Making it Pencil: The Math Behind Housing Development

April 22\textsuperscript{nd}, 2021
Making it Pencil – The Math Behind Development

What are the various costs that go into the development of new housing?

How are new housing developments financed?

What are the benchmarks required by financial institutions and capital sources to invest in new housing?

How do various requirements impact the ability of developers to deliver projects?
The Realities of Housing Development Math

“Terner Terrace” characteristics

- Market rate building – East Bay
- 120 units:
  - (48) studios
  - (40) 1 bdrm apartments
  - (32) 2 bdrm apartments
- 120 parking spaces
- 1,500 square feet of retail
- 5 over 1 construction (stick over podium)
The Realities of Housing Development Math

Development assumptions:

- No EIR*
- No demolition*
- No environmental remediation*
- No offsite infrastructure improvements*

- No exactions*
- Standard approval times
- Standard wages
- $40,000/unit in fees
- Q1-2019 Construction Costs

* It is rare that infill projects avoid these costs. Any combination of these costs plus current inflation could add as much as $100,000/unit.
Total Cost to Build East Bay Prototype: $68,828,255

- Land Cost: $7,858,500
- Hard Cost: $46,169,455
- Fees: $2,298,271
- Financing: $707,369
- Consultants: $6,394,660
- Tax, Title, Insurance: $5,400,000
Total Cost to Build East Bay Prototype: $573,569/unit

- Land Cost: $384,745 (68%)
- Hard Cost: $45,000 (10%)
- Fees: $19,152 (22%)
- Financing: $100,000
- Consultants: $5,895
- Tax, Title, Insurance: $5,895

East Bay

Legend:
- Land Cost
- Hard Cost
- Fees
- Financing
- Consultants
- Tax, Title, Insurance
What are the financing requirements to make this project feasible?
How much debt can I raise?

Debt Service Coverage Ratio (DSCR) is the Debt to Net Operating Income (NOI) required by our bank.
Terner Terrace Financing Requirements

How much debt can I raise?

Financing breakdown for a 65% “Loan to Cost”:

- Debt, $44,738,365
- Equity, $24,089,889
TERNER CENTER FOR HOUSING INNOVATION
UC BERKELEY

4.30%
5.46%

Prototype ROC/Cap Rate Spread

East Bay

Cap Rates Return on Cost

15.4%

Internal Rate of Return

East Bay

Internal Rate of Return
The Result: High Rents

To meet debt, operating expense, and investor requirements, Terner Terrace *monthly* rents must be:

- **Studio**: $2,138, $5.70/sf
- **1 bedroom**: $3,366, $5.30/sf
- **2 bedroom**: $4,441, $4.75/sf
Cumulative Policy Impacts on Terner Terrace

The layering of many common city policies can result in either higher rents or stopping projects altogether.
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East Bay ROC

- Baseline: 5.46%
- 2:1 Parking: 5.02%
- 2:1 Parking, $60k/Unit Fees: 4.84%
- 2:1 Parking, $60k/Unit Fees, 15% Inclusionary (60% AMI): 4.46%
Calibrating policies to work with the market can help projects pencil while achieving important goals.

Cumulative Policy Impacts on Terner Terrace

East Bay ROC

5.04%

15% Inclusionary (60% AMI)
Cumulative Policy Impacts on Terner Terrace

Calibrating policies to work with the market can help projects pencil while achieving important goals.

East Bay ROC

- 15% Inclusionary (60% AMI)
- 15% Inclusionary (60% AMI), $20k/Unit Fees
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- 15% Inclusionary (60% AMI)
- 15% Inclusionary (60% AMI), $20k/Unit Fees
- 15% Inclusionary (60% AMI), $20k/Unit Fees, .5:1 Parking
- 15% Inclusionary (60% AMI), $20k/Unit Fees, .5:1 Parking, Tax Exempt IZ units

East Bay ROC
Please visit www.ternercenter.berkeley.edu for more information on our *Cost of Building Housing Research Series* and our other work.

Thank you!