

A GUIDE TO DEVELOPMENT VIABILITY



Scottish Government - Directorate for the Built Environment

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1. Introduction

- 1.1 It is important that all parties in the development process understand the financial aspects of development. This document outlines the fundamentals to assist planners, elected members and the general public with that understanding. The aim of this document therefore is to:
- Explain the factors which determine the viability of any development proposal.
 - Provide simple examples of how planning policy and procedure can impact upon development viability.
- 1.2 For any development to be viable – to actually take shape on the ground - it must have:
- A planning consent for an end use that the market is prepared to pay a reasonable price for.
 - Access to capital to fund the project, which the developer has to pay an appropriate return on and this return has to be a surplus of revenue returns over costs (usually expressed as a percentage).
- 1.3 Scotland has recently enjoyed years of economic growth, assisted by the availability of funding which enables property investment and land development. During periods of economic growth, development pressure is often a given, therefore policies can focus on channelling development pressure to the most appropriate locations and in the most acceptable formats.
- 1.4 The wider modernisation of the planning system aims to increase the efficiency of processes and promotes a culture of joint working to enable better quality developments. This and the downturn in the economy encourages planning to place much greater emphasis on creating and facilitating good quality development opportunities.

2. Development Contexts

The Fundamentals

Change: Development involves a process of change to realise additional value (economic, social and / or environmental) in land.

Concept: A vision of a desired end state, arrived at through a design process and based on market intelligence.

Supply: The availability of appropriate property to be developed.

Demand: The 'need' for new development to take place.

This may be social or environmental, for example an area of open recreational space, a school or crematorium. These cannot be judged against economic criteria but are quantified by socio-demographic trends.

It may also be an economic demand, for example a contractually bound end-user who has committed financially to purchasing or leasing premises. In periods of growth speculative development is more likely where developers rely on their knowledge and experience of the market to develop in the absence of a contractually bound end-user.

Return on investment: The return on the investment in a development must exceed the costs of property development to be viable.

Return leads to repeat: Sufficient return on the investment is necessary to allow for repeat activity. This includes experience and skills as well as financial aspects.

2.1 Whilst the above model is simplistic, it outlines the fundamentals necessary for any development venture to be undertaken by all types of developers.

Types of Developer

Property company / developer: A business that selects projects, assesses risk, promotes concepts, secures land, attracts occupiers and achieves a final development for onward sale. This happens across development sectors such as residential, mixed use and commercial.

Land and estate businesses: Businesses that manage large estates of land, for example historic estates, national utilities and power companies, but which are focussed on other mainstream activities.

Public sector: The public sector estate covers a significant area of Scotland. Central government, local government, agencies and other quasi-public sector parties have a duty of care to manage it responsibly.

Facilitative ventures: Other companies can be created to pursue development, for example joint ventures, special purpose vehicles and local asset backed vehicles. Some of these have a direct link to the functions of central or local government, to promote beneficial redevelopment and regeneration, for example those involving Scottish Enterprise and the Private Finance Initiative / Public Private Partnership schemes.

Homeowners: Individuals develop their own property by extending and upgrading aspects, such as windows, to meet their changing circumstances and to ensure their investment is maintained for the future.

Investment company: A business that holds long term investments in land and property, for example pension funds.

2.2 The above list is not exhaustive but aims to clarify that the term "property developer" may cover a wide range of types and interests. The development fundamentals highlighted previously are, however, common to all of them.

Development Locations

- 2.3 Development takes place within different locations that will each have different contexts in terms of development viability and planning policies.
- 2.4 **Figure 1** presents a simple representation of this but it is not intended to be an exhaustive exposition of the critical relationship between development and planning. By identifying 5 zones it indicates how development viability is influenced by density, changes in value, different levels of investment and developer interest and variations in planning and risk.

Central Prime:

- Comprises higher density, good accessibility, established mixed use, often with the benefits of townscape, heritage and good public realm.
- High levels of interest in occupying these areas for shopping, business, leisure and other employment sectors make them core prime assets and strengthen long term investment interest.
- The healthy demand for a generally limited supply leads to higher property values therefore the strength of the occupier as a long term tenant (good covenant) with an ability to sustain payment of appropriate rent levels is crucial.
- Investment companies are generally most interested in this area to build their portfolios as good prospects for growth enable higher levels of lending to be secured. The sector often operates using a complex mix of price paid in capital terms against the returns in rental each year from the property purchased (the yield).
- In relation to planning, these areas are clearly where development plans are likely to entertain mixed activities, higher densities and to promote strength in public realm, connectivity and prime frontages.

Inner Mixed:

- Typically comprises a ring of secondary and tertiary areas surrounding the prime areas.
- These may be viewed as emerging prime opportunities in the future therefore more active property development is likely by development companies well versed in risk appraisals, site assembly and clearance, land remediation, construction, infrastructure, phasing, promotion and marketing.
- Greater risks involved as a view has to be taken of how the core area will grow however, developers may use master-planning to influence planning policy to encourage growth in their direction.

- Developers will have to assess various site risks and quite often this includes the “abnormals” of adding new infrastructure such as connecting roads, public transport, key services and other urban design considerations.
- In relation to planning, these areas are often challenging with regard to new infrastructure and changing the emphasis of core areas. Development plans and Supplementary Guidance tend to address this kind of area but equally the policy process can be influenced by new ideas.

