

JAMES A. GRAASKAMP COLLECTION OF TEACHING MATERIALS

II. CLASSES AT THE UNIVERSITY OF WISCONSIN--MADISON

E. Business 550/705: The Real Estate Process

3. Assorted Lecture and Discussion Notes:
Various Years

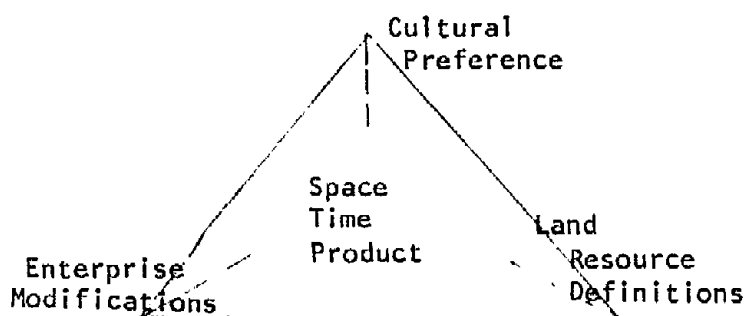
Lecture #1

Urban Land 550

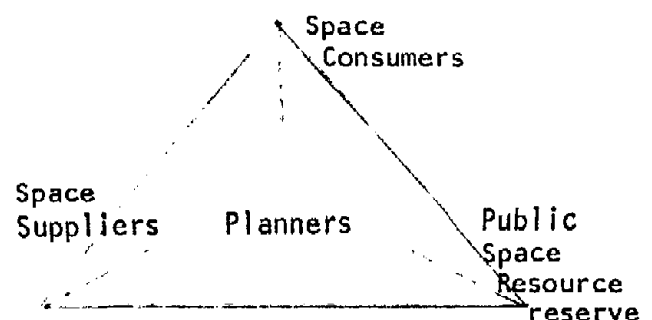
- I. Introduction
 - A. Format of the course
 1. Heavy reading
 2. Field application to an investment case
 3. Exams plus 3 problem sheets
 4. 5 credits worth of work
 - B. Introduce teaching assistants
 1. Don Weiss - administrator - Rm 91 Bascom
 2. Lynn Woodward
 3. Mike Robbins
 - C. Textbook and materials available from Rm 91
 - D. Real Estate Club program, book bargains, and constructive criticism
- II. This fall marks a redefinition and restructuring of the course from previous periods. The real estate business is evolving so fast, this represents the third time since 1962 I have thought it desirable to shift concepts and emphasis of the course. Thus the readings and lectures will be substantially different in form and content from previous semesters and we will value the student critiques which you can provide at the end of the semester.
 - A. Speaking style is fast so we will try to provide a brief lecture outline each day to structure your lecture notes. We will try to use slides and overhead transparencies to emphasize major points or provide examples.
 - B. Many of you are not business students and will have some trouble with present value concepts and cash flow. Don't hesitate to ask one of the T.A.'s or myself for assistance because you will have to learn it to survive the course.
 - C. We must insist that you attend your regular assigned quiz section rather than one that is more convenient to keep class sizes in balance so you can ask questions and we conform to the T.A. contract.
- III. Traditionally real estate and urban land economics have treated land as a commodity and value as the central issue. In essence highest and best use of any particular piece of ground was that use which was legal, technically feasible, in demand and produced the highest present value of future benefits measured in dollars.
 - A. The theory began as an economic concept to allocate land use ala Marshall.

1. Such a premise depends on the assumption that one can measure all costs and benefits, external as well as internal, and convert to a dollar figure.
 2. Such a premise assumes land to be a commodity and that rational objectives are always to maximize present worth.
 3. Such a premise assumes perfect competition, a knowledgeable market, and sufficient liquidity that capital can move in and out in response to marginal demand and level of profitability.
 4. Such a premise implicitly assumes that what is good for one parcel is collectively desirable in the aggregate. Highest and best is pompous.
- B. The viewpoint of this lecture is somewhat at odds with this simplistic approach even ^{the} this traditional approach will be represented by your textbook.
1. The issues we hope to present and discuss as a premise of urban land economics and real estate are those of the instructor and may at times be a little abstract or complex.
 2. Those who advance highest and best use theory or are unhappy with the complexities of a systems approach such as we will advance might consider Pat Moynihan relative to housing policy: "... we have never learned to be sufficiently thoughtful about the tasks of running a complex society... the essence of tyranny is the denial of complexity. It is the great corrupter and must be resisted with purpose and with energy...What we need are great complexifiers..."
- IV. Absolutely basic to the theme and organization of this course are a number of definitions of distinctions in terminology. It's necessary to distinguish real estate from the real estate process. Moreover, the business of real estate is only one segment of the system of factors which comprise the real estate process.
- A. Real estate is artificially differentiated space over time with a fixed reference point to earth. Somebody invented real estate by rolling a rock in front of a cave to provide the natural void with an artificial attribute of warmth, privacy, defensibility or exclusiveness. The space delineated was intended to house some activity, domestic or whatever.
1. Caves may seem far-fetched but if a lifetime of man is 60 years the history of man is accounted for by 800 lifetimes. Of that, man lived in caves for 600 lifetimes and thus the cave analogy explains 75% of real estate!
 2. The utility of the cave--the economic good was its space for housing an activity and not the physical elements of the cave wall or the rock. All our improvements from survey monument to skyscraper, from condominium plat to a skylab hovering over a single point, are simply means of delineating space over time for a purpose.

3. Obviously, for the cave to have value, it depends on where it is and what activity is to be housed. These issues are derived from the cultural area.
- B. Since the cave as a natural void apparently did not suit the cultural needs some improvements and services were required to smooth the interfacing of people and the land. Thus we have three elements to the real estate process, the cultural preferences, physical land resources, and the management of capital and services to reduce the harsh irritations of adapting culture to land.
- C. The real estate business is essentially a service industry which utilizes some very dramatic and large scale pieces of hardware. It is concerned with the improvement, management, marketing, financing, of space-time at a given location to house any manner of activity.
1. While a business school should be primarily concerned with the business of a real estate enterprise, it is first necessary to understand the context in which that enterprise functions.
 2. To judge the success of an artistic effort, one must first define those elements which could not be changed by the artist, the form giver. In making a pot to boil water over a fire, one must take into account the nature of clay as a material, its weight, elasticity, coefficient of expansion reaction to a flame as well as the purpose for boiling the water and the users needs to lift the pot, pour the water, conserve fuel, etc. It is then possible to compare a given pot and see how well it fits the context. Only in fitting the ensemble of form and context can one understand the success achieved by the potter.
 3. In the same way the real estate enterprise is responding to the limitations imposed by the land, the cultural preference, and its own inherent limitations in terms of money, talent, and objectives.
 4. For example, how does one supply housing to the low income family at a place they need to live at a price that they can afford while observing the ecological limitations of the land and the solvency of the enterprise providing housing services?
 5. This three cornered system could also be abstracted in economic terms to a space user, base supplier and public reserve of space resources. The wouldbe planner is caught in the middle as an arbitrator of these three differing viewpoints:



Context of Real Estate Process



Real Estate Decision Makers

- D. The three elements of the real estate process can be further subdivided into additional subsets of factors which all define the context to which the real estate enterprise must adapt, must fit. The real estate business fails when a substantial misfit or irritant remains and succeeds to the degree that it has adapted to each subset of factors in the context. For example, cultural preferences and land resources might be further reduced to subsets of influences or forces shaping the real estate enterprise.
1. Cultural consensus on values and objectives operates through:
 - a. Institutions
 - b. Government
 - c. Peer group
 2. Individual consumer behavior operates through the marketplace - our cheapest regulation machinery, subject to:
 - a. Rational limitations and objectives
 - b. Irrational limitations and objectives
- E. Definition of the land resource will require an examination of its:
1. Physical static attributes
 2. Organic ecological attributes
 3. Legal attributes
 4. Dynamic social attributes
- F. The interfacing of cultural preferences and the resource called land is brought about by some form of enterprise.
1. The systems engineer sees the eventual form of an enterprise, in terms of both its configuration and behavior, as representing a negotiated consensus between two general sources of power - the power of the environment to dictate form and behavior of the organization on the one hand and the power of the organization to decide for itself what its characteristics and behavior will be on the other.
 2. All the subsets of factors must eventually be reconciled into a project, a synthesis of subsets, and this configuration or behavior is finally reduced to a flow of cash outlays and receipts over time. Just to survive the cash flows must balance, that is the enterprise must be solvent and that is the basic determinant for both and private enterprises. Thus public and private solvency is the central issue in urban land economics and not value.
 3. As a result this course will be somewhat schizophrenic - the textbook will pursue the traditional party line while the supplementary readings will emphasize my viewpoint of cash flow.

4. We will begin teaching cash flow early in the course to put across the basic concept in terms of the dynamic interaction of various financial components, assumptions, and measures of yield and risk for any enterprise. Then we will begin to examine the current issues within our culture and inherent in land resource attributes as they would affect cash flow and ultimately cash solvency of the consumer, the supplier, and the society. Government policy in social reforms depend on the finesse with which cash flow can be manipulated to avoid the inexorable logic of cash solvency and survival in a free market.
- V. Any organized undertaking is an enterprise. Some enterprises involve cash expenditures and receipts. The classic cash cycle is a manufacturing firm which goes cash-raw material-goods in process-finished inventory-accounts receivable-cash.
- A. Enterprise management does not require any particular theory of capital, scale, nor cash to be appropriate. Indeed the majority of enterprises may not involve cash at all.
 - B. The traditional functions of management imply a sequence of planning, organizing, directing, and controlling - but this is somewhat circular as it defines management as doing management tasks.
 - C. More recently John Beckett in a little book called Management Dynamics: The New Synthesis (McGraw Hill 1971) indicated the element of functions in a systems approach of any organization or undertaking might be described as:
 1. Goal-setting
 2. Forming policies
 3. Searching for opportunities which are consistent with policies
 4. Selecting opportunities which are consistent with policies
 5. Designing systems for capturing selected opportunities
 6. Installing systems for capturing selected opportunities
 7. Operating the systems that have been installed
 8. Maintaining and continuously perfecting the operating systems
 - D. The list above suggests a flow of events, the presence of feedback, and expresses very clearly the need to convert value judgments in the form of goals to policies or standards or criteria with which to screen alternatives and select courses of action.
 1. One function of the course would be to identify various subsystems in the real estate process such as finance, marketing, development, regulatory.
 2. Secondly we want to suggest some of the values, objectives, and criteria by which these systems select and pursue their opportunities.
 3. During the semester we wish to trace the feedback occurring between the various subsystems and the larger categories of land, culture, and enterprise.

- E. If it sounds complex, it is. However, I know no other area of business enterprise which has more high drama, more opportunity for the generalist and universal curiosity, and more opportunity for impact than real estate. The real estate process sooner or later represents the final battle ground of all the conflicting virtues and weaknesses of our society.
1. We are an urban society which will perish unless we solve our urban problems.
 2. Even if you are not intending to be in real estate, we hope to make you a knowledgeable critic of the ensemble of real estate forms and context so as consumers and voters you can encourage the successful and avoid the charlatans without being so paranoid about real estate you can't tell your true friends from your enemies.

THE REAL ESTATE PROCESS
Business 550/705

ADMINISTRATIVE GUIDELINES

OFFICE HOURS

- Feel free to consult any of the Bus 550/705 teaching assistants during their posted office hours.
- Please arrive at the T.A.'s Office well-prepared (i.e., with all relevant class notes, worksheets, etc. and after having carefully read all assigned readings to date).
- Students who arrive in person at the office will be given priority over students calling by telephone.
- If other students are waiting to see the T.A. after you, please limit your time with the T.A. to ten minutes. If additional time is necessary, arrange an appointment with the T.A. outside of office hours.
- Phone calls to the teaching assistants outside of office hours should be for administrative purposes only (e.g., "I'm in the hospital recuperating. Can I arrange to take a make-up exam?") and not for consultation purposes.

ATTENDANCE

- Prompt and regular attendance of all lectures and discussion section sessions is an essential part of this course.
- If you miss a lecture, try to get a copy of a classmate's notes and promptly stop by the T.A.'s Office during office hours and pick up a copy of any lecture handouts for the missed day (the T.A.s do not bring past handouts to subsequent lectures). In any case, lecture notes are a poor substitute for attendance. Professor Graaskamp's lectures are full of thought-provoking illustrations of the concepts presented in the course -- such examples rarely show up in detail in your classmates' notes.
- If some week you can't attend your regular discussion section, attend one of the other four discussion sections that week.

GRADING

- Grading will usually focus on the "4 C's" (clarity, conciseness, completeness, and correctness) and at times will be very detailed. Superficial knowledge or awareness will be given little, if any, credit in this course. Students should strive for (and be able to express in written essay form) a thorough understanding of all material presented in the course -- including all assigned readings.
- All relevant supporting calculations necessary to arrive at a correct solution manually must be shown in clear, step-by-step form -- with all equations, variables, input values, and parameters being clearly-labeled and well-organized -- regardless of whether or not a calculator or computer was used to facilitate the analysis.

GRADING (Continued)

- While you are encouraged to work with your classmates when necessary to figure out how to solve a problem set, the write-up of the solution to each part of each problem set should be entirely your own work and in your own words. When "discuss/explain" answers appear to be substantially the same (i.e., exactly the same or virtually the same except for superficial re-wording), all of the similar papers will be subject to a severe penalty (i.e., will lose most of the possible points on that section) proportional to the number of similar papers. Who wrote the answer originally will be irrelevant.
- Any cheating on an exam will result in an "F" for the course and the instigation of formal procedures for the expulsion of the student from the University (pursuant to University policy).

PROBLEM SETS

- Read "GRADING" section first.
- Preparation for solving the problem sets includes reading all of the assigned readings to date -- so don't fall behind.
- Always try to work through the problem set before the next discussion section session so that you can ask questions in class and/or benefit from the questions asked in class by others.
- If stumped by part of a problem set, see a T.A. during office hours as soon as possible -- don't put off solving the problem set.
- Problem sets will be due by the beginning of lecture (11 AM) on the days indicated in the syllabus (unless due date is changed by the T.A.s). A large box will be provided near the entrance to the lecture hall in which to deposit your problem set. The box will be removed promptly at the beginning of the lecture and all papers turned in subsequently will be considered late.
- Penalties for late papers will be
 - 0 to 24 hours late lose 10 points
 - 24 to 48 hours late lose 20 points
 - More than 48 hours late lose all points.
- Problem sets can be turned in early to a Bus 550/705 T.A. during office hours, at discussion section sessions, or at the 550/705 lectures.
- Do not turn in problem sets by putting them in the T.A.'s mailbox or by sliding them under the T.A.'s Office door (such papers are occasionally lost and, hence, no responsibility for them will be accepted by the T.A.s).

EXAMS

- Read "GRADING" section first.
- Please arrive at least five minutes early and sit in front-to-back rows with no one next to you. All study materials should be completely out-of-sight upon the proctor's request. Do not write anything on anything until instructed to do so by the proctor. And do not talk once the exams begin to be distributed. Thank you for your cooperation.

Definitions:

Real estate -- space delineated by man, relative to a fixed geography, intended to house an activity for a specific period of time.

The real estate process -- the dynamic interaction of three major groups -- space consumers, space producers, and the public infrastructure group -- regarding the production, ownership, and use of real estate.

Space consumer group -- consists of all entities which use (or consume) real estate. Three subgroups can be identified:

Individual space users -- attempt to rent or buy real estate to house their specific needs.

Collective space consumers -- generally pursue their interests in real estate activity through the political systems which regulate land use and space production.

Future space consumers -- are typically represented by proxy, either by developers who anticipate the need to change the use of a building in the future or by the judiciary or special interest groups who perceive some trusteeship of the land for future generations.

Space production group -- includes all forms of expertise necessary to convert from space-time requirements to money-time (e.g., developer, lender, general contractor).

Public infrastructure group -- includes all enterprises that provide a network of tangible and intangible off-site systems for the benefit of individual space users. (Examples include: street, water, and sewer systems; school system, and judicial system.)

Highest & best use (HBU) -- that use which would maximize the owner's wealth (i.e., the use which is the most profitable over a specific period of time -- taking risk and the time value of money into account).

Most fitting use -- is that use which is the optimal reconciliation of effective consumer demand, the cost of space production, the cost of providing public infrastructure services, and the fiscal and environmental impact on third parties

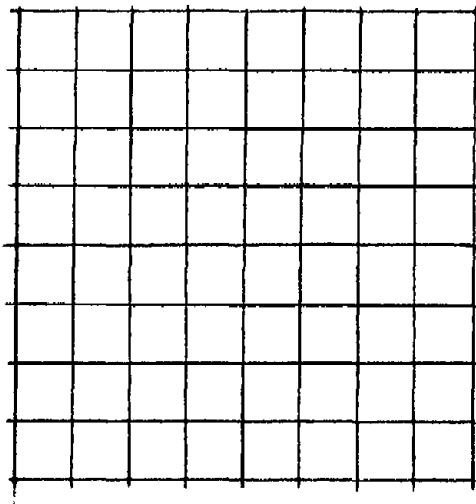
Most probable use -- is that alternative course of action which is closest to being the most fitting use while recognizing the strong constraints imposed by current political factors, the state of real estate technology, the personalities and talents responsible, the money market, and short-term solvency pressures on space consumers, space producers, and the public infrastructure.

Categories of site attributes:

- (1) Physical (static) attributes
- (2) Legal-political attributes
- (3) Linkage attributes
- (4) Dynamic (perceptual) attributes
- (5) Environmental attributes

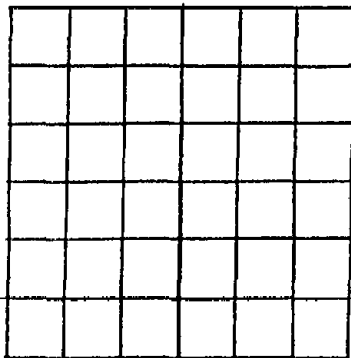
I. Legal Description of Real Estate

A. Government Survey System



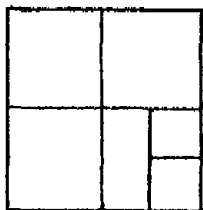
Meridian
Parallel
Principal Meridian
Base Line
Tier
Range
Township
- size
- numbering

Township Tier _____, Range _____



Section
- size
- numbering

Section _____ of Township Tier _____,
Range _____



Fractional Parts
- description
- size

B. Metes & Bounds

- how it works:
- wrt rural land:
- wrt urban land:

C. Plats

- how created:

- how used:

D. Street Address

- OK to use for:
- problems with:

E. Reference to Outside Facts

- valid only if:

II. Recording of Data

A. Register of Deeds

B. Constructive Notice

C. Actual Notice

III. Land Use Controls

- intent:

- how used:

A. Private Sector

1. Restrictive Covenant

- created by:

- must be recorded

- renewal in WI:

- common restrictions:

2. Easement

- definition:

- how used:

B. Public Sector

1. Zoning

- concept:

- evolution:

- wrt terminology:

2. Subdivision Regulations

- when apply:

- intent:

- extra-territorial:

- requirements:

3. Official Map

- shows:

- guarantees:

4. Safety Codes

- intent:

- periodic inspections:

5. Highway Access Restrictions

- access:

6. Shoreland Zoning

- intent:

- provisions:

7. Floodplain Zoning

- intent:

- DNR:

8. Interstate Sales of Subdivided Land

- when apply:

- intent:

- requirements:

Lecture #1 Outline

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I. & II. Introductory Comments

II.

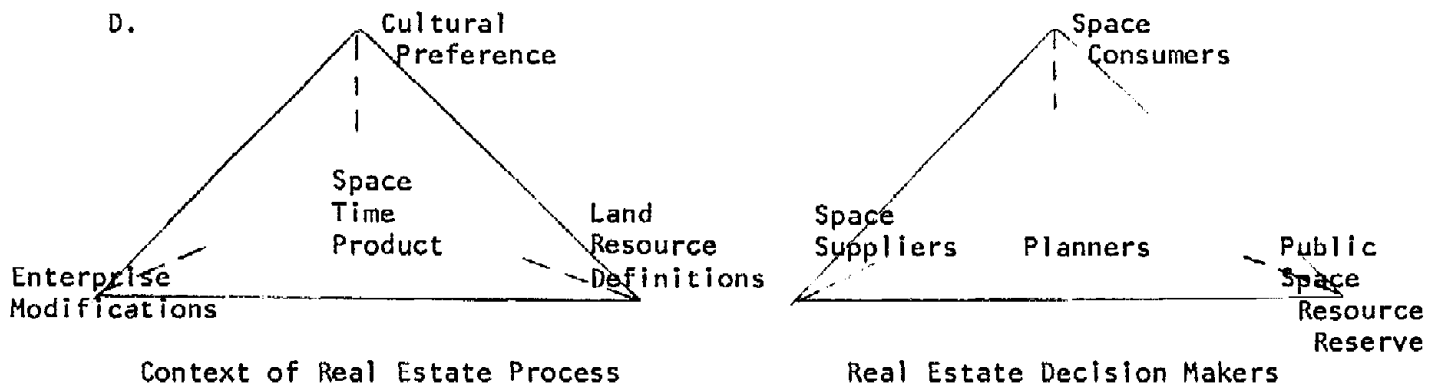
III. Traditional viewpoint - Land is a commodity and value the basic allocation device.

- A. Highest and best use of a real estate interest is that use which is legal, feasible, in demand, and produces the highest present value of future benefits in dollars over a specific time.
- B. This course sees land as a public utility resource, cultural values determining what's "best", and the real estate business has the enterprise of fitting money to the context of land and culture as an interfacing catalyst.

IV. Some basic definitions

- A. Real estate is artificially differentiated space over time with a fixed reference point to earth.
- B. The real estate process is the interfacing of cultural preferences, physical land resources, and enterprise management of capital and services.
- C. Real estate enterprise is concerned with the production, management, marketing, and financing of space-time to house any activity. It is essentially a service industry.

D.



E. Cultural consensus on values and objectives operates through:

1. Institutions
2. Government
3. Peer group
4. Consumer behavior in market place

Lecture 1 Outline (Continued)

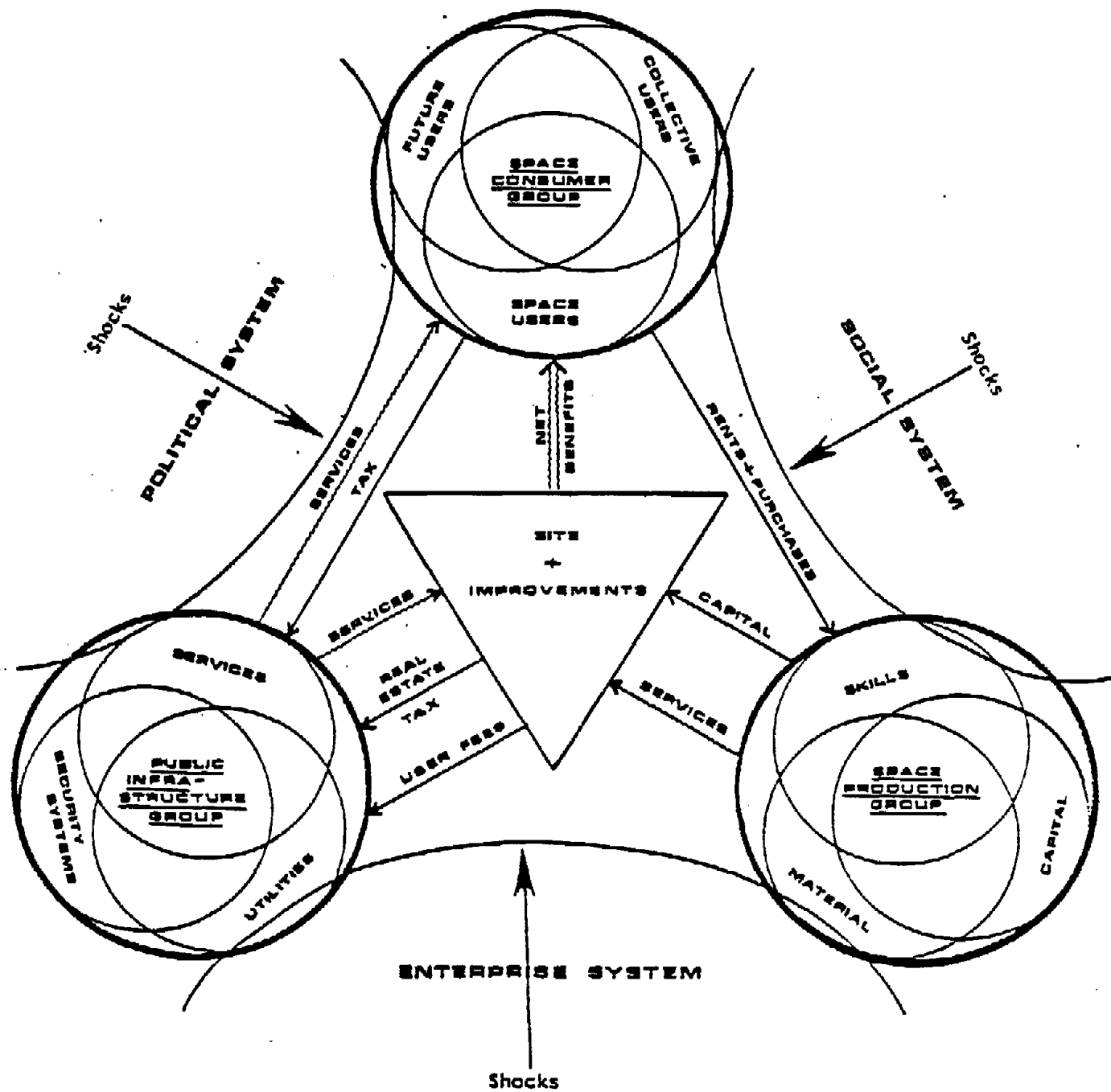
Urban Land 550

- F. Definition of land resource must include:
 - 1. Physical static attributes
 - 2. Organic ecological attributes
 - 3. Legal attributes
 - 4. Dynamic social attributes
- G. Interfacing of cultural references and land resources is brought about by some form of enterprise. An enterprise is any organized undertaking.
 - 1. The systems engineer sees the eventual form of an enterprise, in terms of both its configuration and behavior, as representing a negotiated consensus between two general sources of power - the power of the environment to dictate form and behavior of the organization on the one hand, and the power of the organization to decide for itself what its characteristics and behavior will be on the other.
 - 2. Real estate enterprise is a cash cycle enterprise. A real estate project is a synthesis of attribute subsets converted from space-time to money-over-time. Cash flows must balance. Thus, public and private solvency of an enterprise is the central issue in urban land economics, and not value.
- V. The systems approach to any level of organization or enterprise may be described as requiring the following functions:
 - 1. Goal-setting (value judgments)
 - 2. Forming policies (standards)
 - 3. Searching for opportunities which are consistent with policies
 - 4. Selecting opportunities which are consistent with policies
 - 5. Designing systems for capturing selected opportunities
 - 6. Installing systems for capturing selected opportunities
 - 7. Operating the systems that have been installed
 - 8. Maintaining and continuously perfecting the operating systems

The Real Estate Process - 550 & 705
Lecture Outline #1

- I. Traditional real estate and land economics has always treated land as a commodity and value as a central issue. That's what your textbook says. IN essence highest and best use of any particular parcel of ground was that use which would maximize the owner's wealth in a specified period of time, i.e., the highest present value of a stream of future benefits measured in dollars.
 - A. The theory had its economic roots in Marshallian economics as a method to allocate uses to the land. Presumably those who could pay the most were those that anticipated the greatest producers surplus and society was served by maximizing economic surplus.
 - B. Highest and best use replaced social history where there was a consensus of land use prevailing over long spans of time where culture, technology, and population was static. Development of new world lacked all of these conditions for social consensus on land use allocations.
 - C. The concept of highest and best use, even when qualified as that use which is legal, technically possible, and in demand has some simplistic and questionable premise:
 1. Such a premise depends on the assumption that one can measure all costs and benefits, external as well as internal, and convert to a dollar figure.
 2. Such a premise assumes land to be a commodity and that rational objectives are always to maximize present worth.
 3. Such a premise assumes perfect competition, a knowledgeable market, and sufficient liquidity that capital can move in and out in response to marginal demand and level of profitability.
 4. Such a premise implicitly assumes that what is good for one parcel is collectively desirable in the aggregate.
 5. The semantics of highest and best is vague at the very least and arrogant in the extreme. But it is simple.
 - D. This course will be built around a concept of most fitting use and most probable use.
 1. Before defining these terms some other basic definitions are required to suggest the complexity.
 2. Those who advance highest and best use theory or are unhappy with the complexities of a systems approach such as we will advance might consider Pat Moynihan relative to housing policy: "...we have never learned to be sufficiently thoughtful about the tasks of running a complex society... the essence of tyranny is the denial of complexity. It is the great corrupter and must be resisted with purpose and with energy... What we need are great complexifiers..."
- II. Real estate is artificial delineated space with a fourth dimension in time referenced to a fixed point on the face of the earth to enclose or house some activity. It is a space/time unit of enclosure.
 - A. Real estate invented by rolling a rock in front of a cave to separate the natural void with an artificial attribute such as warmth, privacy, defensibility, or exclusiveness.

