Real Estate Case Study – 90-Minute Industrial Development Modeling Test

You are considering investing in the development of a new 337,154-square-foot industrial property in Calgary, Alberta (Canada). The property is located in the Southeast of the city (4216 61 Ave SE), and the land, construction costs, and reserves will cost approximately $30 million CAD.

The Loan-to-Cost (LTC) Ratio for the initial development will be 50%, and you will work with a Developer who will contribute 10% of the required equity funding; your firm will contribute 90% of the required equity.

The returns to equity investors will be split pari passu up to a 10% IRR, with an 80% / 20% split above 10% and a 70% / 30% split above a 20% IRR.

You plan to rent the property to two major corporate clients, both of whom will sign 4-year leases initially and then switch to 5-year leases. You plan to hold the property for eight years (one year for the construction and seven for operations) and then sell it based on prevailing Cap Rates. In addition, you will sell the excess land in FY 22.

Please use the following assumptions and complete the provided Excel template. You have **90 minutes** to make the calculations and respond to the case study questions:

Part 1 – Construction, Financing, and Exit Assumptions

Use the following figures to set up the key model assumptions:

- **Number of Acres to Purchase:** 18.0
- **Estimated Price per Acre:** $700,000
- **Percentage of Acreage Required for Property:** 43.0%
- **Rentable to Gross Square Feet Ratio:** 95.0%
- **Construction Costs per Gross Square Foot:** $50.00

The average price per acre for undeveloped industrial land in Calgary is $600,000 – $750,000, and most new developments use between 40% and 50% of the available land.

The initial development will be funded by a Construction Loan and Investor/Developer Equity:

- **Loan-to-Cost (LTC) Ratio:** 50.0%
- **Annual Interest Rate:** 6.25% (fixed)

- **Issuance Fees:** 1.00% (capitalized)
- **Amortization Period:** N/A – Interest-only (capitalized)
- **Loan Draws:** Draw on the loan to cover construction and land acquisition costs *after* the maximum amount of equity has been drawn
- **Maturity:** Refinanced upon property completion

In addition to the Land Acquisition and Construction Costs, **$600,000** will also be allotted for the Replacement Reserves during the lease-up period in the first two years.

For the Permanent Loan refinancing upon construction completion, please assume:

- **Loan-to-Value (LTV) Ratio:** 55.0% (Based on the *stabilized* NOI – be careful!)
- **Annual Interest Rate:** 4.75% (fixed)
- **Issuance Fees:** 1.00%
- **Amortization Period:** 30 years
- **Maturity:** 10 years (past the end of the holding period)
- **Prepayment Penalty:** 1.00%

You can use a 15% discount rate to determine the proper loan amount (if necessary).

The lenders are seeking a minimum Interest Coverage Ratio of 1.50x and a minimum Debt Service Coverage Ratio (DSCR) of 1.25x.

Assume property selling costs of 1.50% and Cap Rates that decline from 5.80% to 5.50% and then rise to 5.75% by the end of the period. Historically, Class A Industrial Cap Rates in Calgary have fluctuated between 5.00% and 6.50%.

Finally, assume that the excess land's value increases by 3% per year and that we sell it in FY 22.

Part 2 – Construction Timeline and Equity and Debt Draws

You must submit a deposit for **20%** of the land's value in January 2018 (the first month of construction), with the remaining **80%** following in June.

Use the following percentages for the Construction Costs, which include Hard Costs, Soft Costs, and FF&E: January (20%), February (10%), March (10%), April (5%), May (5%), June (5%), July (10%), August (10%), September (5%), October (10%), November (5%), and December (5%).

Assume that all interest and loan fees are capitalized during this construction period. To avoid circular references, link the monthly interest expense to the *beginning* loan balance each month, and assume that loan draws and issuance fees happen on the 1st of each month.

