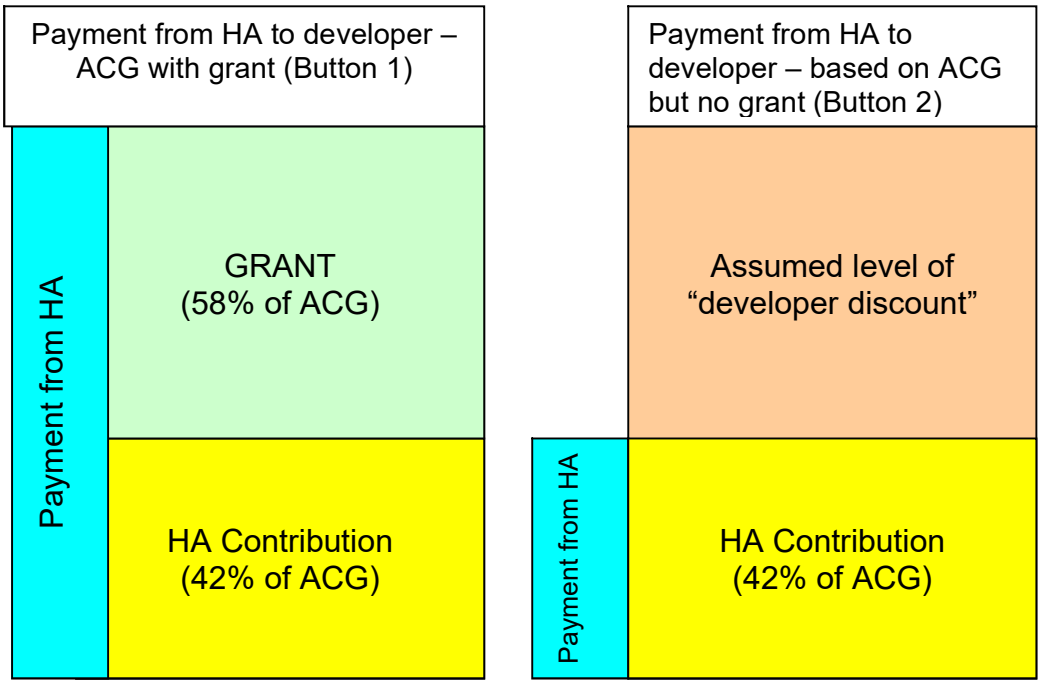
6.14.2 Capital value is based on ACG – grant is not available

With this option, the capital value for Social Rent and Homebuy is reduced by the amount of grant which would have been available, had the scheme attracted grant. This is illustrated below for a single notional Social Rent unit:

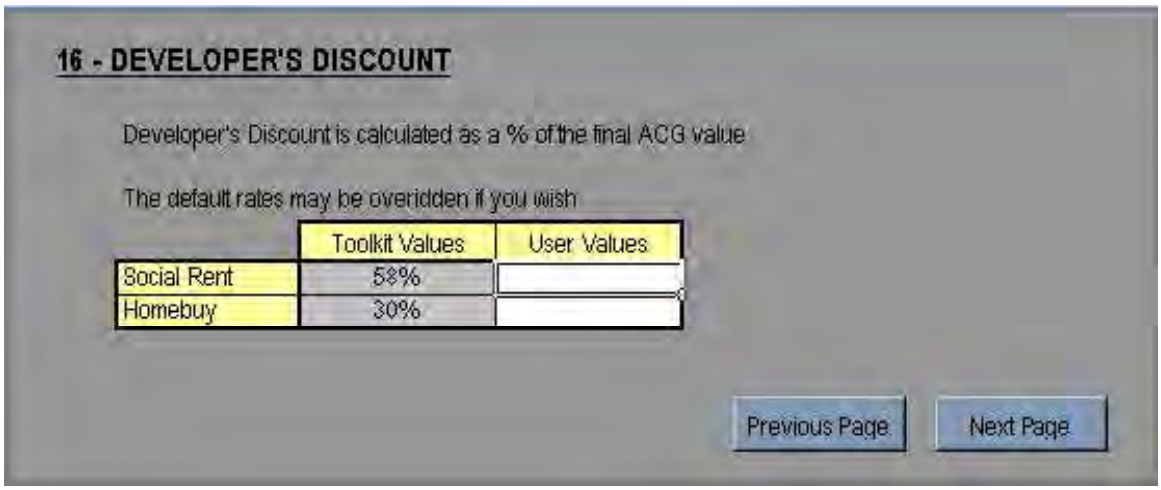
Capital value – based on ACG with grant = £100,000
Grant payable = 58% of ACG or £58,000

Capital value – based on ACG **without** grant = £42,000 (£100,000 minus £58,000)

The following diagram illustrates the difference in approach between Options 1 and 2 (taking social rent as the example):



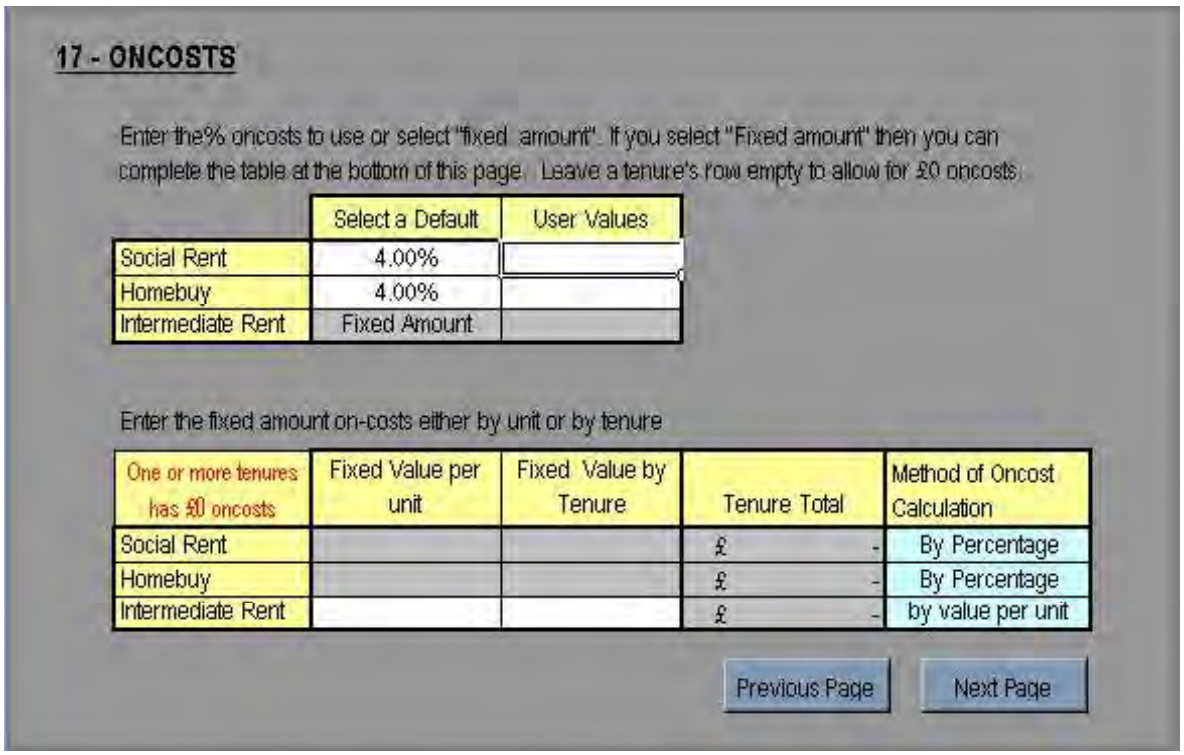
The DAT refers to the grant which is not available as the 'developer's discount'.



Users can over-ride the DAT default values by entering their own values in the white cells.

Press the 'Next Page' button to continue entering information in the DAT. If you need to go back to the 'previous page', press 'Previous Page'.

Page 17 – On-costs is called up next (as shown below). Detailed guidance on the use of this page was given in 6.14.1 above



Press the 'Next Page' button to continue entering information in the DAT. If you need to go back to the 'previous page', press 'Previous Page'.

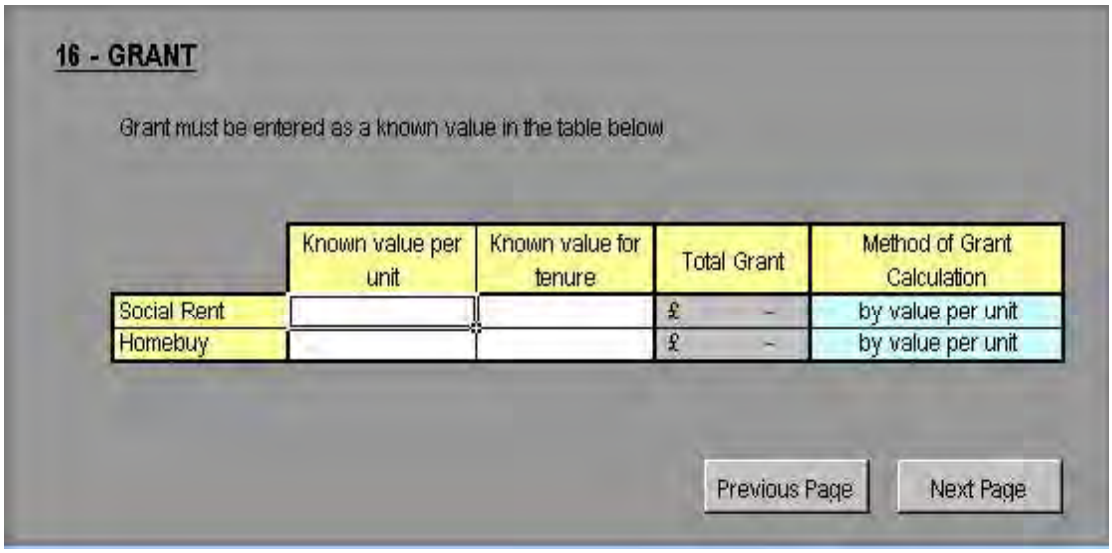
6.14.3 Capital value is based on income to the housing association – grant may be available

In this option, the starting point for the DAT calculation of the capital value is as follows:

For Social Rent – the amount of borrowing which the net rent to the housing association will support (or its capitalised net rent)

For Homebuy – the average percentage of market value purchased by the purchasers. There is no rental payment.

In both cases, grant may be available.



Users can enter the amount of grant (in the white cells) either per unit or as a known value for the tenure. If no grant is available, the white cells should be left blank.

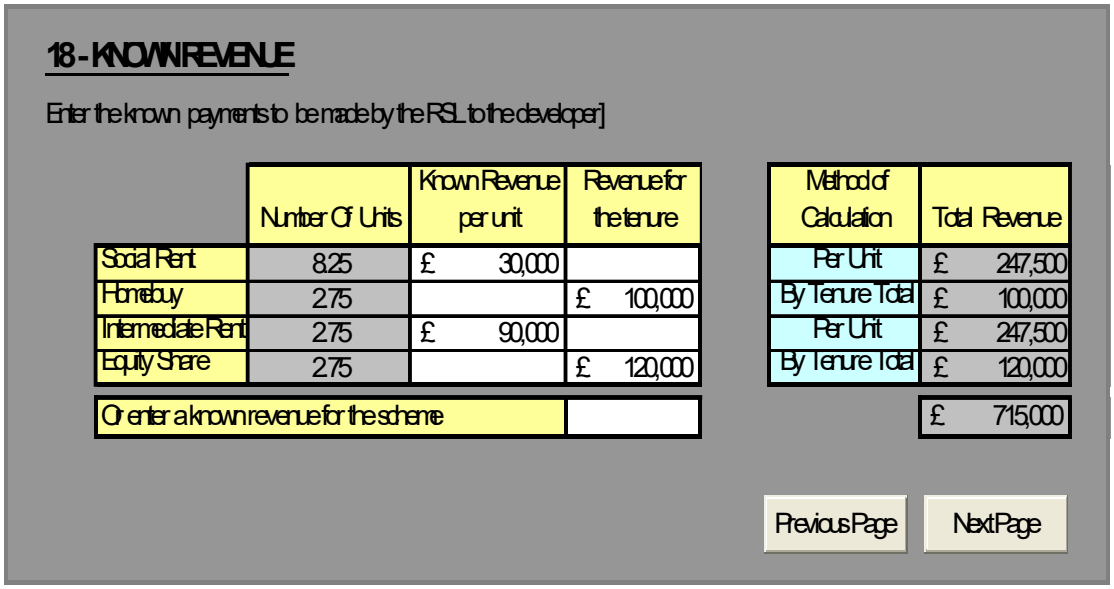
Press the 'Next Page' button to continue entering information in the DAT. If you need to go back to the ‘previous page’, press ‘Previous Page’.

Page 17 – On-costs is called up next (as shown below). Detailed guidance on the use of this page was given in 6.14.1 above

Press the 'Next Page' button to continue entering information in the DAT. If you need to go back to the ‘previous page’, press ‘Previous Page’.

6.14.4 Capital value is agreed between the housing association and the developer

The page gives the user various ways in which the payment can be entered - either on a per unit basis or per tenure or as a single lump sum covering all the affordable tenures applicable to the scheme. The DAT requires information for ALL the affordable tenures in the scheme - if information is not available for one or more tenures - the user should choose an alternative route.



Users should ensure that only one method of payment per tenure is used e.g. in the above example, it would be wrong for the user to leave a value in the 'Revenue for the tenure' cell for Social Rent.

With this option, it is assumed that any available grant and on-costs have been taken into account in arriving at the known payment(s).

Press the 'Next Page' button to continue entering information in the DAT. If you need to go back to the 'previous page', press 'Previous Page'.

Advisory 1

Calculation of capital value for Shared Equity and Intermediate Rent

For the first three options i.e.

i) 'ACG with grant'
ii) 'ACG without grant'
iii) 'Income to the housing association'

Equity Share –capital value is calculated as the percentage of market value specified by the user

Intermediate Rent - capital value is calculated as capitalised net rent less on-costs. It is assumed that there will be no grant for Intermediate Rent. However, if grant were available, it can be modelled by entering an appropriate capital contribution at page 13 of the DAT.

iv) Known revenue – capital value is identified by the user

Advisory 2

Mixed options

There may be cases where the method of payment differs between tenures e.g. the payment for social rent is based on ACG with grant but for Homebuy is based on option 3 ('Income to the housing association).

To accommodate this, users will need to undertake more than one run of the DAT and sum the results. For example, the scheme consists of 50 market dwellings, 10 social rent units (payment based on ACG with grant) and 5 Homebuy units (payment based on income to the housing association). The scheme is divided into 2 runs:

One – the 50 market units and 10 social rent units. Option 1 is chosen to calculate the revenue from the affordable housing (i.e. for the 10 social rent units using ACG with grant). Any planning obligations and capital contributions are included in this run.

Two – the 5 Homebuy units. Option 3 is chosen to calculate the revenue from the affordable housing (i.e. for the 5 Homebuy units using the income to the housing association).

Advisory 3

On-costs are incurred by housing associations in connection with the purchase of homes from developers. On-costs are taken into account in the DAT and are deducted from the gross capital value of affordable housing (Social Rent, Homebuy and Intermediate Rent). Users can enter their own values for on-costs or use the DAT default percentages (which are calculated as a percentage of the ACG value used). These percentages are taken from the Welsh Assembly Government Guidance. They are:

4% - For off the shelf schemes
9% - For package deals
10.5% - For collaborative design and build

Users should seek advice from their local housing associations on the values to use – be they a fixed sum pre unit or tenure or one of the above percentages. If no other information is available, users should use 9% as the 'norm'.

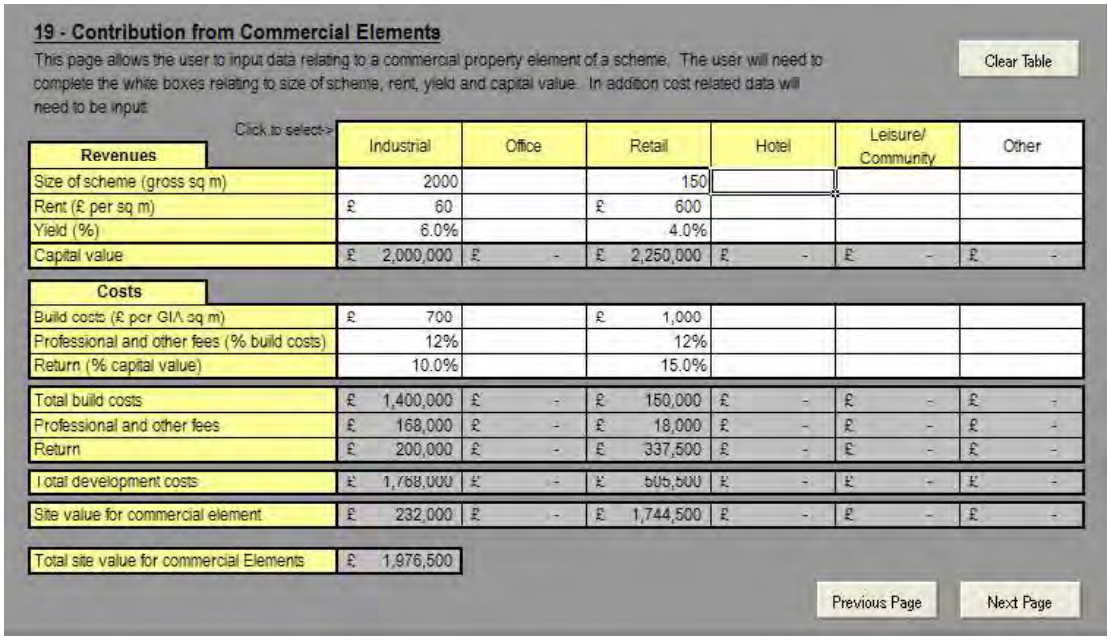
6.15 Contribution from Commercial Elements

This page allows the user to input details of the commercial element of a mixed use scheme.

The page allows the user to input relevant revenue and cost data for six types of commercial property including office, industrial, retail, hotel, leisure/community services or any other relevant commercial use. The user may alter the category for each column of information according to the commercial property types included in the scheme.

The white cells can be filled in. They allow the user to input:

- The floor area of the scheme (gross floor area per m^2);
- The anticipated rent (per m^2);
- The appropriate yield;
- The build cost per m^2;
- The allowance for professional fees;
- The rate of return.



19 - Contribution from Commercial Elements

This page allows the user to input data relating to a commercial property element of a scheme. The user will need to complete the white boxes relating to size of scheme, rent, yield and capital value. In addition cost related data will need to be input

Clear Table

Click to select-> Revenues	Industrial	Office	Retail	Hotel	Leisure/ Community	Other
Size of scheme (gross sq m)	2000		150			
Rent (£ per sq m)	£ 60		£ 600			
Yield (%)	6.0%		4.0%			
Capital value	£ 2,000,000	£ -	£ 2,250,000	£ -	£ -	£ -
Costs						
Build costs (£ per GIA sq m)	£ 700		£ 1,000			
Professional and other fees (% build costs)	12%		12%			
Return (% capital value)	10.0%		15.0%			
Total build costs	£ 1,400,000	£ -	£ 150,000	£ -	£ -	£ -
Professional and other fees	£ 168,000	£ -	£ 18,000	£ -	£ -	£ -
Return	£ 200,000	£ -	£ 337,500	£ -	£ -	£ -
Total development costs	£ 1,768,000	£ -	£ 505,500	£ -	£ -	£ -
Site value for commercial element	£ 232,000	£ -	£ 1,744,500	£ -	£ -	£ -
Total site value for commercial Elements	£ 1,976,500					

Previous Page Next Page

The Toolkit adds (or subtracts) the value of the commercial element to the residual value calculated for the residential.

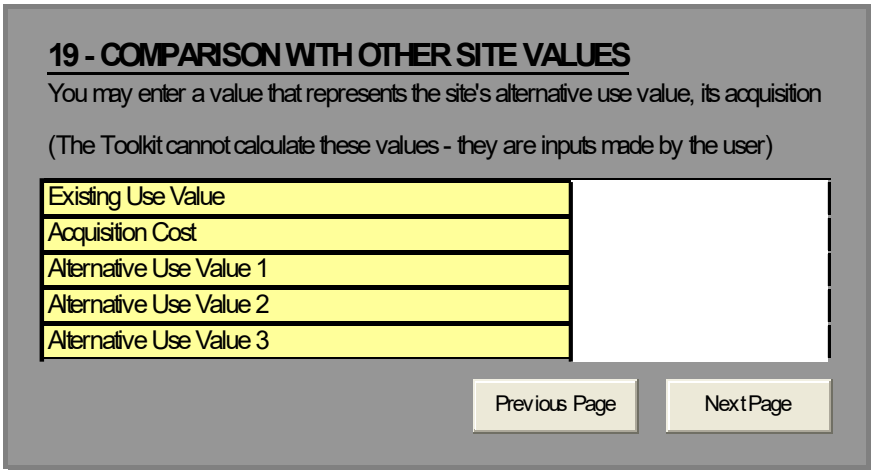
Local authorities may require an affordable or other Section 106 contribution where the commercial element of a scheme adds value. Developers may wish to reflect commercial elements which do not add value.

The Toolkit does not provide default data for this page, although this may be available in future editions, subject to appropriate research.

However, users, and those who evaluate appraisals will have access to best secondary sources of data showing yields, rents and development costs.

6.16 Comparisons with other site values

Users can compare the residual value generated by the DAT with a range of other values for the site. Five options are shown in the page called Comparisons with other site values. Users should enter information in the appropriate white boxes (noting for themselves what is meant by Alternative Use Value 1 etc).



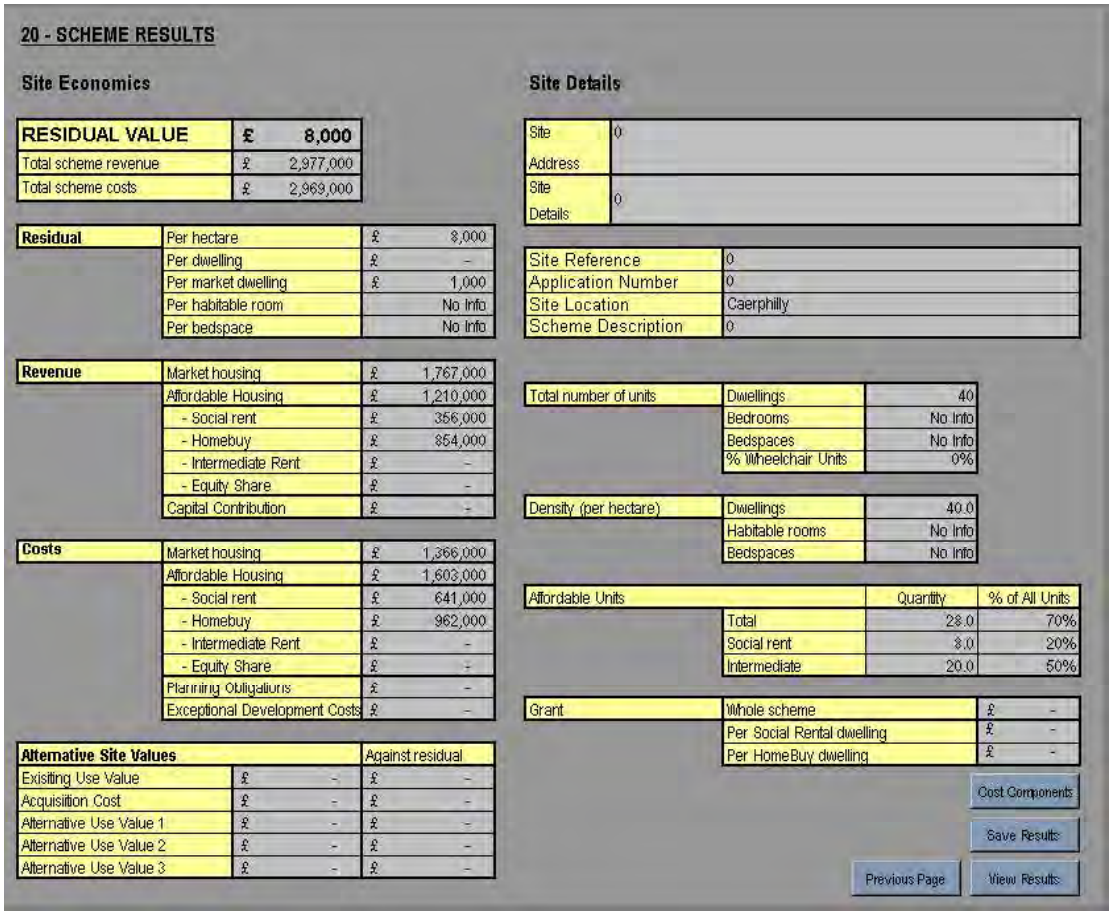
The DAT does not calculate these other site values. However, it summaries the differences between the DAT residual and any values entered in this page in the Results page which follows.

Press the 'Next Page' button to continue entering information in the DAT. If you need to go back to the ‘previous page’, press ‘Previous Page’.

6.17 Displaying and saving the results

6.17.1 Reviewing the Results

When you have completed all the input pages of the DAT displays the results on page 20 - 'Scheme Results'. This shows the basic characteristics of the scheme and financial information which has been calculated by the DAT.



If you wish to print this page, or the next page (Summary Results Page), from the 'File' menu select a print option.

It is also possible to print all of the input pages for the entire scheme from the 'File' menu.

6.17.2 Cost Components

The DAT provides more detailed information about the way in which development costs for individual tenures have been built up. To review the components of costs, press the Cost Components button on the Scheme Results page.