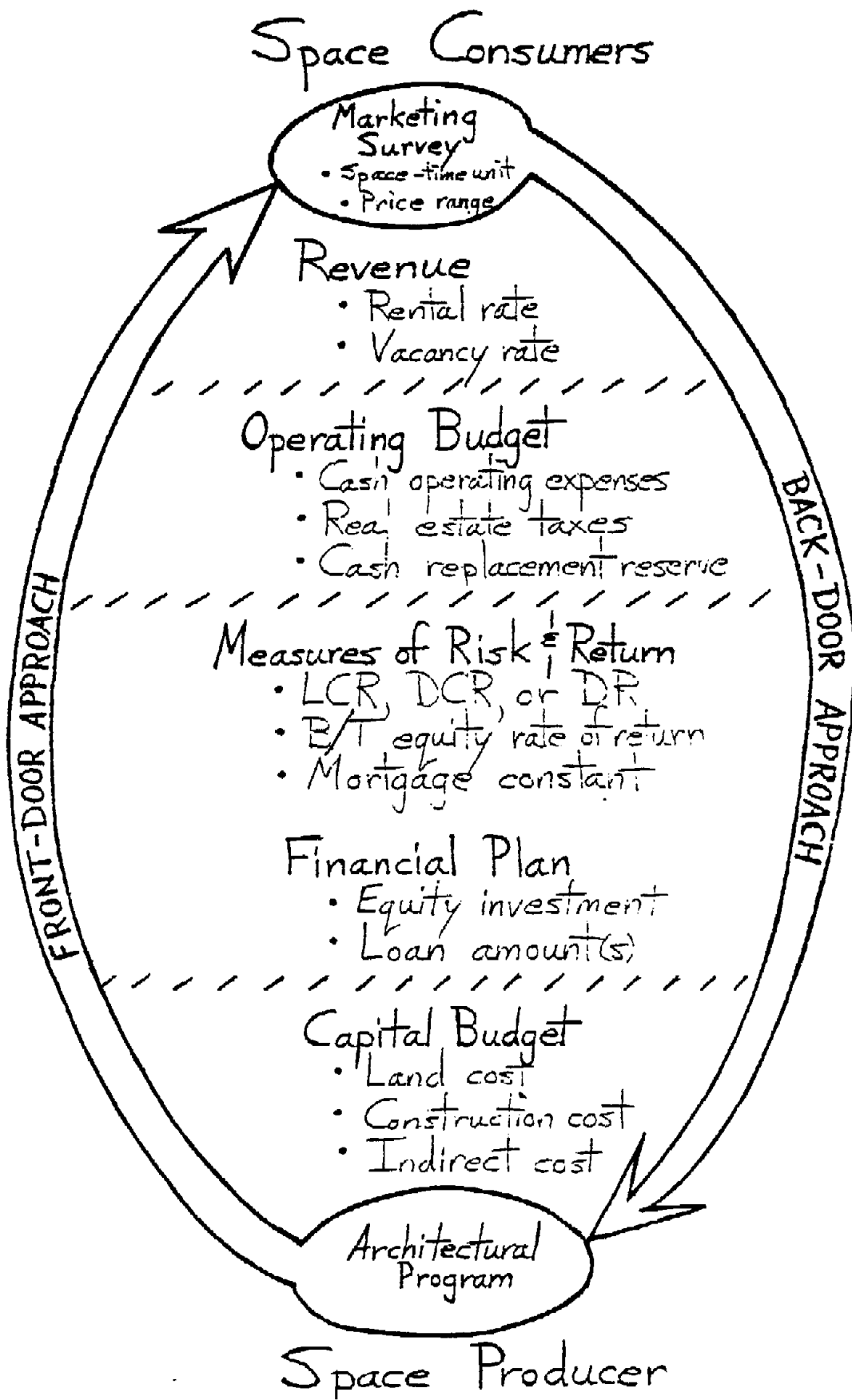
1. If the history of man is 1,000 lifetimes at 40 years each, then man lived in caves for 750 lifetimes and we have explained 75% of real estate.
 2. The utility of the cave, the economic good was its space for housing and activity, not the solid elements of roof, walls, and ceiling. Indeed the technology of building has moved steadily toward reducing the weight and mass of our structures, at least until we have put a priority on holding passive energy.
 3. Space/time units are defined as room per night, apartment per month, tennis court hours, square foot per year, cave per moon, or wilderness for coming generations.
- B. Man made improvements represent an evolution of artifacts to reduce the irritations or misfits between man and the cave, between the form of any artificial solution and the context in which it is to operate. Real estate is intended to interface individuals and their society to the limitations of the land.
- C. Improvements from survey mark to city layouts to individual buildings defines space.
- D. The law through legislation, contract, and precedent allocates and defines time, benefit, privileges and responsibilities of use.
- E. The law is a reflection of the political machinery by which society expresses its values, objectives and priorities including both a collective and individual preference for land use.
- F. Private rights to use and benefit are those which remain after the public has exercised its rights to control through the police power, its share of benefits through the power to tax, and its priority over the private position through the power to condemn or expropriate.
- G. A real estate project is cash cycle business enterprise which combines a space/time product with certain types of management services to meet the needs of a specific user. It is the process of converting space/time needs to money/time dimensions in a cash economy.
1. A real estate business is any business which provides expertise necessary to relate space/time need to money/time requirements and includes architects, brokers, city planners, mortgage bankers., and all other special skills.
 2. The true profit centers in real estate are in the delivery of services and cash capital. Money is an energy transfer system.
 3. Equity ownership is the degree to which one enterprise controls or diverts cash from another real estate enterprise.
 4. Public has direct ownership to the degree real estate taxes take a percentage of tenant income in excess of service cost.
- H. The real estate process is the dynamic interaction of three groups, space users (consumers), space producers, and the various public agencies (infrastructures) which provide services and capital to support the consumer needs. (See diagram)



THE REAL ESTATE PROCESS

1. Users are further subdivided among individual consumers operating in the marketplace, collective consumers operating through the political structure and collective institutions (like unions, churches, peer groups), and future users operating through a resource ethic and collective consensus.
 2. Note that the space production group includes money, expertise, and material sources without specifying which is private, public, or joint venture in terms of ownership form. The real distinction is that the space production group is concerned with improvement placed on a specific site while the public infrastructure group is concerned with all the off-site improvements and services required.
 3. Each of these decision groups and subgroups represent an enterprise, an organized undertaking. In a money economy all cash cycle enterprises are constrained by a need for cash solvency both short and long term, in order to survive.
 4. A desirable real estate solution occurs when the process permits maximum satisfaction to the consumer at a price that he can afford within the environmental limits of land while permitting the consumer, producer, and the government cash cycle to achieve solvency - cash break even at a minimum, after full payment for services rendered.
 5. Solvency of the total process, not value, is the critical issue.
- I. Land is a physical surface, a bearing point for improvements, a locational point where demand and supply forces find solvency and access to business opportunity. Except as a mineral or for the sale of top soil, it is not generally a commodity but rather a point of access to control of economic events. It is not a profit center in itself but rather is desirable because those who control the land control a captive market for their services, their capital, and their opinion as to land use allocation.
- III. The concept of highest and best use of land was a commodity concept which did not consider externalities adequately. It is being replaced by concepts of most fitting use and the concept of most probable use.
- A. The most fitting use is that use which is the optimal reconciliation of effective consumer demand, the cost of production, and the fiscal and environmental impact on third parties. Reconciliation involves financial impact analysis on "who pays" and "who benefits."
 - B. The most probable use will be something less than the most fitting use depending on topical constraints imposed by current political factors, the state of real estate technology, and short term solvency pressures on consumer, producer, or public agency.
 - C. In seeking the most fitting and most probable use, the planner and private property appraiser must interact to determine how community objectives and consumer - production sector solvency can be achieved simultaneously.
1. A real estate decision has only two basic forms. Either a site is in search of a use and consumer with the ability to pay, or a consumer, need or use with a defined ability to pay is seeking some combination of space/time attributes he can afford.
 2. The individual consumer with needs and a budget is the drive wheel

3. The public sector represents the collective consumer service delivery system, seeking to minimize marginal cost to the consumer and average cost to the community at large.
 4. The production sector responds to a derivative demand for engineering and management expertise.
- D. Critiquing the form and adequacy of a real estate solution is analogous to the artistic concept of judging the success of an art object by relating form of the solution to the context to which it was created.
1. Context includes those elements which are fixed, given, or objectives and to which any solution must adapt.
 2. From giving elements are those variables within the artists control, i.e. options or alternatives at a particular time.
 3. A solution is judged for its correctness or success in terms of the degree of fit of the form proposed to the context.
 4. Feasibility analysis is concerned with the degree of fit or the extent of misfit between a proposed course of action and the context within which it must operate or fit.
 5. Success therefore depends on how appropriately the problem is defined; testing feasibility depends primarily upon accurate and comprehensive definition of the context.
- E. An enterprise is any organized undertaking, and a real estate problem or project always begins from the viewpoint of some enterprise relative to its environment.
1. The systems engineer sees the eventual form of an enterprise, in terms of both its configuration and behavior, as representing a negotiated consensus between two general sources of power--the power of the environment to dictate form and behavior of the organization on one hand and the power of the organization to decide for itself what its characteristics and behavior will be on the other.
 2. The system engineer uses "power of the environment" as a dynamic alternative to the static implications of context and adds dynamic element of behavior to the elective responses of the form giver.
- F. If the real estate process sounds complex, it is! Many times during the course it will be necessary to simplify, exaggerate, or arbitrarily ignore various factors for educational purposes. Nonetheless, it is a rich and valuable subject area:
1. There are few other areas of business enterprise which offer more high drama, more colorful actors, more opportunities for those with generalist curiosity and those of entrepreneurial risk taking ability.
 2. Real estate skills have made American millionaires more often than any other enterprise but there is no area of enterprise more parochial, obsolete and in need of scientific management than real estate. Expertise is a competitive edge.
 3. Real estate requires attention to repetitive, mundane, and often boring details but it is an area where the average individual can succeed through patience and persistence rather than brilliance.
 4. The real estate process is the ultimate battle ground of all the conflicting virtues and weaknesses of our society. We hope to make you a knowledgeable critic of the ensemble of real estate forms and context so as consumers and voters you can encourage the successful and avoid the charlatans without being so paranoid about real estate you can't tell your true friends from your enemies.



Given Information

Site size: 8 acres at \$50,000/acre
 Building size: 100,000 gross sq. ft. @ \$38/sq.ft.
 Soft costs: 15% of construction budget
 LCR: 80%; B/T equity ROR: 14%; Loan terms: 12%, 30 years, monthly py
 Operating expenses: \$3 per gross sq. ft. per year

LOAN TO COST RATIO APPROACH

Also given

Real estate taxes:
 assume cost equals
 market value initially;
 equalization rate=.60;
 mill rate = \$0.044
 Cash replacement reserve
 = \$20,000 per year
 Vacancy rate: 5%
 Building efficiency
 factor = .90

| | |
|--|---|
| SITE ACQUISITION COST \$400,000 | |
| + | |
| CONSTRUCTION BUDGET \$3,800,000 | |
| + | |
| INDIRECT COST AND DEVELOPMENT FEES \$520,000 | |
| = | |
| TOTAL CAPITAL BUDGET | |
| \$4,770,000 | |
| x | |
| 1- LOAN TO COST RATIO .20 | LOAN TO COST RATIO .80 |
| = | = |
| CASH EQUITY REQUIRED \$954,000 | MORTGAGE LOAN \$3,816,000 |
| x | x |
| REQUIRED PRE-TAX CASH DISTRIBUTION RATE 14% | GEST SERVICE CONSTANT .12343 |
| = | = |
| CASH THROW OFF REQUIRED FOR EQUITY \$133,560 | CASH REQUIRED FOR MORTGAGE LENDER \$471,000 |
| Δ \$604,569 \triangleleft | |
| NET OPERATING INCOME | |
| + | |
| OPERATING EXPENSES \$300,000 | |
| + | |
| REAL ESTATE TAXES \$125,928 | |
| + | |
| CASH REPLACEMENTS \$20,000 | |
| = | |
| EFFECTIVE GROSS REVENUE REQUIRED \$1,050,407 | |
| + | |
| VACANCY LOSS 5% = \$55,289 | |
| = | |
| GROSS POTENTIAL REVENUE = \$1,105,786 | |
| + | |
| NET LEASABLE UNITS = 90,000 sq. ft. | |
| = | |
| RENT REQUIRED PER UNIT = \$12.29 per net sq. ft. | |

Default ratio:

$$\frac{\$471,009 + \$300,000 + \$125,928}{\$1,105,786} = .81$$

Debt cover ratio:

$$\frac{\$604,569}{\$471,009} = 1.28$$

Given Information

Default ratio = .70

Market rent: \$11 per net sq. ft.

Other info: same as before as far as is applicable

DEFAULT RATIO APPROACH

| GROSS RENT POTENTIAL | |
|---|---|
| | \$990,000 |
| \times | \times |
| <u>.30</u> 1- DEFAULT RATIO | DEFAULT RATIO <u>.70</u> |
| = | = |
| \$297,000 RISK VARIABLES AND EQUITY CASH | CASH SUGGEST OUTLAYS \$693,000 |
| - | - |
| 5 % \$49,500 VACANCY LOSS | OPERATING EXPENSES \$300,000 |
| - | - |
| 0 RISK RESERVE | REAL ESTATE TAXES \$125,928 |
| = | - |
| \$247,500 CASH AVAILABLE FOR INVESTORS | CASH REPLACEMENTS \$20,000 |
| + | = |
| 14 % REQUIRED PRE-TAX CASH DISTRIBUTION RATE | CASH AVAILABLE FOR BEST SERVICE \$247,072 |
| = | + |
| \$1,767,857 JUSTIFIED CASH EQUITY INVESTMENTS | BEST SERVICE CONSTANT .12343 |
| | = |
| | JUSTIFIED MORTGAGE LOAN \$2,001,718 |

\$3,769,575

TOTAL JUSTIFIED INVESTMENT

Land +
Soft Costs

EXISTING CLAIMS OR PLANNED
IMPROVEMENT BUDGET
\$970,000

Construction
Budget

PROCEEDS AVAILABLE FOR
PROPERTY PURCHASE "AS IS"
\$2,799,575

Building size:

100,000 gross sq. ft.

Construction cost:

\$28.00 per gross sq. ft.

DEBT COVER RATIO APPROACH

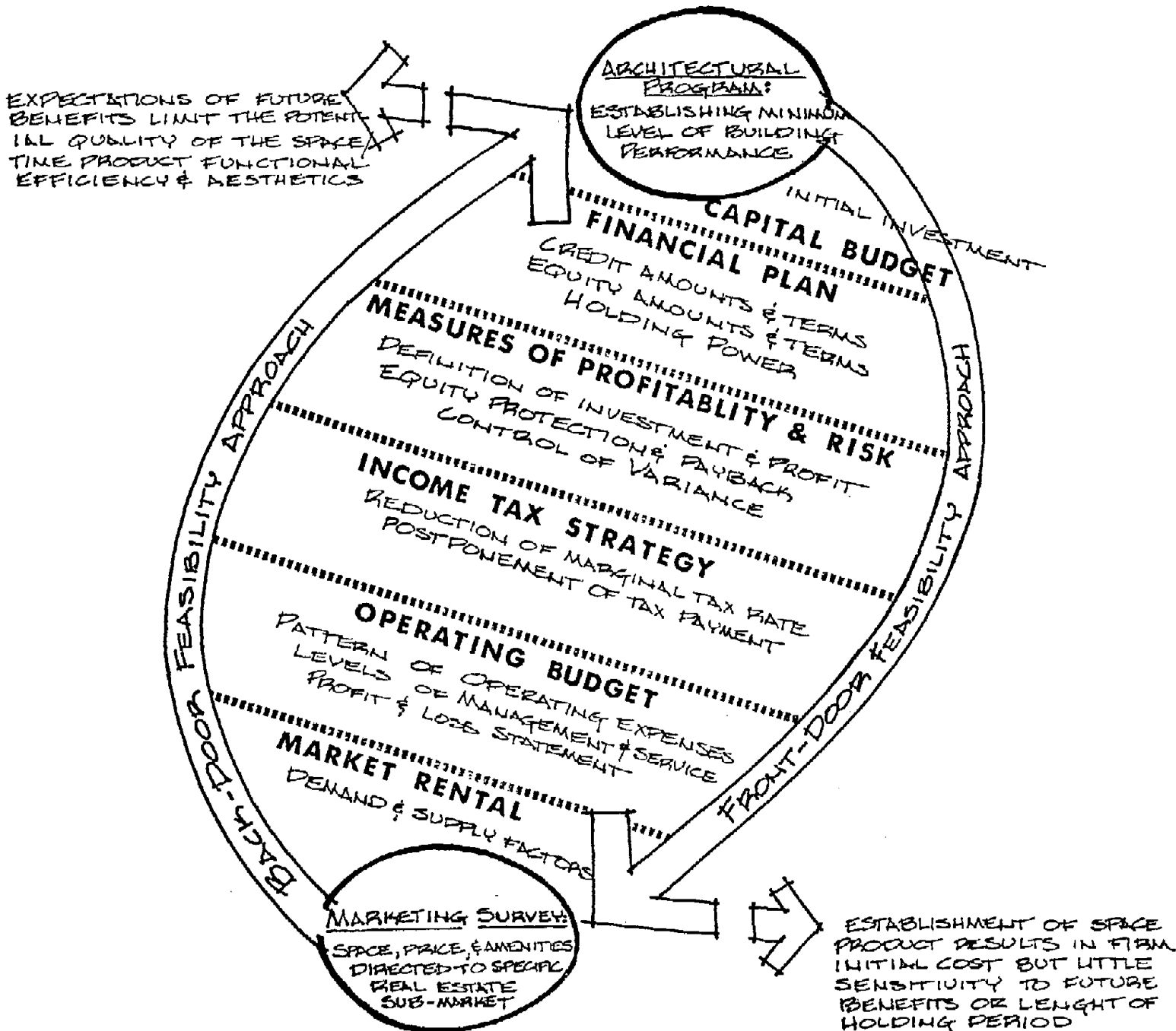
| | |
|--|---|
| GROSS RENT POTENTIAL _____ | |
| - | |
| VACANCY LOSS ____% | |
| = | |
| EFFECTIVE GROSS REVENUE _____ | |
| - | |
| OPERATING EXPENSES _____ | |
| - | |
| REAL ESTATE TAXES _____ | |
| - | |
| CASH REPLACEMENTS _____ | |
| = | |
| NET OPERATING INCOME AVAILABLE FOR DEBT PAYMENT, INCOME TAX, CASH DIVIDENDS | |
| DEBT SERVICE CASH = | DEBT COVER RATIO REQUIRED BY LENDERS |
| CASH AVAILABLE FOR INCOME TAX AND INVESTORS | = |
| + | CASH AVAILABLE FOR DEBT SERVICE |
| REQUIRED PRE-TAX CASH % DISTRIBUTION RATE | + |
| = | DEBT SERVICE CONSTANT |
| JUSTIFIED CASH EQUITY INVESTMENT | = |
| | JUSTIFIED MORTGAGE LOAN |
| TOTAL JUSTIFIED INVESTMENT | |
| - | |
| EXISTING CLAIMS OR PLANNED IMPROVEMENT BUDGET | |
| = | |
| PROCEEDS AVAILABLE FOR PROPERTY PURCHASE AS IS | |

The Real Estate Process - 550
Outline - Lecture #2

- I. First lecture defined the real estate process as a dynamic synthesis in which three parties, space users, space producers and the public infrastructure, seek real estate solutions which allow each of them to remain solvent as cash cycle enterprises while pursuing other objectives.
 - A. Any decision requires organization of information into alternative courses of action and their consequences. Simultaneously the facts generate values, objectives, and specific criteria for judging which consequences are good or bad. Given a ranking of criteria, one selects the most favorable course of action to pursue.
 - B. Thus we need a system for organizing the facts to be discussed in real estate; a system which permits comparative analysis of alternatives and their consequences.
 - C. The first step toward that system is in Diagram A.
- II. The sequence of money flows and service flows historically began with the space producer.
 - A. Step 1 indicates the space producer provides financial capital and services in the form of management expertise to control a site and provide attributes in the form of improvements.
 1. Site attributes could be physical, linkage or dynamic
 2. Site improvements range from survey monument to a fully integrated and operational environment (Disney World).
 - B. Step 2 involves provisional services to the real estate from public systems for sewer, water utilities, etc. Generally compensated by the real estate tax and user charges metered to the site.
 - C. In Step 3 the combination of attributes and services will be perceived by the space user differently and subjectively no matter how well engineered the site improvements may be. This perception will motivate a rent or purchase price which hopefully will compensate the space producer for his capital and services.
 - D. The space users choice of location will also enable him to pay income, sales, and other personal taxes to be eligible for other services which he may or may not want. Obviously the space user wants to maximize net benefits from the real estate (#3) and services (#5) while reducing to a minimum rents or purchases and taxes.
 - E. Since each of these three basic enterprises must make decisions which affect land and the space-time product and since each is a cash cycle enterprise which must remain solvent, it is useful to begin explanation of the cash cycle constraint on their real choices.
 1. Hence we begin with a simple cash flow model of the space producer and the sub-systems which affect his (their) cash cycle.
 - a. Priority based on instruction sequence
 - b. Space producer is a synthesis of many sub-system enterprises

2. Real estate is a multi-disciplinary field and in a beginning course, as we unravel the various sub-systems, we can only suggest how you might pursue the input further from the other disciplines. Thus we will stop short of exploring in full many interesting subject areas.
 3. The quiz sections will detail cash flow for the producer of rental property. Some lectures will be devoted specifically to detailing the cash flow problems of users of residential space, retail space and industrial space.
 4. Lectures will also sketch the public infrastructure cash cycle as represented by real estate taxes and other revenues and the cost of services and public capital in streets, schools, public transit, environmental quality, etc.
- F. Financial behavior is only one small part of the decision system affecting real estate so that lectures will be devoted to suggesting the sociological dimension and historical significance as well. Indeed, if the basic elements in the context of the real estate decision system are classified, financial elements must come last.
- G. Basic elements of context for judging feasibility or fit of a real estate proposal:
1. Goals and objectives of decision maker
 2. General areas of opportunity
 3. Specific micro-market targets
 4. Legal-political constraints
 5. Ethical compatibility constraints
 6. Physical-technical constraints
 7. Financial constraints
- III. By way of introduction of the mechanical front door and back door approaches to be analyzed in detail in quiz sections, it will be useful to examine Diagram B.
- A. The traditional sequence is to begin with a space producer as in Diagram A, which may be called a front door feasibility approach or capital structure approach.
 - B. It may be more useful, however, to first define the maximum the consumer can pay and the priorities the consumer or space user may place on various attributes in order to derive the maximum capital budget which may be appropriate.
 - C. In fact, the real estate process is a continuous iteration between capital budgeting and consumer budgeting constraints.
 - D. The front door and back door flow charts are a simplified schematic way of looking at the space producers cash flow cycle. We will provide similar schematics for space users and the public infrastructure as we move through the course. First, a graphic flow chart, then a detailed budgeting process, and then an actual numerical illustration, the computation of which you will have to be able to execute.

DIAGRAM B



TWO SIDES OF THE COIN

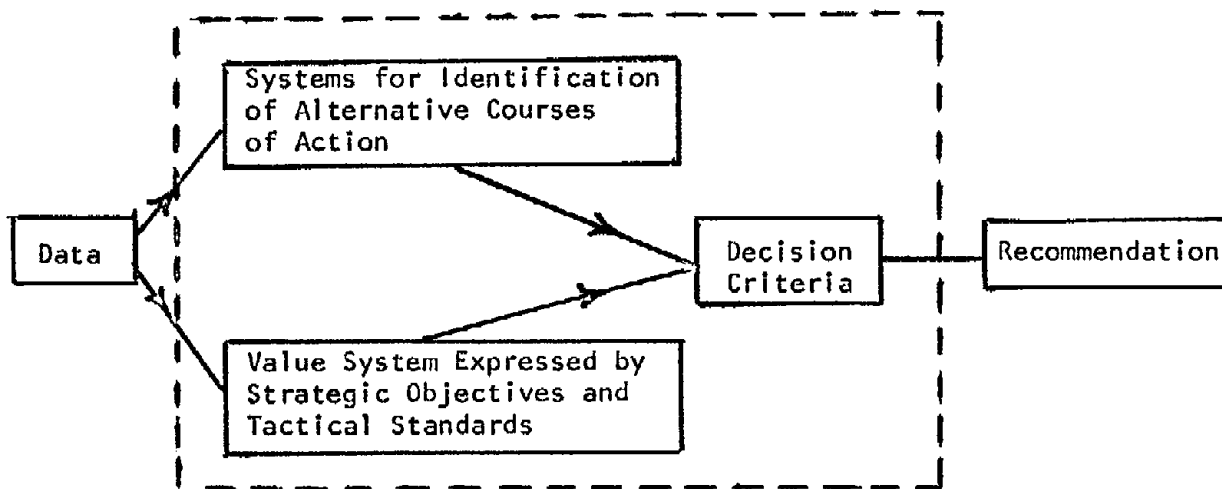
Outline - Lecture #2

1. The form and pattern of urban construction will reflect a consensus between value judgments of the society and its objectives and the physical and financial limitations of available alternatives. The degree of influence of social value judgments in the decision process might be reviewed in three phases - pre-1800, 1800-1950 in the United States, and 1950 to the present.

A. Lecture is an introductory look at the first two elements of the management process for an undertaking - goal setting and forming policies.

B. A schematic illustration of the decision process might be:

1.

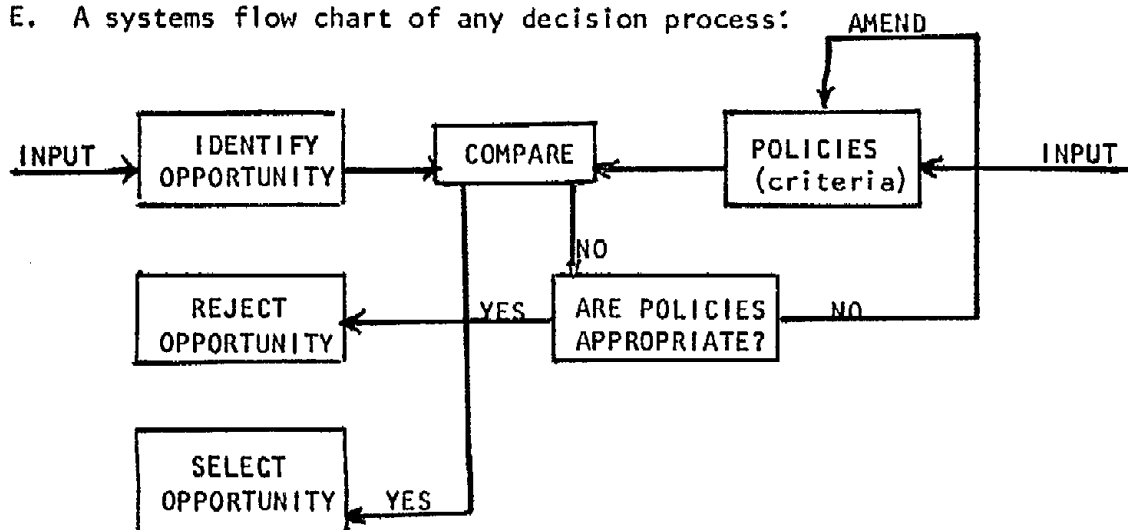


2. Values are moralistic generalization which must be explicit to be operational as objectives. Objectives must be detailed with a series of if/then statements or criteria to provide a logic for accepting or rejecting an alternative.

