

Development, Viability & Planning

A basic guide for planners and regenerators.

March 2014

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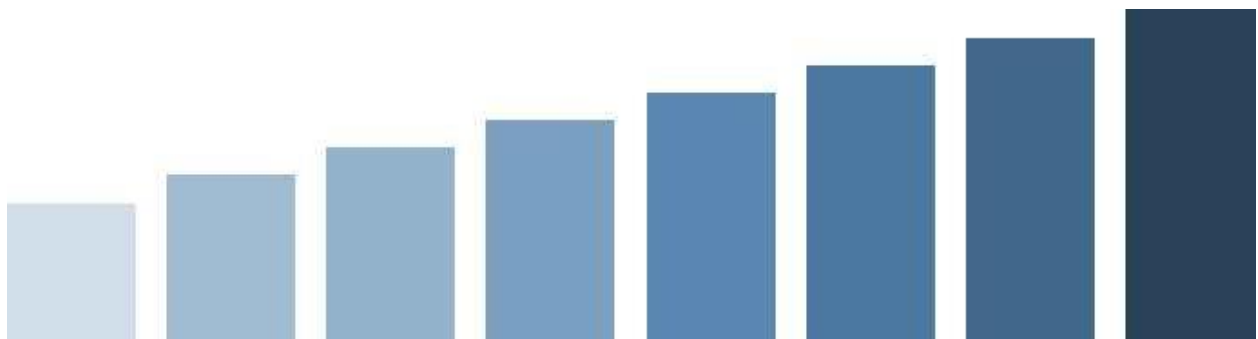


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Introductions

This 2014 version of this guide complements the Royal Town Planning Institute's online CPD course on development viability but can be used independently of it.

First, I would like to introduce you. You are bright, dynamic, good looking and have a life. You have an interest in improving places; but while you realise that the development business is central to that, the way it works seems to be clouded in mystery. The aim of this guide and the course as a whole is to dispel at least some of those clouds and to explain the commercial economics involved. Sadly, you cannot achieve enlightenment simply by learning how to do the financial arithmetic; you need a deeper understanding of the financial hydraulics that underpin it. Nonetheless, I introduce the standard approaches to the appraisal of projects and how these can be used and abused in a planning context, together with some contextual and factual information that you might find useful such as where to find the information needed to estimate values and costs.

Now I must introduce myself. I confess that I qualified as a Town Planner but never practiced and requalified as a Chartered Surveyor before working in senior management in the development business through the 1980's and 1990's. In 1997 I started a solo consultancy specialising in planning contributions, viability and infrastructure studies together with delivery strategies for masterplans; mostly as a specialist sub-contractor to the major practices. Now I am retired so have no vested interests left to pursue! If you are interested, you will find more than you want to know at my website www.regenerate.co.uk. Links from the site will take you to some of the material referred to here together with additions, updates and whatnot.

This is not intended to be a definitive description of property development or an exhaustive DIY guide to appraisals and viability studies. It is not long enough for that. There are textbooks; but most are written for surveying students by people without any direct experience of development and in my view are too theoretical and fail to address the issues that specifically concern planners. The only claim that I will make for this guide is that it has been written for a specific audience! I have tried to keep it brief and have sacrificed some of the detail required to make sense of particular situations and issues. If your inner geek wants more, there are some further reading suggestions at the end.

If you complete the online course you should have a better idea of how the development business works and should be able to:

- ◆ Undertake appraisals that are adequate to support wider policy conclusions such as land allocation studies.
- ◆ Be better equipped to interrogate the appraisals submitted by developers in support of planning applications and to play the role of ruthless interrogator or empathetic and understanding partner!

But please do not expect to be able to appraise a specific development yourself starting from scratch and with any meaningful degree of accuracy. That is more difficult than you might think and professional valuers with many years of experience often fail to achieve it for reasons that will be explained.

This is unashamedly a personal and idiosyncratic account based on personal experience and practice and I must now apologise now for any shortcomings that result and ask you not to hold the Royal Town Planning Institute responsible! Use it as you will but please acknowledge my work where it is appropriate to do so.

This version of the Guide comes at a time when the development business appears to be emerging from the prolonged hangover that followed credit crunch into a new world in which the unpopularity of developers has been eclipsed by the bankers and viability issues are more prominent both in plan making and development control. As ever, change is the only constant, so my intention is to update this guide periodically. In that context I would be grateful for any feedback, correction and additional information.

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1. Background

Not all developers are the same. Within the business, there are some fundamental distinctions. The first is between residential developers and commercial developers. This is embodied in the share price listing section in the Financial Times where you will find commercial developers listed under 'Real Estate' while residential developers are listed under 'Household Services'.

The major housebuilders are creating large numbers of small buildings. When they develop a large site they don't build all the houses in one go but aim to build a few, sell a few and then build a few more. This reduces the risks that they run and minimises the amount of their precious capital tied up in the scheme at any point in time. Cash flow is crucial. In contrast commercial developers make substantial investments in individual buildings. Bigger projects and longer time scales demand more capital while making it difficult to predict costs and the price that will be obtained once the building is complete. Risk management is crucial.

It is crucial that you understand these risks because they drive the business as much as the quest for profit. If you could find a copy of the same Financial Times share price listings from the time when I started in the business, thirty years ago, you would find that all of the 'pure' commercial developers have disappeared, mostly in the cyclical downturns that plague the business. In contrast, major housebuilders don't tend to go bust as often. A similar comparison of lists of housebuilders from then and now would also reveal many absentees but mainly as a result of takeovers rather than collapse. Larger housebuilders often gobble up smaller firms for their land holdings.

Culturally, residential developers pay more attention to process issues such as programme and cash flow management. Many come from a construction background. A lot of their project management is carried on 'in house'. In contrast commercial development is sometimes seen as being more glamorous with those involved being more focused on 'the deal' and outsourcing a lot of the tasks involved in implementation. It is unsurprising that many commercial developers have a background in the major commercial estate agencies.

As you would expect there are a mixture of characters in most firms. At the highest level there are plenty of accountants with the very occasional architect or lawyer together with people who have no discernible qualification beyond a keen appreciation of the opportunities and hazards on the road to the villa and yacht. And finally there are many individuals who confound the stereotypes. If you want to be a developer it helps if you have a nose for a deal, an instinctive grasp of how plans relate to the three dimensional realities of the built environment, a talent for networking and a good grasp of financial hydraulics and legal documentation. Good judgement and a bucket of luck are also important. I have never met anyone who scored highly on all or even most of these criteria.

The size of the company makes a big difference to the way in which it does business. Some of the larger firms have to work very hard to persuade anybody that they are nimble and entrepreneurial. On the other hand, small firms often have to struggle to convince people that they can actually deliver on their undertakings. Many people assume that the smaller

companies will be more adventurous. This cannot be taken for granted. The larger companies, even the more arthritic ones, can experiment a bit, because they (and their bankers) know that a single mistake will not sink the company. But all developers are acutely aware that they are in a risky business in which mistakes can be very expensive and that they need to constantly trim their sails to the wind.

Perhaps the major practical distinction between larger firms and smaller firms is the way in which they finance their projects. Generally smaller firms are more dependent on borrowed money than larger firms and commercial developers are more highly geared than housebuilders. This is important because bankers are often unwilling to take a long view and to back novel approaches especially when the security for their loan is limited and when for reasons of their own they are restricting lending. There are also important differences in the commercial sector between the (usually larger) development companies who sometimes retain their buildings as investments, and those that simply aim to sell them as soon as is reasonably possible.

Notwithstanding the issue of size, this distinction between residential and commercial development is paramount. Many texts books use commercial development as the primary model when explaining appraisal techniques. But in most places house building is the most common development and, critically, the main provider of planning gain. And most houses are built by the large quoted housebuilders. So in what follows I focus first on the large housebuilders before covering the commercial sector. But first I must take you on a quick tour of some of the basic economics and commercial concepts involved.

2. The Basics

If you take an interest in business or are an active investor, skip this next section. It will be too basic for you.

At the heart of development lies the simple mechanism of buying land, constructing a building and then selling it for more than it cost. In real life, any project like this is instantly complicated by:

- ◆ The way the project is financed.
- ◆ Timing and cash flow issues.
- ◆ The risks involved

2.1 AN EXAMPLE

Scratch & Sniff are small time commercial developers. Their last scheme was sold for £50,000 more than it cost. We will call this difference the 'margin' rather than 'profit' for reasons that will be explained in a minute but in practice the terms are used loosely and interchangeably. In this case, it is the margin over the cost of the scheme. In real life some property people use the margin over value as the measure, which would be regarded as odd in the wider world of business.

Are you impressed by this margin? You shouldn't be, because you don't have enough information to make a judgement. If they had only invested £1,000 in the scheme it would indeed be an impressive return. On the other hand, if they had invested £10,000,000 it would be pitiful.

I will expand the example a little. Let's say that Scratch & Sniff buy a plot of land for £50,000. They then spend another £150,000 on constructing a small office scheme which they sell for £250,000. On the face of it that looks straightforward. Their total outlay is £200,000 and their receipts are £250,000, giving them a margin of receipts over costs of £50,000 equivalent to 25% of their outlay. You might regard this as handsome, but we need to flesh out the example.

2.2 GEARING

Now let us assume that Scratch and Sniff use their own money to buy the land, and then get a loan from a bank to pay for the construction work on the basis that both the loan and the accumulated interest would be paid back once the building has been sold. This is a common arrangement. In our example the bank treats Scratch & Sniff as a bad risk, more likely to invest in malodorous aftershave than good professional advice, and charges them 10% interest per annum on the loan. The project takes a year from the commencement of construction, which is the point at which they start to draw down the bank loan in order to pay the contractors, to the sale of the building when is repaid.

Their sums might now look like this:

Receipts :	£ 250,000
Less Outgoings	
Cost of Land	£ 50,000
Construction Cost	£ 150,000
Interest (1 year loan of £150,000 @ 10%)	£ 15,000 ¹
Total Project Costs	£ 215,000
Gross Margin	£35,000

Notice that the gross margin on the scheme as a whole has fallen from the £50,000 in the simple example in Section 2.1 to £35,000 here, because we have factored in the extra cost of the interest on the loan. But on the other hand we now understand that in fact Scratch & Sniff only invested £50,000 of their own money to buy the land and that the finance for the construction costs came from the bank. So at the end of scheme the £35,000 margin represents a 70% return on their initial investment of £50,000 in buying the site.

Clearly that is even better than the 25% margin in Section 2.1. This example shows how the use of loans or 'gearing' magnifies percentage gains. This concept is familiar to most home owners. If you buy a house for £100,000 with a £80,000 mortgage, your share or 'equity' is worth £20,000. If the value of the house goes up by 10% or £10,000, the value of your share has increased from £20,000 to £30,000 i.e. by 50%. So a small percentage increase in the value of the house has led to a much bigger percentage interest in the value of your share in it after taking the bank's mortgage into account. Conversely, if house prices drop then your share might become worthless and you might even glimpse that fifth horseman of the British apocalypse – negative equity.

2.3 TIMING

Timing is critical because the key to a successful development isn't really the overall margin but the annual return on the money invested. After all, you judge a savings account by the annual interest rate on offer and not by the actual amount of money that you might get back. For instance, at the moment if you had £1000 to save you might be delighted to get interest of £50 after a year because that would be equivalent to a return of 5% p.a. If on the other hand it took 5 years to earn that £50 your annual return would be less than 1% p.a. which you might reasonably regard as a pittance.

¹ In practice the financing calculation would be much more complicated. Loans would usually be drawn down as expenditure is incurred thus cutting the overall cost of borrowing. On the other hand the bank would charge fees as well as interest.

In the example in 2.2 above Scratch & Sniff bought the land at the outset of the building works and sold the building when it was completed. It was assumed that the process took a year so the £35,000 margin on cost represented an annual return of 70% on their £50,000 investment in the site. But suppose it took a year just to get planning permission so that the sale of the building was delayed until the end of the second year of the project. In that case the £35,000 margin on profit would have taken twice as long to earn, so the annual return on their money would have halved. It would be even worse if the building was constructed and then the sale was delayed because this would add another year's interest on the loan to the costs. This illustrates that timing or 'cash flow' is critical and that delays to the project can decimate the annual return on the money invested.

2.4 RISK

The point has already been made that risk is a critical factor in the development business. Scratch & Sniff will be investing their own time and skills in the project and are running the risk of squandering those as well as losing their money. Section 2.3 above shows what happens to the returns when a project is delayed. An equally large risk lies in overestimating receipts or underestimating costs. Let us go back to the example in 2.2 above but assume that:

- Construction costs are 5% higher and are met by increasing the bank loan
- The building sells for 5% less than expected
- In a difficult market it takes a year after completion to sell it.

The sums would then look like this:

Receipts :	£ 237,500
Less Outgoings	
Cost of Land	£ 50,000
Construction Cost	£ 157,500
Interest (2 year loan of £157,500 @ 10%)	£ 31,500
Total Project Costs	£ 239,000
Margin:	£ 1,500 <u>LOSS</u>

In practice, a 5% estimating error is common² not least because the developer's knowledge of the market is imperfect; prices can vary over time and at the outset a scheme is not fully designed so cost estimates are provisional. Timing is a factor here too. Quite simply, as the timescale for the project increases, the crystal ball gets cloudier as the increasing likelihood of changing market conditions or unforeseen events makes it more difficult to confidently predict receipts and costs.

² In fact that is quite precise. The margin of error will often be higher. See Section 7.6

This illustrates that while the returns from development can be good, the risk of losing your shirt is horribly real. An adage among speculative developers is that one scheme in three will turn out to be a lemon, another will cover its costs, and the third will be a pearl. The ratio of pearls to lemons rises during a market upswing and sinks on the way into a recession.

Usual risks include:

- ◆ Overestimating what the completed development might be worth or how long it will take to let and / or sell it, perhaps caused by a lack of information on which to base a judgement, the result of unforeseeable market movements during the project period or bad luck.
- ◆ Underestimating costs, missing some costs altogether, or unforeseen events.
- ◆ Paying too much for the site. This often happens in competitive situations in which the winner is usually the party with an over-optimistic view of the market and of the chances of securing an advantageous planning permission³.
- ◆ Delays, which can be costly in themselves especially once a building contractor is involved, but which also reduce the annual return on capital by extending the period before the returns are achieved.

Later sections cover these risks in more detail together with others that are specific to various types of schemes.

When considering the risks and rewards it is useful to imagine that the money to be invested involved is your own. (It might well be. For instance, your pension fund almost certainly holds some investments in property and housebuilding companies). You will seek a higher reward if you are hazarding your hard earned cash rather than leaving it in a Post Office account. Longer term projects and highly geared projects are inherently more risky. What return would you want before risking your savings in a speculative office development scheme?

Most developers will target a return of around 15% per annum or more on the total cost of a project with a wide range of difference depending on individual styles and the circumstances. The figure will be lower when gearing is low and risks can be reduced, perhaps by pre-sales or other means. You might care to think of this return as being similar to the interest rate charged on a credit card. As you know the cost of repaying credit card bills can spiral if regular payments are not made. A delayed payment ends up as a much bigger payment. In the same way a developer will need a much higher return if he has to wait for it.

³

See Section 6.1. on ‘the winner’s curse’

2.5 THE 'YIELD'

The concept of the 'yield' is crucial to understanding the dynamics of investment in commercial property. Many planners struggle to grasp it so I will cover it now before we move on to more detailed stuff.

At its simplest it is just the rental return as a percentage of the money invested expressed as a percentage. So if a building is rented to a tenant for £10,000 a year and an investor buys it for £100,000, the yield is 10%. So where is the complication? Again, it is easier if you imagine that your own money is involved. When you pick a savings account one of the factors you take into account is the rate of interest payable. The problems faced by the banks in recent years suggest that you might also want reassurance that you can actually get your money back when you want it. Some years ago, the Icelandic banks paid high interest rates with the aim of attracting savers who would otherwise have preferred more substantial and familiar banks. You will recall the outcome. The risks need to be considered alongside the rewards.

The yield on a property investment plays the same role with a higher yield sometimes offered to lure you into what is perceived as a more risky investment. The market often regards government bonds (i.e. loans to the Government known in the UK as gilts) as a benchmark. These are supposedly low risk investments so you might expect them to give you a relatively low return but which allow you can sleep soundly at night knowing that the Chancellor would never imperil the public finances to the point at which the Government couldn't pay its debts! If on the other hand you decided to invest in the three legged nag in the 2 p.m. race at Epsom, you would be aiming for a high 'yield' in the form of winnings to compensate for the probability of glorious failure.

The risks in investing in rented property are not so high but nonetheless need considering.

- ◆ The tenant. Is it a strong tenant? Would you rather have Tesco or Scratch & Sniff Limited. The latter might already be eyeing up a chance to abscond to a small tropical paradise without an extradition treaty with the UK. In contrast Tesco are unlikely to go bust and fail to pay the rent. And is it a short lease or a long lease? That security is something that you would normally expect to pay for by accepting a lower initial return on your investment.
- ◆ The area. Is the location suitable for a building of this quality? Is it declining or improving? Is the access good? If Tesco leaves or goes bust - heaven forbid - how easy will it be to find a new tenant?
- ◆ The building itself. What is it like? Most leases require a tenant to maintain a building but not to improve it, so in the longer term some modernisation might be required.
- ◆ Do the conditions in the lease protect your investment, for instance by stopping your tenant sub-letting to a less reputable concern. Does it allow you to increase the rent periodically?

If you have ever considered investing in 'buy to let' property the issues will be familiar and here again the yield is simply the rental return expressed as a percentage of the price. In the examples in Section 2 above, for simplicity I assumed that Scratch & Sniff planned to sell their building on completion. But now let us assume that they have let their building and identified a potential buyer for the freehold, namely your pension fund. The fund will have an idea what initial income return or 'yield' they expect from that investment. This will usually be higher than the interest they might get from a bank deposit because the risks are higher. Let us assume that they expect an initial yield of 5%. In order to get that from an investment of £250,000 in Scratch & Sniff's office building the rent payable would have to be £12,500 per annum. Conversely if the rent on the building is £12,500 they could afford to pay £250,000 and still achieve their return of 5%.

I am mathematically challenged and loath formulae. But you might find it easier to see it this way:

$$(100 \div \% \text{ yield}) \times \text{rent} = \text{Value}$$

In this case that is:

$$(100 \div 5) \times £12,500 \text{ p.a.} = £250,000$$

If on the other hand the pension fund are dubious about the building holding its value they will want a much higher initial yield to compensate for this longer term risk and will only buy Scratch & Sniff's building if the rental income would give them a return of (say) 8% . In which case the building is only worth:

$$(100 \div 8\%) \times £12,500 \text{ p.a.} = £156,250$$

As you can see the value of the building depends not just on the rent but on the yield that the investor requires and which tells you a lot about their view of the long term prospects of the rental from the investment increasing. A requirement for a high initial rental return on the capital invested is the concomitant of a gloomy view of future prospects. Conversely an investor will accept a lower initial rental yield from his investment if he expects the rent to grow in the future, perhaps because the building is located in an improving area or because there is only a minimal chance of problems such the tenant failing to pay the rent or departing. This explains the thing that many planners find counter-intuitive. All other things being equal, the higher the yield required by the investor, the less valuable is the building.