21 - COSTS COMPONENTS

All figures rounded to the nearest £1000	Market	Social Rent	Homebuy	Intermediate Rent	Equity Share
Build Costs	£ 1,904,000	£ 689,000	£ 344,000	£ 344,000	£ 317,000
Finance Costs	£ 257,000	£ 41,000	£ 21,000	£ 21,000	£ 43,000
Developer and Contractor Return	£ 643,000	£ 77,000	£ 39,000	£ 39,000	£ 107,000
Other Development Costs	£ 655,000	£ 108,000	£ 54,000	£ 54,000	£ 109,000
Total (nearest £1000)	£ 3,459,000	£ 915,000	£ 457,000	£ 457,000	£ 576,000

Figures in the above row may be affected by rounding in the above table

Return to Results

In the Costs Components table:

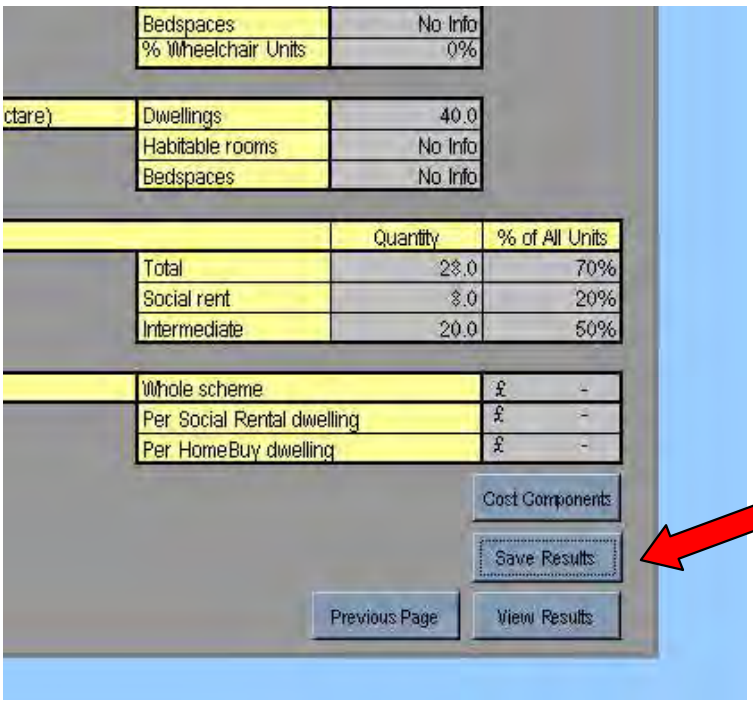
- Build costs does not include the cost of providing parking
- Other development costs includes costs of garage provision, marketing, internal overheads and professional fees.

Because of rounding, column totals may appear to vary from the sum of the individual cost components.

It should be noted that the Cost Components page does not cover 'exceptional costs'. These are shown separately on the Scheme Results page.

6.17.3 Saving the Results

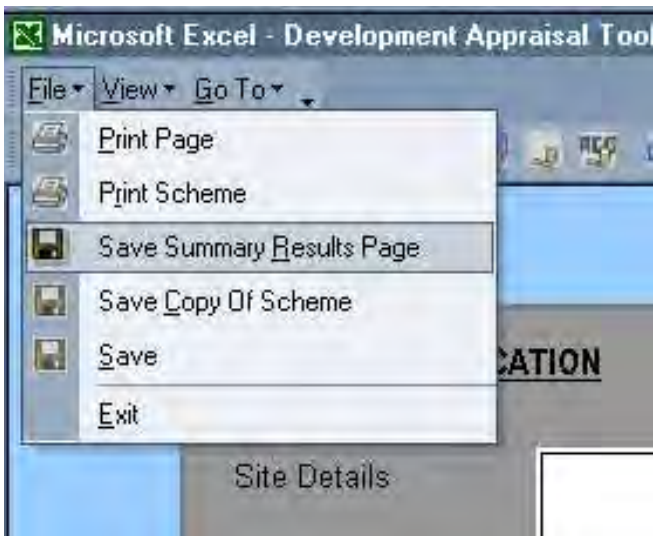
The DAT allows the user to store a number of different results for the same scheme and to compare the impact on scheme finances of different sets of assumptions. To store results in the Summary Results Page, press the Save Results button on the 'Scheme Results' page.



The Summary Results Page can store over 200 different sets of results within the DAT. The Summary Results page provides scheme reference information at the top, key financial and other information and a review of the main assumptions which have been used. This information is automatically saved upon exiting the DAT via the "File" menu, and is recalled when the user next accesses the DAT.

If the user wants to remove saved results from the Summary Results Page, press the "Clear Results" button.

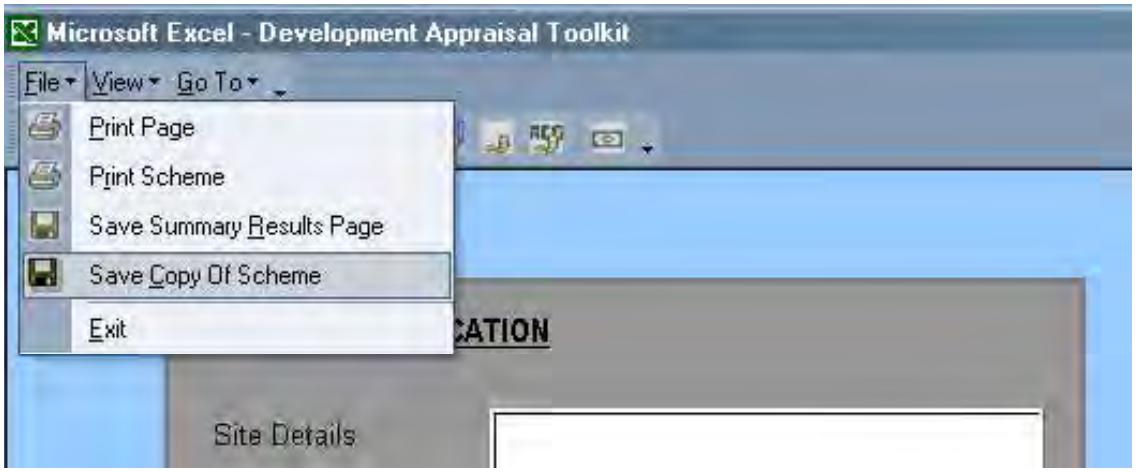
By using the menu button "File" and selecting "Save Summary Results Page" you can create a file of results only. The user will be prompted to enter a name for this Results File, which is then created in the same directory as the DAT.



7. SAVING FILES

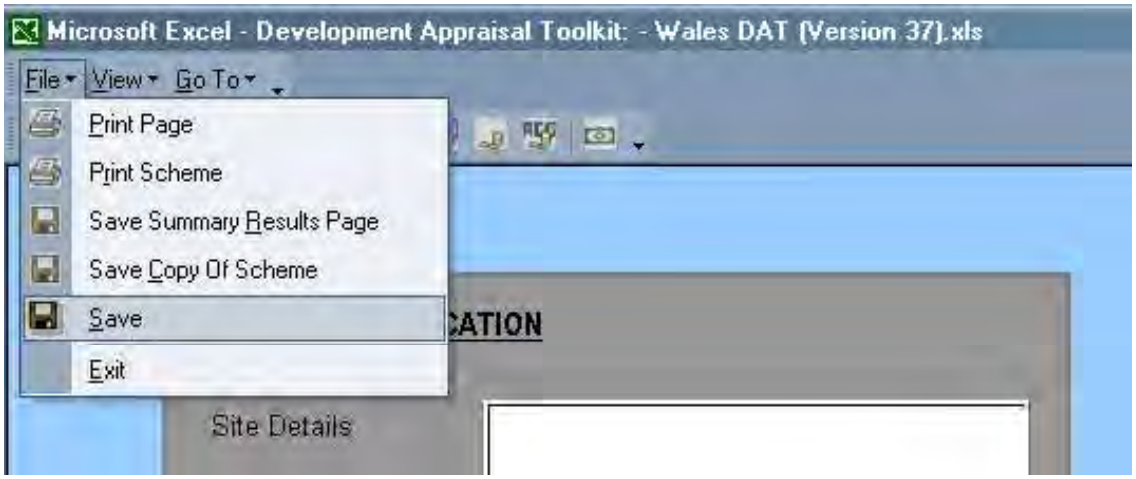
Users can save copies of the DAT (with scheme data) as separate files. This makes it possible to keep a record of the appraisal and to allow future amendments. You may find it helpful to save the entire DAT run in its own file (perhaps within a folder which deals with a particular scheme). This section advises on how to do this.

When working with the original DAT file (Wales DAT.xls) go to the file menu and select 'Save Copy Of Scheme', as shown below.



You will be prompted for a filename for the scheme. Enter a filename and press 'Save'. You will then be able to close the DAT and open the saved scheme, or alternatively carry on making changes in the DAT and save subsequent versions using the steps above.

Schemes that have been saved can be opened and altered. It is also possible to make changes to saved schemes and to then save those changes. The screenshot below shows how saved schemes (those derived from the original DAT) can have changes saved within them, or changes saved as another file.



It is possible to save many schemes within one folder on your computer, providing that they do not have same filename.

The option to ‘Save’ is not available within the original DAT file (Wales DAT.xls).

8 COMPARING RESULTS

Users can choose a wide range of assumptions to use to test and compare results for a scheme. There is no single right way of doing this. A suggested sequence of testing is set out below. This sets out a series of basic tests which would provide key results.

1 All market – no affordable housing
2 Percentage of affordable housing as per policy (with the capital value of social rent and Homebuy based on ACG with grant)
3 Percentage of affordable housing as per policy (with NO grant for social rent and Homebuy and the option chosen, 'Capital value is based on income to the housing association')

1 to 3 above with an increase in market values of 10%
1 to 3 above with a decrease in market values of 10%
1 to 3 above with an increase in density of 10%
1 to 3 above with a decrease in density of 10%

It would be advisable for authorities to identify a 'testing sequence' (as above or an alternative which is preferred). This sequence would then be followed by all users of the DAT each time a new/revised scheme is being tested, providing consistency in approach. Thereafter, the user can undertake whatever other tests are required but there would always be a series of benchmark results against which other test results can be compared and a benchmark to compare the results of one scheme to another.

ANNEX 1 DAT SOFTWARE COMPATIBILITY

The table below indicates where and where not, the DAT will function with respect to different combinations of Microsoft Windows and Microsoft Excel:

Excel Version	Windows XP	Windows NT	Windows 2000	Windows 1998	Windows 1995
2002/XP	OK	OK	OK	OK	X
2000	OK	OK	OK	OK	X
97	X	X	X	X	X
95	X	X	X	X	X

ANNEX 2 DEFAULT DWELLING MIXES

The default dwelling mixes were developed through analysis of a range of recent and current planning applications across the 10 local authorities covered by the DAT. The local authorities commented on an initial draft of the mixes. The mixes are therefore a robust reflection of current practice in the area covered by the DAT. However, it should be noted that they are notional 'average' mixes for a given density band and that individual schemes may have very different characteristics from the default mixes. Users are advised to include scheme specific information wherever possible.

(Densities in dwellings per hectare)

Description	Rooms	0	30	35	40	45	50	75	100	125	Rural
Studio Flat	1							5%	20%	20%	
1 Bed Flat	1				5%	5%	15%	25%	35%	35%	
2 Bed Flat	2			10%	10%	15%	20%	40%	45%	45%	10%
1 Bed Terrace/Town House	1							5%			
2 Bed Terrace/Town House	2			15%	20%	30%	25%	15%			
3 Bed Terrace/Town House	3	10%	10%	20%	20%	25%	30%	10%			10%
4 Bed Terrace/Town House	4				5%	5%					
2 Bed Semi Detached	2										
3 Bed Semi Detached	3	10%	10%	10%	10%	10%	5%				10%
4 Bed Semi Detached	4	10%	10%	10%	10%	10%	5%				
3 Bed Detached	3	20%	20%	10%	10%						20%
4 Bed Detached	4	30%	30%	15%	10%						20%
5 Bed Detached	5	20%	20%	10%							20%
2 Bed Bungalow	2										5%
3 Bed Bungalow	3										5%

ANNEX 3 DEFAULT UNIT SIZES

Dwelling Type	Size in sq.m Affordable Units	Size in sq.m Market Units
Studio Flat	45	45
1 Bed Flat	48	50
2 Bed Flat	60	55
1 Bed Terrace/Town House	48	50
2 Bed Terrace/Town House	73	55
3 Bed Terrace/Town House	80	80
4 Bed Terrace/Town House	100	100
2 Bed Semi Detached	73	65
3 Bed Semi Detached	80	75
4 Bed Semi Detached	100	105
3 Bed Detached	80	100
4 Bed Detached	100	130
5 Bed Detached	120	150
2 Bed Bungalow	58	80
3 Bed Bungalow	90	100

ANNEX 4 DAT METHODS FOR CALCULATING CAPITAL VALUE OF THE AFFORDABLE HOUSING

There are 4 methods by which the Capital Value of a scheme (also known as the revenue) can be calculated.

1. Capital value is based on ACG – Grant is available
2. Capital value is based on ACG – Grant is not available
3. Capital value is based on income to the housing association – grant may be available
4. Capital payment is agreed between the housing association and the developer

Option 1 - Capital value is based on ACG – Grant is available

Tenure	Method
Market Housing	Revenue is the product of Market price and number of units; **Market Value x No.units**
Social Rent	Revenue is the product of a percentage of ACG for each unit less on-costs**.** (The user can adjust the % ACG to be used. On-costs are either a percentage of adjusted ACG or a fixed value); **(ACG% x No.units) - On-costs** Grant is calculated separately and is a percentage of ACG(or adjusted ACG) plus any Wheelchair supplement; **(Grant% x ACG% x No.units) + (WCsupp x No.units)**
Homebuy	Revenue is the product of a percentage of ACG for each unit less on-costs**.** (The user can adjust the % ACG to be used. On-costs are either a percentage of adjusted ACG or a known value); **(ACG% x No.units) - On-costs** Grant is calculated separately and is a percentage of the base ACG plus any Wheelchair supplement; **(Grant% x ACG x No. units) + (WCsupp x No.units)**
Intermediate Rent	Revenue is the capitalised net rent value. Net rent is the annual rent less Management costs, Voids and Letting Fees; **((AnnualRent – (Management+Voids+LettingFee) x Capitalisation) x No.Units**
Equity Share	Revenue is the product of the reduced market value and the number of units; **Reduction% x MarketValue x No.units**

Option 2 - Capital value is based on ACG – Grant is not available

Tenure	Method
Market Housing	Revenue is the product of Market price and number of units; **Market Value x No.units**
Social Rent	Revenue is the product of the base ACG less developer's rate and the number of units less on-costs**.** (On-costs are either a percentage (100%less developer's rate) of ACG or a known value); **(ACG x (100% - DevelopersRate) x No.units) - On-costs**
Homebuy	Revenue is the product of the base ACG less developer's rate and the number of units less on-costs**.** (On-costs are either a percentage (100%less developer's rate) of ACG or a known value); **(ACG x (100% - DevelopersRate) x No.units) - On-costs**
Intermediate Rent	Revenue is the capitalised net rent value. Net rent is the annual rent less Management costs, Voids and Letting Fees; **((AnnualRent – (Management+Voids+LettingFee) x Capitalisation) x No.Units**
Equity Share	Revenue is the product of the reduced market value and the number of units; **Reduction% x MarketValue x No.units**

Option 3 - Capital value is based on income to the housing association – grant may be available

Tenure	Method
Market Housing	Revenue is the product of Market price and number of units; **Market Value x No.units**
Social Rent	Revenue is capitalised net rent less on-costs plus grant**.** (On-costs entered as a known value, grant entered as a known value). Net rent is the annual rent less any management, voids and repairs reserve; **(((Annual Rent – (Management + Voids + Repairs)) * Capitalisation x No.units) + Grant) - On-costs**
Homebuy	Revenue is the product of the reduced market value and the number of units (On-costs entered as a known value, grant entered as a known value), **((Reduction% x MarketValue x No.units) + Grant) – On-costs**
Intermediate Rent	Revenue is the capitalised net rent value less On-costs. Net rent is the annual rent less Management costs, Voids and Letting Fees (On-costs entered as a known value); **(((AnnualRent – (Management+Voids+LettingFee) x Capitalisation) x No.Units) - On-costs**
Equity Share	Revenue is the product of the reduced market value and the number of units; **Reduction% x MarketValue x No.units**

Option 4 - Capital payment is agreed between the housing association and the developer

Tenure	Method
Market Housing	Revenue is a known value entered by the user
Social Rent	Revenue is a known value entered by the user
Homebuy	Revenue is a known value entered by the user
Intermediate Rent	Revenue is a known value entered by the user
Equity Share	Revenue is a known value entered by the user

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Entec

Creating the environment for business

Appendix B
Stratification of Housing Market Areas

Appendix B

RYEDALE					Detached			Semis		Terraced		Flats		
Sub Market	Postcode Sector	Large Settlements	Medium Settlements	Small Settlements	5 Bed	4 Bed	3 Bed	3 Bed	2 Bed	3 Bed	2 Bed	3 Bed	2 Bed	1 Bed
Prime Ryedale	YO62 4		Hovingham	Ampleforth, Stingsby	£475,000	£210,000	£330,000	£255,000	£215,000	£250,000	£210,000	£225,000	£195,000	£135,000
National Park West	YO62 7 (South)			Nawton, Wombleton	£425,000	£370,000	£295,000	£230,000	£195,000	£225,000	£185,000	£200,000	£175,000	£120,000
	YO62 5 (South)		Helmsley	Nunnington, East Newton										
	YO7 2 (East)			Cold Kirby, Scawton										
	Y61 4 (North)			Oldstead, Byland Abbey										
South West Ryedale	YO60 7			Barton-Le-Willows, Coneysthorpe	£395,000	£345,000	£275,000	£215,000	£180,000	£210,000	£175,000	£185,000	£160,000	£115,000
	YO60 6		Sheriff Hutton											
Pickering, Malton and NP Hinterland	YO18 7 (South)	Pickering (East)	Thornton-Le-Dale		£320,000	£280,000	£225,000	£175,000	£145,000	£170,000	£140,000	£150,000	£130,000	£90,000
	YO18 8 (South)	Pickering (West)		Cropton, Wrelton										
	YO62 6 (South)		Kirkbymoorside	Sinnington, Safton, Spaunton										
	YO17 7	Malton												
	YO17 6			Great Habton, Swinton, Broughton										
Norton on Derwent & Hinterland	YO17 8	Norton on Derwent (East)		Rillington, Duggleby, Sherburn	£295,000	£255,000	£205,000	£160,000	£135,000	£155,000	£130,000	£140,000	£120,000	£85,000
	YO17 9	Norton on Derwent		Leavering, Thixendale, Langton										
East Ryedale	YO 25 3			Foxholes, Butterwick	£265,000	£230,000	£185,000	£140,000	£120,000	£140,000	£115,000	£125,000	£110,000	£75,000
	YO12 4			Potter Brompton										

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Appendix C
Assumed Base and Overhead Development Costs

10 - DEVELOPMENT COSTS

ALWAYS DEPRESS THE CLEAR TABLES BUTTON FIRST

Clear Table

Build Costs per sq m

You can enter your own values in the white cells below.
Where cells are left blank, the Toolkit value for that row will be used

	Toolkit Values	
Bungalows	#N/A	£895
Flats (6+ storeys)	#N/A	£1,470
Flats (5 & less stor	#N/A	£1,055
Houses <= 75m2	#N/A	£850
Houses > 75m2	#N/A	£745

Other Development Costs

You can enter your own values in the white cells below. Enter 0% for non-applicable items.
Where cells are left blank, the Toolkit value for that row will be used.

	Toolkit Values	User Values	
Professional Fees %	12.00%		of build costs
Internal Overheads	5.00%		of build costs (Market and Discount Market units)
Interest Rate (Market)	7.00%		of build Costs (Market, Discount Market and Low Cost Sale u
Interest Rate (Affordable Hous	7.00%		of build costs (SR, HB, IR units)
Marketing Fees	3.00%		of market value (Market and Discount Market units)
Developers Return	15.00%	20%	of market value (Market and Discount Market units)
Contractors Return	6.00%		of development costs (SR, HB, IR and LCS units)
Land financing costs	£ -		*Please see the Guidance Notes for use of this value*

Exceptional Development Costs

You may enter SCHEME totals for exceptional costs. The first row is for Sustainable Homes costs. The other three rows are for user defined costs.
You can enter the name of the cost in the left hand cells and SCHEME value in the right hand cell.

Sustainable Homes Standard	
Market Housing	Affordable Housing
None	None

Costs incurred for Sustainable Homes Levels None a	£
Flood Risk - Zone 1	£
Contamination Risk A - High Water Risk	£ -
Demolition at £6.49 / m3	£

Scheme Total	£328,918
per dwelling	£16,446
per hectare	£657,836

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Appendix D
Flood Resilience Costs

Ryedale Affordable Housing Viability Study – Flood Mitigation Costs

Spreadsheet Approach

Existing data sources for flood mitigation costs were examined, and simple example scenarios produced in an Excel spreadsheet.

Data was principally obtained from:

- CIRIA C687 "The SuDS Manual" (2007) – chapter 25 gives indicative costs per m^3 of storage required (assumption that 1 ha requires 650m^3 of storage);
- Costs for Environment Agency flood defences were also identified, and have been included in some Flood Zone 3 scenarios, however the costs are large for the more difficult (and unlikely to be selected) brownfield sites with significant flood risk;
- Various costings from ABI and Defra flood resilience studies were identified, in general these reflect costs to adapt existing buildings and many of the measures are active (require residents to set up). For new build these measures are not suitable, so only passive flood resilience measures were considered (i.e. floor raising).

The following scenarios were used (for a 1 ha site):

- Flood Zone 1 – fitting of SuDS (permeable paving and attenuation basin), plus basic FRA;
- Flood Zone 2 - fitting of SuDS (permeable paving and attenuation basin), some floor raising for building resilience. Plus medium-FRA costs;
- Flood Zone 3 - fitting of SuDS (permeable paving and attenuation basin), some floor raising for building resilience, earth moving to raise parts of site (0.1ha) and reduce levels elsewhere on site (0.1ha), 100m of retaining wall. Plus costs for a FRA supported by hydraulic modelling etc.

The following costs were identified from the spreadsheet approach for residential development:

- One hectare of residential in Flood Zone 1 – cost of £85,000
- One hectare of residential in Flood Zone 2 – cost of £170,000
- One hectare of residential in Flood Zone 3 – cost of £220,000 to £640,000

Reductions in per hectare costs for non-residential use (i.e. employment uses) are likely to be minimal, given that the same standard of flood mitigation would be required by PPS25. Efficiencies may occur as SuDS may be simpler on employment sites with less individual building units, a ~10% reduction in costs has been used for these. These efficiencies may be limited on mixed-use sites.

It should be noted that potential costs are very sensitive to site specifics, for example in the case of land raising, costs would be markedly lower if suitable fill material can be obtained on site rather than imported in from off-site. In some cases SuDS costs may be similar to the cost of a standard traditional drainage system. It is recommended that the costing for each potential site is tailored once summary information on site characteristics is available.

Table 1 Flood Mitigation Costs for Brownfield Sites

Categorisation	Criteria	Mitigation Costs per Ha	
		For Residential Uses	For Non-Residential Uses
Minor	Flood Zone 1	£85,000	£76,000
Medium	Flood Zone 2	£170,000	£153,000
Significant	Flood Zone 3	N/A	£220,000 to £640,000

Internet data Review

A Google search for 'Flood Mitigation Costs' gave the following data sources:

- GVA Grimley - Stroud Employment Land Review (October 2007) - £50,000 per site (Employment uses) and £100,000 per site (Mixed Use), although no details are given (i.e. site size, proportion in each flood zone), source is given as "GVA Grimley, 2007", but no reference list is given.
- Springfield School, Todmorden Road, Burnley, Lancashire (August 2008) - £45,000 flood related drainage, £70,000 flood mitigation works (300mm of floor raising via cast concrete). EA map shows site on edge of Flood Zone 3 extent. Aerial images indicate that the built component of this site is in the region of 1ha.

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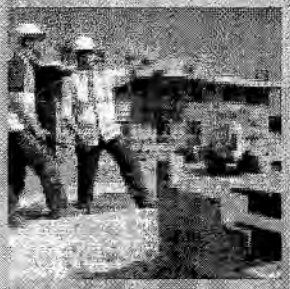
Appendix E
Contaminated Land Remediation Costs



Best Practice Note 27 (revised February 2008) Contamination and Dereliction Remediation Costs

English Partnershi
The National Regeneration Agency

Contents

Front and back cover images:
(main)
Dudley, West Midlands
(from left to right)
Former Parnell site, Bristol;
Construction at Westoe Crown Village, South Shields, Tyne and Wear;
Children's playground at Upton, Northampton; Lower Beswick Regeneration Programme, East Manchester

Above images (main)
Greenwich Millennium Village, London
(left to right)
Chatterley Whitfield Colliery Site;
Greenwich Millennium Village, London

Foreword

Estimating the cost of preparing a brownfield site for reuse is a complex exercise and one that is fraught with uncertainties. Up-to-date and comprehensive information is essential, to reduce the uncertainty and risk of grossly underestimating the costs of remediation. In this regard nothing can compete with a recent and well executed site investigation that has been designed with full regard for the land use history of a site.

Unfortunately, it is sometimes necessary to take decisions regarding brownfield sites without having the benefit of this important information. Researching the history of a site, over say 200 years of industrial use and designing and executing an intrusive site investigation, all take time and money, both of which may not be available at the inception stage of a project. It was with this in mind that, in 2005, English Partnerships took the decision to prepare an internal Best Practice Note on the costs of remediating contamination in brownfield sites. This document was intended for use by the agency's project managers in the early stages of the decision making process regarding brownfield sites and as a means of cross-checking remediation costs in subsequent tenders.

Since the Best Practice Note was prepared in 2005 it has been recognised that tackling the problems caused by dereliction can be as complex, and often as expensive as treating or removing contamination. HM Treasury has also consulted on the possibility of extending the Land Remediation Relief scheme, which provides for 150 per cent Corporation Tax relief in respect of qualifying decontamination works, so as to include the costs associated with remedying dereliction. In response, English Partnerships decided to revise its internal guidance on contamination costs to include dereliction costs, and to publish a new Best Practice Note so that it can be used by Government agencies, development partners and other stakeholders.

