CASE STUDIES

Book: Baum, **Real Estate Investment** (4e), Routledge, chapters 3, 4, 8, 10.

1. The Burj Alhamra case: see chapters 3, 4
2. Botley Road case: see chapter 4
3. The Wilson Street case: see chapter 4
4. The Dubai case: see Chapter 8
5. The Citygate case: see Chapter 8
6. Mezzanine finance: see Chapter 8
7. The Argyle House case: see Chapter 10
8. The L&G/Croydon case: see Chapter 10

THE BURJ ALHAMRA CASE

The Burj Alhamra in Kuwait City is the tallest carved concrete skyscraper in the world and the thirtieth tallest building in the world at 414 m (1,358 ft). There are 62 office floors, each with a gross area of 2,300 sq m, while the Al Hamra shopping mall covers five levels and totals 24,000 sq m gross.

You are required to come up with a market value for this building, following the approach outlined below.

Office floors
Office space gross per floor sq m
Office space net per floor sq m
Office space net sq m
Retail space gross sq m
Retail efficiency rate
Retail space net sq m

Total gross sq m
Total net lettable sq m

Office rent psm pm
Office gross potential income
Vacancy
Office gross effective income

Retail rent psm pm
Retail gross potential income
Vacancy
Retail gross effective income

Total gross effective income
OpEx %
Net operating income

Risk free rate (RFR)
Risk premium (Rp)
Inflation (i)
Real growth (gr)
Growth (g = gr + i)
Depreciation (d)
Cap rate (k = RFR + Rp - g + d)

Valuation:

THE BOTLEY ROAD CASE

You have found this property for sale on the Oxford real estate website BlueBricks. The ad says that this is "a modern two storey business unit, with gas heating, flexible ground floor use with loading door, parking. Please note that this property is also available freehold". Further online enquiry suggests that it was built in the 1980s and is unoccupied. The floor area (ground floor and a part upper office floor) is 2,504 sq ft. It is available freehold (to buy) or leasehold (to rent).

The quoted rent – if you wish to occupy it – is £17,500 pa (£7 psf). The quoted price – if you wish to buy it – is £220,000 (£88 psf).

Is this a good buy? How has it been valued? What return would you make if you bought it?

First, let's check the rent. Does £7 psf seem reasonable? What else is on the market? Is this a fair rent for a small, 1980s industrial/warehouse/storage/office building on the edge of Oxford? There is usually plenty of evidence for this. Let's assume it is a reasonable rent. Second, let's check the price. There are two ways to approach this.

First, does £88/psf seem reasonable? What else is on the market? Is this a fair price for a small, 1980s industrial/warehouse/storage/office building on the edge of Oxford? Maybe there is a lot of evidence of selling prices which gives you comfort. But it is likely that there is not – there are not usually many directly comparable empty properties of this type for sale.

This takes us to the second line of approach. The price (£88psf) is around 12.5 times the rent (£7 psf). Have other less directly comparable - but similar - properties sold for 12.5 times rent?

12.5 is a capitalisation (cap) factor. Years' purchase is a property-specific term for the cap factor used in the UK – the term reflects the number of **years'** income required to **purchase** the investment. This is also called a payback period, and is known in finance as the present value of annuity – in this case in perpetuity.

Rent
multiplied by

Cap factor (years' purchase) equals
Capital value

A formal property valuation would look like this:

Market rental value: £17,500
x Cap factor: 12.5
= Capital value: £218,750
Rounded to: £220,000

[Years' purchase or PV £1 p.a. in perpetuity @8% = 1/.08 = 12.5]

Where does the cap factor of 12.5 come from? As we have already seen, this is based on comparable evidence. But what financial logic lies behind it? Why 12.5?

Clearly, the better the property the bigger the cap factor will be. I will pay a bigger multiplier of rent the more excited I am about the future prospects for the building. In Germany and other markets, the multiplier is talked about a lot and used as evidence of a good deal or otherwise. It is directly comparable to a price/earnings or P/E ratio used to estimate stock prices.

In the UK, US and most other places, real estate people prefer to use a variant of the cap factor, specifically its reciprocal. This is called a capitalization (cap) rate. In this case it takes a value of £17,500/@£220,000 = 7.95% or say 8%.

A formal property valuation would look like this:

Market rental value: £17,500
/ Cap rate: 0.08
= Capital value: £218,750
Rounded to: £220,000

Rent divided by Cap Rate equals Capital Value

Why is the cap rate 8%? What can we compare this with or benchmark it against?
At the time of writing, I can buy a 10-year fixed interest UK government bond which will give me an annual return (or yield) of 2%. 8% is surely better – but the investment will be more time consuming or expensive to manage (if I am an investor, I will have to find and keep a tenant); it is less secure (the tenant may vacate without paying rent); it is more likely to cost money to run (repairs, depreciation); and it is less liquid (harder and more costly to sell). So maybe the 6% extra 'yield' is justified.

Yet rents could rise, pushing ip the value of the property, and Oxford is an expanding economic and employment centre with very high house prices and rising land values, and maybe I will be able to build something better than this on the same site in a few years' time. So maybe □□ is a good 'price', or yield.