In some appraisals you might see a reference to the 'Years Purchase' or Y.P. This is quite simply the inverse of the yield and it means that part of the calculation of value has been done for you; you can simply multiply the rent by the Y.P. to calculate the value of the building. The Y.P. in the example above is 20 i.e. $100 \div 5$.

2.6 PROFITS AND PEDANTRY

It is a common prejudice that development companies make excessive profits at the expense of all that is held to be wholesome. In fact, after taking relative risks into account, they make a return that is much like any other as can be seen from the usually modest stock market rating of their shares! Developers used to be popular targets of hatred, charged with excessive profiteering while desecrating cities with ugly and over-sized buildings. Maybe investment bankers have now replaced them in the pillory, but just possibly some people have drawn conclusions from the fact that none of the big companies that were solely involved in commercial development a few decades ago have survived to the present day. (Housebuilders have done better). Some might have found the mountain of gold easy to climb, but the route down was even quicker. The fact is that it is a very risky business and if development companies truly offered a one way ticket to wealth, a lot more of us would buy shares in them, wouldn't we?

It is important to understand how developers measure the performance of both their companies and their individual projects because this partly explains why they operate as they do. In the examples in the previous sections I referred to the margin between value and costs on Scratch & Sniff's scheme as being the 'gross margin'. Sometimes people will refer to 'return' or 'profit'. All of them are used loosely. The 'margin' normally refers to the difference between receipts and costs and 'returns' to the same figure expressed as a percentage. The concept of profit is more complicated and while the term is often used it can be misleading. For instance Investopedia defines it as "a company's total earnings, calculated according to Generally Accepted Accounting Principles (GAAP), and includes the explicit costs of doing business, such as depreciation, interest and taxes". Neither depreciation nor taxes feature in standard development appraisals and while a developer's own calculation might include actual interest payments that will be incurred, an independent assessment will not⁴. So gross margin made on a project and which is calculated with a development appraisal does not neatly equate to a net profit for the company. To get to the latter you have to:

1. Deduct all of the general overheads such as salaries and office rents and often further allowances to cover anything from the corporate administration and marketing to the cost of the office party, the Chairman's Rolls Royce and the tax bill.
2. Calculate what has been spent during the particular year rather than on a particular project. When a project takes a year the percentage profit and the annualised return will be much the same before overheads are taken into account. But for longer projects such as large housing schemes or business parks the returns are earned over a number of years. And it is that *annual* return that provides the shareholders with an *annual* dividend.

⁴ The standard practice in independent appraisals to make a radical departure from reality and assume that all of the development costs will be met with loans.

In short, the term profit is meaningful when applied to the performance of a company in the property business, but rarely in the context of an individual scheme. Also, a simple calculation of the margin on a project such as that used by Scratch & Sniff will not be good enough for anything except the most straightforward and short term developments. Rather, you need something which will measure the annual return on the money invested. This involves an estimate of the money flowing into and back from a project throughout its duration i.e. a cash flow.

It is also worthwhile remembering that in most businesses earning cash and making a profit are not the same thing with the latter prone to manipulation by companies for presentational reasons. You buy a beer with cash, not profit. In legal terms, businesses go bankrupt when they haven't got cash to pay the bills when they fall due, not because they fail to make a profit. That is why property companies rush to cut spending and sell sites when there is a downturn, rather than using the weak market to acquire new sites at low prices. Quite simply, the need for cash to avoid bankruptcy outweighs the attraction of purchasing cheap land.

2.7 SUMMARY

In summary a developer always wants to ensure that the potential receipts from the sale of a building will cover the costs incurred and provide him with an adequate return on his investment. Adequacy in this context reflects the amount he had to invest to make the return, how long it took to make it and finally the risks involved.

Keep in mind that:

- ◆ To be 'real' all returns must be capable of materialising as cash in the hands of the developer at some point in the future.
- ◆ The objectives of developers differ and as a result they measure performance and appraise projects in different ways.

Beyond all that, if there is one lesson that I hope you draw from the effort of reading this, it is that the returns from development can be impressive but timing is king and the risks are significant especially when using borrowed money. The key points are:

- ◆ The margin of difference between receipts and costs - however you choose to refer to it - is important not least because it provides a cushion against estimating errors and market movements pushing a project into the red.
- ◆ The timing of those costs and receipts dictates the **annual return** which is equally crucial.
- ◆ Land values are hypersensitive to changes in the value or cost of development.
- ◆ Using borrowed money usually magnifies both the percentage return on the money invested and the risk of loss.

Glue these to the inside of your brain, just behind the visual cortex.

Thus ends our quick tour of the basics. We will now look in turn at housing and commercial development.

3. Housebuilders

There are some important differences between the volume housebuilders who focus on large sites and the smaller builders. Most of the development in the UK is undertaken by the former so I will start with them.

You will know the names of many of these companies. The sector has had a roller coaster ride since 2007 so in order to give a picture of the industry in what were perhaps more normal times I will go back to then. Before the current recession, Taylor Wimpey, Barratt and Persimmon all sold 15,000+ units a year while Redrow, Berkeley and Bovis all sold between 3,000 – 7,000 units. (In comparison, their combined output during 2011 was nearer 40,000 units). No other quoted company sold over 1,000 units. So the major housebuilders are critical to the overall rate of delivery of new homes. At the time of updating this guide, data on the number of homes sold by each company in 2013 was not available, but it would appear that while sales volumes have been recovering, they haven't regained those levels yet.

3.1 THE COMPANIES

Company Reports provide a useful insight into how the housebuilders see their business. Figure 1 shows an extract from the Annual Report of Taylor Woodrow shortly before their merger with Wimpey in 2007. At the very beginning of the Report they provide information on how much profit they have made in the year and how the assets of the company have increased. They go on to describe this in more detail using a group of operational performance measures namely:

- ◆ Completions. How many houses have they built? More than last year? All other things being even, they will make more money if they can build and sell more.
- ◆ Operating Margin. Are they selling houses at a comfortable premium to the cost of building them? This is a good measure of whether or not their costs are under control and their houses are popular. It broadly equates to the simple 'gross margin' measure of the return made by Scratch & Sniff and referred to in Section 2.
- ◆ Return on Capital Employed (ROCE)⁵. Are they using their capital efficiently, delaying investment until necessary and then selling houses quickly so that the receipts can be recycled elsewhere in pursuit of further profit? This is a sophisticated equivalent of Scratch & Sniff's 'annual return' in Section 2.3 insofar as it shows how much the company

⁵ Note that the ROCE in Figure 1 is much higher than the 15% I suggested might be appropriate in Section 2.4. This is partly because the latter figure is calculated gross of finance costs and the former is net, mainly because it is a historic figure and reflects unanticipated increases in house prices during the course of the developments)

earned in the year from each £1 it invested on behalf of its shareholders. This is a key operating target for most businesses. In contrast, as explained earlier, the reported profit means very little unless you know how much money was invested and how long it took to make it.

- ◆ Gearing. Have borrowed funds been used extensively to increase percentage returns? That usually increases the risk of a rapid fall in profits in a downturn.
- ◆ Order book. Have a reasonable number of the houses being constructed been pre-sold? That can reduce margins, but early receipts can reduce risks and improve the annual ROCE.
- ◆ Land bank plots. Land is the stock in trade of housebuilders. They would be in deep trouble if they hadn't any! So how many years supply of the land that the company needs is 'in the bag'? Most major builders try to keep enough land to cover four to seven years of development. In this case it is 5.7 years.

If you looked at these reports over the period since 2007 you would see steep falls followed by a slow recovery in sales, margins and ROCE, and a restocking of the land banks.

The main aim of housebuilders is to achieve a high and consistent return on their capital. They focus much more on the 'process' of development than their commercial counterparts, trying to optimise the flow of homes that they release onto the market and the ratio of cost to price in each case. The key to success is not just building and selling houses but in optimising the product and the pace of development to suit market conditions. For instance, there was a marked switch from developing town centre apartments to family houses from the onset of the recession, when first time buyers experienced particular difficulty in obtaining mortgage finance.

Conversely, ruin comes from being caught with large amounts of debt if houses become difficult to sell. So like car manufacturers or retailers the major housebuilders tend to control financial risks by limiting the size of the loans they use to fund their operations. The Calcutt Review of house building in 2007 suggested that house builders' average gearing level from 2000 - 2008 was only around 30% but there would have been wide differences between firms not least because some borrowed money to buy competitors. Towards the end of the recent recession it was even lower, under 6% at the end of 2011 according to an analysis in the *Investor's Chronicle*⁶. In contrast commercial developers and especially the smaller firms in both the residential and commercial sectors tend to use more debt, often to fund a specific project, but on terms that allow the lender to recover the money from the borrower on a more general basis if the project fails. This is an inherently less stable business model because one bad project can sink a company. Housebuilders are more fortunate than their commercial counterparts in this respect. The market for houses is larger than (say) the market for office blocks and it is easier to generate cash through sales at reduced prices.

⁶

September 18th 2012

When conditions in the market are improving most companies will happily increase gearing to improve results. Conversely, when conditions are deteriorating they will cut gearing by limiting investment, perhaps by curtailing site buying and reducing the number of houses being built.

In this guide the main focus is on volume house building but smaller and specialist firms also play a role. Smaller housebuilders do not have the funds to support a sophisticated land banking operation. Sites for immediate development will be sourced through the trade press or perhaps from agents or contacts. For many cost minimisation is critical not least because they must compete with larger firms who enjoy economies of scale, so design standards among those who do not have a particular niche can sometimes 'disappoint'. In order to survive they have to be nimble and to get their timing right but they have the great advantage over their half-brothers in the commercial sector that even in a downturn new houses can usually be sold at a discount whereas in the commercial market in particular occupier demand can simply dry up.

A few developers specialise in building blocks of flats. The economics of developing these is rather different and is discussed in Sections 3.5. There are also an increasing number of private companies that specialise in care homes, supported accommodation for elderly people or student accommodation. They tend to buy sites for immediate development and calculate what they can pay on a 'per room' basis in the same way as hotel groups. If you want an idea how these odd types of development are seen in a commercial sense, take a look at the website of Christie & Co⁷, an agent that specialises in this field or Unite Group⁸, a developer who specialises in student accommodation.

⁷ www.christie.com

⁸ www.unite-group.co.uk

Chief Executive's Review continued

Monitoring our performance

Operating margin is calculated using profit from operations (excluding joint ventures' interest and tax) and revenue (including that of joint ventures). Please see Note 3 of the Consolidated Financial Statements on page 56 for further information. This measure represents the profitability of our operations.

Return on average capital employed (ROACE) is calculated using profit from operations (excluding joint ventures' interest and tax) and capital employed (pre-goodwill). This measure indicates how efficiently the business is using its capital to generate profits.

Gearing is calculated as net debt divided by shareholders' funds and represents the level of borrowing within the business.

Home completions include sales from within joint ventures, which are counted as a proportion of a unit in line with the percentage of the joint venture owned by Taylor Woodrow.

The order book represents future business, consisting of houses or lots reserved or amounts yet to be invoiced on construction contracts.

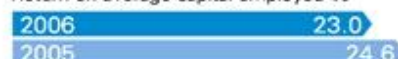
Landbank indicates the 'stock' available for new housing, for which planning consent has been received. Some of the landbank is owned outright, whilst other plots are controlled through options.

Customer satisfaction is measured by each of our businesses through the use of customer surveys. The way in which these surveys are conducted and the questions that they contain vary by business.

Operating margin %



Return on average capital employed %



Gearing %



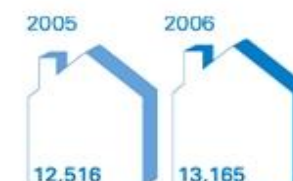
Order book £m



Landbank plots



Home completions



Results

Consolidated revenue for the year to 31 December 2006 was up 3 per cent at £3,572.1m (2005: £3,476.9m). Profit before tax was £405.6m (2005: £411.0m).

At 31 December 2006, total equity before minority interests was £2,103.5m (2005: £1,928.4m). Net debt was £391.3m (2005: £456.9m). Net gearing was 18.6 per cent (2005: 23.7 per cent).

Basic earnings per share was 50.5 pence (2005: 50.6 pence). Equity shareholders' funds per share increased by 7.8 per cent to 364.7 pence.

Group housing

	2006	2005
Revenue, including joint ventures £m	3,128.4	2,864.9
Profit from operations* £m	469.2	456.0
Operating margin* %	15.0	15.9
Ending capital employed £m	2,241.2	2,138.2
ROACE %	21.4	22.9
Home completions	13,165	12,516
Home average selling price £'000	207	204
Lot completions	6,413	4,495
Order book £m	1,070	1,318
Landbank plots	68,662	75,160

Group housing has had a good year, with our North American business reporting another year of record profits. Revenue increased to £3,128.4m (2005: £2,864.9m), reflecting an increase in both home and lot completions. Profits from operations were higher than last year, at £469.2m, as the increase in completions outweighed the reduction in overall Group housing operating margin.

Some 53 per cent of 2006 Group housing profit from operations* came from overseas operations (2005: 49 per cent). This reflects our decision to increase investment into those markets over the last few years.

The Group housing landbank (owned and controlled) was reduced to 68,662 plots (2005: 75,160), as a result of our more cautious approach to land buying in North America. The Group housing order book stood at £1,070m (2005: £1,318m), with a decrease in North America offsetting increases in the UK and Spain.

Throughout the Chief Executive's Review, profit from operations excludes joint ventures' interest and tax (see Note 3). Profit from operations* is used in the margin calculation (see Note 3).

Figure 1 : Extract from Taylor Woodrow Annual report 2006

3.2 LAND FOR HOUSEBUILDING

In Section 3.1 I mentioned that one particular goal of housebuilders is to minimise the amount of capital tied up in their schemes at any point in time. Clearly owning a large land bank militates against that objective but as shown in Figure 1 the larger firms have a supply of sites for several years of development and frequently an additional potential supply comprising sites being taken through the town planning process.

Housebuilders don't often buy large swathes of land outright. When and where they want to secure large greenfield sites, perhaps part of a farm, a typical approach is to find a suitable land without planning permission and then try to negotiate an 'option' agreement with the owner. Typically this will give the housebuilder the right to buy the land at some point in the future, usually when it suits them but after Planning Permission has been obtained, at a discount to 'open market value' but with a stated minimum price. Both the discount and minimum price vary but in many parts of England have typically been 10% and £250,000 per hectare respectively with wide variation, sometimes more in better areas and less in the poorer areas. In the weak market which persisted to 2012, in some situations, options could be obtained without a minimum price. That is unlikely to last much longer in situations where development is clearly viable.

The advantage of an option agreement from the landowners' point of view is that:

- ◆ It relieves them of the considerable burden and risk of financing the pursuit of planning permission.
- ◆ It gives them a price for their land which is much higher than its value in agricultural use, although not as high as it might have been if they had obtained a good planning permission themselves before marketing it.

The advantage from the developer's point of view is that:

- ◆ It gives them access to development land when they need it and at a discount to open market value without tying up their capital in land ownership.
- ◆ It lowers the risk of overpaying for the land in open competition. (See Section 7.1 : The 'Winner's Curse').
- ◆ It protects them to some extent from the adverse effect of longer term undulations in the price of land.

Most housebuilders also have a stock of land that they own directly. Sometimes this will have been an opportunistic purchase but very often it will be a site that they aim to develop in the shorter term i.e. the timescale within which they feel that they can anticipate the movements in the wider market.

One oddity about volume housebuilders is that, unlike commercial developers, they are not averse to selling chunks of their sites to competitors and then developing alongside them, cheek by jowl. Their only reservation might be to ensure that the ranges of homes offered are

to some extent complementary. The rationale is that the proceeds from these land sales can provide them with a quick receipt which will enhance their annual ROCE by reducing the net amount of money that they have invested in the project. In some cases it is also used to reduce the risk of having too many eggs in one (locational) basket.

There has been a debate about whether the prime responsibility for the shortfall in completions of new homes lies with the housebuilders 'land banking' policies. It is claimed that they can make more of their money by effectively speculating on land values rather than by building houses. A commercial analogy is useful. The Japanese masters of 'just in time' manufacture make sure that they have supplies of key components secured under long term contracts. House builders cannot secure their supply of land in the same way and feel that because of the unpredictability and uncertainties of the land acquisition and town planning process they must secure a supply by building a stockpile. It is quite difficult to decide who sits where in the chain of cause and effect but official investigations have by and large exonerated the housebuilders simply because they recognise the risk to their business if they run out of land.

At a common sense level, if housebuilders profit so much by buying and holding land, it is difficult to see why options agreements are so widely used. And in order to hit a 15% return on capital they must effectively bet that land values will consistently double every five years!! They certainly rose precipitously for many years prior to 2006 but the pattern of increase has not been consistent in the shorter term and values in 2014 are still lower than they have been. As far as the origins of their profits are concerned in the salad days before the market collapsed in 2008 many might well have made more money out of increasing land values than from house building but it doesn't follow that this is a reliable and recurring pattern or that it is a driver of a housebuilding operation rather than an occasional and fortuitous by-product of it.

What is certain is that it won't always suit housebuilders to develop any particular site. They might believe that their limited capital will find a better and quicker reward elsewhere perhaps current demand in the area won't allow them to sell at a fast enough pace. Housebuilding, like most markets, is sticky rather than fluid and can't always adapt itself quickly to changing circumstances.

3.3 BUILDING HOUSES & FLATS

The aim of this section is to give you some idea of how residential development works in practice. It involves a heroic level of generality.

THE LAYOUT

I have already touched upon how housebuilders often use options as a means of acquiring sites. Once the site has been identified the key tasks are to:

- ◆ Obtain planning permission
- ◆ Ensure that the necessary utilities services and transport access are or will be in place
- ◆ Prepare the first phase of the site for development.

Phasing is the key to minimising the amount of capital invested at any one time and thus maximising the annual return on the capital invested, so the amount of infrastructure provided in the first instance is usually limited to what is required for the first phase of housing. By the same token, the aim will be to defer paying planning contributions for as long as is practicable. There is an opportunity for planners here. In some cases increases can be negotiated in the overall level of planning contributions if concessions can be made on the timing of the payments. It also suggests that a priority for public intervention aimed at promoting development should be to reduce the time and risks involved in getting schemes to the point at which construction can start.

A developer of a smaller site might reckon on selling a house a fortnight. Depending on the size of the market where the site is located, the number of houses completed and sold from larger sites will probably range from one to three units per week – two is a typical assumption. A large 'new settlement' comprising thousands of new homes in an attractive location will normally have several developers active at any one time and the overall expectation might be sales of four to seven units a week depending in part on the variety available and the quantity of affordable housing included.