The revised Best Practice Note has been co-ordinated by English Partnerships with consultants from BBP Regeneration, Campbell Reith Hill, and Davis Langdon. Although it has been prepared with the utmost care and consideration, it must be stressed that the Best Practice Note is only intended as guidance and that nothing can substitute for good quality, site specific, information.

Professor Paul Syms
National Brownfield Advisor
English Partnerships

February 2008

1 Background

English Partnerships is the national regeneration agency helping the Government to support sustainable growth in England. The agency is the Government's specialist advisor on brownfield land, providing expert advice on brownfield land and promoting best practice in regeneration and remediation.

The Brownfield Guide: a practitioner's guide to land reuse in England, published by English Partnerships in 2006, *(the Brownfield Guide)* provides a comprehensive overview, with case studies, of the issues that need to be addressed when reusing land, the regulatory framework and processes that need to be observed. The *Brownfield Guide* also sets out a phased approach to land reuse, which should assist intending developers and investors to ensure that significant issues are not overlooked.

In 1999, English Partnerships, together with other stakeholders, founded the environmental charity **Contaminated Land**: applications in real environments (**CL**:AIRE) to stimulate the regeneration of contaminated land in the UK by raising awareness of, and confidence in, practical sustainable remediation technologies. **CL**:AIRE supports the brownfield industry through research, training and the assessment of new technologies. Further information is contained in Annex A.

2 The purpose of the Best Practice Note

This Best Practice Note (BPN) sets out guidance on assessing the costs of preparing, for redevelopment, previously developed land (PDL or 'brownfield' sites affected by contamination or dereliction and provides guidance on pre-acquisition site investigations' 'due diligence'. The BPN has been prepared as a stand alone document, but contains a number of cross references to *the Brownfield Guide* which provides a wider perspective on issues affecting reuse of land and examines the policies and other mechanisms available to assist in the process of unlocking sites.

The BPN was initially developed in 2005 to assist English Partnerships project managers and development partners form, at an early stage, an opinion as to the costs associated with the remediation of contamination, for inclusion in a project appraisal, and prior to the appointment of consultants and the provision of site specific advice. This fully-revised edition presents an update on cost estimates for the remediation of land affected by the presence of contaminative substances updated to 2007 tender prices. Regional weightings for the costs have also been provided for guidance.

This revised edition of the BPN includes additional guidance on pre-acquisition site investigations, as part of 'due diligence', and expands the remediation costs to include the problems associated with dereliction. The history of dereliction means, in addition to the remediation of contamination, having to deal with above and below ground demolitions, together with the stopping up and removal of redundant services. Land that has been subjected to works of this nature often requires excavated voids to be backfilled, with crushed arisings (brick and concrete) from the demolitions and/or the import of clean fill material, consolidation and grading/levelling to form development platforms.

This BPN has been prepared by English Partnerships and its consultants. It should be noted that the information and opinions contained in this BPN are for general information purposes only. The BPN is aimed at assisting English Partnerships project managers and development partners and is not intended to constitute professional advice. However, it may prove equally useful for organisations outside English Partnerships, for example, consultants, contractors, developers and local authorities. The BPN has been prepared on the basis of what is known or assumed about site conditions/history and about potential end uses in relation to requirements for UK sites.

The information contained in this BPN should not be relied on or treated as a substitute for specific advice relevant to particular circumstances. The ranges of costs identified within the BPN are for guidance purposes only and should not be relied upon, on their own, for the purpose of commissioning remediation works. Costs derived from the BPN may be helpful at later stages of a project appraisal, for example to provide a comparison with unit costs estimated by a specialist consultant, or to query unit costs which fall significantly outside the relevant ranges set out in this BPN.

3 Policy, regulatory and procedural context

In England, the Government's preferred approach to land affected by contamination or damaged by former usage is that reclamation should be delivered through the development process. Only when significant harm is being caused to human health, to controlled waters (groundwater and surface waters) and the wider environment, or there is a 'significant possibility of significant risk', does legislation intervene to require the appropriate person to remedy the situation.

The principal pieces of legislation impacting on the reuse of brownfield land relate to how land contamination and water pollution are managed. Key legislation is as follows:

- The *Environmental Protection Act 1990* and the *Environment Act 1995* which introduced Part 2A, the 'contaminated land' legislation into the earlier Act – this includes the legal definition of contaminated land and how it is to be identified and dealt with. To assist, DEFRA published Circular 01/2006, which set out details of how the legislative framework regarding contaminated land was to operate. CLAN 5/06 (amended) replaced DETR Circular 01/2000 to promulgate the statutory guidance, as now amended, for radioactivity and sets out the way in which the extended regime is expected to work. The modifications made to the regime do not alter the way Part 2A works for non-radioactive contamination, with the exception of the change to appeals procedures for remediation notices served by a local authority;
- The *Water Resources Act 1991* makes it a criminal offence for a person to cause or knowingly permit pollution of controlled water. It sets out requirements for rectification if pollution has occurred and provides powers for the Environment Agency to take action to prevent or remedy pollution;
- The *Groundwater Regulations 1998* (SI 1998/2746) control the disposal of List I and List II substances to groundwater. List I substances are the most damaging and toxic, and must be prevented from directly or indirectly entering groundwater. They include many pesticides and herbicides, many solvents, mineral oils and hydrocarbons, cadmium and mercury. Activities resulting in indirect discharges may be authorised, following prior investigation. List II substances are less harmful, but must be controlled to prevent pollution of groundwater. They include many metals, such as zinc, lead, copper, many biocides, phosphorus, fluorides, ammonia and nitrates and anything that will make groundwater unfit to drink. The regulators have further information on listed substances and detailed lists of designations;
- The *Landfill (England and Wales) Regulations 2002* (SI 2002/1559) aimed to reduce the pollution potential from landfilled waste that can impact on surface water, groundwater, soil, air, and also contribute to climate change. Liquid wastes were banned from landfill, whilst other wastes must be treated before being consigned to landfill;
- The *Water Act 2003* introduced changes to regulation of the water industry in England and Wales under the *Water Industry Act 1991*, by transferring responsibility for economic regulation from an individual Director General to an Authority – OFWAT. The Act is in three Parts, relating to water resources, regulation of the water industry and other provisions. It aims to improve protection of the environment and to provide a more flexible process of regulation. The changes will be implemented over a number of years;
- The *Hazardous Waste (England and Wales) Regulations 2005* (SI 2005/894) set out the procedures to be followed when disposing of carrying and receiving hazardous waste. The term special waste became obsolete in England and Wales from July 2005, when the new hazardous waste regime replaces the special waste regime; and
- The *Contaminated Land (England) Regulations 2006* (SI 2006/1380) these deal with various procedural details such as the description o special sites, public registers, remediation notices and appeals.

The *Brownfield Guide* (Chapter 3) provides a summary of the legislation and regulations affecting contaminated land. However, it is important to note that the regulatory framework is subject to change and any such changes may influence preferred remediation technique and unit costs.

The various project and design guidance documents produced by English Partnerships describe the processes for appraising and designing projects including those that involve the remediation of PDL. The relevant procedures are designed to reduce the level of risk and uncertainty associated with projects (including the abnormal costs of remediation).

The decision to financially approve public sector expenditure is subjec to prior appraisal and due diligence procedures. These procedures are to ensure that decision makers approve the lowest risk and highest value for money projects. English Partnerships has its own appraisal systems, outlined in published and internal documents. If the guidance in these documents is followed, project managers should be able to comply with the guidance on appraisal set down in HM Treasury's Green Book[1] and the then ODPM's *Assessing the Impacts of Spatial Interventions (3Rs)*[2].

Due diligence on the site conditions will be required before English Partnerships commits to securing an interest or investing in the subjec land or property. The BPN should not be used on its own for this purpose, without other inputs, but its application may raise issues for due diligence and should be used to inform the specification of terms of reference and the selection of the appropriate consultants.

[1] HM Treasury, 2003 *'Green Book, Appraisal and Evaluation in Central Government'* (TSO)
[2] Office of the Deputy Prime Minister, 2004. *Assessing the Impacts of Spatial Interventions (3Rs)* (HMSO

4 Guidance on assessing the costs of preparing previously developed land (PDL) affected by contamination

This section presents a model that can be used as a first basis for assessment of the potential costs of preparing sites affected by contamination. The BPN is not to be used for estimating other site preparation and servicing costs. It does not take account of extensive asbestos removal nor does it cover geotechnical activities. For the purpose of this BPN, the remediation of land affected by contaminative substances has been defined as *'activities whose purpose is to prevent, minimise, remedy or mitigate the effects of harm to human health or to the wider environment, or pollution of controlled waters and to restore the land or polluted waters to a state appropriate for its intended end purpose taking account of environmental and/or public health requirements.'*

The benchmark costs can be used to check on cost estimates provided from other sources (e.g. by the project applicant or by consultant engineers). They might provide a basis for querying the estimates if they lie outside the appropriate range taken from Table 1 if the assumptions about site conditions and end use are the same. The BPN is not to be used for estimating full site preparation and servicing costs. It does not take account of asbestos removal nor does it cover geotechnical activities.

The BPN provides benchmark cost ranges for the remediation of contamination on PDL sites. The costs are based on the per hectare cost of remediation and should be applied to the gross area of the site as available from sales documents or site survey. They are not related to actual areas of contamination (as this is unlikely to be known early in appraisal) nor to historic employment floorspace.

Use of the benchmark unit costs will require a level of knowledge and judgement about the site, its location and history and its future uses. It will be necessary to obtain a minimum level of information about the site based on desktop assessment with respect to the following:

- The description of the site and its history: different types of historic uses on the site will have generated particular levels and types of contamination which will tend to determine the appropriate remediation techniques, the likely areas within the site requiring remediation and the likely unit costs of that remediation. Previous uses can often be determined easily by studying historic maps[3] and through reports obtained from commercial sources such as Landmark Information Group.
- The future use of the site: remediation techniques, and hence costs may vary according to the nature of the proposed end use. It is therefore necessary to take a view about the likely future uses of the site – and this will require the site to be placed within a broader regeneration context. In decreasing order of human health sensitivit are the following developments:
  1 residential properties with gardens (e.g. houses);
  2 residential properties without gardens (e.g. flats);
  3 commercial and/or industrial developments; and
  4 public open space.
- Potential groundwater or surface water sensitivities: if the contaminated site is in an area where there are sensitive receptors on, adjacent to, or under the land, contaminated land regulations may require remediation that is independent of the proposed end use of the site. In such circumstances, unit costs can increase significantly. Equally, some remediation techniques considered adequate in regulatory terms, insofar as they break any pathway between contaminant(s) and receptor(s), may not be sufficient in scope to render the site suitable for redevelopment. Some water sensitivities can be identified and located through looking at appropriate maps[4]. Table 1 provides different ranges of costs, according to whether the site is in an area of high or low water sensitivity. Concerning this, the Environment Agency states the following sensitivities in decreasing order:
  A inner source protection zones (I) for potable water abstractions;
  B outer source protection zones (II) for potable water abstractions;
  C source catchment zones (III) for potable water abstractions;
  D principal aquifers, industrial water supplies (non-source protection zone), private water supplies and rivers;
  E secondary aquifers, water-dependant ecosystems and other controlled waters; and
  F unproductive strata (groundwater).

Table 1 opposite sets out ranges of benchmark costs per hectare for the remediation of PDL sites affected by the presence of contaminativ substances. The costs are arranged according to different site descriptions, end uses and surface or ground water sensitivities. Cost are rounded to the nearest £25,000 per hectare. A technical note to the table explains the method used for calculating the cost ranges.

[3] Historic maps available from: www.old-maps.co.uk/

[4] Information and maps about the local environment available from: www.environment-agency.gov.uk/maps/

Table 1: The range of potential remediation costs per hectare of contaminated land according to different site conditions, end uses and risk to ground or surface water

Cost of remediation (£000s)

Spons 2007-Index 500	**Description of site in its historic use** Increasing cost of remediation...			
	Site Category A **Industrial sites, colliery/ mine spoil heaps, factories and 'works'[5]**	**Site Category B** **Garages, pithead sites, railways, textiles, timber treatment and sewage works**	**Site Category C** **Metal workings, scrap yards and shipyards. Paint and solvents**	**Site Category D** **Gas, iron and steel works, chemical works, refineries, ship breaking and building**
Low water risk				
Proposed End Use:				
Public open space	50 to 125	175 to 350	250 to 625	300 to 725
Residential	75 to 200	250 to 625	300 to 725	325 to 825
Employment	50 to 125	200 to 425	250 to 575	300 to 650
Mixed use	50 to 125	225 to 525	300 to 650	325 to 750
High water risk				
Proposed End Use:				
Public open space	125 to 250	400 to 1,025	475 to 1,275	525 to 1,200
Residential	175 to 400	350 to 900	525 to 1,425	700 to 1,725
Employment	125 to 250	250 to 625	500 to 1,200	525 to 1,200
Mixed use	125 to 250	325 to 750	525 to 1,325	600 to 1,375

Technical Note on the calculation of the benchmark unit area costs

The costs have been calculated using different remediation scenarios for each cell in Table 2 combined with some experience and cost estimates based on *Spons Civil Engineering and Highway Works Price Book 2007*. Each scenario is based on a notional development site with a gross area of five hectares and represents a notional remediation scheme based on the site's end use, historical use (based on DEFRA R&D publication CLR 8) and environmental setting. The mixed use scenario is based on an assumption of equivalence to predominantly residential use without gardens and, hence, the cost ranges are close to those for public open space.

The input variables used to define the cost estimates are:

- the broad types of treatment required;
- the depth of treatment for each treatment; and
- the areas to be treated for each treatment (as a proportion of the five hectare site).

In each category, the site has been broken down into components and different remediation techniques with appropriate unit costs applied to each area. Where contamination is not anticipated, a notional cost of £10,000 per hectare has been applied. The costs also include a minimum allowance of £10,000 per hectare for site investigation. Costs are then divided by five to generate per hectare unit costs. Figures are rounded to the nearest £5,000 per hectare.

The scenarios are based on notional sites relating to typical situations and assume a reasonably dense existing development. It is important to note that sites are not homogenous and that different remediation treatments, depths of treatment, and contaminant specific factors will apply in different cases resulting in different unit costs. Annex B describes three case studies which have been used to benchmark the approach.

[5] The classification 'works' is often used in maps to indicate a previous industrial use.

Annex B provides three case studies that demonstrate how to use the benchmark costs in the context of actual sites and their remediation. It will be seen from the case studies how the ranges might be used a) to give a broad indication of likely remediation costs at the outset of an appraisal prior to site investigations and engineering studies and b) to provide a cross check on the cost estimates derived after such investigations and studies had been carried out and to challenge them if they fall significantly outside the expected range.

Guidance in using the benchmark unit costs

The following steps should be followed in using the benchmarks to derive broad-brush estimates of remediation costs at an early stage in appraisal.

1 Based on what is known about the site's existing use, select the best match in columns A to D in Table 1 (e.g. Site Category A).
2 Select an end use for the site (public open space, residential, employment or mixed use).
3 Decide whether there is a high or low risk of contamination dependant upon ground or surface water issues on or adjacent to the site.
4 Read across to the relevant cost range. This provides the upper and lower range of unit area remediation costs.
5 Multiply the per hectare unit area costs by the overall site area, not just the area of contamination (if known or suspected), to estimate the total cost of remediation.

It may be possible to judge whether the costs are expected to be at the higher or lower end of the indicated range along the following lines:

- **Size of the site:** where sites are significantly smaller than five hectares, the upper end of the cost ranges should be considered to allow for the absence of economies of scale. Conversely, the lower end of the ranges should be considered for very large sites.
- **Density of the site:** large sites such as colliery spoil heaps, sewage works and military bases are very unlikely to be remediated over the whole area and so it will be more appropriate to use the lower end of the cost range. Conversely, in dense city centre sites where contamination could be spread over most of the site, the upper cost ranges may be more appropriate.
- **Site context:** in areas where the surrounding sites are known to have needed remediation, it is likely that costs will be greater than the mean cost. Conversely, sites in areas historically clear of problems could result in lower costs.
- **Duration in use:** the longer an area has been used for a particular historical purpose, the more the remediation costs are likely to be higher within the range for that particular use. Sites that have been only in recent use, over say the last two or three decades, may be less contaminated than those used for similar purposes in earlier years. This is due to increased levels of environmental awareness and more stringent environmental regulations.
- **Geology:** after risks to human health, the risk to groundwater or surface water is a primary driver for remediation and the underlying geology will be relevant. If it is known, or can be easily established, that the site lies on areas where the underlying geology is of cohesiv material (clays), then the risk of high remediation cost may reduce and lower cost ranges can be used. Conversely, if the site overlies sandstones, chalk or other permeable strata then the use of higher cost ranges should be considered. Of course, it is possible that cohesive materials may overlie a major aquifer and offer some form of protection, which may reduce remediation costs. Therefore, this BPN cannot replace comprehensive site investigation (see Section 7

The benchmark unit area costs are designed to be used without commissioning studies to interpret them. However, for all projects, particularly those that are large or complex, it must be emphasised that it would be inappropriate to apply this BPN without professional advice even at the early stages of a project. There may be a need to consult experts to carry out desk research to generate enough background information along the above lines to identify the appropriate benchmark cost range and to establish whether the costs were likely to be towards the upper or lower ends of the range. As a general rule, time and resources invested in site investigations and professional advice are unlikely to be wasted.

Sites may have a mixed pattern of intended end uses that span the categories in Table 1. This is reflected in the inclusion of a 'mixed use' range of cost estimates in the table derived on the assumption that this will be equivalent to predominantly residential use without gardens However, for different proportions of mixed use (say between residential and employment), the cost ranges could be apportioned to generate a new cost range. For example, a new cost range could be estimated for a mixed use site – 50 per cent residential and 50 per cent employment – by taking its lowest bound to be the mid-point of the bottom of the range of unit costs for residential and employment respectively and taking the highest bound to be the mid-point of the high end of the two ranges. Large complex sites with a mix of differen past uses and a mix of end uses can be broken down into zones and costs built up from the constituent parts. In order to reduce remedial costs if at all possible it should be the aim to put less sensitive land (e.g. public open space or commercial properties) within the more contaminated parts of the site, whilst more sensitive end uses (e.g. houses) are in the least contaminated areas of the site.

The following qualifications apply to these benchmark costs:

- the costs assume that there is some contamination present. Clearly, if investigation demonstrates the absence of contamination, this section of the BPN will not be applicable;
- they do not cover geotechnical issues – i.e. landfill or changes to ground strata, which are the focus of other BPNs and guidance;
- they do not cover sites with a known radioactivity problem or munitions;
- none of the costs allow for removal or demolition of buildings where there may be additional contamination issues (e.g. asbestos);
- the BPN categorisation classifies mine pithead sites separately from spoil heaps. Pithead sites usually have more expensive treatment needs;
- the unit costs should not be used to determine the level of potential contamination, including costs and liabilities; this can only be done by utilising a multiphase site assessment process;
- users of the BPN should be wary of relying on older site investigation reports as part of desk site investigations. These may not provide an adequate investigation;
- the costs assume that treatment is onsite, and do not reflect exceptional offsite treatment, landfill or insurance costs;
- the figures included within the model assume that no landfill tax is payable. Where such a tax does arise an allowance for this should be made; and
- specialist advice should be taken to ascertain whether tax credits are available.

For site remediation being considered in post 2007 years, adjustments will need to be made to the benchmark costs to reflect inflation rates. It will also be necessary to take into account the effect of changes to regulations.

Guidance on assessing the costs of preparing previously developed land (PDL) affected by dereliction

This section presents a model that can be used as a first basis for assessment of the potential costs of preparing sites affected by dereliction. The BPN is not to be used for estimating other site preparation and servicing costs. It does not take account of extensive asbestos removal nor does it cover geotechnical activities. Demolition costs are included to the extent that such works are required to redress dereliction. Infrastructure costs are included only so far as they relate to the stopping up of redundant services at the boundaries of derelict sites (i.e. not off-site works), and the grubbing out of pipes, cables and other utility-related obstructions below the ground. The costs associated with the provision of new site accesses and service infrastructures are not included, as these will apply, more or less equally, to both brownfield and greenfield sites.

Derelict land is defined as *'land so damaged by industrial and other development that it is incapable of beneficial use without treatment'*. Treatment in this context may include demolition, clearing of fixed structures (above or below ground), the removal of redundant services, backfilling and consolidation of the ground and other works required in order to render the site suitable for a proposed hard or soft end use (the model excludes costs associated with the importation of material and specialist compaction techniques).

The model considers a range of works that may be necessary to create a 'development platform' on a piece of derelict land. A development platform is considered to be a site where the necessary works have been undertaken to prepare the site for development for its intended future purpose.

Annex C contains 'Standard' Notional Sites for cost assessment. The sketches shown on these sheets provide brief descriptions of the range of works considered for preparation of the cost estimates, as follows:

- **demolition above ground:** demolition of existing buildings and other structures;
- **demolition below ground:** removal of redundant services and foundations, probing for and removal of obstructions etc including ground and soil restoration though the backfilling of voids with crushed materials arising from site demolitions, and the placing of clean fill, consolidation, grading and levelling to form development platforms (but excluding the importation of new material and the use of specialised compaction techniques);
- **removal of redundant services:** stopping up and removal of gas, water, electricity, drainage, communications; no allowance is made for mains service diversions;
- **fees:** related to the above range of works; and
- **site investigations:** that may include geo-technical, contamination or ordnance surveys.

Sites under consideration have also been categorised in Table 2 and in the 'Standard' Notional Sites according to the following variables:

- **size (of the entire site)** – small sites, up to and including five hectares (Table 2 fixed costs based on average size 2.5 hectares), or large sites greater than five hectares (Table 2 fixed costs based on average size 10 hectares); and
- **complex or non-complex** – see below and also the guidance contained in **Annex C.**

Table 2 also considers the proposed end use of the site i.e. residentia employment, public open space or mixed use.

Costs need to be categorised as 'fixed' or 'variable'. Fixed costs are applied on a per site basis and include stopping up, the removal of redundant services, fees and site investigations. These are shown as unit costs per site because a fixed cost is a more appropriate representation of the level of resource required. Variable costs are applied on a per hectare basis and include demolitions, above ground and below ground (including ground soil restoration but excluding impor of new material and the use of specialised techniques).

In general terms, a **complex site** would have all of the features of a special case needing careful consideration and is likely to have some significant infrastructure constraints. Factors to consider include:

- services may need to be cut off at the site boundary and removed from below ground;
- demolitions could be complex and require some shoring and carefu working to prevent cross contamination, nuisance etc. Underpinning of adjoining highways and buildings may also be required but is excluded from the present cost modelling;
- obstructions in the ground, such as machinery bases and sub-basements, may need removal and may require a number of specialised techniques; and
- hazardous materials and contaminants may be encountered that had not been revealed by the site investigations, although these have been assumed to comprise a relatively minor proportion of the site preparation costs, otherwise Section 4 above will apply with regards to the treatment of costs for the removal of contamination.

A **non-complex site** may have the following characteristics:

- services stopping up and removal predominantly small and few;
- demolitions above ground would relate to stand alone buildings with little in the way of known contaminants and there would be some residual value in salvaged materials;
- demolition below ground would be related to conventional substructures with little in the way of obstructions to remove;
- the level of specialist advice needed would rely on easily available information; and
- the site would have ready access on more than one side and is unlikely to be in a large urban environment.

Having categorised the site, the applicable costs can then be taken from the relevant range of costs per hectare in the high level summary provided in Table 2 opposite. Within each box, a range of costs is given according to the extent of works anticipated.

Further guidance on how to determine which end of the range is mos appropriate and a more detailed method of assessing costs is provided in **Annex C** of this BPN.

Table 2: Derelict land preparation costs: high level summary (£000s)

Mixed Use				
	Small		Large	
	Non-complex	**Complex**	**Non-complex**	**Complex**
Range per ha	125 to 200	225 to 400	75 to 175	200 to 250
Mid-point per ha	**162.5**	**312.5**	**125**	**225**
Fixed cost range	125 to 275	275 to 425	275 to 425	800 to 1,075
Mid-point fixed cost per site	**200**	**350**	**350**	**937.5**
Residential				
	Small		Large	
	Non-complex	**Complex**	**Non-complex**	**Complex**
Range per ha	120 to 200	250 to 400	100 to 200	200 to 250
Mid-point per ha	**160**	**325**	**150**	**225**
Fixed cost range	150 to 275	300 to 475	325 to 500	925 to 1,250
Mid-point fixed cost per site	**212.5**	**387.5**	**412.5**	**787.5**
Public Open Space				
	Small		Large	
	Non-complex	**Complex**	**Non-complex**	**Complex**
Range per ha	100 to 200	225 to 400	75 to 125	200 to 250
Mid-point per ha	**150**	**312.5**	**100**	**212.5**
Fixed cost range	150 to 250	275 to 425	300 to 450	850 to 1,150
Mid-point fixed cost per site	**20**	**350**	**375**	**1,000**
Employment				
	Small		Large	
	Non-complex	**Complex**	**Non-complex**	**Complex**
Range per ha	120 to 200	225 to 400	100 to 175	200 to 250
Mid-point per ha	**160**	**312.5**	**137.5**	**212.5**
Fixed cost range	125 to 225	275 to 400	275 to 425	800 to 1,075
Mid-point fixed cost per site	**175**	**337.5**	**350**	**937.5**

How to Use:

a Decide on the end use and whether small or large.

b For each component decide whether complex or non-complex.

c According to the criteria decide where the costs lie within the given ranges (use mid-point if no further information available.

d For each site apply the appropriate fixed cost estimate.

e For each site apply the appropriate per hectare cost estimate multiplied by the area of the site.

f For each site add **d** to **e**.