C. Shoreline conservation example.

D. Financial analysis pattern example.

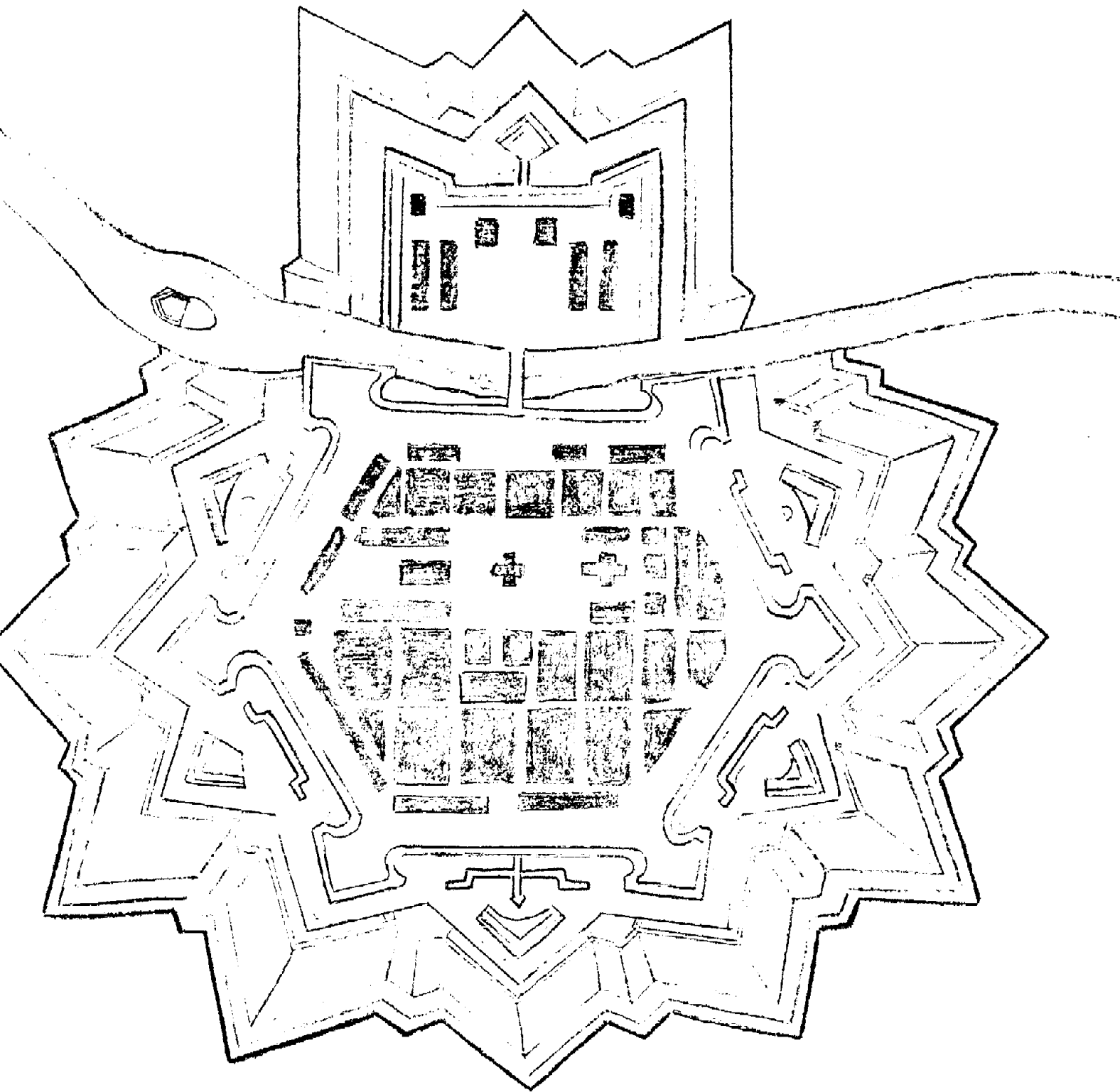
E. A systems flow chart of any decision process:



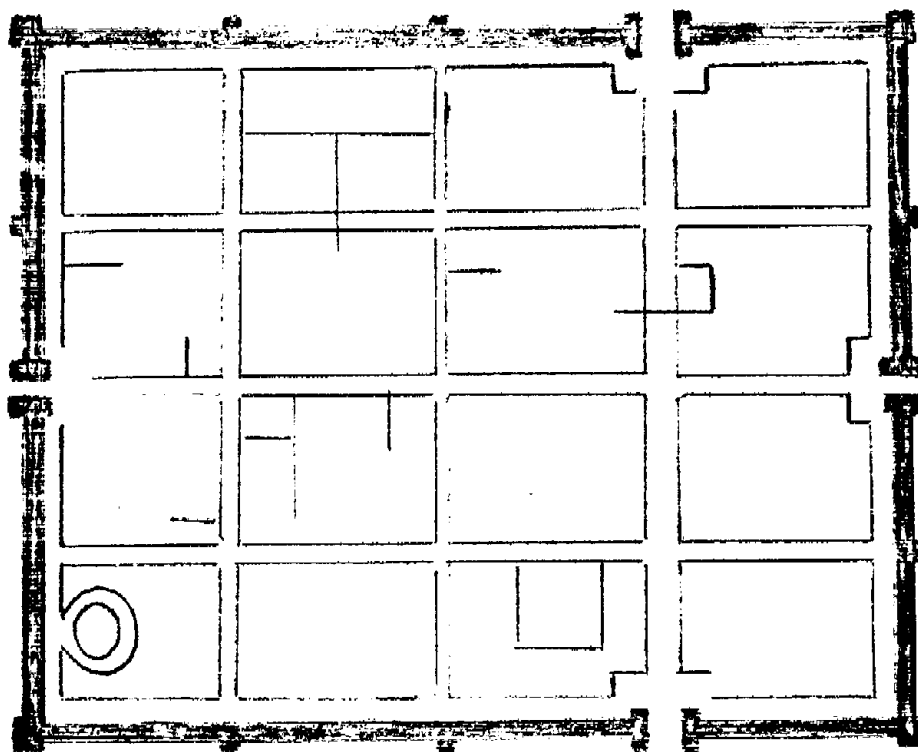
- II. Cities of the past often have physical clarity in land forms, layout and architect as a result of static population, static technology, and cultural continuity.
 - A. Specific purposes produce a desirable order so that social need was reflected in urban forms.
 - B. Interaction was simplistic in priority, defense, commerce, religion, etc.
 - C. Form builders made changes in traditional procedures only in response to significant and obvious irritation, misfits in the form fit to the context such as the London fire, the cannon, or disease from polluted water.
- D-1 Defensive town - Naarden
D-2 Roman military town - Aosta
D-3 Inca store town = Pikillacta
D-4 Peking - Tartar City - Imperial City - Forbidden City
D-5 Canal structure of Amsterdam
- III. Settlement of the new world meant conditions of cohesive development in other civilizations were gone.
 - A. Population explosion
 - B. Cultural restructure from outer directed to inner directed
 - C. Technological explosion in communication, transportation, and building structures
 - D. Property rights were a populous emotional experience
 - 1. Pioneer ethic of development favored those who could pay the mostest and build the biggest.
 - 2. Thus highest and best use concept - that use which had the highest present value of dollar benefit over a specific period of time - does describe the land use allocation system form 1800 to 1950.
 - E. Cities grew like a reef - a process of accretion, with each building a skeleton built to house a particular activity. A process of accretion tending to cluster around transportation systems leading to the center of commerce, government, and industry.
 - F. A Greek city planner - Doxiadus.
 - 1. Dynapolis - a city plan designed to grow in one direction
 - 2. Ekistics - the science of city building as a multi disciplinary art form.
 - G. The conditional constraints on highest and best use through which society has begun to operate.
 - 1. Legal constraints on the use of the land
 - 2. Market need for particular kinds of space at a given point in time
 - 3. Engineering feasibility
 - 4. Financial prudence

3 (outline)

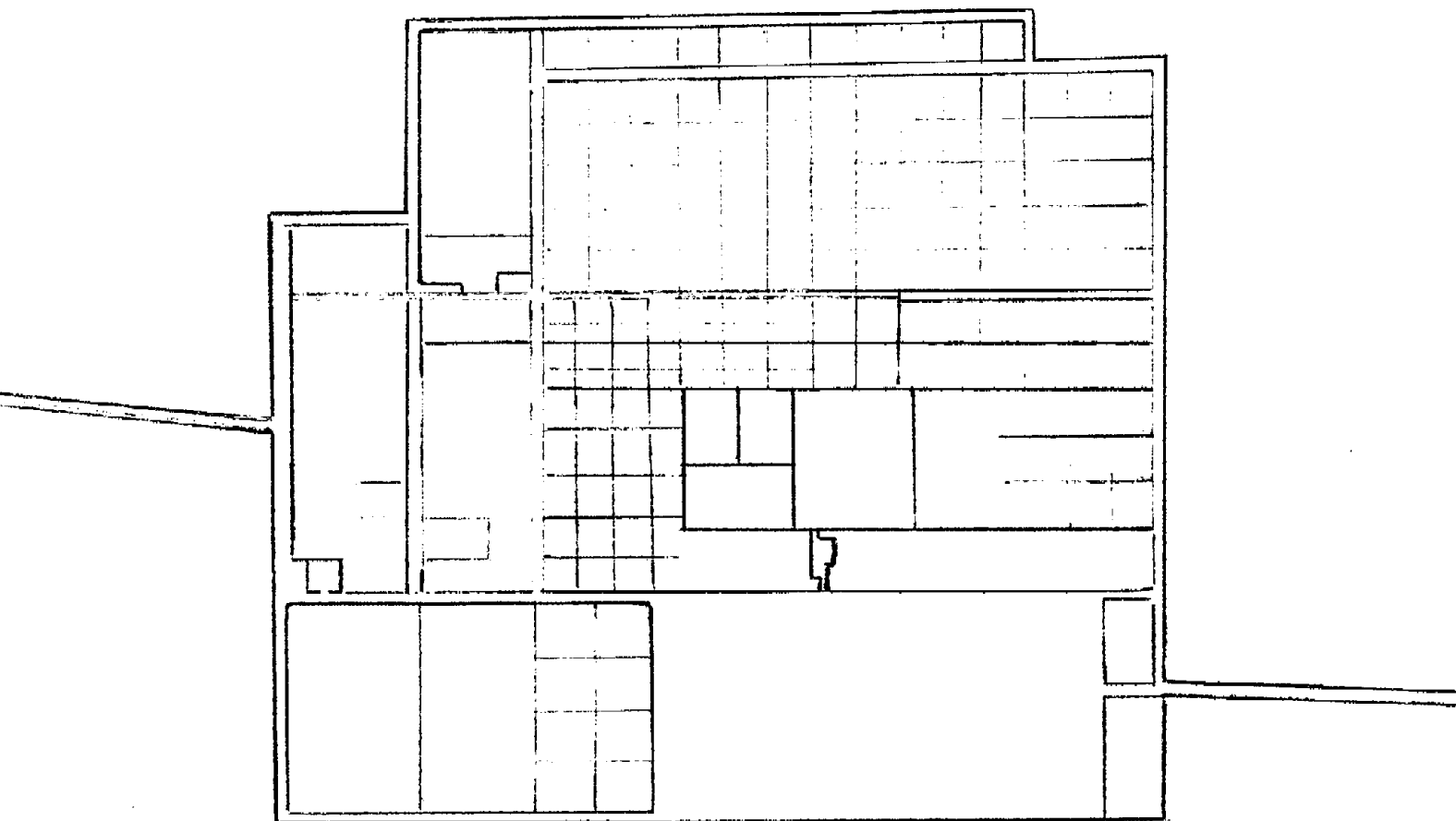
- IV. Since 1954 federal subsidies of urban planning are leading to drastic redefinition of land as a public utility and resource rather than a private commodity. Thus the land use allocation process is no longer a bidding process in the marketplace and we make a distinction between land use pattern and decisions and the present value of improvements to land by private enterprise.
- A. The old semantics of private property remains but substance of those rights have been drastically altered. Government had retained in the original constitution the power to tax, the right to regulate or to lease, and the right of eminent domain.
 - B. Recent Rockefeller commission recommendation calls for judicial reinterpretation of property rights so that "when the protection of natural, cultural or aesthetic resources or the assurance of orderly development are involved, a mere loss in land value should never be justification for invalidating the regulation of land use."
 - C. This course is concerned with the mechanisms and the real estate process by which value judgments are restated as objectives and objectives are made operational by creating decision screens or criteria with which to select one of several of alternative courses of action in the creation of space time units to house an activity.



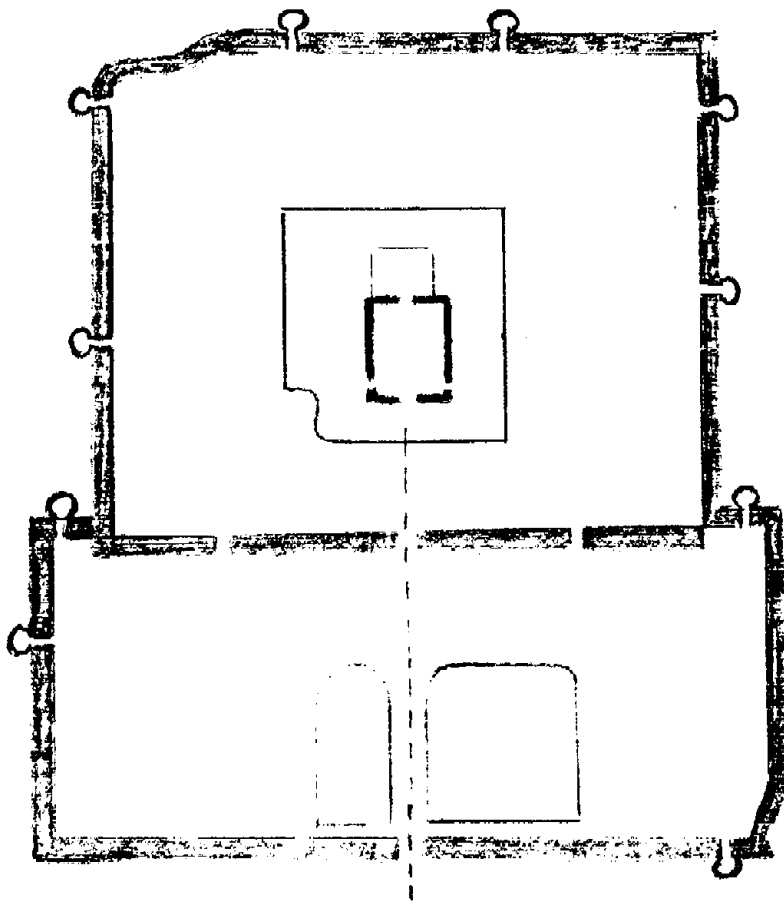
Fortified Town, Naarden



Roman Camp, Aosta

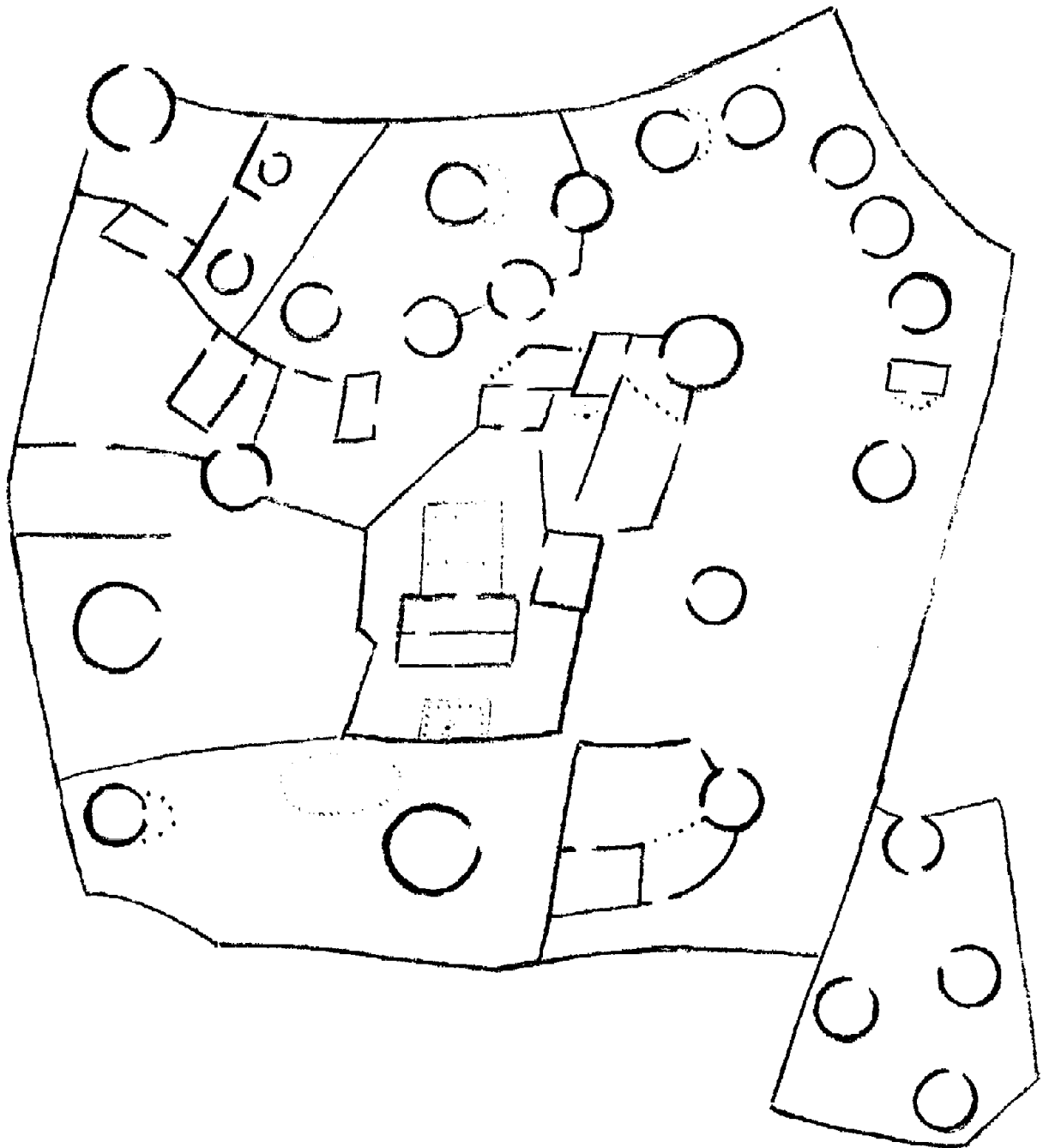


Inca Store Town, Pikillacta

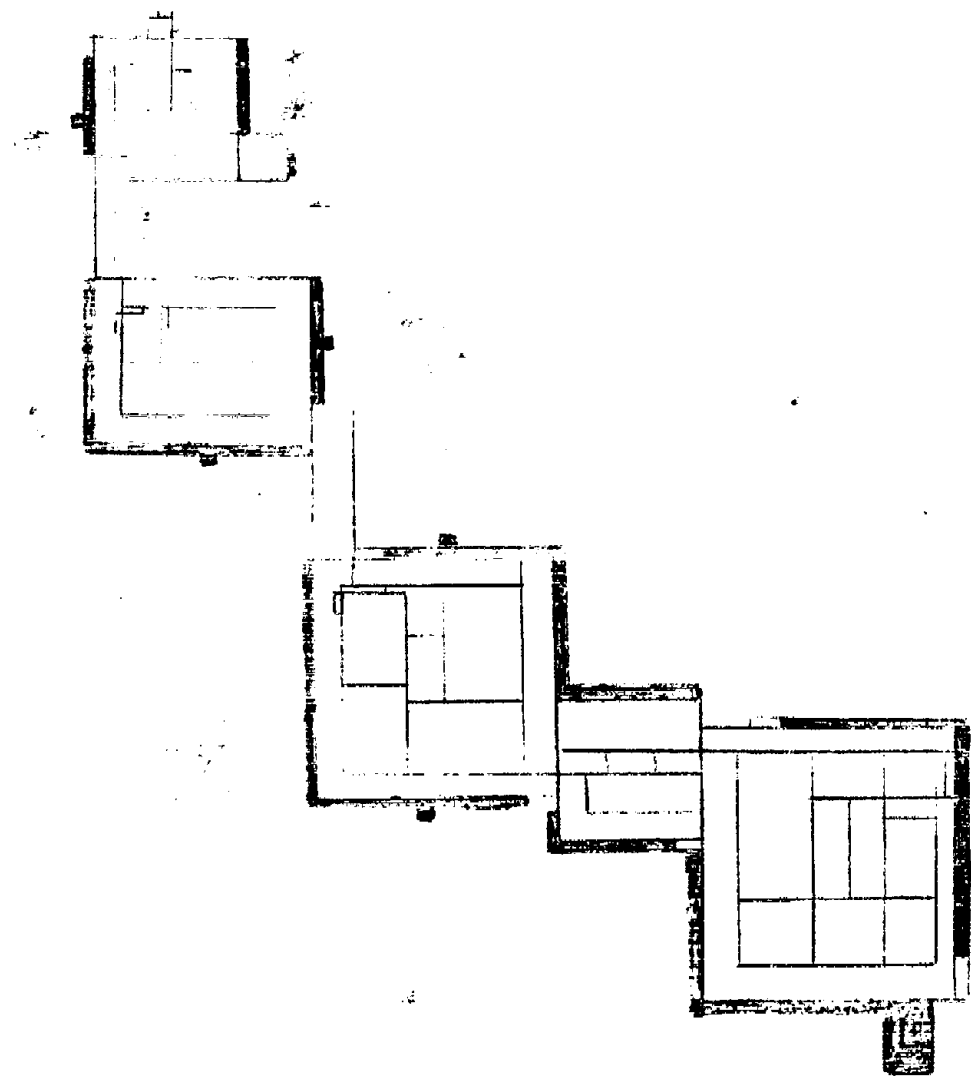


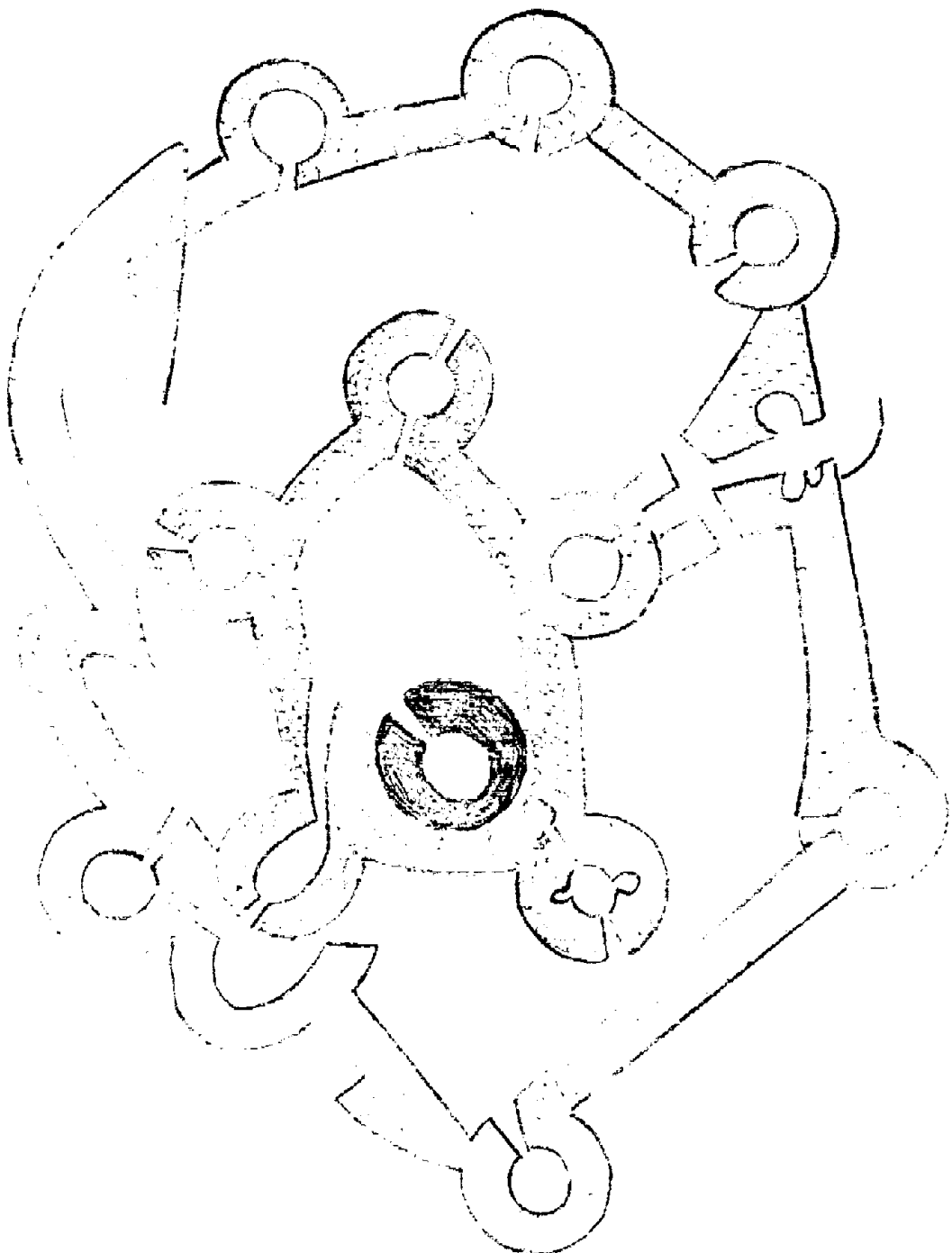
Peking

Farm Compound, Cameroons



Palace, Japan





Fortress, Sardinia

LECTURE #3
Social Impact of Real Estate

- I. The decision process involves both identification of alternative outcomes including financial consequences, and conversion of value judgments to selection criteria as in the following diagram A:

Diagram A

- A. Social content or impact of real estate is found in:
 1. Decision procedures of users, producers, and public agencies.
 2. Impact of past real estate decisions on future behavior of individuals and social groups.
 3. Winston Churchill - "We first shape our buildings and then our buildings shape us."
- B. The space user can express his values...
 1. As a market transaction.
 2. As a do-nothing decision.
 3. As explicit collective social or political action.
- C. The space producer can express his values...
 1. As an individual selective response to user stimuli.
 2. As a collective response to external forces.
- D. Political infrastructure reflects values...
 1. Of the constituency through laws and ordinances.
 2. Of the political administration through discretionary procedure.
 3. Through devices for public hearings and appeals.
 4. By means of the threat of future political action.
- E. Thus to examine social values in decision making and social impact of real estate solutions on society involves the real estate process in an almost infinite variety of behavioral models of the political and social process
 1. Some simplistic historical surveys may be useful

Urban Land 550
Lecture #3

- I. In earlier definition of the land resource, we suggested it would be necessary to examine four sets of attributes to determine its suitability for any specific purpose or improvement. Today's lecture is concerned with detailing the type of data input and discision criteria appropriate for these attributes. We will try to note in passing other courses at the university outside the Sch. of Bus. which are useful tools for the real estate major.
 - A. The four, somewhat arbitrary subsystems of attributes relative to land are:
 1. Physical static attributes
 2. Organic eco-system attributes
 3. Dynamic social attributes
 4. Public and private legal attributes (the lecture will limited to the first three)
 - B. Each of these sets of attributes will affect the cash flow characteristics of any enterprise located on a particular site in different ways and therefore it will be useful to briefly sketch the elements of cash cycle forecasting so that we may simply suggest where site attributes are synthesized into the eventual solution.
 - C. The elements of financial planning for the cash cycle include:
 1. Definition of profit center viewpoint
 2. Definition of time line for the enterprise cash cycle
 3. A schedule of capital outlays
 - a. Direct capital cost
 - b. Indirect capital cost
 4. Schedule of revenue and expenses
 5. Assumptions of a financing plan
 6. Assumptions of income tax strategy
 7. Measures of risk (potential variance between plan and realization)
 8. Measures of yield
- II. Static physical attributes ultimatley define the cubage available to contain an activity.
 - A. Size and shape of parcel
 1. Frontage - filling station versus movie theater
 2. Width - circulation versus us able area - double loading corridor + office or apartment
 3. Depth - need for access - frontage
 4. Effective building area - setback zoning, deed restrictions, ground cover area, FAR density
 5. Shape-structure relationship
 - B. Topography
 1. Degree of slope - zero to 12% buildable - cut and fill cost
 2. Elevation from access point
 3. Drainage

C. Soil and sub-soil conditions

1. Bearing qualities
2. Expansion and stability characteristics
3. Permeability - drainage and septic percolation

D. Utility infrastructure

1. Municipal or private sewer and availability of hook-up permits
2. Cost and capacity of electrical service
3. Availability and cost of water (Madison has metropolitan sewer but city water)
4. Availability of gas and gas service permits
5. Availability of telephone service (definition of districts-Westowne)
6. Availability of fire service and rate classification
7. Availability of municipal services such as police, garbage disposal cable TV, etc.

E. Existing improvements

1. Survey monuments, etc.
2. Underground utility easements
3. Abandoned foundations, mining shafts, quarries, etc.

III. Organic eco system attributes are concerned with the relationship of the site to the general ecology of its environments and the impact that any alteration of the site on the natural systems of which it is a part.

A. Water conditions

1. Ground water contamination or recharge
2. Surface water run-off and erosion
3. Siltation of lakeshores and streambeds
4. Alteration of storm water absorption and run-off patterns

B. Plant life conditions

1. Destruction of rare plant resources
2. Reduction of prime agricultural reserve
3. Damage to natural food chains
4. Damage to significant animal or insect habitat

C. Alteration of micro climate

D.

