Discounted cashflow assignments in property valuation: (how) can we make them AI proof

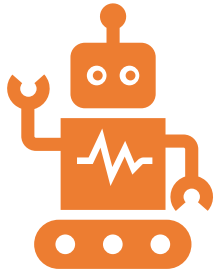
Ilir Nase

University of Manchester

Outline

- Introduction
- The case summative assessment
- Institutional perspective on use of AI
- Walking on students’ shoes
- Evaluation and discussion

Introduction(s)



Icebreaking…

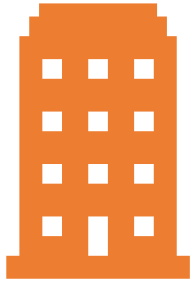
DCF familiarity

AI & Valuation

Who uses AI for DCF models?

Who asks students to build DCF templates in their assignments?

Who thought that AI was not ‘coming for them’?



Today’s focus

A real case of a student assignment

Property valuation module, PGT Real Estate programmes @ University of Manchester (UoM)

The case summative assessment

The assignment

- Red Book-compliant valuation report (2.5K words) of a commercial asset on the market around assignment release date (mid-November)
  - Generally Manchester but also London if market too thin
- … ‘Assess the property’s investment worth via a discounted cash flow (DCF) model taking account of all existing and future tenancies including (possible) lease renewals and/or new leases’.
- …‘build your own excel template for calculation purposes’…
- ...‘intended holding period of 10 years and have instructed an assignment due (valuation) date of 16/11/2025…the precise holding period will be for 121.5 months…’
- …only one template screengrab is allowed in the assignment (Appendix with 2 screengrabs in total one for calculations and the other for formulae)…

Last year’s asset

16-18 New Bridge St

★★★★☆

Office - Holborn Submarket
London EC4V 6AG

21,141 Sq ft NIA	0.14 ac Lot	1800 / 2009 Built / Renov	1,363 Available Sq ft	£77.50/FRI Asking Office Rent	£18M Sale Price	£851.43 Price/Sq ft

Sale

For Sale	£18,000,000 (£851.43/Sq ft)		
Yield	6.87%	Status	Active
Sale Type	Investment		
Sold Price	£19,620,000 (£928.05/Sq ft)		
Date	Jan 2018	Yield	4.59%
Sale Type	Investment		

Sale Highlights

- the building is strategically positioned just to the south of the junction of Ludgate Circus
- Excellent transport connections, with Blackfriars (1 min), City Thameslink (2 mins), St Paul's (9 mins) and Farringdon stations
- The building is multi-let to four office tenants and two retail tenants on leases with breaks and expiries between Jan 2026 and March 2033.

Building

Type	4 Star Office		
Location	CBD		
NIA	21,141 Sq ft	Tenancy	Multi
Floors	8	Owner Occup	No
Typical Floor	2,885 Sq ft		
Construction	Masonry		
Lifts	2		
Year Built	1800		
Renovated	2009		
Property Mix	Office 16,983 Sq ft 80.3%		
	Retail 4,158 Sq ft 19.7%		

Land

Land Acres	0.14 ac	Land Sq ft	6,098 Sq ft
Bldg FAR	3.47		

Tenants

Name	Lease Type	Rent/...	Exp Date	Sq ft Oc...
Tesco Express	[illegible]	[illegible]	[illegible]	[illegible]
Mace Group	[illegible]	[illegible]	[illegible]	[illegible]
Professional Standards ...	[illegible]	[illegible]	[illegible]	[illegible]
Baseware	[illegible]	[illegible]	[illegible]	[illegible]
Adam Smith Internation...	[illegible]	[illegible]	[illegible]	[illegible]
Natural Atmosphere	[illegible]	[illegible]	[illegible]	[illegible]
Nla Media Access	[illegible]	[illegible]	[illegible]	[illegible]
The News Media Associ...	[illegible]	[illegible]	[illegible]	[illegible]

For Lease

Smallest Space	1,363 Sq ft	Office Avail	1,363 Sq ft
Max Contiguous	1,363 Sq ft		
# of Spaces	1		
Vacant	1,363 Sq ft		
% Leased	93.6%		
Rent	£77.50		
Service Type	Fully Repairing & Insuring		
Service Charge	£12.16/Sq ft		

Space

Floor	Available	Use	Rent	Service Type
E 6th	1,363 Sq ft	Office	£77.50	FRI

Leasing Highlights

- Corner position located within close walking distance to Blackfriars
- Newly refurbished

Lease Activity

Sign ...	Leased	Use	Rent	Service ...	Rent ...
Jul 2...	2,982 Sq ft	Office	£69.50	FRI	Asking
Jan 2...	3,205 Sq ft	Office	£48.00	-	Achie...
Dec 2...	3,133 Sq ft	Office	£58.43	FRI	Effect...
Aug 2...	3,141 Sq ft	Office	£68.87	IRO	Achie...
Jan 2...	3,173 Sq ft	Office	£71.85	FRI	Achie...