NB

The data needs to be indexed for sites outside of London.

Figures quoted in ranges have been rounded to nearest £25,000.

6 Regional variation

As is the case for contaminated land in Section 4, the benchmark costs can be used to check on cost estimates (e.g. by the project applicant or by the consultant engineers). They might provide a basis for querying the estimates if they lie outside the appropriate range taken from the tables.

The benchmark unit area costs are designed to be used without commissioning studies to interpret them. For some projects, particularly those that are large or complex, it must be emphasised that it would be inappropriate to apply this BPN without professional advice. There may be a need to consult experts to carry out desk research to generate enough background information along the above lines to identify the appropriate benchmark cost range and to establish whether the costs were likely to be towards the upper or lower ends of the range. As a general rule, time and resources invested in site investigations and professional advice are unlikely to be wasted.

Sites may have a mixed pattern of intended end uses that span the categories in the tables. This is reflected in the inclusion of a 'mixed use' range of cost estimates in the table derived on the assumption that this will be equivalent to predominantly residential use without gardens. However, for different proportions of mixed use (say between residential and employment), the cost ranges could be apportioned to generate a new cost range. For example, a new cost range could be estimated for a mixed use site – 50 per cent residential and 50 per cent employment – by taking its lowest bound to be the mid-point of the bottom of the range of unit costs for residential and employment respectively and taking the highest bound to be the mid-point of the high end of the two ranges. Large complex sites with a mix of different past uses and a mix of end uses can be broken down into zones and costs built up from the constituent parts. In order to reduce costs if at all possible it should be the aim to put less sensitive uses (e.g. public open space or commercial properties) within areas that have the greatest proportion of underground structures, whilst more sensitive end uses (e.g. houses) are in areas of the site with fewer underground structures.

The following qualifications apply to these benchmark costs:

- costs per hectare are based on a set of assumptions and the model has identified the components that make up the range of cost and the mid-point;
- it should be noted that as the size of the site increases the fixed costs reduce proportional to area;
- certain components of the model may or may not apply to particular sites, for example, the site may have only below ground electric services to stop up, or both overhead and below ground supplies to divert;
- the exceptional cost of offsite works of major diversions is excluded as is supply reinforcement. Assumptions are made related to unit lengths only; and
- below ground obstructions are assumed to be removed within the plane of normal development with obstructions below that depth being left in place.

The benchmark costs in Tables 1 and 2 are based on a database of actual costs held by English Partnerships and its partners indexed to outer London for contamination (Table 1) and non-complex derelict sites (Table 2), and South East England for complex derelict sites (Table 2). The estimates reflect prices prevailing in 2007 (1st Quarter). The costs need to be adjusted for other regions (see Table 3 below) and to take account of future price fluctuations

Table 3: Adjustments for regional variations

Area	Contamination remediation	Dereliction non-complex	Dereliction complex
East of England	0.92	0.92	0.95
East Midlands	0.92	0.92	0.94
London (Outer)	1.00	1.00	1.05
London (inner)	1.07	1.07	1.12
North East	0.95	0.95	1.00
North West	0.91	0.91	0.95
Scotland	0.95	0.95	1.02
South East	0.98	0.98	1.00
South West	0.91	0.91	0.94
West Midlands	0.93	0.93	0.95
Wales	0.91	0.91	0.93
Yorkshire and the Humber	0.95	0.95	0.97

Due diligence and site investigations

The purpose of this part of the BPN is to inform English Partnerships project managers and development partners of the key steps and processes involved in undertaking essential site investigations, prior to the acquisition of land/property, as part of a process of due diligence. The site investigations described should be undertaken by an appropriately qualified consultant, but the following sections aim to promote an improved understanding of the processes which can be reflected in briefing material for consultants.

Due diligence investigation is undertaken in order to identify any existing contamination or other related site problems, such as water related risks, that may present a risk to humans, the environment or property. This forms the first stage of a phased assessment process that may lead to land remediation to tackle contamination and/or dereliction. It should be noted that the potential presence of contamination at a site and any proposed mitigation measures will be a material consideration in obtaining planning permission for a proposed development. Regular due diligence site assessment/ investigation is also a requirement for the operation and decommissioning of industrial installations operating under Pollution Prevention and Control Regulations.

Varying legal definitions of 'contamination' exist that provide the context for site remediation. These include definitions established both for 'Land Affected by Contamination' under Planning legislation and 'Contaminated Land' in Part 2A of the *Environmental Protection Act 1990*[6]. In addition it should be recognised that additional legislative, directive or common law definitions may be relevant to the assessment and decision making process. Planning Policy Statement 23[7], *Planning and Pollution Control*, Annex 1, provides a list of such matters for consideration in preparing development plans and consideration in granting planning approval.

The requirement to undertake remediation may present considerable cost and time constraints for the development of a site. As a result, all sites should be fully assessed prior to purchase as part of the due diligence process. This may also form the basis for subtracting 'abnormal costs' from any price for purchase of the site, subject to the agreed definition of these for a project. It is important to note that, should investigation identify significant contamination that presents an on-going risk to statutory receptors (comprising humans, controlled waters and/or property), remediation may be required under Part 2A of the *Environmental Protection Act* regardless of any decisions or timescales for the redevelopment of the site. In order for any redevelopment to be approved by the local planning authority, intrusive investigations and risk assessments are almost always required as a condition of planning permission for a brownfield site.

Appraisal of risk

Contaminated land assessment is based upon the principle of 'risk' assessment rather than the appraisal of 'hazard'. Therefore, in order fo a site to pose a defined 'risk' there must be a contaminant source, a receptor sensitive to that contamination, and a pathway between the two. These pollutant linkages (source-pathway-receptor) are fundamental to investigations and risk assessments and are developed within the Conceptual Site Model (CSM) for the site. Normally there must be confidence that pollutant linkages are either absent or do not give rise to significant risks in order for planning permission to be granted or to provide confidence that a site cannot be classified as 'contaminated land' under Part 2A of the *Environmental Protection Act*

The sensitivity of the development will greatly influence the CSM and the number of potential pollutant linkages. In decreasing order of human health sensitivity are the following developments:

- residential properties with gardens (e.g. houses);
- residential properties without gardens (e.g. flats);
- commercial and/or industrial developments; and
- public open space.

Concerning the wider environment, pollutant linkages must also be considered for offsite human receptors, controlled water receptors (under the remit of the Environment Agency), other ecological receptors (such as Local Nature Reserves), and property.

Pollutant linkages may pre-exist at any site or be introduced by redevelopment. Site investigations provide the basis to assess the significance of these and the likely requirements and costs of remediation.

In order to make best uses of resources any site investigation should be carried out using a phased approach, as recommended within authoritative guidance, published by DEFRA and the Environment Agency Contaminated Land Report 11 (CLR 11)[8]: *Model Procedures for the Management of Land Contamination*.

A Preliminary (Tier 1) Risk Assessment (as described in CLR 11) is the absolute minimum action that should be effected prior to the acquisition of a brownfield site. This will involve a desktop review of available environmental and geotechnical literature information, such a (but not limited to):

- historical maps;
- geological and hydrogeological maps;
- landfill information;
- potential for radon;
- contemporary trade directories; and,
- records of the Coal Authority, local petroleum officer, Environment Agency and local Environmental Health Department.

[6] *The Environmental Protection Act 1990* (HMSO)
[7] *Planning Policy Statement 23, 2004* (HMSO)
[8] DEFRA and The Environment Agency, 2004. *Contaminated Land Report 11 (CLR 11)*

In order to supplement the desktop review, a site reconnaissance survey, or 'walkover', should be carried out, in order to visually assess site conditions. In conjunction with the desktop review the 'walkover' will enable an effective Preliminary (Tier 1) Risk Assessment to be completed and inform the requirements for intrusive investigation and the potential for remedial requirements.

Intrusive investigation will normally require vehicular access to a site and such access arrangements must be confirmed prior to works. The written permission of the current owner of the site to be investigated will be required and under no circumstances should investigation commence without this. Where intrusive investigations take place, the Health and Safety documentation of any appointed contractor should be reviewed and approved prior to the commencement of works. It is noted that 'CDM regulations' apply to investigations where development is foreseeable.

Typically an intrusive investigation could comprise one or more the following components (in order of increasing cost per day):

- hand dug trial pits (generally up to 1.2 m depth without shoring);
- hand augured holes (generally up to 5 m depth depending on ground conditions);
- machine (JCB or similar) excavated trial pits (generally 3.5 – 5 m depth);
- window/windowless-sample (percussive dynamic) holes (generally up to 6 m depth depending on ground conditions);
- cable percussive (or dynamic) boreholes (generally up to 40 m depth or more depending on ground conditions); and,
- rotary cored or open holes (for achieving depth in rock formations).

Please note that other costs may be associated with these works, for example, costs to install monitoring wells and drilling costs per metre, chiselling and standing time, as well as mobilisation.

Any intrusive site investigation works should be supervised by an appropriately qualified geo-environmental scientist/engineer in accordance with the British Standards BS5930 *Code of Practice for Site Investigations*[9], BS10175 *Investigation of Potentially Contaminated Sites*[10] and BS8485 *Code of Practice for the characterisation and remediation from ground gas in affected developments*[11]. The investigation should accurately describe and define (or 'log') the materials encountered, record any in-situ testing undertaken and accurately record the elevation and locations of the exploratory hole positions. Sufficient representative soil samples should be obtained from the various soil strata encountered and stored in an appropriate fashion to limit any contaminant or sample degradation. All samples should be quickly dispatched with a completed 'chain of custody' form to a UKAS accredited analytical laboratory following MCERTs procedures (where appropriate). Under normal circumstances groundwater and ground gas monitoring installations should be installed within window/windowless sample holes, boreholes and/or rotary holes to allow monitoring and sampling of these media on subsequent visits. In order to maximise cost effectiveness, the scope of any intrusive investigation should also include basic geotechnical investigations to inform likely development design and associated abnormal risks.

In order to assess the significance of any potential pollutant linkages, site specific analytical suites for contamination should be determined based on the findings of the Preliminary (Tier1) Risk Assessment. A list of potential contaminants associated with specific industries is presented in CLR 8 (*Potential Contaminants for the Assessment of Land*[12]) and the former Department of the Environment Industry Profiles. As a general guide any soils suite should, as a minimum, include testing for heavy metals, phenol, pH, cyanide, sulphates, hydrocarbons and asbestos.

Should potential pollutant linkages associated with water receptors be identified, groundwater monitoring wells should be installed during the intrusive site investigation and an appropriate monitoring programme completed. Water samples should be obtained during the monitoring programme and scheduled for laboratory analysis at a UKAS accredited laboratory. As with the soils analysis the Preliminary (Tier 1) Risk Assessment will identify the appropriate analytical suite, although those general parameters identified for soils (with the exception of asbestos) should be considered a minimum requirement.

Should potential pollutant linkages involving ground gas be identified, ground gas monitoring (e.g. methane, carbon dioxide, oxygen, hydrogen sulphide and hydrocarbon gasses) should be undertaken. This is normally carried out in conjunction with the groundwater monitoring programme. Any ground gas monitoring programme and reporting should follow the recommendations provided in BS8485:2007 *Code of Practice for the characterisation and remediation from ground gas in affected developments*, CIRIA Report 665: *Assessing Risks Posed by Hazardous Gases to Buildings* and NHBC Guidance on *Evaluation of Development Proposals on Sites where Methane and Carbon Dioxide are Present*. It should be noted that more visits are usually required, over several months, to characterise a site's ground gas regime than may be required to characterise the hydrogeological regime. This is because gas monitoring results are influenced by a range of weather conditions, including atmospheric pressure.

The intrusive investigation should discount or confirm any potential sources of contamination and associated pollutant linkages identified in the Preliminary (Tier 1) Risk Assessment for all media (soil, water and gas). This should be undertaken in accordance with the procedures for a Generic Quantitative (Tier 2) Risk Assessment set out in CLR 11.

[9] BSI, 1999. *Code of Practice for Site Investigations*, (BS5930 HMSO)
[10] BSI, 2001. *Investigation of Potentially Contaminated Sites*, (BS10175 HMSO)
[11] BSI, 2007. *Code of Practice for the characterisation and remediation from ground gas in affected developments*, (BS 8485 HMSO)
[12] DEFRA, 2002. *CLR 8 Potential Contaminants for the Assessment of Land* (Environment Agency

[8] Summary

Should the Generic Quantitative (Tier 2) Risk Assessment identify any potentially significant pollutant linkages it will normally be necessary to undertake a Detailed Quantitative (Tier 3) Risk Assessment (as described in CLR 11) or proceed directly to a remediation.

A Detailed Quantitative (Tier 3) Risk Assessment will seek to establish the significance of any potential pollutant linkages identified following the Generic Quantitative (Tier 2) Risk Assessment by using site specific data. In general terms this comprises the use of site specific and literature based data to quantitatively characterise pathway components of the CSM within a risk assessment package (such as CLEA UK for human health receptors or EA 3.1 Remedial Targets Worksheet for controlled water receptors). This allows Site Specific Assessment Criteria (SSACs) to be developed for acceptable concentrations of contaminants in soils, waters and/or gas. Direct comparison of the results of the intrusive investigation against these SSACs can then be undertaken to reassess the need for a site remediation.

Where issues of risk are identified following this phased approach it is normal practice to implement a process of regulatory consultation and remediation appointment and design.

This Best Practice Note has been prepared to assist the stakeholders involved in the redevelopment and reuse of brownfield land, whether that land is affected by the presence of contaminative substances, or is in a state of dereliction. It will be noted that, whilst the costs of dealing with contamination vary significantly according to both the historic and proposed uses of the site, there is less variation in terms of the costs of tackling dereliction. This is because, in dealing with dereliction, it is not necessary to remove or break contamination pathways. Also, the obstacles arising out of dereliction are, for the most part, likely to hinder land reuse regardless of the eventual form o development.

Whilst English Partnerships' specialist staff and external consultants have used their best endeavours to ensure that this BPN accurately reflects current best practice for dealing with contaminated and derelict land, English Partnerships does not accept any responsibility for any loss which may arise from reliance on information contained in this BPN. All of the cost ranges provided are intended to be indicative and, it must be emphasised, should be used in context with the best site specific information available at any point in a project's life.

References

Acts of Parliament

The Environmental Protection Act 1990 (HMSO)

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Annexes

Annex A
Contaminated Land: applications in real environments (**CL**:AIRE)

Annex B
Case studies of previously developed land (PDL) contamination remediation

Annex C
Detailed guidance for modelling the cost of remediating Derelict Sites:

i diagrams of notional sites to illustrate the differentiation between 'complex' and 'non-complex' sites;
ii guidance for determining where a particular site lies within the range of possible costs; and
iii the range of potential remediation costs for preparing derelict land for development according to different site complexity, size and proposed end use.

Annex A: **CL**:AIRE

1 As part of its remit to develop best practice in remediation, English Partnerships and other stakeholders set up **CL**:AIRE (Contaminated Land: applications in real environments) in 1999. English Partnerships has been central to the development of **CL**:AIRE, contributing staff resources and meeting a major part of its core costs. It remains a key supporter of the initiative.

2 **CL**:AIRE is a respected, independent, not-for-profit organisation established to stimulate the regeneration of contaminated land in th UK by raising awareness of, and confidence in, practical and sustainable remediation technologies and reducing the quantity of soil going to landfill.

3 It is an environmental charity and company limited by guarantee. Other stakeholders in **CL**:AIRE include; The Environment Agency, Department of the Environment for Northern Ireland, the Welsh Assembly Government, Soil and Groundwater Technology Association and the Scottish Environmental Protection Agency.

4 **CL**:AIRE is one of the leading organisations within contaminated land in the UK, fulfilling a need for objective, scientifically robust appraisals of remediation technologies and effective methods for monitoring and investigating sites. Its independence allows it to appraise and disseminate innovation in remediation, increasing confidence across the entire industry and driving forward the effective remediation of contaminated land.

5 **CL**:AIRE has an advisory group, the Technology and Research Group (TRG) which draws on leading professionals and academics within the field to provide independent, third party appraisals of remediation technologies and research.

6 **CL**:AIRE has free monthly e-alert keeping stakeholders up to date with contaminated land activities and has published over 80 publications with a number of them free. These can be accessed vi their website (www.claire.co.uk). Publications include a series of short technical, case study, site, guidance and research bulletins, and more detailed Technology and Research Project Reports.

Annex B: Case studies of previously developed land (PDL) – contamination remediation

Three case studies are presented as examples to show how the unit cost benchmarks can be used and if they generate the appropriate ranges in real cases. Each is structured in terms of the following:

- scheme and site description;
- choice of unit cost benchmark and the resulting benchmark cost; and
- assessment of the benchmark unit costs as compared with actual.

The cost estimates provided through the benchmarks were derived from benchmark proformas circulated to English Partnerships' own engineering consultants combined with follow up interviews with engineers. The following observations were made in collecting the information which may influence the use and accuracy of actual cost estimates derived through this approach:

- There is a significant concern about confidentiality when discussing costs of remediation programmes. Especially as these often involve non-English Partnerships agents. The cases selected here also do not represent projects involving English Partnerships.
- English Partnerships' engineering consultants are often the designers of schemes and the practical issues, details and costs are often the contractor's responsibility. The designers are not always with the project to completion. Project teams can sometimes be disbanded making it difficult to collect all the knowledge gained and summarise any lessons learned from the project.
- Contamination issues are not always subject to a separate set of contracts, especially if the cost of remediation is small compared to the overall scheme, or the project sponsors take the risk. Some programmes of works such as landscaping or hard standing will be undertaken anyway, so may not be seen as a remediation cost.
- Projects often use existing available surveys and assessments, which may hide the real cost of remediation as our case studies suggested they do not count the sunk costs relating to assessments by others, for example a previous owner.

Case study A: Contaminated areas by an industrial canal

Scheme and site description

The site represents a two hectare severely contaminated area of ground used for 100 years to manufacture a range of chemicals, including arsenic products, organo-chlorinated compounds and pesticides. The site is above a chalk aquifer and adjacent to a canal and residential housing. A recent purchaser of the site planned to redevelop for residential purposes.

Earlier stages of work included reviewing previous information and looking at the history of what had been manufactured on the site. Subsequently £50,000 of preliminary investigation, boreholes, geophysical monitoring, trial pitting, probing and testing was undertaken. On this basis, a remediation strategy was developed with a costed options appraisal. Options varied in cost between £1.5m and £3.5m. The preferred option was projected to cost £2.5m.
A main concern for the strategy was to deal with the site's location above an aquifer, which can lead to contaminants entering wider wate sources extending beyond the site. The remediation strategy for the agreed option involved removing solid and aqueous material from within the aquifer. Interlocking sheet metal piles were used to isolate areas of ground above and within the aquifer. From these areas the water was drained, treated and fed to the sewer. The contaminated land itself was removed and disposed of. The resulting hole was filled with a combination of infilling from demolished nearby buildings and re-profiling the overall relief of the site.

In practice the cost of the remediation was around £2.2m (adjusted to £2.4m first quarter 2007 prices), which is significantly less than the projected cost, although there was a large contingency cost of £300,000. The figures include some costs for remediating asbestos from the buildings used to infill (approximately five per cent). Costs also included an insurance cost cap (an insurance product from environmental insurers) to limit the overall costs to £2.5m.

Identification of benchmark cost

Estimated cost based on the BPN categorisation:

- **end use:** Residential
- **current description of site:** Equivalent to a chemical factory
- **water risk:** High

The BPN estimated cost is £700,000 to £1,725,000 (see table).
The actual cost was £1,200,000 per hectare (adjusted to £2.4m first quarter 2007 prices).

Assessment of the benchmark cost compared to actual cost

The actual costs provide a good match to the mid-point of the BPN forecast range.

Identification of benchmark cost (Case study A contaminated canal) (£000s)

Spons 2007-Index 500	**Description of site in its historic use** Increasing cost of remediation...			
	Site Category A **Industrial sites, colliery/ mine spoil heaps, factories and 'works'[13]**	**Site Category B** **Garages, pithead sites, railways, textiles, timber treatment and sewage works**	**Site Category C** **Metal workings, scrap yards and shipyards. Paint and solvents**	**Site Category D** **Gas, iron and steel works, chemical works, refineries, ship breaking and building**
Low water risk				
Proposed End Use:				
Public open space	50 to 125	175 to 350	250 to 625	300 to 725
Residential	75 to 200	250 to 625	300 to 725	325 to 825
Employment	50 to 125	200 to 425	250 to 575	300 to 650
Mixed use	50 to 125	225 to 525	300 to 650	325 to 750
High water risk				
Proposed End Use:				
Public open space	125 to 250	400 to 1,025	475 to 1,275	525 to 1,200
Residential	175 to 400	350 to 900	525 to 1,425	700 to 1,725
Employment	125 to 250	250 to 625	500 to 1,200	525 to 1,200
Mixed use	125 to 250	325 to 750	525 to 1,325	600 to 1,375

[13] The classification 'works' is often used in maps to indicate a previous industrial use.

Case Study B: Contaminated docks

Scheme and site description

This site has an area of 2.9 hectares. It adjoins docks and is to be developed for commercial purposes. Contaminants were found to include hydrocarbon contamination from diesel oils, localised asbestos, imported materials (dredging waste), waste from nearby road construction and other man made materials bulldozed into the dock itself. Only parts of the site were identified as having contamination.

Site investigations identified those areas not contaminated and suitable for future planned uses and those areas in need of remediation, according to a 25 m grid over the area. The process required liaison with the local authority and the Environment Agency. This resulted in a Remediation Action Plan. On this basis areas acceptable for the proposed end uses were more clearly identified.

The remediation approach was to evacuate contaminated land and dispose of at a landfill site. The unit area (hectare) cost for investigation and monitoring was £60,000. Overall, the pre-remediation monitoring costs were around half of the unit area costs of actual remediation (circa £120,000). In practice the remediation costs were reported a little higher than planned, although not necessarily higher than the contingency. This was due to areas of contamination lying along or between the grid monitoring system that were not identified. Although the existence of these was not unexpected, they added to overall remediation costs.

Identification of benchmark cost

Estimated cost based on the BPN categorisation:

- **end use:** Residential
- **current description of site:** Dockside – equivalent to a shipyard
- **water risk:** High

The BPN estimated cost is £525,000 to £1,425,000 per hectare (see table). The actual cost was £660,000 per hectare (adjusted to first quarter 2007 prices).

Assessment of the benchmark cost compared to actual cost

The actual costs provide a good match within the BPN forecast range

Identification of benchmark cost (Case study B contaminated docks) (£000s)

Spons 2007-Index 500	**Description of site in its historic use** Increasing cost of remediation...			
	Site Category A **Industrial sites, colliery/ mine spoil heaps, factories and 'works'[14]**	**Site Category B** **Garages, pithead sites, railways, textiles, timber treatment and sewage works**	**Site Category C** **Metal workings, scrap yards and shipyards. Paint and solvents**	**Site Category D** **Gas, iron and steel works, chemical works, refineries, ship breaking and building**
Low water risk				
Proposed End Use:				
Public open space	50 to 125	175 to 350	250 to 625	300 to 725
Residential	75 to 200	250 to 625	300 to 725	325 to 825
Employment	50 to 125	200 to 425	250 to 575	300 to 650
Mixed use	50 to 125	225 to 525	300 to 650	325 to 750
High water risk				
Proposed End Use:				
Public open space	125 to 250	400 to 1025	475 to 1,275	525 to 1,200
Residential	175 to 400	350 to 900	525 to 1,425	700 to 1,725
Employment	125 to 250	250 to 625	500 to 1,200	525 to 1,200
Mixed use	125 to 250	325 to 750	525 to 1,325	600 to 1,375

[14] The classification 'works' is often used in maps to indicate a previous industrial use.

Case Study C: Colliery site

Scheme and site description

The site with an area of 1 hectare was previously used as a colliery, and located near a stream and areas of groundwater. Assessments had judged there to be minor sensitivity to aquifers. The proposed end use of the site was for commercial purposes. The programme of works started in 1999.

Identification of unit benchmark

Estimated cost based on the BPN categorisation:

- **end use:** Employment
- **current description of site:** Colliery. Not clear if it is a spoil heap or a pit head site, so it may be more than one category
- **water risk:** Minor based on risk assessments

The BPN estimated cost is £50,000 to £125,000 per hectare for a spoil heap site and £175,000 to £350,000 for a pit head site (see table). The actual cost was £135,000 per hectare (adjusted to first quarter 2007 prices).

Assessment of the benchmark cost compared to actual cost

The actual cost of remediation is between the lowest and highest possible remediation costs. Although the range is very wide. The value of the benchmarking exercise here might be to direct pre-appraisers to ask more detailed questions. In particular, if there is a pithead, and if so, how much of the site it covers.