The proportion of the overall site that can't be used for market housing because of planning requirements is also crucial to the economics of house building⁹. Some land must inevitably be used to provide on-site roads, basic landscaping and open space. Additional planning requirements can involve enhanced landscaping, play areas, habitats and often free land for social facilities such as schools. A particular land hungry requirement is space for sports pitches and if you want to improve viability it always makes sense to try and locate these on land that can't be built on in any event (e.g. land used for flood storage) or to consider joint use of secondary school facilities. In densely developed urban areas the impact on viability of the requirement for land to meet open space policy objectives can be a major problem. Sadly, this is often not tested when the policies are formulated.

On larger conventional low and medium density schemes, the requirement for undevelopable land will typically comprise between 25% and 40% of the overall. Many housebuilders would agree with the proposition that this land requirement doesn't really have an impact on scheme viability because infrastructure is essential to creating a good and sustainable scheme. They build the effective cost of providing it into the price that they offer the landowners. But the latter can regard it as daylight robbery, claiming that the provision of public open space and facilities is the responsibility of the Council to whom taxes are paid for the purpose. You might

⁹ Particularly if the terms of any option agreement mean that the developer will pay for the overall site area that he requires rather than just the developable area.

regard that as a laughable argument but it is one more real factor that leads to the market in development land being much 'stickier' and less responsive to demand than you might expect. Landowners who can afford to be patient will often wait a long time to sell their land if they feel that the price they get is prejudiced by Local Authority requirements that might in time be reduced.

Note also that the land required for social rented housing rarely has any value. The houses and flats are sold to an RSL for less than the cost of development.

THE GROUND

All sites are not created equal. Every developer's dream is a negotiated deal struck on the basis of a residual valuation in which he gets a conveniently shaped, flat, well drained site without hidden horrors and with no need for additional off site services. They are as common as unicorns. Most sites pose problems. Typical examples are:

- ◆ A need for extensive preparatory demolition and ground works, perhaps to create dry and level plots or to compact 'made ground'¹⁰ or to remove contaminants. This will often lead to a need for additional investment in substructure, perhaps piles or load bearing raft foundations.
- ◆ An odd shape that limits what can be built.
- ◆ A need for extensive access works, flood protection or service infrastructure with the latter in particular often provided by utility companies who are often slow and whose charges can appear arbitrary and onerous¹¹.

When a bid is made for land on the open market, there is rarely enough information available to gauge these costs and risks accurately. Buying land in an auction is particularly hazardous in this respect which is why most established developers avoid it.

As a result of the policy focus on issues associated with the re-use of brownfield land, the need for remediation is often regarded by planners as a major cost obstacle. There are certainly unique costs associated with developing brown field sites. Typically these will involve some demolition work, removing concrete hardstanding and remediating the ground underneath. But in practice the cost of remediation which is the bugbear with brownfield sites is just one problem among many and is really only a major issue where land values are marginal, the problems are severe and/ or there is a high water table.

¹⁰ i.e. land that has been developed before and which as a result doesn't provide a stable base for conventional foundations.

¹¹ See English Partnership's 'Utilities Infrastructure Study' April 2002

Remediation is clearly not a problem when developing greenfield sites. But the latter also pose problems. There will usually be unique costs associated with preparing virgin ground. Slopes can complicate development considerably by making it more difficult to create effective drainage and achieve level bases for the new buildings. Some soils provide poor support for building, for instance clay or alluvial soils and where deeply rooted foliage has been removed. More importantly they tend by definition to be situated outside of the urban area and are thus more likely to need new access roads, utility connections. They are rarely well located in relation to existing formal open space and social infrastructure and these deficiencies have to be remedied.

For these reasons the total cost of developing a greenfield site is often greater than that of brownfield sites unless there the latter is crammed with derelict buildings or horribly polluted. The main reason why brownfield sites are sometimes worth less is not so much their physical characteristics but because their environs are less pleasant. So a tariff or Community Infrastructure Levy (CIL) which requires the same level of contribution from each new dwelling irrespective of where it is built can imply a subsidy from brownfield to greenfield land owners!

BRICKS & MORTAR

At the heart of most volume housing schemes lies the basic and traditional range of detached, semi-detached and terraced houses together with some low rise flats. The main determinants of cost are:

- ◆ Ground conditions (as above).
- ◆ The complexity and standard of the basic design and the ratio of walls and roof surfaces to floor area.
- ◆ The standard of the fit out.
- ◆ Extras such as garages.

When developers start a large scheme they usually don't try to settle the precise mix of types of house that they intend to build across the entire site at the outset but adjust it over time to suit changing perceptions of local demand. The economics of constructing larger blocks of flats has more in common with the economics of constructing an office block than estate housing. The great advantage is that you can achieve a high density. Once you pass a certain threshold in terms of value per square metre this invariably leads to higher land values than might be obtainable from a conventional housing scheme. But the relationship isn't arithmetically straightforward:

- ◆ With a house you can effectively sell all of the space that you build but with flats you must build the common access and circulation space which doesn't have any sale value.
- ◆ Unlike estate housing, a block of flats is difficult to phase! Usually, full payment is not received until people move in and this normally follows completion of the construction

of the whole block. People are reluctant to buy 'off plan' if they can avoid it and no one likes to live on a construction site. From a developers point of view this makes the cash flow from blocks of flats much less attractive than from a conventional scheme where homes can be sold earlier.

- ◆ Buildings of three stories or under can be built relatively inexpensively with load bearing brickwork or simple timber frames. Once you start building much higher than that you usually need a more complex framed structure. In addition tall and slender buildings suffer from a relatively low ratio of saleable floor space and a high ratio of external building envelope in relation to the total area of the building.
- ◆ High density complicates parking provision. Undercroft parking can cost £6,000 a space or more and underground parking can easily cost more than three times that, especially if it needs to be mechanically ventilated.

Finally, there are issues with mixing affordable housing into blocks of flats. Different size standards can complicate floor plans and mixed tenure also makes it more difficult to create the kind of cachet that allows the developer to add value to a development through exclusivity.

In summary, very high densities only translate directly into higher margins where the flats can be sold for relatively high prices.

One option used by developers to increase densities within conventional housing schemes is to build 'town houses' which either make use of roof space for an extra room or include a genuine third floor, often in a relatively narrow house. While popular enough on small sites in genuinely 'city centre' locations, elsewhere town houses tend to be loved by the housebuilder's land buying team because they push up the amount that they can justify paying for a site, but loathed by the sales staff who will later have to sell them. In both cases the price achieved can be less than might be achieved for a conventional house of the same size because stairs and circulation space take up more room in tall, thin houses and roof rooms are often compromised in terms of ceiling height and layout. Also, some people are averse to walking up the extra floor! The market for town houses is limited and on any given site and especially outside of town centres the developer will need to weigh up carefully how many it is prudent to build.

4. Commercial Developers

A housebuilder has one customer for each house. A commercial developer often has two or more. Most new commercial development in the UK will be leased to an occupier or occupiers and then sold to an investor who is seeking a return from their investment in the form of the rent, which they hope will increase over time. Most buildings leases allow the rent to be adjusted every so often – normally five years – to reflect the current market rent if this is higher than the rent currently being paid. Across the UK as a whole the investors are often pension and life insurance funds or specialist property companies but a lot of investment in the biggest and most valuable developments comes from overseas.

Both investors and developers in property use borrowed funds, anticipating that the percentage rate of return from their investments will be significantly greater than the interest rate on their loans, thus improving the overall percentage return on their own money. Small firms tend to borrow more than large firms and commercial developers more than housebuilders. This is the ‘gearing’ effect first mentioned in Section 2.2. They adjust the level of this gearing depending on their market outlook. When they are confident, they borrow more. When times get hard, there is usually an almighty effort to repay as much debt as possible in order to reduce interest payments and to ensure that they have the cash available to pay their bills and to avoid bankruptcy.

Commercial developers vary more widely than housebuilders. I will try to represent the various types that are most frequently encountered using imaginary composites.

4.1 MEGABUCKS PLC

The leviathans of the commercial development business are the surviving development and investment companies listed on the Stock Exchange. Many are now constituted as Real Estate Investment Trusts (REITS) which gives them some tax advantages. MegaBucks are a billion pound grandad of the property business and have been listed on the London Stock Exchange since dinosaurs roamed the earth. Their key strength is a large portfolio of well-located shopping centres, office blocks and retail warehouses. It is the type of company that a professional investor might recommend to their mother on the grounds that they have solid assets and a rental stream which should provide an income for old age that offers some prospect of rising with inflation.

Megabucks takes a long term view and will invest a lot in a really good site which can be developed to provide a property that is worth retaining as an investment for the long term, not that they are averse to selling anything if the price is tempting enough. They can limit the danger of paying too much for land in a competitive market by simply aiming for sites that are too large for their smaller competitors. They reckon on being here today and here tomorrow, so long term management and design issues are usually carefully addressed and this can be a real advantage from a regeneration point of view. Their reliable stream of rental income

provides them with a comfort cushion so they won't go bust for lack of cash to pay the bills when the property market hits a cyclical low point.

Like most corporate giants, the Megabucks corporate style is solid and bureaucratic and makes good use of their seven league boots. At a corporate level it has never been accused of flair but can be quietly innovative and is certainly open to stealing good ideas from elsewhere. For the point of view of development control this combination of large schemes and deep pockets often gives them an advantage when justifying proposals either in negotiation or in an appeal situation.

Examples include Land Securities, British Land, Derwent London and Hammerson (mostly office & retail); Capital and Regional and Liberty (mostly retail); SEGRO (mostly Industrial), Great Portland Estates and Derwent London (both mostly offices in London's West End). The extract in Figure 2, from an Annual Report from British Land gives the flavour.

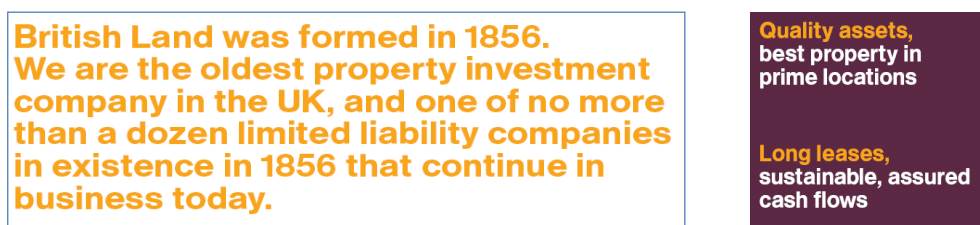


Figure 2: Extracts From British Land Annual Report 2006

Their website currently records that they are:

“A responsible company: listed on the Dow Jones Sustainability Index (World and Europe), FTSE4Good Index, Global Real Estate Sustainability Benchmark Index (Green Star), Ethibel Pioneer and Excellence Investment Registers, and Management Today's Most Admired Companies in Britain. The only REIT globally to be listed on both the CDP Carbon Disclosure Leadership Index and Performance Leadership Index 2012.

As you can see, they are keen to tick the boxes!!

4.2 LONDON & NARNIA DEVELOPMENTS LTD.

There is a second tier of substantial companies that mix development with investment depending on the opportunities at hand. They might be quoted on a Stock Exchange but are not usually REITS. These days, some of the largest are privately owned.

Our example, London & Narnia Developments plc, focuses on slightly smaller schemes than Megabucks because their financial and project management resources are more limited. It is an entrepreneurial concern whose progress through the cycles of the property market is like a big dipper, soaring to giddy heights in those glorious moment when investor and occupier demand

coincide and it seems that anything can be sold at a premium price, only to come crashing down when the bubble subsides. At that point, if it is still carrying a lot of debt and has no rental income to fall back on, it might collapse.

London & Narnia's style of operation is hyperactive. They aim to buy a site and then complete the building and sell it as quickly as possible. They will aim to finance their operations using someone else's money as far as possible either:

- ◆ In the form of debt either arranged on a simple basis or by using more exotic loan packages (sometimes referred to as mezzanine loans or junior debt) which are effectively an expensive second mortgage secured against the value of the proposed building.
- ◆ By forming a joint venture to spread the burden and to lever in funds from partners.
- ◆ By pre-selling the completed building to a long term investor on a basis which leaves the investor paying for construction costs and London & Narnia managing the scheme and finding a tenant and with a share in any profit.

The attraction of the last of these arrangements to London & Narnia is that:

- ◆ If things go badly but their building is pre-sold, their losses are limited.
- ◆ It frees up their (often limited) capital for other schemes. While as a result they might make less on this particular project in absolute terms, it puts them in a position to reinvest (perhaps repeatedly) in other schemes and thus maximise their annual ROCE and improve their overall profitability.

The attraction of this arrangement to a pre-purchasing investor is that:

- ◆ It gives them access to additional investment opportunities.
- ◆ The effective price that they pay is usually less than it would be if they simply bought a complete and tenanted building.

Companies like London & Narnia are not averse to selling one of their development sites in order to achieve a quick profit and turnover of capital, if someone will pay them more than they think it is worth. Some are purely developers while others mix development and investment in varying proportions. Larger examples of comparatively sure-footed public companies of this sort exhibiting some but in no case all of these characteristics include Helical Bar, Stanhope, Chancerygate, Terrace Hill, Quintain, St Modwen, Heron, Scarborough Group, Chelsfield Partners and Emerson Group.

At the corporate level large commercial companies often focus on 'total return' which is broadly the amount that they have added to the value of the company each year. For instance, the 2006 Accounts from Helical Bar, a particularly entrepreneurial major developer, states that *"Our objective is to maximise growth in assets per share using a recurring stream of development and trading profits to build up the investment portfolio.....A property company's share price should reflect growth in net assets per share"*. The crucial distinction from a shareholder's point of view is that this emphasises an increase in the net value of the assets owned (and thus by extension the share price) rather than the housebuilders goal of ever increasing levels of profits (and by extension dividends) for shareholders.

In their dreams a developer will quickly make a large profit from a scheme which can be quickly reinvested in another development with the aim of achieving an annual return that is higher still. On the flip side, the net result of completing schemes (a) slowly but with a high margin over cost, or (b) quickly but with a lower margin on cost; is that both lead to a mediocre annualised return.

4.3 GEARED LAND, SCRATCH & SNIFF

Regional companies play a valuable role in developing small and medium sized schemes throughout the UK, using familiarity with the local market to give them a competitive edge. Geared Land operates in much the same way as London & Narnia but sticks to smaller schemes in its own backyard. It makes extensive use of loans to increase the return on its own limited capital resources and as a result tends to make good use of any means of limiting the scale of the risks it takes on. This makes it more difficult to take on long term challenges so they concentrate on being nimble. A far sighted local authority outside of the most prosperous areas of the UK will encourage firms like these as a counterbalance to the negative effects of the over-concentration of the efforts of the (mostly London based) large developers on larger schemes in the South East¹².

At the bottom end of the scale are the minnows like Scratch & Sniff. For many firms like this, their key relationship is with the bank manager. They only have the capacity to create small schemes at times when the market cycle is at its peak and bank finance is readily available. Otherwise they often play a role in piecing together larger and more complicated schemes which they will then package and 'sell on' to a more financially muscular firm, often in return for an introduction fee or a project management contract and a share in the profits. At this

¹² If you can get a copy I recommend the following academic paper: "Development Cultures and Local Regeneration". Simon Guy, John Hennenberry & Steven Rowley. Urban Studies Vol 39 Nom. 7 2002. Or alternatively a somewhat less pointed version of the implications of their research is in Guy & Hennenberry's earlier paper for the RICS 'Cutting Edge' series entitled "Cultures of development: property and urban regeneration". There is a copy under links on www.regenerate.co.uk

point the distinction between a development company and an estate agent begins to blur a bit. From a development control point of view, one problem with companies of this size is that you cannot be sure that you are dealing with the people that will actually be implementing the proposals in question and which might be prone to abrupt variation as the winds of the marketplace change direction.

4.4 OVERSEAS COMPANIES & THE SPECIALISTS.

In recent years the number of larger development companies has increasingly been joined by overseas firms. Their origin varies over time. In the run up to the last recession the major players included Lend Lease (Australian), Hines and Brookfield (North American). Now they are being joined by other overseas companies. Also, major investment companies can act as developers. Classic examples include life insurance giants Aviva and Prudential.

Finally, there are specialists. Their role is best illustrated using specific examples. For instance, the market for very large distribution units is now dominated by giant international companies such as Pro Logis, a San Francisco based U.S multinational with 55m square metres of space worldwide and who see themselves as offering an integrated international logistics service rather than just warehouses. The important thing for them is to acquire sites of the necessary scale. At the other end of the size range, companies like Basepoint develop and manage economical space for small businesses, often with grant assistance. (Most firms offering space to small business do not develop the space, but buy existing buildings and convert them; for example Workspace at the economical end of the market, and Regus at the top end). Finally, there are a growing number of companies with niche specialisms such as sheltered housing, doctor's surgeries or student accommodation.

4.5 DEVELOPING COMMERCIAL PROPERTY

There are a much wider range of commercial schemes than housing schemes and it is difficult to describe the mechanics of all of them in a short guide. So a summary of the most common types of development must suffice.

LARGE TOWN OFFICE SCHEMES

The economics of major city centre office schemes are obviously driven by the potential value of the building but also by the amount of floorspace that can be fitted onto the site. Costs are strongly influenced by the standards that the developer needs to achieve in order to create a competitive product. This will differ enormously between, for instance, a block in the centre of London and a business park scheme outside a small provincial town. The latter might comprise a simple framed or load-bearing brick construction, with basic finishes and services. The former will often be a complicated construction sometimes requiring deep excavation and with sophisticated mechanical and electrical services and high standards of finish in the common

parts costing between two and four times as much. Shape also plays its part. Generally speaking squat buildings will cost less than tall thin buildings and use internal space more efficiently. In my experience most commercial occupiers and investors prioritise the functional aspects of a building and will rarely pay a premium commensurate with the cost of significantly higher aesthetic standards of external design. But conversely both occupiers and investors will avoid buildings that are functionally challenged and aesthetic factors can play a role when there is a choice between buildings that are similar in other respects.

The extent to which a developer will fit out a building depending on whether he expects potential tenants to customise the space or to prefer, for speed and simplicity, a unit that has been fully fitted but which perhaps doesn't respond to their specific needs quite so well. Smaller firms often fall into the latter category as they tend to have shorter operational planning horizons and are more likely to want to early occupation without additional expense. Larger firms can have exacting and precise requirements that could not have been anticipated and which imply the need for extensive customisation. A distinction is sometimes made between 'Category A' fit outs comprising basic services, suspended floors and floor and wall finishes and 'Category B' fit outs which involve further investment in dividing the space up and creating the reception and other facilities. This reduces but does not remove the threat of installing fittings that are simply ripped out by the incoming occupant! Many developers of larger buildings in particular stick to providing Category A. When doing a viability study it is important to check what level of fit out is assumed in both the value and costs estimates.

BUSINESS PARKS

Large in-town office schemes usually comprise complex and expensive buildings with very little private or public external open space. In contrast the main characteristic of business parks tends to be relatively inexpensive buildings which, at the upper end of the market at least, are set in extensive and expensively landscaped areas. The classic building in a business park is a simple construction of between two and four storeys. At the lower end of the market use of lightweight frames and industrial style cladding systems is quite common. This brings costs down considerably but in higher value areas better buildings, infrastructure and landscaping will be needed to create a competitive product.