11 Other Leases

Market Conditions

Vacancy Rates	Current	YOY Change
Subject Property	6.4% ↓	-7.7%
Submarket 3-5 Star	7.0% ↓	-1.6%
Market Overall	10.3% ↓	-0.5%
Market Asking Rent Per Area		
Subject Property	£53.74/Sq ft ↓	-0.8%
Submarket 3-5 Star	£64.77/Sq ft ↓	-1.2%
Market Overall	£56.88/Sq ft ↑	1.1%
Submarket Leasing Activity		
12 Mo. Leased	903,930 Sq ft ↑	34.9%
Months on Market	12.2 ↓	-6.1 mo

Submarket Sales Activity	Current	Prev Year
12 Mo. Sales Volume	£301.4M	£653.4M
Market Sale Price Per Area	£857/Sq ft	£827/Sq ft

Property Contacts



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The tenancy schedule

Tenant	Floor	Area (sq ft)	Lease Start	Lease Expiry	Rent Review	Inside the (54)Act	Break Date	Break Comments	Rent (£PA)	Rent (£psf)	Comments
Cignal Infrastructure UK Limited	Roof Mast	N/A	17/01/2014	16/01/2026	31/01/2020	Yes (Telecoms Code)	–	–	£19,900	–	Lease is now protected under the Code & under prevailing legislation the lease can only be terminated on redevelopment grounds with evidence of intention to redevelop, minimum notice period 18 months. Renewal terms being negotiated.
Vacant	Sixth	1,363	–	–	–	–	–	–	£102,225	£75.00	Vendor to provide 12 month rental top-up on the vacant 6th floor at £75.00 per sq ft.
Under Offer	Fifth	2,968	–	–	–	–	–	–	£242,095.20	£81.57	Under Offer. Tenant break option in Y3 subject to 6 months' notice. 4 months rent free if tenant does not operate break. Rent Y1–3 £242,095.20 pa (£81.57 psf); Y4–5 £207,110 pa (£69.78 psf). Landlord Cat B works of £183,000 (to be passed onto prospective purchaser. 6 month rent deposit.
Basware Holdings Limited	Fourth	3,173	03/03/2022	02/03/2027	–	No	–	–	£223,300	£71.85	Currently paying half rent of £111,650 pa from 03/03/2025 to 02/07/2025 due to break not being actioned. Rent deposit of £137,455 gross. Schedule of condition attached to lease.
Professional Standards Authority	Third	3,133	15/03/2023	14/03/2033	15/03/2028	No	15/03/2028	Tenant to be entitled to 6 months of rent free if break not exercised	£207,679.50	£66.50	Open Market Rent Review on 15/03/2028. Tenant entitled to rent free from 15/03/2028 to and including 14/09/2028 if tenant does not operate break. Service charge cap at £49,435 (£15.78 per sq ft) with CPI annual uplift. Schedule of condition attached to lease.
Adam Smith International Ltd	Second	3,141	17/07/2023	16/07/2028	–	No	17/07/2026	Tenant to be entitled to 3 months rent free if break not exercised	£219,282	£68.87	Tenant entitled to rent free from 17/07/2026 to and including 16/10/2026 if if tenant does not operate break. Service charge cap currently at £45,160 (£14.38 per sq ft) with RPI annual uplift. Schedule of condition attached to lease.
Mace Construct Limited	First	3,205	05/01/2023	04/01/2026	N/A	No	–	–	£153,936	£48.00	Tenant looking to extend for 5 months. Rent deposit of £47,379 gross.
Natural Atmosphere Limited	Ground (rear)	363	24/06/2019	23/06/2029	–	No	–	Landlord rolling break upon 6 months notice	£36,736.64	£113.04	Rent deposit of £16,928 gross.
Tesco Stores Limited	Ground & Lower Ground	3,795	04/11/2009	03/11/2024	04/11/2019	Yes	–	–	£115,000	£30.30	Inside the Landlord & Tenant Act 1954 (Part II) as amended. In legals with Tesco on new 15 year lease at a proposed rent and interim rent of £115,000 pa with 6 months rent free at half rent. 5 yearly CPI uplifts compounded with cap of 4% and collar of 1%.
Ancillary	Lower Ground	1,942	–	–	–	–	–	–	–	–	
Total		**23,083**							**£1,320,154.34**	**£57.19**	

A wealth of market reports from CoStar



Holborn

London GBR

PREPARED BY

Ilir Nase

Lecturer in Real Estate

CoStar



London GBR

PREPARED BY

Ilir Nase

Lecturer in Real Estate

CoStar



City of London

London GBR

What students should be able to produce

	A	B	C	D	E	F	G	H	I	J	K	L	M
4	**1. GENERAL DATA**												
5													
6			CLIENT NAME	**XXX**									
7			CLIENT OBJECT REFRENCE NUMBER	For internal use									
8			OBJECT NAME	**Address**									
9			CITY/TOWN	**Address**									
10			ADDRESS	**Address**									
11			POSTAL CODE	**Address**									
12													
13	**2. DCF INPUT PARAMATERS & RELATED ESTIMATIONS**												
14													
15				2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
16			RENTAL GROWTH %	4.00%	3.50%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
17			OPERATING COSTS % INCREASE	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
18			MARKET RENT PER SQ.FT.	35.00	36.40	37.67	38.80	39.97	41.17	42.40	43.67	44.98	46.33
19													
20			DISCOUNT RATE, CONSISTING OF :	7.50%									
21			RISKFREE RATE	5.00%									
22			REAL ESTATE RISK PREMIUM	2.00%									
23			ASSET SPECIFIC RISK	0.50%									
24													
25			EXIT YIELD	8.00%									
26													
27	**3. TENANCY DATA**												
28													
29			TENANT NAME	LEASED (SQ.FT.)	PASSING RENT PER SQ.FT.	PASSING RENT	EXPIRY DATE		MARKET RENT PER SQ.FT.				
30													
31													
32			TENANT A	6,850	33	226,050	31/12/28		35				
33			TENANT B	7,500	32.5	243,750	31/12/29						
34			TENANT C	3,460	37	128,020	31/12/30						
35			TENANT D	12,300	36	442,800	31/12/31						
36			TENANT E	5,325	35	186,375	31/12/32						

Cont.