Identification of benchmark cost (Case study C colliery site) (£000s)

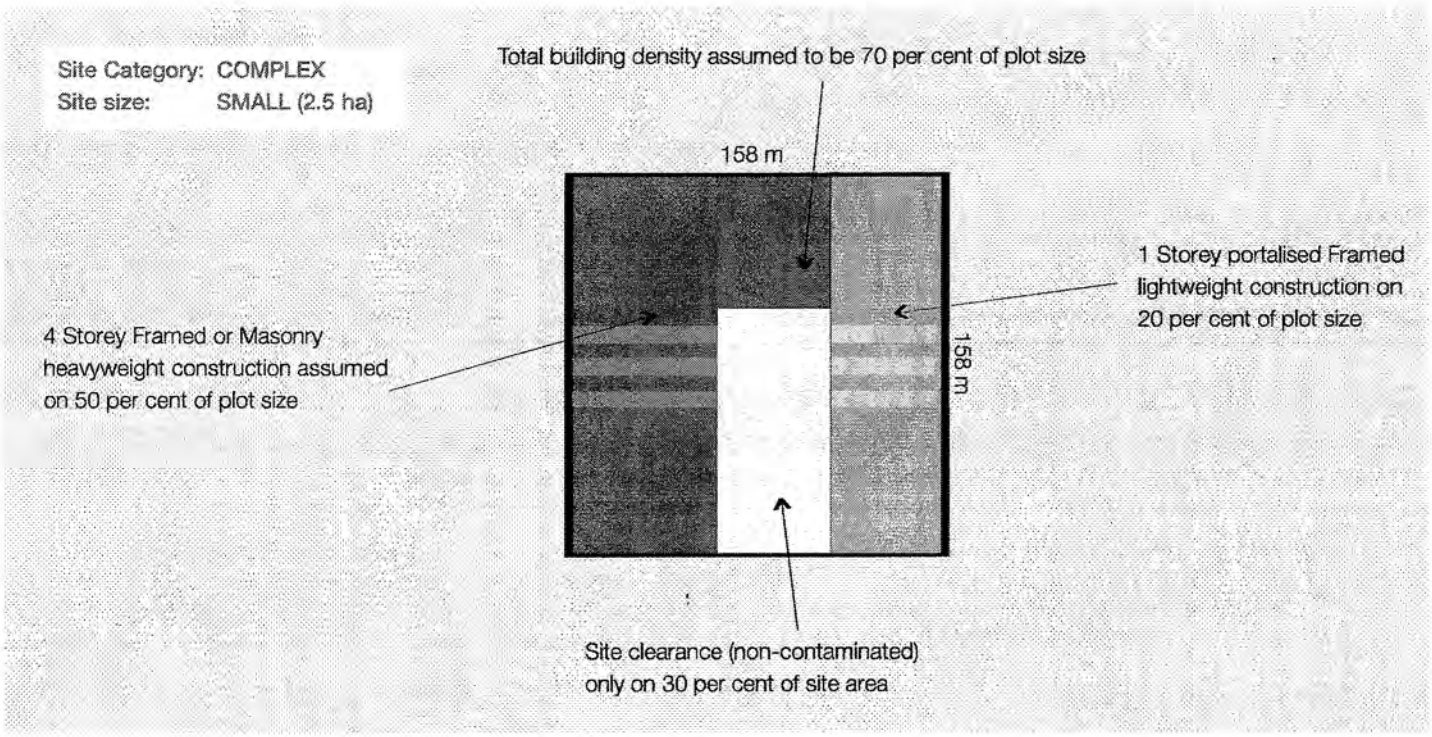
Spons 2007-Index 500	**Description of site in its historic use** Increasing cost of remediation...			
	Site Category A **Industrial sites, colliery/ mine spoil heaps, factories and 'works'[15]**	**Site Category B** **Garages, pithead sites, railways, textiles, timber treatment and sewage works**	**Site Category C** **Metal workings, scrap yards and shipyards. Paint and solvents**	**Site Category D** **Gas, iron and steel works, chemical works, refineries, ship breaking and building**
Low water risk				
Proposed End Use:				
Public open space	50 to 125	175 to 350	250 to 625	300 to 725
Residential	75 to 200	250 to 625	300 to 725	325 to 825
Employment	50 to 125	200 to 425	250 to 575	300 to 650
Mixed use	50 to 125	225 to 525	300 to 650	325 to 750

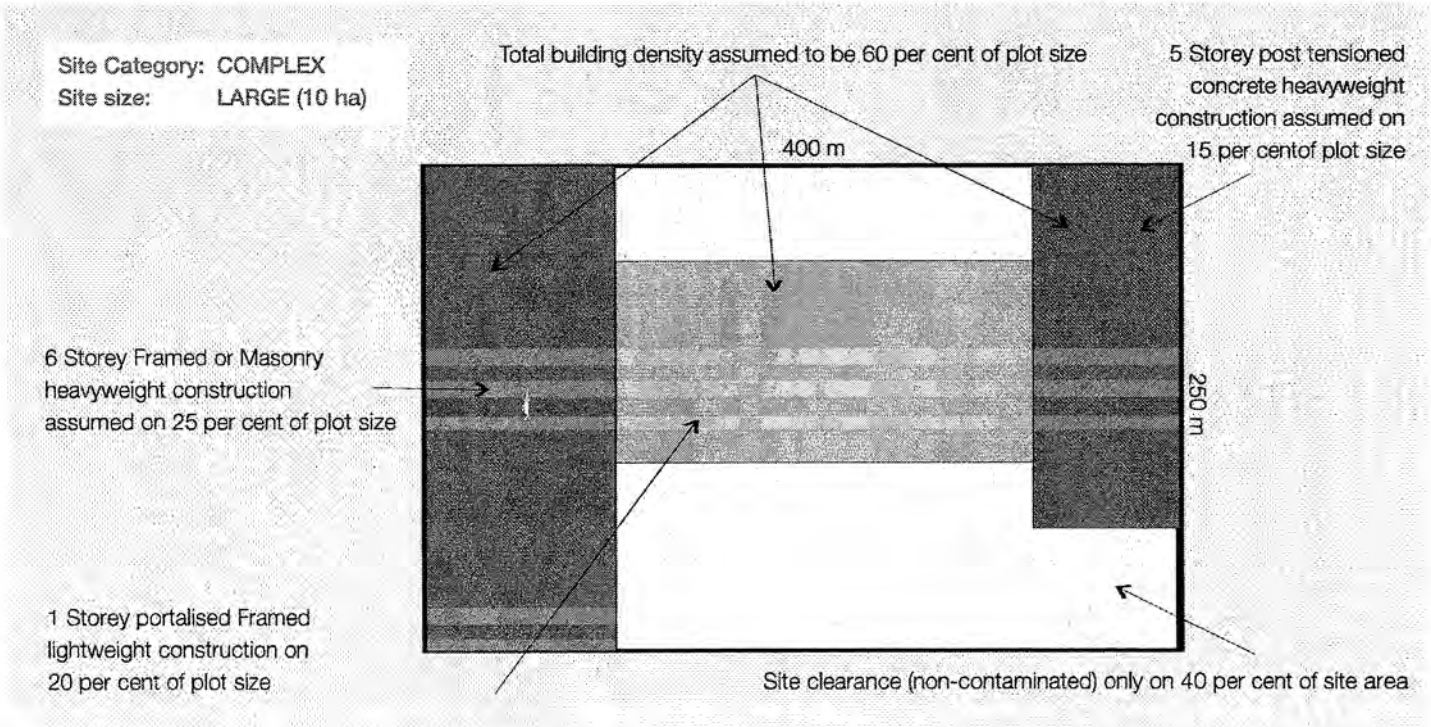
[15] The classification 'works' is often used in maps to indicate a previous industrial use.

Annex C (i): Illustrative guide to explain complex and non-complex sites

Demolitions above ground

BPN Derelict Land Costs
'Standard' Notional Sites for cost assessment

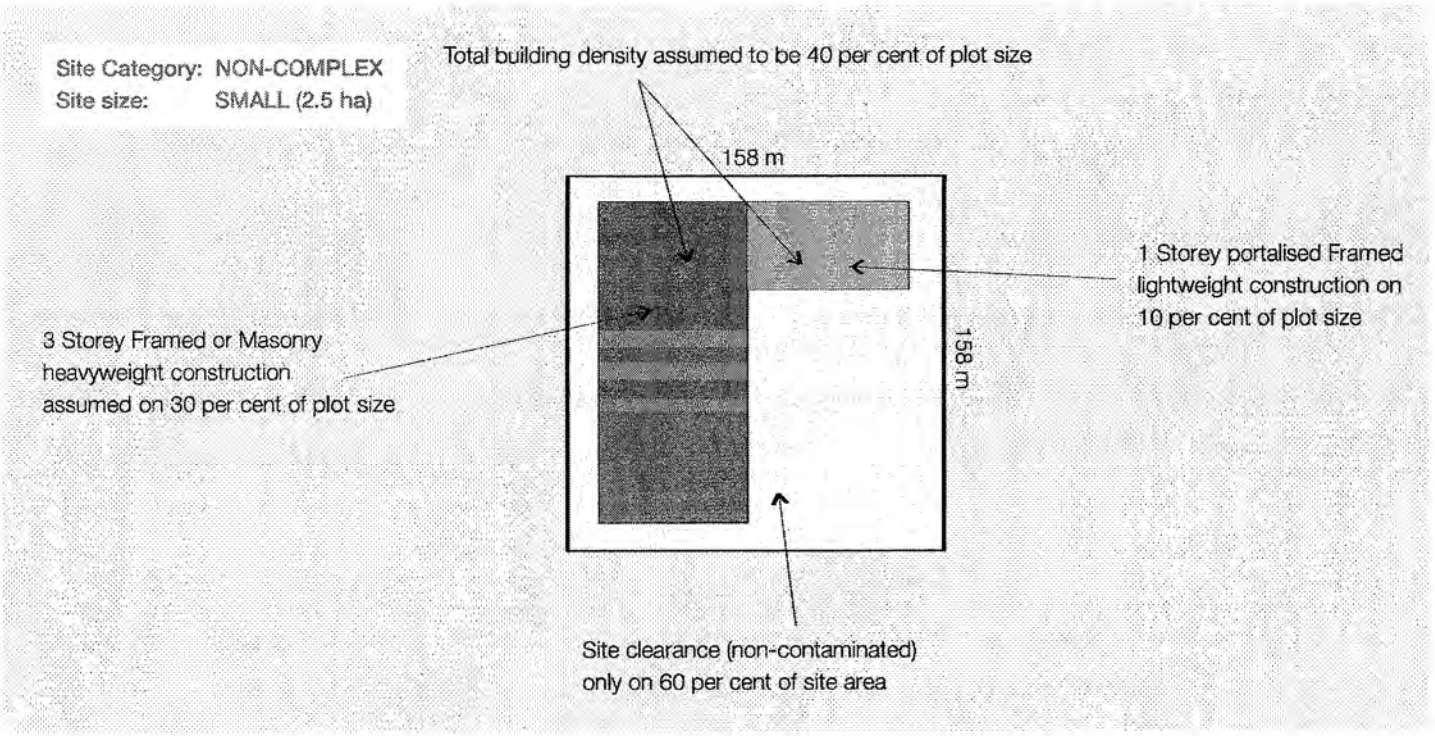


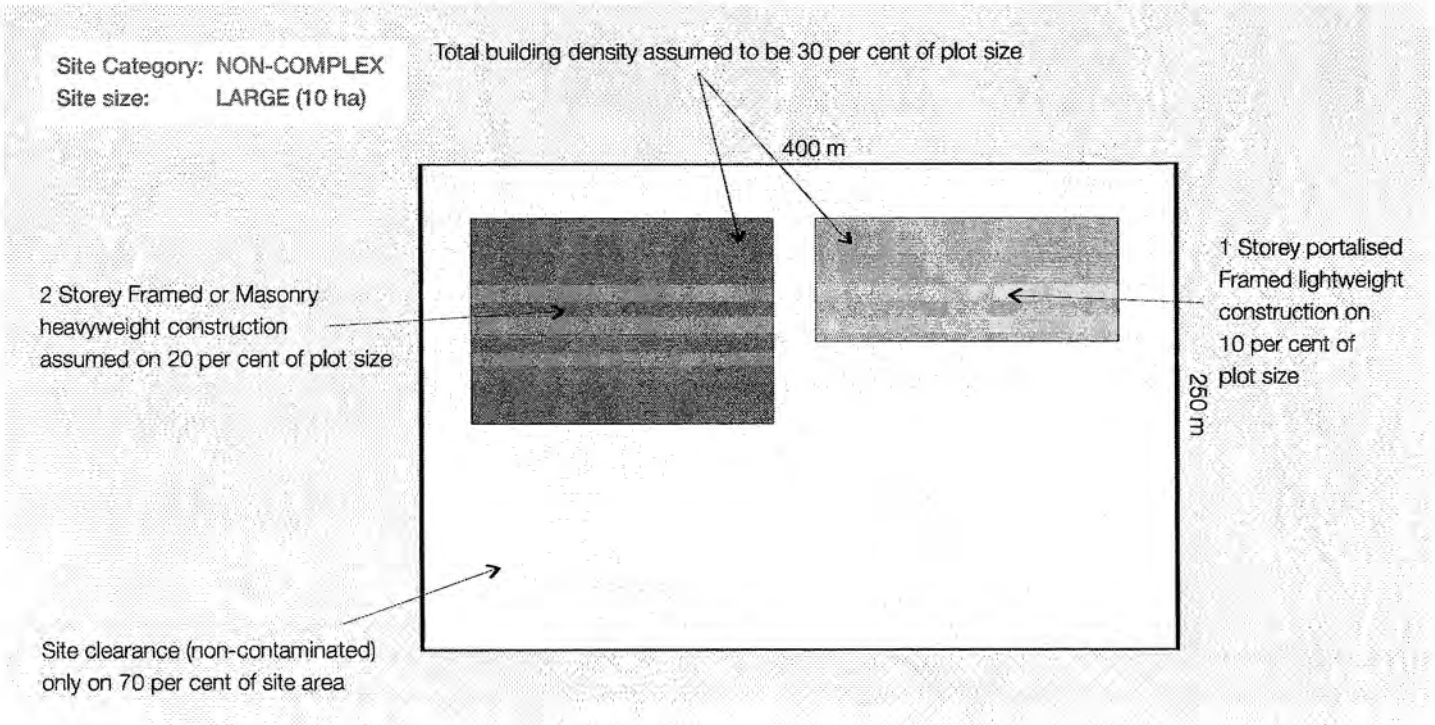


Notional site plans. All pilecaps/columns on notional 7.5 m grid.

Demolitions above ground

BPN Derelict Land Costs
'Standard' Notional Sites for cost assessment

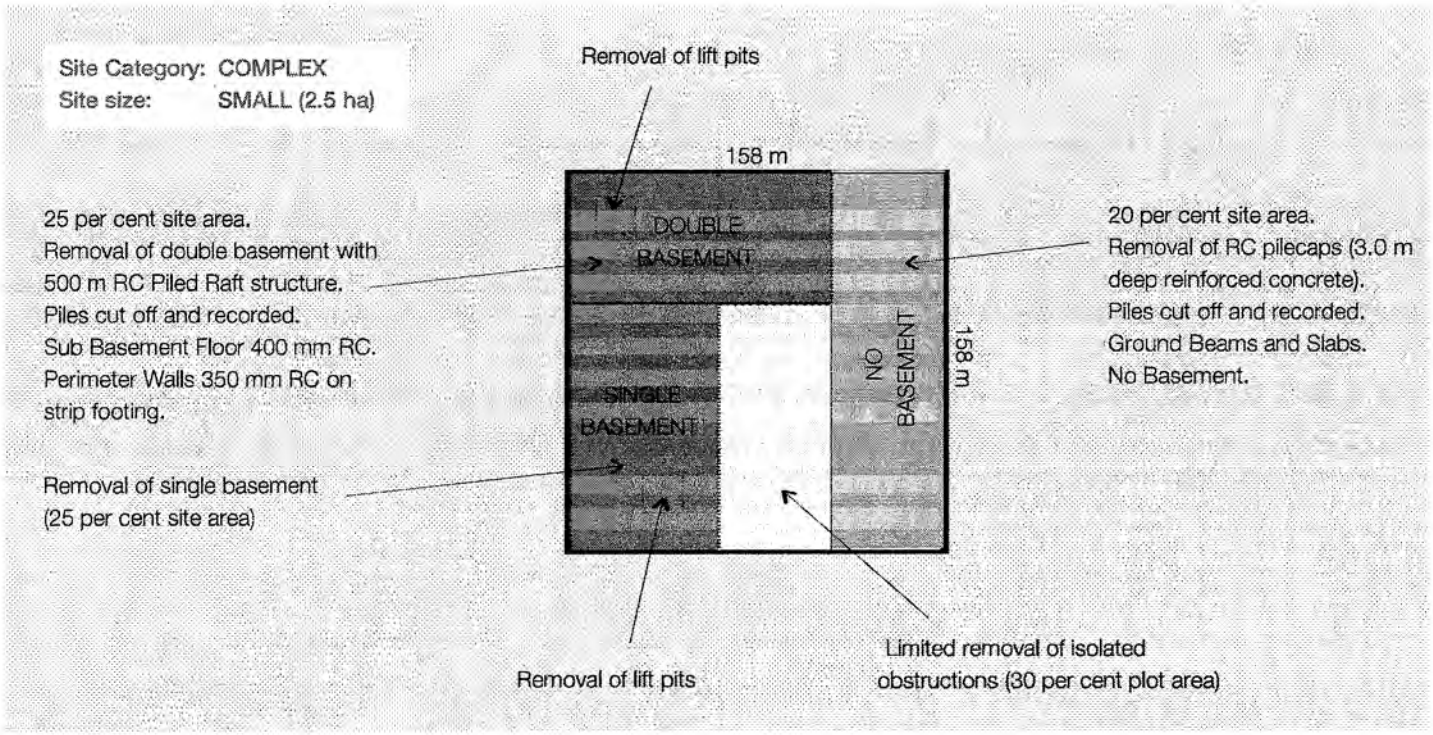


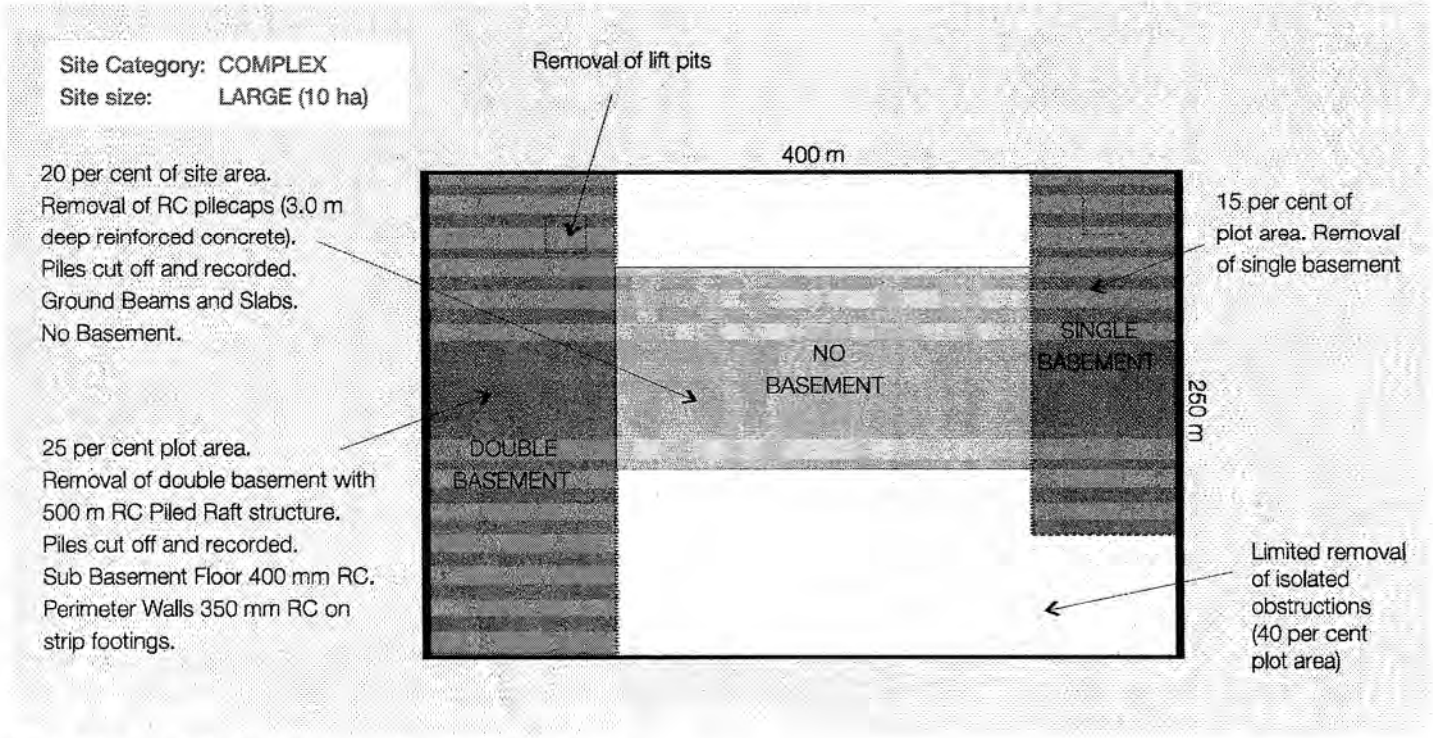


Notional site plans. All pilecaps/columns on notional 7.5 m grid.

Demolitions below ground

BPN Derelict Land Costs
'Standard' Notional Sites for cost assessment

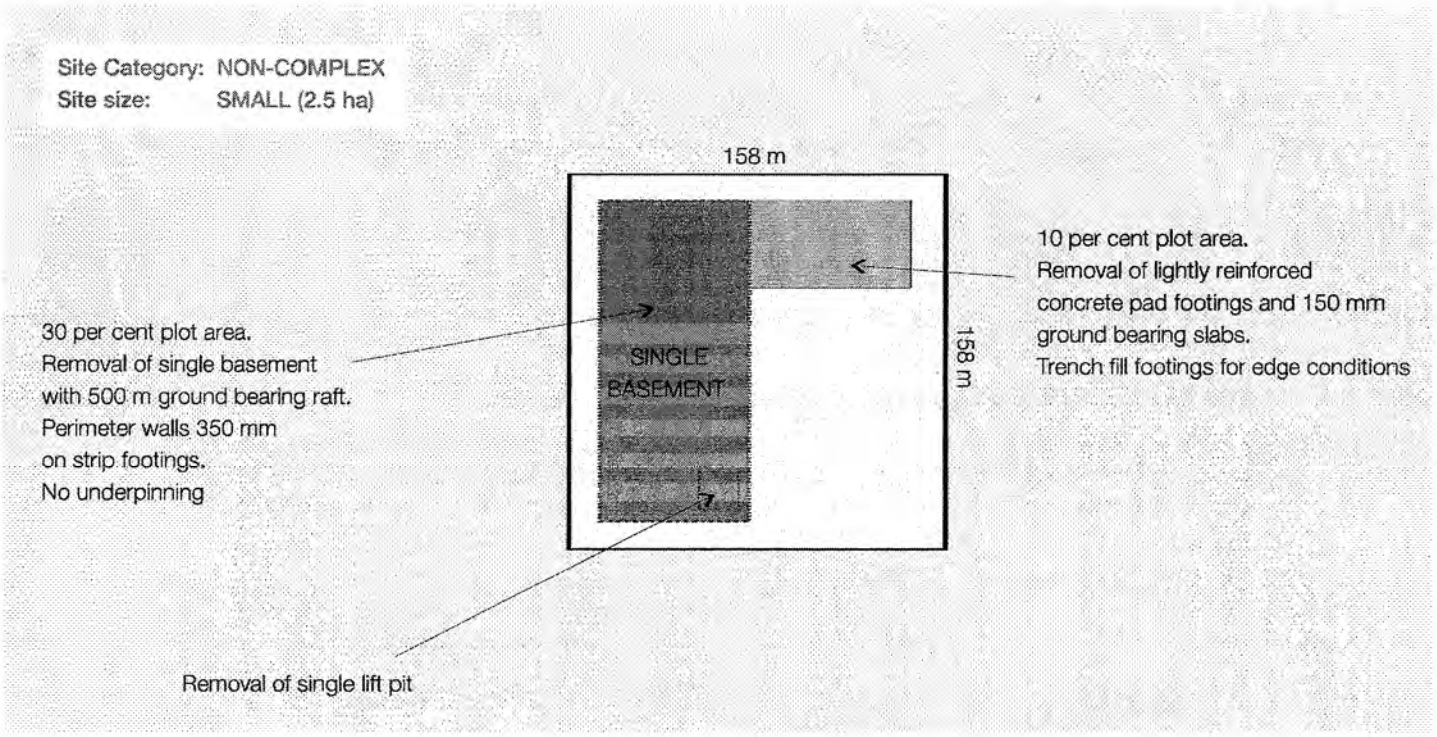


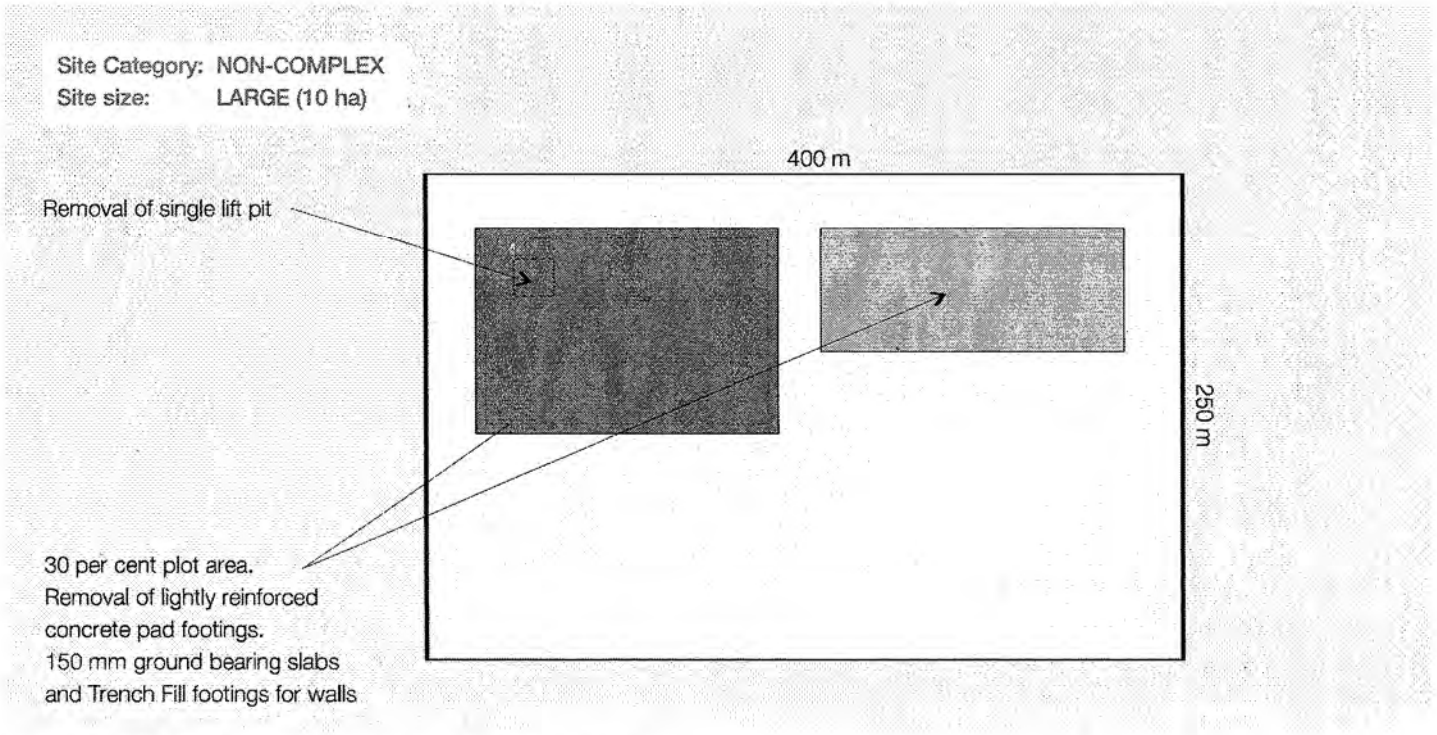


Notional site plans. All pilecaps/columns on notional 7.5 m grid.

