



Real Estate Development Key Terms

If you want to understand real estate development, you need to know the **key terms** used to describe properties – whether you’re developing the properties from the ground up or acquiring and renovating them.

Even if you work at a bank and only work with real estate investment trusts (REITs), you still must understand real estate at the property-level because REITs are collections of individual properties.

Measuring Real Estate

Before you develop or acquire a property, you must know how big it is – **size** is the key metric for real estate.

	Lot Size	Building Gross Area	Building Rentable Area
Measured In:	Square Feet or Square Meters; Sometimes also Acres (1 Acre = 43,560 ft ²) or Hectares (1 Hectare = 10,000 m ²).	Square Feet or Square Meters.	Square Feet or Square Meters.
Used For:	Determining gross area inside building, floor size, and number of floors; also used to calculate land acquisition costs.	Determining rentable area; also used to calculate certain construction costs.	Rent, parking spots, and some expenses are calculated based on rentable area.

1 Square Foot is equal to 0.0929 Square Meters, so you can think of it as 10 Square Feet ≈ 1 Square Meter when you see those units in models.

Remember that an entire building will never be rentable – you need room for walls, staircases, elevators, lobbies, and so on, so you assume that the Rentable Area is a percentage of the Gross Area.

Using the **Lot Size** and local zoning requirements, you calculate the Building Gross Area. For example, if the Lot Size is 10,000 square feet and the **Floor Area Ratio (FAR)** is 10, your building’s Gross Area can be 100,000 square feet.

The **Allowable Lot Coverage** tells you what percentage of the lot you can build on. If it’s 80% and the Lot Size is 10,000 square feet, you can build on 8,000 square feet in that lot. That means that your building will have 12 full floors and one partial floor (100,000 square feet / 8,000 square feet = 12.5).

For apartment complexes you might use **Units** rather than square feet or square meters; for hotels you might use **Rooms**; and for healthcare you might use **Beds**. But everything starts with size and the distinction between Gross Area and Rentable Area.

Real Estate Development Expenses

There are 5 major expense categories in real estate development:

- **Land Acquisition Costs:** Buying the actual land and paying for broker fees and permits.
- **Hard Costs:** Buying the raw materials and physically excavating, demolishing, and constructing the building.
- **Soft Costs:** Paying architects, designers, lawyers, and engineers to design the building.
- **Furniture, Fixtures & Equipment (FF&E):** Paying for tables, desks, chairs, computers, and so on.
- **Tenant Improvements (TIs):** Paying for items specific to certain tenants – for example, if one tenant wants a different style of window, carpet, or arrangement of desks.



These expenses differ according to **magnitude** and **timing**: Hard Costs tend to be most expensive, followed by Soft Costs and Land Acquisition Costs, and then FF&E and TIs after those.

You have to pay for the land first, and then you pay for the Hard Costs and Soft Costs throughout the development of the project. FF&E and TIs come near the end when tenants are about to move in.

Real Estate Development Funding



Think “Startup meets Leveraged Buyout” for the financing of real estate development. It’s like a startup because you’re creating a property from nothing and you have no revenue at first – and it’s like an LBO because you use a combination of debt and equity to fund the project.

The **Loan-to-Cost (LTC)** or **Loan-to-Value (LTV)** ratio tells you what percentage of debt you can use.

If the total project cost is \$100 million and the LTC is 70%, you can use \$70 million of debt and you’ll have to use \$30 million of equity to cover the rest. You use comparable property developments to estimate this ratio, and you then negotiate it further with the banks financing the development.

Here are the main financing methods for properties:

- **Developer Equity:** The developer puts down their own cash; usually this is much lower than 3rd Party Investor Equity and debt.
 - Sometimes the developer is eligible for a “Promote,” where their percentage ownership is increased based on the IRR of the project (e.g. 10% under 10% IRR, 15% above 10% IRR).

- **3rd Party Investor Equity:** The developer seeks 3rd party investors to invest their own cash in the project for a percentage ownership; this amount is significantly greater than Developer Equity.
- **Mezzanine:** This is a form of debt with higher interest rates and higher risk than Senior Debt, and is used when equity investors can no longer contribute additional cash.
- **Senior Debt:** This has lower interest rates than Mezzanine and is less risky; most projects use a combination of Mezzanine and Senior Debt.

You also must pay for “hidden fees” using this combination of debt and equity – examples include:

- **Capitalized Interest:** Interest on debt is capitalized in the early stages when the property is still under construction – this is added to the total development costs.
- **Operating Deficit:** You must start paying for operating expenses and property taxes before you start collecting rent from tenants, so you must also allocate funds to cover this deficit.
- **Origination Costs and Taxes:** As you draw on debt, you must pay the bank a fee and pay taxes on it – these are also added to the total development costs.

The Construction Timeline

The real estate timeline is **granular** – you think in months rather than quarters or years.