	A	B	C	D	E	F	G	H	I	J	K	L	M
40	**4. CASH FLOW FIGURES FROM OPERATIONS**												
41		CASH FLOW YEARS		2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
42		TENANT A		226,050	226,050	226,050	226,050	226,050	**281,997**	281,997	281,997	281,997	281,997
43		TENANT B		243,750	273,000	273,000	273,000	273,000	273,000	318,018	318,018	318,018	318,018
44		TENANT C		128,020	128,020	130,352	130,352	130,352	130,352	130,352	151,114	151,114	151,114
45		TENANT D		442,800	442,800	442,800	477,292	477,292	477,292	477,292	477,292	553,312	553,312
46		TENANT E		186,375	186,375	186,375	186,375	212,831	212,831	212,831	212,831	212,831	**246,730**
47		**THEORETICAL RENTAL INCOME**		**1,226,995**	**1,256,245**	**1,258,577**	**1,293,069**	**1,319,525**	**1,375,472**	**1,420,490**	**1,441,252**	**1,517,272**	**1,551,171**
48		INCENTIVES		0	0	0	0	0	70,499	0	0	0	61,682
49		VACANCY		0	0	0	0	0	70,499	0	0	0	61,682
50		**GROSS RENTAL INCOME**		**1,226,995**	**1,256,245**	**1,258,577**	**1,293,069**	**1,319,525**	**1,234,474**	**1,420,490**	**1,441,252**	**1,517,272**	**1,427,806**
51													
52		INSURANCE		0	0	0	0	0	0	0	0	0	0
53		BUSINESS RATES		0	0	0	0	0	0	0	0	0	0
54		**SUBTOTAL FIXED COSTS**		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
55		PROPERTY MANAGEMENT		0	0	0	0	0	0	0	0	0	0
56		BROKERAGE FEE							42,300			0	37,009
57		**SUBTOTAL MANAGEMENT COSTS**		**0**	**0**	**0**	**0**	**0**	**42,300**	**0**	**0**	**0**	**37,009**
58													
59		**MAINTENANCE COSTS**		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
60		**REPLACEMENT**											
61		UNRECOVERABLE VAT		0	0	0	0	0	0	0	0	0	0
62		BAD DEBTS		0	0	0	0	0	0	0	0	0	0
63		UNRECOVERABLE SERVICE CHARGES		0	0	0	0	0	0	0	0	0	0
64		**SUBTOTAL OTHER COSTS**		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
65													
66		**TOTAL OPERATING COSTS**		**0**	**0**	**0**	**0**	**0**	**42,300**	**0**	**0**	**0**	**37,009**
67													
68		**OTHER CASH FLOW**											
69		OTHER INCOME		0	0	0	0	0	0	0	0	0	0
70		PM FUTURE COSTS		0	0	0	0	0	0	0	0	0	0
71		RENOVATION		0	0	0	0	0	0	0	0	0	0
72		**TOTAL OTHER CASHFLOW**		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Cont.

5. END VALUE												
		RENTAL INCOME YEAR 11										1,597,706
		EXIT YIELD, REQUIRED RATE OF RETURN BUYER										8.00%
		VALUE EXCLUDING PURCHASER'S COSTS										19,971,322
		PURCHASER'S COSTS										1,298,136
		END VALUE										18,673,186
6. VALUATION												
	6a.	RECAP CASHFLOWS	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
		GROSS RENTAL INCOME	1,226,995	1,256,245	1,258,577	1,293,069	1,319,525	1,234,474	1,420,490	1,441,252	1,517,272	1,427,806
		TOTAL OPERATING COSTS	0	0	0	0	0	-42,300	0	0	0	-37,009
		TOTAL OTHER CASHFLOWS	0	0	0	0	0	0	0	0	0	0
		EXIT VALUE										18,673,186
		TOTAL CASHFLOWS (NET)	**1,226,995**	**1,256,245**	**1,258,577**	**1,293,069**	**1,319,525**	**1,192,174**	**1,420,490**	**1,441,252**	**1,517,272**	**20,063,982**
	6b.	DISCOUNTED VALUE INCOME/OUTGOINGS	1,216,103	1,158,227	1,079,420	1,031,630	979,291	823,048	912,253	861,010	843,186	718,977
		DISCOUNTED VALUE END VALUE										9,653,170
							BASIC CHECKS w/ NIY	Gross	Net			
		TOTAL ALL DISCOUNTED VALUES		19,276,316			INITIAL YIELD (before P.C.)	6.37%	6.37%			
		PURCHASER'S COSTS		1,252,961								
		VALUE		18,023,356			INITIAL YIELD (after P.C.)	6.81%	6.81%			
		ASKING PRICE		18,000,000								
		NPV		**23,356**								
		DATE : 12-Nov-24										