Gordon's growth model helps us to understand real estate cap rates. K, the cap rate, is equal to R, the total return or IRR, less G, the annual growth in income.

K = R – G and R = K + G

Where K is an initial yield or cap rate
R is the required return or discount rate G growth in rents (net of depreciation)

The Fisher model helps us to understand required returns or discount rates. R, the discount rate, is equal to RFR, the risk free rate (say a bond yield of 2% plus RP, a risk premium.

R = RFR + RP
Putting Gordon and Fisher together:
RFR = RP + K - G

Assuming that rents grow in line with inflation of 1.5%:
R = K + G = 8% + 1.5% = 9.5%

If R = RFR + RP, R is 9.5% and RFR is 2%, this reveals a risk premium of 7.5%: RFR + RP = K + G
2% + 7.5% = 8% + 1.5%

The discount rate or *required return* should be Risk Free Rate (RFR) + Risk Premium (Rp).

In 2009, the UK RFR was given by the yield on 10 year government bonds or gilts – around 3.5%.

The Rp can only be estimated by a survey (asking investors what total return they want or would accept for the asset, and then deducting RFR to isolate Rp.

We made an assumption and plucked 9.5% out of the air, implying a 6% Rp.

It so happens that this equates to the *expected return* - cap rate (8%) + rent growth rate (1.5%) – meaning that the asst is priced fairly, or (as an economist would say) in equilibrium.

Now let's use Excel to build a cash flow for the property investment. To do this, we will need to make some assumptions about the future.

Let's assume we lease the building immediately after buying it, on a 10 year term at an initial net rent of £17,500. This is the NOI (net operating income). Let's assume the rent is reviewed annually at the expected rate of inflation of 1.5%. We will assume that the lease is renewed in year 10 and that we sell the building in year 10 at the same cap rate of 8%, but this time applied to the rent we will expect the buyer to receive in year 11. We will assume annual rents, paid in arrear.

1. What will be the rent in year 11? (£20,309)

2. What is the expected sale price year 10? (This is the expected rent in year 11/cap rate = £20,309/0.08 = £253,868).

3. What will be the 10-year cash flow?

4. Discounted at the required return (9.5%) what is the present value of the asset cash flow?

5. What would we pay if our required return was 10.5%?

6. What woud we be able to pay if we expected rent growth of 2.5%; had a required risk premium of 4.5%; and expected an exit cap rate of 6.5%?

7. How would we feel if the site had an alternative use?

THE WILSON STREET CASE

Introduction

This case study describes an analysis of the value or worth of an 'over-rented' City of London office building in 1993. It illustrates the tension between true 'value' and an appraiser's valuation produced by conventional income valuation techniques. It demonstrates the key importance of international investors and capital markets, and the significance of lease contracts.

The case shows how the pricing process should be affected by a greater understanding of the purchaser's view, and how changes in economic fundamentals will create changes in worth before market pricing techniques can adapt to new comparable evidence.

The economic background

In 1990, on 5 October, Britain joined the European Exchange Rate Mechanism or ERM at a DM 2.95 central rate, with 6 per cent margins. The UK economy was suffering: unemployment was rising, interest rates were high, inflation was significant and the first Gulf War was brewing up. All asset markets were performing poorly.

On July 10 1992, with base rates at 10 percent, the pound was close to its theoretical lowest point in the ERM, at DM 2.7780. On August 26th the Bank of England spent $1 billion buying pounds. On 'Black Wednesday', 16 September 1992, interest rate were raised from 10 per cent to 12 per cent. There was no resulting rise in sterling, despite further massive intervention, as George Soros and others were selling stering heavily. An increase in rates to 15% effective the next morning was announced. Again, there was no resulting rise in sterling, and it was finally announced that evening that the UK will leave the ERM.

The 10-year gilt yield stands at 8.4%. There is no longer any need to maintain high interest rates to protect the value of sterling.

The property market background

The typical lease contract in London in the 1980s was for 25 years, with reviews of rent to market levels every 5 years, but only upwards. The 'upward-only' rent review meant that every five years rent would either be increased or stay the same. This is similar to a call option for the owner, where the option is exercisable if enough evidence exists to prove an increase in market rent levels. (By 2020, the maximum lease length was more like 10 years, with a single upward only rent review at year 5.)

The investment market was largely domestic: de-regulation of the London stock exchange had sucked in Japanese and US banks, but the Euro had not yet been introduced.

In late 1992, the UK had been in recession for 18 months, and the over-supply of London offices created through the boom of the mid to late 1980s, coupled with a very weak demand side and rents which had reached a peak in real terms by 1989, created a potent mixture. Property

companies had been squeezed by interest rate rises in the late 1980s, by a scarcity of debt following the record indebtedness of banks and by a fall in investor demand for property. When rents started to tumble in 1991 the UK saw property company failures, non-performing bank loans and a loss of investor confidence. In one weekend in October 1992, Canary Wharf announced its insolvency, falls in house prices became the favourite topic in the Sunday supplements, and commercial property markets were badly infected by a widespread malaise. When, in late 1992, the UK withdrew from the European Exchange Rate Mechanism, interest rates fell, gilt yields fell and Sterling was effectively de-valued against the German Mark.

