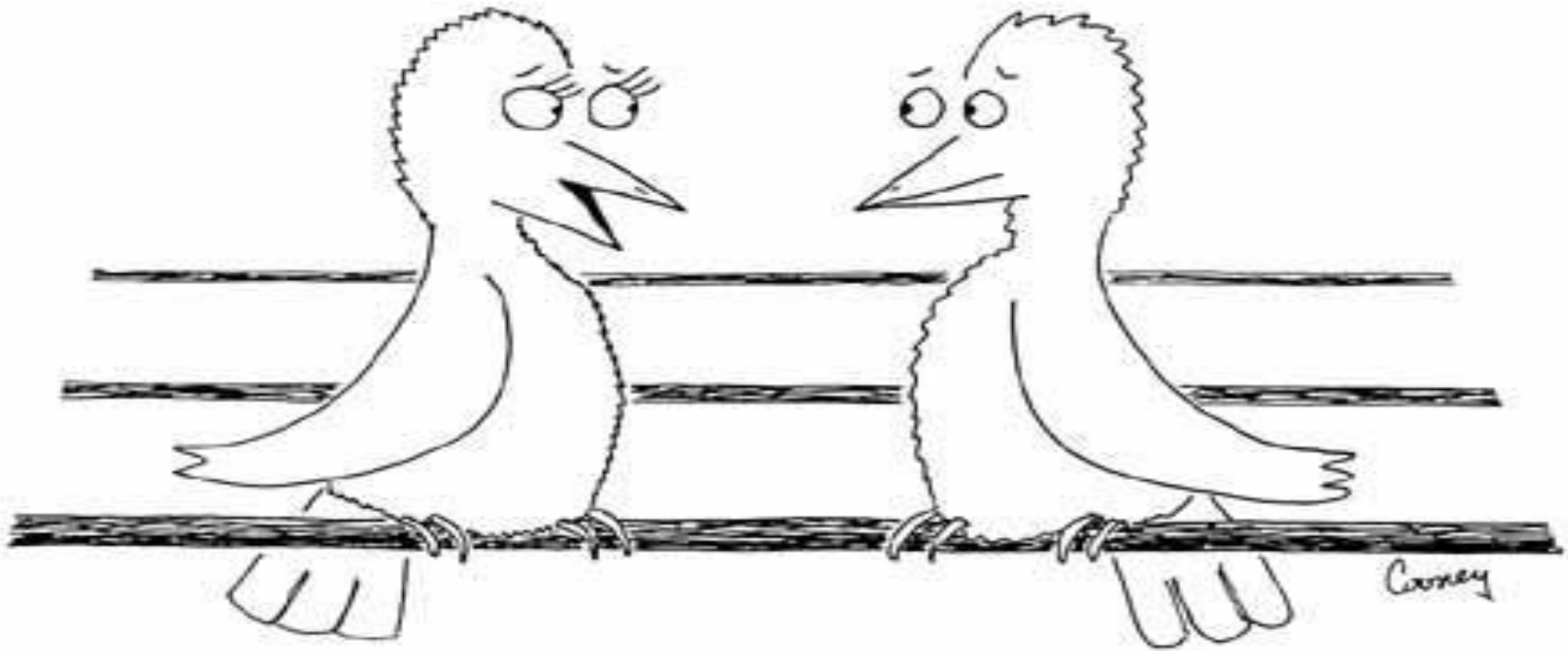


Fundamentals of Commercial Real Estate Development

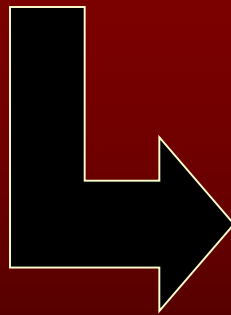


"Talk to you later, I'm going off-line for a while."

Module 1: Feasibility Analysis Overview and Financial Analysis

- Development Overview
- Feasibility Analysis
- Market Analysis Overview
- Data Vendors and Information Sources
- Site Analysis Elements Intro
- Front Door Back Door Financial Analysis
- A short homework assignment

What is development?...



Conversion of “financial capital” into “physical capital”

January 4, 2002



May 17, 2002



May 30, 2002



June 27, 2002



July 7, 2002



September 20, 2002



January 16, 2003



February 6, 2003



April 17, 2003





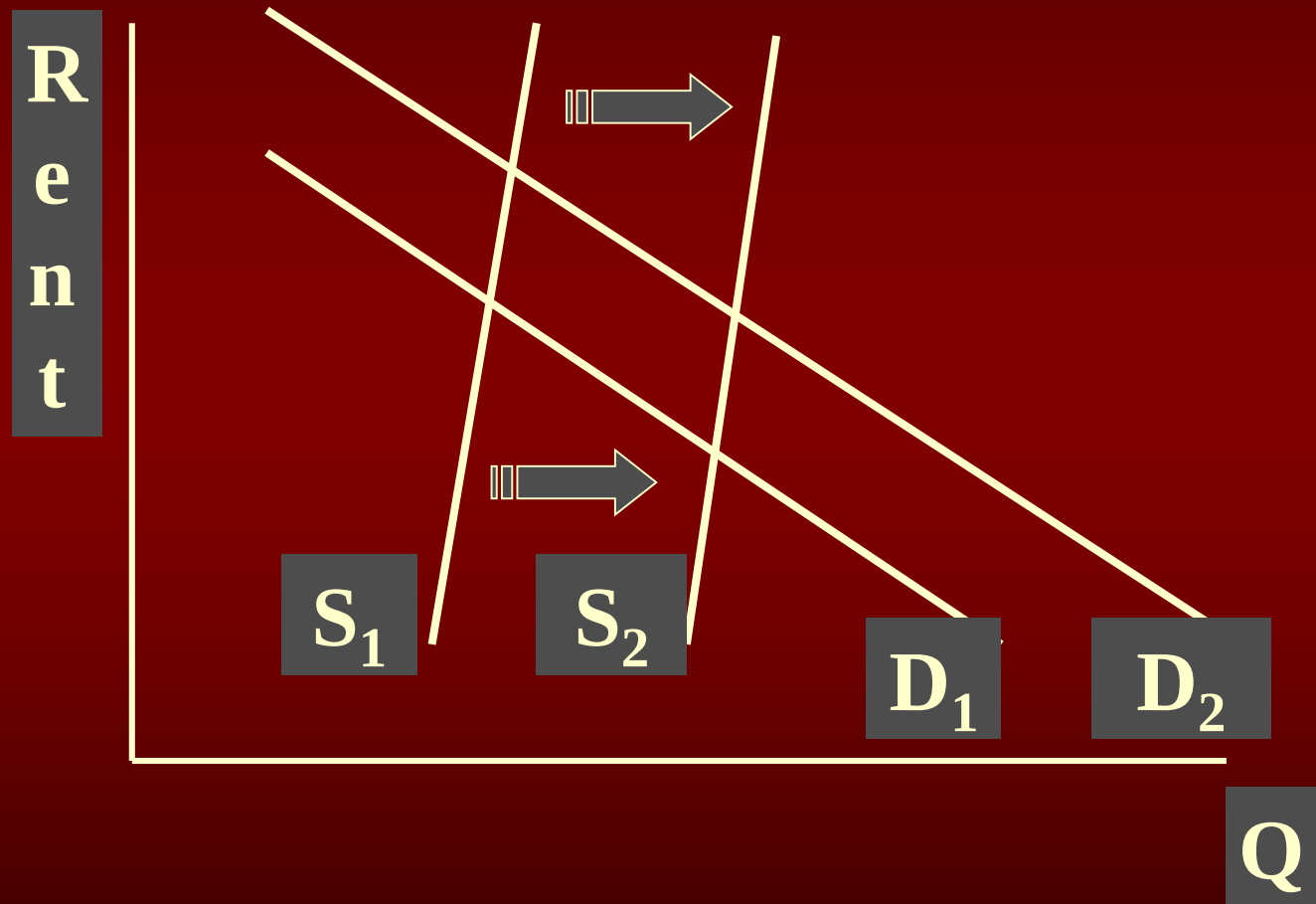


ABN AMRO plaza

540 west
MADISON



Development in an Econ Framework

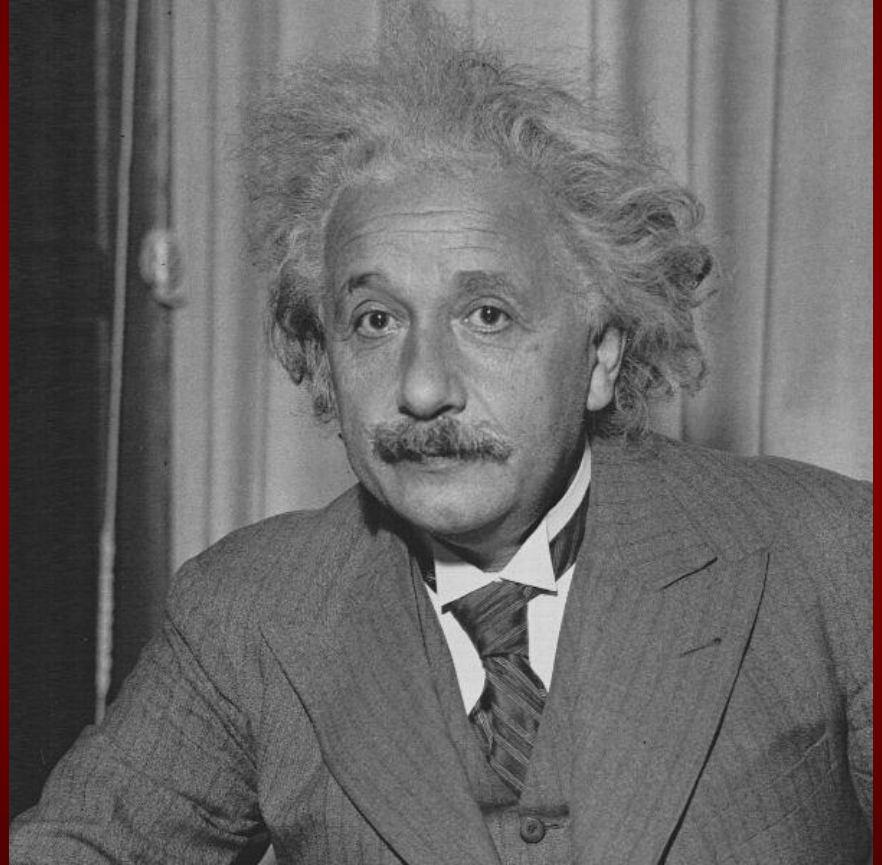


Adding to supply side of the space market.

Styles of successful developers:

* The “visionary”

relies on market
fundamentals,
questions everything,
sees new trends,
and realizes truth –
the new opportunities and builds a brand.



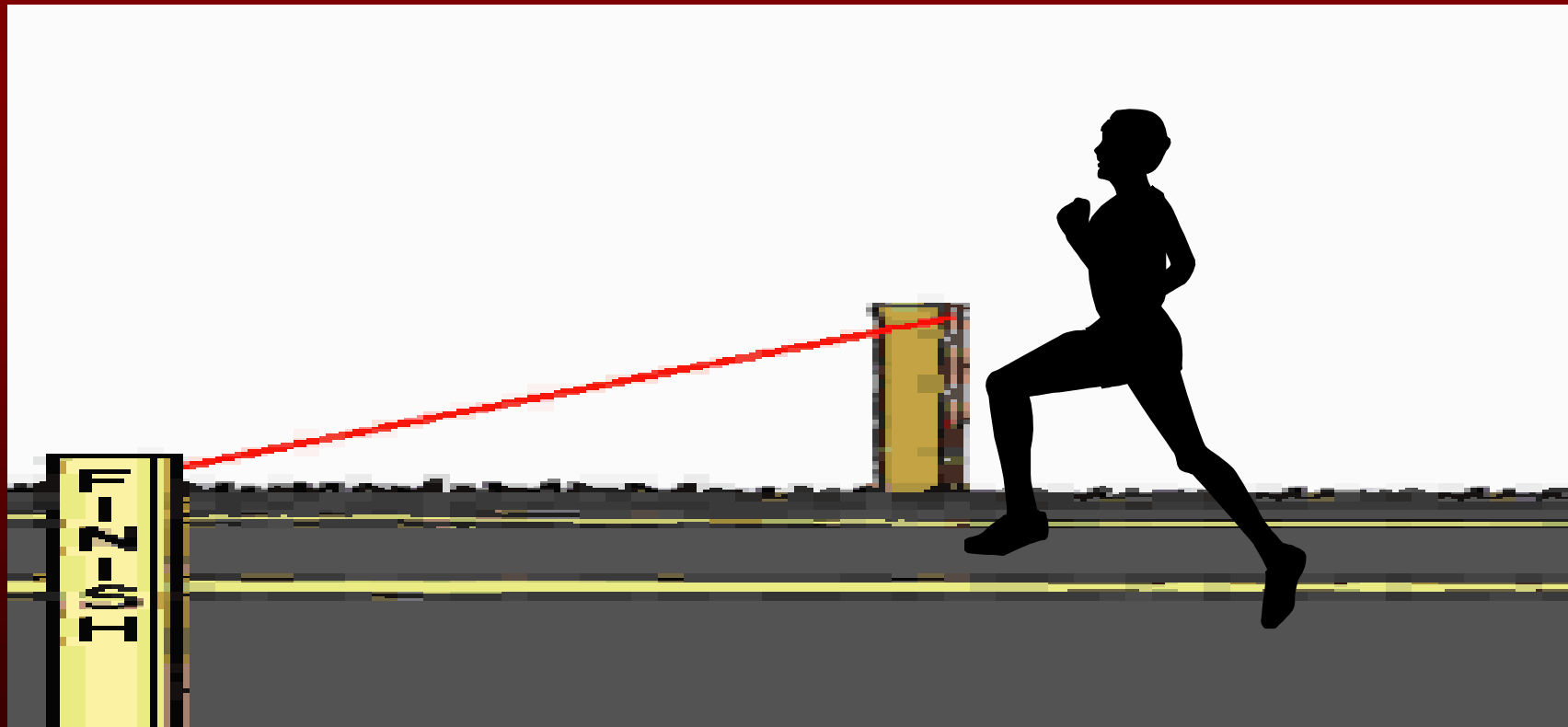
Other visionary products

- Retail in an airport
- The first enclosed suburban shopping centers
- The small package handling distribution centers
- The first telcom or carrier hotels now called Data Centers
- The first Lifestyle Centers
- The first Biotech buildings
- The first _____?

Styles of successful developers:

- *The “visionary”(pioneer)

- *or The “fast second”



The fast second uses a different model

- What worked for someone else I can copy
- What sold yesterday I can keep building
- The fast second can be a successful way to do business even though a changing market might be missed – the point of “Who Moved My Cheese? By Johnson

Real Estate Is Still One of the Quickest Ways to Create Value



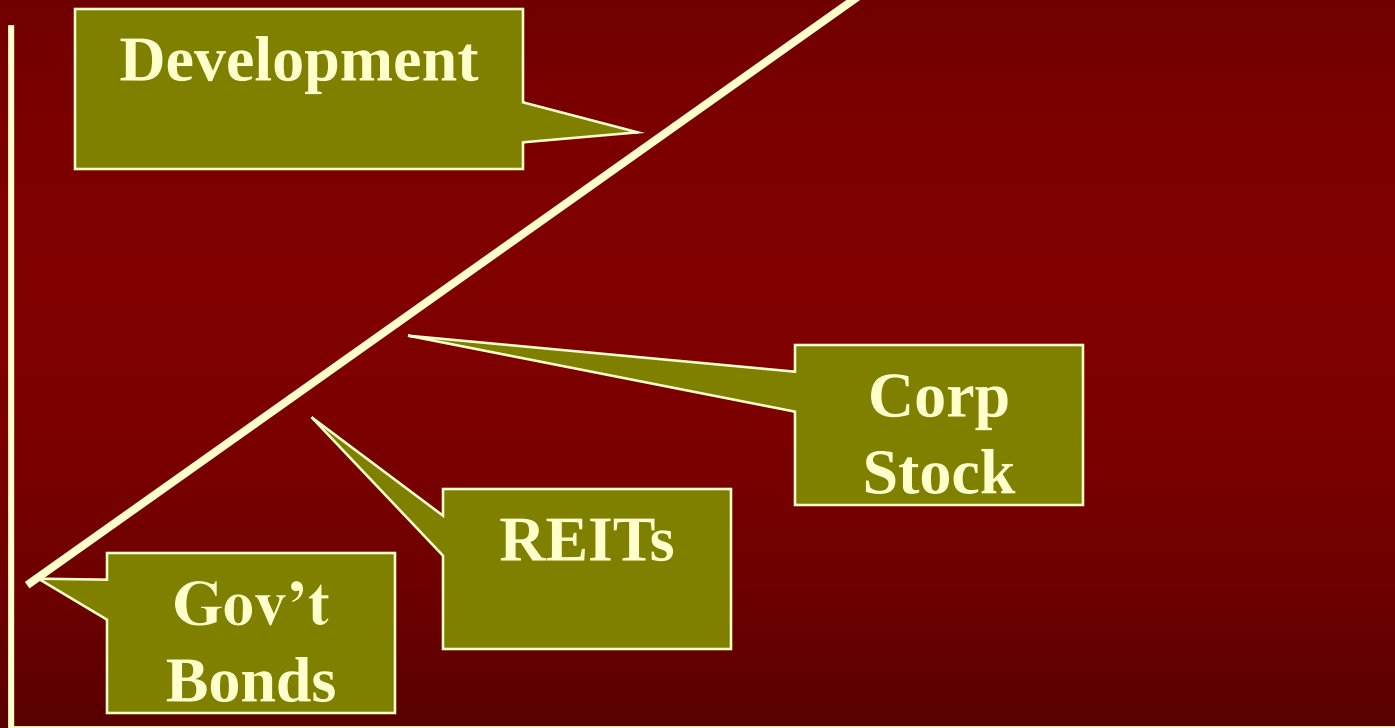
It is also one of the quickest ways
to screw up...