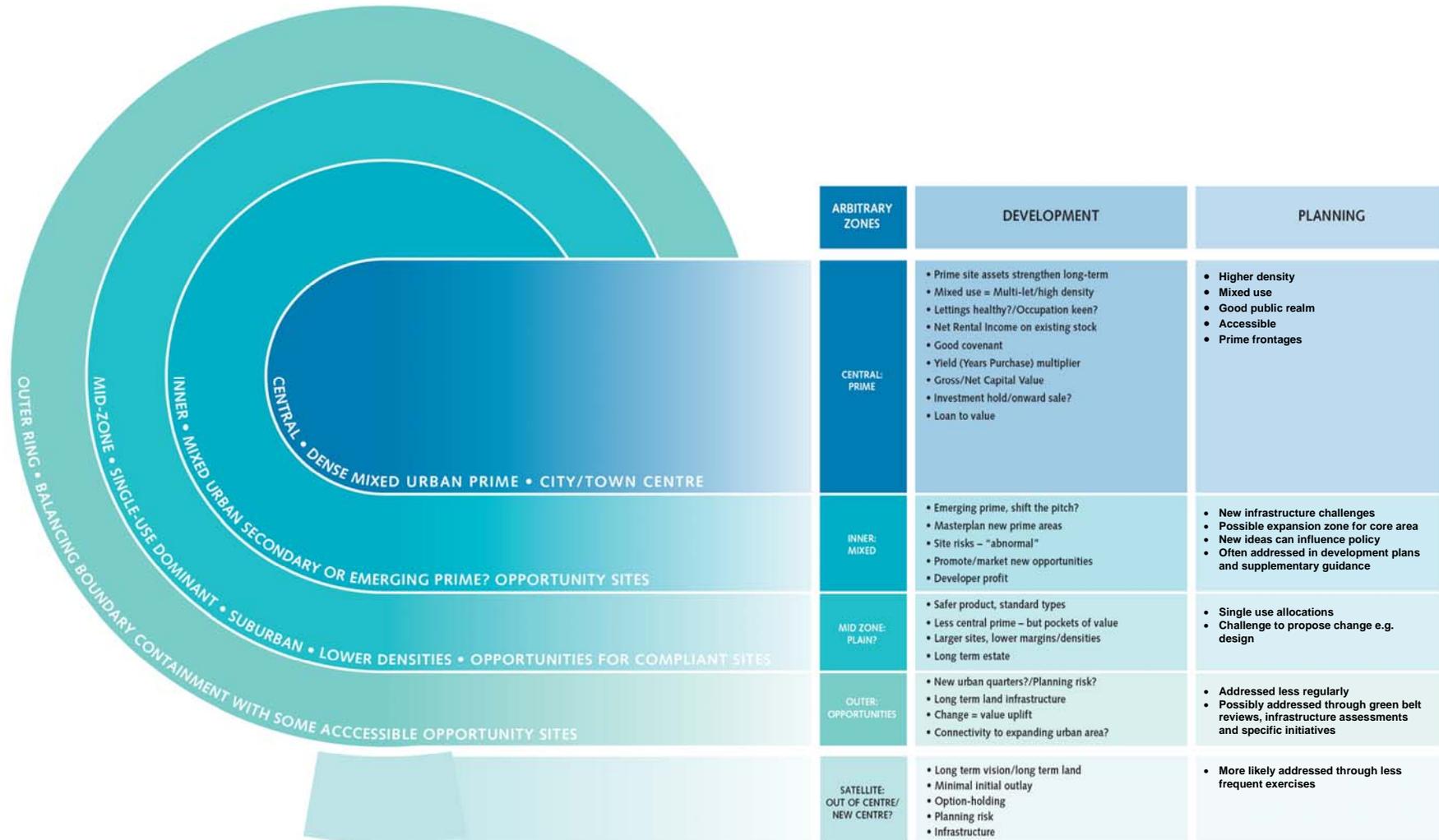
Mid Zone - Single Uses:

- Loosely associated with the broader mid-town areas, most likely characterised by suburban development.
- In these areas, there is perhaps an approach to safer, standard product types of development such as residential. Some developers will look to regeneration opportunities in the mid zones and will assemble sites over a long period for long term planning change.
- Typically, this involved the release of larger sites for new development or redevelopment in the outer areas of towns and cities.
- Lower profit margins may be incurred, but changes to density and the normal and abnormal costs on sites will all be key factors.
- In terms of planning, these mid zones may have single use allocations and the challenge will be to propose change and promote new central nodes of mixed use development.

Outer / Satellite Opportunities:

- Locational outwith the existing urban footprint.
- Longer term opportunities that arise from the release of greenfield land, new infrastructure investment orbiting urban areas, or through the redevelopment of existing built sites.
- Tend to be driven by the potential for change from low value to higher value and the ability to reflect costly infrastructure and site preparation challenges at an early stage into a phased approach to delivery.
- Interest frequently from the longer term landed estate business or development company with experience in specific technical, planning and design challenges.
- Planners address the outer opportunities less regularly, through more fundamental exercises such as greenbelt reviews, new infrastructure assessments and initiatives such as the Scottish Sustainable Communities Initiative.

Figure 1 : Development Locations



Basic Development Process

2.5 **Figure 2** sets out a simple concept of the development process :

property – purchaser – profit – planning - project.

Property Secured:

2.6 Securing a property can take many forms. This can be a “clean purchase” where a price is agreed and a property transfers with no conditions attached. More often however, where the planning process is complex and evolving, the purchase will be agreed subject to planning. This may involve payment of an initial base price, with a subsequent top up, based upon enhancement in value resulting from securing planning consent. Other formats can involve the purchase of a time limited option, with either a one off or annual payment. In this scenario, no payment for the land is made, until there is a realisation of the final planning consent. A key point at this stage is that the price of the property purchase will be fixed which will subsequently influence the development viability appraisal (see section 3).

Purchaser Interested:

2.7 There must be a reasonable prospect of demand for the end use of a development. Attracting the interested purchaser is a critical element though it is crucial to gauge purchaser interest at an early stage. Without market intelligence on occupier demand and operator interest, most site concepts will fail and resources expended on site investigations, architects schemes etc could be in vain, if there is no prospect of an onward sale of the developed asset at the end of the process. Most developers have a property agent to provide up to date opinion on market activity and to canvass interest in the project.

Profit Proven:

2.8 The business sense in securing a property and assessing purchaser interest will only be proven if the price paid by the eventual end user outweighs the set up costs. This is the cost of securing the property and all the other costs associated with preparing that property, running the basic concept through the planning process (see section 3) and completing the development.

Planning Prospects:

2.9 Not all property transactions require involvement in the planning process. However, where the property or the land in question is subject to change that change usually has to be ratified by the planning process. It is therefore essential to take an early view on the prospects of planning consent for the changes envisaged in the development concept.

2.10 The planning system in Scotland is plan led so where a proposed development is contrary to the development plan for the area a higher risk is involved for developers. If the developer decides to proceed, then the essential risk will be with the chances of the planning application being approved. Development plan policy and development management issues tie into the developer's planning risk appraisal and ultimately, a final risk assessment has to be made on these planning prospects for any project. Figure 2 summarises the planning cross-checks.

Project Delivery:

2.11 Before committing to the considerable financial undertakings of construction, the developer has to review the price agreed for securing the property and whether purchasers are still interested in occupying the final development. Profit has to be proven and planning permission has to be secured in the form of a final consent. Only at this stage, when all the cross-checks have been made can the final project delivery be undertaken.

Figure 2 reviews the above process, but the various annotations also give the overlap of each element at each stage.

Figure 2 : Basic Development Process



3. Basic Development Appraisal Methods

- 3.1 Development appraisals can take many different forms and there are various guidebooks and best practice on techniques. However, the fundamentals of development appraisals can be identified.
- 3.2 There is no set professional code of conduct for development appraisal and the assessment of development viability. The RICS (Royal Institution of Chartered Surveyors) publish a Valuation Information Paper (VIP 12) that provides useful background on the valuation of development land.
- 3.3 Most developers will prepare Development Appraisals using computer software packages, with Circle Developer and Pro-Dev being two of the most popular. Some have their own bespoke in-house systems.

What is a Residual Valuation?