In most places parking is a big issue. For many schemes outside of town centres, public transport cannot be relied upon and few business parks are adequately serviced in this respect so parking space is a requirement for both occupants and investors. This is normally provided at grade because in most places the value of land for business parks is too value to justify underground provision. This combination of low site ratios and a need for extensive parking at ground level means that the ratio of the built space to overall site area in a business park can be very low indeed.



Figure 3 Chiswick Park London. A lightweight structure keeps cost down while there is heavy investment in landscaping.

One particular variation on the theme is the 'suburban business park' which in development terms are a hybrid of city centre office buildings and traditional business parks. Classic examples include Chiswick Park in West London. The high rents obtainable in a competitive local market justify investment in good standards of internal and external design and in this case a cost-effective lightweight structure and fit out is used in order to keep costs down.

INDUSTRIAL AND WAREHOUSING

These days' so-called industrial developments often comprise a mixture of industrial and warehouse space with a heavy preponderance of the latter. The amount of space used for industry in the UK has declined over the years and in any case much industrial plant is bespoke and doesn't lend itself to being housed in the standardised, speculative offerings of the development industry. In contrast, the demand for new warehouse space has remained relatively robust even though the logistics sector as a whole has become more prepared to treat the a lorry trailer or seagoing container as a form of storage. This is partly because many older estates don't meet modern needs.

Speculative development of buildings suited to technically sophisticated manufacturing by firms in the science and technology sectors is comparatively rare and in most places difficult to achieve. The market is simply too small and when buildings are created for a particular niche in

the market there is a high risk that many occupiers won't need and won't want to pay a premium for all of the expensive features provided.

From the occupier's point of view the key attractions of a good warehouse development will be:

- ◆ Good access to the motorway and trunk road network and adequate space for parking and movement of vehicles within both the site itself and the estate in which it is situated.
- ◆ The capacity of the building, defined by cubic capacity as well as floor area in some cases.
- ◆ Adequate unloading and turning space with enough loading bays.

The last of these adds to the cost of the building and, again, the attendant risk of investing in features that the eventual occupier doesn't actually need. This makes bespoke construction an attractive and practical option for many large scale occupiers because it doesn't take long to erect a shed.

From the developer's point of view a further advantage of bespoke buildings is that their tenants are more often prepared to accept a longer lease thus providing extended security for the rental income. In contrast smaller buildings are often bought or leased 'off-the-peg'. On issue for warehouse developers is that contract distribution companies (for instance Exel or the Eddie Stobart group, beloved of truck spotters nationwide) are a major source of demand but frequently seek leases that coincide with the length of their customer contracts, perhaps five years or so. This reduces the security of the rental income so investors won't pay as much for the buildings which in turn reduces the effective value of the land used for the development.

SPACE FOR SMALL BUSINESSES

Local Authorities frequently seek the inclusion of space for small business into schemes and in my experience planners sometimes assume that developers will regard the opportunity to provide this type of space as a commercial opportunity because existing schemes are frequently oversubscribed and the rents and other charges exceed those for conventional buildings.

In fact, new developments of this type almost invariably cost more and are worth less than conventional schemes. As far as business centres are concerned, the basic cost of construction increases because a group of smaller buildings requires more walls, services, fittings and features than a single larger building, and a greater proportion of the space is lost to provide common circulation and facilities. And while on a pro rata basis business centre occupants usually pay more for their space, the additional risks and management involvement further discourages investors. In some areas the returns obtainable are reduced by competition from publicly funded schemes. All this makes it difficult to source sites that can be used to provide small business space at an appropriate price.

The evidence is visible. There are companies that have made money developing business centres but it is noticeable that with few exceptions they convert existing buildings or lease space in new ones. Most new bespoke business centres have been developed with subsidies from public bodies.¹³

SHOPS, SHOPPING CENTRES AND RETAIL WAREHOUSES

The classic form of retail property is the high street shop. The key to the value of these is usually the location. W.D. Fraser in 'Principles of Property Investment & Pricing'¹⁴ uses the excellent example of a petrol station to illustrate the point. In this case, marginal differences in turnover can lead to big differences in potential rent because many of the overhead costs involved in supplying the petrol are fixed so the cost per gallon of sales from a station with a higher throughput (such as motorway services) will usually be much lower. But a host of other factors also play a part and these will differ depending on the type of shop. Many need a location where lots of people pass by. In the jargon, this is 'high footfall'. In contrast some specialist shops do not; because their customers don't buy on a whim and will happily travel to make their purchase. Others need a certain ambience or a lot of window display space. Some retailers happily use basements and upper floors or need lots of storage and some do not.

This variety means that retail development is something of a specialist field. It also makes it difficult to gauge the attractions of new shops for the purpose of a viability study. When assessing the rental high street shops, valuers will look at comparable properties focusing primarily on size and location and then using their experience to adjust these figures to reflect the other various characteristics. The complicated mechanism used is described in Section 6.1

The cost of building retail units depends very much on the type. A single storey supermarket or even a conventional suburban parade will be a lot cheaper than a covered mall. They are all frequently let on a shell basis i.e. with no internal finishes and connections to utility services which are simply capped and left for the tenant to connect to later. This has the great advantage of reducing wastage.

As you would expect, the location and catchment area are absolutely critical to the success of larger shopping centres with both the absolute size local of the population and the socio-demographic profile (i.e. how much money the shoppers are likely to spend) being important together with the extent of local competition. Dear readers, you will all have used shopping centres at some stage and will know that the mix of retailers within the centre is key and that some stores have greater magnetism than others. Classic examples are John Lewis or in less wealthy locations perhaps Debenhams or Marks & Spencer. Developers will often provide these

¹³ In view of the interest within the planning and regeneration sector in procuring space for small businesses I have explored this issue in greater detail in a note that can be downloaded from the 'Links' section of my website www.regenerate.co.uk

¹⁴ Pub. Macmillan 1984. Page 211 onwards.

firms with massive inducements to open in their scheme because their presence as 'anchors' acts as a draw to other potential tenants. In some cases, retail development is judged not to be viable without them because of the difficulty that might be encountered in attracting other occupants. This is a good example of an instance in which the developer's feel for a market is often as important as a scheme appraisal prepared without full knowledge of the implications of these factors can prove to be very misleading.

Retail warehouse schemes probably have more in common with standard high-value warehouse estates than with shopping centres. The buildings are similar, normally being constructed with a light steel frame and basic cladding. There are even some economies, for example retail outlets don't need the number of expensive goods doors or the amount of lorry circulation space normally required for a warehouse and although there is internal fitting and finishing that needs to be done this often falls to the tenant rather than the developer. The main difference is frequently the higher amount of customer parking space required, which reduces the amount of floorspace that can be built and in some (regrettably few) cases a perceived need to provide a more interesting external fascia.

CONVERSIONS

Building conversion projects vary so much that it is impossible to generalise about costs particularly when the aim is to retain a lot of an older structure. At one level, surveyors are rather like surgeons who can't be sure what they will find in a body until they have cut it open, a process which in itself is damaging. An experienced surveyor (and when it comes to building surveying the value of experience cannot be stressed enough) can sometimes anticipate the problems that might be found in renovation even in circumstances in which his toolkit of probes and whatnot are ineffective.

In regeneration, projects based on the re-use of existing buildings are common and enthusiastically pursued and the risks are increased when:

- ◆ Contingencies are cut to make the proposal look more superficially attractive.
- ◆ Major repairs are required to a building that is any event fundamentally unsuited to the proposed purpose¹⁵.

For instance, repairing the structure of a Georgian town house, a church or Victorian public baths and reconfiguring them for modern use can easily cost more than building anew. The golden rule is that you don't know anything about the cost of reusing an old building until you have comprehensive survey information and you still don't know too much after that. Renovation is risky, specialists do better, and the prudent developer includes a large contingency in his budget.

¹⁵ For the regeneration professional the nightmare is a public or voluntary sector project looking for a home when there is a shortage of candidates, because it often results in far too much getting paid to convert a building for a purpose for which it is fundamentally unsuitable.

It is also difficult to generalise about mixed use schemes, again for the obvious reason that by definition they vary a lot. From the developer's point of view they are certainly more complicated because they must meet diverse needs. But they have the significant virtue of widening the market for the space thus reducing risks and providing an accelerated sales and improving the annual return on capital.

Clearly any mixed use scheme needs careful planning and in this respect a distinction needs to be made between mixing uses vertically and horizontally. The latter is usually regarded as less challenging although it certainly poses design problems arising out of, for instance, different standards of rights to light. Vertical mixed use is much more difficult to implement. For instance, let us assume a proposal to build flats over offices. There are:

- ◆ Commercial problems. Keep in mind that professional investors will only pay top prices for buildings which give them the discretion to make whatever changes they think will maximise value over the long term. In practice this implies having a freehold title rather than a long lease and even then if they want to undertake building works to the commercial element of a scheme incorporating flats they will need to consult all of the residential leaseholders above.
- ◆ Legal problems. For instance, the legal regime covering service charges is different in each case and sometimes those residential owners can collectively acquire their freehold! There is no point in building in flexibility to a structure in order to minimise the risk of functional obsolescence if there are legal constraints which frustrate any change.
- ◆ Design problems. Critically, the means of escape requirements are different for residential and commercial occupiers. There will also usually be a need to separate the access to each which has implications both in terms of the efficient use of space and management costs.
- ◆ Financing problems. The conventional structures for financing commercial and residential development are different. While problems can usually be overcome this normally increases both cost and complexity.
- ◆ Planning Complexity. A mixed use scheme will have to satisfy more than one set of planning policies.

In any mixed use scheme attention also has to be paid to the compatibility of different uses. That can be trickier to achieve than it might appear. For instance some restaurants have a distinctive aroma and a small supermarket might be desirable as a shopping facility but less popular in terms of the lorry deliveries outside of normal working hours that it depends on.

ON STICKINESS AND MARKET FAILURE

Some people seem to expect that in a 'free market' the development industry should be expected to provide a full range of types of property to meet potential demand and at the price that potential occupiers want to pay. They attribute any shortfall in this respect to a 'market failure'. This is surely a misconception. I would like to have a good pub at the end of the street but I don't blame the market for failing to provide one. The pub companies are doing their job by choosing the best locations and what suits me doesn't suit them. Maybe if I drank even more.....?

Shortages of any type of property can arise from the market operating to ration capital investment in precisely the manner that it is supposed to. It might suit property buyers and for that matter planners to have a wide range of building types available on a constant basis and at a price that suits occupiers, but it would not suit the developers because of the enormous risk of developing buildings which might be very slow to let or which can only be sold at a loss. They are not slow to accuse the planning system itself of restraining their ability to meet new and unfulfilled needs in more promising circumstances. Together they do not provide a smooth mechanism for balancing supply and demand, especially in the short term and at a sub-regional level. Rather, most local markets are sticky and illiquid and prone to feast and famine. In economist's parlance, they are characterised by imperfect information and very inelastic in the short term.

There is no easy answer to this problem. Public efforts to bolster provision in areas where there is a commercial development market can simply drive down prices by underpricing commercial risk and thus deter private investment. The net gain is often questionable. The two major general qualifications are that:

- ◆ The south-eastern centred perspective of the property business can lead to ignorance of real commercial opportunities in other regions. I suggested in Section 5.2 that one logical public policy response would be to encourage regional and local developers.
- ◆ Publicly funded projects can demonstrate the rental levels obtainable in places where developers fear to tread for lack of market evidence of demand or pricing to support their appraisals and risk assessments.

In most countries, a larger proportion of commercial space is bespoke which avoids the supply issue. Presumably companies in the UK do not go down this route because they would rather invest in their core activities in the belief that this might be a more financially efficient choice but it is also possible that the relative enthusiasm of the financial sector in the UK for property investments makes funding more readily available here for speculative development.

I suggested in Section 3 that there are macro-economic forces which propel increases in the value of residential land. As far as I am aware there is no general, long term pattern of increase in the price of commercial and retail land in real terms (i.e. after adjusting for general inflation). It differs by sector and location. For instance, restrictive planning policies have led to real growth in the value of land for offices in London's West End and for the best located retail and warehouse schemes. But in many places and especially those anxious to attract employment, there is no fundamental shortage of land for this purpose and no imbalance between supply and demand that might drive land values upwards.

Although there is no general basis for assuming that the viability of commercial development will improve over time, it is far from constant. A key characteristic of the office development market in particular is pronounced cyclical fluctuations in values. This partly reflects a phenomenon known in economics as the 'hog cycle' following early research into the pattern of pricing in the Cincinnati livestock market. High profits for pig farmers lead them to rear more pigs. When the glut of pigs reaches the market, prices and profits collapse so farmers decide to rear fewer pigs. This eventually leads to higher prices so profits rise again and the cycle repeats itself.

In the property market pricing is not driven by the price of a second bacon sandwich but by wider economic factors and in particular fluctuations in occupier and investor demand and the readiness of banks to lend money. The lead times for development are a bit longer than the gestation period of a pig so a glut takes longer to arrive and, during the subsequent downturn, longer to clear.

The result is that in many areas there are quite long periods of low volumes of development followed by short peaks of intense activity. This can be seen in Figure 5 which is produced by IPD and which shows income and capital returns from office developments over time. Rental returns are the dark bars. Changes in capital values are shown by the white bars. As you can see, rental returns are fairly consistent, while the pace of capital gains is not. If this chart was extended to the present, you would see the white bars rise until 2078 and then fall steeply below the zero line before recovering again. If the data was disaggregated by area you would see returns on London sink the least and recover the quickest with only a slight improvement in most areas up until the beginning of 2013.

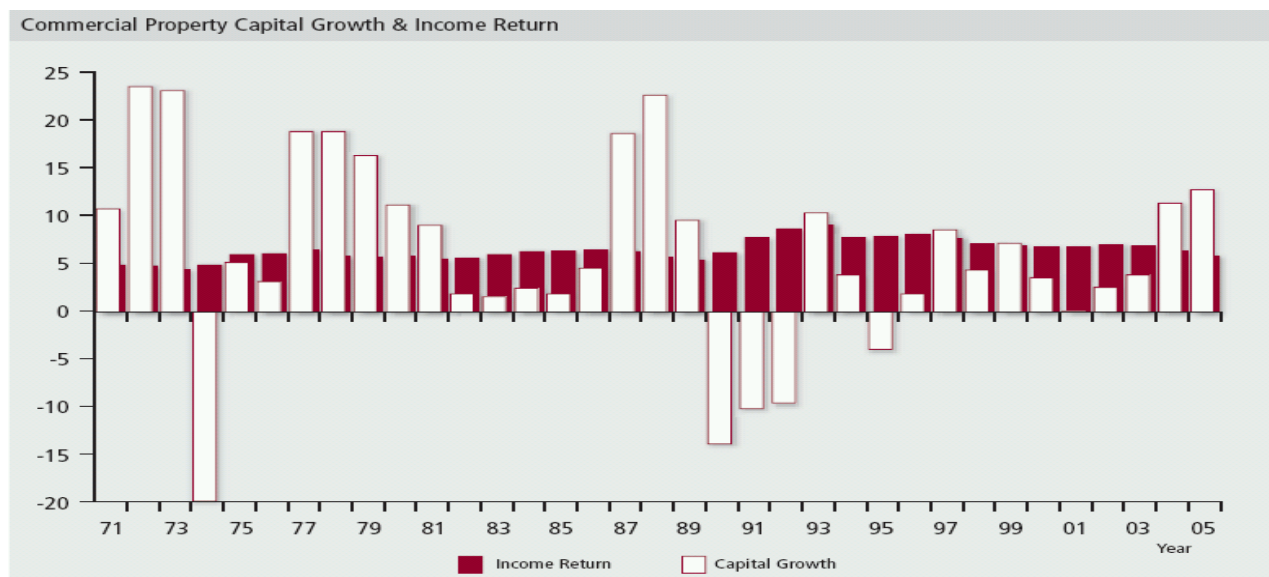


Figure 4 : Cyclical Fluctuations in The Office Market : IPD Data

If you are interested in what drives the markets in this respect I would recommend Oliver Marriot's classic book 'The Property Boom' or the latest edition of David Harvey's 'The Limits to Capital'. If you can't sleep, try both for contrast. The former is a former developer who stood as a UKIP candidate in the last general election and the latter is a prominent academic Marxist, but in neither case does that detract from the quality and relevance of their analysis in this particular case.

What does all this mean for planners and regenerators? In many places office development occurs like rain in the desert. It doesn't happen often, but when it does there is too much of it. Central areas in many towns are characterised by the legacy of past booms, buildings that were hurriedly developed in a flush of entrepreneurial enthusiasm when signs of occupier and investor demand coincided with a readiness of the banks to lend developers money for speculative schemes, resulting in buildings that are now tired, badly located and difficult to let.

The retail and industrial markets do not seem to be as troubled in this respect. I suspect that this is another reflection of demand elasticity i.e. well located shops will invariably let at a price! Also both shops and sheds are usually let as mere shells and fitted by the occupiers so they are not as prone as offices to functional obsolescence. (A common problem with offices is that old buildings sometimes cannot easily be adapted to suit newer patterns of use. For instance the limited floor to ceiling heights which are common in older buildings restrict the options to install new cabling systems or air conditioning). The trick for public agencies wishing to procure office development without building it themselves is to ensure that, at the upturn of the development cycle, there are sites available which can be easily and quickly developed as soon as economic conditions permit.

5. The Development Process

You are unlikely to be directly involved in the development process but nonetheless I set out to impart some of the flavour of the business so there is some justification for the slanderous comments that follow and which primarily relate to commercial development. I would stress that these are my opinions and that others might have a different experience.

As you know, developers don't do work alone but retain and lead a team of specialists. The size of these teams varies widely; the biggest I have seen comprised 47 different consultants on a single project.

At the top of the tree is the project or development management role. Different companies handle this in different ways depending on their capacity, internal policy and the nature of the project. Companies who manage their projects directly sometimes have one individual masterminding the whole process. This is a great way of ensuring continuity and a single point of responsibility but the downside is that the task requires a variety of skills and a jack of all trades is rarely the master of all of them. For that reason some of the larger companies split the various roles in-house, with perhaps different people responsible for:

- ◆ The commercial arrangements
- ◆ Taking a scheme through the planning process
- ◆ Controlling work on site

Housebuilders in particular tend to split management functions and can have separate land buyers, planners, project managers and marketing teams.

When calculating how much a site is worth a developer will usually take advice from:

- ◆ Property agents on the value of the completed scheme.
- ◆ Various design professionals on what will be required to bring it to fruition
- ◆ Quantity Surveyors on the cost.

In my experience, one of the key underlying problems encountered in managing complicated building projects is a failure to achieve a good enough collective understanding of what is proposed. Quite simply, communication within any team is imperfect, particularly when everyone is working to a personal time and fee budget. But there are other issues with the typical design team that the developer will need to be aware of and to manage. Each of the professionals involved:

- ◆ Is the victim of professional training that will impart its own biases and mix of skills that are not ideally matched to his needs.
- ◆ Will have an agenda which he cannot assume is perfectly aligned with his own.