With risk comes potential reward . . .

Capital
Market Line

Return

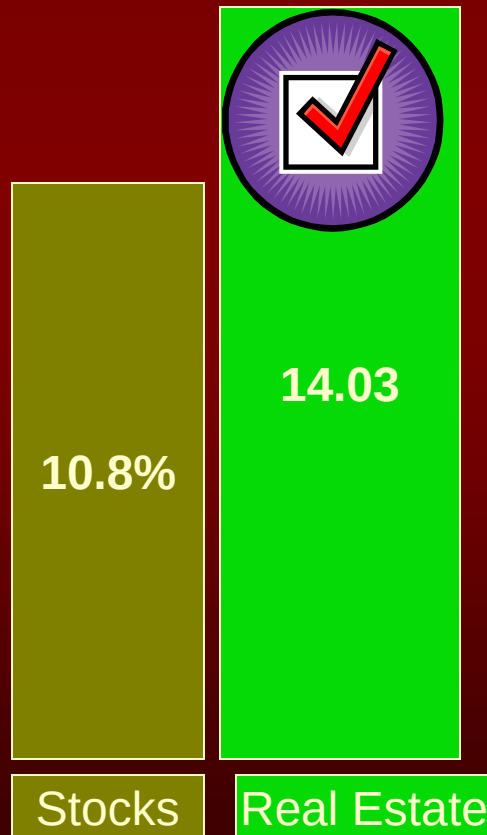


Risk

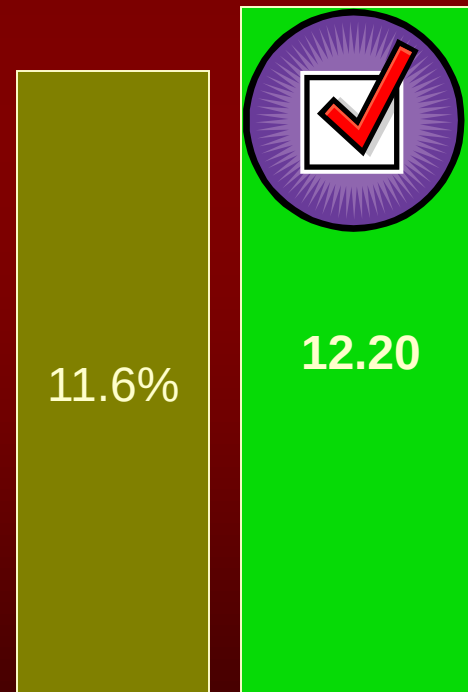
Real Estate Versus Stock

Compounded Annual Returns

■ Past 15 Years

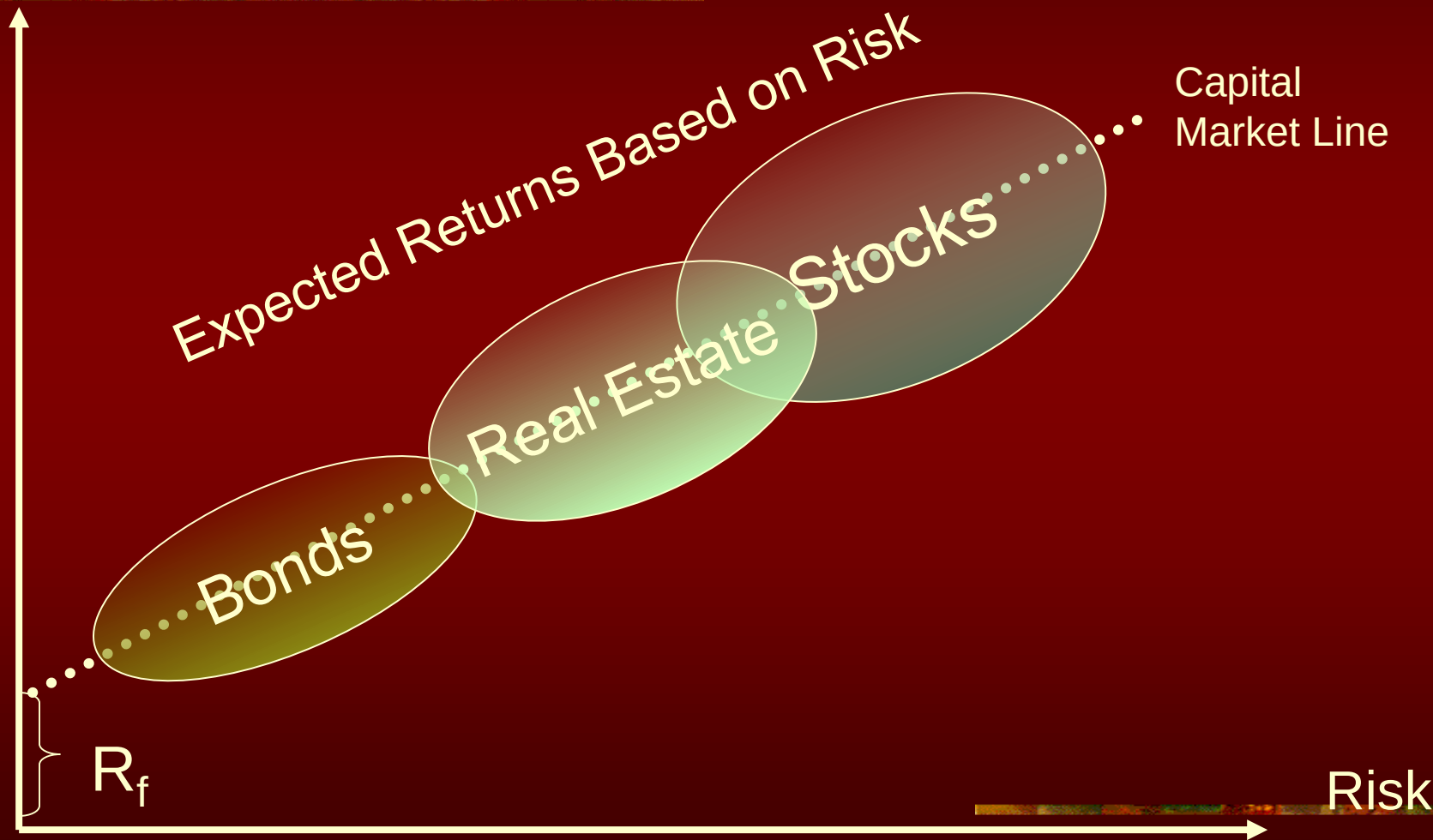


■ Past 20 Years



THEORY

Return



Development is a risky business

- * Many places for mistakes...**
 - Construction costs, time?**
 - Unexpected Competition?**
 - Loss of Key Tenants**
 - Unexpected Regulation?**
 - and so on...**

Perspectives on Pre-Development Feasibility Analysis and Planning

Chronological Perspective

- **1st: Conceptual stage / Preliminary planning**
- **2nd: Resource assembly / Further planning**
- **3rd: Implementation / Contractual period**
- **4th: Operational period**
- **5th: Harvesting & disposal**

Let's expand these first two steps chronologically

Step 1: The Idea

- Identify site for known concept or
 - Identify H&B use and feasibility for given a site
 - Rough financial analysis based on crude costs and crude assumptions to check on likely feasibility.
 - Creative phase of planning where most sites and ideas will not pass “GO”
-

Step 2: Overcoming Naysayers

- Check with government officials and local politicians on zoning for planned use and if necessary get scheduled for zoning hearings.
- Check temperature of neighbors for the planned project and if necessary plan strategy to mitigate concerns.
- Check on utility and sewer access.
- Boundary survey if necessary.
- Review public notifications required and easements in area.
- Preliminary soil testing and Phase 1 study.
- Order deed preparation and legal work required for closings or contracts for control prior to closing.

Step 3: Site Control

- Site must now be under control via options or purchase (if Phase 1 study is okay).
 - Obtain liability insurance on site.
 - Preliminary site plan and building concepts should be developed, again!
-

Step 4: More Market Support and Team Building

- Order market feasibility studies for preliminary concept.
 - Assemble development team.
 - Discuss partnerships if appropriate.
-

Step 5: Concept Tweaking, Contracts and Planning

- Tweak concept and design, size, access based on preliminary study results and all relevant codes.
 - Involve property managers in discussions on access, servicing building and tenant needs during this design phase.
 - Contract for design and engineering work.
 - Confirm all plans with fire department and check on fire code requirements to be sure design conforms.
-

Step 6: Looking for problems and opportunities!

- Discuss and start to negotiate construction financing.
 - Start to pre-market to possible tenants. Involve leasing professionals early.
 - Request preliminary construction cost estimates.
 - Check on sewer and utility access fees and other impact fees.
 - Identify possible property tax abatement and economic incentives.
-

Step 7: Convince the Players of Feasibility

- Develop more detailed pro-formas and financial projections, address lender and equity concerns.
 - Order site appraisal and preliminary value of completed project.
 - Communicate with construction lender and negotiate construction loan terms.
 - Contact permanent financing lenders.
 - Complete formation of partnerships, JVs or LLCs used for equity contributions.
-

Step 8: Refine plans and numbers

- Review plans with architects and engineers and consider process, timing, refinement of costs estimates.
 - Request address for property from government.
 - Address any easement concerns and requirements and sign agreements.
 - Revise pro-forma again.
-

Step 9: Confirmations

- Receive revised plans from architect and engineers.
 - Receive confirmations from fire department, building code department, zoning, environmental reviews or LEEDs certification process and economic incentives if any.
 - Lawyers complete construction loan negotiation.
-

Step 10: More negotiations and verifications

- Confirm construction finance and further negotiate permanent financing.
 - Continue with pre-leasing and marketing and public relations for project.
 - Confirm building permits if not received earlier.
 - Check on legal issues outstanding before site closing if not yet purchased.
-

Step 11: Close on Capital Sources

- Close on construction loan and equity contributions and close on site if not closed earlier.
 - Continue with leasing or pre-sale efforts.
-

Step 12: Begin Construction

- Start site work and construction immediately.

Back to The Graaskamp Approach to Feasibility Analysis

- Dr. James Graaskamp: perhaps the father of feasibility analysis

The Graaskamp Approach to Feasibility Analysis

- Dr. James Graaskamp: father of feasibility analysis

James Graaskamp, 1933-1988



- PhD from the University of Wisconsin (1964)

Started the first graduate Ph.D. program in Real Estate in the United States (1970)

Five Major Components of a Feasibility Study

- Strategic analysis
- Market and competitive analysis
- Political legal analysis
- Physical and Design analysis
- Financial analysis

The key to any plan is avoiding surprises



Grasskamp's Approach to Feasibility Analysis

Market and Competitive
Analysis

Political and Legal
Analysis

Strategic

Objectives

Alternatives

Analysis

Financial Analysis

Physical and Design Analysis

Increasing detail with each iteration

Grasskamp's Approach to Feasibility Analysis

Market and Competitive
Analysis

Political and Legal
Analysis

Strategic

Objectives

Alternatives

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Physical and Design Analysis

Increasing detail with each iteration

Grasskamp's Approach to Feasibility Analysis

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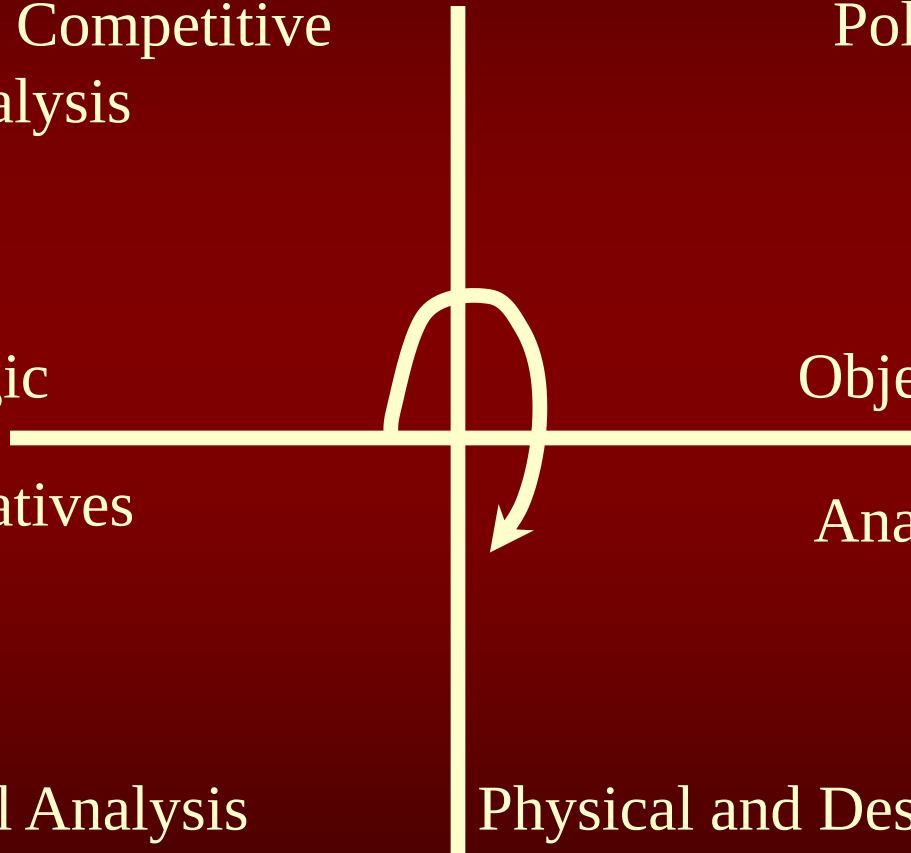
Alternatives