Demolitions below ground

BPN Derelict Land Costs
'Standard' Notional Sites for cost assessment



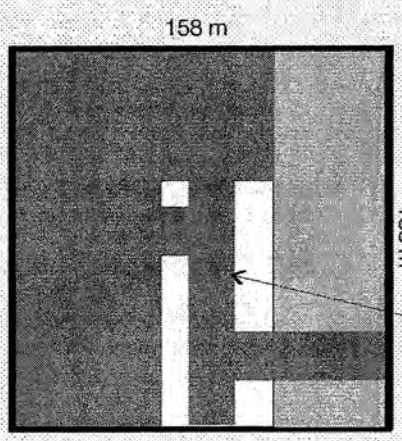


Notional site plans. All pilecaps/columns on notional 7.5 m grid.

Removal of redundant services

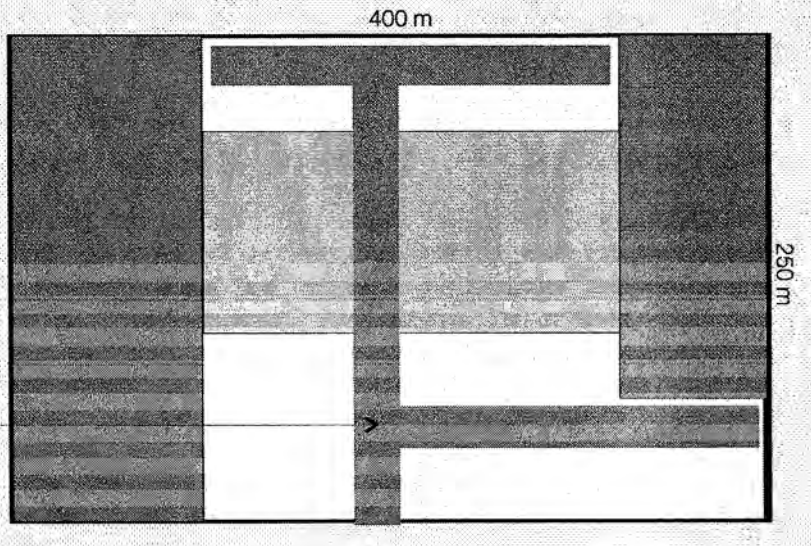
BPN Derelict Land Costs
'Standard' Notional Sites for cost assessment

Site Category: COMPLEX
Site size: SMALL (2.5 ha)



Multi-service corridors, provide for terminating the services at the boundary of the site and removing redundant services where necessary

Site Category: COMPLEX
Site size: LARGE (10 ha)



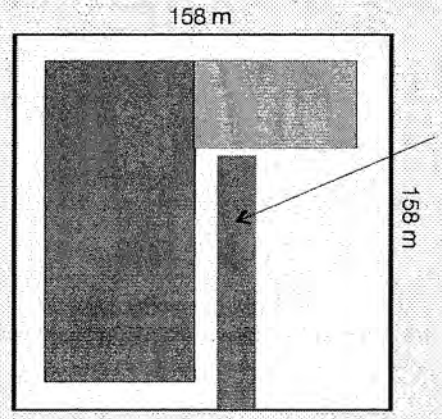
Multi-service corridors, provide for terminating the services at the boundary of the site and removing redundant services where necessary

Notional site plans. All pilecaps/columns on notional 7.5 m grid.

Removal of redundant services

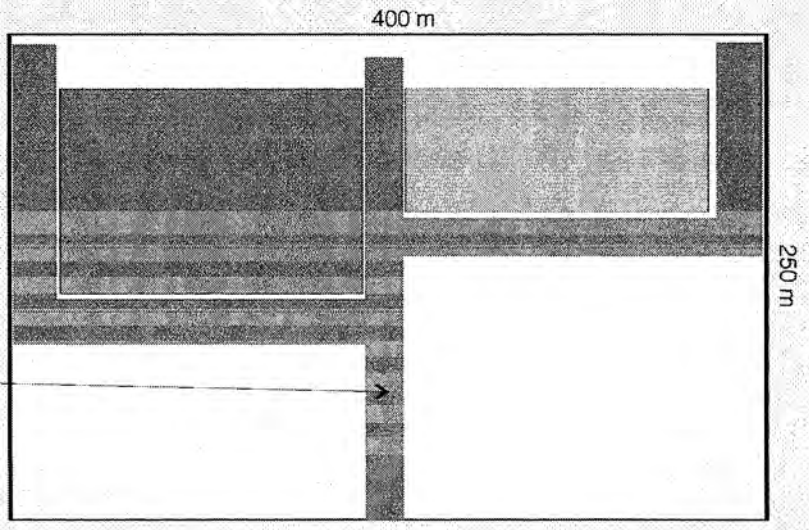
BPN Derelict Land Costs
'Standard' Notional Sites for cost assessment

Site Category: NON-COMPLEX
Site size: SMALL (2.5 ha)



Single service corridor, provide for terminating the services at the boundary of the site and removing redundant services where necessary

Site Category: NON-COMPLEX
Site size: LARGE (10 ha)



Single service corridor, provide for terminating the services at the boundary of the site and removing redundant services where necessary

Notional site plans. All pilecaps/columns on notional 7.5 m grid.

ANNEX C (ii): Guidance for determining where a particular site lies within the range of possible costs (applicable to small and large sites)

Demolitions above ground		
	Non-complex	**Complex**
Low	Simple demolition process Building density 30-40 per cent plot coverage 1- 3 storey buildings Predominantly brick/block structures Slab removal to 300 mm below ground	Demolition requires specialised equipment Building density 30-40 per cent plot coverage 1-6 storey buildings Predominantly brick/block structures Slab removal to 300 mm below ground
High	Simple demolition process Building density 30-40 per cent plot coverage 1-3 storey buildings Predominantly concrete framed structures Slab removal to 300 mm below ground	Demolition requires specialised equipment Building density 30-40 per cent plot coverage 1-6 storey buildings Predominantly concrete framed structures Slab removal to 300 mm below ground

Demolitions below ground		
	Non-complex	**Complex**
Low	Simple demolition process Removal of single basements only Removal of single lift pit Ground and soil restoration including the backfilling of voids with crushed materials arising from site demolitions, and the placing of clean fill, consolidation, grading and levelling to form development platforms (but excluding the import of new material and the use of specialised compacting techniques); Removal of limited redundant services in building area Removal of limited building pads or foundations	Demolition requires specialised equipment Limited removal of isolated obstructions Removal of single and double basements Removal of multiple lift pits Ground and soil restoration including the backfilling of voids with crushed materials arising from site demolitions, and the placing of clean fill, consolidation, grading and levelling to form development platforms (but excluding the import of new material and the use of specialised compacting techniques); Removal of limited redundant services in building area Removal of limited building pads or foundations
High	Simple demolition process Removal of single basements only Removal of single lift pit Ground and soil restoration including the backfilling of voids with crushed materials arising from site demolitions, and the placing of clean fill, consolidation, grading and levelling to form development platforms (but excluding the import of new material and the use of specialised compacting techniques); Removal of large proportion of redundant services in building area Removal large proportion of building pads or foundations	Demolition requires specialised equipment Limited removal of isolated obstructions Removal of single and double basements Removal of multiple lift pits Ground and soil restoration including the backfilling of voids with crushed materials arising from site demolitions, and the placing of clean fill, consolidation, grading and levelling to form development platforms (but excluding the import of new material and the use of specialised compacting techniques); Removal of large proportion of redundant services in building area Removal large proportion of building pads or foundations

Removal of redundant services		
	Non-complex	**Complex**
Low	Removal of a single service corridor – terminated at site boundary, redundant services removed where necessary. Gas-low pressure Electricity-low voltage Water-up to 75 mm Drainage-foul-up to 300 mm Drainage-rainwater/storm up to 300 mm Communications-copper	Removal of multiple service corridors corridor – terminated at site boundary, redundant services removed where necessary. Gas-low pressure Electricity-low voltage Water-up to 75 mm Drainage-foul-up to 300 mm Drainage-rainwater/storm up to 300 mm Communications-copper
High	Removal of a single service corridor – terminated at site boundary, redundant services removed where necessary. Gas-high pressure Electricity-high voltage Water-over 75 mm Drainage-foul-300-600 mm Drainage-rainwater/storm between 300-600 mm Decommission and remove governor Communications-fibre	Removal of multiple service corridors corridor – terminated at site boundary, redundant services removed where necessary. Gas-high pressure Electricity-high voltage Water-over 75 mm Drainage-foul-300-600 mm Drainage-rainwater/storm between 300-600 mm Decommission and remove governor Communications-fibre

Fees		
	Non-complex	**Complex**
Low	Activities require a low level of resources to undertake Due Diligence Desktop Appraisal Topographical Architect Engineer-Geotechnical Engineer-Environmental, C Cost Consultant Other inc. laboratory tests	Activities require a high level of resources to undertake Due Diligence Desktop Appraisal Topographical Architect Engineer-Geotechnical Engineer-Environmental, C Cost Consultant Other inc. laboratory tests
High	Activities require a moderate level of resources to undertake Due Diligence Desktop Appraisal Topographical Architect Engineer-Geotechnical Engineer-Civil/Structural Engineer-Environmental Ecologist Services enquiries Archaeologist Cost Consultant Statutory Fees Agent Other inc. laboratory tests	Activities require a very high level of resources to undertake Due Diligence Desktop Appraisal Topographical Architect Engineer-Geotechnical Engineer-Civil/Structural Engineer-Environmental Ecologist Services enquiries Archaeologist Cost Consultant Statutory Fees Agent Other inc. laboratory tests

Site investigations		
	Non-complex	**Complex**
Low	Limited number of basic site investigations required Contamination surveys Geo-environmental investigations	Wide range of site investigations required Contamination surveys Ordnance Geo-environmental investigations
High	High number of basic site investigations required Contamination surveys Geo-environmental investigations	High number and wide range of site investigations required Contamination surveys Ordnance Geo-environmental investigations

Annex C (iii): The range of potential remediation costs (rounded to £10,000) for preparing derelict land for development according to different site complexity, size and proposed end use

All figures in £000s		Small		Large	
	Basis	Non-complex	Complex	Non-complex	Complex
Mixed use					
Removal of redundant services	per site	20 to 100	30 to 110	20 to 100	30 to 160
Demolitions above ground	per ha	110 to 170	190 to 340	70 to 160	150 to 200
Demolitions below ground	per ha	10 to 20	40 to 50	10 to 20	40 to 50
Fees	per site	90 to 110	190 to 230	200 to 240	600 to 670
Site Investigations	per site	10 to 20	40 to 70	60 to 90	170 to 260
Residential					
Removal of redundant services	per site	30 to 110	30 to 130	30 to 110	30 to 180
Demolitions above ground	per ha	110 to 170	190 to 340	70 to 160	150 to 200
Demolitions below ground	per ha	10 to 20	50 to 60	20 to 30	50 to 60
Fees	per site	100 to 120	230 to 260	230 to 270	690 to 770
Site Investigations	per site	20 to 30	50 to 80	70 to 110	200 to 300
Public open space					
Removal of redundant services	per site	20 to 100	30 to 110	20 to 100	30 to 160
Demolitions above ground	per ha	100 to 170	190 to 340	70 to 160	150 to 200
Demolitions below ground	per ha	10 to 20	40 to 50	10 to 20	40 to 50
Fees	per site	100 to 120	210 to 250	210 to 250	650 to 720
Site Investigations	per site	20 to 30	40 to 70	70 to 100	180 to 280
Employment					
Removal of redundant services	per site	20 to 100	30 to 110	20 to 100	30 to 160
Demolitions above ground	per ha	110 to 170	190 to 340	70 to 160	150 to 200
Demolitions below ground	per ha	10 to 20	40 to 50	10 to 20	40 to 50
Fees	per site	90 to 110	190 to 230	200 to 240	600 to 670
Site Investigations	per site	10 to 20	40 to 70	60 to 90	170 to 260

How to Use:

a Decide on the end use and whether small or large.

b For each component decide whether complex or non complex according to the criteria preceding the table.

c According to the criteria decide where the costs lie within the given ranges (use mid-point if no further information available.

d Where cost estimates are provided on a per site basis apply the appropriate fixed (per site) cost estimates.

e Where cost estimates are provided on a per hectare basis multiply the appropriate per hectare cost estimate by the area of the site.

f For each site add **d** to **e**.

NB The data should be indexed to allow for regional variations in respect of sites outside London (non-complex) or the South East (complex) following the guidance in the BPN.

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The National Regeneration Agency

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Appendix F
Extract from Cost Analysis of The Code for Sustainable Homes

Communities and Local Government

Cost Analysis of The Code for Sustainable Homes

Final Report

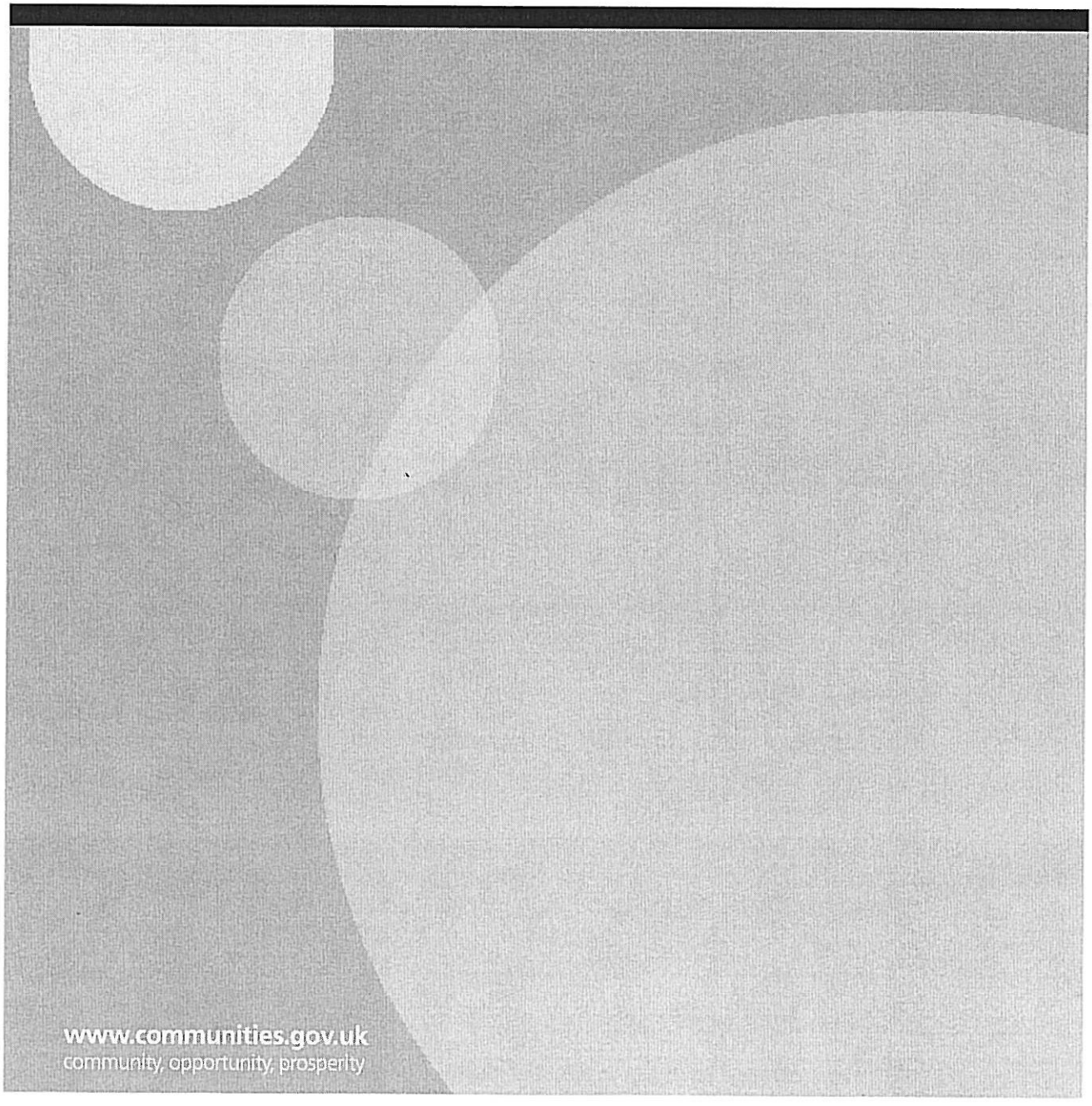

Table 4.3: Flat

CSH Level	Mandatory (£)	Energy (£)	Water (£)	Flexible (£)	Total cost (£)	Cost £ per m2	Percentage increase on 2006 Building Regs
Best Case (Urban regeneration scenario with low ecological value and low flood risk)							
1	£0	£460	£0	£0	**£460**	£8	1%
2	£0	£1,648	£0	£115	**£1,763**	£30	2%
3	£0	£2,622	£125	£145	**£2,892**	£49	4%
4	£0	£4,782	£125	£580	**£5,487**	£93	7%
5	£0	£8,289	£805	£1,170	**£10,264**	£174	13%
6	£0	£16,775	£805	£1,500	**£19,080**	£323	24%
Medium Case (Market town scenario with medium ecological value and low flood risk)							
1	£0	£275	£0	£10	**£285**	£5	0%
2	£0	£1,648	£0	£115	**£1,763**	£30	2%
3	£0	£2,622	£125	£175	**£2,922**	£50	4%
4	£0	£5,054	£125	£880	**£6,059**	£103	8%
5	£0	£9,962	£805	£1,500	**£12,267**	£208	15%
6	£0	£18,596	£805	£1,850	**£21,251**	£360	27%
Worst Case (City infill scenario with high ecological value and medium/high flood risk)							
1	£0	£460	£0	£40	**£500**	£8	1%
2	£0	£1,648	£0	£205	**£1,853**	£31	2%
3	£0	£2,622	£125	£420	**£3,167**	£54	4%
4	£0	£5,054	£125	£1,020	**£6,199**	£105	8%
5	£0	£12,055	£805	£1,850	**£14,710**	£249	19%
6	£0	£18,430	£805	£3,320	**£22,555**	£382	28%

For each house type the analysis shows a substantial increase in cost between Code levels 5 and 6, largely as a result of the additional costs associated with achieving Zero carbon status together with the Code 6 requirement that the home's heat loss parameter must be 0.8 W m²K. The heat loss parameter requirement has the combined effect of increasing capital costs whilst also reducing the home's demand for heat (and therefore the amount of low carbon electricity generated by a CHP system).

The range in cost estimates from the best to worst case scenarios is most marked for the houses, particularly the detached house, and there is a clear link between development density and scale and cost. The costs at Code level 6 do not take into account the benefit of zero stamp duty associated with achieving the zero carbon standard, if these were included it could reduce costs (assuming all of the benefit were to accrue to the house builder) by up to £15k per home, depending on sale price. If this benefit were factored into the analysis it could mean that it would be more cost effective to build to Code level 6 than Code level 5 (i.e. where the cost differential is less than the level of stamp duty avoided). Further work would be required to determine the likely percentage of avoided stamp duty that could be added to property value, although it would seem likely that this would be a relatively high percentage given that a Code 6 home is offering measurable performance improvements over a Code 5 home.

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Appendix G
Evidence of Economic Trends

1. Economic Trends/ Projections UK 2009/10

1.1 Introduction

This note provides an overview of the current and potential future economic climate within the UK. It also provides some general analysis on the current and future trends with regards to the housing market and more specifically to the North Yorkshire market. The research draws on publicly available resources from the Government, the banks, house builders, local authority websites and newspaper articles.

1.2 General Economic Trends/Forecasts for UK

As of this week the UK economy has officially come out of recession, after figures showed it had grown by a weaker-than-expected 0.1% in the last three months of 2009. The economy had previously contracted for six consecutive quarters - the longest period since quarterly figures were first recorded in 1955. The Office for National Statistics showed that in the year to December 2009 the rate of inflation rose by approximately 3% with the Consumer Prices Index rising by 2.9% from 1.9% in November. The Retail Price Index rose by 2.4% from 0.3% in November and the RPIX (excluding mortgage interest payments) rose by 3.8% from 2.7% in November.

However there is an overall feeling of caution with many analysts predicting that the economy could struggle to grow strongly with most only expecting the economy to grow by around 1% this year, compared with its long-run annual average of 2.5%.

1.3 Current/Future Housing Market Trends

Mervyn King's general message for house builders is salutary and they must expect a slow and weak recovery, as earnings stagnate for what could be a considerable period. However there is some room for cautious optimism with the market making some slow improvements. The DCLG published its house price index based on mortgage completions in October and it outlined that UK house prices rose by 2.3 % in the quarter ending October compared with a smaller rise of 2.0 % for the quarter ending July. The Halifax published its House price index showing a rise of 2.9% in the three months to October compared to the previous three months. In addition the Land Registry outlined data for house prices in October which showed a positive monthly change of 0.6%, however, the annual change stands at -3.4%. The Office for National Statistics outlined that private housing orders in the three months to November 2009 rose 56% compared with the previous three months and by 23% compared to the same period a year earlier.

As a gauge to housing trends over the last 50 years The Halifax showed that house prices rose 273% between 1959 and 2009, an average of 2.7%, but the rise was uneven. The fastest growth was between 1999 to 2009 after a fall, in real terms, of 2.4% between 1989 and 1999. It

identified four periods when prices rose rapidly (1971-73, 1977-1980, 1985-89 and 1998-2007. These were each followed by a period of significant falls. This outlines a general 10 year cyclical rotation of house prices with rapid rises coming in 5 year periods.

1.4 Housing Market in North Yorkshire

Based on Land Registry data the average house prices across North Yorkshire continue to rise with monthly increases of 1.6% and 1.2% for October and November 2009 respectively. The number of housing sales in York has increased 1.1% from October to November 2009 and this sees a 0.6% increase on 2008 levels.

Based on DCLG mean houses prices North Yorkshire has seen significant rises in the last quarter (13.1% increase) and more specifically within Ryedale (24.3%). DCLG property sales have also increased for North Yorkshire rising 32.7% within the last quarter and 30.7% in the last year. The figures are even higher for Ryedale with 56.2% and 48.8% increases respectively.

1.5 Conclusions

Overall the UK economy is showing signs of gradual improvement. This is no better underlined that the figures published on 26/1/2010 confirming that we are officially out of the recession, albeit marginally. The improvements are also underlined by the rise of rates of inflation of approximately 3% in last quarter of 2009. This positive vibe is also picked up in housing market which is showing signs of picking up particularly in the second half of 2009 with houses prices rising also by approximately 3%. The positive trends in relation to the housing market in the last quarter of 2009 are also being felt through North Yorkshire albeit at a slightly slower rate.