For instance, there is a constant risk that an architect will design a scheme with aesthetic appeal and a sensible layout but which is inefficient in structural and construction terms. These

days a lot of the detailed design and in particular the integration of components that have been manufactured off site, is done by the building contractors. Bringing these two skill sets together in the context of the typical contractual arrangements which place the two parties on opposite sides of a negotiating table, is not straightforward.

Clearly the civil engineer has a role in this respect but they can be risk averse because they are not paid any more if the building stands up but will be in deep trouble if it falls down. A development surveyor rarely has the know-how to challenge an engineer on these technical matters. In contrast many enjoy paying close attention to the architectural design of their buildings particularly where it impacts on cost. They will also have a view on what the customer wants but nonetheless listen carefully to the views of the agents who are dealing with those customer's on a day to day basis. The main difficulty is that agents has a vested interest in selling a building quickly and with minimum effort which can lead to bias against innovation and towards over-specification.

Quantity Surveyors are perhaps in a different position. You might have noticed that many of them are now re-branding themselves as cost consultants probably in an understandable reaction to being characterised as mere brick counters. Notwithstanding, at the heart of the quantity surveying profession and the building contract system is a method of cost estimation based upon pricing the individual components of the building, excavated tonnage, the bricks, the steel and the concrete. This is not perhaps the best way of ensuring that attention is paid to how costs might vary depending on how the various bits are put together. (Think lego! You can spend days or minutes over making models which differ in complexity but have exactly the same number of pieces!).

One of the key talents of a good and experienced quantity surveyor is his ability to guess what price contractors might tender for a job irrespective of the cost estimates produced by their usual methodology. (The design team might have a sweepstake on this!). But the contractors approach to cost estimation is basically similar to the quantity surveyor's albeit usually with a more considered view on how costs might be cut in practice by the efficient use of existing resources and different techniques and methods. To use a simple example, the two usual ways of creating the strip foundations for the brickwork of a simple building are to dig a trench and then either fill it with concrete or to put a small amount of concrete in the bottom of the trench and then start the brickwork from there, below ground level. The former method is more expensive in terms of materials but cheaper in terms of labour and quicker and tolerates small errors in setting up the site. The choice will depend to a great extent on the cost, availability and skill of the labour force involved. The contractor who will actually be carrying out the work will be better placed to estimate this than the consultant quantity surveyor. The mechanical and electrical engineer's role is particularly problematic since these services are particularly prone to causing problems and are sometimes difficult to cost. That is another argument for a design and build contract in which you can simply state the functional standards that the building needs to achieve in terms of temperature etc. and leave it to the contractor to work out how to achieve it.

One approach to circumventing these problems is to use a 'management contract' arrangement. This effectively treats the building contractor as a member of the clients design team but implies a marginal loss of the pricing efficiencies that arise from a competitive tendering process, so it only tends to be used for complicated buildings. If nothing else, the design team who are consulted on the most appropriate form of building contract to use will often advise against any contractual arrangement that reduces their own involvement!

Beyond that, the developer has the difficult task of reconciling all of these factors and making sure that the input from each of the consultants can be harnessed to support a bid that is pitched at a level that gives them a chance of buying and developing a site in a competitive bidding situation. The agent will prefer a high specification and a low quoting price that will make it quicker and easier to attract an occupier and in passing to earn their fee. The architect will want a building that will satisfy their inner aesthete and win the plaudits of their peers. Quantity Surveyor's will propose a budget that there is little danger of exceeding and the engineers will propose a belt and braces design that minimises the risk of problems and attendant writs. The developer brings all these inputs into his development appraisal and discovers that he can't afford to buy this or any other site because the advised values are too low and the costs are too steep. There usually follows something of a negotiation within the team during which the proposals and sums are tweaked and the less cost-effective elements of the design are usually jettisoned. At the end, the developer will often juggle the assumptions to try and justify the price demanded for the site, knowing that if he can't buy land he is out of a job.

The volume house builder, being much more process driven, has overcome many of these intrinsic inefficiencies in the development process. They will normally act as the managing contractor as well and build their own houses, often to a standard design. These are optimised to marry construction efficiency with customer preferences. Few are unique and so the cost of each is well established. As a result the overall level of design and contract management fees is much lower in the volume house building sector than it is in the commercial sector.

6. Doing the Sums: Introduction

In what follows there are various references to sources of free online information. I haven't included links here because these go out of date. If you visit my website www.regenerate.co.uk and look under links you will find what you need. I check these periodically to make sure they are live.

6.1 VALUATIONS AND APPRAISALS

At the outset a distinction needs to be drawn between efforts to estimate what land might fetch if sold on the open market and what it is worth for development. The first is what is conventionally referred to as a valuation and the second as an appraisal. In what follows we are primarily concerned with the latter. The two figures can differ a lot. You might wonder why.

An analogy might explain it. I once bought a ticket for an FA Cup Final from a tout. The face value of the ticket - in effect the FA's view of what it was worth - was £20. This probably reflected their view of an economically efficient price based on an appraisal of supply and demand and taking into account some wider policy aims. For instance, some tickets are intentionally sold at an affordable price and others sold cheaply for promotional purposes. This gives rise to opportunities for the touts and in this case the tout demanded £30 based upon his past experience of the amount that individuals would pay. For my part, I would have swapped a limb for that ticket so I happily parted with £30. So in this case there are three different perceptions of 'value', the FA's, the tout's and mine. To extend the analogy a bit, when you do an appraisal for policy purposes, perhaps for a SHLAA or CIL, your position is analogous to the FA's. When you appraise someone else's project you are in the position of the tout. And the only person with a reliable knowledge of what the buyer will pay is the buyer!

There are in essence only two relevant ways of appraising the worth of land for development. These are:

- ◆ Comparative analysis which involves estimating the value of a site by comparing it with others in the area that have been sold for development at a known price, making adjustments to reflect differences in circumstances. Because the starting point is comparison with the price at which land has actually been sold in the market, this is often preferred when a valuation is required e.g. when a CPO is contemplated.
- ◆ Residual land value appraisal which is based on deducting the costs of development and the required level of profit from the anticipated proceeds of development to arrive at an estimate of the surplus available for land purchase. In this case the starting point is the underlying economics of development. This is discussed in more detail in Section 7.5.

You can also use benchmarking and 'discounted cash flow' analysis as tools for estimating viability. These are both variations of residual land value analysis. The former simplifies parts of

the residual value analysis and can make the conclusions easier to understand. The latter is the sharpest tool but is more difficult to use. Both are discussed in more detail later in this section.

In the land market the price at which land is sold will often exceed any rational calculation of what it is worth for development based on normative or standard assumptions about values and costs. Sometimes this is because there is a purchaser with a special and unpredictable interest; maybe an adjoining owner or a developer who is desperate to secure a scheme to fill a gap in their programme. Sometimes the purchaser has a unique angle on the potential development. But the most common reason for a high price is the 'winner's curse'. This was referred to in Section 3.4 and is best understood as a behavioural phenomenon.

Land is the vital fuel for a development business and a company who fails to buy enough will not only have trouble sustaining their business but will also have no need for their development staff who are thus incentivised to bid aggressively for the available sites. The bid in each case will be arrived at by making assumptions about a variety of financial cost and value variables. In order to outbid the competing buyers, optimistic assumptions have to be made about those costs and values. Some times that optimism might turn out to be justified but the balance of probability is that the true economics of the scheme are somewhat less impressive than suggested by the forecasts. As a result the bid will be too high and the price paid for the land will exceed the price that would be predicted on the basis of those standard normative value and cost assumptions.

The interests of a Planning Authority are not simply the maximisation of planning contributions or affordable housing. They also usually need to ensure that there is enough new development in their area. The pace of development will slow if land prices are too high and for that reason there is a strong argument that when considering viability issues the planning system needs to focus on the worth of land for development and not on what it might fetch if sold on the open market. That in turn suggests that residual land value analysis - notwithstanding its many, many faults and weaknesses - is the most appropriate methodological starting point when appraising individual projects for planning purposes.

In what follows I will ignore the semantic nit-picking of the property profession. Unless otherwise stated references to value refer to what the land is worth for development and to not to what it might fetch if sold on the open market. For that reason I briefly cover comparative analysis in the next section before moving on to look at residual value techniques in more depth. But note that if you instruct Chartered Surveyors to provide you with advice he or she will invariably clearly state whether you will be getting a valuation or a calculation of what the land is worth for development if only because the former is more likely to lead to a writ if it proves to be inaccurate.

6.2 COMPARATIVE SITE ANALYSIS

This approach, which was described in the previous section, is the method preferred by the Lands Tribunal who are invariably concerned with the market value of a property for quasi-legal reasons and who are mindful of the subjectivity and wide range of values that can be produced

using residual land value models. District Valuers often like it for the same reason, but it doesn't follow that it is the most suitable tool to use in a town planning context. By definition a comparable site value analysis starts from the market value rather than the development value and, as I have argued, the two often differ and the main aim for planners should be to understand what land is worth for development rather than the price it might fetch if sold on the open market. This is the main drawback in using data on land values from Valuation Office Reports (see later) which give typical values for residential and industrial land broken down by region and major centres¹⁶. Bear in mind also that both Land Registry and Valuation Office Agency data is historic, incomplete in terms of detail and reflects transactions in yesterday's markets under yesterday's planning policies and regulations.

In any event there are usually practical problems involved in applying comparative methods to land rather than buildings. There is frequently a lack of even vaguely comparable sites and it is rare that all of the terms of relevant transactions are known. Sometimes adjustments can be made using hard data (for instance on the cost of creating adequate access) but in a worryingly high number of cases these are simply based on provisions and guesswork.

Much, much worse is comparative site analysis as practised in the pub or at the water fountain in the Town Hall and which usually involves gross oversimplification and the recycling of half-digested anecdotes. Rumours that "old Charlie up the hill got a million an acre for his land" don't normally acknowledge the fact that Charlie had a flat, square site just off a major road and the site being compared with Charlie's is a long, thin, sloping, wet clay pit with buried bunkers accessed by a dirt track.

But there is a version of comparative site analysis that I would commend to anyone involved in policy studies where it is the wider picture rather the viability of an individual scheme that matters; and that is to use the evidence provided by your eyes and ears. If when you look around the sites available in your area you see no evidence of construction activity then odds on there is a viability problem. Conversely if the only thing preventing you from seeing a jungle of cranes is the stack of applications for planning permission on your desk, there probably isn't. Equally it isn't difficult to do a quick vox pop of local developers and agents and while the views have to be taken with a pinch of salt and compared with the visual evidence, this can provide invaluable insights into what might work locally, what will not, and why. In my view this type of evidence if properly marshalled and interpreted can sometimes provide a better insight into local viability constraints at a fraction of the cost of a large theoretical residual land value modelling study. But I would stress that this doesn't work at the level of an individual scheme where site specific factors play a major role alongside local market conditions in determining viability.

¹⁶ The scope of the information published by the Valuation Office Agency has now been curtailed following budget cuts. As a result, where information is available, it is often not up to date.

6.3 THE OFFICIAL VIEW: GUIDANCE ON VIABILITY APPRAISAL IN THE PLANNING SYSTEM

Two pieces of Guidance on the use of viability appraisals in the planning system were published in 2012. The Local Housing Delivery Group chaired by Sir John Harman produced a report entitled “Viability Testing for Local Plans” and the RICS issued guidance for members entitled “Financial Viability in Planning”.

Both effectively recommend the use of Residual Land Value Appraisal as the basis for decision making but neither provides a definitive ‘one size fits all’ approach to doing the calculations. The former is freely available online. In my view it is a balanced assessment and only fails insofar as it underplays the potential for using the ‘eyes and ears’ evidence I referred to above.¹⁷ The latter is also available online but is only free to RICS members. In my view it is less useful for policy studies because it implies a preference for complicated models notwithstanding that the extra expense involved is not necessarily rewarded by any meaningful increase in accuracy.

One issue that both had trouble dealing with is the assumption that should be made about the price of the land purchased for development, sometimes referred to as the threshold land value because it refers to the threshold price below which landowners might be reluctant to release land for development. Should it be assessed as the price actually paid by the developer? Or the market value? Or established by a formula based on the value of the land in its current use? This is a contentious and political issue and as a result both reports hedge their bets on it but in general the Local Housing Delivery Group believe that the calculation should be based on current or suitable alternative use values while the RICS has a preference for a market value approach with the caveat that this value should take account of planning policies. This might be partly because the former focuses on policy studies while the latter is mainly concerned mainly with decisions on individual applications but it would be surprising if the RICS Guidance in particular did not reflect the preoccupations and interests of the rather narrower range of property professionals involved in its creation. Keep in mind that this is Guidance and not instruction; you don’t need to follow it.

6.4 RESIDUAL LAND VALUE APPRAISAL: MATHS & MODELS

So you are rather stuck with Residual Land Value Appraisal as the key methodology for viability studies in the planning system. The good news is that it is relatively easy to learn how to do sums involved in a basic residual land value appraisal, but you might be disappointed to discover that simply mastering the maths and models will not enable you to make accurate assessments of the viability of individual developments. Quite simply, the appraisal model is not a financial SatNav which will guide you unerringly and accurately to a reliable view of the value of a piece of land. Rather, the magic lies in the quality of the information on which the

¹⁷ I also have reservations about its suggestion that the BCIS index should be the first choice of data on building costs because it involves a very high degree of generalisation. This topic is covered in Section 7.4

appraisal is based. The recent history of the role that quantitative models played in causing the credit crunch graphically illustrates how important it is to understand what they can and cannot tell you and to take care to start with considered and accurate assumptions. To repeat, in development, small mistakes in estimating sales values in particular can lead to big differences in predicted land values.

When you are analysing development land values for policy purposes it is quite appropriate to use generic and normative estimates of values and costs. But when dealing with individual schemes you need more specific information. This places planners at a major disadvantage in negotiations. They will not usually be party either to the developer's thinking on issues of commercial importance or to the advice from the project design and marketing team. Professional valuers try to make up for this by drawing on a reservoir of skills and experience which you cannot replicate by reading a book or doing a short course. And as I will show later they still get it wrong!

So why should you bother? There are several good reasons:

- ◆ If you understand the arithmetic of the creation and destruction of value in the development process, what tends to make a big difference and what does not; you will have a better idea how to create planning policies that will achieve a positive result.
- ◆ As stated above, if you are involved in an exercise which involves generalising about viability across a wider area – the sort of analysis that might underlie decisions on where to promote development through a Local Development Framework or the calculations underlying a CIL or affordable housing regime - you don't need the degree of precision that is required when dealing with a specific site. This level of analysis is within the competence of any planner with basic training in development economics, perhaps using consultants to check the conclusions.
- ◆ In development control and in a negotiating situation where you have an appraisal submitted by a developer, it helps to understand how these calculations are done and where the assumptions made might be self-serving.

If it makes you feel better, I have been doing appraisals for decades both as a developer and consultant but still would not claim an ability to second guess what another developer might reckon his site is worth with reliable accuracy. Anybody who says they can do this is a charlatan, but depending on what the point of the exercise is, there are usually more reliable ways of skinning the cat.

6.5 HOW DO DEVELOPERS DO IT?

So how do developers do it? In short approaches vary, not least because companies vary. Let us start from the assumption that the model should reflect the objectives and approach of the developer using it. This is often forgotten - not least by consultants using standard appraisal models - but it is important.

Bigger commercial firms invariably have a formal and often complex appraisal system which provides information on returns in a way that fits their objectives and which also predicts cash flow and thus serves as a basis for controlling project finance. This might be an 'off the shelf' model or a standardised in-house model. For the largest phased schemes a bespoke spreadsheet based appraisal can run to dozens of linked worksheet pages. House builders will sometimes base strategic investment decisions on a cash flow based model while using a more basic residual land value appraisal for tactical decision making e.g. settling the housing mix. Senior management will also make use of formal market projections sourced from research and data providers such as IPD¹⁸. Many will adopt a belt and braces approach when bidding for land. As the development business is very sensitive to operational, financial and market risks, so you might expect any appraisal to deal with them explicitly and comprehensively, but as I have explained residual valuation techniques do not; and unless they include realistic cash flow forecasting they don't really deal with timing and timing and financing issues either, although many appraisals include a sensitivity analysis albeit sometimes crude insofar as they provide guidance on what the outcome will be in certain circumstances but no guidance on the relative likelihood of those circumstances coming to pass.

More sophisticated risk appraisal techniques such as Decision Tree, Probability or Monte Carlo analysis are very seldom used. But there are other ways in which the issues are addressed. Often, comparable transactions are identified to make sure that the price being offered for the land is not considerably in excess of a crudely defined 'going rate'. When doing the appraisal they might adjust their estimates of potential costs and receipts depending on their outlook, taking a cautious view on sales values and timings and if potential costs cannot be verified they will add a contingency into the budget. Or they might simply require a higher margin from risky projects¹⁹. Most important of all, the final decision will depend not just on the perceived economics of the particular project but on a wider judgement of the commercial outlook and a lot of emphasis is placed on 'gut feel' based on experience.

This emphasis on tacit knowledge gives rise to the dangers involved from cognitive and other bias in decision making. I have personally had proposals rejected by a board despite appraisals indicating nearly bomb proof profitability and also once had a substantial investment in a site approved without any serious attention being paid to risk assessment at all. The main difference was that in the former case the market was falling and the site was in the North East where "it always rains"²⁰. In the latter the market was rising and the board were desperate to climb aboard what they perceived as a railroad to riches. As it turned out they were wrong on both counts; the meteorological insight was erroneous and the gravy train had been derailed.

¹⁸ See: www.ipd.com

¹⁹ Some assume that developers will cut the margins that they seek in a recession. In fact they do the opposite to compensate for higher perceived risks.

²⁰ The phrase actually used by the Chairman of the company involved and a good illustration of the southern bias in the business!

There is also the issue of the 'winner's curse' referred to earlier in Section 6.1 which pushes developers into making more optimistic assumptions about values and costs than might be justified on the basis of a thorough empirical analysis alone.

For simple schemes, smaller companies and solo developers might rely on mental arithmetic for appraisal particularly when there is no need the backing of a board of directors or a financier. If you can create a building worth £1m which costs £0.8m, which you are confident that you can sell within a year, you hardly need an appraisal to assess returns and many will rely on instinct to gauge risks. The need for an appraisal then arises when there is a need to attract finance from a bank or as a tool for tweaking the economics of the project.

7. Doing the Sums: Residual Land Value Analysis

A 'residual value' calculation can be used to estimate any single variable in a calculation of the economics of development, for example:

- ◆ The worth of development land.
- ◆ Where the land cost is known, the potential margin for the developer.
- ◆ The surplus available to make planning contributions.

The basic calculation in each case is shown in the text box on the following page.

I have explained the central role that cash flow plays in investment decisions particularly in relation to longer term schemes and that the underlying commercial objective of the most developers is to achieve a high return on capital (the ROCE) rather than a simple margin on cost. But the calculation of the margin on cost is still important simply because any developer will always need ensure that the projected receipts from a project will exceed its costs. Especially for shorter term projects it is a useful 'back of an envelope' test of viability. Most companies will require that any project achieves a hurdle rate in terms of both ROCE and margin on cost.