Analysis

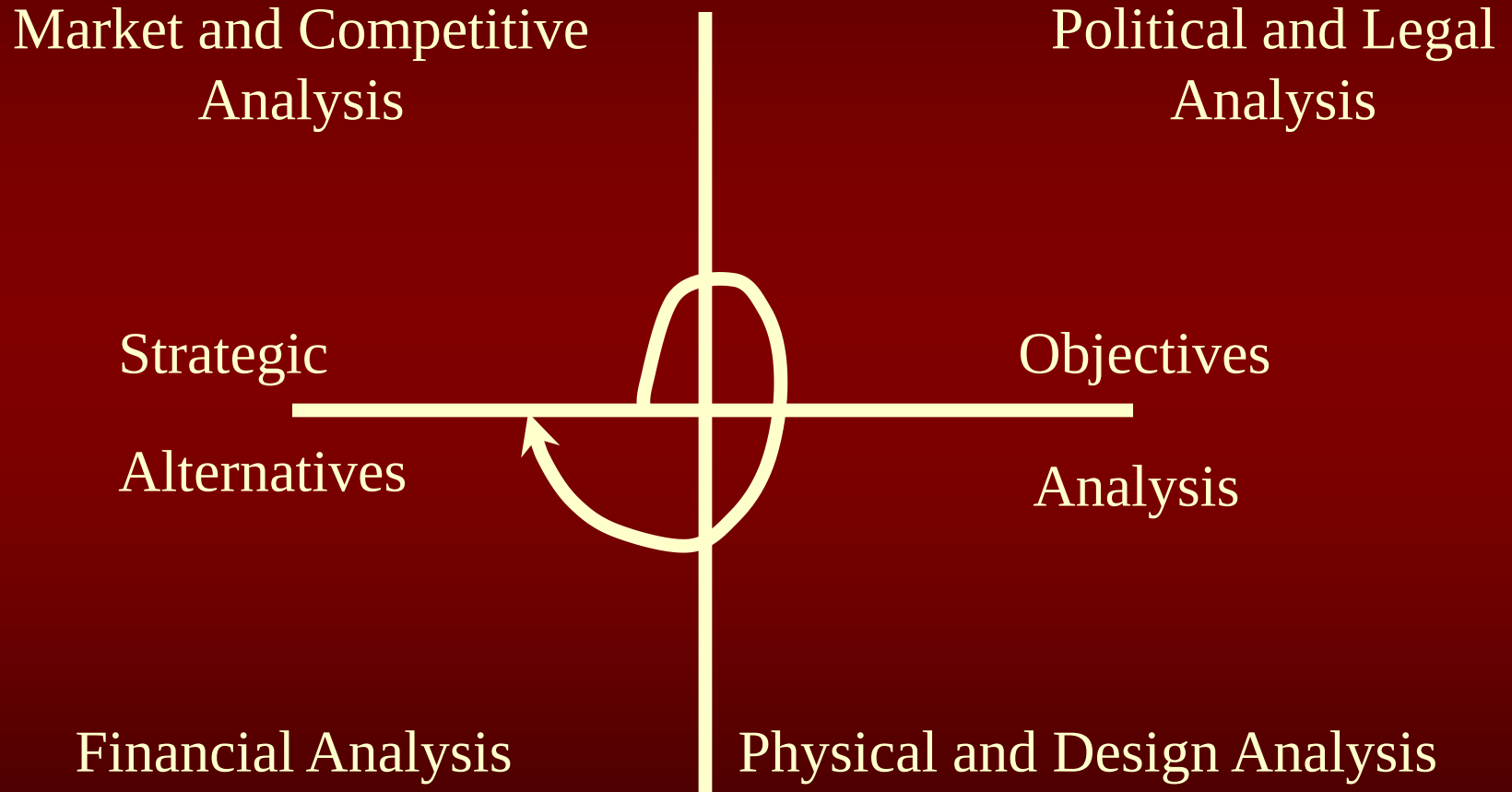
Financial Analysis

Physical and Design Analysis

Increasing detail with each iteration

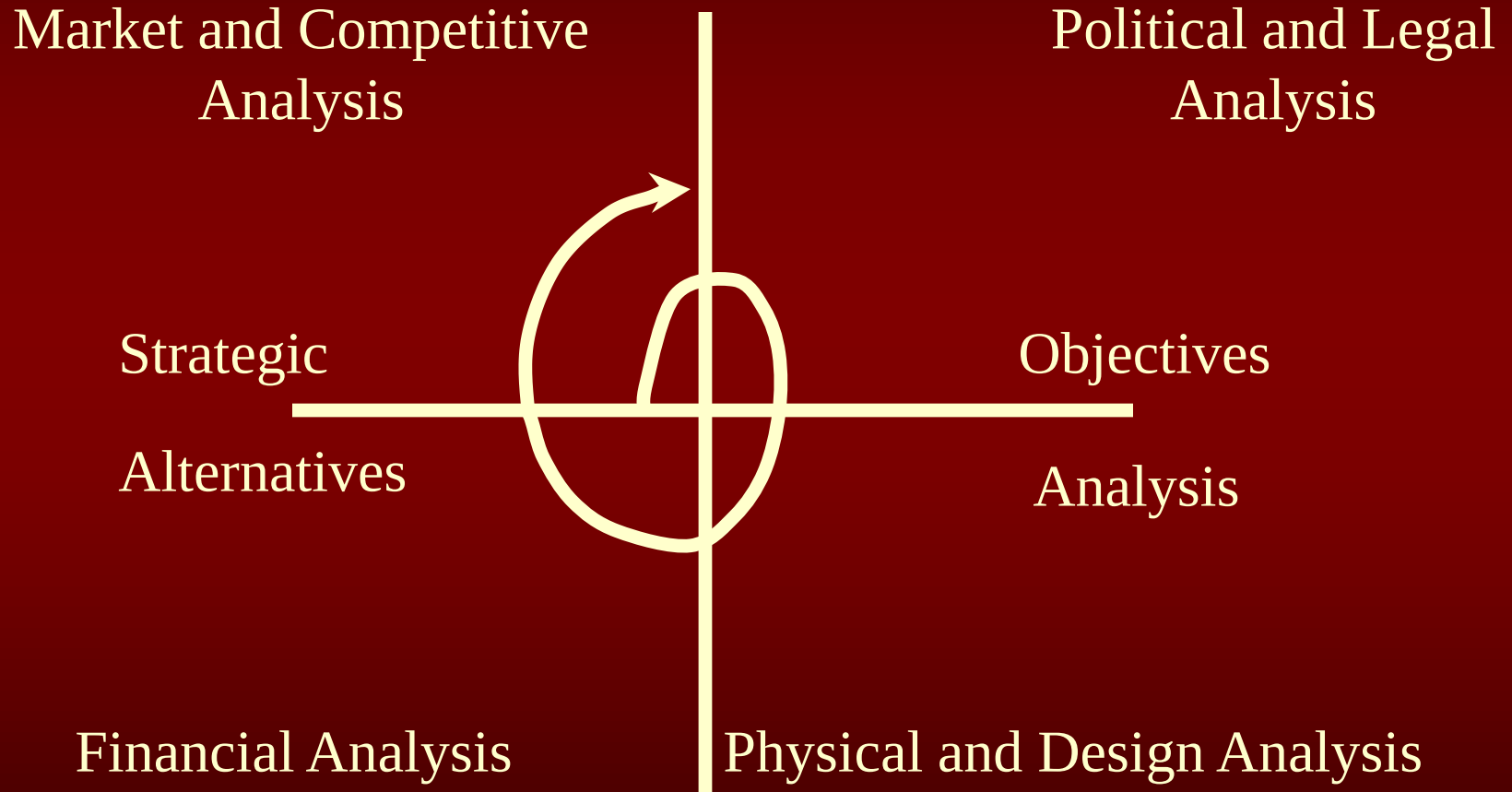


Grasskamp's Approach to Feasibility Analysis



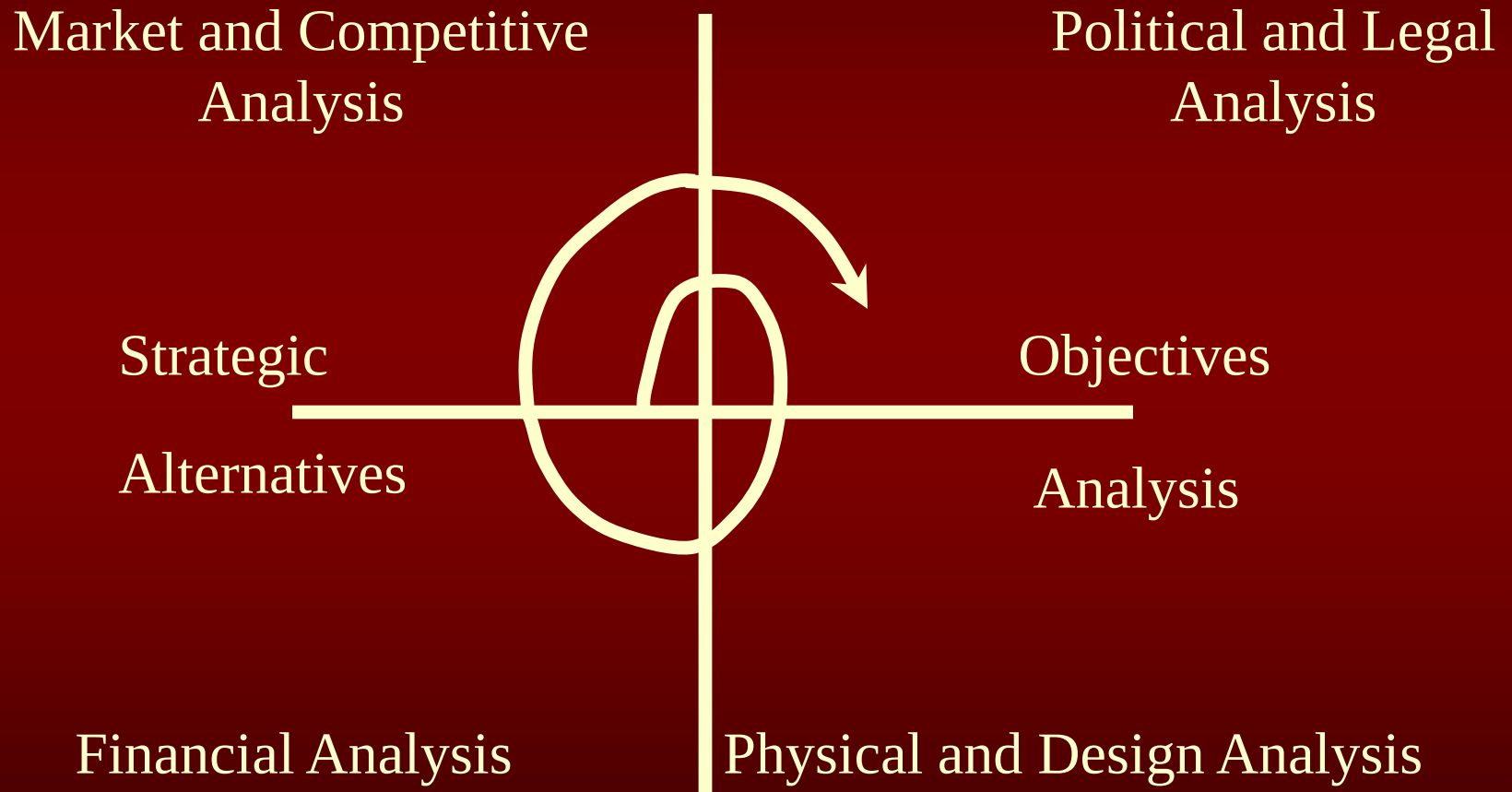
Increasing detail with each iteration

Grasskamp's Approach to Feasibility Analysis



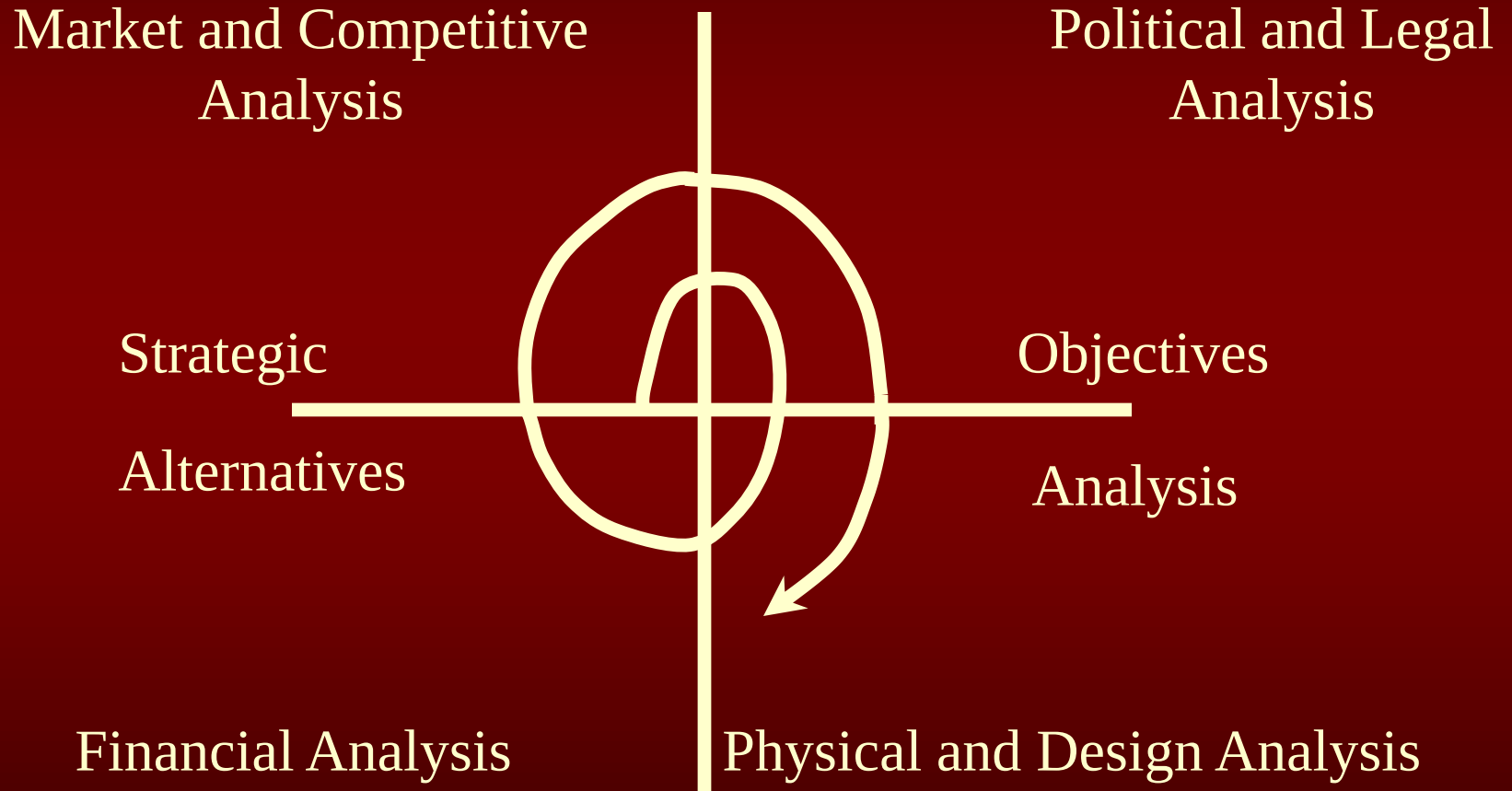
Increasing detail with each iteration

Grasskamp's Approach to Feasibility Analysis



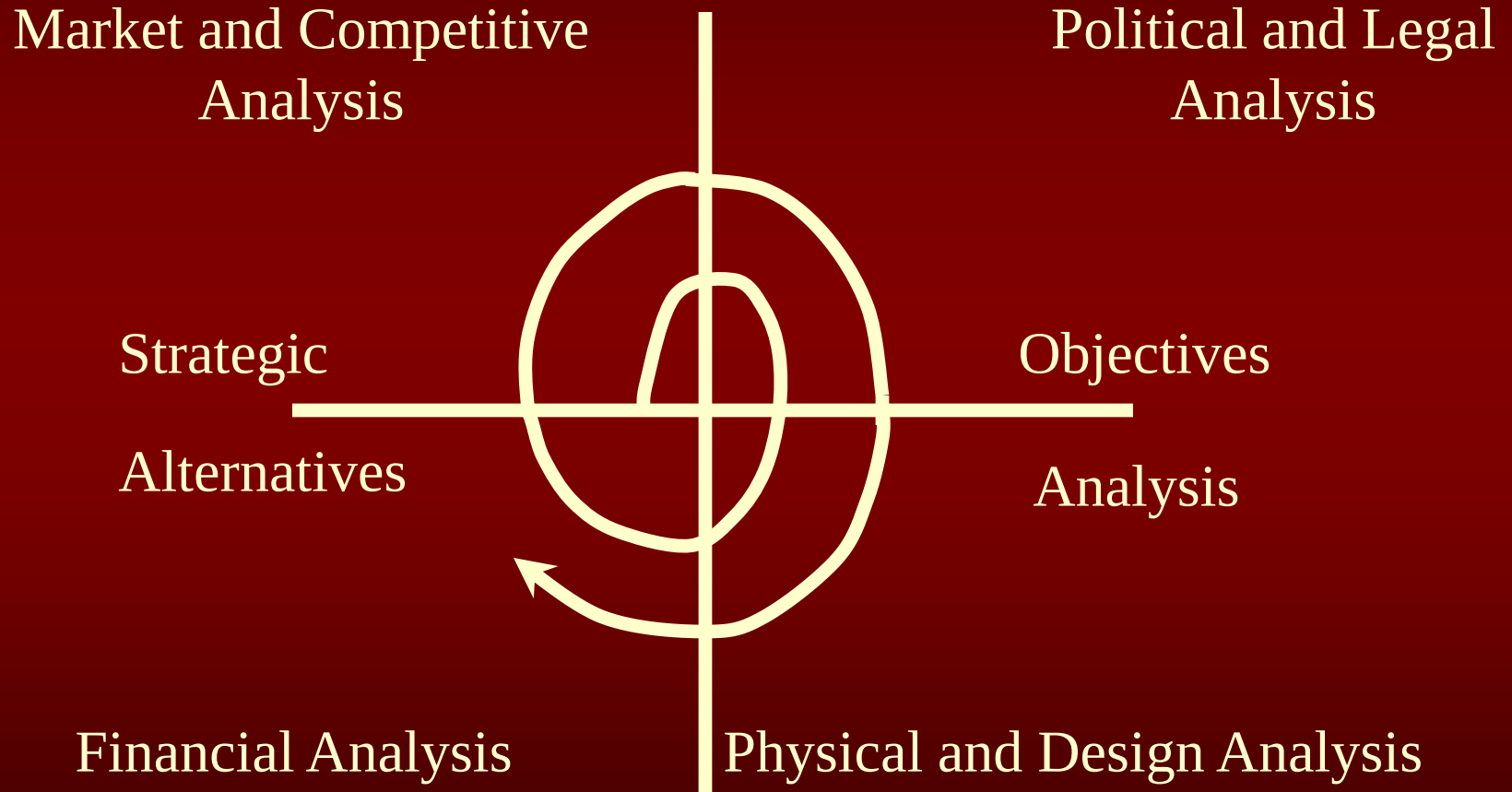
Increasing detail with each iteration