- 3.4 When first preparing a Development Appraisal, developers will be focussed on establishing what to pay for the site or building. To do this, they will prepare a residual valuation, which forms part of the development appraisal process.
- 3.5 In its simplest form, this involves the costs of construction, together with professional fees, finance costs and developer's profit being deducted from the anticipated sales proceeds of the completed development. The remaining (or residual) sum is what the developer can afford to pay for the site or building.

When will a Development Appraisal be prepared?

- 3.6 Development Appraisals will be carried-out at different stages of the development process. The appraisal will evolve over time as the initial estimates on variables change, for example sale prices are subject to the volatility of the market. These constant revisions add to the complexity.
- 3.7 The development process occurs over time. The length of time taken to achieve the final product is commonly referred to as the **development time lag**. During this market demand may vary significantly. It is therefore a significant consideration for developers and the reason for the constant revisions to the development appraisal.

What does a Development Appraisal look like?

- 3.8 Appraisals will vary according to the property in question and the software package utilised by the developer however, the fundamental elements that are assessed in parallel include:
- Site purchase costs (residual value).
 - Standard site development costs
 - Exceptional site development costs
 - Standard planning costs
 - Exceptional planning costs
 - All professional fee costs
 - Finance costs
 - Profit return.
 - Gross development value – or sales proceeds
- 3.9 The stack chart at Figure 3 will be used in later sections to illustrate the impact of planning processes on development viability. It identifies the typical headings, as noted above and which are explained individually later. For the avoidance of doubt, the component parts of the stack-chart are purely illustrative and do not represent the actual cost composition within the example appraisals.
- 3.10 The appraisal will be composed of a **Summary Page** as well as a **Cash flow**.
- 3.11 The Summary Page will provide an outline of the Gross Development Value (sales value) and show the various costs which have been deducted to arrive at the residual land value and profit level. Finance cost (interest) is one of the key costs and this will be calculated according to the timing assumptions outlined in the cash flow (i.e. how quickly do the houses sell or how soon can a tenant be found for the office building).
- 3.12 The cash flow sets out the detailed cash movements, including timing of cost outlays (expenditure) and revenue receipts (income). It is a critical tool in preparing a development appraisal and in reality will provide the primary focus for the developer.

FIGURE 3 • BASIC DEVELOPMENT VIABILITY APPRAISAL



What are the main data inputs of a Development Appraisal?

Gross Development Value or Sales Proceeds

3.13 This is the starting point for any appraisal. The value used is the market value of the proposed development assessed on the assumption that the development is complete as at the date of valuation in the market conditions prevailing at that date. This is widely referred to as the Gross Development Value (GDV) and is illustrated in a “maximum headroom” graphic in Figure 3.

3.14 Different types of development may use different approaches:

- For residential sales, the total of the values of the individual properties may be adopted.
- For an office block, there may be an additional assumption that the completed development is let and income producing rather than being vacant and available for sale or letting.
- For commercial property, a slightly more complex Investment Valuation (rent x yield) approach to establishing the value may be used.

Site Purchase Price / Land Value

3.15 The basic element of the appraisal is the costs of purchasing the property to be developed. Establishing what a developer can afford to pay for a site, the residual value, will be key. However, if the property has already been acquired, the site value will already be known and stated in the appraisal.

What happens when the land has been acquired or the price has already agreed?

3.16 Once a developer has acquired the property, the purchase price becomes a fixed entry within the development appraisal. Thereafter, the developer will be focussed on delivering the project on time and in accordance with the budget figures within the appraisal to ensure that the scheme is profitable.

Initial Site Costs

3.17 These are costs to be incurred before the main construction activity can proceed. They include:

- The cost of environmental works, for example remedial works to remove contamination, conservation, flood protection, waste management, noise abatement or emission control requirements. Such costs are normally presented in a site investigation (S.I.) report.

Ground improvement works needed before the main construction begins.

- Diversion of essential services and highway works and other off-site infrastructure costs.
- Site security management: health and safety, buildings and hoardings and access arrangements etc.
- Sustainability issues, including the provision of Sustainable Urban Drainage Schemes (SUDS) and site specific transport plans.
- Vacant possession costs, including legal interests in the subject site or adjacent property.

Costs Associated with Obtaining Planning Permission

3.18 Where there is no existing planning permission it is necessary to allow for the costs of obtaining that permission. This can range from influencing a development plan allocation to a final detailed planning permission. Where a proposal is in line with the development plan, developers can anticipate planning costs more accurately based on a reasonable assessment of policy implications, for example public consultation, design, environmental impact and transportation.

3.19 Further costs may arise due to the circumstances of the specific proposal for example, retail assessment, road access, transportation enhancements, sewerage facilities and other key elements of infrastructure which would be considered as standard planning costs. Clear, concise and up to date planning policy guidance is invaluable at this stage.

3.20 Planning agreement (section 75 legal agreements) costs must also be considered. The legal obligations usually, but not always, are deliverable on site but may include contributions to wider infrastructure, such as highways, education, community facilities, affordable housing or public transport. The timing of these payments will be crucial to viability.

3.21 Statutory and regulatory consents may also incur significant costs. These could include:

- Listed building consents,
- Archaeological surveys or digs,
- Environmental protection during demolition and construction.

3.22 For larger schemes, the costs involved in preparing to submit a planning application can be substantial, for example a proposal for 100 private houses could be around £400,000. This includes professional fees for architects, lawyers, site investigations etc.

Exceptional Planning Costs

- 3.23 Linked to the above is the incidence of unexpected costs associated with planning. Exceptional planning costs can arise from poor quality applications being submitted, a late response from a consultee, requiring technical inputs on unexpected additional infrastructure, or extra requirements for mitigation of built or natural heritage impacts. Such matters add **time** to the process, which can profoundly increase interest and other finance charges and professional fees.
- 3.24 Where the developer anticipates that the scheme may be contentious, allowances may be made for the potential additional costs, including delays caused by fresh rounds of consultation, amended plans, extra environmental appraisals, committee deferrals at decision stage or ultimately appeals and/or inquiries. However, the timescales involved can never be truly established until formal discussions begin and this uncertainty carries risk.
- 3.25 The final negotiation of many planning consents in recent years has involved requests for financial contributions to matters other than the normal infrastructure costs. This might include the likes of affordable housing units, contributions to the construction of local schools and other community facilities and services. A key aspect of planning contributions in recent years has been the added frustration of late decisions on these elements. Often a planning application reaches a “minded to approve” stage subject to conditions or obligations and this adds delay and cost uncertainty at a late stage.
- 3.26 The key phrases above are “unforeseen or unexpected”. Ideally a clear policy indication in the development plan or supplementary guidance can pre-empt many of the unexpected elements. Early answers with clear assurances on site constraints, and more importantly viable solutions assist the developer’s assessment of risk as early as possible in the process.