The point has already been made that residual appraisals are poorly suited to measuring the impact of timing on development economics because they focus on the total return from a project but don't tell you much about the ROCE. They also usually assume that all of the funds needed for a scheme are borrowed. That is a reasonable assumption when dealing with smaller developers but the point has already been made that with larger firms and especially volume housebuilders it is rarely the case. Inaccurate assumptions about how a scheme might be financed can accidentally introduce significant bias into the analysis²¹. Simple models can hide other timing issues. For instance they might ignore the impact of staged payments for land or the income that might arise from letting a building before it is sold. For this reason more sophisticated and still relatively unconventional tools such as 'discounted cash flow' models can be more useful when dealing with long term schemes in particular. We shall turn to those later.

There are numerous problems with residual land value analysis. The biggest has already been alluded to several times: i.e. the outcome of the calculation is hypersensitive to changes in the underlying assumptions. For instance, if it is anticipated that a scheme that costs £0.8m will sell for £1.0m, the underlying land is worth £0.2m. But if the receipts are increased by 10% to £1.1m the residual worth of the land increases by 50% to £0.3m. Conversely if costs increase by 10% to £0.88m the land is only worth £0.12m, a reduction of 40%.

²¹ Because the rate of interest on a loan is lower than a developer's target return on capital appraising on this basis should tend to flatter the economics of longer term schemes but disguise higher levels of project risk.

The Conventional Approach to Residual Value Appraisal

IF YOU WANT TO KNOW HOW MUCH YOU CAN AFFORD TO PAY FOR A PIECE OF LAND FOR YOUR DEVELOPMENT THE CALCULATION IS:

Potential receipts

less

Development costs including any planning contributions plus any interest payments and minimum required level of profit

equals

The 'residual' development value you can afford to pay for the site.

IF YOU WANT TO KNOW WHETHER A SCHEME IS VIABLE ON A PIECE OF LAND WHOSE PRICE IS KNOWN:

Potential receipts

less

Development costs including any planning contributions and the cost of the site plus any interest payments

equals

The profit (Is it adequate?)

IF YOU WANT TO CALCULATE THE SURPLUS AVAILABLE FOR PLANNING CONTRIBUTIONS:

Potential receipts

Less

Development costs including the cost of the site plus any interest payments

Less

The developer's required level of profit

Equals

The amount available to make planning contributions

The resulting capacity for error and disagreement is impressive. This is illustrated by a quote from Staughton LJ in *Nykredit Mortgage Bank plc v Edward Erdman Group Ltd* [1996].

*"Even more striking, the court in that case was shown the details of five different residual valuations of the same site (which had been carried out by leading firms) and found that, by taking the highest and the lowest figure from the five for each element in the valuation, one could arrive at residual site values of either £4,734,422 or £65,666. 'Which, as Euclid would say, is absurd!'"*²²

The key point to remember at this stage is that residual land value appraisal is a reasonable way for me to calculate what a site is worth to me. It is not a good way for you to work out what my site is worth to me because you won't share my knowledge of the plans for the site or assessment of the risks involved or views on its future and these inevitable imperfections in your knowledge will lead to big errors in the calculation. This doesn't matter much when doing studies for policy purposes which are necessarily based on generalisations but they are important when dealing with individual sites when you want to second guess a developer's own assessment of the economics of a specific scheme.

So if standard residual land value models are so unreliable why does anyone use them? There are three reasons:

- ◆ They are relatively simple to use and widely understood, certainly in comparison to discounted cash flow models (see below).
- ◆ The figures used in a residual land value appraisal can easily be used as a basis for a project budget. This reduces the possibility of overestimating the price that can be paid for a site by omitting some costs from the calculation. The same cannot be said of the comparative approach.
- ◆ Most developers don't make a decision on the basis of the appraisal alone. They understand its failings.

7.1 DISCOUNTED CASH FLOW (DCF) MODELS

The core of this technique is that you use the same basic assumptions about costs and values as you would in a conventional appraisal but construct a cash flow of the income and expenditure over the life of the project and perhaps add in an explicit allowance for inflation. An analysis

²² In fact things aren't quite so bad. Staughton arrived at this 'absurd' result by mixing figures from different appraisals. This is a mistake because each would probably have been based on a different idea of what the development might comprise; for example cheap but inexpensive terrace houses or valuable but costly villas. Effectively he seems to have conceived a scheme based on the cost of a terrace and the value of a villa and compared it with something built for the cost of a villa and sold at the value of a terrace. Unsurprisingly, the results varied widely.

based on quarterly figures is usually quite accurate enough for appraisal purposes. The net income or expenditure for each period is then discounted over the period of the project so that in effect current income is treated as more valuable than future income and current expenditure is more onerous than future expenditure. The principle (which is sometimes referred to as the time value of money) might sound odd but it is really self-evident. You should prefer to have £1000 now than £1000 in a year's time if only because in the meantime you can put the money into the bank and earn some interest or invest it in something more lucrative.

And there's the rub! The key issue is what it is worth to have the money now rather than later. This decision is embodied in the 'discount rate' which is applied to reduce the present value of future costs and income. There is a lot of debate about this. My personal preference is to use a notional developer's target rate of return on capital (say, before taking financing into consideration, 4% per quarter year within a range 3% to 5% depending on the circumstances) and apply it to the net income and expenditure.

You can use discounted cash flow analysis in two ways. You can:

- ◆ Calculate what is called the Net Present Value (NPV) of the land at the start of your project. This effectively becomes the amount that you can afford to pay for the site.
- ◆ Alternatively, if you know what price you'll have to pay to secure a site you can calculate the 'internal rate of return' (IRR) on your project to see if it is greater or smaller than the target rate of return on capital. This is a reasonable proxy for the annual ROCE measure referred to in Section 3.1, as applied at the level of individual projects rather than the company as a whole.

The great advantage of discounted cash flow analysis is that it is much better at allowing for the effects of timing of costs and receipts on the real return from a project and is more aligned with the real corporate financial targets of the larger housebuilders in particular; which is the size of the annual return they will make on their shareholders capital. The main disadvantages are that:

- ◆ The underlying assumptions about sales and costs are still crucial to the result although usually less so than in a conventional residual land value appraisal.
- ◆ The 'output' calculation can run to reams and reams of Excel worksheets and huge number of formulae and calculations that are almost impossible to audit. This increases the potential for errors.
- ◆ The choice of discount rate used can be controversial.

Practice varies. When working on a consultancy basis and looking at housebuilding schemes I made no allowance for finance costs, the implication being that finance will be arranged and paid for from within the targeted return. For commercial schemes I treated the interest on a loan as an added cost but might then use a discount rate at the higher end of the range. When

working as a developer the approach adopted by my employers varied widely depending on their specific commercial objectives.

There isn't really room to discuss these points here. There is a substantial body of theory on financial appraisal but unfortunately much of the thought given to the use of DCF in the property business relates to investment management rather than development. If you are interested, plenty of general guides can be found on the internet and the subject is covered in the Treasury's 'Green Book'. Alternatively, find material by Andrew Baum²³ who is an academic specialist on this type of analysis.

7.2 'OFF THE SHELF' MODELS

If you are going to try and do the sums yourself, you need a model. There are various standard models used by Local Authorities and public agencies. Most are complicated and none are perfect - far from it - but they do save you the daunting task of creating your own.

Examples of standard models include:

- ◆ The 'Three Dragons' model which was originally commissioned by the GLA to help Local Authorities in London to work out how much affordable housing could be accommodated on any given site.
- ◆ The Homes & Communities Agency's (HCA) 'Development Appraisal Tool' which is used by and freely available from the Agency.
- ◆ The Homes & Communities Agency's 'Area Wide Viability Model' (AWVM) developed by BNP Paribas and intended for use in gauging the need for financial support for housing strategies on an area wide basis.
- ◆ Commercial packages such as 'Argus' created for use in the development business and referred to earlier.

They all have different characteristics. Both Three Dragons and the HCA Development Appraisal Tool model were commissioned by bodies with a primary interest in affordable housing. As a result they go into great detail about that and skimp on other factors that are equally critical to the financial outcome especially in phased or mixed use schemes. Neither is really suited to non-housing schemes and in my humble view both are ill-suited to assessing long term phased schemes because they don't adequately handle (a) the impact of the timing of costs and receipts on the annual return on the money invested and (b) the impact of different approaches to project finance on the returns. The AWVM is probably fine for its intended purpose but is complicated and I would argue is not very user-friendly in any other context. Argus is better

²³ For example, Baum, A and Mackmin, D (1996) The Income Approach to Property Valuation (Fourth Edition), Pub. Routledge

balanced but is complex. You have to pay for both Three Dragons and the commercial models but the HCA models are free downloads from their website.

In my experience the relative complexity of all of these models leads to errors in the hands of unskilled users who are less capable of spotting a nonsensical input or result. The Three Dragons model has in the past provided default values for some of the variables²⁴ but this effectively requires a judgement on whether or not the default value is appropriate in each instance. Some of the worst errors that I have seen people make in using it have resulted from uncritical adoption of default values. Remember, the **magic is not in the appraisal model. Rather, it lies in the quality of the information on which the appraisal is based.**

This need to check and audit conclusions highlights a second generic difficulty with these appraisal tools. Each of them has their own biases but more importantly they are what are known as 'black box' models i.e. you feed in assumptions about costs, timing and values and the model spits out the land value or development profit. The actual calculation is hidden in many cases and thus difficult or sometimes impossible to check. Developers can resent this lack of transparency. Most run their own appraisals in parallel and only accept the conclusions from the standard model if it produces a more advantageous result than their own.

7.3 USING RESIDUAL LAND VALUE APPRAISAL MODELS FOR PLANNING PURPOSES

Nearly all of the standard models you will encounter have their roots in the traditional approach to appraising single development schemes. In most case, with the AWVM being the main exception, that is still what they are primarily used for.

My own preference is to use models of my own devising with simple and transparent generic calculations for policy studies and more complex bespoke creations for live projects.

A good approach if you want to be as accurate as possible and the developer is prepared to collaborate is to get them to provide their calculations, which will often be based on a model of their own devising and better suited to their style of operation and the scheme in question. This gives you access to the developer's information and provides a means to question the assumptions made. You could ask a qualified valuer with local knowledge to check them for you.

When considering viability on an area-wide basis you don't need a complex calculation because a high degree of generalisation is appropriate. For instance, you don't have to break down the types of homes on a residential scheme or the site specific costs that will be incurred simply because you don't know what they will be. But you do need to make sure that the assumptions that you have made do really do represent the economics of developing typical of the sites in your area. For instance, you could:

²⁴ I believe that this might no longer be the case in the latest versions.

- ◆ Measure sales receipts of a 'per square metre' basis without breaking down house types beyond a simple distinction between houses and flats and market and affordable housing.
- ◆ Make a single allowance for site preparation and infrastructure works.

Obviously that means that the result will not produce an accurate assessment of the value of any particular site (far from it!) but that shouldn't undermine the usefulness of the conclusions as a basis for policy. You simply have to accept that once you move away from evaluating individual sites towards setting policy based on a more global view of the economics of development in your area, some sites might become unviable while in other cases landowners will do very nicely!

The CIL Guidance positively encourages planners to think about viability in this higher level and strategic way. It recognises that the appraisal is only part of the viability analysis and that in any event the latter should inform rather than dictate the judgement on the level of charge. For instance you might decide that a higher but affordable charge might yield funds which, spent on infrastructure, could enable more development in the future. And following the point in Section 5, in my views there is nothing theoretically wrong with using anecdote and observation to support conclusions about the viability of CIL charge providing this is used and interpreted well and in a structured way. In fact investigation along those lines can prove useful in highlighting nonsense in viability studies that are over-reliant on number crunching at the expense of real local intelligence.

If you do want a simple model, those on my website provide examples that might be useful²⁵. Others I have seen in the context of emerging CIL Viability studies would serve equally well. Once again, the magic is not in the model but in the veracity of the assumptions fed into them and the wisdom of the conclusions drawn.

7.4 BENCHMARKING

Benchmarking is a simple variant of this approach which can justifiably be accused of over-simplification but which has its merits as a 'ready reckoner', perhaps when evaluating policy options or to double check conclusions reached by other means. For instance, there is an old housebuilders rule of thumb that the price you can afford to pay for a site for a standard housing scheme is roughly 30% - 40% of the value of the houses that you could build on it before deducting the cost of meeting planning and affordable housing requirements. So, if you can develop 45 houses which would sell for £200,000 each, you could afford to pay £3m for the

²⁵ These models (or variants on them) have been used in numerous policy studies, the Planning Advisory Service (PAS) Courses on Viability for Planners in Autumn 2010 and in the RTPI's online CPD course on viability. They are just about good enough for most strategic policy purposes but I cannot commend them to you as serious project appraisal tools where real investment decisions need to be made. They are too simple. An 'alternative' third model on the site is a bit more sophisticated insofar as it requires a more detailed analysis of costs. It also suffers from the flaws of a conventional residual value appraisal and is thus only suitable for smaller commercial projects involving a single building

land. This ready reckoner doesn't work in comparatively high and low value areas without adjusting the percentage or for higher density sites, but still seems to be used by some land buyers as a basis for quick decisions on whether to take an interest in a site or not.

Another approach when looking at housing land on an area wide basis is to use Land Registry data on house prices to adjust any information that you can find on the value of comparable land²⁶. For instance if you know that similar houses in Dryport and Goldenvale sell at roughly the same price then it is reasonable to suppose that sites with similar physical and locational characteristics will be worth the same before taking into account any difference in planning policies. If houses in Goldenvale sell for £10,000 more to similar houses in Dryport and developments typically comprise 40 dwellings per hectare, then land values on smaller sites will typically be £400,000 per hectare higher (i.e. 40 dph @ £10,000 extra per dwelling, perhaps less a bit because you don't get the benefit of the sales until the end of the development period!). One caution though; this takes you back to an estimate of the market price of land rather than its worth for development and assumes that all of the value generated by higher house prices will materialise in that price. A third approach which can provide a helpful 'ready reckoner' guide for policy making - especially when council members become involved - is to use residual land value analysis to calculate the thresholds at which various types of development become viable and then use a graphic illustration of these to suggest a basis for land allocation policies. I have found this particularly useful when dealing with Councillors. An example is given in Figure 5 below.

It cannot be stressed enough that all of these are rules of thumb that are a helpful starting point to understanding viability at a strategic level but cannot be used as a guide to individual schemes.

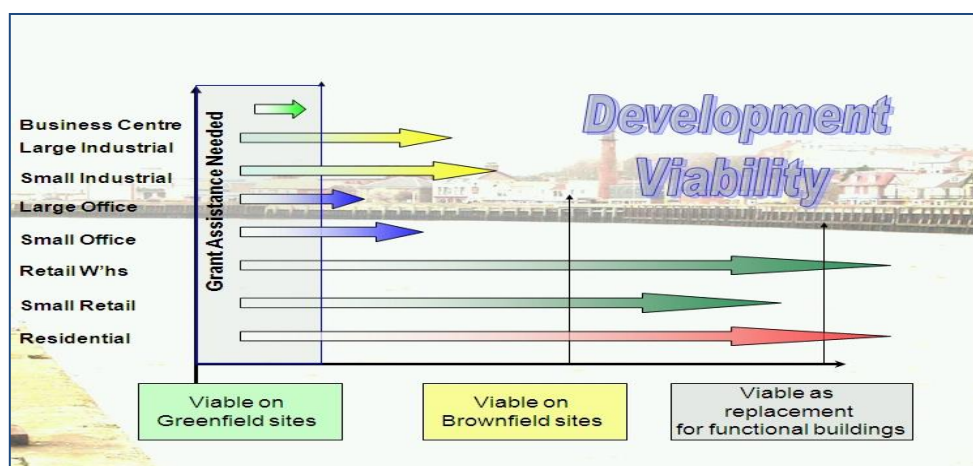


Figure 5: Development Viability Benchmarks

²⁶ The Valuation Office Agency used to provide reports on residential land values across the country but the spending cuts seem to have terminated this useful series of reports.

7.5 USING THE RESULTS: THE MARGIN OF ERROR

I have illustrated how small differences in the anticipated level of sales result in major changes to the residual worth of a development. In places where land values are high, the impact of changing assumptions in percentage terms will be lower and the converse is true where values are low. Given that you can't achieve precision when estimating values and costs it follows that the margin of error in estimating development residual land values is considerable.

So how accurate can you be? The most important variable in most calculations is the sale value of the property. Every year the RICS compares the valuation of a large sample of commercial properties against their actual sale prices²⁷. In general their conclusion has been that around 60% of valuations are within 10% of the subsequent sale value of the property in question with variations between sector and over time. (And around 80% achieve 20% accuracy). I am not aware what the margin of error is when valuing residential property but would imagine that it is rather lower²⁸. Keep in mind that this refers to valuations of existing property by experienced valuers and consider it in the context of the impact of scale of the adjustments made to the appraisal of Scratch & Sniff's scheme in Section 2.4 and the impact they had on the outcome. A 5% change in the key assumptions wiped out the profit entirely. Remember that when you are doing a development appraisal you are trying to anticipate the sale value of a building that hasn't been built yet and - when doing a high level appraisal for policy purposes - you sometimes don't have a design or even a location! Both of these affect not only the estimate of sale value but also of the costs involved which introduce their own additional margin of error into the calculation. And often you don't have specialist input and scheme -specific input from valuers, engineers and cost consultants. Your information will probably be poor.

As a result you need to accept that any estimates will be - to put it very kindly - imprecise. I would advise against basing decisions on estimates of land value that suggest figures that are marginally higher or lower than you might want. For example, a residual land value appraisal is not sensitive enough to provide a reliable indication that a Section 106 requirement of £10,000 per dwelling is not viable whereas (say) £8,000 might be. A good decision on this score would need to be based on a wider feel for the specific circumstances both in your area and in the market as a whole and the best chance of negotiating development contribution upwards would be to get the developer's appraisal and use any sound information you might have (for instance in house prices) to question key assumptions. I can't stress enough that the appraisal should only be part of the analysis and not all of it. On the other hand if the calculation shows that values need to virtually double to make development viable and even then costs need to be cut - take a hint!

²⁷ e.g. RICS IPD : Valuation and Sale Price Report 2012

²⁸ In *Paratus AMC Ltd and another v Countrywide Surveyors Ltd* [2011] the High Court suggested that 8% was a reasonable margin of error in relation to the valuation of a flat in a volatile market.

7.6 GATHERING INFORMATION FOR THE APPRAISAL: WHAT ARE YOU SELLING?

There are two issues involved in putting a price to a new building. Firstly, you need to know how much space you are selling. Secondly you need to work out how much you might get for it on a pro rata basis. Neither is straightforward. Different types of building are conventionally measured in different ways. I will go through each in turn. A key figure in all cases is the 'net to gross' ratio. This is the proportion of the overall internal floor area that is included in the calculation of the rent or sale price. Clearly developer's will always want to minimise the proportion of any building that won't form part of the saleable space.