Grasskamp's Approach to Feasibility Analysis



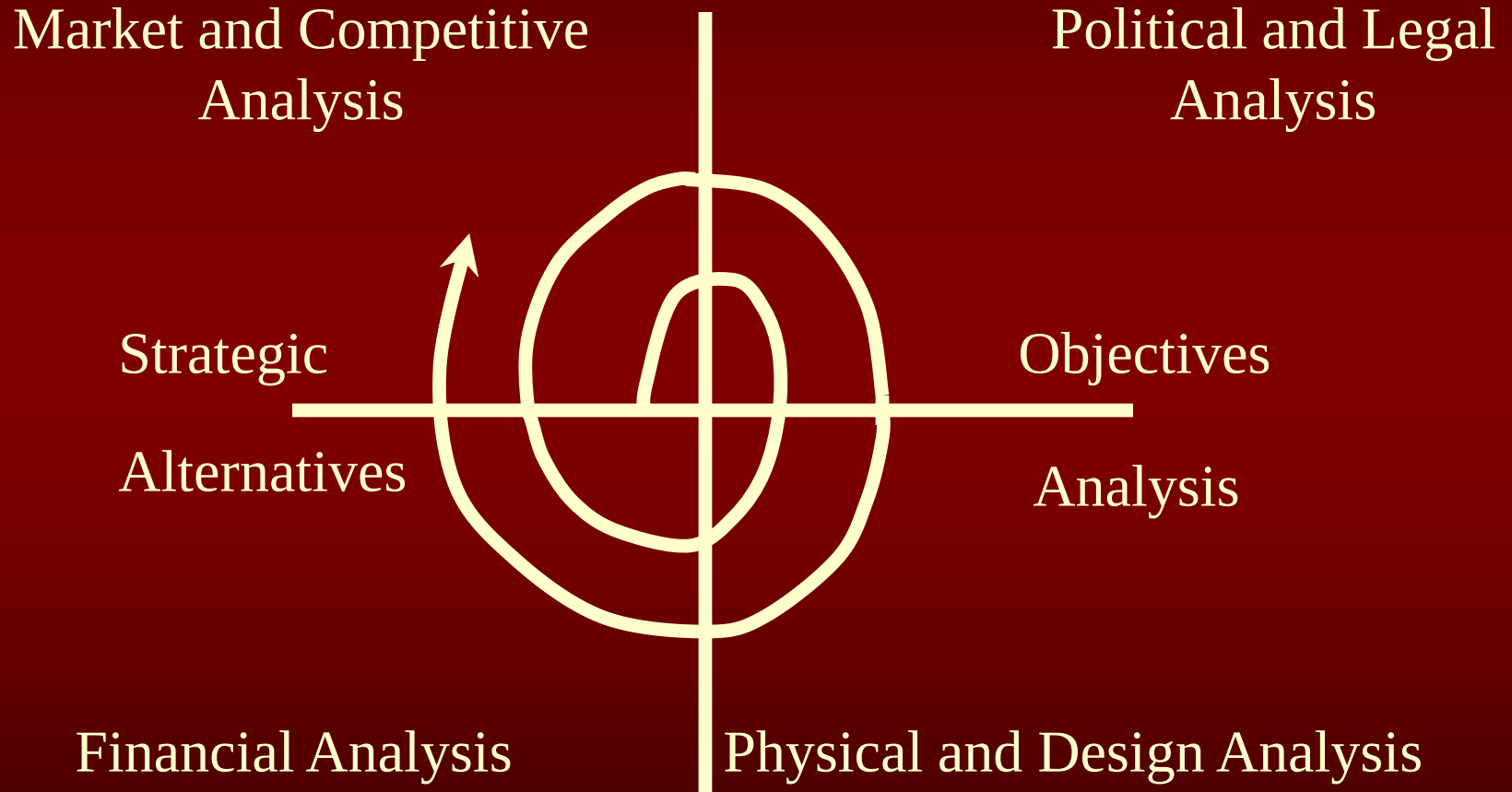
Increasing detail with each iteration

Grasskamp's Approach to Feasibility Analysis



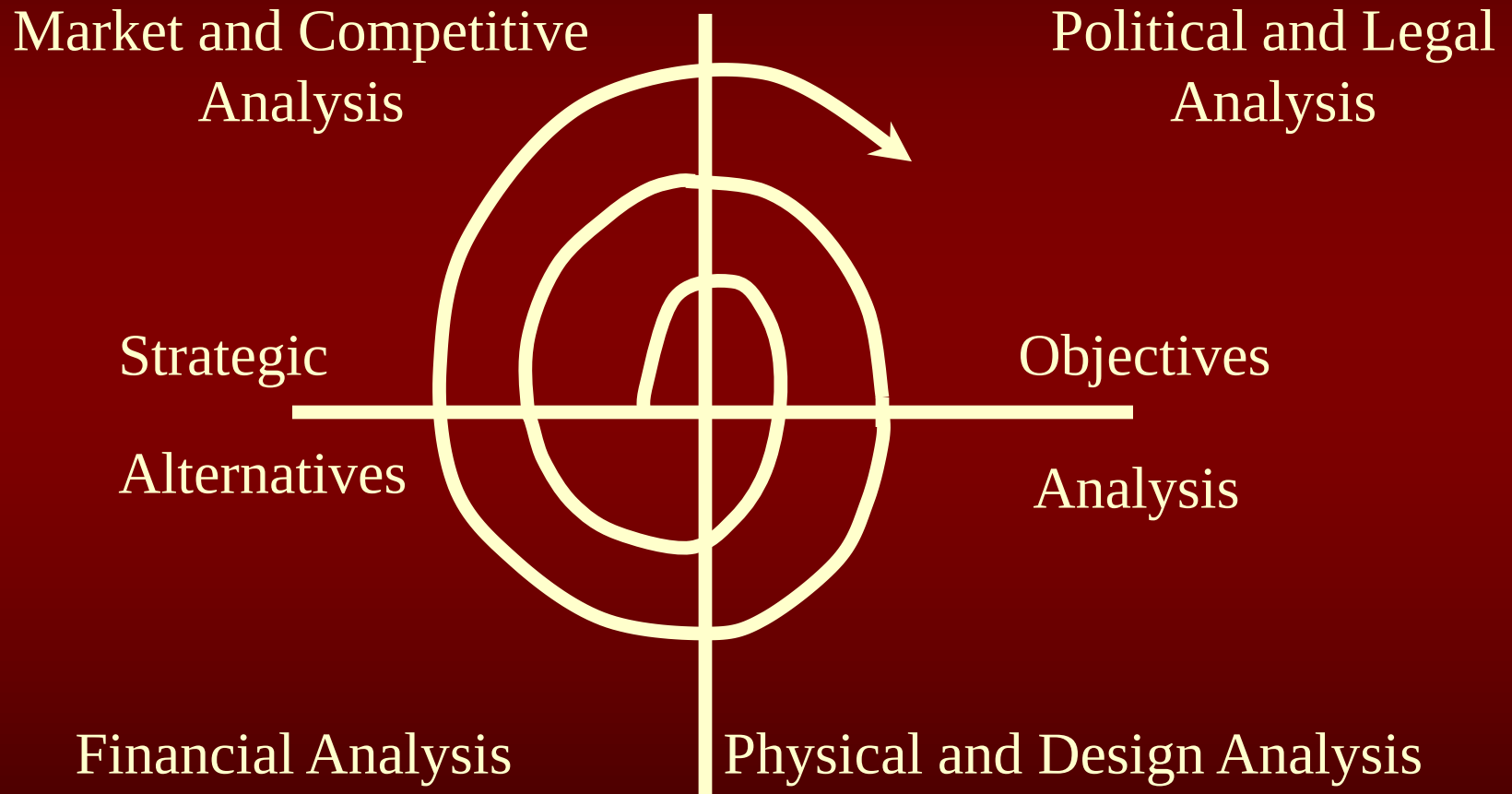
Increasing detail with each iteration

Grasskamp's Approach to Feasibility Analysis



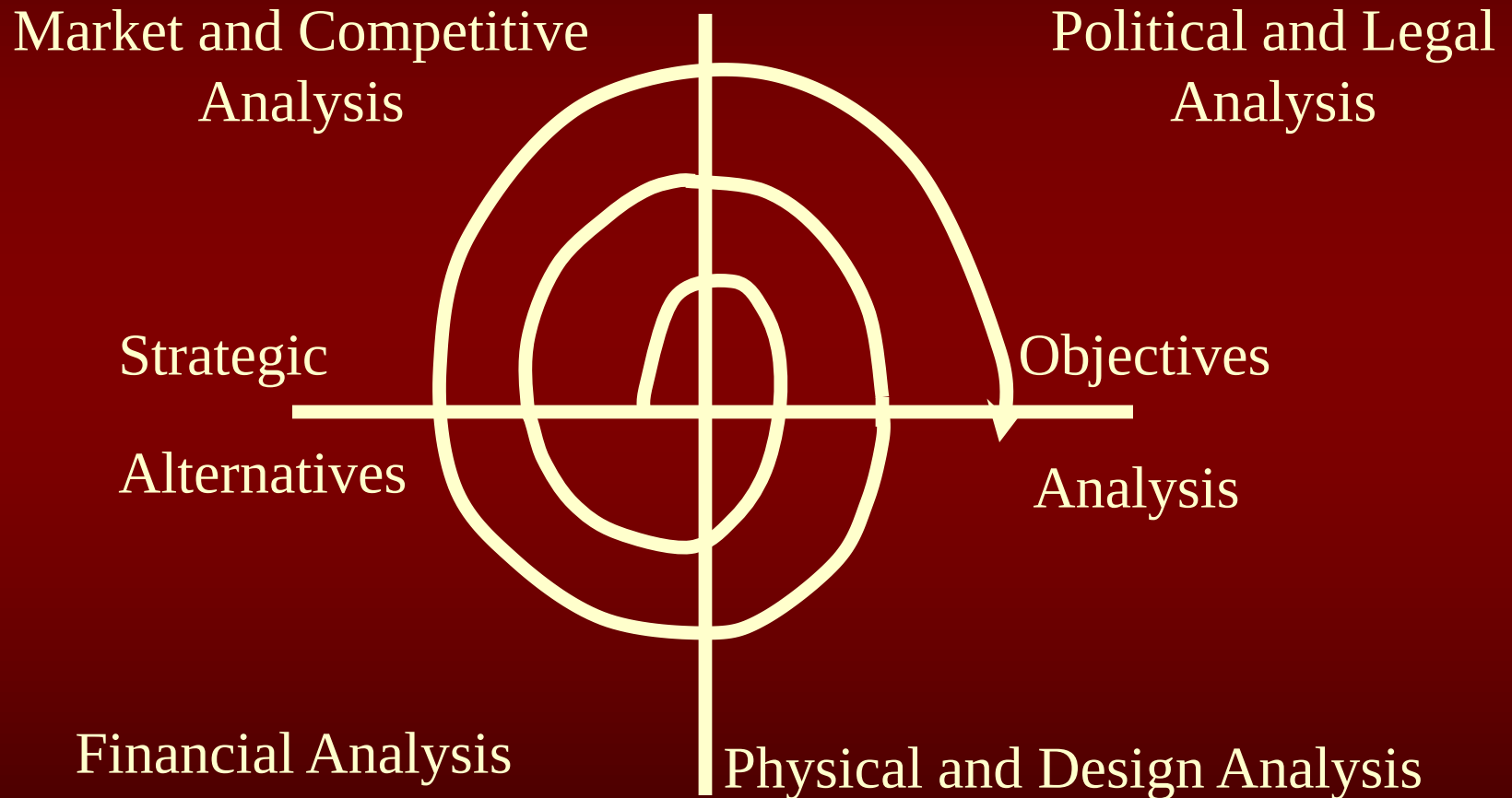
Increasing detail with each iteration

Grasskamp's Approach to Feasibility Analysis



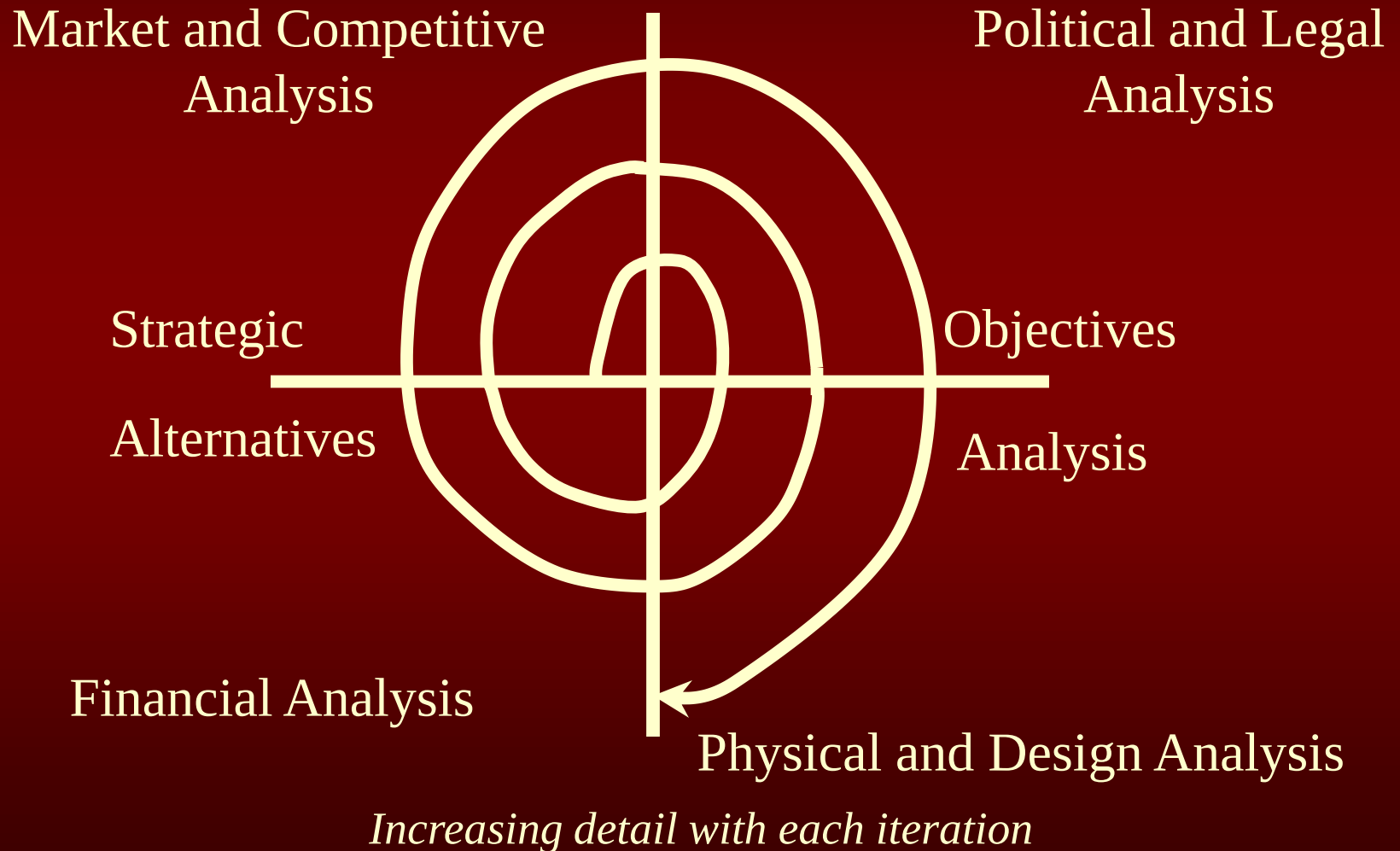
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Grasskamp's Approach to Feasibility Analysis