Part 3 – Operating and Rent Roll Assumptions

- **Property Management Fees:** 3.0% of Effective Gross Income
- **Expenses & Taxes per Rentable Square Foot:** $2.35; 3% annual growth
- **Replacement Reserves per Rentable Square Foot:** $0.30; 3% annual growth

The property can support only two tenants, so you will model the revenue and expenses on a lease-by-lease basis. Here is the lease information for each tenant:

Tenant #1 – 65% of Rentable Square Feet

- **Lease Type:** Triple Net (NNN) Lease (Tenant is responsible for Expenses & Taxes, but not Management Fees or Reserves)
- **Lease Start Date:** 2018-12-31
- **Lease Expiration Date:** 2022-12-31
- **Rent per Square Foot:** $7.50; 3% annual growth

Tenant #2 – 30% of Rentable Square Feet

- **Lease Type:** Triple Net (NNN) Lease (Tenant is responsible for Expenses & Taxes, but not Management Fees or Reserves)
- **Lease Start Date:** 2019-12-31
- **Lease Expiration Date:** 2023-12-31
- **Rent per Square Foot:** $8.00; 3% annual growth

You should model the possibility of a lease renewal or expiration for each tenant by using weighted numbers based on the renewal probability. Use the following figures:

- **New Lease Term:** 5 years upon expiration for each tenant
- **Renewal Probability:** 60%
- **Months of Downtime for Non-Renewals:** 6
- **Months of Free Rent:** 4 (New Tenants); 2 (Renewal Tenants)
- **Tenant Improvements (TIs) per RSF:** $1.50 (New Tenants); $1.00 (Renewal Tenants)
- **Leasing Commissions (LCs) % Total Lease Value:** 3.0% (New Tenants); 1.0% (Renewals)

Asking Rents on industrial properties in Calgary have averaged between $7.00 and $9.00 per square foot over the past several years, with additional concessions worth between $3.00 and $4.00 PSF.

Part 4 – Property Pro-Forma

Use the figures above to calculate everything down to Adjusted NOI on the Pro-Forma. Pay special attention to the Vacancy and Expense Reimbursement assumptions as they relate to the lease start and expiration dates.

Also, make sure that you reflect the initial deal funding for the Replacement Reserves when calculating the annual capital costs.

Part 5 – Permanent Loan Refinancing, Excess Land Sale, and Equity Returns

Assume that the Construction Loan is refinanced with the Permanent Loan at the beginning of the first operational year (FY 19), that the Excess Land is sold in FY 22, and that the property is sold at the end of FY 25.

For simplicity, you may assume that all the equity draws happen at the end of the Construction Year (FY 18); you do **not** have to use the XIRR function to calculate the project-level equity IRR.

Part 6 – Waterfall Returns Schedule

The Developer in this deal will contribute **10%** of the required Equity, and your firm will contribute **90%.**

Up to a **10% project-level leveraged IRR**, the cash flows will be distributed “pari passu” (i.e., in proportion to the initial equity invested).

When the leveraged IRR exceeds 10%, the Developer will receive 20% of all cash flows, with the remaining 80% going to your firm. Above a 20% leveraged IRR, the Developer will receive 30% of all cash flows, with your firm receiving 70%. Assume no catch-up or lookback provisions.

Part 7 – Case Study Questions

Once you’ve completed the model, please respond to the following questions:

1) **If your firm is targeting a 20% IRR, would you do this deal? Why or why not?**

We would **NOT** do the deal as it is presented here because the IRR to the LPs is only 19%, primarily because of the large amount of excess land purchased in the beginning. That excess land (57% goes unused) greatly increases the debt and equity required for the deal and makes it difficult to exceed a 20% IRR.

Also, we believe the Permanent Loan refinancing takes place too early and should be postponed for a year; lenders would be unlikely to approve of this deal under the current assumptions. If the refinancing takes place one year later, we would also be able to use a higher LTV Ratio, boosting returns.

The waterfall incentive structure also works against our interests in this deal because the Developer receives 20% of cash flows once the IRR exceeds 10%. For a new development, this threshold should be set to a significantly higher level, such as 20% or 25%, to reflect the higher risk. This structure might make sense for a stabilized property or renovation, but not for a new development.

Finally, we don't have a good sense of the outcome in different scenarios, such as higher construction costs, higher/lower rent, and delayed tenant move-ins. We would need to assess the deal in those cases and determine how the IRR changes before making a decision.

2) **Would the lenders be likely to approve of this deal? If not, how would you change the Permanent Loan to win their approval?**

The lenders would be unlikely to approve of this deal because the Interest Coverage Ratio and Debt Service Coverage Ratio fall below the minimum levels of 1.50x and 1.25x, respectively, in the first year of operations. Also, the Debt Yield is only 4.0% in the first year (there is no official minimum, but many lenders target at least 10.0%).