Development Costs

- 3.27 For any development, a critical influence on its viability will be the cost of preparing the surface of the site for development and the contract cost of final construction. A reasonably accurate estimation of the building costs at the valuation date is a major component in a residual valuation.
- 3.28 Development Appraisals are very sensitive to variations in the estimated costs however, the accuracy with which costs can be assessed may vary greatly according to the specific site characteristics for example the intention to retain specific structures.

- 3.29 The choice of procurement route imposes differing responsibilities. Fixed price contracts are only fixed to the extent of the works outlined in the contract. It allows for inflation and amendments can be made if variations to the specification are made.
- 3.30 In all cases the inclusion of a contingency allowance to cater for the unexpected is essential. The amount of this is usually reflected as a percentage of the building contract sum and is dependent upon the nature of the development, the procurement method and the perceived accuracy of the information obtained.

Exceptional Site Development Costs (Abnormal Costs)

- 3.31 There can be much debate about the threshold between “standard” and “exceptional” site costs. However, the typical approach to Development Appraisal includes provision for unexpected costs not in the original appraisal. This might include an unusual sewerage connection facility, high levels of site contamination and the need for extensive remedial works, flooding, site boundary and stabilisation works (particularly if there is historical mineral working). These exceptional site costs, or “abnormals” sometimes arise late in the process, inflating costs and adding to delay.

Professional Fees and Expenses Costs

- 3.32 The incidence of fees and expenses can vary significantly according to the size and complexity of the development. The **development team** normally includes:
- a planning consultant
 - an environmental contractor
 - an architect
 - a quantity surveyor
 - a valuation surveyor
 - a civil and / or structural engineer
 - specialist services may be supplied as appropriate by mechanical and electrical engineers, landscape architects, traffic engineers, acoustic consultants, project managers, health and safety and other disciplines, depending on the nature of the development;
- 3.33 The following items may also need consideration:
- Legal advice and representation at any stage of the project.
 - Lettings and sales expenses: where the development is not pre-sold, or fully pre-let as a single unit expenses may include incentives, promotion

costs and agents commissions. The costs of creating show houses in a residential development may also be appropriate.

- Rent-free periods, whether as an incentive or recognising the tenant's fitting out period.
- Costs related to the raising of development finance, for example the lender's surveyors and legal fees.
- In some cases the prospective tenant / purchaser may incur fees on monitoring the development and these may have to be reflected as an expense where they would normally be incurred by the developer.

Interest or Finance Costs

- 3.34 Most development projects are funded from interest paying borrowings that are highly sensitive to timescales and risks. Interest arises on land acquisition and development costs. The rate of interest reflects levels in the market for the type of scheme involved. It is either paid when due or deferred (rolled up) throughout the projected programme. Conventionally the interest is compounded, either quarterly or annually in line with the current market practice. Delay, added complications, or shifts in the money markets, can all therefore have a profound impact on finance costs.
- 3.35 Development Appraisals generally assume that projects are fully funded by borrowing money. This is often referred to as 100% gearing. In some instances, where the funder has provided only part of the finance (say 70%) and the developer has used his own funds for the balance (30%), the appraisal may simply show interest costs on the borrowed sums (70% geared).
- 3.35 It is common in Development Appraisals for the interest costs to reflect all of the costs as the developer will reflect the opportunity costs of the funds provided internally. Normally interest is treated as a development cost up to the assumed letting date of the last unit, unless a forward sale agreement dictates otherwise. For residential developments, sales of individual units may occur at various stages during the development and appropriate assumptions have to be made regarding cash flow, both inward and outward. The approximate timings for the pre-construction, principal construction and post construction periods have to be determined.

Developer's Profit

- 3.36 The nature of the development and prevailing practice in the market for the sector influences the target profit margin, or rate of return. This varies for each development. Commercial developers tend to seek a return on cost, usually expressed as a percentage of the total development cost. The residential sector seeks a return on the Gross Development Value, commonly referred to as the sales margin.
- 3.37 Sometimes other criteria are adopted. These include:
- Initial yield on cost: The net rental return calculated as the initial full annual rental on completion of letting, expressed as a percentage of the total development cost. This criterion may reveal whether the developer could service a long-term mortgage loan or for evaluating the effect of the development scheme on the company profit and loss account.
 - Discounted Cash Flow (DCF) methods: The income stream is projected with explicit assumptions about rental growth and discounted back to a net present value (NPV) using an appropriate discount rate.
- 3.38 It is difficult to specify the appropriate level of profit to be assumed in appraisals as market requirements vary from project to project and from time to time. However, for commercial schemes, typical profit levels on costs can vary between 10 and 25%, depending upon the investment return requirements and the finance costs and many other factors associated with development appraisal. For residential schemes, developers will often look for a profit margin in excess of 12.50% - 15% (net of overheads – see later).

Example : Residential Development Appraisal

- 3.39 This following example seeks to establish how much to offer to purchase a piece of land for the development of 100 private houses. For simplicity, it is assumed that the affordable housing requirement is cost / revenue neutral and is being dealt with by providing land to be developed by a housing association adjacent to the private units. The following table shows the key assumptions we have made, with the Development Appraisal Summary Page following thereafter.

Residential Development Example - Assumptions

Description	Assumption
Revenue Assumptions	
Sale of 50 Detached Houses at £250,000 each	£12,500,000
Sale of 50 Semi-Detached Houses at £180,000 each	£9,000,000
Total Sales or Gross Development Value	£21,500,000
Timing Assumptions	
Total Development Period	48 Months
Development Commences	Month 6
Build period	35 Months
Sales Commence	Month 13
Sales Volume (i.e. how often do we sell a house)	Average of 3.5 per month
Borrowing Costs	
Interest Rate	6.50%
Profit Levels	
Target Developers Return on Sales	18.74%

Residential Development Example – Appraisal

REVENUE			
4 Bed Detached House	50 units at 250,000.00 ea.		12,500,000
3 Bed Semi-detached Houses	50 units at 180,000.00 ea.		9,000,000
			REVENUE
			21,500,000
COSTS			
Site Value			5,000,000
Site Stamp Duty	at 4.00%	200,000	
Site Legal Fees	at 0.75%	37,500	
Site Agency Fees	at 1.00%	50,000	
			Site Costs
			5,287,500
Planning Fees		50,000	
Site Investigation		30,000	
Traffic Impact Assessment		15,000	
Archaeological Works		20,000	
Market Intelligence Reports		15,000	
Planning Obligation Payments		1,500,000	
			Initial Payments
			1,630,000
Groundworks		190,000	
House build Construction		4,850,000	
Infrastructure		830,000	
Externals		865,000	
Prelims		1,250,000	
Contingency	at 2.50%	199,625	
Professional Fees	at 7.50%	598,875	
			Build Costs
			8,783,500
Marketing Of Scheme		600,000	
Legal Fees From House Sales		75,000	
			End Payments
			675,000
INTEREST	(See CASH FLOW)		1,095,204
6.50% pa	on Debt charged Quarterly and compounded Quarterly		
PROFIT	4,028,796	COSTS	17,471,204
PROFIT/SALE	18.74%		

How much can the developer offer to acquire the land?

