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Professional Practice 544
The Economics of Construction

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* The provisions contained herein are taken directly from the AIA Document A201 – 2007 General Conditions of the Contract for Construction.
BUILDING TYPES

Buildings can be categorized on the basis of their economic equation. Look at the relation of profit in comparison to the building’s function. Start with the original intent of the building’s function.

1. **Intent**: Purely to function, not to earn: single family house, courthouse, library, etc.

2. **Intent**: Primarily to function, but also to make economic sense: hospital, nursing home, etc.

3. **Intent**: It must function and earn through its function: factory.

4. **Intent**: Primarily to earn as an investment, but also to function in order to be marketable: housing, office buildings, commercial buildings.
BUILDING TYPES

Motives: Profit (free market) versus social good (controlled economy) . . . the equation still has to work to make economic sense.

When losing money, the “owner” does not continue to maintain building.

Roles of:

Developer – It will be the “owner” in the beginning, but then turn over to new “owner.”

Market Analyst – It will assess when, what & where through market forces.

Mortgage Lender – Mortgage and construction loans
A Latin term meaning “for the same of form.” For financial considerations, it describes a method of calculating financial results in order to emphasize either current or projected figures. Below is a typical list of items that will be found in a developer’s pro forma for a given project. The three main factors in a developer’s pro forma will be:

- Costs
- Expenses, and
- Income.
BUILDING TYPES

COSTS

Land Acquisition
Local Costs (utility extension, fee, etc.)
Construction Cost
Furnishings
Architect/Engineer Fee
Legal Expenses/Accounting
Misc. Costs (survey, borings, printing, etc.)
Marketing (personal, advertising, etc.)
Project Cost
+ Interest on construction loan

Total Cost (-mortgage = cash equity)
BUILDING TYPES

**EXPENSES**

- Utilities (gas, oil, water, electric, etc.)
- Operations (engineer, doorman, etc.)
- Repair and maintenance
- Management office
- Continued marketing
- Insurance
- Real estate taxes
- Miscellaneous
- Operating expense
- + mortgage retirement
- **Total Expense**
BUILDING TYPES

INCOME

- Apartment rental income
- Office or commercial leases
- Garage rental income
gross income
- vacancies (... %)

Net Income (or cash flow)

NET INCOME – TOTAL EXPENSE = PROFIT (= % OF EQUITY) –
growth is the hidden quantity here.

Return on Investment (“ROI”) - What will be your ROI? If you have a $50K investment and growth is $1M = 20X ROI. If you have $100K invested in a project and the growth is $1M = 10X ROI.
## THE “ECONOMIC EQUATION”

Assume a 12-14 story apartment building at a good Evanston site containing 100 two-bedroom apartments of 1200 square feet, 100 parking spaces and 5,000 square feet commercial.

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hard Costs</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Land:</strong></td>
<td>$25,000/Units at 100</td>
<td>$2,500,000</td>
</tr>
<tr>
<td><strong>Building:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net Units: 100 at 1200 s.f.</td>
<td>120,000 s.f.</td>
<td></td>
</tr>
<tr>
<td>Circulation – add 20%</td>
<td>24,000 s.f.</td>
<td></td>
</tr>
<tr>
<td>Common areas – add 7%</td>
<td>10,000 s.f.</td>
<td></td>
</tr>
<tr>
<td>(Corridors, elevators, etc.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>exterior walls, lobby,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>garbage, janitorial lockers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commercial</td>
<td>5,000 s.f.</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>159,000 s.f.</td>
<td></td>
</tr>
<tr>
<td>Garage: 100 @ 350 s.f.</td>
<td>35,000 s.f.</td>
<td></td>
</tr>
<tr>
<td>159,000 s.f. @ $120.00</td>
<td>$19,080,000</td>
<td></td>
</tr>
<tr>
<td>35,000 s.f. @ $70.00</td>
<td>$2,450,000</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL HARD COSTS</strong></td>
<td>$24,030,000</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Soft Costs:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction Loan ($24,030,000):</td>
<td>7.0% Amount “halved” b/c</td>
<td>$841,050</td>
</tr>
<tr>
<td>drawn progressively</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lender’s Fee:</td>
<td>1.5% of full loan</td>
<td>$360,450</td>
</tr>
<tr>
<td>Architect’s Fee:</td>
<td>4.0% of Construction Costs</td>
<td>$961,200</td>
</tr>
<tr>
<td>Legal</td>
<td></td>
<td>$50,000</td>
</tr>
<tr>
<td>Marketing</td>
<td></td>
<td>$50,000</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td></td>
<td>$120,000</td>
</tr>
<tr>
<td><strong>TOTAL SOFT COSTS</strong></td>
<td></td>
<td>$2,382,700</td>
</tr>
<tr>
<td><strong>TOTAL HARD COSTS</strong></td>
<td></td>
<td>$24,030,000</td>
</tr>
<tr>
<td><strong>TOTAL PROJECT COST</strong></td>
<td></td>
<td>$26,412,700</td>
</tr>
</tbody>
</table>
THE “ECONOMIC EQUATION”