The key dates and phases in this construction timeline are as follows:

- **Planning / Pre-Construction:** You acquire the land and permits and design the building.
- **Construction Phase:** You pay for the Hard Costs and construct the building, as well as any additional properties that are attached to the building, such as parking garages.
- **Post-Construction:** Tenants begin to move in and you start collecting rent.
- **Sale Date:** You assume that the property is sold at the end of the period once it reaches “stabilization” (no further changes to rent, expenses, or the Vacancy Rate aside from inflation). You cannot earn an acceptable IRR unless you sell the property to someone else in the future.



This timeline might last anywhere from a few years to 10 years or more depending on the scale of the project – from an investor perspective, shorter is better because it’s much easier to earn a 20% return in 5 years than it is to do the same over a 10-year period.

Property Revenue

You calculate revenue differently depending on the property type:

- **Retail/Offices/Industrial:** \$ Per Square Foot or \$ Per Square Meter * Rentable Area
- **Apartments:** \$ Per Apartment Unit
- **Hotels:** Average Daily Rate (ADR) * Rooms * Occupancy Rate

In addition, certain properties such as hotels may have additional income from parking, food & beverages, and other sources. But tenants and/or guests always comprise the bulk of a property's revenue.



For apartments, retail, offices, and industrial complexes you also include a **Vacancy Allowance** that is netted against the potential revenue.

For example, if there are 100 units with an average rent of \$1,000 each, that is \$100,000 of potential revenue. But with a **5% Vacancy Allowance** – to account for the fact that 5% of the units will be empty – you would net the 5% * 100 units * \$1,000, or \$5,000, against the potential revenue to get net revenue of \$95,000.

Initially, you start off with **Non-Stabilized Revenue** because tenants are still moving in – in models you assume that the revenue reaches **stabilization** by the end of the period, and that the Vacancy Allowance no longer changes after that.

Property Expenses

There are 2 major expense categories: **Operating Expenses** and **Property Taxes**.

Operating Expenses consist of paying for energy, utilities, insurance, maintenance, repairs, and staff to operate the property; Property Taxes are levied on properties by local governments, and the rates differ by region.

Normally you project both of these on a \$ Per Square Foot or \$ Per Square Meter basis, or you link them to the number of Units or Rooms.

What about **Depreciation** and the **Interest Expense**?

Those are also major expenses, but they do not factor into the **Net Operating Income (NOI)** of the property (see below).

You normally leave out corporate-level taxes (i.e. if a large corporation owns the building and it must pay taxes on its earnings) because you don't know who the eventual property owner will be and whether or not it will be a tax-exempt REIT.





Net Operating Income (NOI)

Net Operating Income is like EBITDA, but for properties rather than companies.

Just like EBITDA, it excludes Interest, Corporate-Level Taxes, and Depreciation & Amortization.

The basic calculation is **Potential Property Income – Vacancy Allowance – Operating Expenses – Property Taxes = Net Operating Income**, which you can see to the right.

NOI serves the same purpose as EBITDA: it approximates how much in cash earnings the property can generate.

What does Net Operating Income **not include**?

- **Depreciation & Amortization:** These are both non-cash charges, so they are excluded from NOI; for real estate, D&A is also less meaningful because real estate typically **appreciates** over time.
- **Interest Income / (Expense):** Just like EBITDA, NOI lets us analyze a property on a **capital structure-neutral** basis. We only care about the earnings generated by the property's core business.
- **Gains / (Losses) on Asset Sales:** These are one-time, non-recurring items (or if they recur, they're unpredictable), and so they are excluded from NOI.
- **Corporate Overhead:** If a company or REIT owns a property, the property NOI would not include expenses from the larger company, such as paying for employees there.
- **Management Incentive:** With certain property types (mostly hotels), the management may receive a bonus depending on their performance over the year – you do **not** subtract this to calculate NOI.

Capital Expenditures could go either way. Some people subtract *Maintenance* CapEx – the cost of maintaining the property and replacing parts of the building – when calculating NOI and argue that it better reflects the property's true cash flow.

Often buyers subtract Maintenance CapEx so that the property doesn't seem as profitable, and sellers exclude it to make it seem more profitable than it really is.

It doesn't matter what you do as long as you're consistent when calculating NOI and Cap Rates (see below).

Growth CapEx – investments in **new** buildings, land, or renovations – is **never** subtracted from NOI.

You should use the "12-month forward, stabilized NOI" to describe your property – in other words, the NOI when the Vacancy Rate reaches stabilization and when rent and expenses no longer change aside from inflation.

Revenue:		
Potential Rental Income:	\$	10,000,000
Potential Parking Income:		1,000,000
Less: Vacancy Allowance:		(550,000)
Total Revenue:	\$	10,450,000
Property-Level Expenses:		
Operating Expenses:		3,000,000
Property Taxes:		1,500,000
Total Expenses:		4,500,000
Net Operating Income:	\$	5,950,000
<i>NOI Margin:</i>		<i>57%</i>

Property Valuation: Capitalization Rates

Capitalization Rates (abbreviated to Cap Rates) are the most common method of valuing properties.

In Europe, the term “Yield” is used instead – but that gets confusing because there are many other yields in finance and in real estate, so we’re sticking with Cap Rates here (apologies if you’re in Europe).