IV. The dynamic social attributes of a site have to do with its spatial relationships to other related sites and the way in which people perceive the specific site. Real estate, remember, is intended to house an activity and these activities are generally interdependent with persons and activities at other locations.

A. The urban land economist defines any single activity as an establishment. A family is an establishment, a church, Oscar Mayers, or a store at Westowne.

- B. The relationship between any one site or establishment and another establishment, termed a linkage. The linkages of the site are a major determinant of its economic value. For example, a car rental company may want a direct linkage to the air traffic terminal or a student book store may find it critical to be tied directly to a major student pedestrian thoroughfare.
 1. Many linkages may be physical such as pedestrian bridges or the truck stop at the interchange downramp.
 2. Most linkages are more mental in terms of convenience and time or street intelligence or "amenities".
 3. Amenities are the esthetic satisfactions and comforts which individually cannot be priced, such as the tone of the neighborhood created by parks, and trees, etc.
- C. The single family home has a variety of linkages which each household gives different weight. It has a linkage to school, to shopping, to job, to recreation, to social circles, etc. (a short crawl home).
- D. Site linkages are a key to feasibility. The West Allis Inn example.
- E. Linkages are related to the spatial distribution of land uses which are town builders or primary employment centers and land uses which are town fillers or auxiliary services.
- F. A set of linkages, physical or mental, of any particular parcel is called the situs pattern. A situs pattern suggests a use and a use defines the deserved situs pattern.
- G. The relationship of establishment activities is not only rational in terms of obvious motivation of convenience, economy, etc., but is also subtle and to some degree irrational conditioning of the mind.
 1. Identification with or of a building or an area depends on repeated exposure and subtle delineation of areas or visual cues.
 - a. The Hidden Dimension by Hall
 - b. Defensible Space by Oscar Newman
 2. Anxiety is a significant factor = security, privacy, driving or pedestrian safety (the secret to defensible space is to increase the anxiety of the interloper or stranger to increase the security of the resident).
 3. One writer sees the psychology of linkages as a degree of public-private character. The major streets are community at large while your own street and sidewalk are neighborhood. Your front entrance is a transition zone from public to family while the bedroom is a transition from family to private. At each point there is need for different levels of audio-visual privacy and reinforcement of the appropriate degree of scale. Community plazas are large scale, but neighborhood is expansive but low key. The entry walk and foyer reduce the scale and texture at first and the home pattern itself is small pattern and texture.
 4. The shopping center design is intended to reduce the anxiety of the driver approaching the site, his confusion and anxiety in parking and walking to the store of his choice, and his discomfort while in the store itself. Thus the approach zone to the site is an important linkage.

Urban Land 550 Lecture #3

- I. Site attributes affect the fit of an activity to the land.
 - A. For somewhat arbitrary and related subsystems of site attributes are:
 1. Physical static attributes
 2. Organic eco-system attributes
 3. Dynamic social attributes
 4. Public and private legal attributes (the lecture will be limited to the first three)
 - B. All these attributes each affect the cash flow cycle characteristic of any enterprise or establishment located on a particular site.
 - C. Elements of financial planning for a real estate enterprise cash cycle include:
 1. Definition of profit center viewpoint
 2. Definition of time line for the enterprise cash cycle
 3. A schedule of capital outlays
 - a. Direct capital cost
 - b. Indirect capital cost
 4. Schedule of revenue and expenses
 5. Assumptions of a financing plan
 6. Assumptions of income tax strategy
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- II. Static physical attributes define cubage available to contain an activity and are inherent within the boundaries of the site.
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 4. Effective building area - setback zoning, deed restrictions, ground cover area, FAR density
 5. Shape-structure relationship
 - B. Topography
 1. Degree of slope - zero to 12% buildable - cut and fill cost
 2. Elevation from access point
 3. Drainage
 - C. Soil and sub-soil conditions
 1. Bearing qualities
 2. Expansion and stability characteristics
 3. Permeability - drainage and septic percolation
 - D. Utility infrastructure
 1. Municipal or private sewer and availability of hook-up permits

2. Cost and capacity of electrical service
3. Availability and cost of water
4. Availability of gas and gas service permits
5. Availability of telephone service
6. Availability of fire service and rate classification
7. Availability of municipal services such as police, garbage disposal, cable TV, etc.

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1. Survey monuments, etc.
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3. Abandoned foundations, mining shafts, quarries, etc.

III. Organic eco system attributes are concerned with the relationship of the site to the general ecology of its environments and the impact that any alteration of the site on the natural systems of which it is a part.

A. Water conditions

1. Ground water contamination or recharge
2. Surface water runoff and erosion
3. Siltation of lakeshores and streambeds
4. Alteration of storm water absorption and runoff patterns

B. Plant life conditions

1. Destruction of rare plant resources
2. Reudction of prime agricultural reserve
3. Damage to natural food chains.
4. Damage to significant animal or insect hatitat

C. Alteration of micro climate

IV. The dynamic social attelbutes of a site refer to its interaction of its other sites and the perception of people of the specific site.

A. To an urban land economist any single enterprise on a site is an establishment

B. The relationship between one site or an establishment and another site or establishment is termed a linkage.

1. Linkages may be physical, such as a pedestrian bridge
2. Linkages may be mental in terms of convenience, time, economy, etc.
3. Linkages may be cumulative in terms of esthetic satisfactions and comforts which are called amenities.

C. A single family home has a set of linkages to schools, shopping, jobs, recreation, or social structure.

D. Site linkages are a key to feasibility of a store or motel.

E. A set of linkages for a particular parcel is called the situs pattern for an establishment.

F. Perception of a site is a product of both motivation and subtle conditioning of the mind.

1. Visual cues. Interesting reading on psychology of space
 - a. The Hidden Dimension by Norman Hall and Defensible Space by Oscar Newman
2. Anxiety-security-privacy
3. Community-neighborhood-family-individual "zoning" by means of audio visual controls and patterns
4. The conditioning of the approach zone linkage for a site relative to its use.

BUSINESS 550
Linkage, Dynamic, Environmental Attributes
Lecture #3

I. Linkage Attributes

The marketing of a permitted use depends in large part on the location of a property. The banal phrase in real estate is that there are three critical factors in real estate - location, location, and location. Those who love to quote it seldom can define systematically the elements of location.

- A. Linkage attributes are the ties of the subject property to networks of supporting infrastructure which improve convenience and access and to activity centers which may interact with the subject property. The convenience and cost of this interaction is measured in terms of friction. (Ex. when congestion downtown meant too many wasted truck driver hours, wholesale centers moved to the outer rim of the community along beltline roads; lack of parking on the Square is one element of friction which motivates people towards suburban shopping centers).
- B. Analysis moves best from the borders of the subject property outward to expanding zones containing potential demand sources or competitive supplies of space. Analysis moves best from physical networks to intangible ties and relationships which may be visual or perceptual (dynamic attributes, as well).
- C. Physical networks typically involve utilities and transportation. Utility linkages need to be considered in terms of availability or dependency on:
 - 1. Sewage processing, storm water retention, and storm run-off provisions. (IBM Building)
 - 2. Water capacity for use and fire, and water chemistry if applicable.
 - 3. Energy sources including electrical, gas, steam, solar, and capacity of suppliers.
 - 4. Public service zoning for fire and police, rail switching zones, etc.
 - 5. Access networks include street, sidewalk, rail, gallerias, underground pedestrian networks, overhead bridges, and public transit systems including access points, traffic department controls, capacity for additional volume and possible shared cost formulas.
- D. Relationship of subject site to immediately contiguous property (adjacent parcels), balance of city block or track, and neighborhood layout patterns.
- E. Possible dependency on available resources of underutilized labor and potential employees, timber and other natural resources, water flows in streams or underground, etc.
- F. Relationship of subject site to generators of potential needs and uses for the subject site, such as:
 - 1. Employment centers
 - 2. School system alternatives
 - 3. Retail services
 - 4. Complimentary existing nearby uses

- 5. Recreational services
- 6. Health care systems
- 7. Security systems
- 8. Waste disposal services

- G. Neighborhood demographics (population, age, employment, income, etc.)
- H. Relationship to competitive alternative and estimate of supply of available space, competitive ranking, and exposure of subject site to competitive interception of potential demand.

II. Dynamic attributes are those attributes which exist in the minds of the beholder which are mental or emotional responses which a site or project stimulate and which affect decision making behavior.

- A. Image conditioning of the approach zone
- B. Visual factors in terms of prominence of the site, views from the site, potential for controlled sight lines, etc.
- C. Prestige and status
- D. Anxiety factors of access and security
- E. Noise as a function of traffic count (FHA noise pollution manual)
- F. Prevailing air currents and airborne pollution (phosphate plants or sulphite paper mills, for example).
- G. Political images established for a site by the public positions of local politicians or vested interest groups.
- H. Historical community reputation and values attached to the project site and structures.

III. Compatibility of Alternative Uses With Off-Site Factors

Individual user needs are reflected in the first four attributes while the collected community of consumers is considered under the broadest definition of environmental attributes. The collective community is generally represented by political administrators so a land use must be sold to "two markets", the buyer or tenant user and the community political administrator.

- A. Physical and environmental impacts off-site .
 - 1. Storm water and ground water run-off
 - 2. Contamination of air and water
 - 3. Impact of sun shadows on neighboring property
 - 4. Encroachments of flora and fauna supplies
 - 5. Encroachment on historical or cultural resources
- B. Silhouette of social impact in terms of public perceptions of:
 - 1. Displacement of existing residents and neighborhood units
 - 2. Contribution to social integration or mobility barriers

3. Contribution to land use heterogeneity
4. Contribution to regional and community master plans
- C. Fiscal impact on the community where appropriate:
 1. Direct impact on real estate tax revenues
 2. Direct impact on other governmental revenue
 3. Direct impact on incremental government
 4. Secondary contributions to local government revenues
 5. Secondary cost burdens created for local communities
- D. Social factors in the ethical environment:
 1. Impact on supply/demand equilibrium
 2. Stamina of project sponsor in the face of public pressure
 3. Vulnerability of potential project buyers to secondary political pressures and counter attack
 4. Potential uses requiring unique political resources or private/public consortiums

IV. Alternative Use Scenarios Require Further Testing

The site in search of a use is first inventoried for its apparent attributes in each of the five sets above in order to identify technically possible alternatives. These alternatives must be further screened for financial viability.

- A. Reference to Exhibit I sketches the flow of analysis. It is a repetitive cycle in which surviving uses are further refined relative to market, solvency, infrastructure and investing.
- B. The critical element of financial viability (i.e., solvency and perhaps profit) is effective market demand. Market attributes include macro-markets inherent in general population data, micro-market data discovered from consumer research of people and competitive products, and collective markets as related to neighborhood expectations, and perhaps future unknown re-uses.
- C. Use scenarios for which there is effective demand lead to preliminary solvency tests which indicate the relationship of justified investment to required capital costs for the individual investor, just to achieve breakeven.
- D. The uses which survive solvency tests for the individual investor then must be related to the financial and physical infrastructure of community needs and priorities as well as financial capacities. At this point the ideal use may be modified by short term political consideration and a number of not so perfect private alternatives will survive to be tested in terms of appropriate mini-max criteria related to spendable cash, future networth, acceptable risk, and portfolio fit.

SITE IN SEARCH OF A USE

Property Attributes

Physical (Static)
Legal
Linkage
Dynamic
Environmental

Building Envelope
& Orientation of
Technical Alternatives

Market Attributes

General Market
Patterns

Micro Markets *

Neighborhood
Expectations

Future Markets

Possible Alternative
Use Scenarios

* Consumer profiles, price
range, and product description

* Alternative revenue justified
capital budgets and source
structure

Solvency Tests

Justified Private Capital
- Required Capital
Investment
+ Public Capital Subsidy
= Net Private Capital
Exposure

* Preliminary environmental,
political, and fiscal
constraints

Infrastructure Tests

Environmental Tolerance

Public Service Capacity

Fiscal Impact

Public Priorities and
Subsidy

* After-tax cost, flows,
financial ratios, and
qualitative screens

Acceptable Alternative Uses

Financially Solvent
Most Fitting Use

Investment Tests

Investor Limitations
& Objectives

Acceptable Risk Sensitivity
Parameters

Most Probable Use of Site
In Search of Use

12/1/78

III. Physical (Static) Attributes of the Site and Its Improvements

A. The analysis of static site attributes which begin to narrow the potential alternative uses of the site should include both the facts and their implications for productive use of the site in such topical areas as:

1. Size, shape, and lot area
2. Topography, soils, geology, slope stability, bearing capacity, septic tank suitability, potential for subsidence,
3. Water table, wells, streams, ponds, storm water swales, shoreland edges, bulkhead lines, flood plain designations, et
4. Flora and fauna which enhance marketability or which might cause environmental impact litigation
5. Concealed utility easements, old foundations, etc.
6. Existing on-site utility services and capacity
7. Access points to public thoroughfares or private right-of-ways.
8. Site improvements such as paving, retaining walls, pedestrian paths, culverts, etc.
9. Landmark attributes or historical site features
10. Define physical system subsystems

- | | |
|-------------------------|----------------------------------|
| a. foundation system | h. horizontal circulation system |
| b. structural system | i. vertical circulation system |
| c. floor system | j. life safety system |
| d. ceiling system | k. electrical system |
| e. roof system | l. plumbing system |
| f. exterior wall system | m. HVAC system |
| g. interior wall system | n. site circulation system |
| | o. social control system |

B. Numerous courses are offered at the UW-Madison which touch upon these topical areas (see course listings for the following departments, among others: landscape architecture, civil engineering, land resources, and real estate). All persons active in the field of real estate should have at least an introductory knowledge of these topical areas to better appreciate and to understand the ramifications of the physical nature of the real estate product. Experts should be consulted whenever appropriate.

IV. Legal-Political Attributes

A. In Anglo-American law, real estate ownership is usually viewed as consisting of a "bundle of rights." The bundle includes:

1. Right of possession
2. Right of control
3. Right of enjoyment
4. Right of disposition

B. These rights are not absolute, however. The law through legislation, contract, and precedent allocates and defines time, benefit, privileges, and responsibilities of use.

C. The law is a reflection of the political machinery by which society expresses its values, objectives, and priorities, including both a collective and individual preference for land use.

- D. The actual private rights to use and benefit are those which remain after the public has exercised its right to control through the police power, its share of benefits through the power to tax, and its priority over the private position through the power to condemn or expropriate.
- E. The analysis of legal attributes should move from specific limitations on the site imposed by the rights of others to restrictive covenants, private controls, etc. to public sector controls and regulations. It is important to recognize not only the black letter law but the composition of those authorities who have discretionary responsibility for interpretation, enforcement, or amendment of these controls relative to future uses of the site.

1. Freehold estates

- a. fee simple absolute
- b. defeasible fees
- c. life estate

2. Leasehold estates

- a. estate for years
- b. estate from period to period
- c. estate at will
- d. estate at sufferance

3. Nonpossessory interests

- a. easements
- b. profit
- c. license
- d. security interests

4. Legal description and measurement

- a. government survey method
- b. metes & bounds
- c. platting
- d. street address
- e. reference to outside facts

5. Restrictive covenants limiting use, re-use, or modification of the property.
6. Applicable zoning ordinances and building code limitations on use (type and extent), including: alternative setback line height limitations, floor area ratio (FAR), parking requirements, dwelling unit (DU) density limitations, etc.
7. Special zoning options which may be available at owner's option such as rezoning, down-zoning, PUD zoning, etc.
8. Special controls imposed by other communities through extraterritorial zoning, tax conservancy commitments, urban renewal districts, tax increment districts, county regulation of subdivision, and overlapping jurisdiction.
9. Special state constraints on uses affecting shorelands, state highways, state airports, etc., including state industrial building code.

10. Special federal constraints such as airport approach zone districts, harbor and river commissions, office of environmental protection, Department of Housing and Urban Development, provisions for the handicapped (HEW), and many more.
 11. Since the building process takes time, impending legislation is important and regulations require interpretation or public hearings so that public attitudes and expectations may modify black letter law.
 12. A hidden source of regulation are the rules which control the lending institutions which lend the money. For example, they cannot lend on any properties located in a designated flood plain except under certain conditions which include community participation in flood prevention programs.
- F. Sites that border rivers or bodies of water may have water rights:
1. Riparian rights
 2. Prior appropriation
 3. Littoral rights
 4. Accretion
 5. Avulsion
- G. Conceptually, real estate is often divided into three physical levels:
1. Earth's surface and attachments
 2. Air space
 3. Subsurface space
- H. Forms of ownership include:
1. Single ownership
 2. Tenancy in common
 3. Joint tenancy with right of survivorship
 4. Tenancy by the entirety
 5. Community property
 6. Condominiums
 7. Cooperatives
- I. Legal Entities for Owning Real Estate Interests
1. General partnership
 2. Limited partnership
 3. Corporation
 4. Land trust
 5. REIT
 6. Syndicate
 7. Joint venture
- J. Transferring title to real estate
1. Purchase and sale
 2. Inheritance
 3. Gift
 4. Foreclosure or tax sale
 5. Adverse possession
 6. Escheat
 7. Eminent domain

K. Examining and Insuring Title

1. Good and marketable title
2. Abstract of title
3. Restrictions, security interests, liens
4. Title insurance

L. Elements of Sales Contracts:

1. Mutual agreement
2. Reality of assent
3. Legal capacity to contract
4. Consideration
5. Legality of the transaction
6. Contract in writing

M. Purchase options

N. Types of Deeds:

1. General warranty deed
 - a. covenant of seisin
 - b. covenant of the right to convey
 - c. covenant against encumbrances
 - d. covenant of quiet enjoyment
2. Special warranty deed
3. Quitclaim deed
4. Sheriff's deed
5. Executor's deed
6. Tax deed

O. Recording deeds

1. Actual notice
2. Constructive notice
3. Race-type statutes vs. notice-type statutes

V. Analysis of the Physical and Legal-Political Attributes of the Site

- A. A preliminary analysis of these attributes permits the experienced analyst to discard the majority of alternative uses and to select a set of plausible alternative uses which we will call scenarios -- courses of action which should be analyzed further in terms of marketing, pricing, costing, and acceptability.
- B. These initial screens for elimination need to be refined by reference to the dynamic attributes, linkage attributes, and environmental constraints which characterize the property.
- C. Sometimes legal-political attributes and physical attributes are related. For example, if physical attributes preclude development of the site as it is currently zoned, then the landowner may have a case for the rezoning of his site or for a variance.
- D. Some static attributes may help identify most probable user types while other attributes will make certain uses unlikely.
- E. Some static or legal-political attributes can provide monopoly advantages if they make the site unique relative to other sites.

BUILDING ENVELOPE TERMINOLOGY • P.S.#1

1) Lot Size - the area of the lot (in sq. ft.).

2) Area Lost to Set-backs - the area around the lot's perimeter which must be left vacant (due to zoning regulation and/or deed restriction).

3) Buildable Area = Lot Size - Area Lost to Set-backs

4) ^{Maximum} Floor Area Ratio (FAR) - the maximum total floor area allowed as a ratio to lot size.

5) Maximum Allowable Floor Area = Lot Size x ^{Maximum} FAR

6) Standard Allocation Unit (SAU) - an areal unit of measurement incorporating the proportional mix of lot uses* required by the zoning code for a proposed use of a given site.
*e.g., open space, parking space, & the building itself

7) Number of SAUs on Lot = Buildable Area / SAU

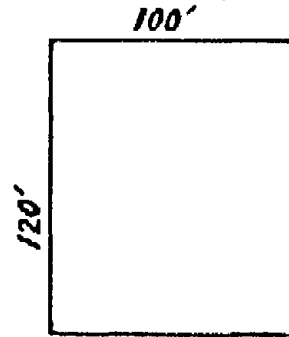
8) Lot Area Requirements:

| Type of Dwelling Unit | Minimum Lot Area Per Dwelling Unit |
|---|------------------------------------|
| Efficiency | 700 sq. ft. |
| One bedroom | 1,000 " " |
| Two bedroom | 1,300 " " |
| plus an additional 300 sq. ft. of lot area for each additional bedroom in excess of 2 in a dwelling unit. | |

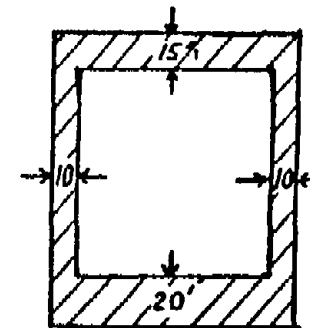
9) Parking Requirements - by type of use:

- 1 per apartment
- 1 per 300 sq. ft. of net rentable area of office space
- 5 per bowling lane
- etc.

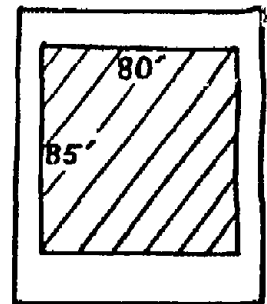
10) Useable Open Space Requirements - at least 160 sq. ft. of useable open space for each



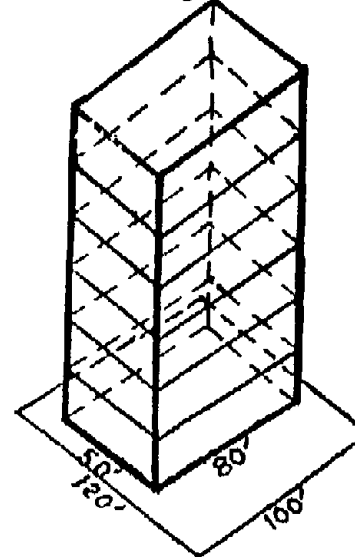
Lot Size:
12,000 sq. ft.



Area Lost to Set-backs:
5,200 sq. ft.



Buildable Area: 6,800 sq. ft.



Total Floor Area:
6 x 50' x 80' = 24,000 sq. ft.

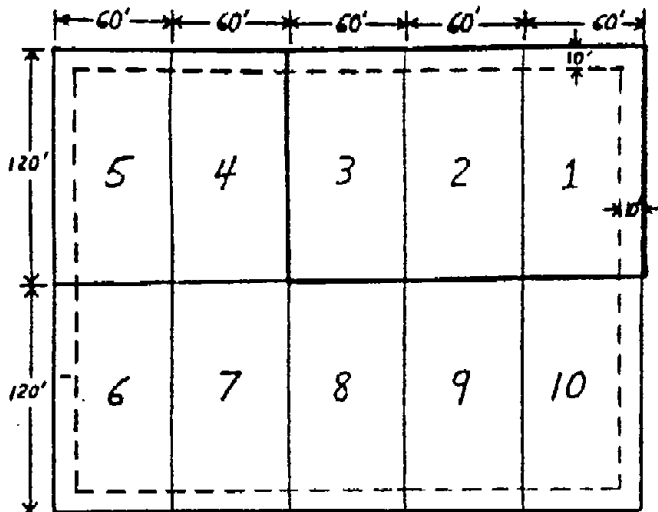
Floor Area Ratio:
24,000/12,000 = 2

efficiency unit or one-bedroom unit, plus an additional 160 sq. ft. for each additional bedroom in excess of one in a dwelling unit.
- up to 50% of this open space can be on the roof or balconies.

11) Building Efficiency Factors - percentage of net rentable area to gross building area; decreases with increasing height of building (i.e., # of stories).

550 + 705

ONE-STORY RETAIL BUILDING



1. Lot Size: $180' \times 120' = 21,600'$

2. Area Lost to Setbacks:

a. Restrictive Covenant:

Front yard: $10' \times 180' = 1,800'$

Side yard: $10' \times 110' = 1,100'$

b. Zoning:

Front yard: $3' \times 10' = 30'$

Total $= 2,930'$

3. Buildable Area:

$21,600' - 2,930' = 18,670'$

4. Maximum Allowable Floor Area:

$3 \times 21,600' = 64,800'$

5. Calculation of SAU:

| | | | |
|----------|-------------------|-----------|-----------|
| | Net | BEF | Gross |
| Building | $300' \div .90 =$ | $333.33'$ | |
| Parking | $375' =$ | $375'$ | |
| | | SAU = | $708.33'$ |

6. Number of SAUs within Buildable Area:

$18,670' \div 708.33' = 26.36$ SAUs

Given Information:

- Assume that there exists a restrictive covenant which requires a 10' setback from all streets and which forbids any "use" of the setback area.
- Assume that the building efficiency factor for this one-story retail building will be .90.

7. Total Building Area:

| | |
|---|----------|
| Gross | Net |
| $26.36 \times 333.33 \times 1 = 8,787'$ | $7,908'$ |
| $26.36 \times 300 \times 1 =$ | |

8. Parking Area:

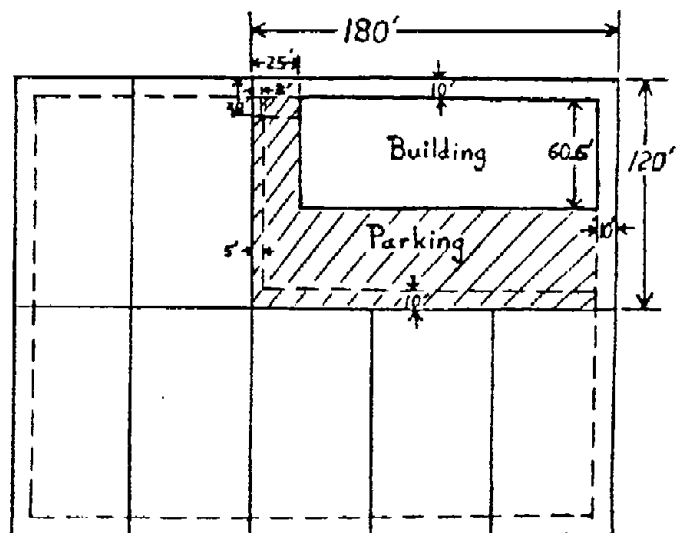
| |
|-----------------------------|
| Gross |
| $26.36 \times 375 = 9,885'$ |

9. Base Area Check:

| | |
|----------|-----------|
| Building | $8,787'$ |
| Parking | $9,885'$ |
| Total | $18,672'$ |

10. Is there a difference between #3 and #9? Only 2' due to rounding.

11. Illustrate below how you might allocate the required building and parking areas to the site. Be sure to indicate setback lines, draw to scale, and show dimensions.



Scale: 1cm = 40'

TWO-STORY BUILDING
FIRST FLOOR RETAIL & SECOND FLOOR 500 NET SQ. FT. EFFICIENCIES
 (Assume that the building efficiency factor is .85.)

1. Lot Size: $180' \times 120' = 21,600'$
2. Area Lost to Setbacks:
 - a. Restrictive Covenants:
 - Front yard: $10' \times 180' = 1,800'$
 - Side yard: $10' \times 110' = 1,100'$
 - b. Zoning:
 - Front yard: $3' \times 10' = 30'$
 - Total = $2,930'$
3. Buildable Area: $21,600' - 2,930' = 18,670'$
4. Maximum Allowable Floor Area: $3 \times 21,600' = 64,800'$
5. Maximum Number of Apartments Allowed by Lot Area Requirements: $21,600' \div 700'_{\text{apt.}} = 30.86 \Rightarrow 30 \text{ apts.}$
6. Calculation of SAU: Net BEF Gross

| | | |
|-----------------------------|-----------------------------|-----|
| Building | $500' \times .85 = 588.24'$ | 15. |
| Apt. Parking | $(.75) 375 = 281.25$ | |
| U. Open Space | $(.50) 160 = 80$ | |
| Retail Pkg. $(500/300) 375$ | $= 625$ | |
| SAU = $1,574.49'$ | | |
7. Number of SAUs within Buildable Area: $18,670' \div 1,574.49'_{\text{SAU}} = 11.86 \text{ SAUs}$
8. Number of Apartments on Lot Based on No. of SAUs w/in Buildable Area: $11.86 \text{ SAUs} \times 1 \text{ floor of apts. SAU} = 11.86 \text{ apts.}$
9. Given constraints #5 and #8, the largest number of apartments that can be built is: 11.86 apts.
10. Total Building Area:

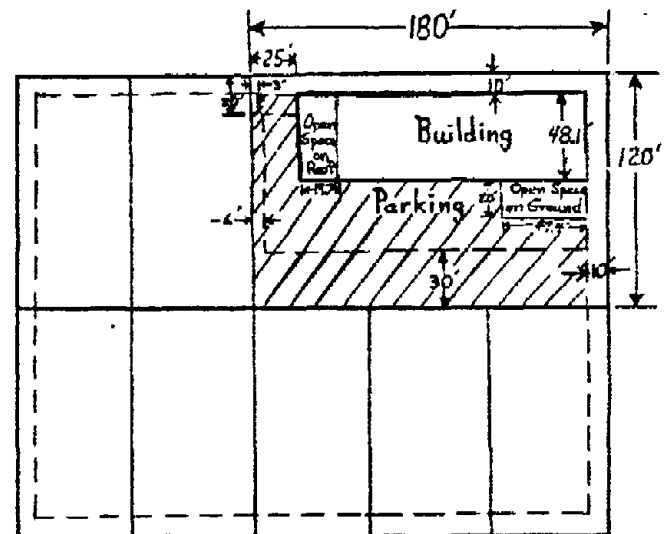
| | | |
|------------|--------------|------------|
| | <u>Gross</u> | <u>Net</u> |
| Apartments | $6,977'$ | $5,930'$ |
| Retail | $6,977'$ | $5,930'$ |
| | $13,954'$ | $11,860'$ |

$11.86 \times 588.24'$
 $11.86 \times 500'$
11. Parking Area:

| | | |
|------------|--------------|-----------------------------------|
| | <u>Gross</u> | |
| Apartments | $3,336'$ | $\leftarrow 11.86 \times 281.25'$ |
| Retail | $7,413'$ | $\leftarrow 11.86 \times 625'$ |
| Total | $10,749'$ | |
12. Open Space:

| | | |
|-----------|--------------|-------------------------------|
| | <u>Gross</u> | |
| On ground | $949'$ | $\leftarrow 11.86 \times 80'$ |
| On roof | $949'$ | $\leftarrow (\text{ditto})$ |
| Total | $1,898'$ | |
13. Base Area Check: Gross

| | |
|------------|-----------|
| Building | $6,977'$ |
| Parking | $10,749'$ |
| Open Space | $949'$ |
| Total | $18,675'$ |
14. Is there a difference between #3 and #13? If so, how much? Why? Only $5'$ due to rounding.
15. Illustrate below how you might allocate the required building, parking, and open space areas to the site. Be sure to indicate setback lines, draw to scale, and include dimensions.