INCOME

Apartment Rents: $1,600/month at 100 at 12: $1,920,000
Garage: $200/month at 100 at 12: $240,000
Commercial: $100,000
Subtotal: $2,260,000
Less 5% vacancy: $113,000

TOTAL INCOME: $2,147,000

EXPENSES

Management: salaries, utilities, maintenance, taxes, etc. 40% of income: 40% of $2,147,000: $858,800
Mortgage Retirement: 85% of $26,412,700 = $22,450,795 x 6%: $1,347,050

TOTAL EXPENSES: $2,205,850
THE “ECONOMIC EQUATION”

<table>
<thead>
<tr>
<th><strong>BALANCE</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Income:</td>
<td>$2,147,000</td>
</tr>
<tr>
<td>Expenses:</td>
<td>$2,205,850</td>
</tr>
<tr>
<td><strong>Loss:</strong></td>
<td>(58,850)</td>
</tr>
</tbody>
</table>

Equity: 15% of $26,412,700 = $3,963,405
This is almost a 1.5% loss/year of investment

**CONCLUSION**

Compared to risk-free savings accounts or bonds, this is a poor investment. Can it be improved and have it still marketable?
## THE “ECONOMIC EQUATION”

### How about trying higher rent?

**INCOME**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
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</thead>
<tbody>
<tr>
<td>Apartment Rents</td>
<td>$2,000/month at 100 at 12: $2,400,000</td>
</tr>
<tr>
<td>Garage</td>
<td>$200/month at 100 at 12: $240,000</td>
</tr>
<tr>
<td>Commercial</td>
<td>$100,000</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>$2,740,000</strong></td>
</tr>
<tr>
<td>Less 5% vacancy</td>
<td><strong>$137,000</strong></td>
</tr>
<tr>
<td><strong>TOTAL INCOME</strong></td>
<td><strong>$2,603,000</strong></td>
</tr>
</tbody>
</table>

**EXPENSES**

<table>
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<tr>
<th>Description</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Management: salaries, utilities, maintenance, taxes, etc. 40% of income: 40% of $2,603,000:</td>
<td>$1,041,200</td>
</tr>
<tr>
<td>Mortgage Retirement: 85% of $26,412,700 = $22,450,795 6%</td>
<td>$1,347,050</td>
</tr>
<tr>
<td><strong>TOTAL EXPENSES</strong></td>
<td><strong>$2,388,250</strong></td>
</tr>
</tbody>
</table>
THE “ECONOMIC EQUATION”

How about trying higher rent?

**BALANCE**

Income: $ 2,603,000

Expenses: $ 2,388,250

**Gain:** $ 214,750

Equity: 15% of $26,412,700 = $3,963,405

This is almost 5.5% gain/year of investment

**CONCLUSION**

This is not a *great* investment. But if one considers the value of the real estate which increases more rapidly than money in the bank, it might make sense to certain people who are not looking for liquidity.
THE “ECONOMIC EQUATION”

CONDOMINIUM

Hard Cost (Same): $24,030,000
Soft Cost (Same with increases) $ 2,382,700

Increases:

Broker: 6% of $24,030,000 $ 1,441,800
Legal: $ 25,000
Surveyor (vertical survey): $ 75,000

Sub-total: $27,954,500

Add 15% Profit: $ 4,193,175
Total: $32,147,675

32,147,675 / 100 = approximately $320,000/apartment. This is a reasonable assumption in Evanston.
Ownership → Care for building
- Apartment building landlords don’t maintain
- Slumlords
- But even condo boards hesitate to spend.

Condo litigation crisis
- Developers cut corners and oversell
- Attorneys scare boards into lawsuits