Stop & Discuss…

Any questions/comments so far



Institutional perspective on use of AI

Approach for this session

- Simulating a student who seeks to use AI to build the DCF template in excel
- Leave out the report writing bit (no time, too straightforward?)
- Not looking for ‘absolute perfection’
- (IMO) Students: best example of the ‘homo economicus’
  - Tick all boxes and reach the merit/pass range with minimum effort



- Abide to all (possible) institutional restrictions:
  - e.g. UoM incorporates/requires a four-level AI adoptability in summative assessments
  - advises/recognises only use of Copilot

The institutional perspective

- University position:

The University position is that, when used appropriately, AI tools have the potential to enhance teaching and learning and can support inclusivity and accessibility. Output from AI systems must be treated in the same manner by staff and students as work created by another person or persons, used critically and with permitted license, and cited and acknowledged appropriately.

The four categories

a) AI Prohibited - AI is not permitted to be used in this assessment.

b) AI Minimal - AI is permitted to be used in this assessment in limited ways that contribute to the presentation without changing the substantive content or meaning. The assessment information must set out what is acceptable use.

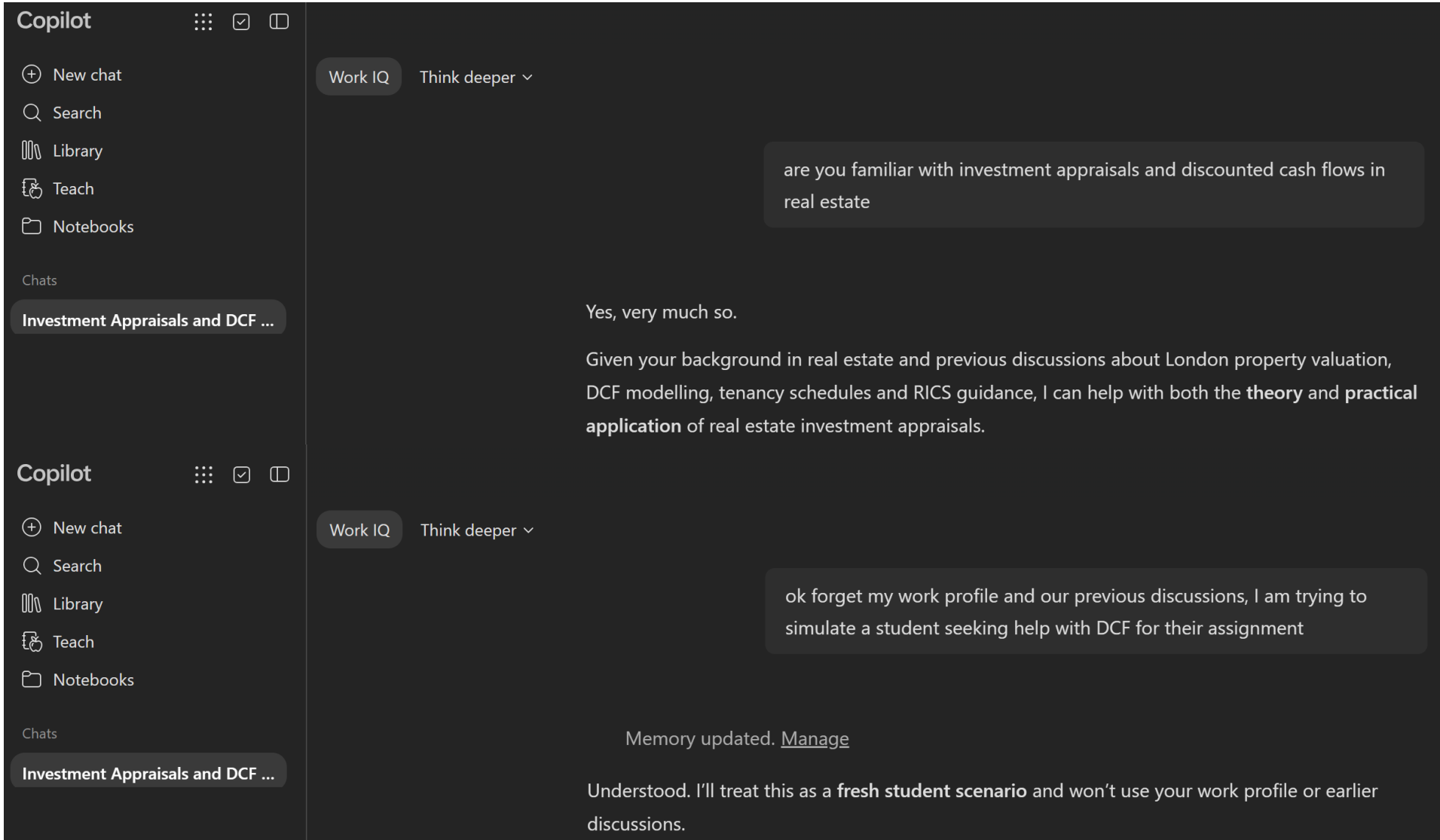
c) AI Permitted - AI may be used to complete the assessment in line with the conditions set out in the assessment information. The assessment information must clearly state what AI use is not acceptable. The assessment brief should explain how students who do not wish to personally use AI tools can undertake the assessment.

d) AI-Integrated - AI use is necessary to meet the course unit intended learning outcomes. This does not imply that all AI use is permitted.