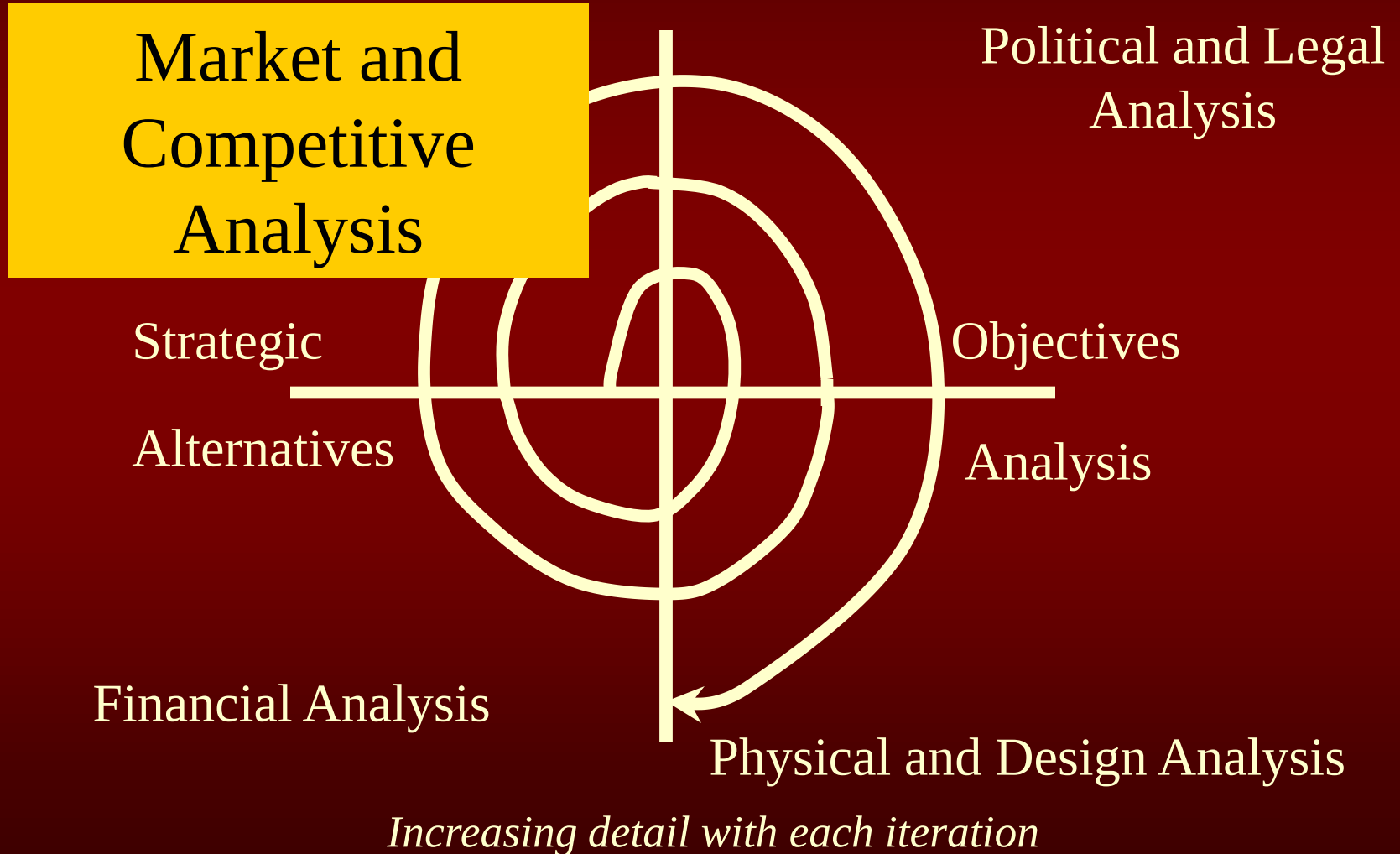


Increasing detail with each iteration

Grasskamp's Approach to Feasibility Analysis



Grasskamp's Approach to Feasibility Analysis



Grasskamp's Approach to Feasibility Analysis

Market and Competitive
Analysis

Political and
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Analysis

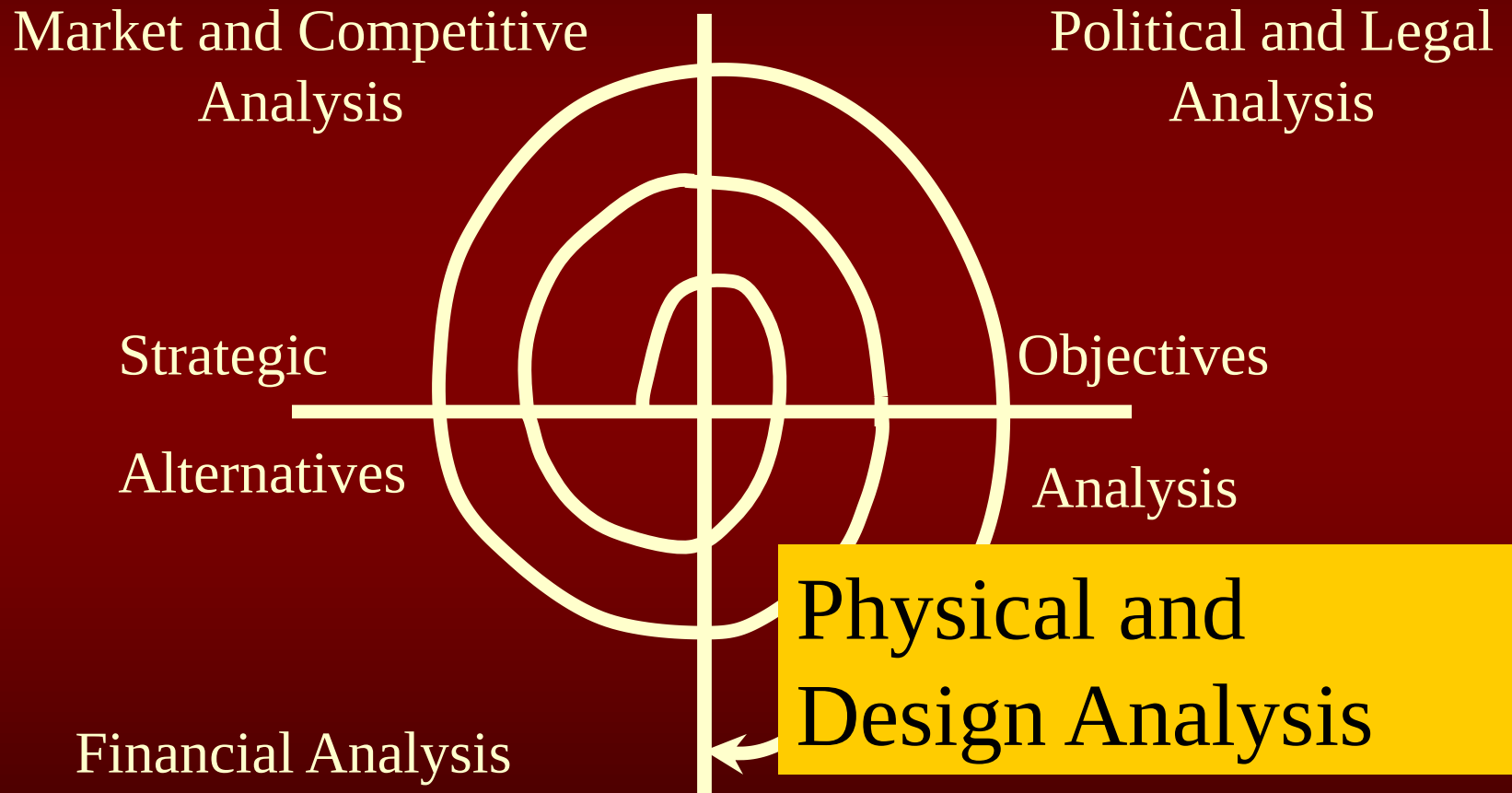
Financial Analysis

Physical and Design Analysis

Increasing detail with each iteration

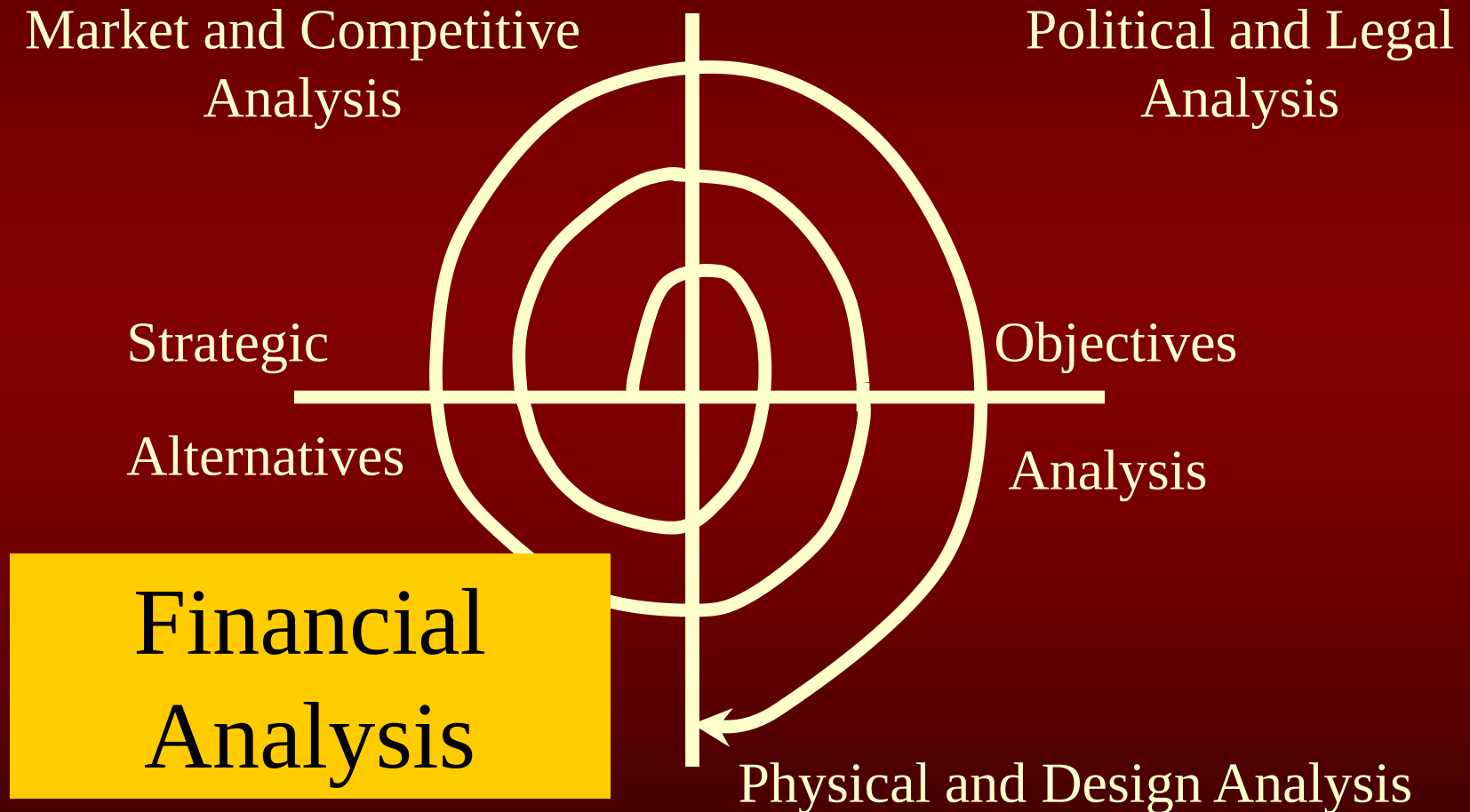


Grasskamp's Approach to Feasibility Analysis



Increasing detail with each iteration

Grasskamp's Approach to Feasibility Analysis



Increasing detail with each iteration

Market Analysis

- Sources of demand for the concept
- Start with Macro view and move to Micro



Sublease & Direct Vacancy

	<u>Sublease %</u>
Market	
Orange County	2.3%
Los Angeles	2.3%
Chicago	3.6%
New York	3.6%
Washington DC	3.9%
Atlanta	4.6%
Seattle	4.6%
Boston	5.2%
San Francisco	6.4%
San Jose	7.1%
Top 10 Markets	4.0%
Top 20 Markets	3.8%

Sublease space tends to lead direct vacancy rates so it is an excellent leading indicator.

“Shadow” space a fairly new term is harder to track but reflects current excess office capacity.

To Summarize Market Analysis: Types of Information

- Direct data: (Visionary focuses here)
 - business growth
 - employment growth (JOBS!)
 - Economic or technological trends
- Indirect data: (Fast second focuses here)
 - the competition is doing well
 - absorption is strong
 - occupancy is up
 - rents are up

Market Analysis:

Sources of Data and Info

- Direct data:
 - Census, BLS, trade associations, state
 - Chamber of Commerce, City, County
 - Data Vendors like MSCI, REIS, TRW, McGraw Hill, CoStar, CBRE, Realpage, Reonomy, and many others.
 - Publications: Firm Newsletters, Institutional Investors, Brokerage houses like JLL, CBRE, CW.

Competitive Analysis

- Sources of failure
- Who is the current competition?
- Sources of information:
 - land ownership records
 - building permits
 - zoning hearings
 - breakfast meetings, local conferences, newspapers
- Why are they doing well or poorly?

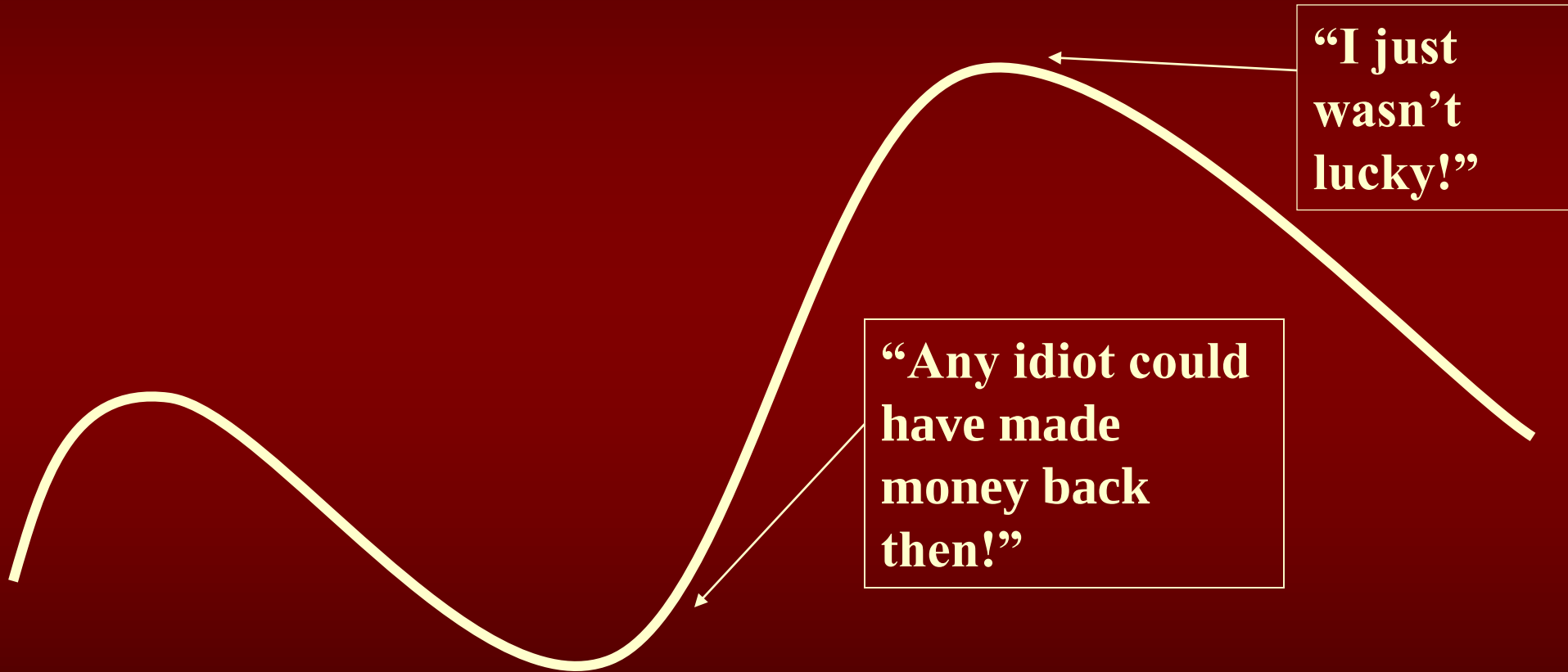
Demand and Supply Together

- Seldom are in sync
- We will always have cycles even with the Fed adjusting short term interest rates