By this time, and after only two years, a London office building might have been worth only 50 per cent of its 1990 peak. Rents appeared to be approaching a floor. Yields (cap rates) were at an all-time high in absolute terms and relative to gilts (treasuries) and equities.

Because rents had fallen so much, and following the building boom of 1986 to 1990, there were many office properties in central London which had been let on new leases at high rents of up to £65 per square foot and were now worth only a small proportion of this. These were 'over-rented'; the rent passing was likely to continue for a very long time as a result of upward-only rent reviews, until a rent review would operate to apply a market rent of more than the original passing rent. In some cases this was not expected to happen before the end of the lease, as inflation and real growth forecasts were both very bearish at the time.

The property

Constructed in 1990, the subject property is an office building of around 38,000 square feet constructed on the edge of the central area of the City of London. It was let to Simmons and Simmons, a leading firm of lawyers, a private unlimited partnership, on a 25-year lease from May 1991 at a rent of £1,650,000. At early 1993 the estimated rental value was currently around £20-25 per square foot or £760,000-£950,000 without, or net of, inducements (such as rent tree periods and fitting out costs, currently common in the market).

7 Wilson Street was owned by Legal and General, an insurance company which, due to poor solvency and an over-weight position in property and City offices in particular, was very keen to sell. The property was sold in March 1993. What price did Legal and General achieve?

The questions

1. What is your quick, back-of-the-envelope, estimate of the property's market value?

2. What was the value of the lease rent, with 23 years unexpired?

3. What is the value of the landlord's right to call higher rents very 5 years?

4. What is the value of the residual (a 25 year old building with the lease recently expired)?

5. What is your more considered view of the price Legal and General might achieve?

6. Who is a likely buyer?

THE DUBAI CASE

Losing the plot

Introduction

The Dubai residential property market became the centre of global attention as a boom took hold in the mid-2000s. Investors and speculators were attaining short-term (often 6 months or less) capital gains delivering in excess of 100% IRRs via off-plan property purchases. Sometimes, as will be described, the returns were even more astronomical.

Were the risks these investors took commensurate with the gains? What was their rationale? How sustainable was their strategy? How did this situation develop?

Background

1999 to 2001

During this period, Dubai embarked on a pioneering and visionary approach to property in the GCC (Gulf Co-operation Council) region. For the first time, pockets of strategic locations were made available for expatriate ownership via a freehold model. Under this model, expats were able to buy a small number of apartments and villas. To entice buyers, the initial property prices asked were extremely low, and buyer-conducive schemes such as rent-to-own were introduced. The initial market reaction was skeptical, but, soon, some regional residents began to pick up these properties as speculative investments. The risks were high, as the market was new/emerging, legislation was not in place, prices were difficult to compare, and home finance was scarce and complicated.

In spite of the risks, in retrospect it is clear that great value was to be had. Ambitious and almost surreal pans of the future Dubai were laid out, albeit difficult to believe. The vision was grand – Dubai was billed as 'the new Singapore;' a cross between Hong Kong and Manhattan. In the face of common criticism, 'build it and they will come' became an increasingly persuasive mantra. However, the full-on marketing and PR campaign had yet to begin in earnest.

Prices of around £100psf were typical. Rental yields were around 10%, while rental rates were deemed to be competitive and expected to rise.

2002 to 2005

Dubai became the focus of a huge international advertising campaign. The freehold property market began to pick up steam. The boom took hold as legislation supporting freehold ownership, although ambiguous, was announced, and there seemed to be a move towards market transparency.

Local Islamic (Shariah-compliant) banks, such as Amlak and Tamweel, began to participate in financing iconic projects, and such high-impact schemes as the man-made Palm Island and the Burj Dubai (the world's tallest structure, now known as Burj Khalifa), were launched. Nonetheless, skepticism still abounded as to whether Dubai could deliver on its hyper-ambitious plans. After all, the United Arab Emirates was a desert sheikhdom with only 30 years of sovereign history.

As Dubai attracted many foreign workers who came to help develop the Dubai dream, the need for housing quickly exceeded supply. Thus, savvy investors perceived this as a good opportunity to buy as rental yields were rapidly rising. The first wave of speculation began, pushing prices up and widening the new market to international investors. In addition to investment from local Emiratis, nationals from Kuwait, Saudi Arabia, and Qatar began investing heavily in Dubai. Furthermore, a few very wealthy groups from Russia, India, Pakistan and Iran begin buying property in bulk. There was a mad rush for any new residential development, and impressive schemes were being completed and delivered. People started to own, not rent, and communities started to develop. Expectations became very high, and delivered returns for investors were strong.

Prices of around £150psf became commonplace. However, rental yields were still in excess of 10-12% and there remained room for further capital price increases. Leading government-backed developers Nakheel and the listed EMAAR became very large and began to sell land to private developers, further embedding the boom.