SELECTED SAU FORMULAS (FOR MADISON C2 ZONING DISTRICT)

CASE 1: First floor retail*, upper floor(s) apartments

| | <u>NET</u> | <u>B.E.F.</u> | <u>GROSS</u> |
|-------------------|---|---------------|--------------|
| Building | $\frac{\text{Net size (of apt. in } \square \text{)}}{\text{# of floors}} \div$ | | = |
| Apartment Parking | $\frac{\text{# of pkg. spaces required per apt.}}{\text{# of apts.}} \times 375 \square \div 1.00 =$ | | |
| Open Space | $\frac{\text{# of BRs}}{\text{per apt.}} \times (.5) 160 \square \div 1.00 =$ | | |
| Retail* Parking | $\left[\frac{\text{Net size (of apt. in } \square \text{)}}{\text{# of floors}} \div 300 \square \right] \times 375 \square \div 1.00 =$ | | _____ |
| | | SAU = | ===== |

CASE 2: If only apartments are present, then omit the "Retail Parking" line.

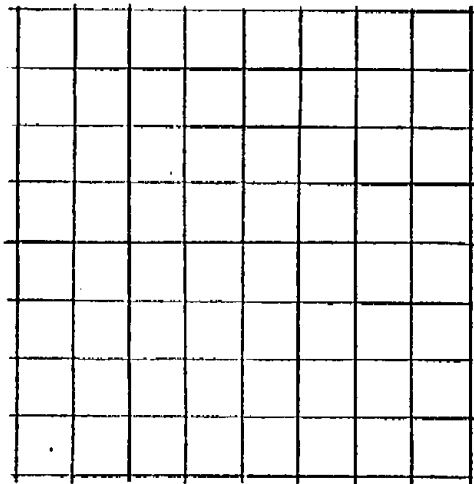
CASE 3: If only retail* space, then use this format:

| | <u>NET</u> | <u>B.E.F.</u> | <u>GROSS</u> |
|-----------------|---|---------------|--------------|
| Building | $300 \square \div$ | | = |
| Retail* Parking | $(\text{# of floors}) \times 375 \square \div 1.00 =$ | | _____ |
| | | SAU = | ===== |

* "Office" can be substituted for "Retail" in these formulas for Madison's C2 District.

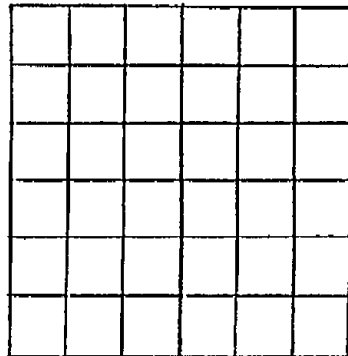
I. Legal Description of Real Estate

A. Government Survey System



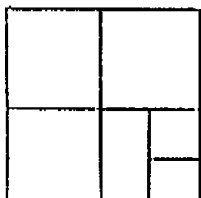
Meridian
Parallel
Principal Meridian
Base Line
Tier
Range
Township
- size
- numbering

Township Tier _____, Range _____



Section
- size
- numbering

Section ____ of Township Tier _____,
Range _____



Fractional Parts
- description
- size

B. Metes & Bounds

- how it works:
- wrt rural land:
- wrt urban land:

C. Plats

- how created:

- how used:

D. Street Address

- OK to use for:
- problems with:

E. Reference to Outside Facts

- valid only if:

II. Recording of Data

A. Register of Deeds

B. Constructive Notice

C. Actual Notice

III. Land Use Controls

- intent:

- how used:

A. Private Sector

1. Restrictive Covenant

- created by:

- must be recorded

- renewal in WI:

- common restrictions:

2. Easement

- definition:

- how used:

B. Public Sector

1. Zoning

- concept:

- evolution:

2. Subdivision Regulations

- when apply:

- intent:

- extra-territorial:

- requirements:

3. Official Map

- shows:

- guarantees:

4. Safety Codes

- intent:

- periodic inspections:

5. Highway Access Restrictions

- access:

6. Shoreland Zoning

- intent:

- provisions:

7. Floodplain Zoning

- intent:

- DNR:

8. Interstate Sales of Subdivided Land

- when apply:

- intent:

- requirements:

Tax Law - understand the ramifications:

- revenue source
- is the tax burden equitable?
- a tool to conduct social policy
- continually evolving

Economic Recovery Tax Act of 1981

| Accelerated Cost Recovery System | | | |
|----------------------------------|------------------------|-----------------|---------------|
| Property Type | Recovery Period (Yrs.) | Deprec'n Method | Recapture* |
| Residential | 15 | SL | No |
| | 35 | 175% DB | Excess Dep. |
| | 45 | SL | No |
| Nonresidential | 15 | SL | No |
| | 35 | 175% DB | All Deprec. |
| | 45 | SL | No |
| Subsidized Housing | 15 | SL | No |
| | 35 | 200% DB | Excess Dep.** |
| | 45 | SL | No |

* Residential and nonresidential real estate is subject to 100% recapture if held less than 12 mths. Subsidized housing is subject to recapture of excess depreciation if held less than 12 months.

** This excess deprec'n is phased out gradually (wrt being recaptured).

* Depreciation:

- the deduction of a noncash expense from income before arriving at taxable income
- recognizes the diminution of value over time (i.e., losses from wearing out)
- this has not been the case historically with real estate

• Need:

- 1) depreciable basis - the amount of capital expenditures allocated to improvements,

- 2) useful life - the number of years over which the asset will be depreciated for tax purposes
- 3) method of depreciation - straight-line, declining balance, etc.

• Example of Straight-Line Depreciation:

Given: Cost of improvements = \$75,000
Useful life = 15 years

$$\text{Annual dep.} = \frac{1}{\text{useful life}} \times \text{Original depreciable basis}$$

$$\text{Annual dep.} = \frac{1}{15 \text{ years}} \times \$75,000 = \$5,000/\text{year}$$

• Example of 175% Declining Balance Method of Dep.

$$\text{Dep. in Yr. } j = 1.75 \times \frac{1}{\text{useful life}} \times \text{Remaining Bal. (beginning of year)}$$

Note: Remaining balance =
Original depreciable basis minus
accumulated depreciation

Given: Cost = \$75,000; Useful life = 15 yrs.

$$\text{Dep. in Yr. 1} = 1.75 \times \frac{1}{15 \text{ yrs.}} \times \$75,000 = \$8,750$$

$$\text{" " " 2} = \text{" " " } \times \$66,250 = \$7,729$$

$$\text{" " " 3} = \text{" " " } \times \$58,251 = \$6,827$$

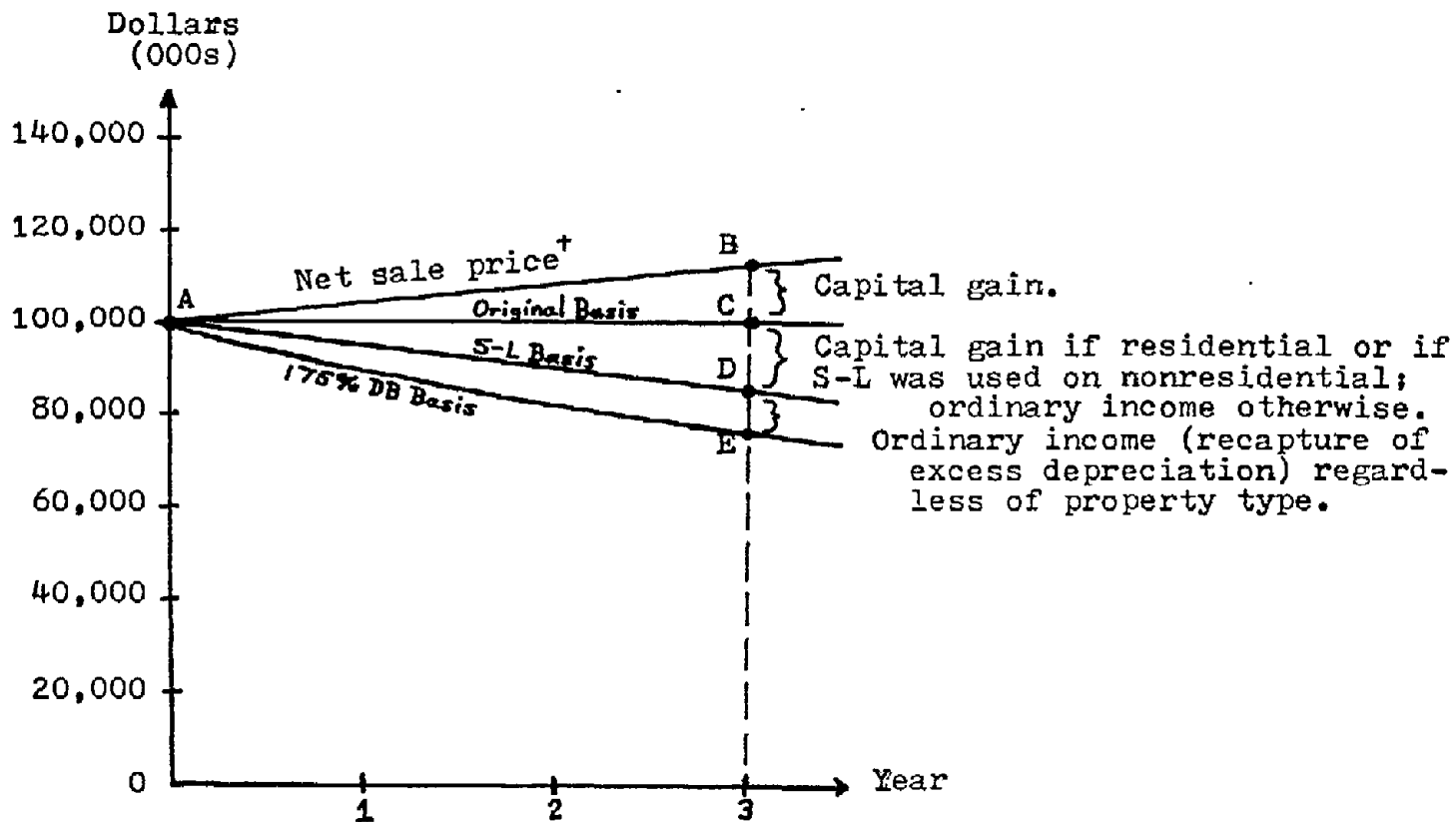
etc.

* Long-term Capital Gain Treatment on the Sale of Property

• Necessary conditions:

- 1) the property must be considered a "capital asset" or a "Section 1231" property under the tax code definition
 - 2) the property must be owned for a period greater than 12 months
 - 3) the investor cannot be considered a dealer in real estate
 - ~ 4) the S-L dep. method was used (for full C.G. treatment)
- Long-term capital gain is taxed at a rate equal to 40% * individual's tax bracket or 28% if a corporation

Taxation of Total Gain* upon Sale of Property



- 25% 75%
- A = Purchase price of property (land & improvements) = \$100,000
- B = Net sales price (after selling expenses) = \$112,000
- C = Original basis of property = \$100,000
- D = Adjusted basis using S-L depreciation = \$85,000
- E = Adjusted basis using 175% DB depreciation = \$76,694

Suppose that the above information applies to a nonresidential property that we've depreciated at 175% DB. If the property is sold at the end of year 3 for \$112,000, then:

$$\text{Total gain} = B - E = \$112,000 - \$76,694 = \underline{\underline{\$35,306}}$$

$$\text{Capital gain} = B - C = \$112,000 - \$100,000 = \$12,000$$

$$\text{Ordinary income} = C - E = \$100,000 - \$76,694 = \$23,306$$

$$\text{Sum} = \underline{\underline{\$35,306}}$$

* The "total gain" recognized on the sale of the real estate equals the difference between "adjusted basis" and "net selling price."

† Assume 4% simple growth in project value.

FORHAT
ANNUAL CASH FLOW STATEMENT

| | YEAR---- | 1 | 2 | 3 | 4----- |
|----|--|---|---|---|--------|
| 1 | GROSS POTENTIAL INCOME | | | | |
| 2 | LESS VACANCY ALLOWANCE | | | | |
| 3 | ADD OTHER INCOME FROM SERVICE SALES | | | | |
| 4 | EFFECTIVE GROSS INCOME | | | | |
| 5 | LESS REAL ESTATE TAXES | | | | |
| 6 | LESS OPERATING EXPENSES | | | | |
| 7 | NET OPERATING INCOME | | | | |
| 8 | LESS DEPRECIATION | | | | |
| | LESS INTEREST | | | | |
| 10 | TAXABLE INCOME | | | | |
| 11 | PLUS DEPRECIATION | | | | |
| 12 | LESS PRINCIPAL PAYMENTS | | | | |
| 13 | CASH THROW-OFF | | | | |
| 14 | LESS INCOME TAXES | | | | |
| 15 | LESS RESERVES | | | | |
| 16 | CASH FROM OPERATIONS | | | | |
| 17 | WORKING CAPITAL LOAN(CUMULATIVE BALANCE) | | | | |
| 18 | DISTRIBUTABLE CASH AFTER TAXES | | | | |
| 19 | PLUS TAX SAVINGS ON OTHER INCOME | | | | |
| 20 | PLUS SURPLUS FROM REFINANCING | | | | |
| | SPENDABLE CASH AFTER TAXES | | | | |

Business 550
Physical and Legal Attributes of Real Estate
Lecture #3 Outline

I. Application of Most Fitting use and Probable Use Concepts

- A. The most fitting use is that use which is the optimal reconciliation of effective consumer demand, the cost of production, and the fiscal and environmental impact on third parties, given the limitations on constraints of a specific parcel and existing improvements. Ultimately reconciliation involves financial impact analysis on "who pays" and "who benefits."
- B. The most probable use will be something less than the normative and idealistic "most fitting use", depending on short term constraints imposed by the state of real estate technology, short term market shortages and surpluses, current political factors and short term solvency pressures on consumer, producers or public agencies.
- C. Fit implies that we can first define the context or elements in a design problem which are fixed, given, or objectives to which any solution must adapt.
 - 1. Note that financial arrangements, marketing programs, as well as property management are all part of the design process in real estate. Design means the software of any enterprise as well as the hardware.
 - 2. Form giving elements are those variables within the control of the artist, the entrepreneur, or the decision maker - i.e. options or alternatives available at a particular time.
- D. The next several lectures are concerned with the problem with identifying limitations on use and viable alternatives of use that could be discovered in a given parcel of ground as the first step toward real estate analysis.

II. An Inductive Approach to Analysis

Before identification of a specific consumer target, producer group, or public infrastructure involvement it is necessary to begin with a given - a specific property. Analysis moves from the attributes of the property outward toward ever broader areas of concern.

- A. For all real estate problem solving there are basically only three situations:
 - 1. Site in search of a use
 - 2. A use in search of a site
 - 3. An investor seeking a real estate opportunity to improve his spendable cash or net worth position
- B. A physical analysis of a real estate parcel in the search for limitations and opportunities should include:
 - 1. Physical attributes of the site and improvements
 - 2. Legal-political attributes controlling use and reuse
 - 3. Linkage attributes which in combination create that illusive element of location.
 - 4. Dynamic attributes
 - 5. Environmental attributes of the site in relation to off-site natural systems

- C. Static site attributes which begin to narrow the potential market alternative uses should include both the facts and their implications for productive use in such topic areas as:
1. Size, shape, and lot area
 2. Topography, soils, geology, slope stability, bearing capacity, septic suitability, potential for subsidence, etc.
 3. Water table, wells, streams, ponds, storm water swales, shoreland edges, and bulkhead lines, flood plain designations, etc.
 4. Flora and fauna which enhance marketability or which might cause environmental impact litigation.
 5. Concealed utility easements, old foundations, etc.
 6. Existing on-site utility services and capacity.
 7. Access points to public thoroughfares or private right-of-ways
 8. Site improvements such as paving, retaining walls, pedestrian paths, culverts, etc.
 9. Landmark attributes or historical site features.
 10. Define physical system sub-systems
 - a. Foundation system
 - b. Structural system
 - c. Floor system
 - d. Ceiling system
 - e. Roof system
 - f. Exterior wall system
 - g. Interior wall system
 - h. Horizontal circulation system
 - i. Vertical circulation system

Life Safety System
HYAC System
Site Circulation System
Visual Control System
- D. Legal Attributes should move from specific limitations on the site imposed by rights of others to private covenants, private controls, etc. It is important to recognize not only the black letter law but the composition of those authorities who have discretionary responsibility for interpretation, enforcement, or amendment of these controls relative to future uses of the site.
1. Legal interests, vested or continued of other persons in the site.
 2. Legal description, its accuracy, and implied transfers.
 3. All local ordinances defining alternative setback lines and height limitations in order to identify alternative building envelopes permissible on the site.
 4. Private covenants limiting use, re-use, or modification of the property (urban renewal covenants, landmark building facade bequests, etc.
 5. Applicable zoning and building code limitations on use and the critical constraints of each relative to floor area ratio (FAR) bulk, parking requirements, dwelling unit (DU), etc.

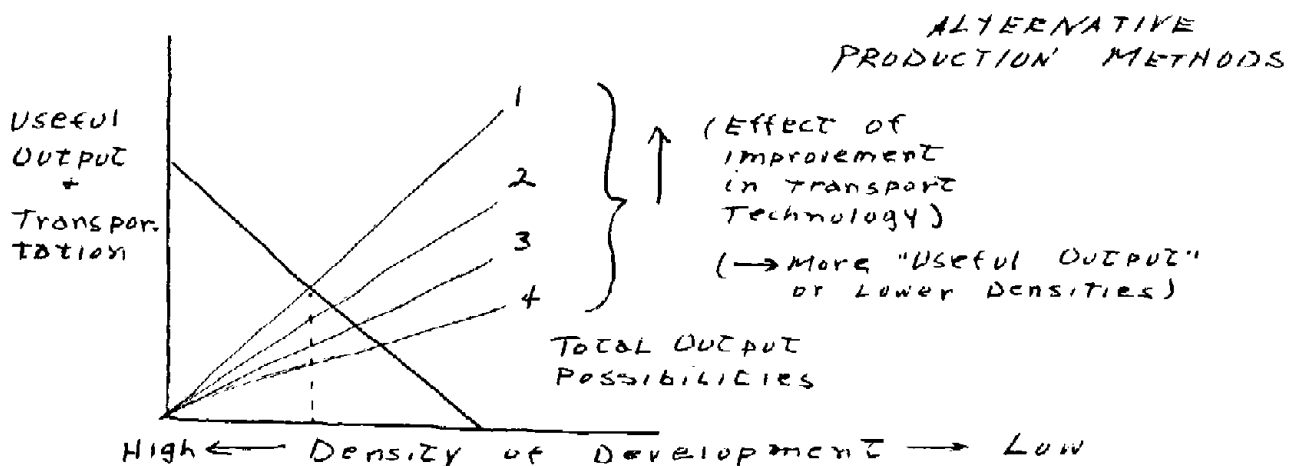
6. Special zoning options which may be available at owners option such as rezoning, down-zoning, PUD zoning, etc.
7. Special controls imposed by other communities through extra territorial zoning, tax conservancy commitments, urban renewal districts, tax increment districts, county regulation of subdivision, and overlapping jurisdiction.
8. Special state constraints on uses affecting shorelands, state highways, state airports, etc. including state industrial building code.
9. Special federal constraints such as airport approach zone districts, harbor and river commissions, office of environmental protection, Department of Housing and Development (HUD), provisions for the handicapped (HEW) and many more.
10. Since the building process takes time, impending legislation is important and regulations require interpretation or public hearings so that public attitudes and expectations may modify black letter law.
11. A hidden source of regulation are the rules which control the lending institutions which lend the money. For example they cannot lend on any properties located in a designated flood plain except under certain conditions which include community participation in flood prevention programs.

III. Analysis of the Physical, Legal, and Political Attributes of the Site

- A. preliminary analysis of these attributes permits the experienced analyst to discard the majority of majority of alternative uses and to select a set of plausible alternative uses which we call scenarios, courses of action which should be analyzed further in terms of marketing, pricing, costing, and acceptability.
- A. These initial screens for elimination need to be refined by reference to the dynamic, and linkage attributes and environmental constraints which characterize the property. Sometimes legal and physical are related.
- B. Consider the site of the Camelot Apartments. The soils are very bad and were capable of supporting only light weight industrial buildings. There was a side track and noise from the railyard. Hence it was zoned M-1. A developer thought he could afford to take advantage of a park by putting in extensive foundation improvements and siting the building to minimize window openings facing the railyard. Excessive costs were only possible by finance by a limited partnership. Eventually a legal issue ensued as to whether best use of the site was commercial or residential.
- C. Some static attributes may help identify most probable user types (Ex. special display window sizes may be suitable for antique or art display) while attributes will make certain uses unlikely (Ex. floor load limitations of fire proofing weights required of places of public assembly).
- D. Some static or legal attributes can provide monopoly advantages because suitability is unique relative to lands all around it, because of exemption from certain regulations, or existing approvals of development plans, including licenses for dredging, building code variances, etc.

Spatial Distributions Within & Among Clusters

- I. Aside from a certain need for social interaction, an ordered dense ~~of~~ cluster of people creates certain economies for any exchange system.
 - A. Clustering permits internal economies of scale due to increased specialization of labor and enterprise and reduced distribution costs.
 - B. External economies may be the result of increased logistical support made possible by agglomeration. For example, sewer line in place of septic tank is only possible where there are only short runs of pipe between collection points. Responsibility for disposal is shifted from the individual space user to a external community system.
 - C. Communication is an essential byproduct of clustering because it fosters innovation and reduces the cost of mistakes or duplication of effort.
 - D. Nevertheless, the original and most dominant cost affecting location of each cluster relative to one another and internal ordering of priorities within a cluster was transportation costs. The greater the effort, the more product allocated to transportation, the less net output any enterprise can enjoy (the appetite of the horse for oats reduces the net surplus from the farm).
1. The trade-off between transportation economics and urban land economics is suggested by the simple tradeoff diagram A.



2. The arrows labeled 1,2,3,4 show progressive reduction in transportation costs (below the arrows) and successive increases in useful output given ~~an increasing degree of clustering~~ despite declining degrees of clustering.
3. When transportation becomes cheaper the economic payoff of clustering is less necessary and therefore people may choose to have lower densities, less spatial order or some combination of aesthetic satisfactions.

II. There are many different theories by economic geography as to what is an efficient location for different types of enterprises. Urban Geography is a useful course area for real estate majors. A few demonstrative theories follow:

- A. A weight-gaining process - product gets heavier as it reaches the market - that is an increase in cost per mile of transportation the more complete the product.
 - 1. The more significant the weight-gaining process the closer the enterprise to its market, assuming the other costs of production are identical. Transportation cost not only reflects weight and distance but bulk (modular homes), perishability and fragility (bread) and this assumes all other costs are equal.
 - 2. In general, we are talking about the costs borne by the firm and not the real cost to the economy so if suppliers conceal costs with discriminatory rating, delivered pricing, etc. eventually the pattern of business location is less than efficient for the economy as a whole.
 - 3. It is also assumed that the firm is free to locate anywhere along the line between raw material and market when, in fact, locations with the desired logistics are limited and there are irrational goals, too.
- B. Multiple sources and multiple markets involve location vectors as in the second diagram. There is a point at which the aggregate transportation cost per ton of steel is least.
- C. Urban areas are generally involved in exchange processes one of which is a transportation break point - i.e. a change in the mode of transportation from barge to rail or rail to truck.
- D. There are foot-loose enterprises in which transportation and convenience cost are minimal in relation to value added, such as diamond cutting or the manufacture of transistor diodes.
- E. The way station of accommodating transients.

III. Assuming that urban clusters make sense and are spaced out with some logic, the question remains what goes where within a single urban center (ordered cluster) - i.e., pattern of urban land uses. Such pattern is relative and not absolute. For the moment, pattern is considering a "featureless plain" so the topography, water, and subsurface conditions, and political boundaries have no significance. With those assumptions pattern can have a number of dimensions.

- A. Relative direction of various uses - such as oil refineries should be at the opposite end of towns from homes, or factories should be outside the green belt buffer.
- B. Another dimension is density expressed as number of dwelling units per acre, or workers per square foot of floor area, or ratio of building/floor area to land area.
 - 1. Density should be a frequency distribution and leads to many different sociological topography maps.

2. Frequency distribution modes influence values, pattern of retail and public facilities, and particularly the transportation system.
 3. High density office buildings as compared to low density of employees in factory buildings will influence their relative locations and transportation linkages.
- C. Definition of land use categories will influence our ability to study spatial arrangements in terms of diversity of land uses and locational tendencies of these uses. Diagram B of the average distribution of land by forty-eight (48) large cities shows the relative significance by 5 broad categories and it should be noted that while residential is the largest single class, it is far less than 1/2 all the land use.
- D. The urban land economist has traditionally assumed that the separation of land uses, often through zoning and city planning, will create a land pattern. Some criteria of maximum benefit:
1. Efficiency is aggregate expenditure for internal transportation. Ideal is to reduce rent differentials to zero.
 2. Fiscal profit where the real property tax is the primary source of revenue.
 3. Social integration to achieve neighborhoods of relative homogeneity.
 4. Control of external cost such as traffic or noise nuisance.
 5. Flexibility to absorb new elements without becoming dysfunctional.
 6. Prescriptive order - how people will live and behave.
 7. A pattern which suggests a certain ethos or life style.
- E. This is not an exhaustive list of criteria for urban land use patterns but it might suggest that with proper definition one could select a land use pattern which was best although that itself has some unattractive implications.

Of course, we are not often given clean slate options as to overall land use patterns as we must begin with an urban area as we find it and we must adapt to physical limitations of the land. Nevertheless your textbook will explore certain basic interaction patterns such as Hoyt, multiple nuclear patterns, star patterns, etc.

- F. Within a certain loosely structured pattern imposed by society or physical constraints of an area individuals will be fine tuning their linkage patterns to optimize their particular goals and objectives, some of which are rational and predictable and others which are highly subjective. Planners cannot anticipate these patterns and thus the marketplace is a very useful allocation and rationing device which determines the texture of land uses in the city.