Inevitable Real Estate Cycles

■ **Why do we have cycles?**

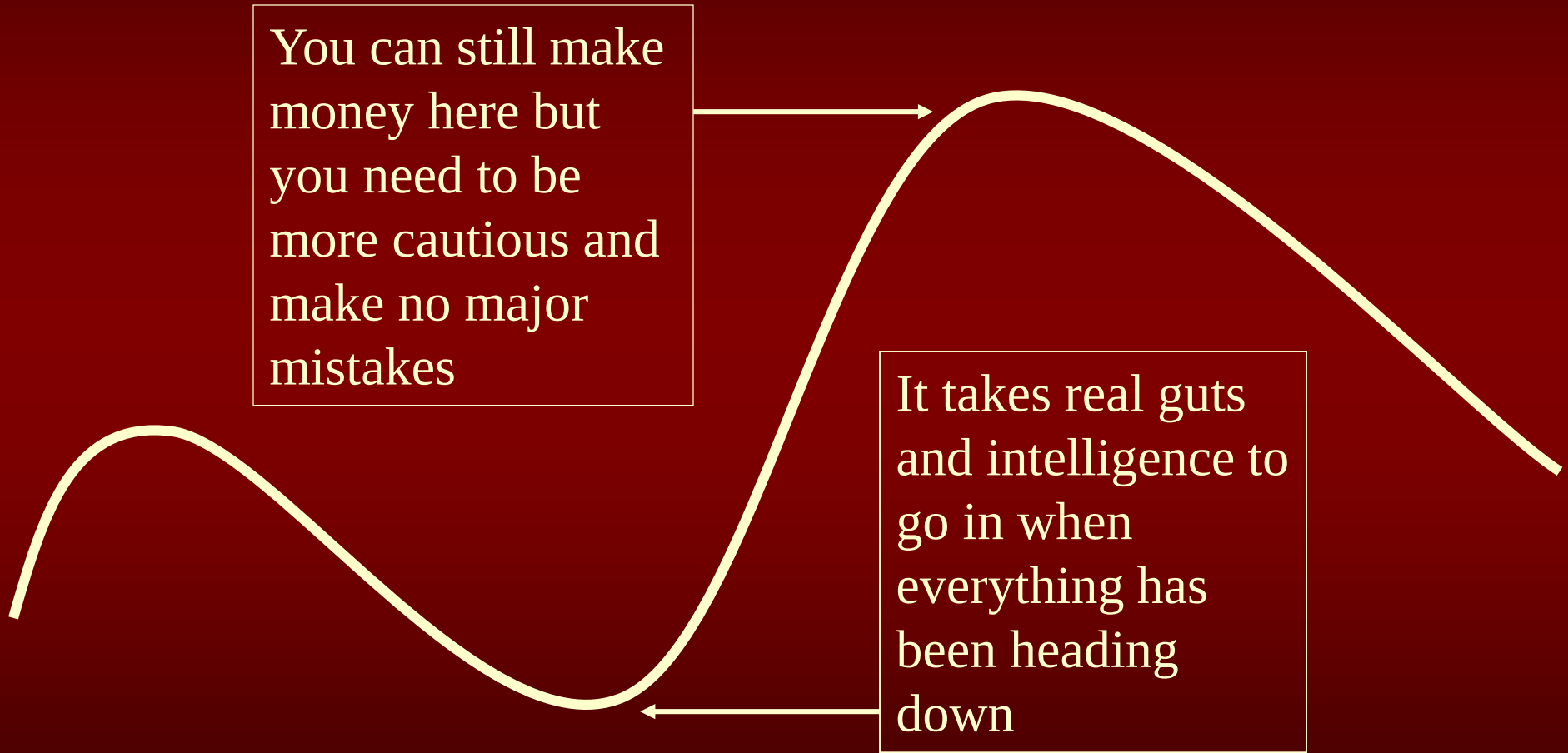
The Rhetoric of Cycles



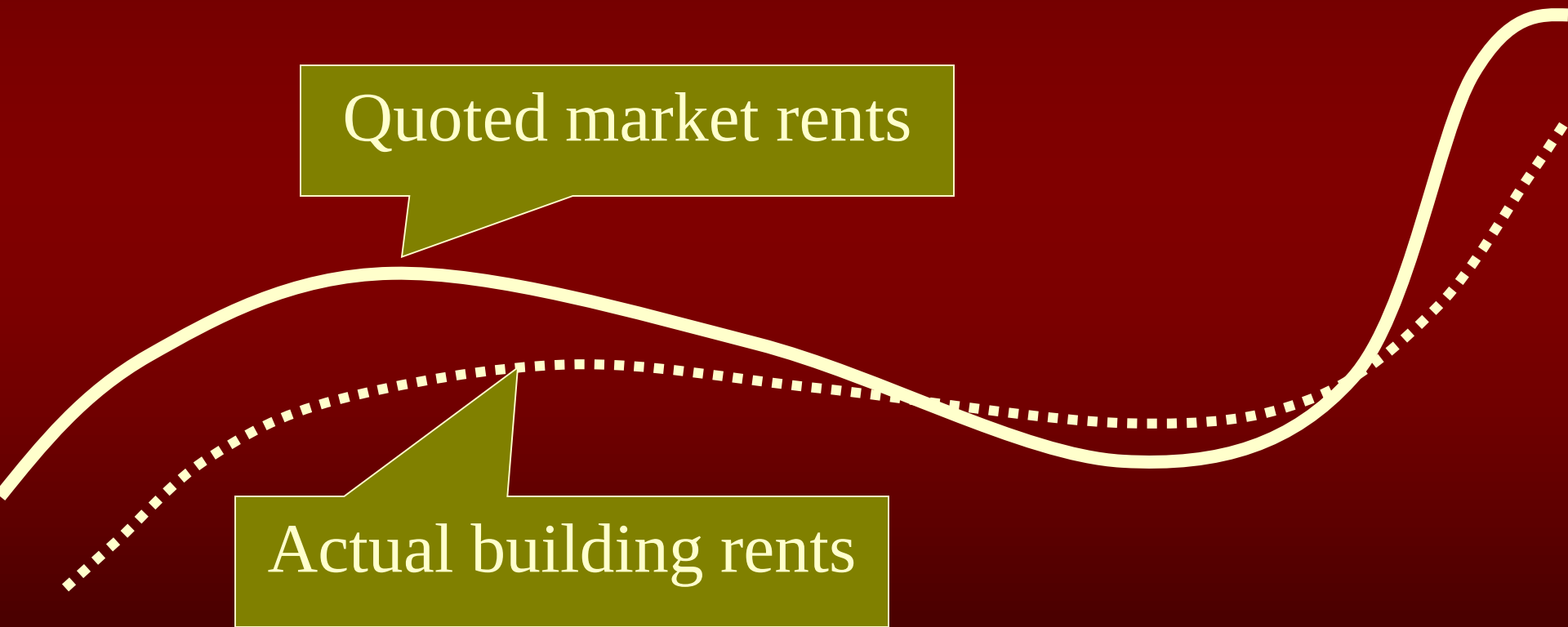
The Reality Behind Cycles

You can still make money here but you need to be more cautious and make no major mistakes

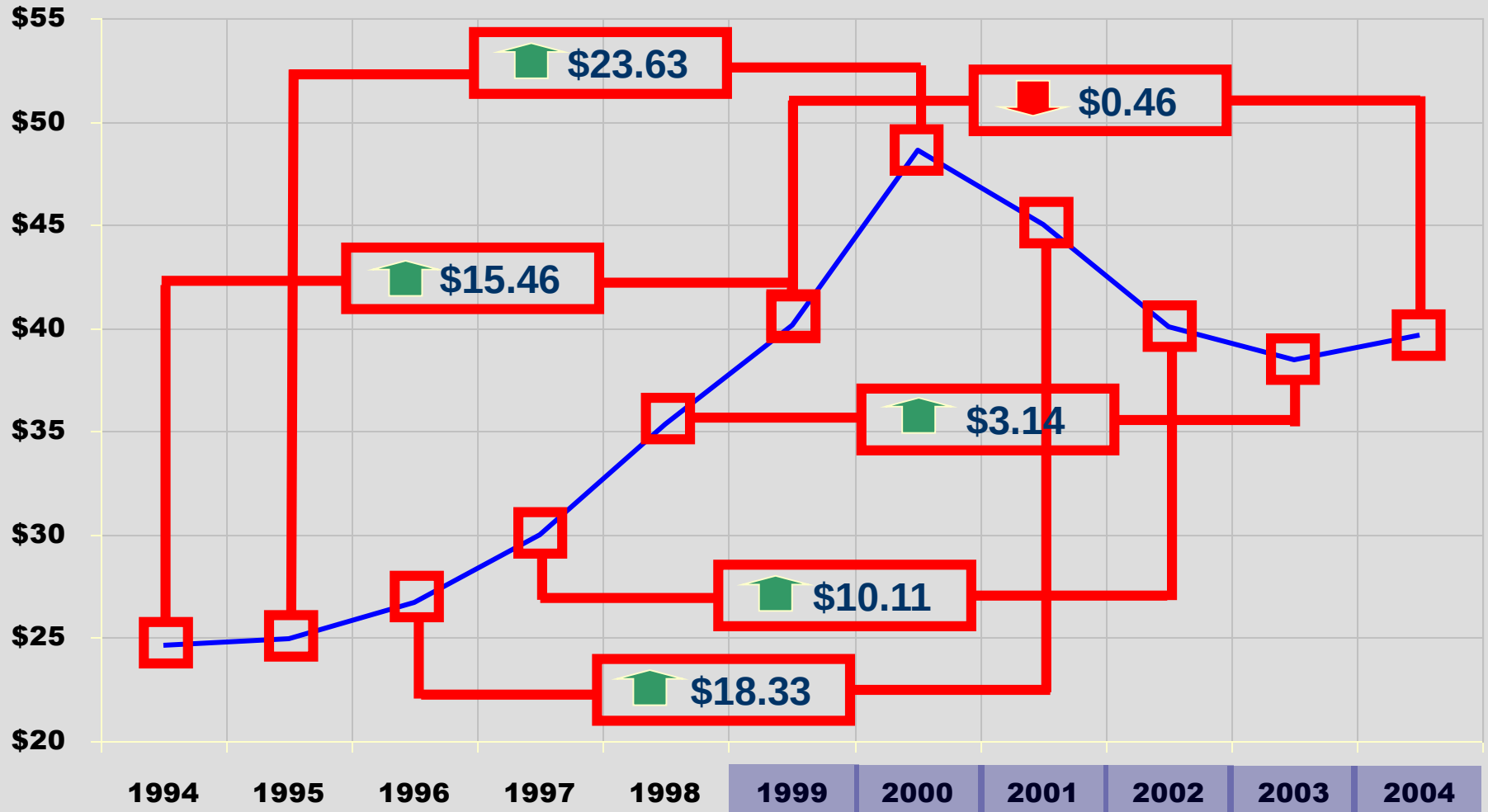
It takes real guts and intelligence to go in when everything has been heading down