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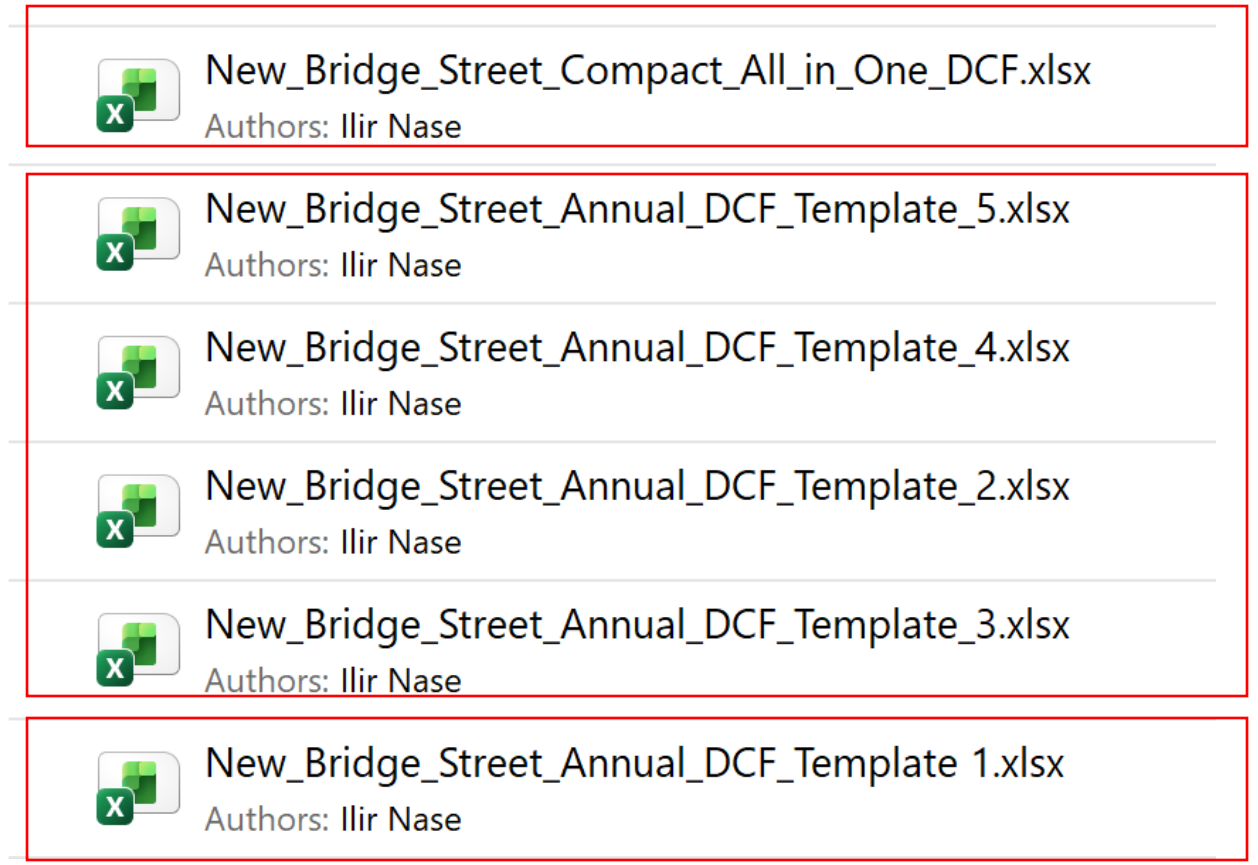
Walking on students' shoes