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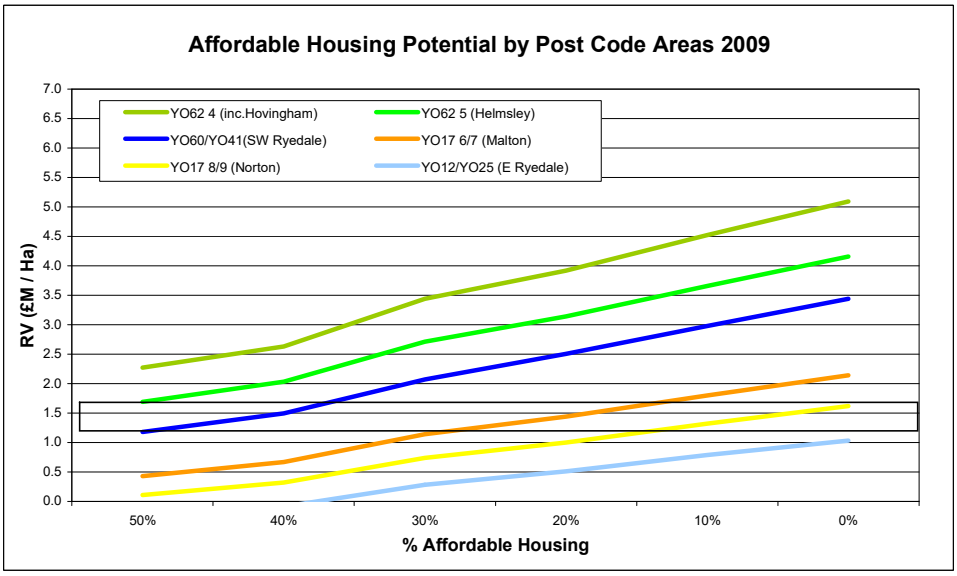
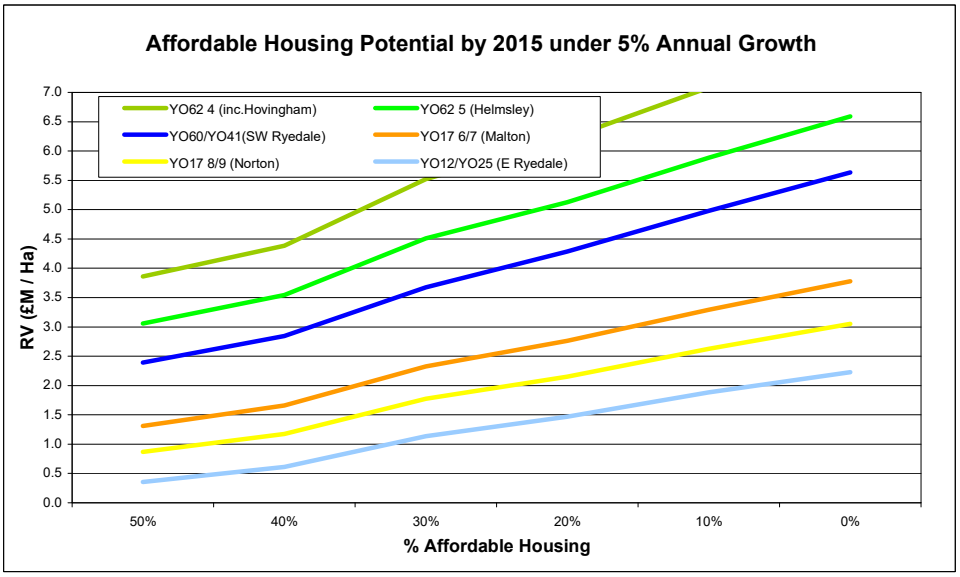
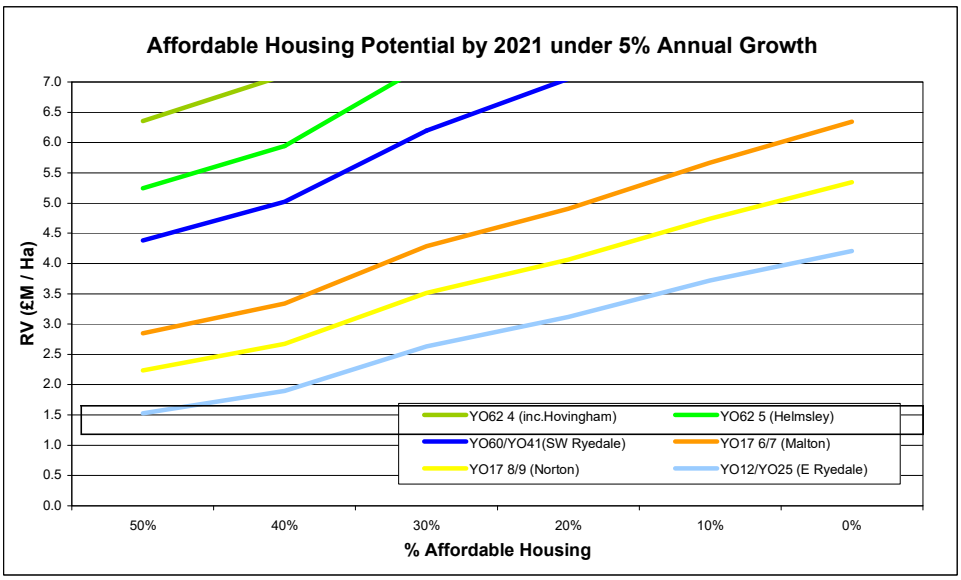
Appendix H
2009 Post Code Level Assessments and Projections


Affordable Housing Potential by Post Code Areas 2009
YO62 4 (inc.Hovingham)
YO62 5 (Helmsley)
YO60/YO41(SW Ryedale)
YO17 6/7 (Malton)
YO17 8/9 (Norton)
YO12/YO25 (E Ryedale)
RV (£M / Ha)
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
50%
40%
30%
20%
10%
0%
% Affordable Housing


Affordable Housing Potential by 2015 under 5% Annual Growth
YO62 4 (inc.Hovingham)
YO62 5 (Helmsley)
YO60/YO41(SW Ryedale)
YO17 6/7 (Malton)
YO17 8/9 (Norton)
YO12/YO25 (E Ryedale)
RV (£M / Ha)
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
50%
40%
30%
20%
10%
0%
% Affordable Housing


Affordable Housing Potential by 2021 under 5% Annual Growth
RV (£M / Ha)
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
50%
40%
30%
20%
10%
0%
% Affordable Housing
YO62 4 (inc.Hovingham)
YO62 5 (Helmsley)
YO60/YO41(SW Ryedale)
YO17 6/7 (Malton)
YO17 8/9 (Norton)
YO12/YO25 (E Ryedale)

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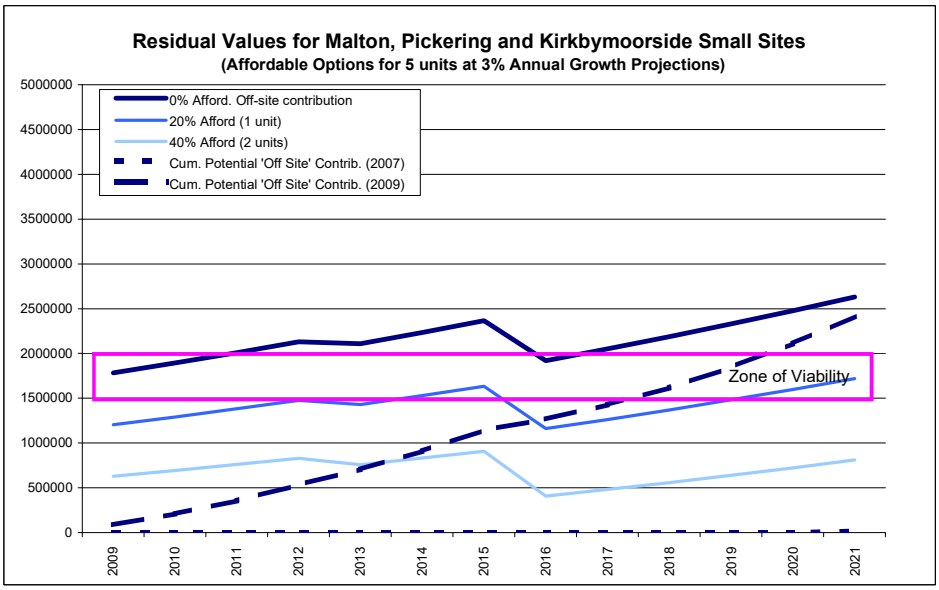
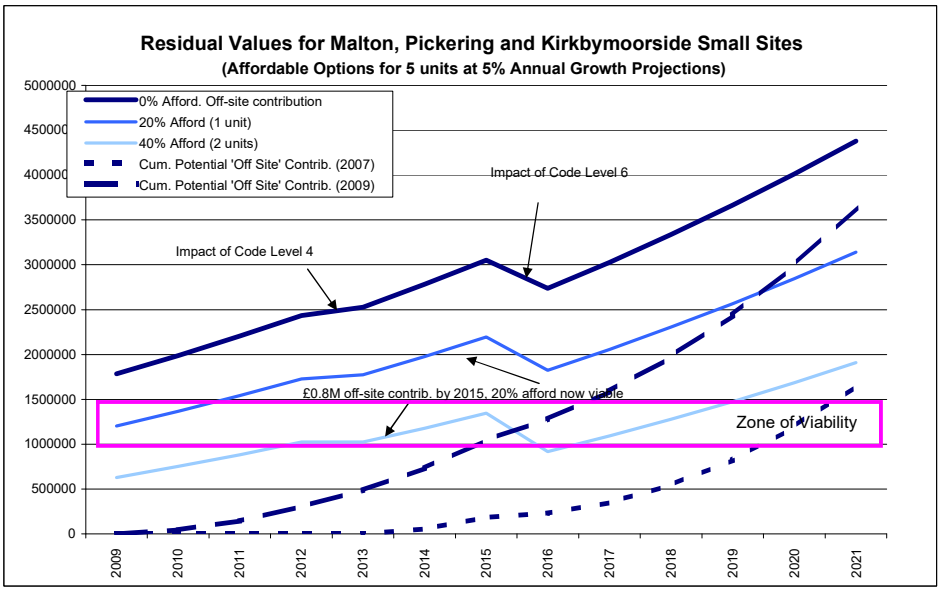
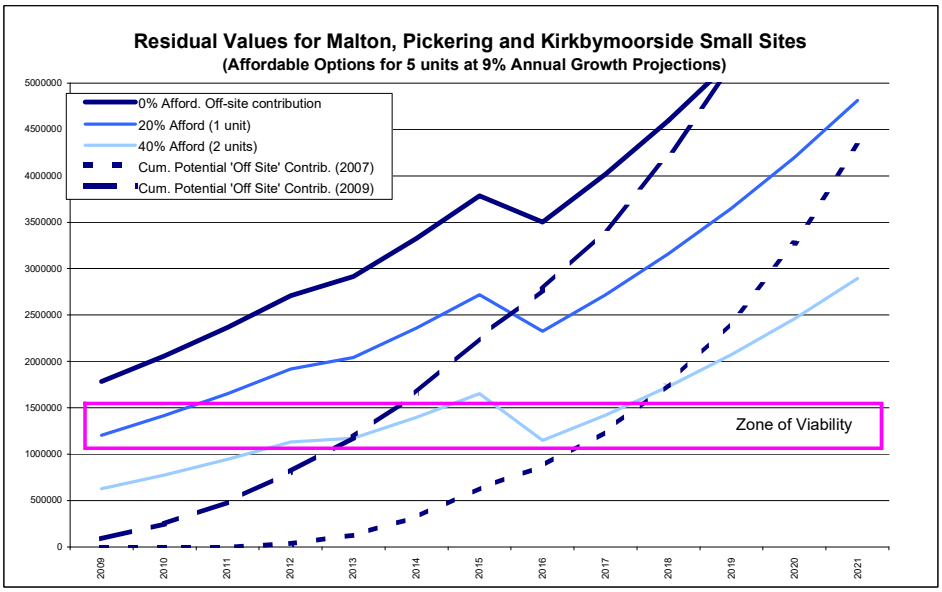
Appendix I
2009 Small Site Level Assessments and Projections


Residual Values for Malton, Pickering and Kirkbymoorside Small Sites
(Affordable Options for 5 units at 3% Annual Growth Projections)
0% Afford. Off-site contribution
20% Afford (1 unit)
40% Afford (2 units)
Cum. Potential 'Off Site' Contrib. (2007)
Cum. Potential 'Off Site' Contrib. (2009)
Zone of Viability
5000000
4500000
4000000
3500000
3000000
2500000
2000000
1500000
1000000
500000
0
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021


Residual Values for Malton, Pickering and Kirkbymoorside Small Sites
(Affordable Options for 5 units at 5% Annual Growth Projections)
0% Afford. Off-site contribution
20% Afford (1 unit)
40% Afford (2 units)
Cum. Potential 'Off Site' Contrib. (2007)
Cum. Potential 'Off Site' Contrib. (2009)
Impact of Code Level 6
Impact of Code Level 4
£0.8M off-site contrib. by 2015, 20% afford now viable
Zone of Viability
5000000
4500000
4000000
3500000
3000000
2500000
2000000
1500000
1000000
500000
0
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021


Residual Values for Malton, Pickering and Kirkbymoorside Small Sites
(Affordable Options for 5 units at 9% Annual Growth Projections)
0% Afford. Off-site contribution
20% Afford (1 unit)
40% Afford (2 units)
Cum. Potential 'Off Site' Contrib. (2007)
Cum. Potential 'Off Site' Contrib. (2009)
Zone of Viability
5000000
4500000
4000000
3500000
3000000
2500000
2000000
1500000
1000000
500000
0
2009
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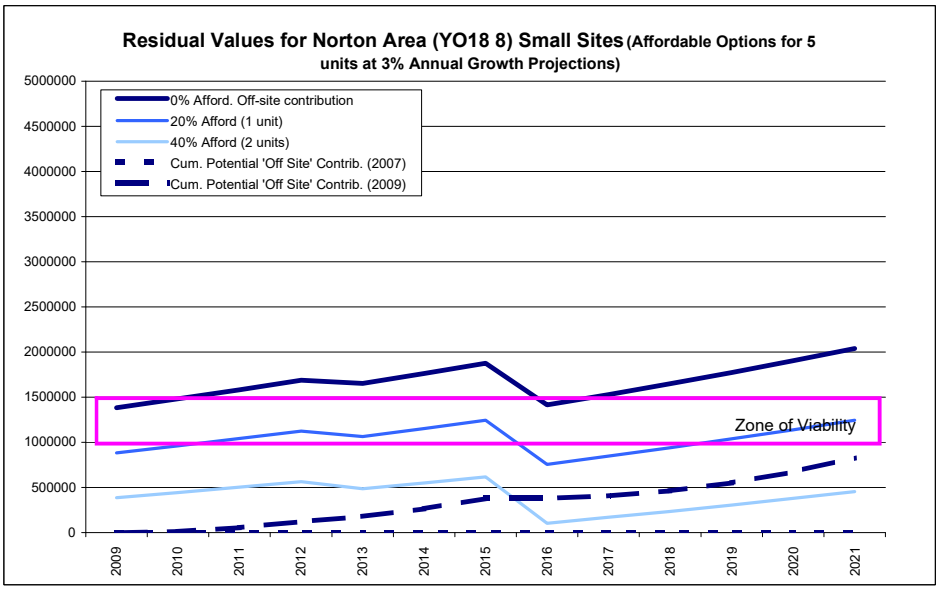
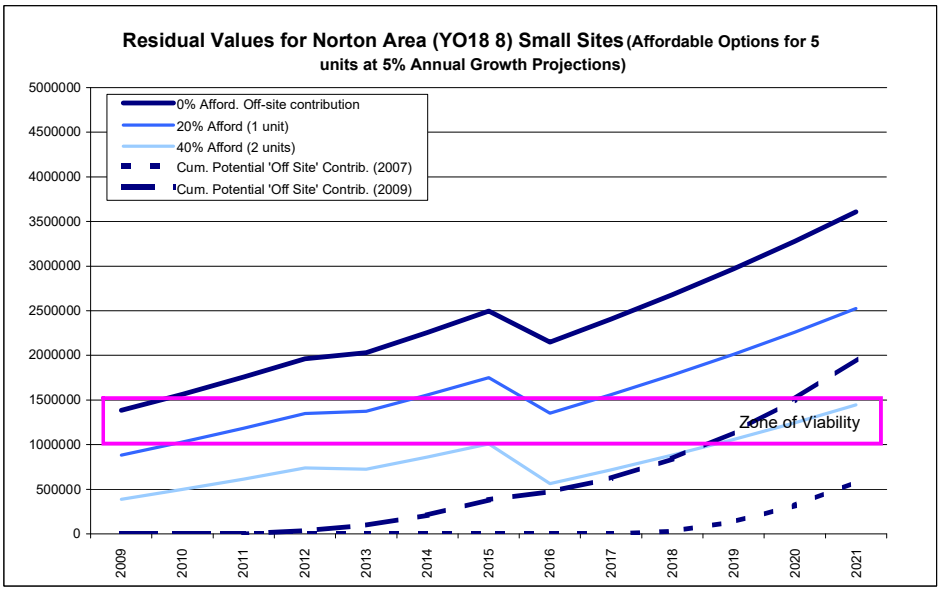
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021


Residual Values for Norton Area (YO18 8) Small Sites (Affordable Options for 5 units at 3% Annual Growth Projections)
0% Afford. Off-site contribution
20% Afford (1 unit)
40% Afford (2 units)
Cum. Potential 'Off Site' Contrib. (2007)
Cum. Potential 'Off Site' Contrib. (2009)
Zone of Viability
5000000
4500000
4000000
3500000
3000000
2500000
2000000
1500000
1000000
500000
0
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021


Residual Values for Norton Area (YO18 8) Small Sites (Affordable Options for 5 units at 5% Annual Growth Projections)
0% Afford. Off-site contribution
20% Afford (1 unit)
40% Afford (2 units)
Cum. Potential 'Off Site' Contrib. (2007)
Cum. Potential 'Off Site' Contrib. (2009)
Zone of Viability
5000000
4500000
4000000
3500000
3000000
2500000
2000000
1500000
1000000
500000
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2009
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2017
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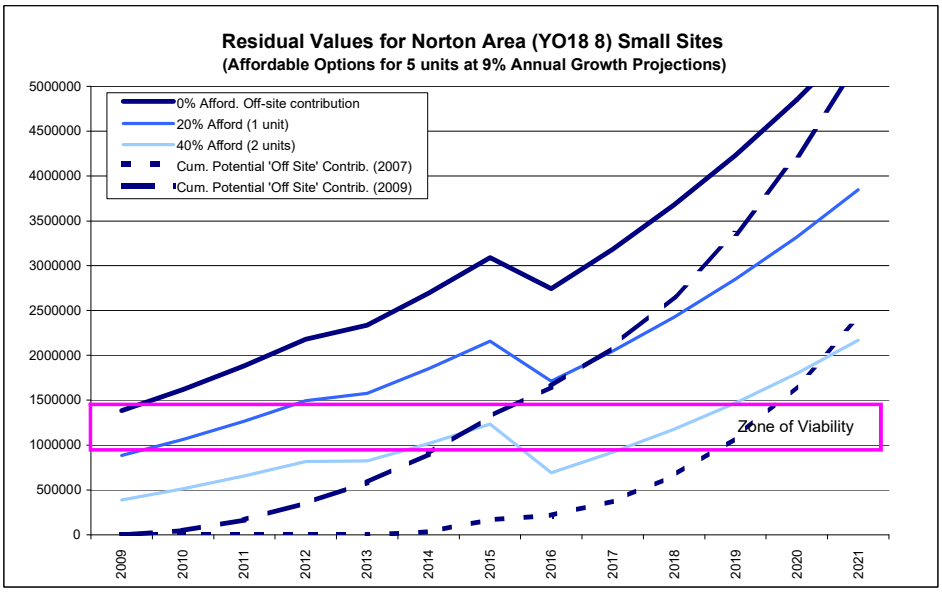
2019
2020
2021


Residual Values for Norton Area (YO18 8) Small Sites
(Affordable Options for 5 units at 9% Annual Growth Projections)
0% Afford. Off-site contribution
20% Afford (1 unit)
40% Afford (2 units)
Cum. Potential 'Off Site' Contrib. (2007)
Cum. Potential 'Off Site' Contrib. (2009)
Zone of Viability
5000000
4500000
4000000
3500000
3000000
2500000
2000000
1500000
1000000
500000
0
2009
2010
2011
2012
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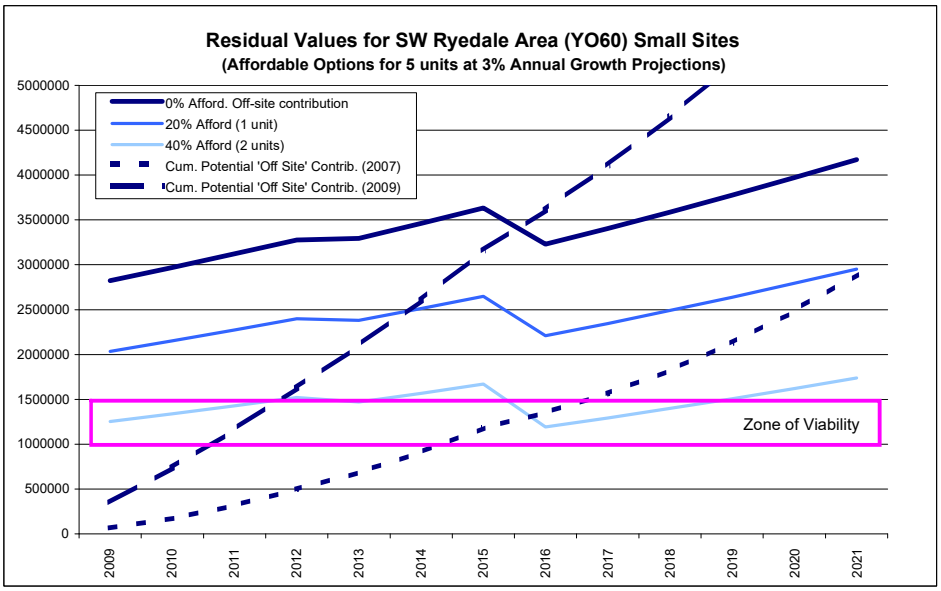
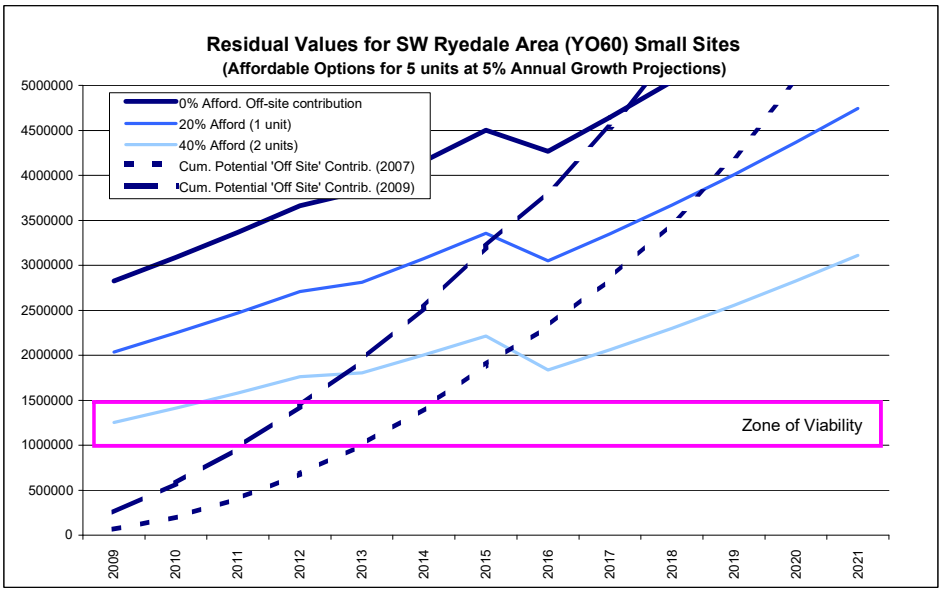
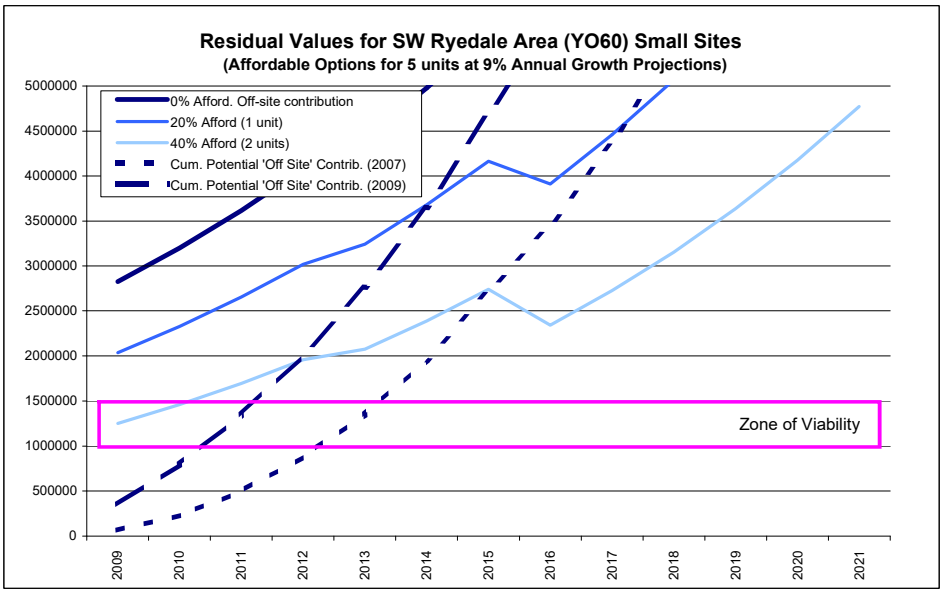
2014
2015
2016
2017
2018
2019
2020
2021


Residual Values for SW Ryedale Area (YO60) Small Sites
(Affordable Options for 5 units at 3% Annual Growth Projections)
0% Afford. Off-site contribution
20% Afford (1 unit)
40% Afford (2 units)
Cum. Potential 'Off Site' Contrib. (2007)
Cum. Potential 'Off Site' Contrib. (2009)
Zone of Viability
5000000
4500000
4000000
3500000
3000000
2500000
2000000
1500000
1000000
500000
0
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021


Residual Values for SW Ryedale Area (YO60) Small Sites
(Affordable Options for 5 units at 5% Annual Growth Projections)
0% Afford. Off-site contribution
20% Afford (1 unit)
40% Afford (2 units)
Cum. Potential 'Off Site' Contrib. (2007)
Cum. Potential 'Off Site' Contrib. (2009)
Zone of Viability
5000000
4500000
4000000
3500000
3000000
2500000
2000000
1500000
1000000
500000
0
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021