LECTURE #3
Social Impact of Real Estate

1. The decision process involves both identification of alternative outcomes including financial consequences, and conversion of value judgments to selection criteria as in the following diagram A:

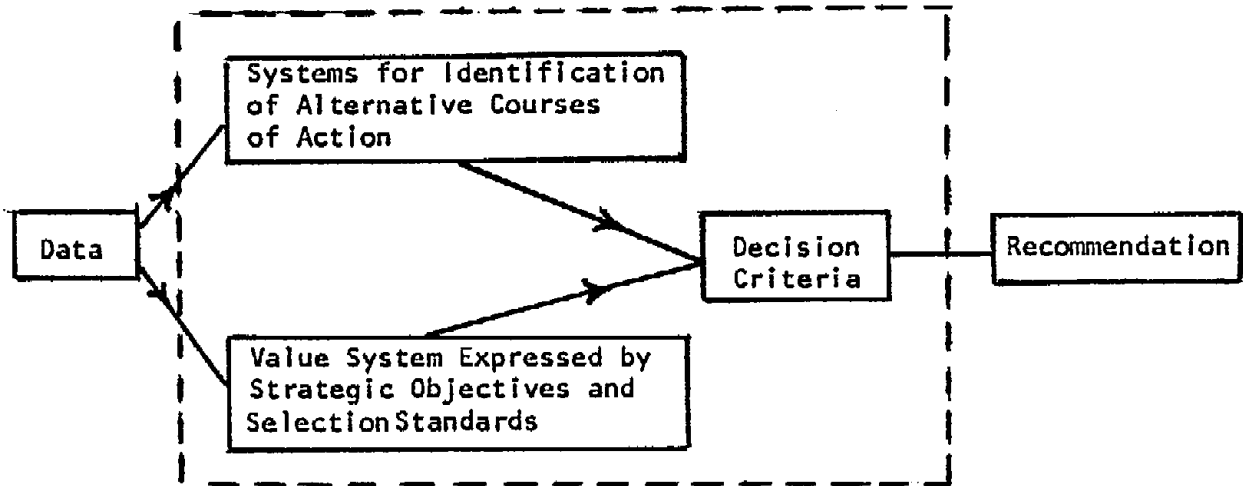


Diagram A

- A. Social content or impact of real estate is found in:
 1. Decision procedures of users, producers, and public agencies.
 2. Impact of past real estate decisions on future behavior of individuals and social groups.
 3. Winston Churchill - "We first shape our buildings and then our buildings shape us."
- B. The space user can express his values...
 1. As a market transaction.
 2. As a do-nothing decision.
 3. As explicit collective social or political action.
- C. The space producer can express his values...
 1. As an individual selective response to user stimuli.
 2. As a collective response to external forces.
- D. Political Infrastructure reflects values...
 1. Of the constituency through laws and ordinances.
 2. Of the political administration through discretionary procedure.
 3. Through devices for public hearings and appeals.
 4. By means of the threat of future political action.
- E. Thus to examine social values in decision making and social impact of real estate solutions on society involves the real estate process in an almost infinite variety of behavioral models of the political and social process. Thus land economics grew out of the school of institutional economics which saw economics as a by-product of social organization.

- II. Cities of the past often have physical clarity in land forms, layout and architect as a result of static population, static technology, and cultural continuity. A value consensus leads to simplistic purposes with momentum over time.
 - A. Specific purposes produce a desirable order so that social need was reflected in urban forms.
 - B. Interaction was simplistic in priority, defense, commerce, religion, etc.
 - C. Form builders made changes in traditional procedures only in response to significant and obvious irritation, misfits in the form fit to the context such as the London fire, the cannon, or disease from polluted water.
 - D-1 Defensive town - Naarden
 - D-2 Roman military town - Aosta
 - D-3 Inca store town - Pikillacta
 - D-4 Peking - Tartar City - Imperial City - Forbidden City
 - D-5 Canal structure of Amsterdam
- III. Settlement of the new world meant conditions of cohesive development in other civilizations were gone.
 - A. Population explosion
 - B. Cultural restructure from outer directed to inner directed
 - C. Technological explosion in communication, transportation, and building structures
 - D. Property rights were a populous emotional experience
 - 1. Pioneer ethic of development favored those who could pay the most and build the biggest.
 - 2. Thus highest and best use concept - that use which had the highest present value of dollar benefit over a specific period of time - does describe the land use allocation system from 1800 to 1950.
 - E. Cities grew like a reef - a process of accretion, with each building a skeleton built to house a particular activity. A process of accretion tending to cluster around transportation systems leading to the center of commerce, government, and industry.
- IV. Over the years, many men of intellectual stature have expressed a fear or disgust for urbanization with historian Arnold Toynbee anticipating that the increase in world population will "silt up in urban slums," and Thomas Jefferson believed cities would be the ruination of American democracy. He advocated that manufacturing remain in Europe and that the loss in transportation and trade over the Atlantic would be offset by the happiness of life in America.

- A. If there was a consensus as to form of the city beautiful it was essentially on two romantic images - to the central plaza as the focus of the city for government and business and to extensive lawns as the mark of an estate owner.
1. The rich sought a palace on a hilltop surrounded by grass and the middle class copied this conspicuous assumption with the modern suburb.
 2. The focus of each city is growing feeble. The Capital Square no longer is the hub of Madison; the harbor and the three rivers in Milwaukee are no longer the focus of industrial expansion, and so on. Instead of prescribing a form of order to serve a purpose we are tending to simply describe inductively what has taken place as the community "grew like Topsy."
 3. It should be noted that most American towns originally had a plan - Philadelphia, the courthouse square of Georgia, the grid plans of the Midwest, etc. but the last 25 years of the 19th century and the first 25 years of this the 20th century overwhelmed the pattern because the pattern was essentially static rather than dynamic in its approach to growth.
- B. A Greek city planner by the name of Doxiadus points out that the traditional concentric expansion of the city eventually strangles the city center and its functions. As a result the community develops multiple centers and the loss in community identity. If a city is dynamic there is a fourth dimension, specifically time, so that the city should be designed to expand logically in time as well as height, width, and length.
1. He proposed that a city of the future be designed to expand in only one direction at a time so that the city could accept population pressure and changing technology without having to tear down or desert its historical buildings and past. He calls his concept a Dynapolis.
 2. Compare that concept to the radial, sector, and multiple-nuclei in your textbook.

Perception of City Structure and Social Organization

- I. When man settled down from the nomad's existence of hunter and food gatherer to cultivate the soil and raise livestock, he developed the first forms of man oriented spacial layouts: the village, rural town, and citadel.

In its formative stages, this determination to provide artificial shelter, space, heat, light, and protection, as well as security for his clan and his goods, required living in a selected environment in which the most advantageous location was chosen to bring nature under the control of man.

- A. The Neolithic Age is generally considered the beginning of the village society. From 8000 B.C. to the present, the agriculturalists have maintained their settlements on the recurrent cycles of cultivating, sowing, harvesting, and storing. Even the recent introduction of mechanical assistance to the process has done little to change the spatial and functional relationship of a kabbutz of Israel or Sudonesevillage along the Nile from their prehistoric predecessors.
 - B. Rural towns must be as ancient as the concept of barter exchange- the true purpose for their existence. The village cycle of harvest now has added to it the elements of market transfer, and dispersal. In North America, the Germans and the Dutch knew how to build uniform market towns, but the English and Scots adhered to dispersed village planning. Even in towns with foundations of purely urban character this is true- resulting in ragged subdivision lots of modern times.
 - C. In addition to village and market town, the third achievement of man's sense for spatial layout was the fortified settlement or citadel. It's origin is an inextricably connected with sedentary living and the accumulation of wealth as the village or the market town. The mountain or hilltop citadels far outnumber the fortified control points on waterways and roads, but in every case, the common characteristics remains the full exploitation of natural advantages. The purest example of "high town" settlements were achieved neither in Europe nor in Asia, but rather with the pre-columbian cultures of South and Central America. The search for high ground as the ultimate form of natural defense was abandoned with the introduction of gun powder and firearms in the 14th, 15th, century.
- II. No concept of man-made environment ever dies and none ever becomes obsolete if society has the potential for maintaining its status-quo in terms of man-to-man interaction.
- A. The drive toward urbanization has gripped mankind since the third millennium B.C.-observed by some experts as the longest sustained irrational impulse in human history.
 1. City life meant separation from natural resources, defenses, and escape routes.
 2. It meant passive exposure to famine; epidemic; conflagration; earthquake ; and assault by sword, cannon, and ultimately by warplanes.
 3. The conspicuous display of urban wealth, the concentration of administrative power in monumental buildings, had a magic attraction for the haves-nots who attacked with monotonous regularity the cities, "because this is where the money & goods are."
 4. As the cities rebuilt, redeveloped, or renovated after each overt or covert onslaught, their spatial organization changed and modified and thus dating older man-made environments obsolete to contemporary threats and fears.
 5. The gains and curses of the first urban age might have evaporated in the inferno of incessant warfare if they had not proved so persuasive to those who come to destroy them.
 - B. Man has built and loved cities because in the urban form he constructs the superimage of his ideal self.
 1. In the city man has been able to amplify, beyond the limits allowed by the natural environment, the elements of human intellect: worship, power over nature, consolidation of human resources, knowledge, and wealth.
 2. As urban cultures multiply by either self generation or assimilation, the variations on urban spatial layout become more individualistic. Their origins, however, trace back to common motivations and objectives.

3. All planned cities are the interpreters of social myths
 - a. Nineteenth century cities were called upon to visualize the myth of:
 - unlimited free enterprise
 - successful colonialism
 - regeneration of splendors of past ages through eclectic architecture
 - b. The twentieth century is in breathless pursuit of the adequate statement of the technological city as well as the image personal freedom and unlimited choice.
4. Some architectural concepts take many generations to achieve perfection just as the social values that stand behind the spatial layout took generations to become institutionalized.

III. The architectural aesthetics of the "heritage of Greece and Rome" have their most impact through the emphasis by renaissance scholars to revive the Roman architecture and planning axioms of Vitruvius' ten books on classical architecture.

- A. These nostalgic attempts to keep alive the Hellenistic traditions and principles feel far short of theoretical objectives. There was a obvious misfit between the social systems that developed the spatial pattern of third century B.C. Rome and the dense old quarters of medieval cities of Florence and Venice.
- B. The best example trying to impose the Hellenistic principles over medieval reality is the efforts of Pope Sixtus V and his architect, Fontana between 1585-90.
 1. After the council of Trent (1545-63), Pope Sixtus V decided to construct connecting avenues between the seven most famous pilgrimage churches of Rome.
 2. There is no evidence that Sixtus had intended a city wide renewal project by changing sections of Rome from a maze of medieval slums into a comprehensively planned city with its broad linear processional routes "with reciprocal vistas."
 3. It is clear that Sixtus was concerned only with mobility and ease of access for the religious pilgrim throngs and was totally unconcerned with the worldly Romans who had strongly objected to the increased pressures from the church during the Counter Reformation.
 4. Although Sixtus did not live long enough to see the fruits of his labors, the results far exceeded the original expectations.
 - a. The linear redevelopment was a triggering mechanism that would have its effects on continued redevelopment of Rome for four centuries.
 - b. The absolutist monarchs and their planners who dominated the architectural activities of the seventeenth & eighteenth centuries were greatly impressed by the popes brutal, but effective approach. This had the obvious additional advantage of self-glorification and displacement of disadvantaged populations from selected areas of medieval city slums. (not much different from the present interstate highway displacement in our urban areas.)
- C. The attempts of Sixtus to alter the spatial pattern of Rome and later by L'Enfant's proposed plan for the city of Washington set the stage for the replanning of the city of Paris.
 1. Baron Haussmann was commissioned by Napoleon III in 1853 to redesign Paris with the dual purpose of:
 - a. enhancing its real estate value by constructing modern boulevards
 - b. suppressing riots by cutting through the medieval maze of a city whose population was known for republicanism and violence.
 2. Haussmann's concept is an expression of nineteenth-century commercialism despotism vs. democracy, just as Sixtus' plan was an expression of cleric vs. secular urban political forces.
 3. Haussmann's achievement was again only partially successfully because it neglected the connective tissue of the minor streets and completely ignored any major road connections with the rural areas beyond the city. This problem still plagues the city today.
- D. Modern politically oriented city planning projects are still rather simple-minded when it comes to developing a new variation on an old theme.
 1. Costa and Niemeyer planned and built Brasilia with 1200 foot wide avenues that isolate completely segments of the city into manageable single use units or super blocks as well as providing for a sense of monumentality and visual impact.
 2. Le Corbusier's plan for Chandigarh, capital of the Punjab State in India, attempted and interesting and sophisticated compromise between the past and present theories of space allocation thru the use of complete sub city sectors related to more formal commercial and governmental superblocks.

- IV. Up to this point we have been discussing the issue of major urban spaces which are the domain of the public at large, but an even more important element of city structure is the arrangement of individual functional space users.
- A. There are a number of basic concepts of human settlement as presented by Sigl Moholy-Nagy in the Matrix of Man.
 1. the geomorphic approach is organic, characterized by interrelated growth between landscape and building.
 2. the concentric approach is ideological which had as its focal point a citadel of religious or military importance.
 3. the orthogonal concept is pragmatic where the city is constantly changing requirements of communications and expansion.
 - B. The geomorphic and the concentric concepts are static, because they are predicated on assumed absolutes- nature and faith or power.
 - C. The orthogonal concept, based on man-made reality and change, is fluid permitting a greater variety of approaches.
 - D. In the Rome's civilization, wealth and independence of its ruling class were expressed extravagantly free-form public buildings and villas, the discrimination and contempt for hirelings and serfs was expressed in the modular grid towns built for them.
 1. This orthogonal concept has been transferred through the centuries, interrupted only by the concentric approach of the medieval ages, to the colonization of the Americas.
 2. Such cities as Savannah, Philadelphia, Indianapolis, and Gary and even Jefferson's Land Ordinance adopted by the Congress 1785 all go back to the original Roman colonialism plans.
 - E. The opposite of the grid city is the merchant town. The merchant town layout gained ascendancy over all the other planning concepts because it offered participation in the drive for power to the majority. From the middle of the eleventh century to the present this method of planning has dominated.
 1. The theories that best explain the growth of the market town are best presented by the use of economic variables.
 - a. Hoyt's concentric ring theory and Burgess's sector theory begin to explain the relation of social to physical structure of the city by the factor of site rent.
 - b. To the highest bidder goes the choice locations for residential development which includes high ground, view oriented slopes, and windward sides of the city.
 - c. The working class took what was left and was allowed to hope for better.
 2. Studies of many cities such as Manchester, Edinburgh, Belfast, London, New York, Chicago, and others have confirmed the hypothesis of sectional patterns of socio-economic status in which:
 - a. Address counts
 - b. Quarter acre owner-occupied plots are strongly entrenched in all western European cultures.
 - c. There is a point of entry for recent immigrants into all urban centers and these settlement patterns have different locations for social groups. The international unskilled and semi-skilled immigrants locate in different housing sectors from the relatively well educated native young adults on the threshold of their productive years.
 - d. Most cities have clear sectional patterning of socio-economic status attributes of population as a result of:
 - in the pre-industrial city, the upper status groups had strong residence to workplace ties with the C.B.D. while the remainder of the residents lived in small neighborhoods elsewhere
 - improvements in transportation freed the upper class from their workplace ties
 - a small number of high-status "rural retreats" tended to develop on the fringe of the urban center
 - increased real income and changes of societal structure created an upper-middle class that followed the rich to the fringe of the city
 - changes in dwelling location became associated with the climb in the status and social structure (filtering is one result)
 - the upper class have the status and don't have the pressure to relocate to mark phases in their social cycle but to the middle class there is only one alternative, move up and out or laterally
 - the majority of the middle class are now also freed from their workplace ties and can afford the move away from the central city leaving in the C.B.D. only those that do not have the resources to make the move - the urban poor

550 Lecture Outline
Lessons to be Learned From New Towns

- I. The city is a combination of various enterprise systems
 - A. A residential system includes retail, recreational, and educational facilities and financing.
 - B. The residential system must include a great variety of styles, prices, tenures, and locational patterns.
 - C. The retail system includes convenience shopping, neighborhood services, downtown comparison shopping.
 - D. The recreational system includes open space, water systems, golf courses, big structures like music pavillions and ice skating rinks as well as very small personal tot lots, patios, private gardens, and teenage hangouts.
 - E. The educational system and recreational system are related from tot lot to elementary school to high school to college courses and technical college courses. Education is a form of recreation.
 - F. The transportation system also has a hierarchy from international airport and interstate to bike paths to school and shopping. All of these must interface but avoid intersection and conflict. Like Columbia many cities have solved the problem of linking internationally and the mini-systems in the neighborhood but have failed to solve the intermediate transportation problem between village and village or between village neighborhood and downtown core.
 - G. Utility systems today include water, sewer, storm water, environmental quality control, cable TV, central heat and air conditioning as well as fire and police security. Each has a cash flow problem.
 - H. More recently town planners can design for health maintenance systems, various levels of hospitals and clinic care and house calls.
- I. The land use plan also contemplates social and political interaction on systems. Columbia recognizes the need for appropriate scales of political decision making and budgeting at the point of impact, the neighborhood, the village, the city, and even the county.
 1. Social systems include churches, organized welcome committees for new neighborhoods as well as subtle design controls for security and vandalism.
 2. Columbia failed to anticipate the teenage social culture and has had more than its share of delinquency.
 3. The social hierarchy stresses longevity - the family there three years is established and carries more influence than the Johnny-come-lately.
 4. Both the price range and sophistication of the Columbian experiment has skewed its population toward higher education, higher income professionally so that the sophistication of city government is very high and with only 20-25,000 people in place, much of the talent is volunteer because everybody knows somebody else with a special talent.

- II. New town experiments have to strike a very delicate balance between three major factors.
 - A. To buy cheap land in sufficient quantity they must choose a site some distance from established urban areas, but the farther they go...
 - B. ...the more amenities and infrastructure must be built at the beginning before anyone is attracted to live there for its residential quality. But to support these systems it is necessary to have a rapid increase in population density which can only come if...
 - C. ...an economic base industry can provide employment opportunity and jobs providing income sufficient to qualify for purchase of a new home or apartment in the new town. But employers need residents in place looking for work so it is easier to begin where economic base is already causing growth.
 - D. A close-in location or a big investment in infrastructure means high front-end costs which are only justified by creating an early cash flow from land sales, requiring a very competitive marketing package or a location in the middle of a natural growth area (Irvine, Reston, Elk Grove, Park Forest South).
 - E. The time horizon is too long and the risks too great - Columbia may not be duplicated for lack of land, capital at 6%, or another Rouse. Others have suggested government build new towns.
- III. The federal government has tried new towns before, building Greendale in Milwaukee as well Greenbelt, Maryland.
 - A. These were later sold piecemeal to private developers to complete following World War II.
 - B. More recently it launched a program of insuring loans for the developers for new towns. The federal government insured loans for the developers, making some of the loans from GNMA and guaranteeing others for up to \$100,000,000 per town. About 13 were approved and put into construction, but 8 are out of cash including:
 1. Jonathon, Minnesota
 2. Flowermound, Dallas, Texas
 3. Park Forest South in Chicago
 4. Riverton, New York
 5. Cedar-Riverside - Minneapolis
 6. Gananda - Buffalo, N.Y.
 7. St. Charles - Maryland
 8. Soul City - S. Carolina
 - C. All of these are now in distress and the government may lose several hundred million dollars on these projects. The same factors seem to have contributed to their failures in each case:
 1. All began with a site in search of a market, an assemblage so large so as to require a new town rather than the Rouse example of locating a need first and fitting the site to it.
 2. None of them established the capital budget and then the plan and disciplined the planners according to pre-set cost allowances.

3. The government guarantee required compliance with a host of government regulations and the government bureaucracy was unable to make decisions with the speed required of a business enterprise. A \$20,000,000 loan at 6% interest is \$1,200,000 a year or \$100,000 a month or \$3,300 a day. The government would delay several months at a time on critical decisions or would refuse to include interest costs in allowable capital budgets.
 4. Environmental impact studies were done only after the site had been selected so that large amounts of capital were required to correct or avoid environmental impact. Flowermound was discovered to have serious underground water pollution potential; Riverton had large acreages in a flood plain, etc.
 5. Original capital budgets had not anticipated the inflation in construction costs, particularly in utility infrastructure.
- IV. The success of Columbia and the failure of other programs ultimately can be traced to one pattern:
- A. Government planners and developers treat each other as adversaries rather than respecting the contributions of each viewpoint.
 1. Planners refuse to acknowledge the discipline of cash flow solvency and the time value of money which imposes a dictatorship of adherence to scheduling.
 2. Business oversimplifies the need for simultaneous integration of public infrastructure, social software required by the consumer, and the conventional hardware of real estate.
 - B. No good real estate has ever come from a committee. Ultimately there is only one entrepreneurial ego with an obsession which fits land use to his viewpoint and objective.
 1. When it works we remember William Penn, Oglethorpe, or James Rouse as great humanitarians.
 2. Sometimes the designer of public buildings; sometimes it is the developer of private buildings.
 3. Nobody remembers the committee who designed Rockefeller Center
 4. The difference between success and failure is often the understanding between the old concept of "highest and best use" i.e., maximization of value for the parcel, and the concept in this course of "most fitting use" adaptation to the limitations of the environment wishes of the consumer, and solvency of those involved in the process.
 - C. An example of highest and best use is Water Tower Place on Michigan Avenue in Chicago.
 1. The site had been private park for the family of Edgar Bronfman, founder of Seagram's Distillers until he sold it in 1969 to Phillip Klutznick who operated Urban Investment and Development Company, which he had sold to Aetna Life. Urban Investment entered into a 50-50 joint venture with Marsahll Field & Co. to develop the site.
 2. Total land cost was \$20 million and that meant intensive development. The design was a response to the pattern of available market in the area in 1970.

- a. Office supply was in excess of demand; the site was surrounded by millionaires and had the image of a high income area but it was necessary to attract middle income people to the area to shop to generate the volume.
 - b. Two floors of office space provided for the lawyers and physicians.
 - c. Parking and delivery areas occupy four levels below grade.
 - d. The Ritz Carlton Hotel occupies 22 floors with rooms at \$75-100 per night.
 - e. 40 floors of condominium apartments costing \$100,00-200,000 each are stacked above the hotel which is stacked above the shopping center.
 - f. The anchor stores, Marsahil Field, and Lord & Taylor occupy 300,000 sq. ft. Depending on location retail rents range from \$15 per sq. ft. to as high as \$45 a sq. ft. plus assessments. A specialty shop paying \$30/sq. ft. for 2000 sq. ft. would have to gross \$600,000 a year.
 - g. First years volume was \$65 million, slightly more than \$100 per sq. ft. which is the national average for shopping centers.
3. The critics have blasted it:
- a. Paul Goldberger, critic for The New York Times, labeled the marble facade "dreary and pretentious."
 - b. Critic M. W. Newman, writing in the Chicago-based Inland Architect, called Water Tower Place "the 'everything' building that provides Michigan Avenue with everything but architectural or urban grace."
 - c. "What can you say," he wrote, "about a slender vertical slab more than 70 stories high, wedded uncomfortably to a horizontal box housing shops and atrium? A slab slapped on a box, that's about it..."
 - d. "You have to go back to words like vulgar," said one Chicago architect - who, like other architects quoted here, was reluctant to be identified. "Water Tower Place goes beyond the point where vulgarity on a grand scale can be called a style."
4. People find the exterior marble mausoleum ugly but if one builds a suburban shopping center of 600,000 sq. ft. on land of 60,000 sq. ft. there is no room for setbacks; retailers don't want windows; meeting rooms in hotels are better as one story structures to eliminate columns; and hotel, apartments, and the retail mall each demand separate entrances, elevator systems and other environmental systems and as a result form follows function.
5. Water Tower has been defined as a machine for making money and it may fit the neighborhood as it is; the trouble is it doesn't fit the American dream of what the city might be and American nostalgis or the history of what was. In short, the values of the egotistic city builder are out of synk with the values and criteria of the critics.

V. Real Estate is applied science subject to the discipline of cash solvency and sparked by an ego which has good radar for the dreams of the middle class. Such a talent is Mr. Rouse who responded to the dreams of better suburbs like Columbia and now to the dreams of restoration of the inner city with a project called Faneuil Hall Marketplace in downtown Boston.

A. William Penn and Walt Disney were both great city builders. Disney World proves that there is a huge middle class market for entertainment flavored with history a la mode.

1. Old cities which have lost their retail trade to suburban malls are intrigued by Disney World's magnetism. If the cities can create downtown entertainment centers, neat, bright and laced with nostalgia, they might attract suburban customers back in town.
2. Boston has learned well. The recycling of the Downtown Waterfront and the Quincy markets is an awesome success. These projects represent a skillful blending of the principles of Oglethorpe and Disney.

B. Faneuil Hall Marketplace, in downtown Boston, is adjacent to Faneuil Hall and is bordered by Government Center, Haymarket, the Waterfront, and the Financial District.

C. Faneuil Hall Marketplace consists of three 19th century market buildings: Quincy Market, the copper-domed center building; North and South Market buildings; and North and South Market Streets. The project is being restored for new retail and office use, all designed to create a contemporary urban marketplace in downtown Boston, Massachusetts.

D. Some of the statistics are:

1. Faneuil Hall Marketplace occupies 6.5 acres. Each building is 535' long and 50-65' wide.
2. The Quincy Market has three floors and contains 85,000 sq. ft. of retail space.
3. The South Market building has six floors, including the cellar and contains 160,000 sq. ft.: 80,000 sq. ft. for retail use; 80,000 sq. ft. for office use.
4. The North Market building has six floors, including the cellar and contains 120,000 sq. ft.: 60,000 sq. ft. for retail use; 60,000 sq. ft. for office use.
5. More than 200 retail merchants will occupy space in the three buildings when completed.

E. Faneuil Hall Markets, the original name of the three buildings, were built in 1826 by Mayor Josiah Quincy from the design of architect Alexander Parris. The granite, Greek Revival buildings are listed on the National Register of Historic Places because they formed one of the most architecturally impressive and large-scale urban developments in the U.S. during the 19th century.

F. Faneuil Hall Marketplace is being redeveloped into a contemporary downtown commercial center.

1. First Phase - The Quincy Market is restored to resume its historic use as a food market. It features a variety of restaurants, delicatessens, sidewalk cafes; meat, poultry, fish, cheese, vegetable, and fruit stands; gourmet food stores; and food-related specialty shops. (opened August 26, 1976)
 2. The Bull Market is a group of merchants and artisans selling select wares from small carts and stands under Quincy Market's glass canopies.
 3. South Market Street is landscaped and furnished with benches. Paved with brick, cobblestone, and granite, it provides space for informal gathering and promotional attractions.
 4. Second Phase - South Market building is revitalized and leased for mixed retail and office use. The cellars, first, and second floors feature quality specialty shops (fashion apparel, home furnishings, accessories, and imports) and restaurants with nighttime activity. (August 26, 1977)
 5. South Market building has over 50 retail stores. The Arcade and The Gallery are two separate groups of small shops within the building. The Arcade consists of jewelry, gift, and accessory shops; The Gallery consists of fashion clothing and home furnishing shops.
 6. The third, fourth, and loft floors are being leased for modern office use. Offices range in size from 600 to 15,000 sq. ft.
 7. Third Phase - North Market building is being revitalized and leased for mixed retail and office use. The cellars, first, and second floors feature quality apparel and accessories, home furnishings, and restaurants with nighttime activities. The third, fourth, and loft floors are being leased for modern office use. (Aug. 26, 1978)
 8. North Market Street will be transformed into a lively pedestrian way, with brick and cobblestone pavings, kiosks, pushcart vendors and changing promotional attractions.
- F. LEASE: The City of Boston is the owner. The Boston Redevelopment Authority has leased the building for 99 years to the developer for 25% of tenant rentals in lieu of real estate taxes. This year the City will make \$225,000 but the state will gain \$2 million in sales tax and meal tax. The money flows to the state even though the rehab costs were those of the city and the federal government. In its first year of operation Disney World attracted 14 million visitors; Quincy Market did about 13 million. Unlike Disney World it cannot screen out known criminals so that it has a bigger security problem.
- G. ARCHITECT: Benjamin Thompson and Associates, Cambridge, Massachusetts.
- H. CONTRACTOR: George B.H. Macomber Company, Boston, Massachusetts.
- I. THE MERCHANTS: 63 permanent merchants occupy the Quincy Market; 53 are local merchants, 6 represent regional chain stores; 4 represent regional chain stores; 4 represent national chain stores. The Bull Market consists of 30 changing artisans and craftsmen.
- J. THE SHOPPERS, ACCORDING TO A MARKET SURVEY NOVEMBER, 1976:
1. the average age is 37
 2. 65% live and work within the Boston Metropolitan Region
 3. 54% come by private car and travel 20 miles
 4. 30,000 people visit Quincy Market on an average day

K. SALES:

1. Quincy Market in its first year of operation has achieved an outstanding performance. Sales per sq. ft. are projected to be \$300 on an annual basis.
2. The Bull Market sales per square foot are projected to be \$500 on an annual basis.

L. ECONOMIC IMPACT:

1. Quincy Market provides 700 jobs for full and part-time workers.
2. New ventures: 12 merchants started business in Quincy Market.
48 merchants started new types of business.