- **Capitalization Rate = Net Operating Income / Property Value or Property Cost**

So if the NOI is \$10 million and the Property Cost is \$100 million, the Cap Rate is 10%.



The Cap Rate tells you not only the valuation of the property, but also what kind of return on investment you can expect – a 10% Cap Rate means that the valuation is on the low side, and that you’ll get your money back more quickly.

A 5% Cap Rate indicates a property that’s more highly valued, and that it will take twice as long to get your money back.

Cap Rates are the **reciprocal** of valuation multiples – a higher Cap Rate means a lower valuation, and vice versa.

A Cap Rate of 5%, for example, corresponds to a 20x EBITDA multiple (The reciprocal of 1/20) and a Cap Rate of 10% corresponds to a 10x EBITDA multiple.

You **should** use the 12-month forward, stabilized Net Operating Income to calculate Cap Rates, but in practice there’s a lot of inconsistency and people use historical NOI and calculate NOI slightly differently as well.

The biggest problem with Cap Rates, aside from the inconsistency above, is that **finding the data** is incredibly tough in some regions. It’s easy in New York, London, or Hong Kong, but it’s much harder in a town of 50,000.

When using Cap Rates to value a property, you take the median of the set of precedent real estate transactions you’re looking at, and then divide your property’s NOI by that median Cap Rate to get its implied value.

Property Valuation: Discounted Cash Flow Analysis & Replacement Cost

Cap Rates are the most common way to value properties, but you may also create a property-level DCF – it’s the same as a normal DCF but much simpler since a property’s financial statements have very few line items.

You would determine the Discount Rate based on comparable property transactions and you could calculate the Terminal Value using the Exit Cap Rate or Long-Term Growth Rate methods.

Many people in real estate don't take the DCF seriously because of its dependence on future assumptions, so it's used more often to check the values implied by Cap Rates.

Replacement Cost and Replacement Rent Calculations - Example			
(\$ in US Dollars as Stated)			
Asking Price for Property:			\$ 300,000,000
Gross Square Footage of Property:			350,000 sq. ft.
Property Development Costs:	Total:	Cost Per GSF:	
Land Acquisition Costs:	\$ 30,000,000	\$ 85.71	
Soft Costs:	42,000,000	120.00	
Hard Costs:	120,000,000	342.86	
FF&E:	10,000,000	28.57	
Tenant Improvement (TIs):	15,000,000	42.86	
Capitalized Interest:	10,000,000	28.57	
Origination Costs & Taxes:	5,500,000	15.71	
Operating Deficit:	30,000,000	85.71	
Total Replacement Cost:		\$ 750.00	
Asking Price Per Square Foot:		\$ 857.14	
Replacement Cost Per Square Foot:		\$ 750.00	
Premium / (Discount) to Replacement Cost:		14.3%	

Replacement Cost is another valuation methodology where you estimate the cost of rebuilding an entire property from the ground up, and then compare that to the current asking price.

You can see an example to the left – the main problem is that **finding the data** can be close to impossible depending on the region, the property type, and what different developers tell you.

As with the DCF, the Replacement Cost method is used more often to **check** your existing valuation output and the price you're paying for a property.

Industry-Specific Real Estate Terms

Finally, you should know a few real estate terms that are specific to sub-sectors such as hotels, apartments, or retail/offices:

- **Hotel Metrics**

- # of Keys or # of Rooms are used to estimate size.
- **Average Daily Rate (ADR):** The average rate each customer pays per night at the hotel.
- **Occupancy:** The % of rooms that have paying customers.
- **RevPAR** = Revenue Per Available Room = Occupancy Rate * ADR. RevPAR measures how much revenue a hotel is realizing compared to its potential revenue.



- **Apartments / Multifamily**

- **Units, Average Unit Size, and Maximum Allowable Units** are used to estimate size.
- **Deposits & Closing:** Landlords might collect a larger payment in the first month due to the security deposit, and then return the deposit at the end of the lease.
- **Rent, Operating Expenses, and Property Taxes** can be estimated based on Square Feet, Square Meters, or Units.

Finally, with **retail** and **office** properties there are few lease types you should know about:



Lease Type:	Abbreviation	Tenant Pays...	Implications in Model
Gross Lease		Only Rent.	Higher Rent and you still include OpEx and Property Taxes.
Single Net Lease	N	Rent + Property Taxes.	Lower Rent, but you only include OpEx to compensate.
Double Net Lease	NN	Rent + Property Taxes + Insurance.	Even lower Rent and OpEx is further reduced.
Triple Net Lease	NNN	Rent + Property Taxes + Insurance + Maintenance.	The lowest Rent values, but you also have no OpEx and no Property Taxes. Therefore, Net Rental Income = Net Operating Income.
Bondable Lease		Beyond NNN leases, the tenant also has the obligation to rebuild in case of disaster, among other requirements.	Same as NNN leases for modeling purposes unless you include one-time disasters in your model.

Triple Net Leases (NNN) are the most common in office and retail complexes – for residential property it's highly unusual for the tenant to pay for anything aside from rent and some utilities.