- 3.40 Using the assumptions as to sales, costs and timing outlined above, the residual land value that the developer could offer would be around £5,000,000. Although it is placed as a top entry in the sheet, it is the end or residual result of the appraisal. Some developers will take different views as to some of the variables outlined above, such as projected sale prices or profit levels with a view to securing the site and this is the reason for the many varied bids when sites are offered for sale.

Residential Developer Overheads

- 3.41 Many residential developers seek to cover their overheads for any of the key services that are part of the development process. Some developers will have an additional cost entry relating to overheads, which are often expressed as a percentage of GDV. The level of overhead clearly varies according to each developer, but 5-6% is not uncommon.
- 3.42 Rather than an explicit cost entry, some developers seek to wrap up their overhead costs within their profit margin. Consequently in our example, the profit margin of 18.74% may appear high. However, had we assumed a 5% overhead margin, this would have reduced the profit level considerably.
- 3.43 Consequently, it is important to check whether profit margins quoted for residential schemes are net or gross of overheads.

Key Considerations on Profit Levels

- 3.44 For many, the profit (gross of overheads) generated from this example residential scheme may appear substantial. However, it is seen from the later sections how fragile profit can be but at this stage, the reader's attention is drawn to these key points:
- An examination of the cash flow reveals that at month 14 (May 2010) we have a maximum 'cash out' of £8,705,520. Hence in order to generate the profit, the developer has had to borrow and invest significant sums in the scheme.

- The cash flow balance in a residential appraisal tends to be negative for a considerable period and it is only in the latter stages of the scheme that the cash flow becomes positive. Indeed, in our example, the cash flow movements do not become positive until month 43 (October 2012). Hence it is almost four years into the scheme before the developer makes a profit. Over that time, the market can change markedly for better or worse.
- The total costs for our scheme are £17,471,204 which shows that to break even the average house sale needs to be £174,712. Our average projected sales are £215,000 (£21,500,000 divided by 100 units), which leaves a headroom of £40,288 per unit. Therefore, should the build costs increase, interest rates vary or sales levels decline, it is very easy for profit to evaporate and in severe cases be extinguished completely.

Example : Commercial Development Appraisal

- 3.55 This assumes the developer is contemplating a bid for a cleared development site which has detailed planning consent for a new multi-storey office building extending to 30,000 sq.ft (net).
- 3.56 It is important to note that for commercial property the construction costs are calculated by reference to the Gross Internal Area, whereas the rental value (and consequently the capital value) is calculated according to the Net Internal Area. The developer will therefore always aim to ensure that the gross to net floor ratio is as high as possible.
- 3.57 In this example a gross to net ratio of 85% has been assumed. Hence the net area is 85% of the gross area, which is commonly what developers will target in designing their office space.
- 3.58 The following table shows the key assumptions we have made, with the Development Appraisal Summary Page following thereafter.

How much can the developer offer to acquire the land?

- 3.59 Using the assumptions as to sales, costs and timing outlined above, the residual land value that the developer could offer would be around £1,000,000. Clearly, some developers will take different views as to some of the variables outlined above, such as projected sale prices or profit levels with a view to securing the site and this is the reasons for the many varied bids when sites are offered for sale.

Commercial Development Example - Assumptions

Description		Assumption
Revenue Assumptions		
Net Internal Floor Area		30,000 sq.ft
Rental Rate		£28.50 per sq.ft
Investment Yield		7.00%
Gross Development Value		£11,550,000
Expenditure		
Gross Internal Area	35,294 sq.ft	
Build Cost rate	£150 psf	
Build Costs (calculated on gross internal area)		£5,294,100
Tenant incentive: (18 months rent free)		£1,282,500
Timing Assumptions		
Total Development Period		36 Months
Development Commences		Month 6
Build period		18 Months
Building is let		Month 36
Building is Sold		Month 36
Borrowing Costs		
Interest Rate		6.50%
Profit Levels		
Target Developers Return on Cost		15%

Residential Development Example – Appraisal

REVENUE			
Let	30,000.00 sq-ft at 28.50 psf/pa	855,000	
Inv.Value-A	Net annual income	855,000	
	Capitalised at 7% Yield	12,214,286	
	Less Purchasers costs at 5.75%	664,134	11,550,152
(Net Income: 855,000)		REVENUE	11,550,152
COSTS			
Site Value		1,000,000	
Site Stamp Duty	at 4.00%	40,000	
Site Legal Fees	at 0.75%	7,500	
Site Agency Fees	at 1.00%	10,000	
		Site Costs	1,057,500
Site Investigation		25,000	
Planning Fees		40,000	
Planning Gain		180,000	
		Initial Payments	245,000
Construct	35,294.00 sq-ft at 150.00 psf	5,294,100	
Contingency	at 5.00%	264,705	
Professional Fees	at 10.00%	529,410	
		Build Costs	6,088,215
Letting Agents Fee	at 10.00%	85,500	
Letting Legal Fees	at 5.00%	42,750	
Invest.sale Agents Fee	at 1.00%	115,502	
Invest.sale Legal Fees	at 0.50%	57,751	
		Disposal Fees	301,502
Promotion		50,000	
Rent free period for tenant	18 Months Income	1,282,500	
		End Payments	1,332,500
INTEREST	(See CASH FLOW)		1,018,953
6.50% pa	on Debt charged Quarterly and compounded Quarterly		
PROFIT	1,506,482	COSTS	10,043,670
		PROFIT/COST	15.00%

4. SENSITIVITY ANALYSIS

- 4.1 Minor changes made to the variables in a development appraisal can have a disproportionate affect on the viability of a scheme. This section illustrates how volatile development appraisals can be by changing some of the assumptions made.
- 4.2 It is important to remember that any development appraisal is constantly evolving. Over time, it will be necessary to change key variables. These changes can include variations to build costs, timings of the development (which impacts on interest costs), legal agreements and even substantial changes to the scheme may be required to adapt to fluctuations in market conditions.
- 4.3 The following examples make changes to the previous residential example.