The way in which valuers measure space is controlled by the RICS through the 'Red Book' – a 336 page tome that goes into the detail you need to achieve some standardisation in approach to valuing a wide variety of existing buildings. But in this case the scheme that concerns you is just a twinkle in the eye and the aim has to be to evaluate it in the same way as the developer might. In short, what follows does not necessarily follow Red Book rules.

HOUSES

Houses are normally sold using details stating the area of each habitable room but developers when doing their sums are more likely to simply use the gross internal area of each unit. The effective gross to net ratio is therefore 100%.

FLATS

Flats are treated the same way except that most developers will calculate the gross internal area of each flat and NOT the whole block. The common parts such as reception, stairs, bin storage and lift shafts are treated as having no value. In a typical block this might amount to 15% of the floor space so the net to gross ratio is 85%; occasionally slightly better where there is no lift and several flats are accessed off a constricted single landing, but worse in thin buildings.

OFFICES

An office building is usually sold on the basis of the net internal area which is in effect the useable floor space. This definition normally excludes stairwells, toilets, plant rooms and reception space. The remaining saleable 'net' space is usually between 70% and 90% of the total and a typical office building will also normally achieve something like 85%. Again, thin buildings use space less efficiently. Ironically the least efficient buildings in this respect are often those that are lauded from the design point of view. The GLA building at London Bridge is a classic example; an internal winding ramp uses a lot of internal space.

Business centres often have very poor net to gross ratios because they have wide access corridors, management offices and communal meeting rooms. Ratios of 50% - 70% are typical. This is one reason (among several) why this type of project is uncompetitive in the market and frequently requires subsidy.

INDUSTRIAL AND WAREHOUSE UNITS

In industrial and warehouse buildings the loss of space to circulation, toilets and whatnot is normally minimal. Sometimes no services are provided at all, so the saleable space is effectively everything within the walls and the ratio is 100%. (Some developers assume 95% to take account of, for instance, the provision of toilets or the base of structural pillars). But with increasing mechanisation of goods handling the height of these buildings is also becoming an issue for distribution companies and some very large warehouses are now sold on the basis of their cubic capacity.

RETAIL

Predicting the potential value of retail floor space is a nightmare. This is because the way in which retailers use their floor space varies from company to company and sector to sector and you can't generalise much about the requirements of, say, a fashion company and a grocer. This point was made in Section 3.

As far as high street shops are concerned, the usual approach adopted by valuers is to treat the area closest to the window as being the most valuable. It is referred to as 'Zone A'. The depth of this Zone is usually taken as 6m or 20' from the shopfront. The next 6m back is referred to as Zone B which is judged to be worth half as much pro rata as Zone A. Deep units will have a Zone C etc. with each zone in turn worth half as much as the preceding one. The Valuer can define as many zones as he or she wants but after that it starts to become rather meaningless. They will often use different rates for basement and upper floor space depending on whether it is configured as storage or sales space. Lots of other things make a difference. For instance valuers can add sums for what 'return frontage', i.e. shop window space that extends around a street corner.

As far as individual retail projects are concerned, other than those comprising standard units in established locations, the only person who really knows what they are worth to a developer is the developer. At a more strategic or policy level I tend to forget the zones and simply calculate the rent achievable over the whole floor area of the unit, making the heroic assumption that all the units will be the same. Usefully, retail warehouses and supermarkets can often be valued on this overall basis in any event. You might reasonably think that would make it a lot easier but in fact the beauty of the largest units is often very much in the eye of the particular corporate beholder and can be difficult to predict. It helps if there are some very direct comparators and thankfully there is usually some information available on shop rents in most centres (See Section 8.2).

Generally the best advice is to treat this as specialist territory and to try and avoid a situation in which you have to calculate the worth of land for any retail space except perhaps retail warehouses in established locations or parades of small shops which don't suffer from the zoning problem because they are not deep enough.

LEISURE

Each type of leisure property has its own rules. Most are valued using a proxy for the profit that can be made from them rather than by the square metre. This is a specialist area and, once again, I suggest you don't go there! If you want to get the flavour of how it is approached take a look at the websites of Fleurets²⁹ or Christie & Co³⁰ who specialise in this type of business as well as many other niche sectors of the market in areas in which trading profits rather than rents are the basis of pricing.

7.7 WHAT WILL IT WILL SELL FOR?

The next step in each case is to work out how much per square foot or square metre you might get for the development. There are several sources of information you can use, some of which are always useful and some are only useful for certain types of property.

AGENTS

There's nothing to stop you simply telephoning estate agents and asking for their views. Very often they will be delighted to share them. Most are not secretive about generalities but will be cagier about specific transactions. You need to try and find the agents that are most active in your area. If you are not sure who they might be, Estates Gazette Interactive (EGi) runs the free online 'Propertylink' service that lists commercial property on offer by type and location and which names the agents involved. You might be surprised to know that, when you instruct a national firm of estate agents on a local job, very often the first thing they do is to ring up the local agents to get a better informed view of local circumstances.

The main trick when dealing with agents is to be sure that, when they give you an idea of the going rate, you understand the basis of measurement they are using and make sure that you are comparing like with like both in terms of buildings and locations. In some cases you will find that the agent's websites contain details of properties that are currently on sale. Clearly there is no guarantee that anything like the asking price will be achieved but usually the price set will not be too far in advance of what potential buyers might be prepared to pay for fear of discouraging them. Also, don't treat any individual's word as gospel. You'd be surprised at the range of opinion. In my experience the older hands are much more reliable especially when asked a specific hypothetical question. (e.g. if there was an office block built on the bypass, where there are none at present, fully fitted to a reasonable standard and with air conditioning - how much do you think it might fetch? And why?).

Most developers, most of the time, will have a cautiously optimistic view of the market and be looking to improve upon the current level of rents or banking on marginal increases in values during the time it takes to complete the scheme. The issue of how to deal with inflation in

²⁹ www.fleurets.com

³⁰ www.christie.com

values and costs outlook is especially important where the aim is to purchase land outright for a large or long term scheme, because, as I have explained. The results of development appraisals are very sensitive to these factors. The approach adopted can have a big impact on the perceived value of a development opportunity and make the difference between success and failure in a competitive bidding situation.

In my experience most developers when negotiating with planners flatly deny that they make any allowance for longer term value inflation. But I have many developer's appraisals that testify that they sometimes do! Again, practice varies. Most developers only include an explicit allowance for value inflation in their appraisals of long term schemes but in other cases they will simply take a marginally optimistic view of the outcome based on current values. Some will use current values but base their calculation on a low profit margin in the hope that increasing values over time will raise this to a more acceptable level. Again, the figures are often just a post justification of a more fundamental and visceral commercial judgement about the timing and outlook. An approach that I have used both as a developer and consultant is to use current asking (rather than achieved) prices on other similar local properties as a basis for estimating future receipts. This provides a built in bias towards optimism that might better reflect what might be achieved in the future in a gently rising market.

In terms of hard data some of the national agents publish research which provides useful benchmark data both on rents and yields. A Google search will often reveal what is available. A particularly useful series comes from Jones Lang LaSalle and covers current and achievable rents in the 50 top office, retail and industrial centres. There is one report for each and they are freely downloadable if you register on their site. GVA Grimley, King Sturge and CB Richard Ellis are among other national agents who provide useful research. Savills research on the residential market in particular is highly regarded.

COMMERCIAL DATABASES

There are commercial databases which seek to record details of all property transactions. EGi is a good example. Focus³¹ and PROMIS³² are others. I have not used PROMIS but the other two both provide information and market intelligence, both online and as bespoke reports. Most agency firms make use of these services. In my view, they are most valuable as guides to the market in medium sized centres. Data on larger centres is relatively easy to come by, but for smaller centres it is invariably patchy and some bespoke research is necessary. Remember that these databases rely on agents reporting deals and this feedback can be patchy, late and incomplete.

³¹ www.focusnet.co.uk

³² www.pma.co.uk

AUCTIONS

The databases and the major agent's reports between them provide a fairly good guide to rents and investment yields in many larger centres. In other areas even if there is property available to let which can be used to gauge rents, there is little information on investment sales. Poorer quality property - either by virtue of condition or location - is often sold in auction. The auction catalogues and records can be a mine of useful information. Most of it is freely available online although the databases can take time to navigate and registration is necessary. The best examples are Allsop and Jones Lang Lasalle's auction business.

HOUSE PRICES

The most reliable guide to the price of new houses is the pricing of competing developments in the locality. Many houses are sold through the volume house builder's own marketing operations. Their websites will provide details of houses for sale and make it easy to work out the gross internal area of each example. It is even better if you can get to the sales showrooms where the staff will often have calculated the going rate on a floor area basis and if they are not busy will give you a valuable insight into pricing, preferences and sales volumes. There are also specialist websites which aggregate information on new developments and which play a useful role in illustrating who is building what and where. Examples include Smart New Homes, New Homes for Sale, and What House. The former two usually seem to list the most schemes.

Agent's websites are less useful when trying to assess the price of new houses, simply because for the most part the houses they are selling are second-hand although details of 'nearly new' properties can provide a guide when better information is in short supply. Rightmove - who I am sure you have heard of - usefully aggregates the information from most of the agents in any given area and this can save you the effort of visiting each agent's website on a first trawl for data. They also cover new schemes but this sometimes gets lost in the sheer amount of information on offer. Be wary of assuming that new build homes automatically command a standard premium to second hand homes. There is usually a premium; but it varies a lot and you have to calculate it on a floor area basis because many new homes are smaller than their older equivalents.

Finally, land registry data on house prices across the country is readily available online both directly from secondary - and often more user friendly - sources such as the BBC. (Google BBC House prices). This is not as useful as you might think. Most of the property is second hand and details such as average size are unknown. For instance, in many towns an older semi-detached house will be larger than its modern equivalent but the little cottages in nearby villages can be a lot smaller although they can also qualify as semi-detached. I have primarily found it useful when trying to benchmark one local property market against another for strategic housing viability studies and wouldn't dream of using it for a specific project. Quite simply, it isn't good enough.

When judging house prices you do need to be sure that you are comparing like with like. Obviously garages, gardens and the like do have a real value. For what it is worth (and because

it varies widely don't take this as gospel), I reckon that a garage is worth around £10k on average. In Section 4.3 reference was made to how the practice of adding an additional floor to a conventional two storey house to create a 'townhouse' does not result in a proportionate increase in value even though it reduces the pro rata costs. Finally, note also that the real value of a flat can vary with the efficiency of the internal layout.

The value of an affordable home to a developer is usually what an RSL is prepared to pay for it. That in turn depends on the tenure. An RSL usually funds the purchase of social rented homes from a developer using a cocktail of loans, cross subsidy from other tenures within their control and sometimes when they are keen to secure the stock, contributions from their own reserves. Grant support for affordable housing procured through Section 106 is now comparatively rare.

The quickest way of finding out what this amounts to in aggregate is simply to ask them; the problem being that in most cases they will only admit to being able to afford a sum that can be supported entirely by loans.

This might typically be calculated as follows:

Amount that RSL can pay using loans = $(100 \div \% \text{ Interest on Loan}) \times (\text{Rent} \times 75\%)$

Where:

- ◆ The interest on the loan is LIBOR + 2% (See page 74 re: LIBOR)
- ◆ The rent is the amount that will be charged (as advised by the Local Authority Housing Dept or RSL) less 25% for long term maintenance and management.

So in this case if interest rates are 6% and the local target rent for a typical house is £5000 p.a., the amount that the RSL could afford to pay using loan funding alone would be £62,500 being: $(100 \div 6) \times (£5000 \times 75\%)$. The precise equation varies over time as interest rates and buying policies change.

In the same vein, the scope for contributions from RSL's own reserves has shrunk as house prices have fallen and in any event this practice is now discouraged. Finally, the potential for cross subsidy is entirely dependent on the specific circumstances, so in all these cases some discussion with the RSL's is necessary and the best course is to talk to several and compare views; they will not all have the same appetite for investment or readiness to pay a full price.

Common practice in relation to intermediate tenure is simply to assume that the price payable will be a proportion of the open market value. Typical figures in most places have been 75% of the market value for shared ownership.

OTHER SOURCES

Reports produced by the RICS on both the commercial and residential markets are based on polls of local agents for views and information on current market activity and short term expectations. Changing market activity – viewings and enquiries – takes time to materialise as increased transactions so this effectively provide a lead indicator on market conditions.

Finally, the trade journals are Estates Gazette and Property Week. Both publish occasional analysis of the major regional and city markets. Keep an eye out for coverage of your own area.

7.7 HOW MUCH WILL IT COST?

I have tried to deal with costs in the order in which they appear in a typical appraisal.

LAND COST

You might need to estimate the value of land in its current use if, for instance, you want to work out what is viable and what is not, perhaps for strategic policy purposes. Alternatively if your aim is to calculate a developer's profit margin you will need to find out what they paid for the site.

The former usually arises where the aspiration is to see old buildings replaced with new. The comparable method provides one way of estimating the value older buildings. You can use superficial comparison as a starting point but you really need to have some knowledge of how to value existing buildings to produce reliable conclusions. For example you need to know how lease conditions affect pricing. An altogether cruder estimate which is perhaps adequate for strategic planning purposes but not for planning and negotiating individual schemes, is to:

- ◆ Find out the rateable value of the property.
- ◆ Establish the yield it might command if sold on the open market. Auction results can provide a good guide but for existing stock it is rarely less than 5% or more than 10%.
- ◆ Calculate a value using the formula on Page 14.
- ◆ Add a premium to reflect the fact that rateable values often lag the market and for the costs of achieving vacant possession perhaps 10% to 30% depending on the circumstances and how cautious you want to be.

Clearly the sum needed to persuade an owner to part with a building that is mostly empty will be lower than if a series of tenancies need to be bought out.

The price actually paid by a developer for land can be difficult to ascertain. Information on specific land transactions is usually commercially confidential and not readily available. And even if the price paid can be established, perhaps through anecdotal information sourced from

estate agents, it is often necessary to understand the other terms of the deal, perhaps in relation to the timing of the payment or who was obliged to do what.

If you want to estimate the price paid by reference to the price paid for comparable sites you will need to find some that are truly comparable and then to adjust the prices to make it a real benchmark. As stated earlier, this is not an easy task. In any particular instance you will run into the same problem i.e. the specific circumstances in each case can make a huge difference to the value³³.

The only other useful comment one can make about land values relates to the position of greenfield land owners. In Section 6 I referred to the different approaches to assessing how much they should expect to get and I am frequently asked how much it should be assumed that greenfield land owners will want in order to release their land for development. It is difficult to generalise about this. In Section 4 the point was made that many of the larger swathes are secured by the volume housebuilders using an option agreement where it was suggested that a typical option might involve a minimum payment of around £250,000 per hectare for a site, with a wide range depending on the location and circumstances. Many landowners will expect to receive an added payment as the scheme progresses if it goes well. Obviously a lot depends on their aspirations. If you are really unfortunate you will find that the land that you want to allocate for is owned by long term strategic landowners such as the Church Commissioners or the Crown Estate. Both often seem to be quite prepared to wait until the end of time to achieve best value.³⁴ Maybe the former has some additional market insight?

Personally, I don't see merit in either of the formulations proffered by either the RICS or the Local Housing Delivery Group. They seem too theoretical. My own suggestion if you do need a figure to start from for policy purposes (i.e. this is not a suitable approach to use in relation to a specific site) is that you:

- ◆ Start from this typical option base price figure of £200,000 per hectare.
- ◆ Reduce it in low value areas; say where a typical new semi-detached house sells for under (say) £200,000
- ◆ Or raise it where the same new house might sell for more than (say) £250,000.
- ◆ Double it where either it is obvious that site assembly is needed in many cases or that the developers will need to meet the cost of significant off-site infrastructure in addition to normal Section 106 requirements.

³³ The prices paid for land for other uses varies too much for generalisation.

³⁴ Maybe the former have some insight in this respect? Network Rail is another example of a difficult landowner; at least as far as land used for operational purposes is concerned

- ◆ Apply a liberal dose of common sense in relation to local circumstances and keeping in mind that reducing the target land value will usually result in a reduction in the amount of land brought forward for development.

Finally, when doing an appraisal and if you are calculating the residual land value, don't forget to make allowances for the land buyer's costs. The main one is Stamp Duty Land Tax, which for most larger purchases will be 5% - 7% of the land price plus VAT ³⁵. (Check current rates and scales on the HMRC website³⁶). Agents and legal fees might typically be 1% - 2% mostly depending on site size. (Bigger site = smaller % fee unless the purchase is complicated).

SITE PREPARATION AND SECONDARY INFRASTRUCTURE

The next phase of the scheme is to prepare the site for development. In the case of a greenfield site this will typically involve a fair amount of earth moving or removal, a process charmingly termed 'muck away'. This is becoming increasingly expensive when the muck can't be reused and as landfill tax rates increase. In some cases demolition will be required. The cost of this varies with the size of the structure as you would expect, but also on whether it contains asbestos and how much material can be recycled³⁷. Other problems that can be encountered include underground water courses and a high water table, the need for a SUDS scheme, tree roots and archaeological remains. Again, there are no hard and fast rules for estimating what the overall cost impact might be. It really depends on the particular site.

Equally, there can be no hard and fast rules about the cost of remediating a brown field site. If you want more information on site condition issues, the best 'rule of thumb' estimates of the costs associated with remediation that I have seen are in English Partnerships guide entitled 'Contamination and Dereliction Remediation Costs. Best Practice Note 27 - Revised February 2008' and which is now available from the Homes and Communities Agency website. (It can be difficult to find there so I have placed a link on my website).

Once the basic preparation has been done the developer needs to lay the site out. For smaller schemes this is straightforward, usually a small road to provide immediate access and the connection of new utilities to the mains together with:

- ◆ In residential schemes, gardens, paths etc.
- ◆ For commercial schemes, car parking and security fencing etc.
- ◆ Basic landscaping.

³⁵ So if the site costs £1m, the cost incl. VAT is £1.2m and the SDLT is £60,000 or effectively 5% of the purchase price. I reckon that most property professional surveyors don't know that! If any read this and doubt me, check [this link!!](#)

³⁶ Currently : www.hmrc.gov.uk/sdlr/rates-tables.htm#2

³⁷ If you can find a copy of Spon's Architects and Builders Price Book it provides indicative demolition costs budgets for basic structures and hardstanding etc.

Provision on this scale within the individual development plot for a house, block of flats or offices etc. is referred to as the external works or plot works. For residential schemes a rule of thumb might be that this adds 10% - 15% to the cost of constructing the building itself. The cost for commercial schemes varies a lot between for instance city office blocks which effectively fill their plot and warehouse schemes where the buildings are cheap but there is a need for extensive hardstanding and security fencing. The main point to remember here is that, if you are using a standard index of building costs as a basis for your estimate, you need to know if these external works are included or not.

On larger schemes such as housing estates and business parks there will be a need for a wider scheme of distributor roads, utilities extensions, and drainage and in some cases flood storage. There is usually a need for some landscaping. On business parks this can range from the elaborate 'soft' planting schemes to - in more urban situations - small but expensive areas of hard landscaping. In residential areas there is a need for play space and informal green areas. This is referred to as the 'secondary infrastructure' and is one of several areas where it is very difficult to predict the costs that will be incurred on any specific scheme without expert advice or - better still - the developer's own figures. My own ready reckoner for some of these infrastructure costs, such as play facilities, is on my website.