2006 to 2008

Individual and institutional investors not initially eyeing Dubai began to catch wind of the riches being made by those who had bought and sold. Investors and agencies who had established themselves in Dubai quickly became a magnet for funds and *de facto* fund

managers for friends, family and/or clients who wanted a part of the Dubai pie. In addition to residential property, commercial property and land became hot items.

The Dubai residential market became an established investment sector, with trading in existing properties and a continuing pipeline of new projects being launched or announced. (If all the proposed projects had been built, Dubai would have had housing for 12m people with a population of 1.6m!) However, risk premia fell, as there was greater acceptance of Dubai's position as a post-emerging property market.

Towards 2008, Dubai fever was in full stride, with a number of projects being announced every week. Proposed projects such as the Trump Tower-Palm Island and the Dubai Waterfront (a waterfront community adding hundreds of miles to Dubai's coastline and proposed to be twice the size of Hong Kong!) were launched. Institutional investors entered the market, debt-raising was big business (Standard Chartered, Lloyds and other international names were now taking part), and the concentration of finance and real estate professionals and construction companies fuelled a self-sustaining frenzy for all things real estate in Dubai.

Population and employment growth were being driven by the construction boom. Expectations were being fuelled by the experience of the successful 'flippers', many of whom were using credit cards and other forms of personal debt to raise cash for deposits before quickly selling on their rights at a profit. Often they could not afford to make the next payment. Prices of £300 to £400psf were well established. Rental yields had fallen to 7-8%.

At the peak, prices for flats and villas were being revised upwards every week. Finishing quality was an issue from the start, as developers wanted to finish the work as quickly as they could. Few buyers and fewer sellers cared about specifications and materials. Many stories were exchanged about water leakages and other defects in multi-million dollar flats.

By this stage, speculators were paying money to reserve a place in a queue for a ticket which gave a right to put down a deposit. Those at the front of the queue flipped to those at the back for an easy profit, and some security guards managing the queues are reported to have done very well. Personal credit checks were rarely carried out on prospective buyers. A mortgage could be secured in less than 24 hours, and it was very common to have a person who earned $2,000 US per month owning several $1m+ flats and villas. Deposits might be paid for by cheques drawn on Abu Dhabi banks, which take three days to clear in Dubai; the property would often be flipped in less than three days, so no funds in Abu Dhabi were needed and infinite IRR returns were made. Many people stopped working and going to their day jobs, and a flat in Burj Dubai was reputed to have been sold by the same broker 22 times in less than 18 months.

2008 to 2009

Upon word of Lehman's collapse, existing doubts about the plethora of new projects being announced and sky-rocketing prices caused prices to crash by 40-70% within 8 months. Developers defaulted on debt, borrowers defaulted on mortgages, and (because default is a criminal offence in Dubai) those that could not honour their financial commitments were put

in jail, hence the tales of expats leaving town in a hurry, abandoning cars at the airport with the keys left in the ignition.

The majority of new projects, including Trump Tower, Dubai Waterfront, and hundreds of others, were either put on hold or cancelled. Despite its government backing, Nakheel came close to default and its bonds sold in the secondary market at huge discounts to par value.

Data

Pricing data is presented in Table 1.

Table 1: Dubai residential pricing (AED per sq ft)

Type		2002	2003	2004	2005	2006	2007	2008	2009
Apartments	Burj Dubai	-	-	1,200	1,275	1,350	2,800	4,500	2,000
	Dubai Marina	850	836	900	1,000	1,050	1,400	1,975	1,100
	Greens	500	500	725	875	950	1,250	1,700	1,000
Villas	Lakes	550	575	700	875	1,250	1,450	2,150	1,200
	Meadows	450	500	600	800	1,150	1,500	1,775	1,100
	Ranches	450	475	620	790	1,150	1,450	2,120	1,000
	Springs	420	485	500	640	1,025	1,500	1,850	1,000

Note: The currency in the United Arab Emirates (of which Dubai is a member) is AED (Arab Emirates Dirham). It is pegged to the dollar at the fixed rate of 3.67. 1US$ = 3.67 AED.

1. In 2007, Mr X pays a 10% deposit for a $1m flat under construction. Prices rise. The flat goes up in value but what is his deposit worth one year later? If he borrows 50% of the deposit, what happens to his equity of $50k?

2. In 2008, Ms Y pays a 10% deposit for a $1m flat under construction. Prices fall. The flat goes down in value but what is her deposit worth one year later? If she borrows 50% of the deposit, what happens to her equity of $50k?

3. How sensitive to price rises and falls is (a) the value of their deposits and (b) their equity investment?

4. What do you think are the rights and obligations of Mr X, Ms Y and the developer in each case?

200 CITYGATE

200 Citygate is an office building located in the City of London, EC1, close to the new Crossrail station at Farringdon. It comprises 430,000 sq ft of space constructed by Wimpey in 1990-2. Floorplates range from 5,000-20,000 square feet.

The building was acquired by a Middle East investor in late 2013 for £200m. The acquirer used £100m equity and £100m of five-year debt with penalties for early repayment of debt before year 4.