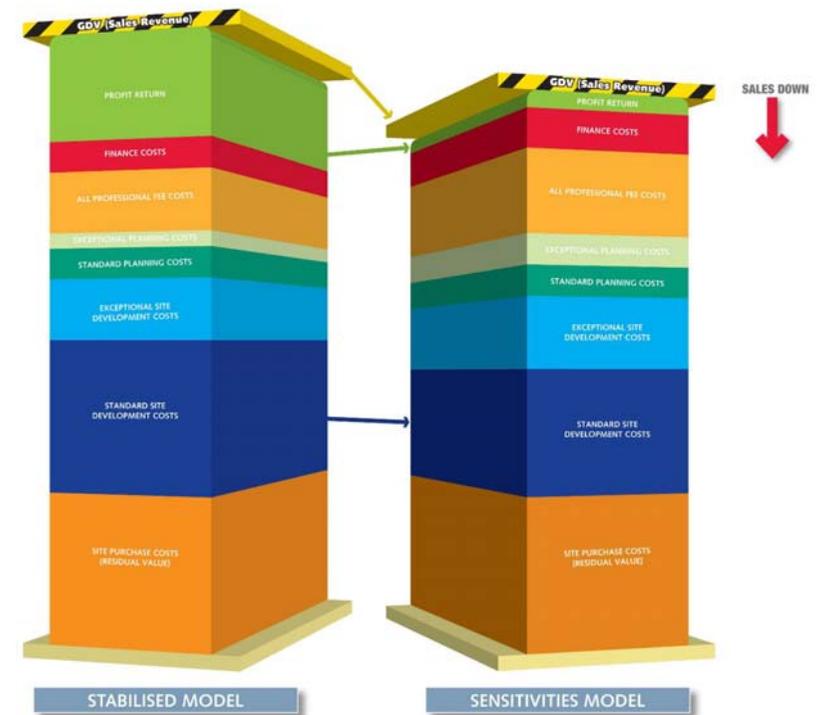
Variation 1: The developer has paid £5m for the land and following discussions with the Planning Authority, the proposed density is reduced to 90 houses.

What impact?

- 4.4 In this example, the sales proceeds will be reduced as there are fewer houses to sell. Whilst the development costs will also be reduced with the building of fewer houses, the costs are not always proportionately reduced as some of the costs (roads, drainage etc) may to some degree be fixed whether 90 units or more are developed.

Description	Base Case	Impact due to variation
Profit Level	£4.028m	£2.762m
% Reduction in Profit		-31.42%
Development Costs	£17.471m	£16.587m

- 4.5 Whilst the development costs have reduced with the building of fewer houses, the relative reduction is insufficient to offset the drop in sales income from ten fewer houses. Having already paid the £5m for the site, the developer cannot reduce the land value. Consequently, the impact of the 10% density reduction is a drop in profit amounting to £1.266m (£4.028m – £2.762m), which is a reduction of over 31% on the 'base' profit level.
- 4.6 The impact of this variation is illustrated in the graphic below, which shows the lower Gross Development Value, and the reduction in the standard development costs. These variations result in a reduced level of profit, hence the smaller green slice in the Sensitivities Model.



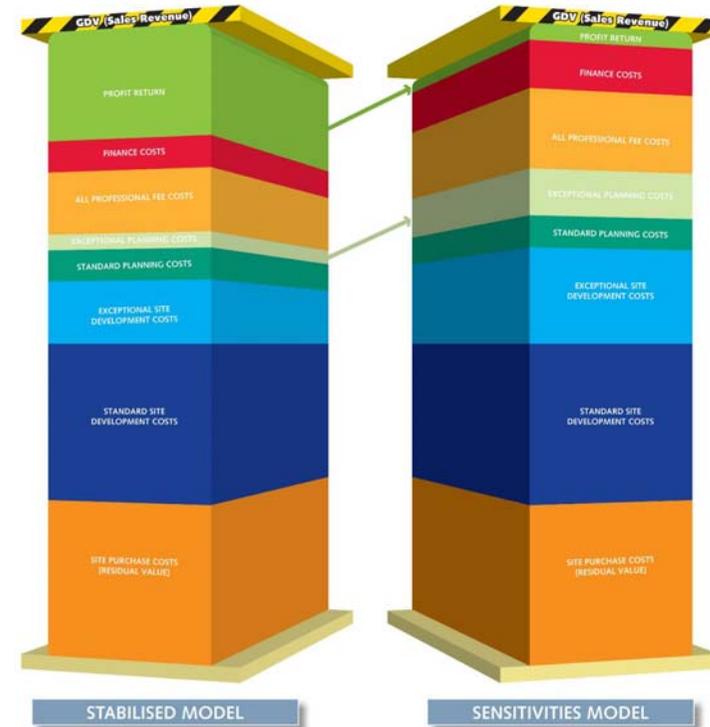
Variation 2: The Planning Authority requires higher quality materials for the completed development, and the Planning Gain contribution has increased by £500,000.

What impact?

- 4.7 The requirement for enhanced materials for the houses will clearly result in an increase in the build costs. Equally the increased costs of the planning contributions need to be reflected. These cost increases will create higher interest charges as the developer needs to borrow more money.
- 4.8 If the land has already been acquired these cost increases must be absorbed into the development appraisal as it is not possible to reduce the land value. Therefore unless costs savings can be made elsewhere, the impact is a reduction in profit levels. In many instances, this can result in the scheme becoming economically unviable so development does not occur.
- 4.9 In this example these relatively simple changes to the scheme result in a drop in profit of some £1.178m, down 29% on our base case.

Description	Base Case	Impact due to variation
Development Costs	£17.471m	£18.649m
Reflects 10% increase on build cost element and additional £500k in planning contributions		
Profit Level	£4.028m	£2.85m
%	18.74%	13.26%
Reduction in Profit		£1.178m (-29.24%)

- 4.10 In the graphic below the profit margin element is shown as being reduced in the Sensitivities Model due to the increase in the Exceptional Planning Costs. The increased costs could alternatively have been 'allocated' to one of the build cost entries but regardless of the category the effect of reducing the profit remains the same.