Getting started…



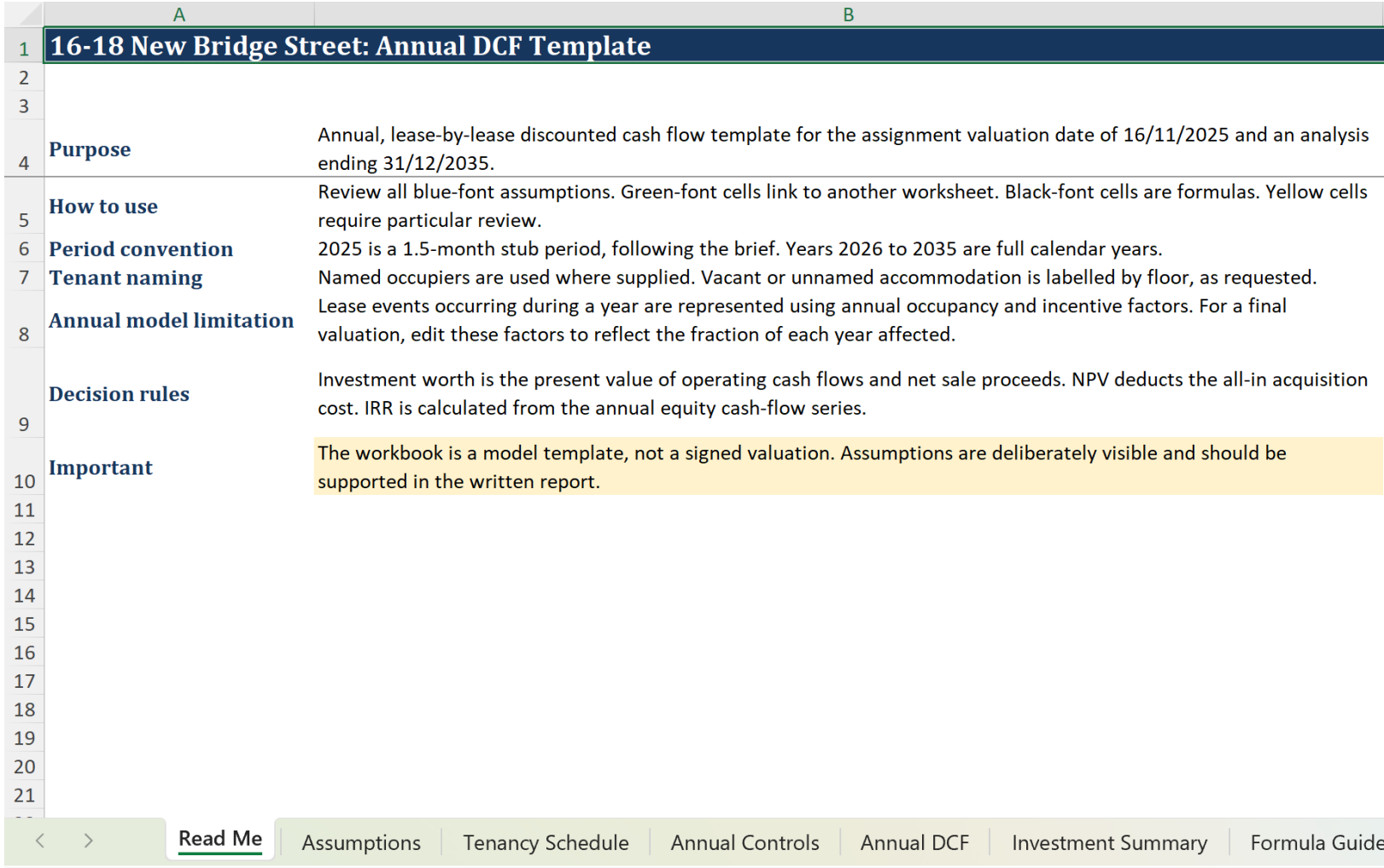
Prompting and refining

- Initial generic template just with rent rolls.
- Four more iterations to include all tenancy schedule details
- One final step to ‘remove most obvious AI traces’ and comply with the assignment brief. → informed by lecture slides



Steps in detail

- Patterns appear:
  - Working across workbooks
  - Perhaps some peculiar wording
  - That blue & yellow/orange highlighting
  - Some parts appear which were not requested



	A	B
1	**16-18 New Bridge Street: Annual DCF Template**	
2		
3		
4	**Purpose**	Annual, lease-by-lease discounted cash flow template for the assignment valuation date of 16/11/2025 and an analysis ending 31/12/2035.
5	**How to use**	Review all blue-font assumptions. Green-font cells link to another worksheet. Black-font cells are formulas. Yellow cells require particular review.
6	**Period convention**	2025 is a 1.5-month stub period, following the brief. Years 2026 to 2035 are full calendar years.
7	**Tenant naming**	Named occupiers are used where supplied. Vacant or unnamed accommodation is labelled by floor, as requested.
8	**Annual model limitation**	Lease events occurring during a year are represented using annual occupancy and incentive factors. For a final valuation, edit these factors to reflect the fraction of each year affected.
9	**Decision rules**	Investment worth is the present value of operating cash flows and net sale proceeds. NPV deducts the all-in acquisition cost. IRR is calculated from the annual equity cash-flow series.
10	**Important**	The workbook is a model template, not a signed valuation. Assumptions are deliberately visible and should be supported in the written report.
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		

Read Me | Assumptions | Tenancy Schedule | Annual Controls | Annual DCF | Investment Summary | Formula Guide

Fast forward…

	A	B
1	**16-18 New Bridge Street: Annual DCF Template 5**	
2		
3		
4	**Scope**	Full annual unlevered DCF built from the completed floor rent roll in Template 4.
5	**New in version 5**	Discount rate build-up, purchaser costs, void business rates, void service-charge leakage, brokerage fees, 2036 terminal rent, exit yield and discounted exit value.
6	**Critical evidence limitation**	The exact 10-year gilt closing yield for 14/11/2025 and an independently published Holborn office risk premium were not retrievable from accessible sources. Both are transparent editable assumptions, not presented as verified facts.
7	**VOA limitation**	The VOA search service was identified, but no exact rateable-value record was retrievable. In line with the prompt, market rent is used as assumed rateable value.
8	**Conventions**	2025 is a 1.5-month stub. Annual cash flows are discounted from 16/11/2025 to each year end. Exit proceeds occur at 31/12/2035 and use projected 2036 rent.