A formal valuation commissioned at the end of 2014 suggested a likely selling price of £246m; by the end of 2015 the estimated value had risen to £330m or £770 per sq ft. By mid-2017 this had fallen back to £300m. At this point the current net initial yield is 4.5%; the average rent/square foot is £38; the estimated market rent (ERV) is £54 per square foot. The current gross rental income is £14.25 million. There are 27 tenants with one tenant taking 25% of the space. There are 12 years of the term remaining on the lease to the main tenant and a weighted average lease expiry term (WALE) across all tenants of 7 years.

What are the owner's options in 2017? Table 1 shows current and prospective debt terms as at mid 2017. If you re-finance, which bank has the most attractive offer?

Table 1: 500 Citygate debt options, 2017

Lender	**Current**	**Arab Bank**	**NL bank**	**US ins co**	**US bank**
LTV	45%	50%	50%	50%	50%
Loan amount	£135.5m	£150.0m	£150.0m	£150.0m	£150.0m
Term	2 years	5 years	5 years	5 years	5 years
Repayment penalty	No	Up to 3 yrs	Up to 3 yrs	Up to 3 yrs	Up to 4 yrs
Arrangement fee	0.80%	0.17%	0.60%	0.80%	1.00%
Margin	1.90%	1.75%	1.70%	1.65%	1.80%
Fix/float	Float	Float	Float	Float	Float
Base rate	0.40%	0.36%	0.36%	0.36%	0.36%
Swap rate	2.00%	1.08%	1.08%	1.08%	1.08%
Hedging	75%	67%	75%	67%	75%
All-in rate	3.50%	2.59%	2.60%	2.49%	2.70%
All-in rate (100% hedged)	3.90%	2.83%	2.78%	2.73%	2.88%
Syndication	None	100%	33-50%	100%	50%/66.7%
Covenants					
LTV - default	70%	70%	70%	65%	60%
LTV - sweep	-	-	65%	60%	-
ICR - default	1.50x	1.50x	2.00x	1.50x	1.50x
ICR - sweep	1.75x	-	2.50x	1.75x	-
Debt yield/other	-	-	-	-	8.0%

MEZZANINE FINANCE

An industrial portfolio was valued in 2010 at £148.5 million and acquired at that price by a private property company. It generated a net income of around £15.75 million, a 10.1 per cent yield on total purchase costs including fees and taxes of £156 million.

When it was acquired, a senior loan of only 50 per cent of the total outlay was available, because banks had become risk averse in the aftermath of the global financial crisis. Interest was charged based on a fixed rate of 3.5 per cent plus a margin to the lender of 3.0 per cent, a total 6.5 per cent interest charge, plus an arrangement fee of 1 per cent.

The property company had around 50 per cent of the required equity capital available, roughly £39 million. It approached a provider of mezzanine finance, who offered to provide the equity shortfall of £39 million on the following terms: a 14 per cent coupon or interest rate; an arrangement fee of 4 per cent of the capital provided; 2.5 per cent amortization, meaning 2.5 per cent of the initial capital borrowed would be repaid on top of interest every year, with interest charged on the remaining balance; and a profit share of 30 per cent of the delivered IRR over 14 per cent on resale or re-financing. (This is calculated by estimating the capital receipts needed to deliver a 14 per cent IRR, and then splitting the extra capital 70:30 in favour of the equity owner.)

The two directors of the property company were very keen to do this deal. They assumed and hoped that they would benefit from 2 per cent rental growth per annum over the holding period of five years, and that in addition capitalization rates would fall and values would rise through both effects.

They estimated that if they resold the asset on a 10 per cent capitalization rate they would earn a return of 10 per cent. At an 8 per cent resale capitalization rate, which was their base case or expected outcome, they reckoned they would earn 27 per cent even after paying the mezzanine provider the high interest rate, the arrangement fee and the split of IRR.

The property was re-valued in 2015 at the same rental value (the 2 per cent rental growth per annum was not achieved) and a surprisingly low cap rate of 7.1 per cent (delivering a price just in excess of £220 million). It was then re-financed wholly through a new senior loan of around £130 million in 2015. The mezzanine provider was paid back plus a share of the IRR generated, making an IRR on their capital in excess of 20 per cent, while the property company more than doubled their money.

How are these numbers generated?

Table 1 shows the expected cash flow to the investor, with flat rents assumed, and the exit cap rate used as the only dependent variable, estimated as the rate need to deliver a 14 per cent return.

This cash flow – based on zero rent growth and an exit cap rate of 9.745 per cent - delivers an exit price of £161,621,344 and an IRR of 14 per cent, the hurdle at which the profit share takes effect.