As a guide you might expect the cost of site preparation and secondary infrastructure on large residential sites to typically range between £300k and £600k per gross hectare depending on the location and the nature of the proposals and - not least - what the planning requirements are. But both higher and lower figures are possible in exceptional cases and I am aware of cases ranging from £180k to £750k gross ha. The Harman Report³⁸ suggested a figure of £17,000 - £23,000 per dwelling for larger residential which isn't very different. My own view is that it is the size and nature of the site rather than the number of houses that makes the biggest difference to the overall cost.

The infrastructure costs for a business park or industrial park are less predictable because they depend in part of the size of the individual plots which determine the density of the on-site road network. At this point I should introduce an excellent source of cost information. Cost Consultants Davis Langdon (who have now disappeared within the Aecom group) produced benchmark 'cost studies' that were reproduced in Building Magazine and which are also now in the Spons series³⁹. With a little ferreting you should be able to find these online, they are generally useful but in this context some cover what is involved in terms of infrastructure costs. You just need to make sure that their examples are genuinely comparable in scope to what you envisage and use a measure of inflation to bring the costs up to date.

Another major element of the costs of a major housing scheme is invariably the off-site and social infrastructure needed to support the development. Clearly it is not possible to generalise

³⁸ See Section 6.3

³⁹ The most useful book in this series for your purposes will probably be "Spons Architects and Builders Price Book" published by Taylor & Francis and updated regularly. It is expensive.

about the cost of these and a lot depends on whether there is capacity in the existing infrastructure and the extent to which public service providers are ready to meet their own costs. A discussion of off-site development costs and planning contributions generally is outside the scope of these notes.

BUILDING COSTS

These comprise the substructure and superstructure of the buildings themselves. The best information I have found on the practical and cost implications of site issues such as tree cover and site slope is in Mark Brinkley's book "The Housebuilders Bible"⁴⁰ but this will probably provide more detail than you need. His 'rule of thumb' is that each degree of slope adds £1,500 to the cost of a house. This sounds rather apocalyptic to me and I guess that he is primarily referring to the sort of sites preferred by the small scale builders he is writing for, so don't take it for granted. On larger sites a slight slope can help with drains and sewers in some cases. But make a mental note that, especially on smaller sites, dealing with slopes and 'made up' ground can add quite a bit to costs.

Bear in mind too that small builders don't enjoy the economies of scale of their larger brethren.

The cheapest and most basic forms of foundation used for houses are strip or trench fill and these are perfectly adequate where there is a firm layer not far below the surface and nothing else untoward between the two. You sometimes get that on farmland, but all too often there are complications. Typical examples on greenfield sites include the deep layers of soft material on river banks, clay soils which expand and shrink as they get wet and dry out again and sites with trees and shrubs with roots that can cause damage. Brownfield sites can be 'made ground'; a term covering sites that have been filled with rubble or the remains of older structures. In both cases the new foundations have got to be based on solid ground below the level of the fill or (mostly on greenfield sites) be constructed on a raft that effectively floats on top of it. There is no point in trying to guess the cost of dealing with each issue, but as an illustration you might reckon that in areas where there are significant problems this might add around £5,000 to the construction cost of a medium sized house; perhaps half that where there are real but less severe issues but a lot more where the issue is mountains, bogs or a serious flooding issue. It is not possible to generalise this way about the cost impact on more complex structures.

SUPERSTRUCTURE

The biggest part of the cost of a project is usually the superstructure. The standard advice here is to use commercial building cost indices and guidance such as the BCIS service or Spons series and in particular their Architects and Builders Price Book which I have already referred to. Both provide a range of likely costs and a large number of standard types of building and both are

⁴⁰

Ovolo Publishing.

expensive. Quantity Surveyors' Franklin & Andrews will send you their 'Black Book' of cost estimates for nothing if you ask them.

These are all useful but will not fulfil your every need. If your land value estimate is going to be in reality ballpark your construction cost estimate has to be well judged and in that context the ranges of figures presented in these guides are often too wide to be very useful. For instance my copy of Spons quotes a range of £680 sq m to £830 sq m for semi-detached housing and £260 sq m to £520 sq m for a supermarket shell. Simply opting for the median figure is only really feasible if you are sure that you are costing a 'median' building! And as I have said before, you also need to check that you understand what is and are not included in the cost estimates especially in relation to external works and, for commercial buildings, fitting out.

For this reason I prefer to use a belt and braces approach and use benchmark costs for known schemes to augment my cost estimates. I have already referred to David Langdon Everest's cost studies and others also publish guides which give you enough detail about the building being described to allow you to use it for this purpose. For instance see Gardiner and Theobald studies⁴¹.

There are other sources and it pays to collect anecdotal information. For instance, John Prescott widely acclaimed competition for housebuilders to create a £60,000 house was based on a target cost of around £790 sq m. In fact, that wasn't a testing target and the resulting price per square metre is a fairly good guide to what it took to build a reasonably well designed house in 2005. Another good source of information on house building costs is a CABE report entitled 'The Value of Housing Design and Layout' produced in 2003 which gives real and notional budgets for a series of developments in the South East.

If you want to use these figures to gauge costs in other parts of the UK you will need to make a regional price adjustment and in both cases you will need to make some adjustment for inflation since they were published. Gardiner & Theobald's web site (see above) includes free data on price fluctuations and UK National Statistics provides an authoritative set of historical data together with information on cost variations between regions. More recently the DCLG publication "Cost of building to the Code for Sustainable Homes: Updated Cost Review" provides benchmarks costs for various types of dwelling which is especially useful because it factors these costs into the estimates. The last was published in 2011⁴² Note that, while developers are chary about owning up to making explicit allowances for inflation in values, standard QS costing practice means that making an allowance for cost inflation is common and this data can be used for that purpose.

As you would expect, once the ground conditions and foundations are taken care of, the cost of houses depends on their design. Detached houses and bungalows have a comparatively high

⁴¹ There are links to some of these on www.regenerate.co.uk and I do try to keep them relatively up to date.

⁴² Note that the cost budgets given here for detached houses seem to be anomalous.

ratio of roof and wall space to internal floor area and this also raises costs. A requirement to use special local materials such as stone or additional external features such as balconies, bay windows or chimneys will also add to the cost but cannot be relied on to add to the sale price. When gauging whether your planning authority's design requirements will simply add to costs or will add to values as well I suggest that you use your own judgement. We all live in houses and if even we don't own them have considered buying one. The simple question is; would you pay more for the feature you are requiring the developer to provide?

FEES

A project team for a typical commercial building or a block of flats might comprise an architect, civil engineer, mechanical and electrical engineer, quantity surveyor and letting agent. There will always be the lawyers as well but they do not tend to be part of the development team. On larger schemes there can be a bewildering variety of other consultants specialising in project managements, town planning, environmental issues, transport, landscaping, acoustics, interior design, public relations, archaeology and listed buildings, consultation and even on very rare occasions exotic beasts like me. At the extremes the fees on simple projects (perhaps a simple logistics scheme) might fall below 10% while smaller complex projects can see costs creep towards 20%. If you assume that the fees on a simple one-off building project will be around 12% and on small scale or more complicated projects around 15% you will not go far wrong.

Housebuilders as ever are a bit different and here the issue is complicated because the larger firms in particular carry out a lot of the work in-house but account for this in their appraisals different ways. But overall project overheads bill will not be so different from the suggested budget for less complex projects with the main saving coming where builders effectively design their own houses. The economies of scale on the largest schemes will be at least partially offset by the higher costs involved in negotiating the planning permission, consultations and planning the secondary infrastructure. Spons Architects and Builders Price Book includes a section on scale fees but note that in practice most developers (a) on larger schemes, will need a larger team than is covered by Spons and (b) will be looking to pay less than the indicated scale fees.

When doing policy studies I use a single allowance for fees to cover all consultants and other fees such as planning application charges fees. But sometimes a discrete allowance is made for these additional costs when appraising a specific project.

MARKETING AND SALES

Again this will vary but a typical budget for marketing an office scheme or residential development might be in the region of 2% or 4% of the value of the scheme. This includes the agent's fees. Some commercial developers will want to invest in events and stunts to market a premium office block in a competitive market and most also have to pay to agents for the sale of the investment as well as on letting.

The cost to housebuilders will often depend on whether they are going to maintain a show home and whether they aim to sell directly or use estate agents. Suffice it to say, if you stick to

the budget I suggested, in policy studies at least, any error you make will be insignificant in the context of the inevitably greater generalisations and errors in the calculation as a whole!

FINANCE COSTS, MARGINS AND PROFITS.

In Sections 5 I described how development is funded. Here are some of the implications for appraisals.

Most standard development appraisal models assume that a scheme will be funded entirely with loans. This is probably a reasonable assumption for short term schemes involving smaller developers but the detailed arrangements for larger and long term schemes will depend on the circumstances and the approach of the particular company involved. For instance major housebuilders tend to use modest levels of debt to support their corporate operations as a whole rather than negotiating funding on a project by project basis while commercial developers will often try to fund schemes by pre-selling them to investors. As a result when you try and use an appraisal to 'second guess' a developer's calculations you will normally get it wrong simply because you won't know how the scheme will be funded. Don't worry, the difference in itself is unlikely to be enough to undermine general conclusions; you only need to worry if the viability is genuinely marginal.

In the following section I will discuss some aspects of development financing and then suggest an alternative approach to doing the sums for larger schemes which circumvents this problem.

Funds borrowed at corporate level by the major commercial investment and development companies or the volume housebuilders are normally secured at a low margin over LIBOR. For instance, they might have a deal with a bank on the basis that providing they maintain net assets of (say) £1bn, they can draw down £0.5bn to pay for development projects as and when required. This debt can be regarded for all intents and purposes as the developer's own capital and I see no reason why it necessarily should be accounted for as debt in an appraisal. In contrast there is a need to account for project finance which is secured to meet the cost of a specified scheme and which is usually loaned at a higher interest rate.

People often loosely refer to the basis for calculating the interest rate as the 'bank rate'. In fact the benchmark for commercial lending is usually the London Interbank Borrowing Rate or 'LIBOR' for loans of the same duration⁴³. This might not be the same as the bank rate and in fact is often higher.

The actual interest rate; that is the premium over the LIBOR rate which the banks require to help fund their annual bonuses, will depend on:

- ◆ The status of the borrower.
- ◆ The proportion of the funding required that is sought.

⁴³ A link to data on current LIBOR rates is posted under links on my website www.regenerate.co.uk

- ◆ The economics, scale and risks of the particular project.
- ◆ The extent to which the borrower has guaranteed repayment if the project fails.
- ◆ The extent to which the lender can rely on that guarantee.

The financial plumbing is usually rather different from the mortgage you might apply for when buying a house, but the underlying principles followed by lenders are the same. If you want to borrow more you might be able to get a 'second mortgage' but the interest rate on that would be much higher. Developers will also sometimes use second mortgages or at least their equivalent in the commercial world which is normally referred to as a mezzanine loan.

In normal times substantial and experienced developers seeking bank finance towards the cost of a specific new development in a situation in which they are footing at least some of the costs directly, might pay between 2% and 4% over the current LIBOR rate. At present it remains difficult to obtain finance for speculative development at all and unless you are very large and strong company, the margins can be higher still.

Just to add to the complication, you have to remember that the average developer doesn't need all the money to pay for a development at the outset. Rather, funds are drawn down from the bank as and when required. The conventional approach in simple residual appraisals is to calculate the interest payment on the entire construction costs over the whole construction period and then to halve it. For instance, if £1m is needed to pay for a construction that will take a year to complete and the interest rate is 8% per annum; the interest bill would be approximately £40k⁴⁴. Complicated appraisal models use a more sophisticated assumption called the S Curve which reflects the way in which construction costs tend to accumulate in reality. Personally unless the project is based on a large single building I don't find that this is a much better approximation to reality and choose to ignore it. (It certainly isn't an appropriate approach to calculating the cost of financing a phased housing development).

If you are trying to crudely second-guess what the economics of the development might be then I suggest that in all cases other than residential development by the volume housebuilders, you calculate the interest at 5% for the smaller developers down to 2% for the largest ones over the LIBOR rate paid on one half of the development costs for the entire construction period. This might be around 6-8 months for a shed, 9 months to 15 months for an office building with large projects especially on constrained city centre sites taking a great deal longer. You should then add interest at the same rate on all of the costs incurred up to completion (i.e. including the site purchase etc.) for the period it will take to sell the completed

⁴⁴ I say 'approximately' because in most cases the interest will be 'rolled up' on a monthly basis and compounded so it will be marginally higher.

building. I would suggest that you allow three months to sell⁴⁵ a house and six months for a commercial building, varying those if you think it appropriate based on local experience.

Alternatively for large scale residential schemes you could adopt my radical approach and ignore the financing costs altogether. I much prefer the Discounted Cash Flow approach to a conventional residual value appraisal in these circumstances⁴⁶ and in this case would simply not make any assumption about how a developer might choose to fund a scheme and focus instead on the return he might require before taking finance costs into account. Some housebuilders do just that when appraising projects. For instance, I might assume that the developer will need an annual return of 15% per annum on their capital and thus use 15% as the discount rate when calculating the NPV of the project. (The use of NPV and IRR measures was explained in Section 7.1). This NPV represents the price that could be paid for the site. Alternatively if, as is often the case when doing policy studies, I am starting out with an estimate of the price that landowners will need to tempt them to release land in sufficient quantity for a Local Authority to hit its development targets, I will calculate an IRR on a basis that includes the price for the land and work on the basis that any result in excess of the target of 15% would mean that the development is viable. Keep in mind that this 15% is a proxy for the annual ROCE and not a margin on cost.

In these instances I know that in most cases the average housebuilder will be using some of their own capital and some debt to pay for a development or that the developer will have pre-sold a scheme to an investor and frankly I'm not in a position to guess what the financial impact of that will be. Using this approach I don't really care! The danger here is that by ignoring the impact of financial wizardry on profits it can lead to my over estimating the return that a developer will require. In most planning situations I would accept that because:

- ◆ Invariably there will be some other costs and risks that have been excluded from the calculation and in any event financial wizardry normally boils down to higher gearing and thus increases both returns and risks.
- ◆ The greater danger in most planning situations is throttling schemes and this can be avoided by avoiding overly aggressive assumptions in your feasibility studies.

In short, it is a matter of swings and roundabouts. I say this is heresy because you will see that every appraisal programme provided seems to make some allowance for finance costs. But at this level you have to start to distinguish between the rate of return on equity and the rate of return on the project as a whole and frankly, you don't even want to get into that. My impression is that the academic community is on my side on this one and the traditional method of appraisal no longer adequately mirrors the way in which housebuilders operate.

⁴⁵ Keep in mind that what is important here is not the date that the sale is agreed but rather when the price is paid.

⁴⁶ See Section 7.5

As far as profit margins are concerned, many standard appraisals for short-term schemes work on the basis that the developer will typically require a margin on all costs of around 20% after factoring in full debt financing. In reality the average is probably effectively rather lower. For low risk schemes such as affordable housing it will be much lower and for the riskiest schemes such as a speculative office block in the boondocks it might be a bit higher. In real life some developers prefer to target a margin on value rather than cost⁴⁷ but I suggest that you prefer the cost basis because it makes the calculations easier.

My suggestion is that:

- For smaller and short term schemes assume 100% debt funding and a profit margin of around 20%. (Less where there are pre-sales such as to RSL's or if the market is competitive, more when development is difficult).
- For longer term schemes and if you are using a standard appraisal model with a discounted cash flow facility assume that there is no debt funding and that the developer's discount rate is around 15% per annum⁴⁸.

⁴⁷ If you think about it the difference is only arithmetic. If a building costs £800 and is sold at £1000 then the margin on value is 20% and the margin on cost is 25%

⁴⁸ Some surveyors will argue that 'standard practice' in the latter respect is to use the interest rate on loans as a discount rate. My view is that this fundamentally distorts the economics because the interest rate does not equate to the return a developer expects on their capital.

8. Concluding Comments & Further Reading

I hope this provides some insight into how to populate and use a development appraisal. Maybe you are doing the RTPI's Online CPR course on viability which includes exercises and models. If not and you want to test yourself, try playing with the simple models that you can find on my website and see if they make sense to you. If not please let me know, e mail beaman@regenerate.co.uk. You could also download the much more complicated Development Appraisal Tool (DAT) model from the HCA website and try that. As stated at the outset, this will not equip you to accurately appraise a complex scheme. It takes years of training and experience before most valuers feel able to do that and they are always aware of the high margin of error resulting from that the sensitivity of the method to the assumptions involved and the number of guesstimates that have to be and the consequential scope for disagreement. But it should be possible for planners to adequately appraise development economics for the purpose of policy making and to interrogate developer's sums and assertions more effectively than hitherto. If this guide helps you to achieve that, it will have been worthwhile.

If the inner geek in you is crying out for a much more detailed treatment of appraisal methodology then you might try and get hold of a copy of *David Isaac's 'Property Development Appraisal and Finance'* published by Palgrave. Mr Isaac is an academic and I suspect that this was primarily written with his more advanced surveying students in mind; he describes it as an overview but it is more comprehensive than anything else that I have seen.

If you want to know more about the development business itself I suggest that you check out *Development and Developers; edited by Simon Guy and John Henneberry* and published by Blackwell.

This is a collection of papers by academics. I find their work (i.e. many of the contributors to this particular book) interesting & useful and wish there was more of it. But a lot of the matters covered are dealt with at a theoretical level and reflect the real distance between the groves of academe and the real world. Researchers generally often seem to devote huge amounts of money to exploring and modelling answers to questions to gain a degree of enlightenment that could have been achieved with a few phone calls to people at the coal face.

Useful government reports and reviews of the house building industry:

- ◆ The Office of Fair Trading concluded a study of the house building industry in 2008. This can easily be Googled or found through their website www.oft.gov.uk. You might find Annex O "Annexe O - Calculation of residual land values" particularly useful. Perhaps also Annexe E on the financing of housebuilding. It provides a decent account of the dynamics of the industry, scuttling a few myths in the process. As does:
- ◆ Kate Barker's "Review of Housing Supply" which can be found on H.M. Treasury website and:

I am afraid that there is much less freely available material on commercial development mainly because it varies so much more. Another book that is popular with students is "*Property Development*" by Richard Reed and Sarah Wilkinson published by Routledge and now in its 5th edition. I found this to be a reasonable tour of the mechanics of the commercial business as practised by medium sized and larger firms but, again, that it rather fails to convey the operational realities.

Thus ends my quick tour of the basic economics of development and the characteristics of the actors in the development game and the different types of schemes. This is an unashamedly personal account and not everyone in the business would agree with me on some things. It has always amused me how fond people in the property business are of stating that something is blindingly obvious even when it is clear from the range of practice and opinion that it is not. My excuse in this note is that the need to be concise does not sit comfortably with a more discursive approach. I will be adding further notes to this one and will make them available online at www.regenerate.co.uk. I hope that you found it useful.

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