References and Pinpoint Evidence

Ref	Source	Date	Page/section	Explicit evidence	Model
A1	Assignment brief	2025	Valuation instructions	Valuation date 16/11/2025 and 10-year DCF to end-2035.	Period
A2	Brochure - 16-18 New Bridge St.pdf	May 2025	Tenancy schedule/comments	Asking price, service charge information, top-up, lease events and £183,000 works.	Rent/cost inputs
A3	London-Office-Market-2025-11-04.pdf	04/11/2025	Holborn transactions/yield section	Indicative Holborn market yield 6.1%.	Initial yield
W1	UK Debt Management Office: Historical Prices and Yields	Accessed 2026	Historical prices and yields	End-of-day gilt reference prices are produced/administered by FTSE-Tradeweb and available via Insite.	Risk-free source frame
W2	Investing.com UK 10-year gilt historical data	Accessed 2026	Historical data page	Daily historical UK 10-year yield series is available.	Risk-free cross-check
W3	CBRE Investment Management: Assessing risks in the UK risk-free rate	12/06/2025	Executive summary	UK gilt yields rose and spreads are not expected to return to previous-cycle levels; income growth expected to drive returns.	Risk context
W4	Leveraged Breakdowns: UK NIY method	21/06/2023	NIY section	UK acquisition costs stated as typically 6.8%, including 5% stamp duty.	Purchaser costs
W5	Nick French, Journal of Property Investment & Finance	2019	Costs of purchase	UK costs include agents' fees, legal fees, VAT and SDLT.	Purchaser-cost compo
W6	Spacebly: UK Office Broker Fees	Accessed 2026	Typical fee structure	Conventional office lease broker fee stated as 10%-15% of year-one rent.	Brokerage 15%
W7	GOV.UK Empty Property Relief	Accessed 2026	Empty property relief	No business rates for three months; most businesses pay full rates afterwards.	Void rates exemption
W8	MHCLG Business Rates Information Letter 01/2025	19/02/2025	2025/26 multipliers	Standard non-domestic multiplier 0.555.	Rates multiplier
W9	Colliers Business Rates 2025/26 data card	2025	London supplements	Crossrail 0.020 and City premium 0.022; office/retail empty relief three months.	London rates addition
W10	GOV.UK Find a business rates valuation	Accessed 2026	Service page	VO service provides rateable values and calculation details.	VOA search

Read Me | Inputs | References | Rent Roll by Floor | Void Costs | Annual DCF | Investment Summary | Checks

(Almost) Final product

16–18 New Bridge Street, London EC4V 6AG | Annual DCF to 31 December 2035

Compact all-in-one model following the layout of the supplied teaching example

1. GENERAL DATA

Client name	Bridgeford Street Enterprises Ltd
Client object reference	16–18 New Bridge Street
Object name	Mixed-use investment
Currency	GBP
Valuation date	16/11/2025
Analysis end	31/12/2035

2. DCF INPUT PARAMETERS & MARKET ASSUMPTIONS

Parameter	Unit	2025	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Office rental growth	% p.a.		(1.2%)	(1.2%)	0.3%	1.7%	3.2%	3.2%	3.2%	3.2%	3.2%	3.2%	3.2%
Retail rental growth	% p.a.		0.1%	0.1%	0.5%	0.9%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%
Office market rent	£/sq ft	£77.50											
Rear retail market rent	£/sq ft	£110.00											
Risk-free rate	%	4.5%											
Property risk premium	%	3.0%											
Discount rate	%	7.5%											
Purchaser costs	%	6.8%											
Initial yield	%	6.1%											
Exit yield	%	6.6%											
Rates multiplier	£/£ RV	0.597											
Empty rates exemption	months	3.000											
Void service charge	£/sq ft	£12.16											
Brokerage fee	% first rent	15.0%											
Tesco CPI	% p.a.	2.0%											

(Almost) Final product cont.

3. TENANCY DATA & ASSUMPTIONS

Floor / tenant	Area sq ft	Passing rent £pa	Expiry / event	OMR £psf	transition
Roof / Cignal	0	£19,900	16/01/2026		Renew
Sixth / vacant	1363	-	c.22/11/2026	£77.50	new tenant
Fifth / Thai Airways	2968	£242,095	24/07/2030	£77.50	at OMR
Fourth / Basware	3173	£223,300	02/03/2027	£77.50	Renew at OMR
Third / PSA	3133	£207,680	15/03/2028 review	£77.50	incentive
Second / ASI	3141	£219,282	16/07/2028	£77.50	Renew at OMR
First / Mace	3205	£153,936	04/06/2026	£77.50	c.10/06/2027
Ground rear / Natural Atmosphere	363	£36,737	23/06/2029	£110.00	c.29/06/2030
Ground / Tesco	2722	£115,000	15/11/2040		reviews
Lower ground	3015	-	Amenity		No separate rent