SLIDE SCRIPT - COLUMBIA I

- 1 (title)
- 2 Planners anticipate the Eastern seaboard will become a single megalopolis by the year 2000. It would consist of a continuous series of urban centers and suburbs linked together by interstate highways, airports, and public transit. Regional planners for Washington D.C. anticipate that the capital will be the center of a string of satellite new towns.
- 3 A good example of urban centers gradually growing together is the Washington - Baltimore corridor. 1970 population spill-over is indicated by the red dots.
- 4 By 1985 the population will increase by another 1 million people. Some new towns like Reston begin by seeking a large piece of property for single ownership and hope to draw people to their location. Columbia started by identification of current population trends and then choosing a site to harness the momentum of expected growth patterns. Columbia needs to capture only 10 - 15% of the anticipated growth on the Washington - Baltimore corridor.
- 5 The best way to capture a market is to give the customer access and so Columbia's builder, James Rouse, located astride two super highways, a rail spur, and connectors to Baltimore - Washington beltline highways (in blue). These highways reach 3 major airports (Dulles, National, and Friendship). It is at the center of a regional market which is fourth in size to metropolitan New York, Los Angeles, and Chicago.
- 6 The skyline of downtown Columbia, a new city between Baltimore and Washington planned for 110,000 people by 1981. The present population is over 21,000. The new city was five years old in 1972.
- 7 Columbia is being built with the idea that cities can work for people-- that a city can be a comfortable and efficient place to live-- and that only a city can provide the full range of services, institutions, recreation, and cultural attractions that people need for growth.
- 8 Columbia's planners believe that even in the busiest of urban places there should be trees and water, paths to walk on, and places to relax.
- 9 Kittamaquidi, the new city's 32 acre man-made downtown lake, borders the downtown plaza--where residents gather in winter or summer for a variety of activities.
- 10 This schematic layout of Columbia suggests planning for each level of community life--a city center, 7-10 villages, and each village divided into 4 or 5 neighborhoods. Each village and neighborhood has its own center. The dotted line indicates a bus route, closed to autos, which connects each village with one another and the town center.
- 11 A schematic plan of the city center shows the relationships of each component. These components are designed to provide a sense of place, a focal point for community life. Both business and civic enterprises which require a large marketplace or a linkage to the Interstate are located here. Notice that in addition to office areas, a major shopping center, a hospital, theater, and hotel, provision is made for some downtown residential areas.

- 12 Over one million visitors have seen the Columbia Exhibit since it opened.
- 13 Displays change with the seasons. These are school kindergarten interpretations of the good life at Columbia.
- 14 The visitor's center indicates the ability of Rouse designers to design at a low budget. This is a steel industrial building and was the first building in downtown Columbia. Some day it may be replaced with a highrise. *12/10*
- 15 In the center of the visitor's building is an information counter and photo snap shots displays to help prompt questions. Space is at a premium but the skylight and sunshine avoids a tunnellike feeling. To the left is a theater providing a slide show on the Columbia process and concept. *12/10*
- 16 To the right of the entry is a pavillion-type space in which each builder and apartment project has its own display of photos and plans. Note the steel roof and wooden boards of this industrial building. The end of the room looks out on the lake through floor to gable glass.
- 17 To the right of the exhibition building are the terraces of the downtown lake front.
- 18 The first investment Rouse made was creating a central place around this manmade lake.
- 19 Here are the fountains before there were people to enjoy them in 1967. We will return to this view later.
- 20 A gazebo on the shoreline on the plaza of the teacher's building.
- 21 A view of the Teacher's building and downtown parking. This became the home office of the Rouse company until completion of the American *Life* building. *City*
- 22 The American *Life* building under construction was pre-fabricated of concrete panels and standard steel components. *City*
- 23 Across from town plaza is The Mall in Columbia--a completely enclosed shopping area with two major department stores and over 100 smaller shops and services. The Mall is designed to serve as the retail core of the new city and its surrounding region.
- 24 The Mall's central court features a fountain whose water rises to a height of 25 feet.
- 25 Trees, an old street clock, two additional fountains and a glass roof convey an outdoor atmosphere, indoors.
- 26 Restaurants and snack shops featuring specialty food items, plus the liberal distribution of tables, chairs and benches throughout The Mall invite shoppers to pause and relax. Expansion plans call for 200 shops and an additional three department stores.
- 27 Rouse plays for taste and smell as well as sight and sound in The Mall. Here is a raw oyster bar where they shell oysters and clams to order in season or provide shrimp and scallops deep-fried. Imported beer on tap. One kiosk serves fresh baked cinnamon rolls and bread while the aromas float free in The Mall. These were used to balance pedestrian flows between first and second levels of the center.

MISSING
(28) Notice the fountains are designed to permit people to get close and enjoy quiet zones, or...

(29) To peek over the second level rail and remind people of activity down below as well as to provide an auditory gauze to muffle background conversations.

- 30 Notice the light space-frame ceiling which floats over the gaps between individual store buildings. This type of construction can be easily extended for future addition to the center. It is easy to maintain, to hang with displays, or to punch with windows. It reverses the current trend toward dramatically high sculptured white plaster ceiling with indirect lighting as found at Woodfield or Southridge.
- 31 In this aerial view the interstate connecting Baltimore and Washington moves diagonally at the top left corner along side Lake Kittamaqundi. The boulevard system is Columbia's own major traffic system. Notice the pedestrian bridge spanning the boulevard between the American Life Building left of center and the shopping center. In the woods beyond the center is a music pavillion. Separating Columbia's central downtown from the 7 villages that will eventually surround it are open spaces-- woods, lakes, stream valleys, playgrounds, parks, golf courses, and other recreational areas. More than 20% of the new city's land area is designated "open space".
- 32 Located in Columbia's 40 acre central park, Symphony Woods, is the Merriweather Post Pavillion--host to concerts, ballet, musical theater and popular singing stars every summer.
- 33 Here is a view of the Merriweather Post Pavillion for which Rouse has made a 20 year contract with the Washington Symphony orchestra for summer concerts. — Rouse: They go to the top
- 34 The Washington summer climate gives a longer season to open-air pavillions.
- 35 The grassy banks and limited number of columns doubles the audience capacity to see and hear.
- 36 The Garland Dinner Theater is open the year-round with light comedy and a sumptuous buffet.
- 37 Howard County is responsible for education, public safety, sewers, water, road maintenance, etc. As with most Maryland cities, Columbia is unincorporated. An elected county government provides city services. Shown is the Howard County Fire Department's Columbia station.
- 38 The grouping of villages around the downtown core (in red) and the highway network is indicated by the raised portions of the map. While Rouse controls 23,000 acres, there are a few areas and subdivisions interspreced in this territory or absorbed into Columbia and governed by it. Contours of villages reflect both the terrain and the need to avoid existing developments.
- 39 This more detailed plan indicates the village centers and neighborhood divisions more accurately than the relief map.
- 40 Here is a schematic of functions to be served by the village center. Notice that cars are excluded to roads at the edge of the center. Shopping and schools and recreation areas may share the same parking capacity at different days and hours.

- 41 The heart of the Columbia plan is the village--like a small town of 10,000 to 15,000 people. Shown is an aerial of Wilde Lake Village Center. Wilde Lake High School, the circular building is separated by common playing fields from the Wilde Lake Middle School. Tennis courts, the village's major recreational facility--a year round swim center, community buildings, stores and offices ring the Village Green.
- 42 The car is left at the entrance to the community center in landscaped parking areas.
- 43 In the Village Center, cars are parked outside, and there are safe places for children to play while their parents shop, stroll or visit with friends.
- 44 Good design brings the pedestrian through an entrance portal which does not reveal the entire view but only hints at the plaza within. Notice the total absence of signs and neon tubes. The building on the right has doctor's offices, etc. on the second floor.
- 45 A close-up of Wilde Lake Village Green shows some of the stores and services that are typical of a village center. A bank, a pharmacy, a supermarket, barber and beauty shops, a cleaners--the kind of stores and services most people use during an ordinary week--plus secondary schools, a library branch, professional offices, and a community hall bring villagers in frequent contact.
- 46 Notice that the domestic scale of the sheltered walk ways and a stairway which tells the pedestrian how to find the second floor without a sign or fear of enclosed stairwell. The snow problem here is minimal.
- 47 Not only is the plaza fun but the colonnade reduces the visual bulk of the supermarket building to the right.
- 48 The pylon provides a reminder of the front entrance and a reference point for directions.
- 49 Notice plenty of benches for the elderly or the kids in a village park setting. All that is missing is a civil war cannon. Residents of 4 years are regarded as elder statesman.
- 50 Note the small office building on another side of a supermarket. The shingle mansard roof, the wood casement windows and the small textured pattern of white painted brick are domestic materials rather than commercial surfaces.
- 51 Across the road from the plaza is a high rise apartment building, the Concord.
- 52 An outdoor art show is typical of the kind of community activities that take place in the open space common to every Columbia village center. Book fairs, bake sales, craft shows, political gatherings, bring residents to the village center.
- 53 Plans call for a fast food service, in each village--like this Jack in the Box at the Village Green.
- 54 Joseph Square in the Village of Harper's Choice is the newest of Columbia's village centers. Like many small towns of old, it features studio apartments above the village stores. Seven villages are now planned for Columbia, four of which are in various stages of development.

- 55 Oakland Mills has a mini-mall for its basic stores and services. Beyond the enclosed mall is a landscaped courtyard, surrounded by offices and the two barns which serve as community buildings.
- 56 Oakland Mills was the second village center and Rouse decided to economize by using an existing dairy barn complex.
- 57 Barns have been remodeled as community meeting rooms and a teen age club.
- 58 The wood beam construction barns becomes a design motif for the wooden playground sculpture and the closed mall. Notice the shed roof provides clerestory lighting.
- 59 Here is the inside lighted pedestrian mall.
- 60 Truck loading docks are still screened with fences at the back of the structure.
- 61 Trash disposal is handled by an auger system which moves trash below the floor of the building and out to this completely enclosed portable bin.
- 62 No 2 villages will look alike. Each will have a flavor of its own. Oakland Mills makes use of 2 refurbished old barns for its community buildings.
- 63 This schematic neighborhood center reveals the close tie between the elementary school the open space area and the neighborhood recreation center.
- 64 3 or 4 neighborhoods compose a village. This aerial of Bryant Woods neighborhood shows how a neighborhood is planned around an elementary school, so that even small children can walk or ride a bike.
- 65 There are 5 elementary schools now open in Columbia. Plans call for one in every neighborhood. *being talked for elementary A middle + high school*
- 66 Columbia schools feature open space areas, team teaching, ungraded classrooms and other innovations from the traditional approach to public education.
- 67 In the summer, the pool replaces the school as a focal point for neighborhood life. The pool and other Columbia recreational facilities and programs, are built, maintained and operated by the Columbia Association.
- 68 Every neighborhood center has a pool, as well as a park, and community buildings. Many also have a small late-hours store and snack bar.
- 69 The school playground and neighborhood park are designed to function together, freeing more land for recreational uses.
- 70 Pathways for walking or biking are designed to lessen dependence on the automobile. Many paths meander through open space and alongside stream beds. Columbia's pathway system has underpasses or overpasses--so that children can get where they need to go, in many instances, without crossing a major street.
- 71 Even in the small neighborhoods the residential clusters are tied in to pedestrian green strips and underpasses made of giant concrete culverts.

- 72 Many pre-school programs are offered, ranging from day-care for children of working mothers, to cooperative nursery schools, Montessori classes, and the privately-owned Singer Learning Center.
- 73 The Columbia Association is a private, non-private corporation supported by all Columbia residents and businesses. An annual assessment on all property owners--residential, business, industrial and commercial--pays for maintenance of parks and open space. Shown is Wilde Lake Park.
- 74 The Columbia Association (CA) sponsors many classes and recreational activities. A sailing class on Kittamaqundi, the 32 acre downtown lake, is offered to residents every summer.
- 75 In winter, when Columbia's lakes freeze, many townspeople come downtown to skate. In the foreground is the city's symbol, called People Tree.
- 76 CA also builds and operates the major recreational facility planned for every village. The Columbia Swim Center is a year-round pool located in the Village of Wilde Lake.
- 77 Oakland Mills Ice Rink is open from October through June. In addition to general skating, there are figure skating classes, hockey games and exhibitions.
- 78 The Village of Harper's Choice has a health club as its major recreational facility. Residents receive sizeable discounts for use of facilities that charge a fee.
- 79 CA also owns and maintains the Hobbits Blen golf course--one of two golf courses located in Columbia.
- 80 There are public courts located in each village center and a privately-owned Tennis Barn open from October to May. Shown is the Wilde Lake Tennis Club, open day and night all summer long.

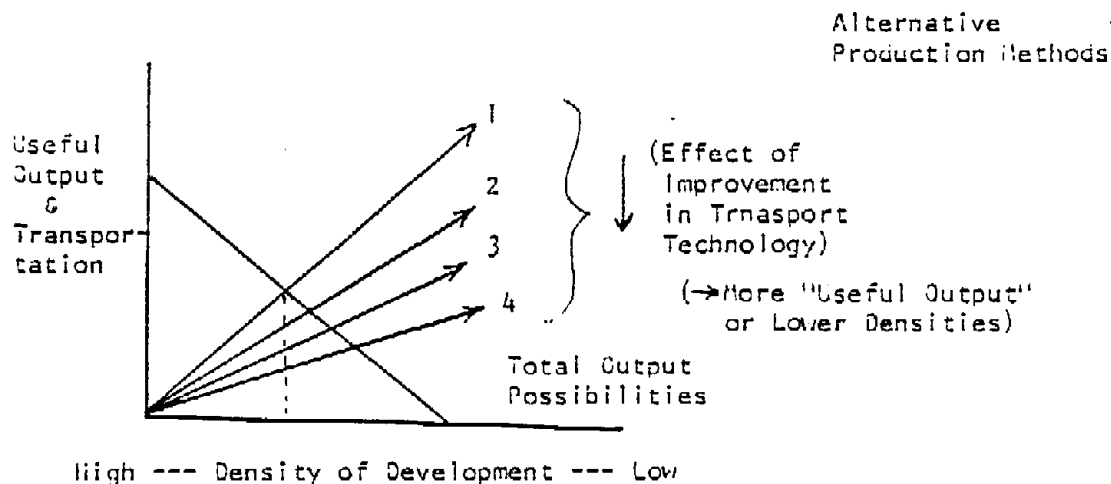
NOTES ON CURRENT STATUS OF COLUMBIA, MD

Shortly after the project started, Robert Gladstone had developed an economic model called "The Green Book" and in working paper 16, a chilling projection showed profits of \$10,000,000 on an investment of \$100,000,000. Everyone was in love with the idea and modified their assumptions with some creative accounting and selective amnesia. And in November of 1964 the first shovels of dirt were turned.

- A. By 1976, Connecticut General had written off losses of \$21 million.
 - B. Another \$3 million was apparently written off by the original bankers, Morgan Guarantee and Manufacturers Hanover.
 - C. \$27 million in losses has been capitalized by Howard County Development Corporation.
 - D. Rouse Controls only 15% of the stock, having assigned the balance to Connecticut General to compensate for their write-down of debt.
 - E. Nevertheless, new communities has a ring of high purpose, great publicity, access to other people's money and an unlimited supply of other's to blame when things go wrong. This is just the stuff for architects, planners, and congressmen.
1. By the end of 1976, HUD had guaranteed debt for 13 projects, six of which had gone bankrupt, six were unable to pay interest on their bonds, and one looked like a viable entity, The Woodlands, near Houston. Viable only because it's sponsored, George Mitchell of Mitchell Energy Corporation, didn't much care whether he made money or not.

Lecture #4 Spatial Distributions Within & Among Clusters

1. Aside from a certain need for social interaction, an ordered dense cluster of people creates certain economies for any exchange system.
 - A. Clustering permits internal economies of scale due to increased specialization of labor and enterprise and reduced distribution costs.
 - B. External economies may be the result of increased logistical support made possible by agglomeration. For example, sewer line in place of septic tank is only possible where there are only short runs of pipe between collection points. Responsibility for disposal is shifted from the individual space user to a external community system.
 - C. Communication is an essential byproduct of clustering because it fosters innovation and reduces the cost of mistakes or duplication of effort.
 - D. Nevertheless, the original and most dominant cost affecting location of each cluster relative to one another and internal ordering of priorities within a cluster was transportation costs. The greater the effort, the more product allocated to transportation, the less net output any enterprise can enjoy (the appetite of the horse for oats reduces the net surplus from the farm).
1. The trade-off between transportation economics and urban land economics is suggested by the simple tradeoff Diagram A.



2. The arrows labeled 1, 2, 3, 4 show progressive reduction in transportation costs (below the arrows) and successive increases in useful output given despite declining degrees of clustering.
3. When transportation becomes cheaper the economic payoff of clustering is less necessary and therefore people may choose to have lower densities, less spatial order or some combination of aesthetic satisfactions.

- E. The third concept is that of dense cluster and here the economics recognize that space is not a free good. Comparing two communities with the same number of households but one town has quarter-acre lots and the other has one acre lots, it is obvious that the lower density community will have a much greater occupied area and therefore the average household is farther from the center of town than his high density counterpart. The result is that all costs of travelling to the center of town or to any other household are increased depending on technology.
1. Aggregate transportation costs for commodities, messages, and persons will rise as the density of the city falls. The marginal cost of lower density is represented by the MC line in the diagram next to dense cluster.
 2. The marginal cost intersects with the marginal utility function for more space establishing the optimum density for the community. This optimum is necessarily greater than the density based on zero marginal utility. Consequently, cluster gives way to dense cluster in which the group of squares are smaller for housing each activity.
 3. There is a surrender of isolation and space control in the interest of economy in interaction and the savings that result occur because space is not a free good. It is a form of wealth which individuals simply pocket in a form of spending less on transportation. These benefits come at a cost which is social and economic which society has difficulty funding since it is so difficult to tax the benefit.
- F. The fourth stage of clustering Smith calls the "ordered dense cluster". If an urban community includes several categories of land users - retailers manufacturers, apartment dwellers, and single family homeowners. There are further aggregate economies to be achieved by arranging these uses in a specific pattern which tends to put high density uses at the center surrounded by rings of decreasing density of people who need to travel greater distances to the center.
1. In the diagram the center is labeled C and the horizontal axis measures the radial distance from the center. The vertical axis measures the value of land resulting from savings in transportation costs as an alternative to residing on the fringe where land would be free.
 2. Just as four students can outbid one working man for an apartment, four apartment dwellers can outbid the single family homeowner for a building site.
 3. Thus location translates itself into a structure of land prices and these prices allocate land among competing users.
 4. The problem is to maintain an efficient spatial order despite constantly changing circumstances - population growth, change in transportation, or a change in the linkages which people value most in their list of preferences.
- G. The four clustering concepts are brought together in a simple-minded tradeoff diagram in Slide #2. Given all economic resources of a community, the greater amount of transportation output, the less useful output it will enjoy.

1. The arrows labeled 1, 2, 3, and 4, show how total output will be divided between transportation and useful output given increasing degrees of clustering.
 2. If transportation itself becomes cheaper, all the arrows would slide upward and closer together. The economic payoff of clustering would be reduced and we might therefore, choose to have less spatial order in our cities or lower densities, or both.
- H. Clustering also permits internal and external economies of scale.
1. Internal economies are realized by increased specialization and reduced distribution costs.
 2. External economies are the result of the increased logistical support from agglomeration.
 3. Not only are the costs of production and delivery reduced, but the diversity of services in a city may provide the consumer more collective satisfaction. There is more utility when you have a large number of choices and choices require that one is aware of the alternatives which is more feasible in urban areas where diversity of experience is a form of education.
- I. Communication is an essential by-product of clustering because it fosters innovation and reduces the costs of mistakes to many people .
- II. Assuming that the economic and social benefits of clustering are positive in the abstract, there remains the next question of which places are best for a cluster as this will further refine special relationships among various communities. There are many different theories by economic geographers as to what is an efficient location for different types of enterprises. Here there are a variety of useful answers because there are many possible situations.
- A. A weight-gaining process would be one in which the product gets heavier as it reaches the market - that is an increase in cost per mile of transportation the more complete the product. A bottle of pop or a house for example.
1. The more significant the weight-gaining process the closer the enterprise to its market, assuming the other costs of production are identical. Transportation cost not only reflects weight and distance but bulk (modular homes), perishability and fragility (bread) and this assumes all other costs are equal.
 2. In general, we are talking about the costs borne by the firm and not the real cost to the economy so if suppliers conceal costs with discriminatory rating, delivered pricing, etc. eventually the pattern of business location is less than efficient for the economy as a whole.
 3. It is also assumed by the chart that the firm is free to locate anywhere along the line between raw material and market when, in fact, locations with the desired logistics are limited and there are irrational goals too. (Michigan City)

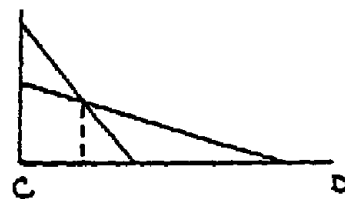
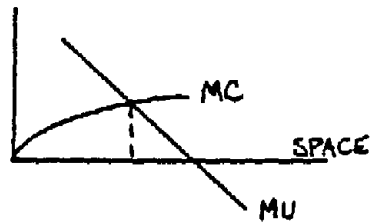
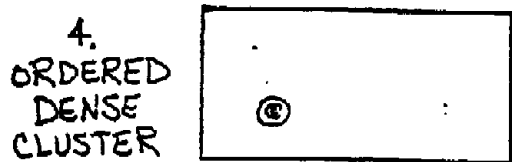
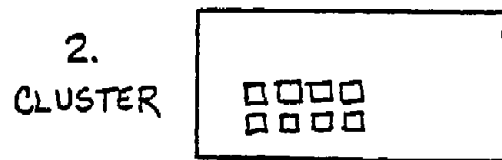
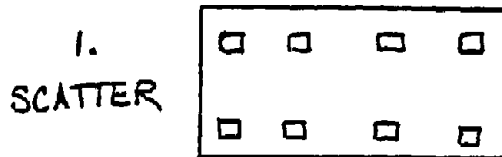
- B. Multiple sources and multiple markets involve location vectors as in the second diagram. There is a point R at which the aggregate transportation cost per ton of steel is least.
 - 1. This point is modified when new industrial facilities need an environment in which labor is available, urban services are available, etc. As a result new facilities are not often set down in the wilderness and the result is existing communities grow.
 - C. Urban areas are generally involved in exchange processes one of which is a transportation break point - i.e. a change in the mode of transportation from barge to rail or rail to truck.
 - D. There are foot-loose enterprises in which transportation and convenience cost are minimal in relation to value added, such as diamond cutting or the manufacture of transistor diodes.
 - E. The way station function of accommodating transients is a major function and many California towns are built around a system of 21 missions started by the Franciscan order, one days journey from one another to provide overnight accommodations. Missions were replaced by hotels near the railroad station, and then motels at the interchanges, and more recently motels at the airport so that transportation advantages changed the way station function quickly and drastically.
 - F. In any event, there is a rough economic logic concerned with transportation linkages that determines where urban clusters locate and continue to grow once they reach a certain critical mass of population and services.
- III. Assuming that urban clusters make sense and are spaced out with some logic, the question remains what goes where within a single urban center - i.e. pattern of urban land uses. Such pattern is relative and not absolute. For the moment, pattern is considering a "featureless plain" so the topography, water, and subsurface conditions, and political boundaries have no significance. With those assumptions pattern can have a number of dimensions.
- A. Relative direction of various uses - such as oil refineries should be at the opposite end of towns from homes, or factories should be outside the green belt buffer.
 - B. Another dimension is density expressed as number of dwelling units per acre, or workers per square foot of floor area, or ratio of building/floor area to land area.
 - 1. Density should be a frequency distribution and leads to many different sociological topography maps.
 - 2. Frequency distribution modes influence values, pattern of retail and public facilities, and particularly the transportation system.
 - 3. High density office buildings as compared to low density of employees in factory buildings will influence their relative locations and transportation linkages.

- C. Definition of land use categories will influence our ability to study spatial arrangements in terms of diversity of land uses and locational tendencies of these uses. The slide of the average distribution of land by forty-eight (48) large cities shows the relative significance by 5 broad categories and it should be noted that while residential is the largest single class, it is far less than 1/2 all the land use.
- D. The urban land economist has traditionally assumed that the separation of land uses, often through zoning and city planning, will create a land pattern which is intrinsically desirable because it is advancing some of the following criteria in pursuit of the goal of maximum benefit from our resources:
1. Efficiency which is normally taken to mean that the aggregate expenditure by the community for internal transportation is minimized. Ratcliff said the ideal is to reduce rent differentials to zero. Without attaching some conditions, however, this implies that the best city is one where everyone and everything is crowded together in one big room.
 2. Fiscal profit where the real property tax is the primary source of revenue and therefore planning should promote those land uses which create a surplus of tax revenue relative to servicing costs. Of course the result is political fragmentation or land use ghettos.
 3. Social integration to achieve neighborhoods of relative homogeneity and therefore presumably tranquility which may lead however to considerable social friction and antagonism and unacceptable cost.
 4. Control of external cost such as traffic or noise nuisance is possible by segregating land uses but there is much problem in making this principle operate specifically. What about the guy who makes widgets in his garage or his wife is retailing pots and pans in an area that is residential.
 5. Flexibility so that a city can absorb new elements as the scale and pace of life style change without becoming unfunctional.
 6. Prescriptive order in terms of how people will live and behave. We could plan for no saloons so that people would learn to walk in the park or in Madison discourage parking for high-rise buildings so that people would learn to use public transportation.
 7. A desire to create a pattern which suggests a certain ethos or life style might lead to a basic physical pattern such as San Francisco or Georgetown, Washington D.C. - a physical collective discipline or control of individual taste to achieve a certain overall impression.
- E. This is not an exhaustive list of criteria for urban land use patterns but it might suggest that with proper definition one could select a land use pattern which was best although that itself has some unattractive implications.

Of course, we are not often given clean slate options as to overall land use patterns as we must begin with an urban area as we find it and we must adapt to physical limitations of the land. Nevertheless your textbook will explore certain basic interaction patterns such as Hoyt, multiple nuclear patterns, star patterns, etc.

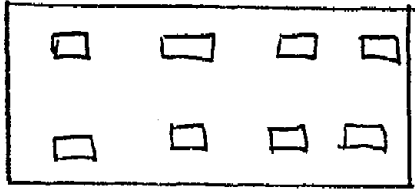
- F. Within a certain loosely structured pattern imposed by society or physical constraints of an area individuals will be fine tuning their linkage patterns to optimize their particular goals and objectives, some of which are rational and predictable and others which are highly subjective. Planners cannot anticipate these patterns and thus the marketplace is a very useful allocation and rationing device which determines the texture of land uses in the city.

Diagram B ECONOMIC IMPERATIVE FOR DENSITY



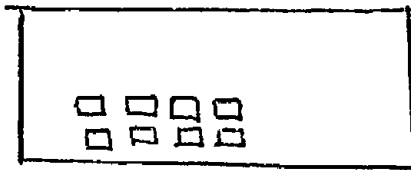
Economics

1.



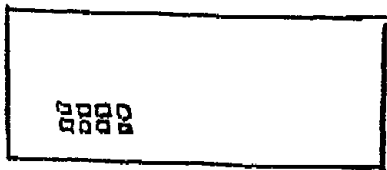
Scatter

2.



Cluster

3.



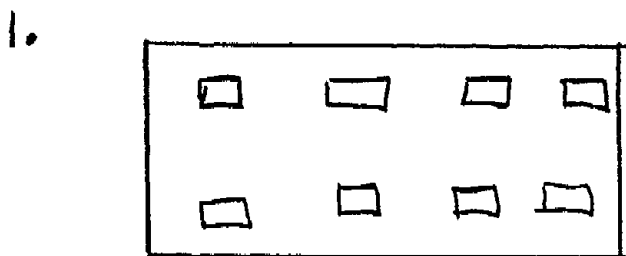
Dense Cluster

4.