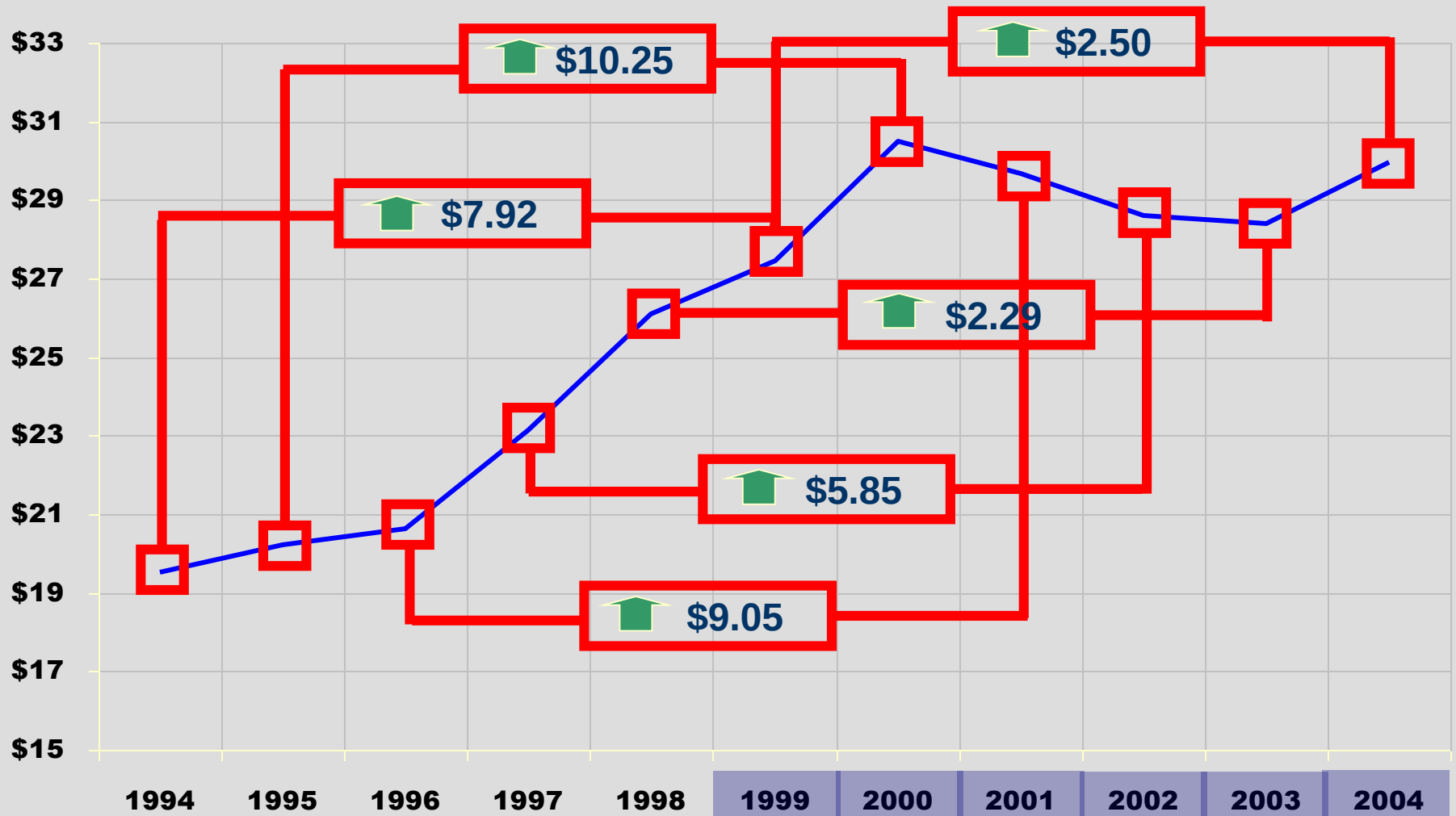
Actual rents always lag the market



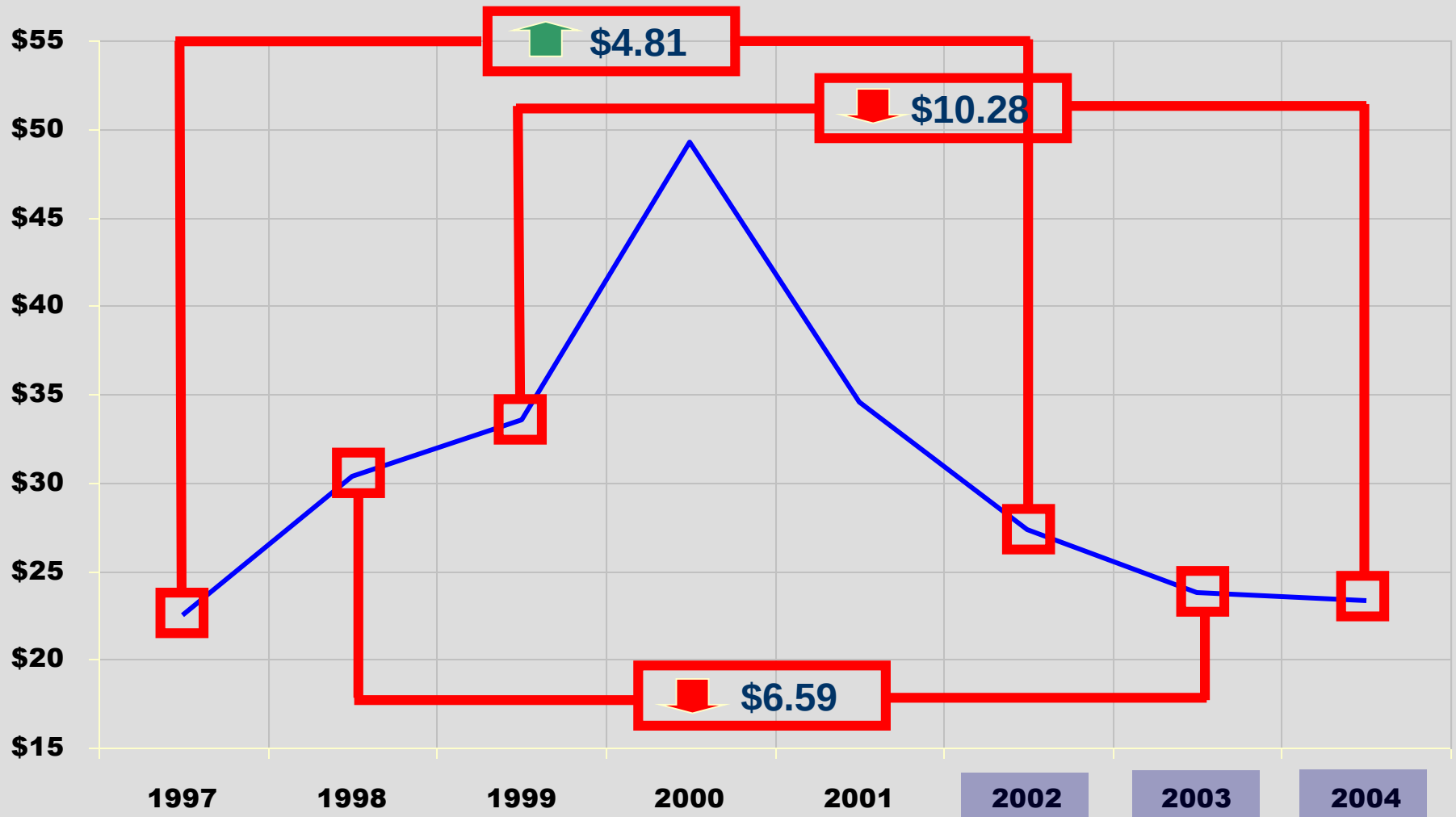
New York City 5 Year Rental Rate Rollovers



Washington DC 5 Year Rental Rate Rollovers



San Francisco 5 Year Rental Rate Rollovers



Political Legal Analysis

Here we review all land use controls at the local, state or national level

- zoning, regulatory boards, design issues, infrastructure access, covenants
- NIMBY's and communication avenues
 - **Research and anticipate the biases of individuals and groups (no excuse for lack of research here)**



Political Legal Analysis in places like Chicago

- **Must start** with the Alderman (50 each representing a district like city councilmen) in order to have a chance for land use approvals
- Be very very nice to them and meet with all the planners you can find.
- Consider hiring a “permit expeditor” and an economic inclusion consultant.

Political and Legal Analysis continued at the Federal, State and Liability Level Includes

- Phase 1 and Phase 2 Environmentals
- ADA controls
- Green design regulations and incentives
- Mold concerns and liability

Physical Design Analysis

■ Architectural Possibilities

- Design versus efficiency
- Ego versus functionality
- Original versus boilerplate
- Process: Renderings, Drawings, 3-D Modeling
- Design/build vs design and build (more contractor control when they pick architect)
- BTS concerns: generic space vs tenant needs

Design trends

- More Green design
- Intelligent or high performance “smart” buildings

Green Design

Sample Elements Include:

- Energy Conservation (windows, lights, solar power, air drying disks prior to cooling)
- Rain Water recycling and indigenous plant landscaping
- Non-toxic materials used in construction
- Indoor air quality, waste management
- Personalized under floor air controls
- Modular components that can be easily removed and possibly re-used.

More Green Design Features

- Natural ventilation
- Windows that OPEN!
- Optimized elevator locations

Green Design Standards

■ What is LEEDS?

LEED (Leadership in Energy and Environmental Design)

Developed by the U.S. Green Building Council (USGBC)

<http://www.usgbc.org/>

LEED Certification Five Step Process

- 1. Project registration – ideally during design phase
- 2. Integration – document green building technologies and strategies
- 3. Tech support – utilize tech experts
- 4. Document submission when near COO
- 5. Certification – preliminary and then final reviews

Leed's Categories and Point System

- **Sustainable site** (1 point each for urban redevelopment, brownfield redevelopment, public transport access, **bike storage**, alternative fueling station, heat island reduction features, etc. up to 14 points)
- **Water** (efficient landscaping, innovative wastewater treatment, water use reduction up to 5 points)
- **Energy** (CFC reduction, HVAC efficiency, renewable energy sources, ozone protection, total up to 17 points based mostly on efficiency measures)
- **Materials** (Storage and collection of recyclables, recycled building materials, local materials, renewable material up to 13 points)
- **Indoor Air Quality** (Monitoring devices, low emitting materials from paint, carpet, concrete, thermal and use monitoring sensors, daylight use up to 15 points)
- **Innovation and design process** (green housekeeping, user education, use of LEED professional, design up to 5 points)

Leed's Certification levels

- 26 to 32 points = certified
- 33 to 38 = silver
- 39 to 51 = gold
- 52 Plus = Platinum
- 69 Maximum score

A somewhat green and intelligent building sample

- The building is a 10-story office building in the city center of Copenhagen, Denmark. It was designed by the Danish architect Bjarne Selvig and completed in 2005. The building is a prime example of a green and intelligent building, as it has achieved a high level of energy efficiency and sustainability.
- The building's design is based on the principles of passive design, which aims to minimize the need for artificial heating and cooling. The building's facade is made of dark, reflective glass, which helps to reduce the amount of solar radiation entering the building. The building's windows are also designed to provide natural ventilation and daylighting.
- The building's interior is also designed to be energy efficient. The building uses a combination of natural and artificial lighting, and the artificial lighting is controlled by a smart system that adjusts the light levels based on the time of day and the occupancy of the building. The building also has a high level of insulation, which helps to reduce the amount of heat loss.
- The building's energy consumption is also low. The building uses a combination of renewable and non-renewable energy sources, and the non-renewable energy is generated by a highly efficient combined cycle gas turbine (CCGT) power plant. The building's energy consumption is also reduced by the use of energy-efficient appliances and equipment.
- The building's sustainability is also reflected in its low carbon footprint. The building's carbon footprint is significantly lower than that of a typical office building of the same size and location. This is due to the building's high level of energy efficiency and the use of renewable energy sources.
- The building's design and construction also took into account the needs of the building's occupants. The building has a high level of indoor air quality, and the building's design also takes into account the needs of people with disabilities. The building's design is also flexible, allowing it to be adapted to different uses in the future.

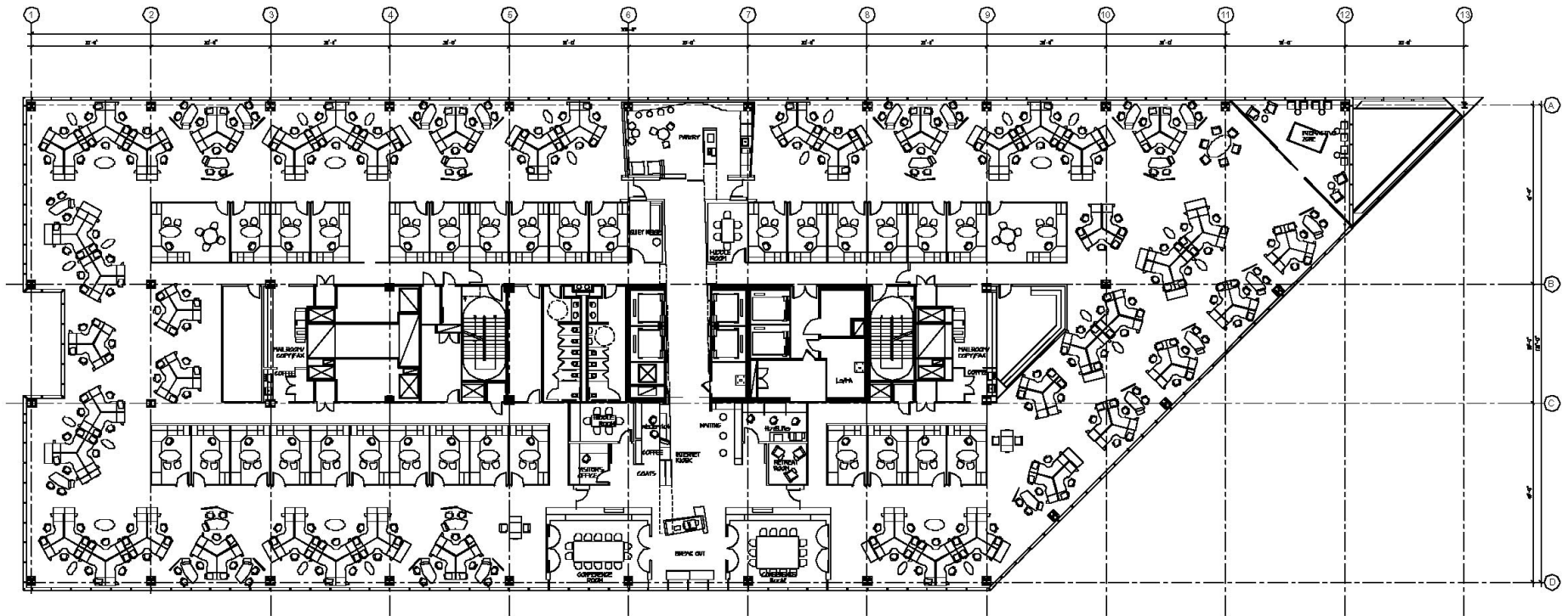


ABN AMRO plaza

540 west
MADISON



Typical Tower Floor



ABN AMRO plaza

preliminary floor PLANS



level 7
ROOF GARDEN



level 2
CAFETERIA

Features

- Seats over 800
- After hours operations
- Wide variety of selections



Raised Floor Mock-Up 12 inches



Raised Floor Installation



Raised floor finished vent under desks



Modular electric and data boxes fit into the same panels as floor vents



Modular electric and data boxes fit into the same panels as floor vents - closed



Work unit with seats on files to save space



Modular work unit



Data access control room



Clear or Opaque Gas Window Separators



Clear or Opaque Gas Window Separators



**Fire
Suppressant
Tanks Fill the
Computer
Server Room
with a low
Oxygen inert
gas in 10
seconds and
lower the
temperature**



NORTH CLINTON

Lower Level 2

Domestic
Water
Storage

Electrical Feed

Tele/Data Feed

Fuel Storage

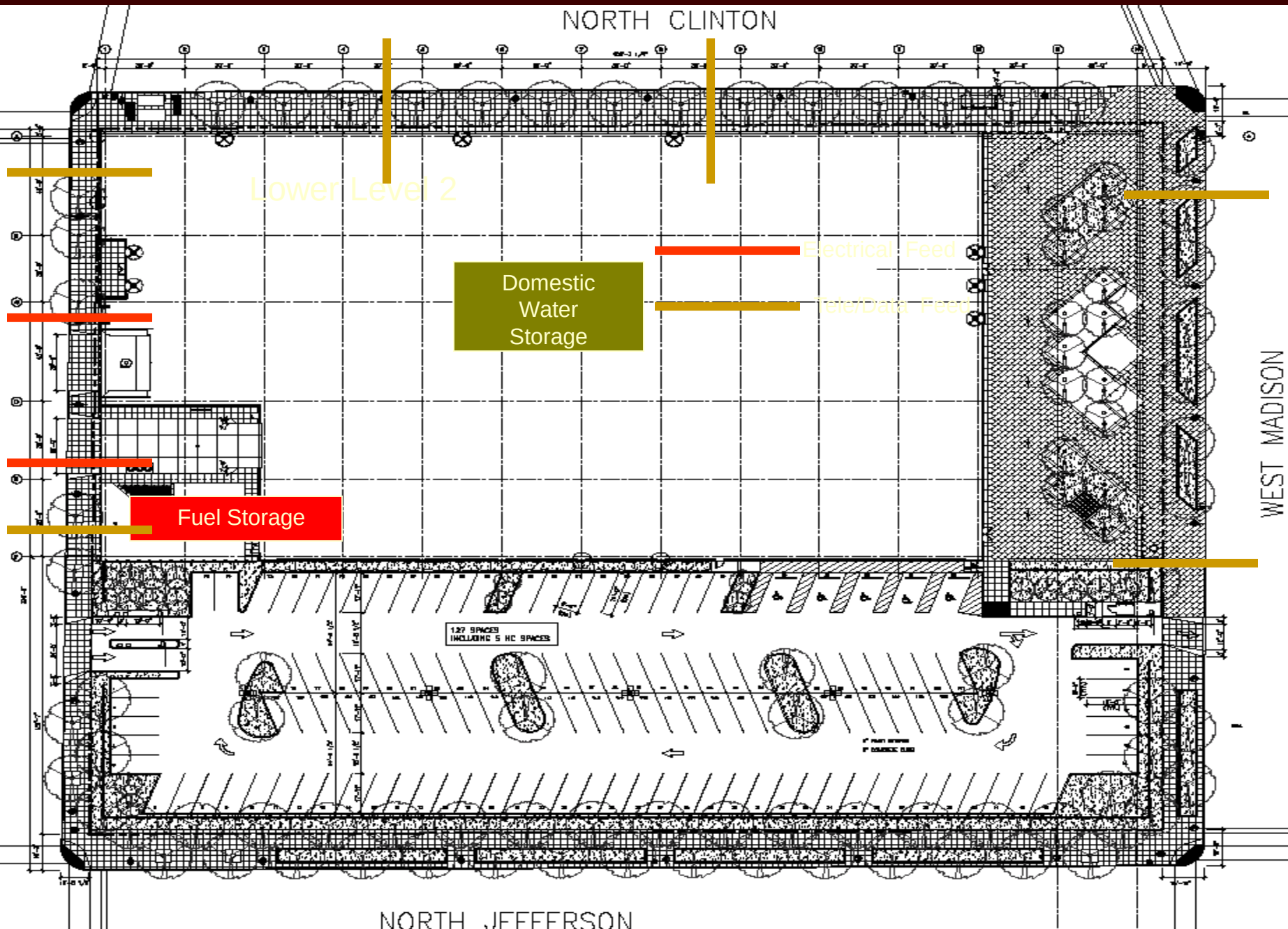
127 SPACES
INCLUDING 5 HC SPACES

1" PLANT BEDDING
BY SOURCE CURB

NORTH JEFFERSON

WEST WASHINGTON

WEST MADISON



Battery Racks



Generators for back up power



Ceiling Cameras motion activated



Physical Site Analysis

- What is site analysis?
- Location, Location, ...

Each characteristic can be thought of as a layer of information



Physical data like
major trees



Physical data
like topography



Physical data like
sewer locations or
sun path

Tying data to a location reference is called “Geocoding”

Physical Attributes and Issues of Concern

Size, shape, access

Topography

Geology

Vegetation, Insects,
Animals

Hazardous Wastes

Utilities

Archeology

Climate, sun, wind,
pollution, and noise

 Capacity of site, ingress/egress

 Drainage, views, layout

 Stability of site, compaction,
drainage, foundation costs.

 Endangered species, design
enhancement

 Liabilities and remediation

 Water, sewer, gas, elec. Access

 Presence of historic artifacts

 Physical design, siting
efficiency and appeal.

Geographic Information System (GIS) Tools

- **Geocoding** has opened up a whole new world of easier, better and quicker real estate/market analytical capabilities
- **Visualization** allows the user to gain insights they may not otherwise notice
- 80% of all real estate data can be mapped and visualized.

GIS systems through better spatial analysis tools also provide a huge leap forward in the **measurement of distance, i.e. using cell phone data and time tracking.**



Maps from Google Earth

Keyhole - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Refresh Mail Print Word Pad Internet Options People

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Frequently Asked Questions ?

What are Google's plans for Keyhole?	Will I be able to see my house?
Will my computer run Keyhole?	Why is it a subscription service?
When were these pictures taken?	More about Keyhole.