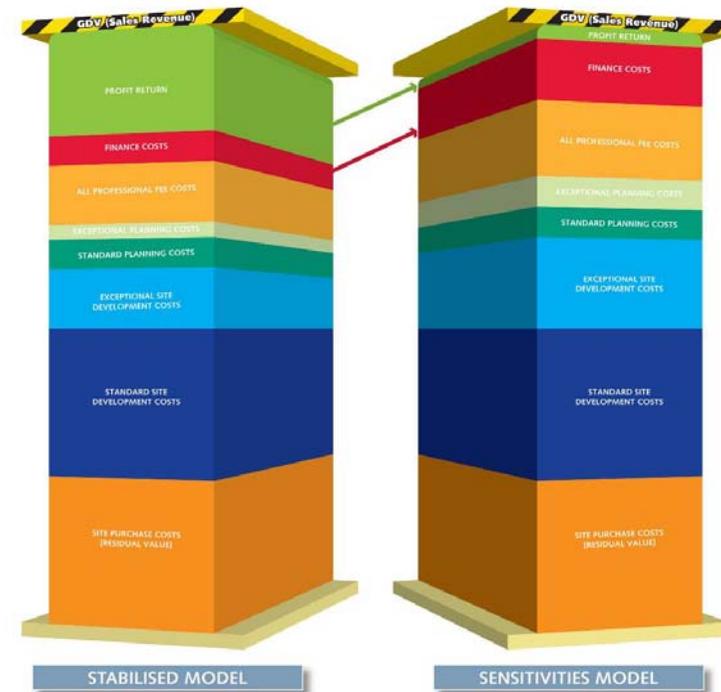
5. Timescale and Delay

- 5.1 No certainty can be assured at the outset of any development appraisal. As the scheme progresses, there is a continual need to cross check assumptions, inputs, costs and impacts on the end values. Even a healthy functioning economy and property development market will always carry risk associated with delay and uncertainty.
- 5.2 Time is a critical cost and delays for a developer can cause significant problems such as increased interest cost (i.e. the longer development takes the more interest is paid) as well as the completed development coming to market at the wrong time.
- 5.3 To illustrate the impact of timing changes, two examples have been provided based on the earlier appraisals with comment provided as the impact on the development appraisal.

Variation 3: The residential scheme has been delayed by nine months due to the need to procure survey X and concerns regarding the quality of the information submitted to the Planning Authority.

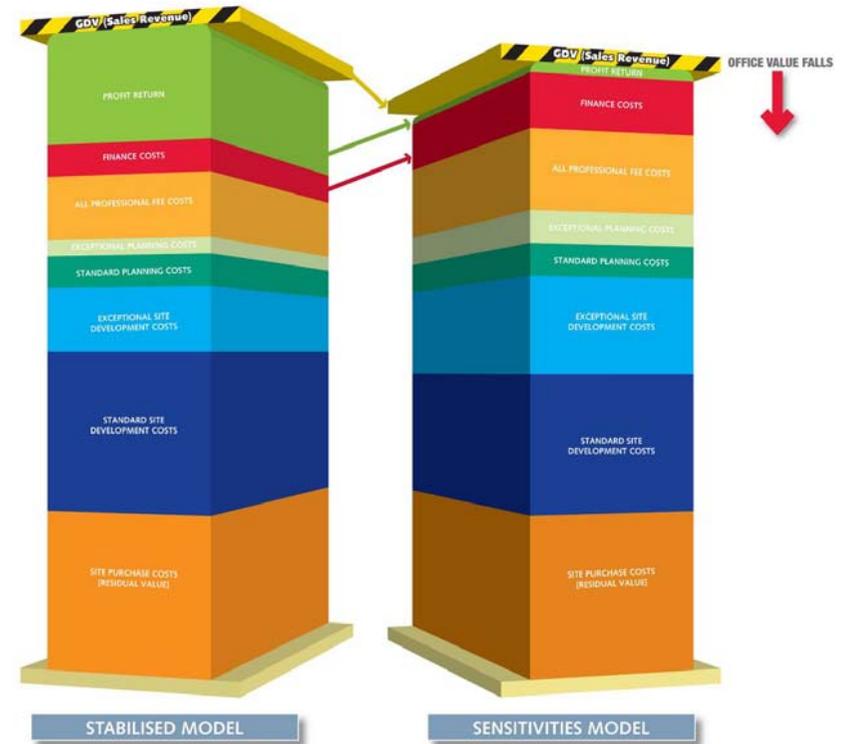
- 5.4 Under this assumption, the timescale for completing the development is extended, which has the impact of increasing the interest costs payable. By simply deferring the scheme nine months, the developers costs (interest etc) are increased. It takes commensurately longer to obtain sales proceeds but interest is still accruing on the costs expended to date, such as the land purchase and associated fees.
- 5.5 In the residential scheme therefore, a delay of nine months increases the interest cost from £1.095m to £1.462m, an increase of £367,000 (33.52%). Unless this costs increase can be offset against cost savings elsewhere, this £367,000 will be deducted from the developers profit and consequently has the effect of reducing the profit level from £4.028m to £3.651m. Therefore, the delay has cost the developer £377,000. The reason for the interest cost being £367,000 and the drop in profit being £377,000 is that a sum of £10,000 has also been included for the survey X.

Description	Base Case	Impact due to variation
Interest Costs	£1.095m	£1.462m
Increase in Interest Costs		£367k
Profit Level	£4.028m	£3.651m
Drop in Profit		£377k
Reduction in Profit		£1.178m (-29.24%)



Variation 4: The commercial office project has been delayed 18 months due to objections raised to the scheme and in that time, the value of the completed office building has fallen by around 10%.

- 5.6 This example illustrates the risks that a developer faces from changes in the market conditions when a scheme is delayed. This is the Development Time Lag and it illustrates of how difficult it can be for a developer to control the timescale of the project.
- 5.7 The impact in this instance is dramatic. The value of the completed office scheme has fallen by 10% from £11.55m to £10.43m and the delay has also increased the interest costs from £1.018m to £1.26m. Consequently the delay and 10% drop in value, has the effect of reducing the profit from £1.5m down to £297,579, an 80% reduction.
- 5.8 Our revised scheme now shows a profit on cost amounting to 2.94% and would be commercially *unviable*.
- 5.9 These changes are illustrated graphically opposite, with the Gross Development Value reduced, the finance costs increased. This has the effect of substantially reducing the profit level, hence the very small profit slice in the Sensitivities Model.



6. What Happens in a Market Downturn?

- 6.1 At the time of preparing this document (August 2009), the impact of the 'credit crunch' and global economic recession have had a profound impact on the UK property market and in particular upon residential and commercial development. The inability to obtain debt finance, coupled with the perilous nature of the respective markets has curtailed development activity.
- 6.2 It is therefore appropriate to provide a few worked examples illustrating what happens to the base Development Appraisals should the market experience a significant downturn.