To fix these problems, we would recommend postponing the Permanent Loan refinancing by a year so that the property stabilizes first. If we did this, we would not have to comply with any of the metrics and ratios in Year 1, and we could also use more Debt to fund the deal since the property's implied value upon refinancing would be higher.

If we waited an additional year to refinance, the Permanent Loan value would be approximately $18.1 million at a 55% LTV, and the refinanced Construction Loan would be $16.6 million

(higher due to one additional year of capitalized interest). The IRR to LPs would also exceed 20% with these assumptions.

We could not go much higher than a 55% LTV with these tweaked assumptions, but if we increased the interest rate to 5.0% and increased the amortization period to 35 years, we could move up to a 60% LTV, increasing the LP IRR to 21% in the process.

3) **What are the approximate IRRs of the Construction Loan and Permanent Loan? If these figures are different from the interest rates, what accounts for the differences?**

Under the *assumptions in this document*, the Construction Loan IRR is approximately 10.8%, and the Permanent Loan IRR is approximately 5.04%.

The Construction Loan IRR is higher than the 6.25% interest rate because the interest and loan issuance fees are capitalized, and the loan draws only start in the last half of the construction year. The shorter period results in a higher IRR since the entire loan is issued and repaid within 6 months. The 1% issuance fee also increases the IRR above the interest rate.

The Permanent Loan IRR is 5.04%, which is slightly higher than its interest rate of 4.75%. This happens because of the issuance fees in the beginning and the prepayment penalty fee at the end; without these fees, the IRR would be exactly 4.75% because the interest and principal repayments follow a normal schedule, and everything is paid in cash.

4) **What additional analysis might a lender perform to decide whether or not to fund the Permanent Loan?**

A lender would look at “downside” scenarios where it takes longer to find tenants, where concessions are higher, and where rents rise at lower rates, and assess how well the property can service its Debt in those scenarios.

For example, if there are 12 months of Downtime in between tenants, and the Renewal Probability is only 40%, the DSCR and Interest Coverage Ratio drop below the minimum levels in FY 23, which would concern lenders.

But if the Free Months of Rent for New / Renewal Tenants were 8 / 4 instead of 4 / 2, and the TIs per RSF were $3.00 / $2.00 instead of $1.50 / $1.00, these ratios would drop to lower levels but would still be above the minimums in FY 23.

Lenders might also look at scenarios in which the entire market declines (reducing rent and increasing vacancy rates) or ones in which it declines and recovers.

They would assess the likelihood of each outcome and use that to make an investment decision. For example, if the DSCR drops to 0.50x in one scenario, but that scenario is highly unlikely, lenders might not care. But if it falls to 0.50x in a more plausible scenario, such as a cyclical decline and recovery, they might ask for different terms or decide against funding the loan.

5) **Are the operating assumptions in this model realistic? If not, which assumptions might you change to get a more reasonable view of this deal?**

Many of these assumptions seem reasonable – for example, the price per acre of land is in the middle of the range of prices in Calgary, the Cap Rates are also in the middle of the range for Class A industrial properties, and the rent-per-square-foot figures for Tenant #1 and #2 are in the middle of the range over the past few years. Free Rent + Tenant Improvements for each tenant are also between $3.00 and $4.00 per year, matching the figures for the area.

We do not have any information on the average construction costs per square foot or the Expenses and Taxes per square foot, so we cannot assess those. We also do not have information on the vacancy rate for industrial properties in the area, so it is tough to assess the 5% General Vacancy assumption.

The most problematic assumption is that we purchase 18 acres of land in the beginning, even though we only need 43% of that land for the building. We would recommend greatly reducing the lot size so that only 10-20% of the land goes unused. That change would immediately boost the IRR by 5-6% since we would contribute far less equity in the beginning.

6) **If you had more time and resources, which additional analyses might you complete to make a more informed investment decision?**

We would look at multiple scenarios to assess both the equity investor and lender views of the deal. For example, we might create sensitivity tables to analyze the IRR when the Cap Rates and Construction Costs change, or when the LTV and Construction Costs change.

We might also create downside scenarios where there's a market decline followed by a recovery. In such downside scenarios, rents might decline while the Vacancy Rate, TIs, and Free Rant all rise (to reflect the greater difficulty in attracting tenants).