Table 1: cash flows needed to deliver 14% IRR

Year		2010	2011	2012	2013	2014	2015
Price	£148,500,000						
Fees	£7,500,000						
Total outlay	£156,000,000						
Equity	£39,000,000	-£39,000,000					
Senior debt	£78,000,000						
Shortfall/mezz	£39,000,000						
Senior fee	1.00%	-£780,000					
Interest	6.50%		£5,070,000	£5,070,000	£5,070,000	£5,070,000	-£5,070,000
Mezz fee	4.00%	-£1,560,000					
Mezz interest	14.00%		-£5,460,000	-£5,460,000	-£5,460,000	-£5,460,000	-£5,460,000
Amortization	2.50%		-£975,000	-£975,000	-£975,000	-£975,000	-£975,000
Balance			£38,025,000	£37,050,000	£36,075,000	£35,100,000	£34,125,000
Rent	£15,750,000		£15,750,000	£15,750,000	£15,750,000	£15,750,000	£15,750,000
Growth	0.00%						
ERV			£15,750,000	£15,750,000	£15,750,000	£15,750,000	£15,750,000
Exit cap rate	9.745%						
Exit price							£161,621,344
Cash flow		-£41,340,000	£4,245,000	£4,381,500	£4,654,500	£4,791,000	£54,423,844
IRR							**14.00%**

At an exit cap rate of 7.1 per cent with no rent growth, the exit price is £221,830,986. Given a hurdle exit price of £161,621,344, there is a surplus of £60,209,642 to split 70:30 in favour of the investor (30 per cent to the mezzanine provider, who takes just over £18m). The net IRR to the investor is 25.63 per cent - see table 2.

Table 2: cash flows and IRR after mezzanine carry payment

Year	2010	2011	2012	2013	2014	2015
Exit price						£221,830,986
Hurdle price						£161,621,344
Excess price						£60,209,642
Mezz carry (30%)						£18,062,892
Cash flow	-£41,340,000	£4,245,000	£4,381,500	£4,654,500	£4,791,000	£96,765,593
IRR						**25.63%**

Source: author

The net IRR to the mezzanine provider is 21.56 per cent - see table 3. Both parties were very satisfied with the arrangement.

Table 3: cash flows and IRR to mezzanine provider

Year	0	1	2	3	4	5
Loan	-£39,000,000					£34,125,000
Fee	£1,560,000					
Interest		£5,460,000	£5,323,500	£5,050,500	£4,914,000	£4,777,500
Amortisation		£975,000	£975,000	£975,000	£975,000	£975,000
Carry						£18,062,892
Total	-£37,440,000	£6,435,000	£6,298,500	£6,025,500	£5,889,000	£57,940,392
IRR						**21.56%**

ARGYLE HOUSE

Figure 1: Argyle House, Edinburgh

Source: CBRE

It is 14 May 2021, and Argyle House - a major office building in the heart of Edinburgh city centre - is on the market for £45m. It extends to 220,402 sq ft (20,476 sq m) with 169 on-site car parking spaces. The overall site extends to approximately 1.88 acres (0.76 hectares). Argyle House is let to the UK government (the Secretary of State for Communities and Local Government) on a fixed rent of £2,375,000 per annum, approximately £10.77 per sq ft, until 14 May 2033.

Immediate repairs of around £3m are required. This will be at the owner's expense. There are also some irrecoverable annual expenses relating to the landlord's obligations under the lease. These currently total around £100,000 but will rise with inflation.

The building occupies one of the most significant future development sites in central Edinburgh, lending itself to a number of potential uses such as office, hotel, residential and student accommodation. It may be possible to materially increase the developable area (by say 10-15 per cent). Prime office rents in Edinburgh are now pushing £35-40 per sq ft. Cap rates for new stock are estimated to be around 4.5 per cent. UK government bond yields are currently priced at yields of at around 0.85 per cent for durations of 10-15 years. Purchase costs will total 6.25 per cent of the purchase price. Demolition would cost around £2m. New office build costs will be around £300 per sq ft.

1. Why would a purchaser be interested in buying this asset?

2. What is a fair price for this building?

3. How would you expect a buyer to maximise his/her return on equity?

1. Why would a purchaser be interested in buying this asset?

This investment is best analysed in two parts. These two parts are very different propositions.

First, we have a fixed government-backed income stream. This is just about the least risky property investment you can imagine. How could you think about the value of that income? How could you capitalise on or realise that income?

Second, we have a potential redevelopment site (a residual, or reversion) which we will gain access to at the end of the lease in 12 years' time. It is also possible at that point that we attempt to relet the current building. This is one of the most risky property investment propositions you can imagine. The building looks ready for demolition, and that may be the most financially viable thing the owner could do with it. In order for this to be the case, the land value for development (see chapter 6) must exceed the existing use value at the lease end.

Land value for development = gross development value[1] – (building costs + fees[2] + developer's profit[3] + demolition costs)

Existing use value = rent/cap rate

2. What is a fair price for this building?

First, we will look at the development value of the residual after the lease has ended in year 12. We assume that we can increase the developed floorspace by around 10-15 per cent from 220,402 to say 250,000 square feet. Current market rent levels for new space are estimated as around £35 per sq ft, and cap rates are at around 4.5 per cent.

The estimated gross development value in 12 years' time will be around £195m (given by (250,000 * £35) / 0.045. Allowing for developers' profit at 15 per cent of total costs (demolition, construction and fees), the corresponding land value in 12 years' time would be c. £93m (table 1).