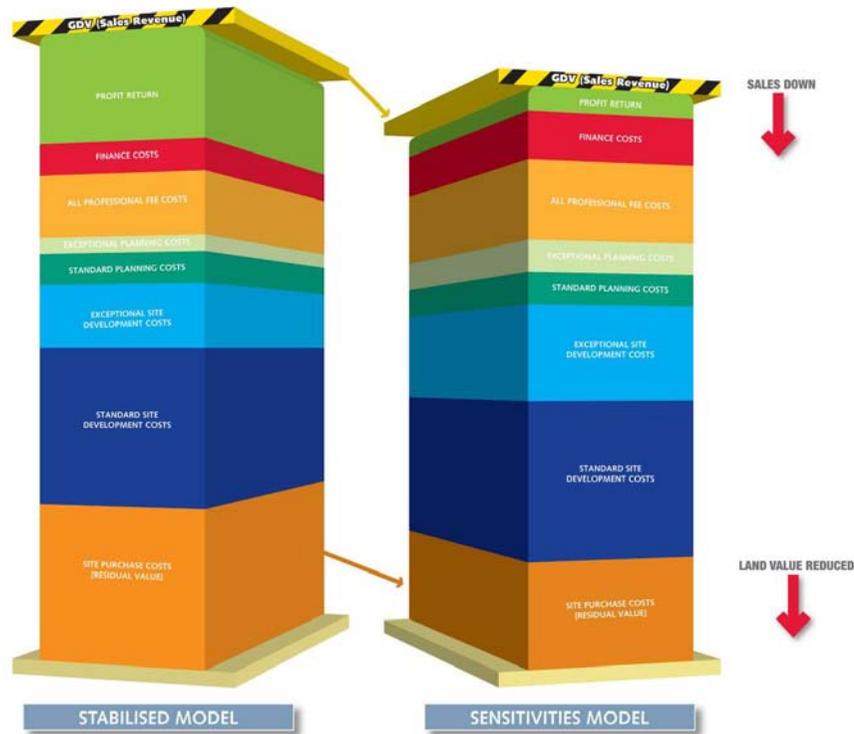
Variation 5 – In the residential example, sales prices have dropped by 20%, following the acquisition of land for £5m.

What impact?

- 6.3 The Gross Development Value has been reduced by 20%, due to the drop in the sale price of the detached houses from £250,000 to £200,000. Equally, the semi-detached houses are now worth £144,000 instead of £180,000. Overall the reduction in sales income amounts to £4.3m.
- 6.4 In the base example the total profit generated by the developer was £4.028m. However, following the drop in sales income the scheme now makes a loss of £640,638.
- 6.5 Having already acquired the land, the developer cannot renegotiate the land purchase so the changes from a downturn in the market impact directly on the profit level. The developer may mitigate matters by slowing the phasing of the scheme, the likelihood is that development would not start or may be put on hold if work had begun.
- 6.6 In the stack-chart opposite illustrates the changes due to the fall in the sales income, combined with a commensurate increase in the finance costs. This effectively extinguishes all of the developer's profit.



6.7 If the developer had been able to renegotiate the land price, then in this example, assuming a similar profit margin of 18.74% as per the base appraisal, then the land value would drop from £5m to £2.1m. Hence, a 20% drop in the Gross Development Value would result in a reduction in land value of 58%. The stack-chart shows the land price being compressed at the bottom of the chart due to the fall in the GDV.



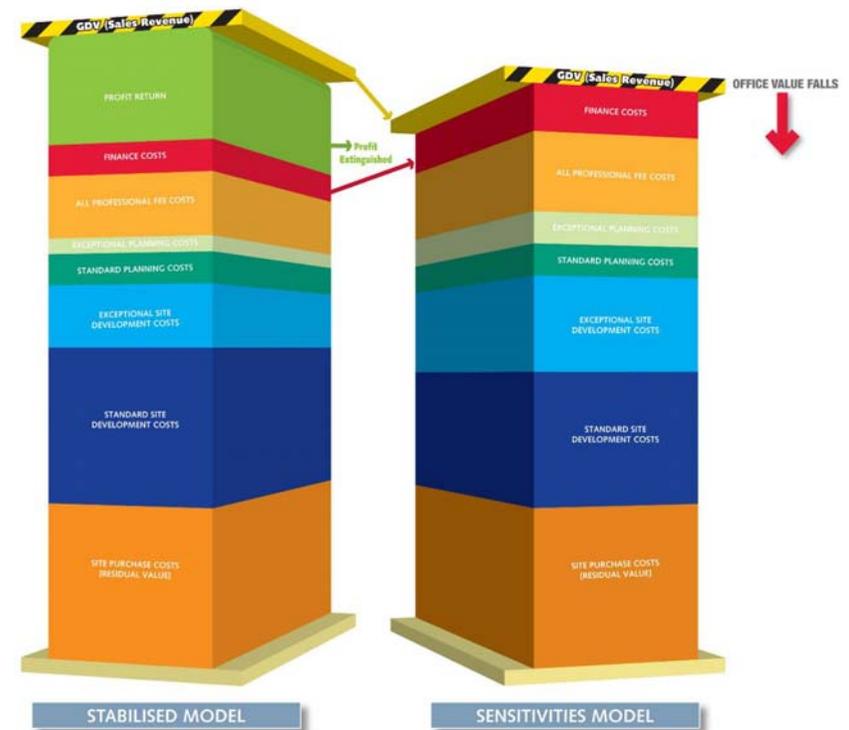
6.8 This exponential impact caused by a fall in the Gross Development Value is a major concern to developers. This principle applies to all forms of development and is particularly a problem in a falling market, as new schemes quickly become commercially unviable. For those schemes that have already commenced, lenders tend to mothball schemes to mitigate their exposure which results in new developments around our towns and cities being left uncompleted.

Variation 6 – In the commercial office example, following acquisition of the site, the value of the completed office building has fallen by 25%

What impact?

6.9 The Gross Development Value has been reduced by 25% due to the fall in the value of the office building. The consequence of this is that the profit level of £1.5m has been extinguished and the scheme actually makes a loss of £1.163m. Clearly therefore the scheme would not progress.

6.10 If it were possible to renegotiate the land price, the land value would theoretically become negative as the scheme simply could not deliver a 15% return on cost, even if the developer only had to pay £1 for the site. In reality however, someone would pay something for the site and perhaps take a long term view on redevelopment at a later date. The stack-chart illustrates the impact of these changes opposite.



- 6.11 The previous two examples illustrate the volatility of development appraisals and just how quickly a profitable development can become loss making. It is therefore important to consider these risks when considering the level of profit that can be generated.
- 6.12 In summary, fluctuations in market conditions are inevitable and something which developers constantly monitor and reflect within their development appraisals. However, where a significant downturn is experienced, this can have a catastrophic impact of all forms of development.

Availability of Finance

- 6.13 The other key consideration that readers should consider is the importance of the availability of debt finance. Most development schemes utilise debt finance and in severe downturns (such as 2009) development finance can be difficult to obtain which reduces new development.

7. Summary

- 7.1 Front line planning decision making is where critical negotiations and decisions are made, which can make or break a development project. A good development manager and an expert in development appraisal and market movements should take matters such as delay, unforeseen issues, and market peaks and troughs as part of their business risk and their skill sets should be ready for these risks. However, it is unfair to expect that any variant can be absorbed on every scheme.
- 7.2 The aim of this guide is to raise awareness and increase understanding amongst planners, elected members and the general public of project and risk management using the Development Appraisal tool. Equally, developers must develop a greater understanding of planning policies and their context.
- 7.3 The current context of planning modernisation and economic downturn emphasises planning's role of enabling and facilitating development, with a greater understanding of development viability.