Keyhole Videos 



PLAY ANIMATION

Screenshots 

-  Zoom to street level
-  Type an address and fly to it
-  Tilt view to see terrain
-  Measure distance, email & print view
-  Find hotels, restaurants & other businesses

<http://www.keyhole.com/body.php?h=downloads> Internet

start Atlanta June 9 2005 Microsoft PowerPoint ... Keyhole - Microsoft I... 9:33 PM

Or www.airphotousa.com

■ Waterworld



Aerial Maps – Bay Fair Mall



Rapid Browsing!

Use Emporis Quickjump to jump between cities and even buildings.

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-  [Français](#)
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-  [Português](#)
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- [About Emporis](#)
- [For Journalists](#)

What is this website about?

Emporis is a provider of building-related data. The building industry widely uses Emporis to publish

EMPORIS Quickjump

Find your city:

Search

Find building
more than
100,000

Atlanta

Districts and Zones
Buildings
 High-rise Buildings
 Other Buildings
 Famous Buildings
 Construction Status
Companies
Images
Local Editorial Staff

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PLACE IS AVAILABLE.

Deutsche Bank



Atlanta

Population

423,019 in city and 4,844,526 in metro

Area

341 km² (132 mi²)

Metro Cities

Please select a link. 

Number of high-rise buildings

249 high-rise buildings ([all status types](#))

All completed [high-rise buildings](#) in Atlanta or more floors are listed in this database.

Find a building:

[Search tips](#) | [Advertising options](#)

Atlanta, GA

[Get the 10 day forecast](#)
[Pollen Reports](#)
[Airport Delays](#)
[Special Events](#)


65 °F

Sunny

Feels Like: 65°F

Humidity: 53%

Wind: WNW at 1 mph

Enter city/zip

[Download Desktop Weather](#)

About Atlanta

Birthplace of Coca-Cola (the most recognized brand name in the world) and the unofficial Capital of the South, Atlanta is one of America's most prosperous cities. Set in the beautiful red-soiled forests at the lower end of the Appalachian Mountains, Atlanta has kept much of its southern grace

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(c) Christopher



Districts and Zones

See buildings listed by geographic location in Atlanta.


[Buildings](#)



Do you have questions on tall buildings in Atlanta? Our editors can help.

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Atlanta

Buildings of the City



High-rise Buildings

This section holds technical data, photos, and detailed facts on skyscrapers in this city.



Other Buildings

Get more information on structures and low-rise buildings such as churches, towers, and similar building types.



Most Famous Buildings

Here you will find the most famous buildings high-rise buildings and sights of Atlanta.



Construction Status

Explore Atlanta and see buildings during their construction process.

Tallest buildings

#	Name	Height	Year
01.	Bank of America Plaza	312 m	1992
02.	SunTrust Plaza	265 m	1992
03.	One Atlantic Center	250 m	1987
04.	191 Peachtree Tower	235 m	1990
05.	Westin Peachtree Plaz..	220 m	1976
06.	Georgia Pacific Tower	212 m	1981
07.	Promenade II	211 m	1989
08.	BellSouth Building	206 m	1980
09.	GLG Grand / Four Seas..	186 m	1992
10.	Wachovia Bank of Geor..	169 m	1966

[\[view more\]](#)



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 **Buildings**

Bank of America Plaza

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Emporis Research

- NO DATA RESTRICTION
- INDIVIDUAL QUERIES
- EXPORT DATA TO EXCEL



Identification

Official name	Bank of America Plaza
Alternative names	*
Emporis Building Number	121137

Location

Street	600 Peachtree Street NE
Bordering street	Peachtree Street NE *
Postcode	*
Location Map	*
Community	Midtown *
City	Atlanta
Country	U.S.A.



(c) Patrick Beckers

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(c) Christopher Schlueter

Photo Compilation

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Building in General

[Type of construction](#)

high-rise building

[Structural materials](#)

*

[Facade systems](#)

*

[Facade materials](#)

*

[Facade colors](#)

*

[Main usages](#)

*

[Architectural style](#)

*

[Status](#)

completed

Go to Chicago

Facts

- The Bank of America Plaza is the tallest building in the southern United States, and the tallest in any state capital.
- It was built in only 14 months, one of the fastest construction schedules for any 1,000 foot building.
- Located on 3.7 acres on Peachtree Street, the tower faces its border streets at a 45-degree angle to maximize the views to the north and south.
- Crowning the building is a stepped pyramid formed from an open steel frame that tapers to a 90-foot high spire. Four hundred and five square feet of the spire is applied with 23-karat gold leaf.

Companies

owner

[CSC Associates, LP](#)

architect

[Kevin Roche John Dinkeloo & Associates LLC](#)

construction company

[Beers Skanska, Inc.](#)

structural engineering

[CBM Engineers](#)

structural engineering

[Newcomb & Boyd](#)

mechanical engineering

[Environmental Systems Design](#)

heating installation

[McKenney's, Inc.](#)

facility management

[Cousins Properties Inc.](#)

elevator supplier

[Otis Elevator Co.](#)

facade maintenance

Financial Analysis

- Two critical time periods:
 - construction and absorption period
 - and operational period

Start with the Pro-forma

- ESTIMATE OR CALCULATE
- Estimate gross rent
- Less vacancy and collection loss
- Equals Effective Gross Income (EGI)
- Less Operating Expenses (OE) including reserves
- Equals Net Operating Income (NOI)

Proforma (cont.)

- Net Operating Income (NOI)
- Less mortgage payments
- Equals cash flow before taxes (BTCF)
- Plus mortgage principal repaid
- Less depreciation
- Equals taxable income
- Taxable income times tax rate equals taxes
- BTCF less Taxes or (taxes saved) equals
ATCF

Ratios Calculated from the Proforma: two types

- Leverage and operating ratios
- Simple profitability measures

Leverage and Operating Ratios

- Loan to value ratio = mortgage loan request/final value estimate (Alternatively for internal use: loan to cost ratio)
- Debt coverage ratio = net operating income/annual sum of monthly mortgage payments
- The Annual Mortgage Constant = the sum of the monthly mortgage constants or MMC for one year
- $MMC = \% \text{ per dollar of loan for principal} + \text{Interest}$ Note: Use $PV = 1$, $N = \text{Term}$, $I = \text{rate}$
- Example

Example of Annual Mortgage Constant

- Assume 8.25%, 25 year am, $PV = 1$, $mmc = .00788450$
- $AMC = .09461402$ or 9.461402%
- Note: Positive financial leverage with respect to cash flow if the ROA or going in cap rate (defined below) exceeds 9.46%
That is the NOI over the cost.

One last operating ratio of importance

- Breakeven point = (operating expenses plus mortgage payments)/gross potential rent

Note: Most lenders will still use 5% or more vacancy no matter what – even with single occupancy.

Compare to the market?

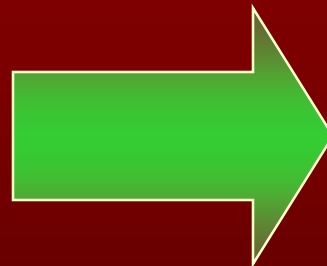
Simple Profitability Measures

- Cash on Cash = projected before tax cash flow/cash equity
 - For REITs it's FFO or AFFO
- After tax return on equity = $\frac{\text{after tax cash flow}}{\text{cash equity}}$ after
- Return on asset = net operating income/total development costs also known as a **Cap Rate**
- **IRR** or Internal Rate of Return
- NPV = PV of all cash flow at the RRR less initial investment. (Note: RRR = required rate of return)

Moving from financial fundamentals to financial feasibility

Financial
Fundamentals

$$PV = \frac{\$FV}{(1+i)^n}$$



Financial
Feasibility



**Pos
NPV**

Techniques to Determine Financial Feasibility

- Two techniques
 - Front Door Technique
 - Back Door Technique

Front Door Technique

- Starts with **cost** estimates and derives the requires rents or selling prices that make a project feasible
- Key questions:
 - “Can these rents be supported in the market place?”
 - “Pre-leasing potential and absorption?”
 - “Potential buyer pool or pre-sale?”

Back Door Technique

- Starts with the market analysis of potential **rents** (or pre-leasing offers) and derives the maximum cost that can be put into the development given the cost of capital and operating cost assumptions
- Key question: “Can the project be built at this cost or less?”

Front Door Financial Feasibility Analysis Expanded

- Estimate of site acquisition cost
- plus estimate of all construction costs
- equals total expected development costs which is broken into
 - Equity Servicing and
 - Debt Servicing

Equity Servicing

- $\text{Equity} = 1 - \text{loan to value ratio}$
- Then multiply Equity dollars times the
- Required cash on equity yield to derive the minimum initial cash flow to equity referred to as the “equity servicing”

Debt Servicing

- Total Expected Development Costs
- times the loan to value ratio
- equals permanent mortgage
- times the annualized mortgage constant
- equals debt servicing required per year

Front Door

Financial Feasibility (cont.)

- Debt servicing plus equity servicing equals the sum or total annual NOI required
- plus annual projected OE (not passed through to tenants)
- equals effective gross income or EGI required
- divide EGI by the expected occupancy rate
- equals gross revenue/leaseable square ft. area
- equals rent required per square foot
- Is this average required rent achievable?

Front Door Financial Feasibility from the Lender's Perspective

- site acquisition plus construction costs
- equals total expected development cost
- times loan to value ratio = permanent mortgage
- times annualized mortgage constant equals
- cash required for debt service times
- lender required debt service coverage ratio
- equals required net operating income or NOI

Front Door for Lenders(cont.)

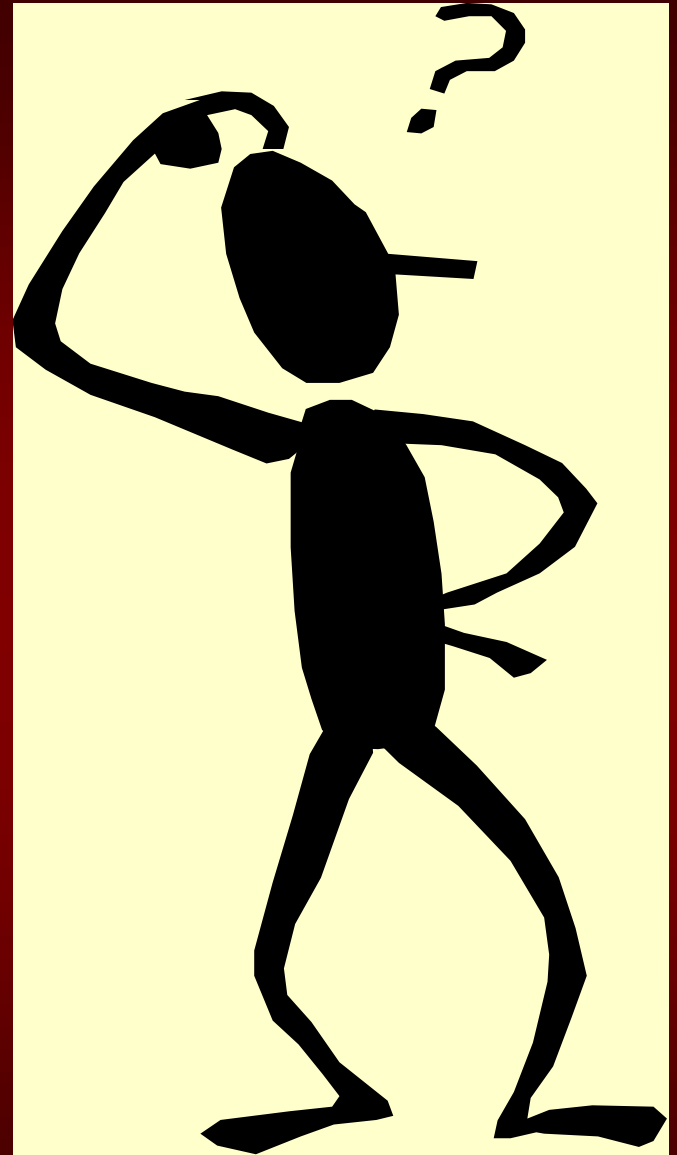
- net operating income plus
- estimated operating expenses (not passed through the tenants) equals required effective gross income
- divided by the expected occupancy rate
- equals required gross revenue/leaseable square feet = rent required per square foot
- Question: Is this average required rent achievable?

Back Door Approach to Financial Feasibility from the Lender's Perspective

- Total Leasable Square feet (building efficiency ratio times the gross area)
- times expected average rent per square foot
- equals the gross rent
- less expected vacancy
- equals expected effective gross income
- less projected operating expenses equals
- expected net operating income/debt service coverage ratio/annualized mortgage constant/maximum loan to value ratio

Confused Yet?

- Take this last term and break it down



NOI/debt service coverage ratio/annualized mortgage constant/maximum loan to value ratio

- $\text{NOI/DCR} = \text{total payments per per year that can be put towards supporting the mortgage}$
- Divide this by the annualized mortgage constant and we derive the total value of the mortgage
..... a PV calculation!
- Divide this by the LTV and you get the total supportable project value
- Note: LTV is based on “value” and may be different from Loan To Cost.

So all this.....

- Equals maximum supportable total project costs
- Can it be built for this including all costs? Or
- Take the Max project cost and subtract expected construction costs (other than site) which then
- equals maximum supportable **site** acquisition cost
- And last can the site be acquired for this or less?
- AKA the “Land Residual Technique” in appraisal

Homework

The Lakeside Case

Introduction, Atlanta, Georgia

Proposal: An upscale office project of 154,595 leaseable square feet in Northern Atlanta on 2.43 acres of land.

The Lakeside Case: Capital

Capital Required: \$23.5 million with land valued at \$3.5 million contributed as equity by the developer (actual cost was about \$1.5 million), and \$3.5 million contributed as additional capital from foreign investors and \$16.5 million derived from a construction loan/semi- permanent mortgage.

Thus, \$7 million should be considered equity.

The Lakeside Case: Debt

The debt costs averaged 8.4% (annualized mortgage constant) while the target stabilized cap rate (ROA) was 10.5% resulting in an implied target cash on cash yield of 15.4% with the goal of a 19% IRR to the equity investors.

The Lakeside Case

Construction Costs

Construction Costs:

■ Land	\$3,500,000
■ Shell, site, parking	11,361,036
■ Performance Bond	94,120
■ Shell Contingency	493,873
■ Technical Assistance	570,000
■ Loan Orig & Closing	170,000
■ Legal Fees	165,000

Lakeside construction costs cont'd:

■ Development Fees	250,000
■ Construction Period Interest	184,000
■ Tenant Finish	3,091,900
■ Leasing Commissions	1,920,071
■ Legal Fees - lease up related	25,000
■ Marketing Center Costs	300,000
■ Lease Up Contingency	1,375,000
■ Total	\$23,500,000

Lakeside Market Conditions

Class A market vacancy was 4%, Class B vacancy was 8.5%. New construction of several million square feet was coming on line in the region within the next few years and a longer term vacancy rate from 4% to 17% was possible depending on the economy and competitive lease rates. Rents at the time of initial analysis were \$23 to \$24 per square foot per year for local high quality office property net of expenses. The operating expenses were estimated to run \$7.50 per square foot.

Lakeside Case: Homework Question?

- What type of gross rent is needed if vacancy runs 4, 6, 8 or 17% to make this project feasible? Assume that the operating expense assumptions hold true for now.)

Lakeside Case Simple Worksheet

The Debt Side Requires $\$16,500,000 * .084 =$

The Equity Side Requires $\$7,000,000 * .154 =$

Sum the above together

Add operating expenses times 154,595 sq ft =

Equals required Effective Gross Income

Divide this by the expected occupancy rate to derive the gross rent required for each scenario requested.

The Lakeside Case results

- At 4% vacancy Min Rent/Sq ft = \$24.41
- At 6% vacancy Min Rent/Sq ft = \$24.93
- At 8% vacancy Min Rent/Sq ft = \$25.48
- At 17% vacancy as in the current market the Min Rent/Sq ft = \$28.24 while the \$24.41 figure is closer to the market.
- Note these are gross rents and operating expenses below the \$7.50 will go to the benefit of the landlord.

Is this feasible?

- Barely, but we might re-calculate the cost of capital and minimum required returns based on a lower cost of equity. If we use \$1.5 million instead of \$3.5 million for the developer and then use a higher rate of return this might work, i.e.
- $\$16.5 \text{ million} * .084 = \$1,386,000$
- $\$3.5 \text{ million} * .154 = \$ 539,000$
- $\$1.5 \text{ million} * .25 = \$ 375,000$
- Total is \$2,300,000 versus \$2,464,000 of required NOI before which lowers the rent needed by \$1.06 per sq ft. Now it works if rents above \$24.48 can be hit with vacancies not above 8%. And it did.