Table 1: Argyle House residual land value, 2033

Size	250,000
Rent psf	£35
Rent	£8,750,000
Cap rate	4.50%
GDV	£194,444,444
Cost psf	£300
Demolition	£2,000,000

[1] Gross development value = rent/cap rate of new building

[2] Fees (architects, costs consultants, etc) are likely to cost say 15% of building costs

[3] A reasonable profit target metric is say 15% of gross development value

Construction costs	£75,000,000
Fees @15% costs	£11,250,000
Total costs	£88,250,000
Profit@15% total costs	£13,237,500
Total costs + profit	£101,487,500
Residual	£92,956,944

Source: author

We could alternatively value the residual or reversion as an existing building. How can we estimate the existing use value of the property at the lease end? Let us assume that if we spend a minimal amount on refurbishment (say £30 per sq ft) we could re-let the space at around half of the top rent for new office buildings (£35 per sq ft), say £17.50, and sell the asset at a cap rate of 6 per cent. The net value is then around £58m (table 2).

Table 2: Argyle House existing use value at lease end

Size	220,402
Rent per sq ft	17.5
Rent per sq ft	£3,857,035
Cap rate	6.00%
Value	£64,283,917
Cost psf	30
Total cost	£6,612,060
Net value	£57,671,857

Source: author

Demolition and redevelopment appears likely to be the better option in 12 years' time, as the estimated gross development value in 12 years' time (around £93m) exceeds the existing use value, as refurbished.

We need to discount this for 12 years at a reasonable required rate of return, defined as (RF_N + Rp). What is a reasonable rate? At a risk free rate of 0.85 per cent and a 10 per cent risk premium the present value is c.£27m. At a 12.5 per cent premium (see table 3) it would be c.£21m. At a 15 per cent premium, it is £15m.

Table 3: Present value of development site

Residual	£95,256,944
Risk free rate	0.850%
Risk premium	12.50%
Discount rate	13.35%
PV	0.2223
Residual	£20,664,435

Source: author

We will assume a present value for the residual of £20m.

Next, we will think about the value of the contracted government income. This is a fixed annuity for 12 years, but the annual expenses begin at £100,000 a year and will rise with inflation, say 2 per cent annually. The expected net cash flow is as follows:

Table 4: Contracted rent, expenses and net cash flow

Year	Period	Rent	Expenses	Net cash flow	PV £1*	PV
2022	1	£2,375,000	-£102,000	£2,273,000	0.9676	£2,199,323
2023	2	£2,375,000	-£104,040	£2,270,960	0.9362	£2,126,124
2024	3	£2,375,000	-£106,121	£2,268,879	0.9059	£2,055,322
2025	4	£2,375,000	-£108,243	£2,266,757	0.8765	£1,986,841
2026	5	£2,375,000	-£110,408	£2,264,592	0.8481	£1,920,603
2027	6	£2,375,000	-£112,616	£2,262,384	0.8206	£1,856,536
2028	7	£2,375,000	-£114,869	£2,260,131	0.7940	£1,794,569
2029	8	£2,375,000	-£117,166	£2,257,834	0.7683	£1,734,635
2030	9	£2,375,000	-£119,509	£2,255,491	0.7434	£1,676,667
2031	10	£2,375,000	-£121,899	£2,253,101	0.7193	£1,620,600
2032	11	£2,375,000	-£124,337	£2,250,663	0.6960	£1,566,373
2033	12	£2,375,000	-£126,824	£2,248,176	0.6734	£1,513,926
Total						£22,051,518

Source: author
*Note: * the present value factor is at a discount rate of 3.35%.*

We need to discount this net income line for 12 years at a reasonable required rate of return, defined as (RFR + Rp). What is a reasonable discount rate? This is a very low risk indeed, with an allowance needed only for the relative illiquidity of the investment relative to bonds. At a risk free rate of 0.85 per cent and a 2 per cent risk premium the present value is £22.7m. At a 2.5 per cent premium it would be £22m (see table 4). At a 3 per cent premium, it is £21.4m.

The present value of the residual development site is £20m. The net cash flow is worth say £22m. Given that we have a liability to spend around £3m on the building immediately, a reasonable value for the two combined parts of this asset would be a maximum of £40m. The asking price of £45m looks on the high side, but maybe we would be successful with a bid of say £42.5m.

3. How would you expect a buyer to maximise his/her return on equity?

There are several options. Is the government tenant in occupation? If not, would they be prepared to pay a cash sum to get out of the lease? We assume not – governments are unlikely to be keen to replace a long term annual liability by paying out a cash sum.

Would someone buy the contracted income? Could we sell the income strip? In an income strip, the government income would be assigned to a new company (an SPV or special purpose vehicle). In this case, however, we cannot assign the entire income to the SPV given

the annual expenditure that the owner will remain responsible for. We will have to retain say £125,000 of the rent to cover this cost, in which case we can sell the strip of the remaining rent of £2,250,000.