Residual Values for SW Ryedale Area (YO60) Small Sites
(Affordable Options for 5 units at 9% Annual Growth Projections)
0% Afford. Off-site contribution
20% Afford (1 unit)
40% Afford (2 units)
Cum. Potential 'Off Site' Contrib. (2007)
Cum. Potential 'Off Site' Contrib. (2009)
Zone of Viability
5000000
4500000
4000000
3500000
3000000
2500000
2000000
1500000
1000000
500000
0
2009
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2012
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2014
2015
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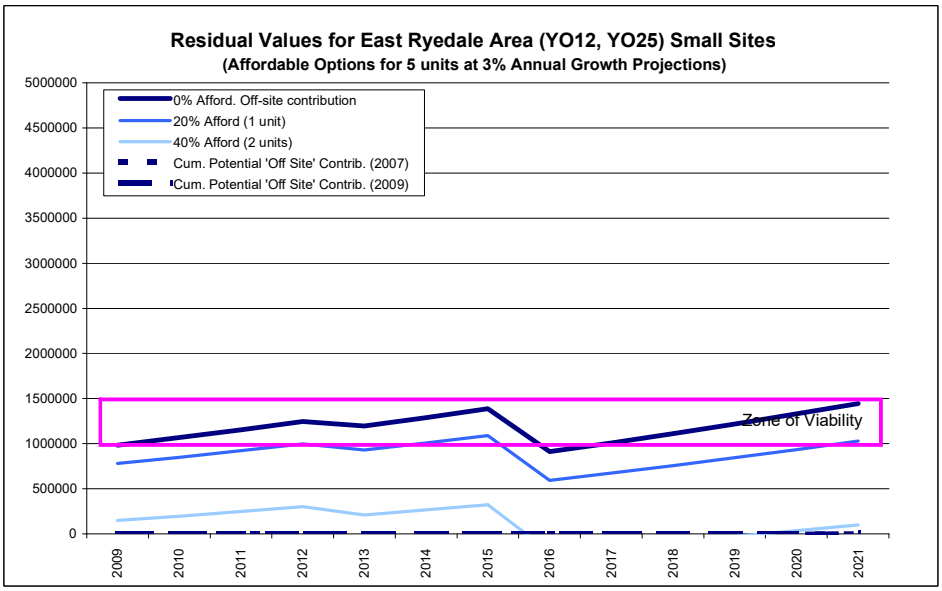
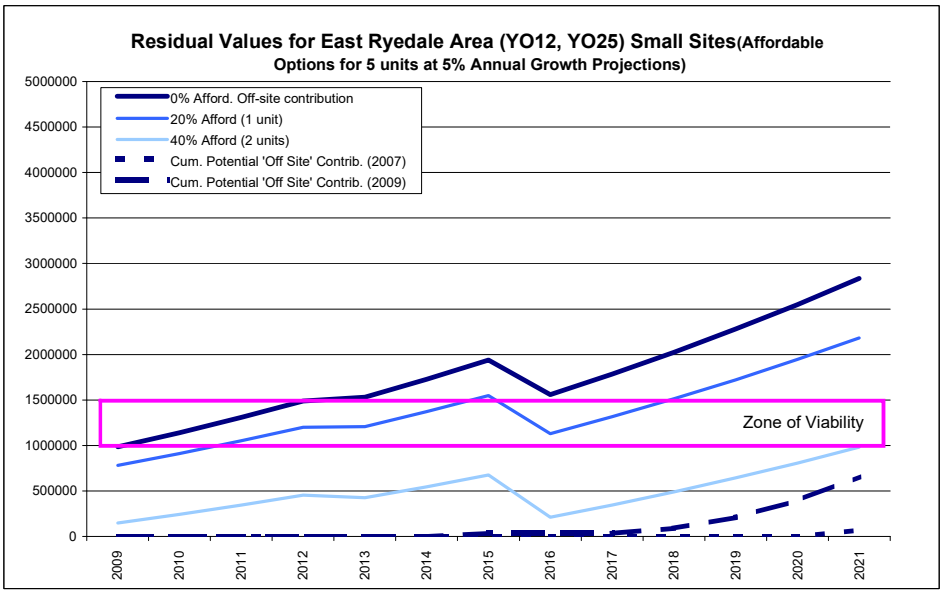
2017
2018
2019
2020
2021


Residual Values for East Ryedale Area (YO12, YO25) Small Sites
(Affordable Options for 5 units at 3% Annual Growth Projections)
0% Afford. Off-site contribution
20% Afford (1 unit)
40% Afford (2 units)
Cum. Potential 'Off Site' Contrib. (2007)
Cum. Potential 'Off Site' Contrib. (2009)
Zone of Viability
5000000
4500000
4000000
3500000
3000000
2500000
2000000
1500000
1000000
500000
0
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021


Residual Values for East Ryedale Area (YO12, YO25) Small Sites(Affordable
Options for 5 units at 5% Annual Growth Projections)
0% Afford. Off-site contribution
20% Afford (1 unit)
40% Afford (2 units)
Cum. Potential 'Off Site' Contrib. (2007)
Cum. Potential 'Off Site' Contrib. (2009)
Zone of Viability
5000000
4500000
4000000
3500000
3000000
2500000
2000000
1500000
1000000
500000
0
2009
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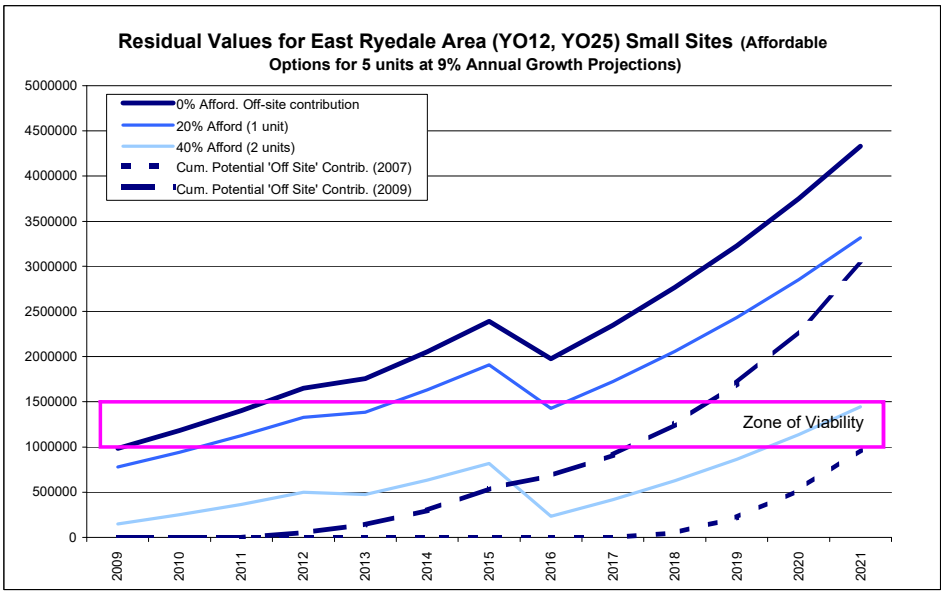
2014
2015
2016
2017
2018
2019
2020
2021


Residual Values for East Ryedale Area (YO12, YO25) Small Sites (Affordable
Options for 5 units at 9% Annual Growth Projections)
0% Afford. Off-site contribution
20% Afford (1 unit)
40% Afford (2 units)
Cum. Potential 'Off Site' Contrib. (2007)
Cum. Potential 'Off Site' Contrib. (2009)
Zone of Viability
5000000
4500000
4000000
3500000
3000000
2500000
2000000
1500000
1000000
500000
0
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021

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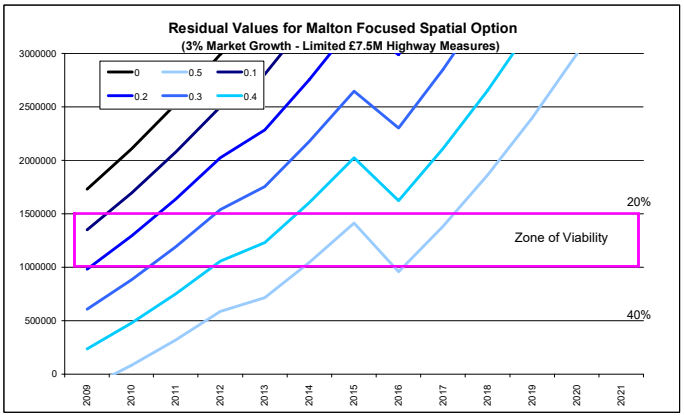
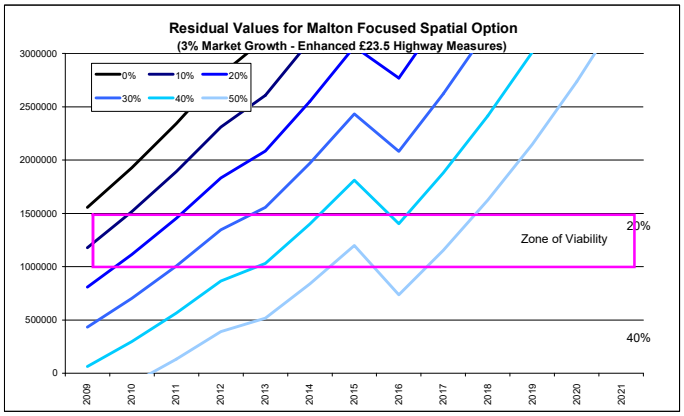
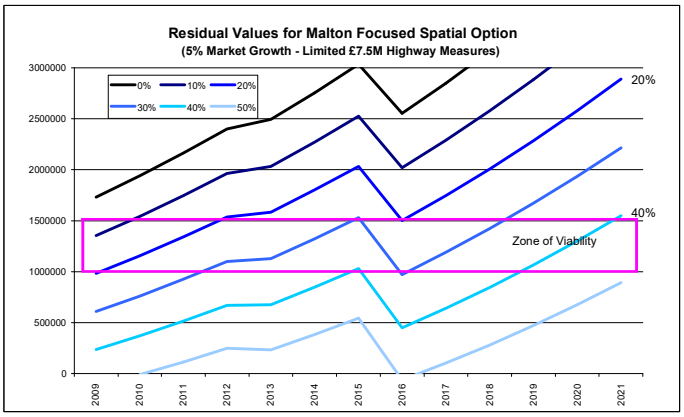
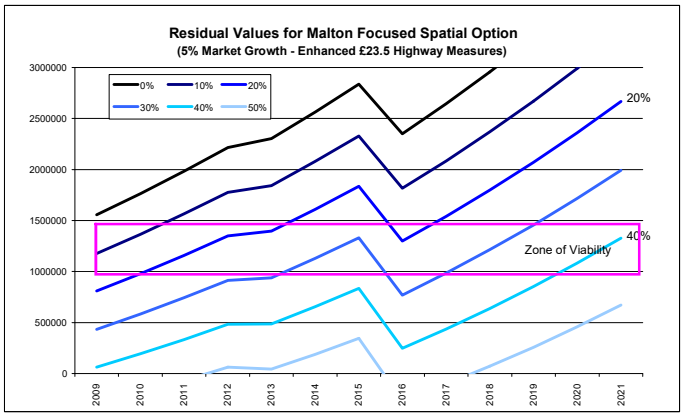
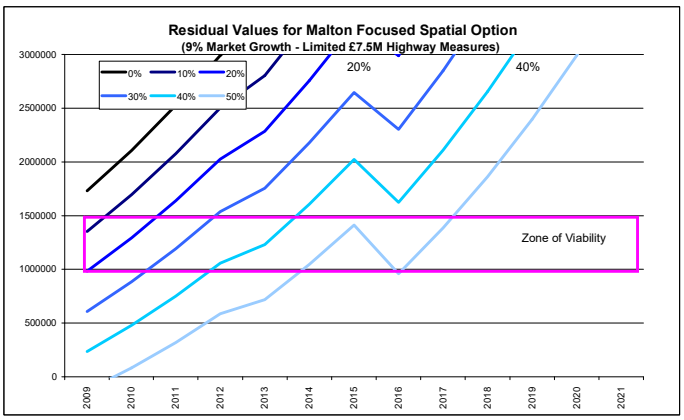
Appendix J
2009 Spatial Option Level Assessments – Infrastructure Costs including £7.5M and £23.5M Highway Measures

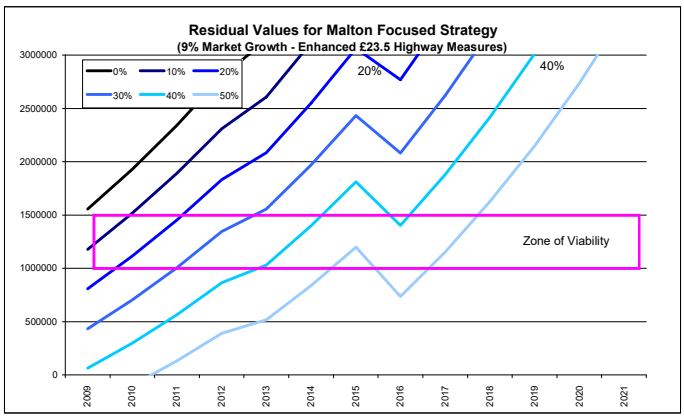

Residual Values for Malton Focused Spatial Option
(3% Market Growth - Limited £7.5M Highway Measures)
0
0.5
0.1
0.2
0.3
0.4
20%
Zone of Viability
40%

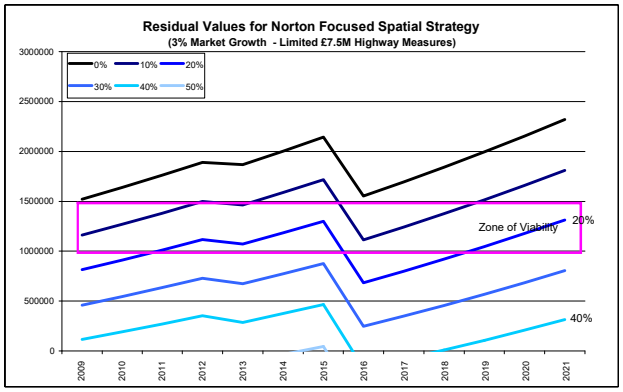

Residual Values for Malton Focused Spatial Option
(3% Market Growth - Enhanced £23.5 Highway Measures)
0%
10%
20%
30%
40%
50%
20%
Zone of Viability
40%

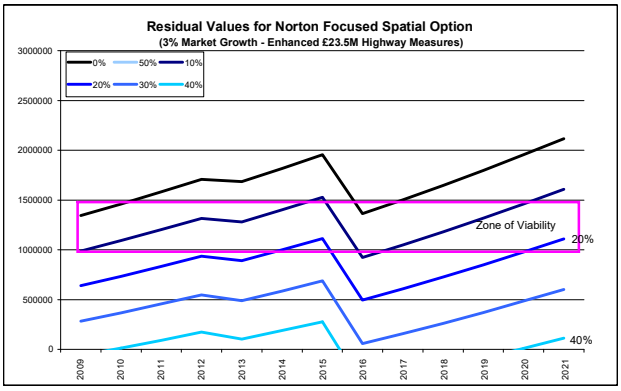

Residual Values for Malton Focused Spatial Option
(5% Market Growth - Limited £7.5M Highway Measures)
0%
10%
20%
30%
40%
50%
20%
40%
Zone of Viability

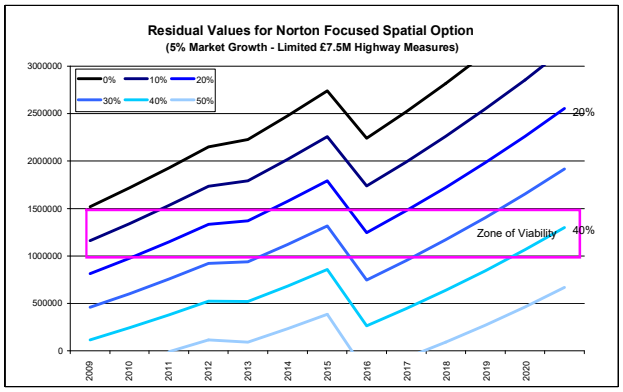

Residual Values for Malton Focused Spatial Option
(5% Market Growth - Enhanced £23.5 Highway Measures)
0%
10%
20%
30%
40%
50%
20%
40%
Zone of Viability

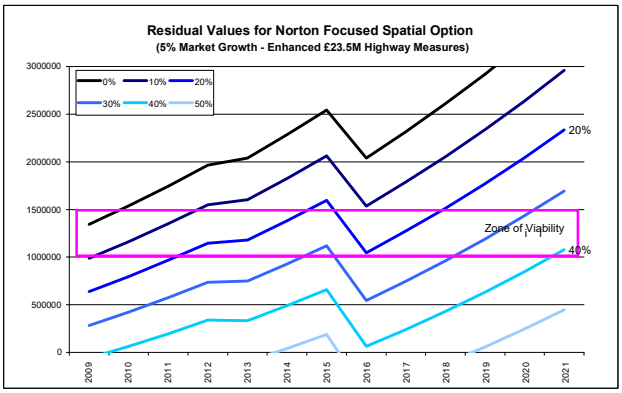

Residual Values for Malton Focused Spatial Option
(9% Market Growth - Limited £7.5M Highway Measures)
0%
10%
20%
30%
40%
50%
20%
40%
Zone of Viability

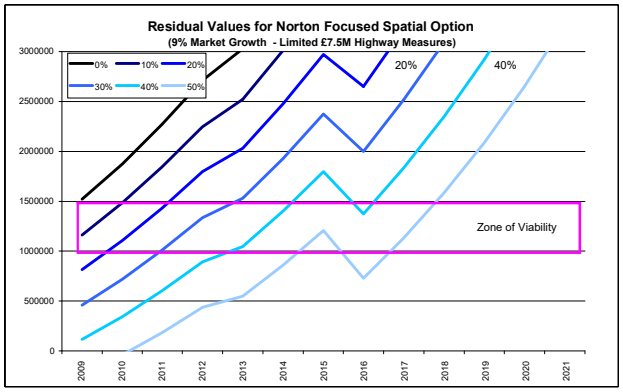

Residual Values for Malton Focused Strategy
(9% Market Growth - Enhanced £23.5 Highway Measures)
0%
10%
20%
30%
40%
50%
20%
40%
Zone of Viability

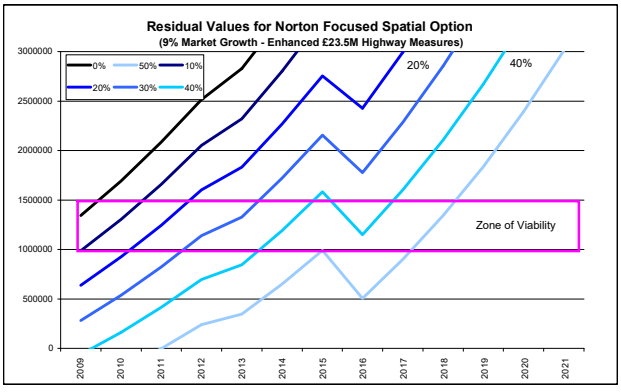

Residual Values for Norton Focused Spatial Strategy
(3% Market Growth - Limited £7.5M Highway Measures)
0%
10%
20%
30%
40%
50%
Zone of Viability
20%
40%

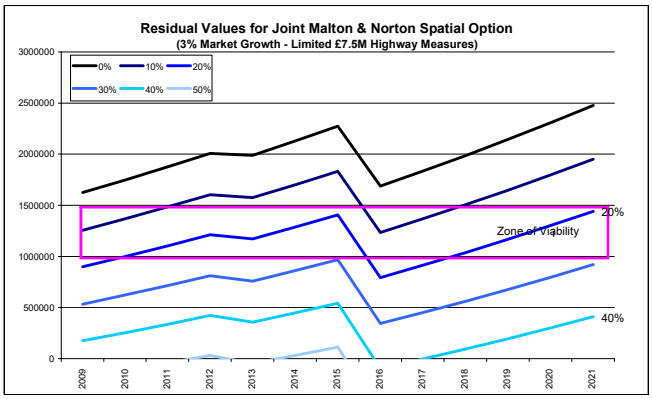

Residual Values for Norton Focused Spatial Option
(3% Market Growth - Enhanced £23.5M Highway Measures)
0%
50%
10%
20%
30%
40%
Zone of Viability
20%
40%

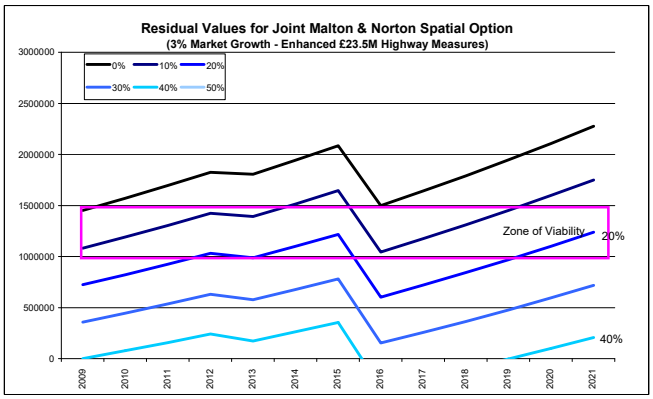

Residual Values for Norton Focused Spatial Option
(5% Market Growth - Limited £7.5M Highway Measures)
0%
10%
20%
30%
40%
50%
Zone of Viability
20%
40%

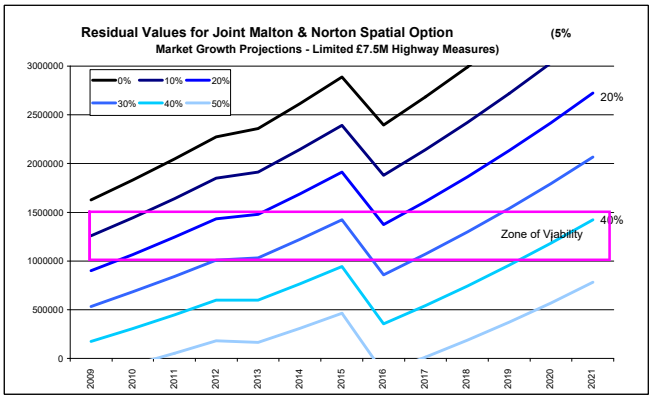

Residual Values for Norton Focused Spatial Option
(5% Market Growth - Enhanced £23.5M Highway Measures)
0%
10%
20%
30%
40%
50%
Zone of Viability
20%
40%

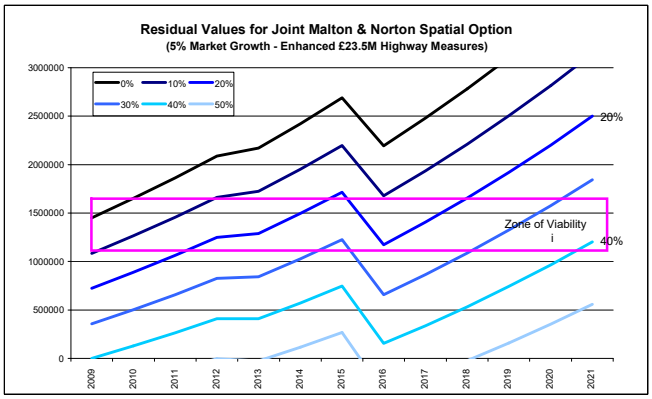

Residual Values for Norton Focused Spatial Option
(9% Market Growth - Limited £7.5M Highway Measures)
0%
10%
20%
30%
40%
50%
20%
40%
Zone of Viability

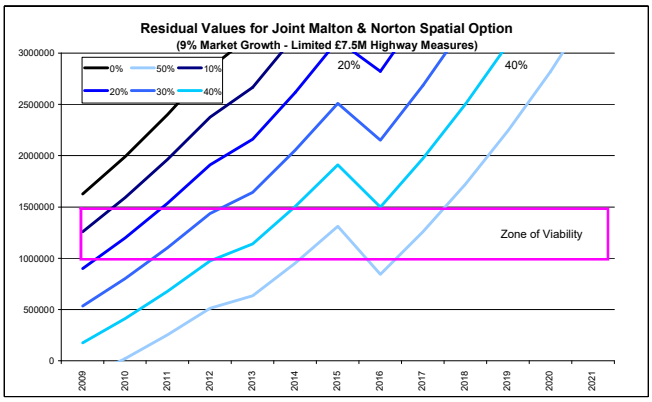

Residual Values for Norton Focused Spatial Option
(9% Market Growth - Enhanced £23.5M Highway Measures)
0%
50%
10%
20%
30%
40%
20%
40%
Zone of Viability

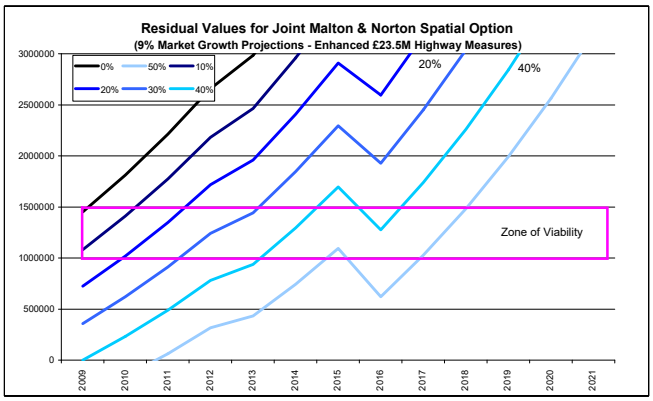

Residual Values for Joint Malton & Norton Spatial Option
(3% Market Growth - Limited £7.5M Highway Measures)
0%
10%
20%
30%
40%
50%
Zone of Viability
20%
40%


Residual Values for Joint Malton & Norton Spatial Option
(3% Market Growth - Enhanced £23.5M Highway Measures)
0%
10%
20%
30%
40%
50%
Zone of Viability
20%
40%


Residual Values for Joint Malton & Norton Spatial Option
(5%
Market Growth Projections - Limited £7.5M Highway Measures)
0%
10%
20%
30%
40%
50%
Zone of Viability
20%
40%


Residual Values for Joint Malton & Norton Spatial Option
(5% Market Growth - Enhanced £23.5M Highway Measures)
0%
10%
20%
30%
40%
50%
Zone of Viability
20%
40%


Residual Values for Joint Malton & Norton Spatial Option
(9% Market Growth - Limited £7.5M Highway Measures)
0%
50%
10%
20%
30%
40%
20%
40%
Zone of Viability


Residual Values for Joint Malton & Norton Spatial Option
(9% Market Growth Projections - Enhanced £23.5M Highway Measures)
0%
50%
10%
20%
30%
40%
20%
40%
Zone of Viability