4. CASH FLOWS FROM OPERATIONS

Cash-flow line	Basis	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	
Roof rent	Cignal renewal		£2,488	£19,900	£19,900	£19,900	£19,900	£19,900	£19,900	£19,900	£19,900	£19,900	£19,900
Sixth floor	Top-up → new tenant		£12,778	£100,617	£103,391	£105,180	£108,545	£112,019	£115,603	£119,303	£123,120	£127,060	£131,126
Fifth floor	Thai → OMR renewal		£30,262	£242,100	£242,100	£226,707	£207,107	£223,247	£251,732	£259,788	£268,101	£276,680	£285,534
Fourth floor	Basware → OMR renewal		£27,913	£223,300	£237,783	£244,853	£252,688	£260,774	£269,119	£277,731	£286,618	£295,790	£305,256
Third floor	PSA review/renewal		£25,960	£207,680	£207,680	£113,991	£249,503	£257,487	£265,727	£274,230	£283,005	£292,061	£301,407
Second floor	ASI → OMR renewal		£27,410	£164,462	£219,282	£229,949	£250,140	£258,145	£266,405	£274,930	£283,728	£292,807	£302,177
First floor	Mace → void → new tenant		£19,242	£65,370	£136,545	£247,323	£255,237	£263,404	£271,833	£280,532	£289,509	£298,773	£308,334
Ground rear	Current → void → new tenant		£4,592	£36,737	£36,737	£36,737	£17,513	£20,817	£42,175	£42,723	£43,278	£43,841	£44,411
Ground / Tesco	Contractual CPI lease		£7,188	£93,438	£115,000	£115,000	£115,000	£116,508	£126,969	£126,969	£126,969	£126,969	£128,635
GROSS RENTAL INCOME			£157,832	£1,153,602	£1,318,417	£1,339,639	£1,475,634	£1,532,302	£1,629,464	£1,676,106	£1,724,230	£1,773,883	£1,826,780
Void rates	RV proxy; 3-month exemption		-	£26,426	£10,031	-	£8,939	£11,817	-	-	-	-	-
Void service charge	Vacant area × £12.16		£2,072	£29,212	£17,078	-	£20,405	£2,167	-	-	-	-	-
Brokerage fees	15% first-year rent		-	£15,459	£42,670	-	-	£6,245	-	-	-	-	-
Thai Cat B works	Contractual works		£183,000	-	-	-	-	-	-	-	-	-	-
TOTAL OPERATING COSTS			£185,072	£71,097	£69,779	-	£29,344	£20,229	-	-	-	-	-
NET OPERATING CASH FLOW			(£27,240)	£1,082,505	£1,248,638	£1,339,639	£1,446,290	£1,512,073	£1,629,464	£1,676,106	£1,724,230	£1,773,883	£1,826,780

(Almost) Final product cont.

64	**5. END VALUE**		
65	Projected 2036 rent	Roll 2035 floor income t	£1,879,640
66	Exit yield	Initial yield + 0.5%	6.6%
67	Gross exit value	2036 rent ÷ exit yield	£28,479,392
68	Exit purchaser costs	6.8% deduction	£1,936,599
69	Net exit proceeds	Added to 2035 cash flow	£26,542,793
70			
71	**6. VALUATION**		

72	Valuation line	Formula	2025	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
73	Operating cash flow	Section 4		(£27,240)	£1,082,505	£1,248,638	£1,339,639	£1,446,290	£1,512,073	£1,629,464	£1,676,106	£1,724,230	£1,773,883	£1,826,780
74	Exit proceeds	Section 5		-	-	-	-	-	-	-	-	-	-	£26,542,793
75	Total cash flow	Operating + exit		(£27,240)	£1,082,505	£1,248,638	£1,339,639	£1,446,290	£1,512,073	£1,629,464	£1,676,106	£1,724,230	£1,773,883	£28,369,573
76	Discount period	Years from valuation		0.123287671	1.123287671	2.123287671	3.123287671	4.123287671	5.123287671	6.123287671	7.123287671	8.123287671	9.123287671	10.12328767
77	Discount factor	1/(1+DR)^t		99.1%	92.2%	85.8%	79.8%	74.2%	69.0%	64.2%	59.7%	55.6%	51.7%	48.1%
78	Present value	Cash flow × DF		(£26,998)	£998,043	£1,070,896	£1,068,785	£1,073,369	£1,043,898	£1,046,458	£1,001,313	£958,198	£917,015	£13,642,560
79	**INVESTMENT WORTH**		£22,793,537	**NPV @ asking price**										
80														
81														
82														

All-in-One DCF

OneDrive - Personal
Backed up and synced

Ready Accessibility: Investigate

- This sort of work will get students into the merit range of marks
- Value a bit high but I could live with that
- After this, not much work required to aim for distinction (report writing also important)

Evaluation and discussion

Evaluation

- Used almost 1,100 words worth of prompting and approx. 3 hours to get here
- I do know what I am looking for and how to ask for it
- Homo economicus student:



  - Cost benefit analysis → better off studying or running around in (prompting) circles? – Whole assignment is 2,000 words long.
- If not 100% aware of what AI can do how can we know what skills are we assessing?
- If I were a student with a completely different background in such a converting PGT programme I would consider using AI to do my DCF template…



Food for thought & Discussion

- If no background in econ/finance/RE, complete reliance on AI very risky
- Institutionally, ‘policing’ of inappropriate AI use not (yet) explicit
- How can we pre-empt this?
- My tools so far:
  - Rely on the stark differences between own template & AI generated one
  - Show the students how to bult their own AI agent for learning, not writing HW
    - My own costs here → need to master it first
  - Still cannot prove that an assignment goes beyond ‘AI minimal’…
  - Is classroom assessment feasible with 100+ cohorts?

- Your thoughts?



Disclaimer/acknowledgements

- This presentation was prepared by a human with minimal AI input
  - screenshots of AI generated DCF templates,
  - some AI suggested PowerPoint slide designs
  - if you spot any spelling/grammar etc. mistakes, good for me

The Manchester Real Estate & Urban Economics (MREUE) group

a research group within the *Manchester Urban Institute*



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