What will someone pay for this? Similarly dated government bonds sell on an 0.85 per cent yield; perhaps we can sell this for a total yield of 1.5 per cent. The present value of an income of £2.25m discounted at 1.5 per cent for 12 years is shown in table 5. Allowing £500,000 for legal fees, this will clear £24m.

Table 5: Income strip valuation

Income strip		£2,250,000
Gilt yield	0.85%	
Risk premium	0.65%	
Discount rate	1.50%	
Term	12	
Discount factor		10.9075
Value		£24,541,875

Source: author

We are now in for a net £16m plus £3m of repairs - £19m – for a development site worth between £16m and £28m.

If we did not sell the income strip, what return would the cash flow deliver? We would earn a 10 per cent IRR and a running yield of around 5.3 per cent (table 6).

Table 6: IRR, no leverage

Year	Period	Capital	Income	Costs	Net cash flow	Yield
2021	0	-£42,500,000		-£3,000,000	-£45,500,000	
2022	1		£2,375,000	-£102,000	£2,273,000	5.35%
2023	2		£2,375,000	-£104,040	£2,270,960	5.34%
2024	3		£2,375,000	-£106,121	£2,268,879	5.34%
2025	4		£2,375,000	-£108,243	£2,266,757	5.33%
2026	5		£2,375,000	-£110,408	£2,264,592	5.33%
2027	6		£2,375,000	-£112,616	£2,262,384	5.32%
2028	7		£2,375,000	-£114,869	£2,260,131	5.32%
2029	8		£2,375,000	-£117,166	£2,257,834	5.31%
2030	9		£2,375,000	-£119,509	£2,255,491	5.31%
2031	10		£2,375,000	-£121,899	£2,253,101	5.30%
2032	11		£2,375,000	-£124,337	£2,250,663	5.30%
2033	12	£95,256,944	£2,375,000	-£126,824	£97,505,120	5.29%
				IRR	10.07%	

Source: author

Could we use leverage to enhance our return? According to table 7, 50 per cent leverage would boost the IRR to over 14 per cent, with a running cash on cash yield of c. 7.6 per cent.

Table 7: IRR, 50 per cent leverage

Year		Capital	Income	Costs	Interest	Net cash flow	Yield
2021	0	-£21,250,000		-£3,000,000		-£24,250,000	
2022	1		£2,375,000	-£102,000	-£637,500	£1,635,500	7.70%
2023	2		£2,375,000	-£104,040	-£637,500	£1,633,460	7.69%
2024	3		£2,375,000	-£106,121	-£637,500	£1,631,379	7.68%
2025	4		£2,375,000	-£108,243	-£637,500	£1,629,257	7.67%
2026	5		£2,375,000	-£110,408	-£637,500	£1,627,092	7.66%
2027	6		£2,375,000	-£112,616	-£637,500	£1,624,884	7.65%
2028	7		£2,375,000	-£114,869	-£637,500	£1,622,631	7.64%
2029	8		£2,375,000	-£117,166	-£637,500	£1,620,334	7.63%
2030	9		£2,375,000	-£119,509	-£637,500	£1,617,991	7.61%
2031	10		£2,375,000	-£121,899	-£637,500	£1,615,601	7.60%
2032	11		£2,375,000	-£124,337	-£637,500	£1,613,163	7.59%
2033	12	£74,006,944	£2,375,000	-£126,824	-£637,500	£75,617,620	7.58%
					IRR	14%	

Source: author

Given this analysis, and the risk and effort involved, does the deal remain attractive?

THE L&G/CROYDON CASE

In April 2019, L&G and Croydon Council announced a new partnership in providing affordable housing. The partnership deal has seen L&G buy 167 homes for £44.6 million – mainly two and three-bedroom flats and houses located in Croydon and neighbouring boroughs – from the local authority and then lease them back to the council over a 40-year term.

These affordable housing units will be rented out, at Local Housing Allowance levels, to previously homeless local families. After the 40-year term ends, the properties will belong to the council. The homes will be managed by Croydon Affordable Tenures, part of Croydon Affordable Housing, a local housing charity set up by the council. Let us assume that the lease transfers all the rental income of the affordable homes to L&G.

This cooperation between L&G seems to be celebrated by both parties. (Note also that in March 2020, Legal & General contributed a further £21.6m to its partnership with Croydon Council, which will provide a total 250 new affordable homes in the borough.)

L&G said: *"It demonstrates the positive social impact that a proactive local authority and long-term investment can deliver, enabling Croydon Council to meet its affordable housing needs and reduce the burden on the public purse."*

Croydon council: *"L&G's investment will save around £20m in loan costs. That means we can assist even more families in the long term. This innovative partnership offers us better value for money than more traditional loans available to councils, and I hope this encourages other councils and financial institutions to follow suit."*

Assume 100 2 bed flats producing £14,635 per annum and 67 3 bed flats producing £17,713 per annum.

1. What are the benefits for the local authority of this deal?

2. What are the benefits for L&G in such a partnership? Why is L&G willing to forfeit the ownership of the homes after the 40 year lease runs out?