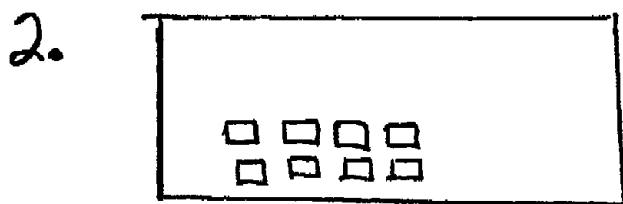
Ordered Dense
Cluster

Economics of Density

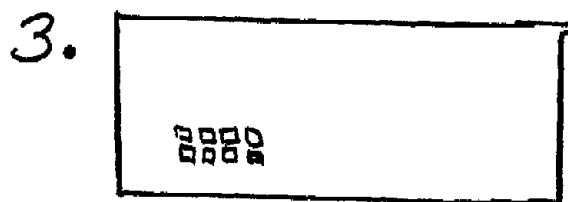
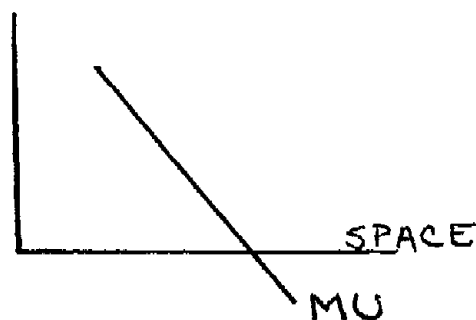


Scatter

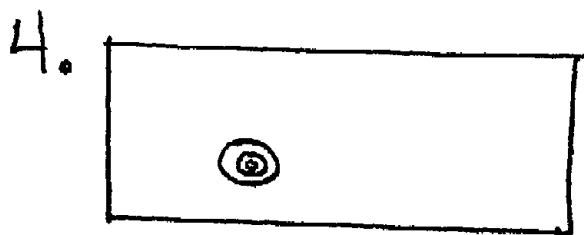
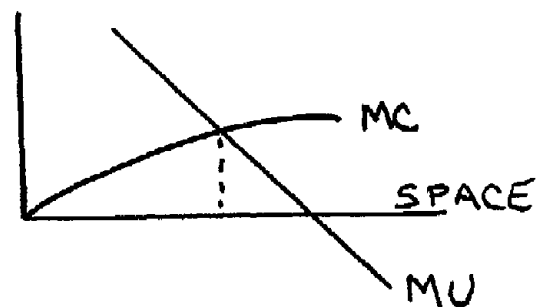
Max $\Sigma T.C.$



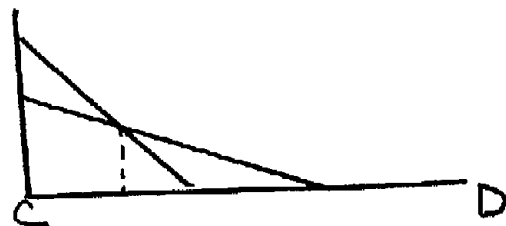
Cluster

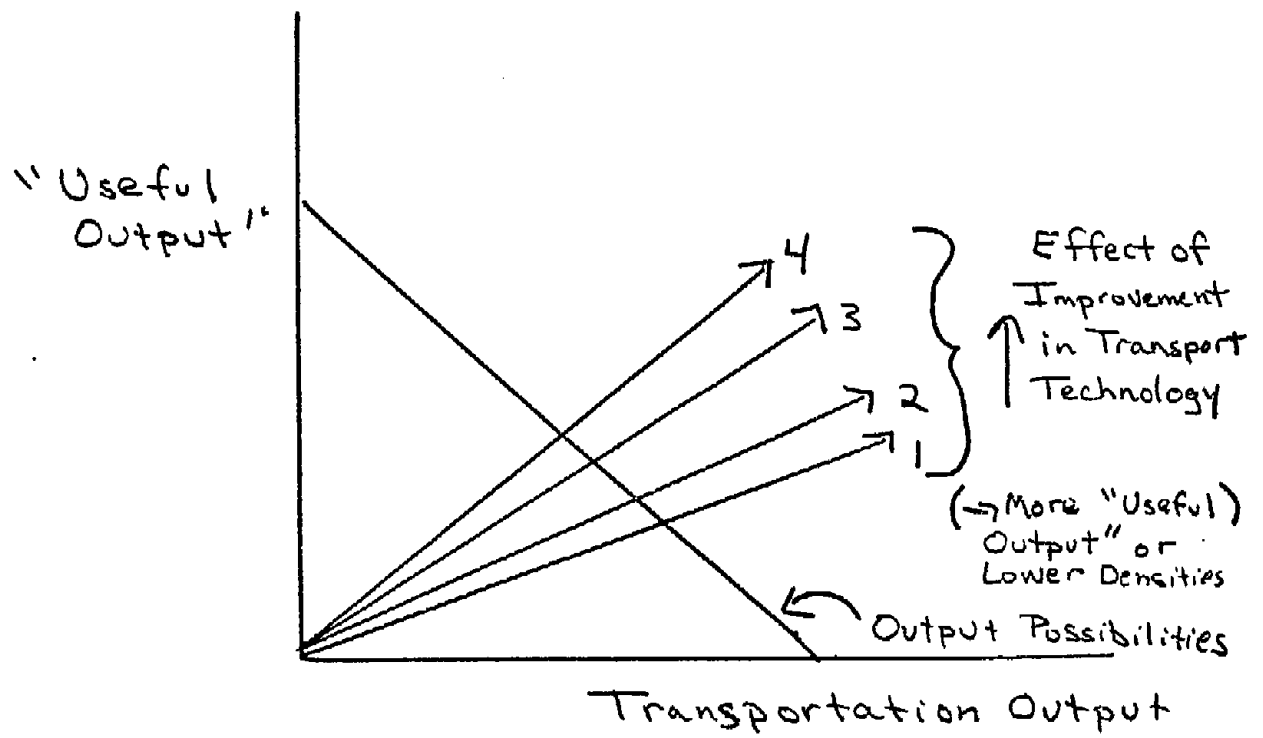


Dense Cluster



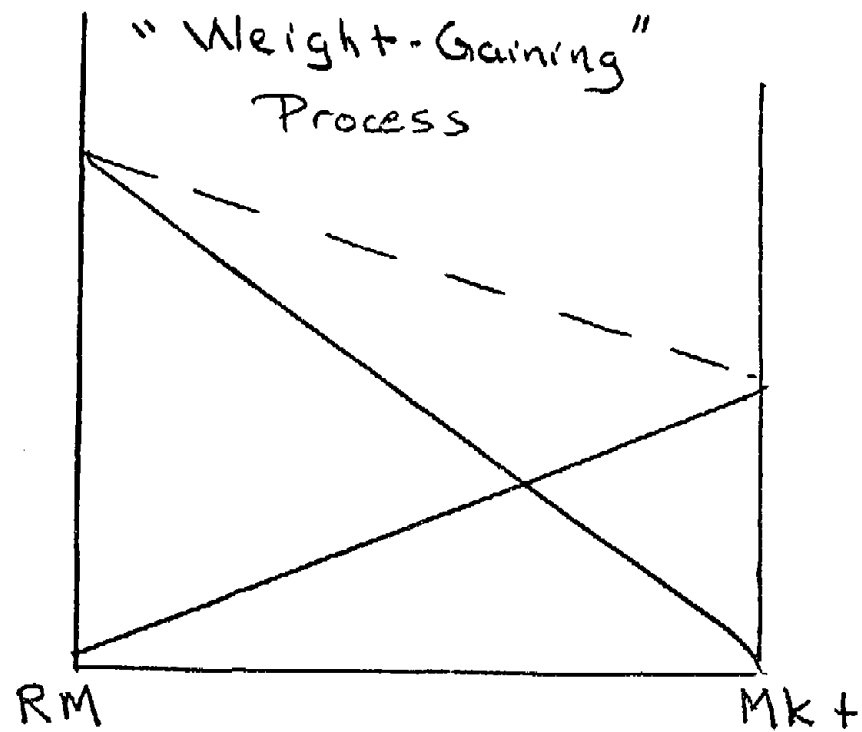
Ordered Dense Cluster



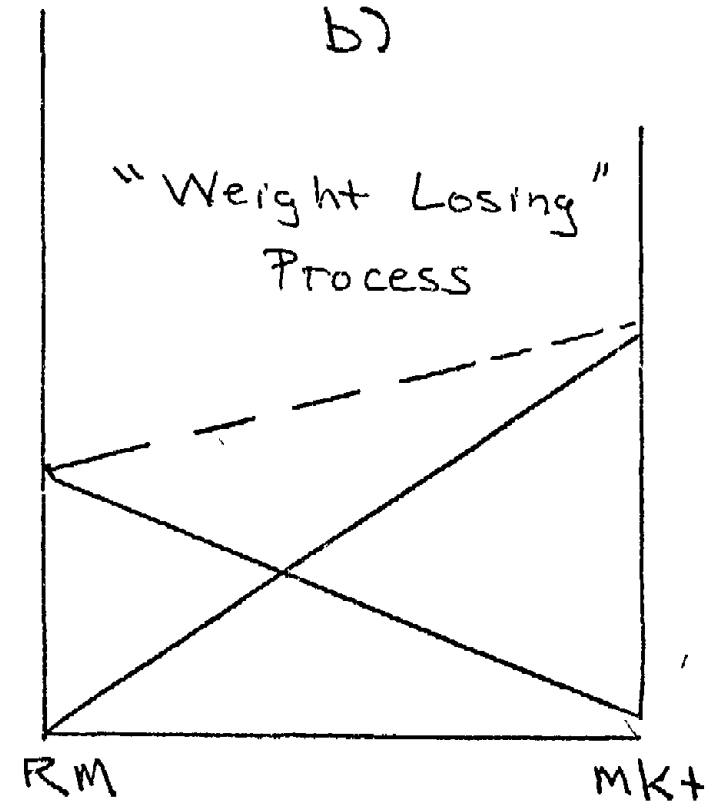


Location of Processing Activities

a)

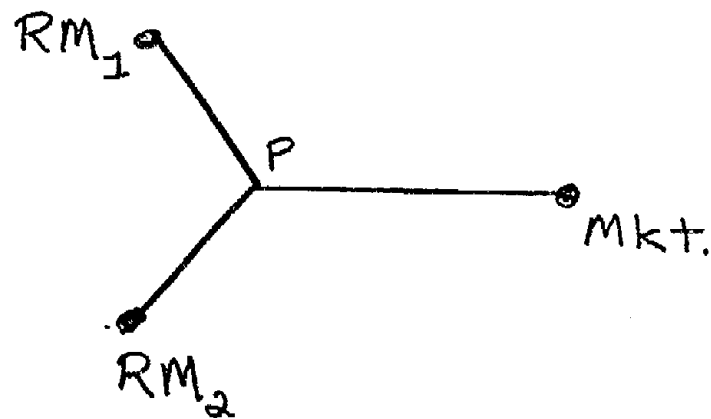


b)



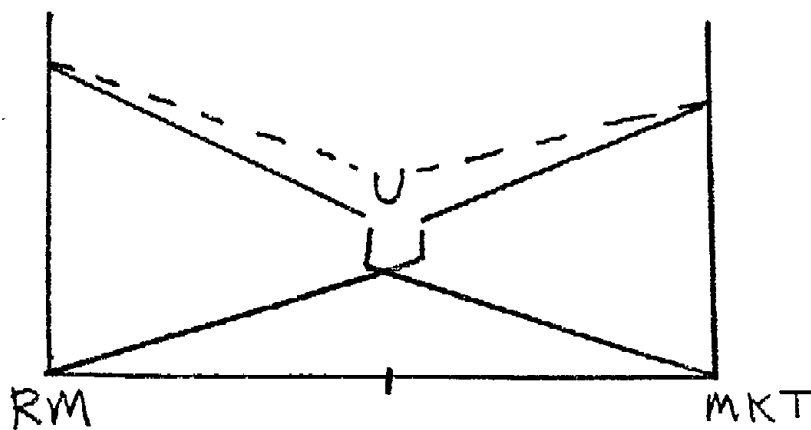
c)

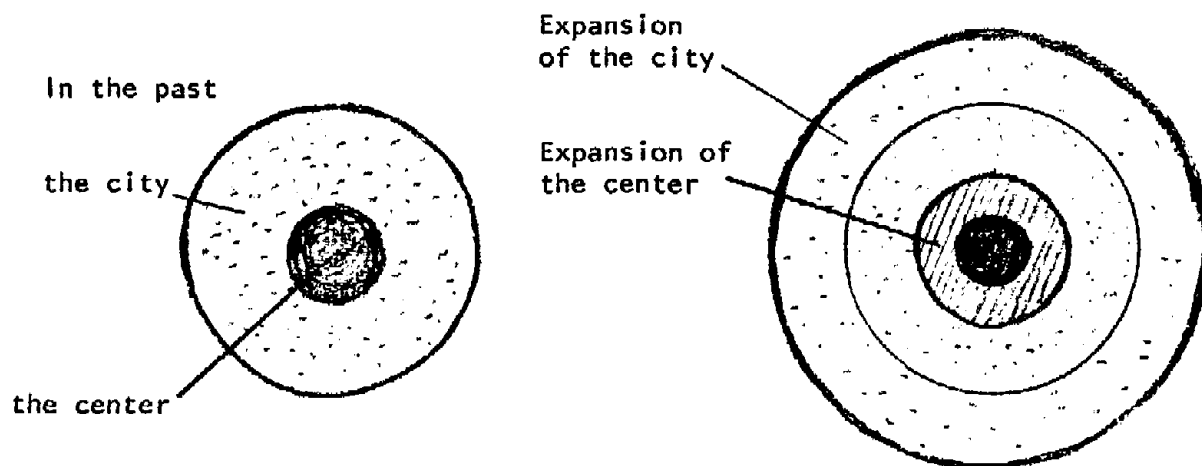
Multiple Inputs (or Markets)



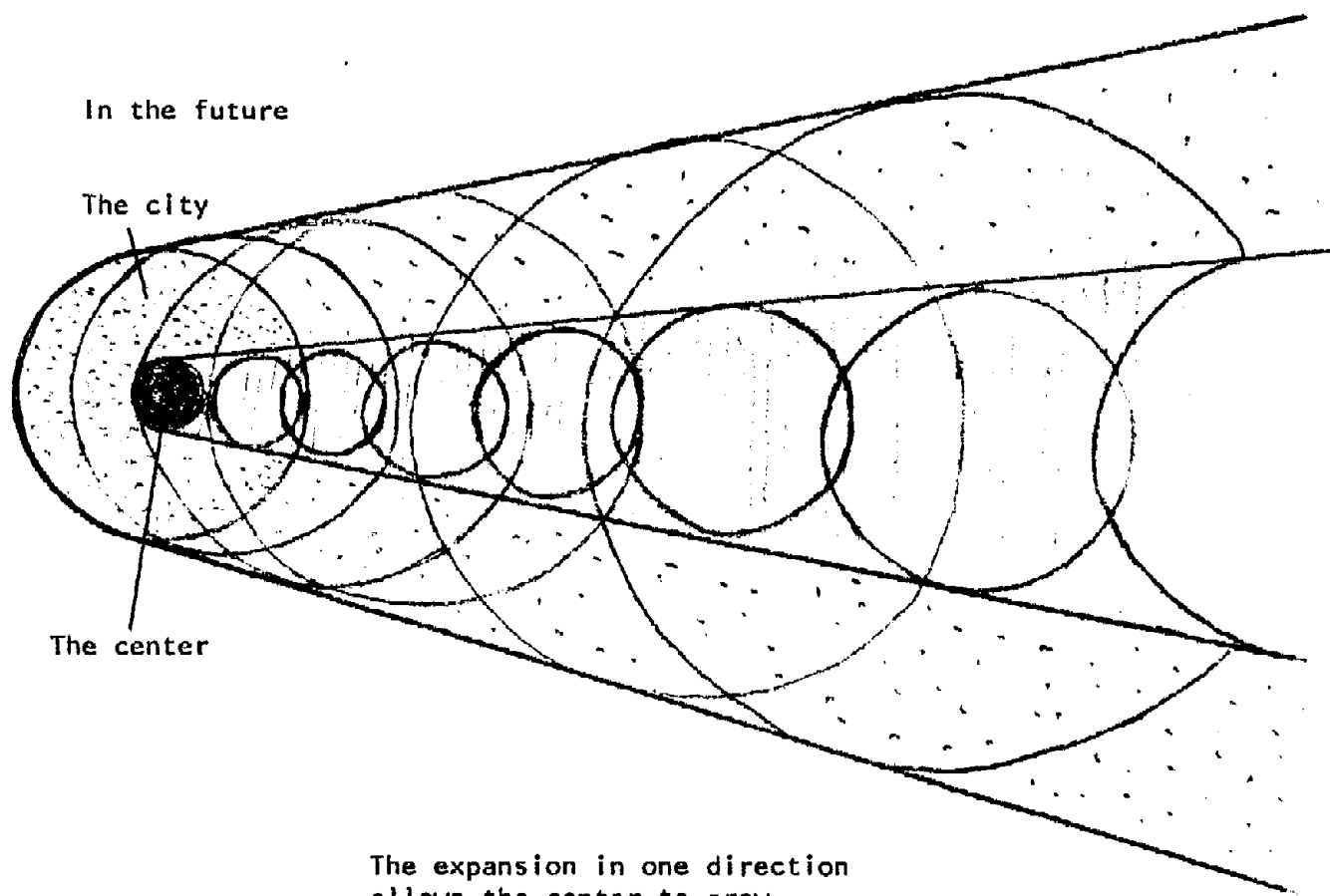
d)

Transportation Breaking Point





The concentric expansion strangles the center and its functions



The expansion in one direction allows the center to grow without difficulty

ENVIRONMENTAL ATTRIBUTES OF REAL ESTATE

- I. The term environmental is used broadly to describe off-site physical and institutional systems with which real estate must be compatible. Most real estate decisions have some measurable impact on a variety of soft systems.

- A. Soft systems include:

1. The micro-climate
2. Off-site ecological systems
3. Historical continuity
4. Social organization
5. Social disorganization
6. Cultural decision procedures

- II. The decision process

A decision requires identification alternative courses of action, possible alternative outcomes and then definition of selection screens by reducing values to objectives and objectives to criteria

- A. Many decisions are unconsciously made by cultural traditions or indirectly made by the institutional mechanics of society.
- B. People are social animals and it is doubtful that if land were a free good that they would scatter to points equidistant from one another. People have tended to cluster, and as the cost of friction inherent in clustering became too great the clusters became denser and eventually well organized in some form of ordered dense cluster. Cost of friction means space is no longer a free good and eventually dense clusters become specialized into multiple land use areas.
- C. An historical survey of famous cities like Peking, Naarden, Venis, Rotterdam all reflected simple cultural priority.
 1. Slave to merchantile economies
 2. Slingshot to gun powder warfare
- D. These cities had a physical clarity in land use layouts and architectural style and construction that depended on cultural factors of:
 1. Static technology
 2. Static population
 3. Cultural continuity
 4. Monolithic and futile governmental structure of the city-state
- E. Conditions for cohesive development by the new world culture were gone due to:
 1. Population explosion
 2. A culture restructured from outer directed to inner directed behavior
 3. Technological explosion
 4. Reform of property rights concepts

- F. Long-term cultural trends may be difficult to perceive in terms of rural to city migration, sophistication and decision making, etc. but even short-term cultural changes affect real estate form. Look at the impact on Madison of earlier independence for young people, political instability or shifting priorities relative to social groups like the elderly, disabled, public transit users, etc.
- G. Highly structured density depends on an ethic of interdependence which was fostered by a generation of depression and world war. A growing consensus to accept planning priorities begins to appear in federal legislation, influential task force reports, and local court decisions.
 - 1. First significant federal assistance to individual cities with city physical planning integrated with capital budgeting, priorities on areas likely to have a high percentage of disadvantaged people, and on minimum standards of housing for health and comfort was in 1954! 25 years ago!
 - 2. Since 1964 we have seen significant advances in regional planning units for coordination of self-serving city plans and the urban interface with water resources, air resources, farm resources, etc. as recently as 1972 a twelve member task force appointed by Richard Nixon and chaired by Lawrence Rockefeller, reported on the public consensus on land:

"When the protection of natural, cultural, or aesthetic resources or the assurance of orderly development are involved, a mere loss in land value should never be a justification for invalidating the regulation of land use."
- III H. Cultural institutions such as labor unions, political lobbies, architectural schools and business schools all contribute to the environment within which real estate decisions are made and sites are valued.
- III. Physical improvements to land form the walls and lid of man's own terrarium-- a manufactured environment. The cliché by Winston Churchill is "We first shape our buildings and then they shape us."
 - A. While the whole civilization process in an industrial society contributes to social instability, real estate has some direct impacts on social disorganization as it is reflected by:
 - 1. Individual mental illness and isolation
 - 2. The strength of the family unit
 - 3. Social stratification and conflict
 - 4. Crime rate, particularly personal and bodily injury
 - B. Real estate development cannot be blamed for providing the consumer with what he wants in a market economy but the public must begin to dimension public controls of land use and building codes to reduce the unwanted byproducts of always doing what the consumer wants.

1. The automobile design has followed the path of least resistance by serving the individual consumer and eventually modifying his behavior with little regard to the aggregate impact.
 2. The suburban flock of individual homes on individual lots compartmented by price and therefore family income has also produced an undesirable social stratification by economic segregation.
 3. Only recently have the social psychologists begun to make their point about manufactured space and society as in the Hidden Dimension by Hall, Defensible Space by Newman, or Community and Privacy by Chermayoff & Alexander.
 4. This lecture cannot presume the planners of real estate can control all of the random social interaction of an active society, but real estate can recognize some basic constraints on its product in order to avoid some obviously undesirable manifestations of social breakdown.
- C. In looking at the series of spaces which are physically defined to create a city we might use the convenient classifications of Alexander & Shermayoff--what they call 6 domains of urbanity a hierarchy of spaces for community and privacy for its residents:
1. Urban-Public. The places and facilities in public ownership: Highways, roads, paths, civic parks.
 2. Urban-Semi-Public. The special areas of public use under government and institutional controls: city halls, courts of justice, public schools, post offices, hospitals, transportation exchanges, parking lots, garages, service stations, stadia, theaters.
 3. Group-Public. The meeting ground between public services and utilities and private property requiring joint access and responsibility: Places requiring mail delivery, garbage collection, utilities control, access to fire-fighting equipment or other emergency rescue devices.
 4. Group-Private. Residential components under control of management acting on behalf of private or public interest for the benefit of tenants or other legal occupants: reception, circulation, and service spaces, community gardens, playgrounds, laundries, storage, etc.
 5. Family-Private. The spaces within the private domain controlled by a single family that are devoted to communal family activities such as eating, entertainment, hygiene, and maintenance.
 6. Individual-Private. The "room of one's own," the innermost sanctum to which individuals may withdraw from their family.
- D. Examples of conscious social organization efforts in land use:
1. Urban-Public -- for municipal Squares of downtown Philadelphia
 2. Urban and Semi Public -- library layout for control of corridors visible from street or parking ramp stairwells
 3. Group-Public interface such as truck loading areas at a shopping center or shopping center periphery road
 4. Group-Private -- study of book called Defensible Space -- design of apartment projects to discourage strangers by reducing anonymity and increasing proprietary zone of residence
 5. Family-Private areas as it is affected by circulation patterns in home plans or emphasis on family kitchens or formal entertainment areas or color and texture of approach zones at front door
 6. Individual-Private Space -- sound privacy of innermost sanctum -- family problems and personality disorder

URBAN LAND 550 LECTURE #5 - Outline
Site and Situs Theory - Origin of Demand for Improvements

- I. Within the general economic base activity, each enterprise searches for a real estate parcel to serve its special needs.
 - A. Any given real estate parcel has three sets of attributes
 1. static or physical attributes - physical characteristics inherent within the property lines
 2. situs characteristics or linkages of the site to other parcels and activities. A linkage can be any kind of relationship between one site and another or one activity and another.
 3. dynamic attributes - behavioral responses of people to site attributes.
 - B. These attributes play a large part in determining the pattern of usage in the urban cluster and influence space users, space producers, and public regulators in reasonably consistent and predictable ways.
 - C. These three sets of attributes permit us to examine the common sense notion of location and the dynamic cycle of success and failure of activities at specific locations.
- II. Static attributes or physical elements of a parcel involve an almost infinite list of variables, many of which relate to improvements intended for the site.
 - A. Definition of shape of a parcel
 1. length and width of parcel
 2. rights below grade
 3. rights above grade
 4. set-back lines for side yards, front yards, waterfront, dock lines, flood plane elevations etc.
 - B. The building envelope - spatial limit of permitted improvements. (Foot of capitol dome, air rights, view lines, private covenants, etc.)
 - C. Topography, geology, and soils
 - D. Flora and fauna inventory
 - E. Self-contained eco-systems
 - F. Access to transportation elements of road, water, rail, or pedestrian route on premises
 - G. Inventory of existing improvements to the site such as farm terracing, road embankments, tile drainage field systems, structures
 - H. Check list of required or acceptable attributes for each use

III. One cannot conceive of location in the abstract without relating to a place and without reference to some kind of an activity conducted at that place.

A. Land economists begin with the terms:

1. establishment - the basic unit of land use consisting of individuals or groups or enterprises occupying recognizable places of business, residence, government, or other attraction
2. Each establishment represents a cluster or packet of functions and each may require a different location but may compromise because of other economies.
3. Relationships between a function at one site and another which influence the movement of persons or goods are termed linkages.
4. The movement of persons or goods creates certain costs which are called cost of friction. Each establishment seeks a location which will minimize these costs in time, money, and stress.

B. Specification of site linkages leads to identification of its micromarket of users and eventually to value of the site.

C. Useful classifications of linked establishments by land economists Robert Mitchell and Chester Rapkin (Urban Traffic, 1954).

1. Dominant Use-Subordinate Use. The subordinate use serves the dominant establishment or group of similar establishments. An example is a machine repair shop and the industrial plant or plants which it serves.
2. Dominant Use-Ancillary Use. The ancillary establishment serves the employees of the dominant use. Examples are a restaurant near a large factory or a cigar stand in an office building.
3. Co-dominant Uses and Dominant Use-Satellite Use. These establishments serve common customers. A large department store and an adjacent ladies' shoe store serve the same clients.

D. Proximity may be historical accident, similar specs or type of building, type of site, or rent level. Proximity does not imply linkage.

E. Establishment as packet of functions suggests a land use is at the focus of its own special complex of linkages. The location of these linkages establish boundaries of a tributary area.

1. Elementary school district
2. Retail establishments subdivide tributary area into primary, secondary, etc, trade areas
3. Primary trade area might be source of 65% of business or area within five-minutes driving time etc.
4. linkages may be discovered from internal data such as address list

- F. Highly specialized linkages can mean control of a unique site provide some degree of monopoly.
- IV. Dynamic attributes of a site are concerned with psychological perception of space users about a site. Unlike linkages they do not directly involve movement of persons or goods but have to do with mental satisfaction of prestige, aesthetics, peace of mind, etc.
 - A. Prestige of residential area, address, or building image
 - B. Aesthetics may stimulate people to more productive labor or anti-social behavior
 - C. Community perception affecting group behavior
 - D. Attributes may be in the eye of the beholder rather than in the reality of physical or functional attributes
- V. The static, linkage, and dynamic attributes of location have a synergistic impact in combination which relate to analogies of magnetic or electrical force fields or energy flows.
 - A. Energy flows may reflect movements of people and goods which draw activity within the field.
 - B. The draw can be reduced by insulators such as the cost of friction or mental stress or the inertia of people.
 - C. There are essentially only two real estate problems:
 - 1. a market need in search of a site with very specific attributes
 - 2. a specific site in search of a market need
 - D. The real estate market is the endless matching of sites and users within a tributary area to bring off the most efficient pattern of uses within each cluster. The question of how to measure efficiency is the subject matter of this course.

REAL ESTATE PROCESS - 550

Lecture #6 Fitting A Use Into the Pattern

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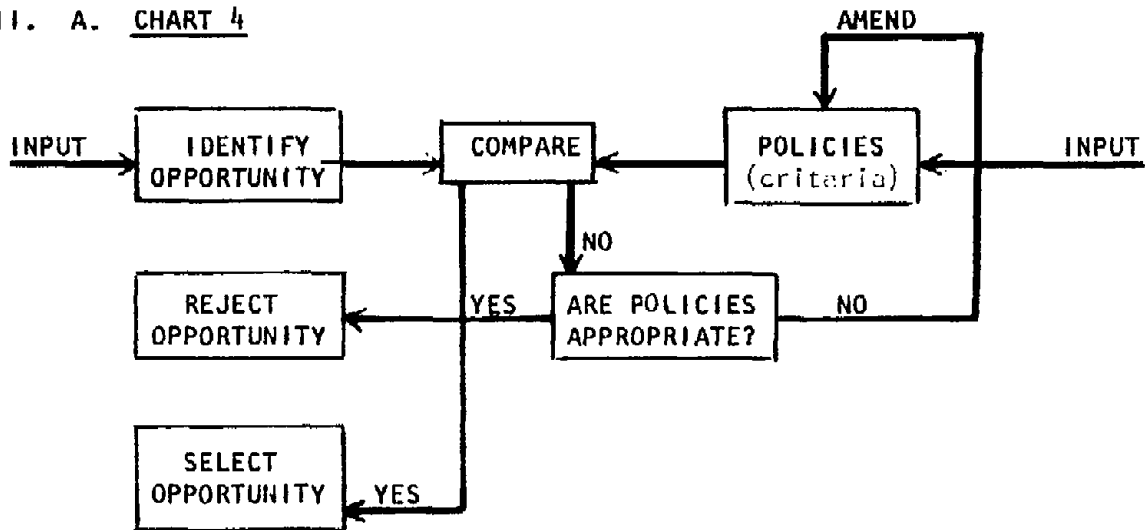
D. Proximity may be historical accident, similar specs or type of building, type of site, or rent level. Proximity does not imply linkage.

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III. A. CHART 4



- B. This whole process is more complex than a simple flow chart representation can depict, but the essence of the process can be discerned from such characterization as that shown in Chart 4; it is the beginning of a systems description of the management process.

This amended model, general though it is, recognizes the inputs to the system from other exogenous systems; characterizes the (circumscribed) whole as an integrated system; points out levels of states (policies, standards) within the system; identifies action points (decisions) within the system;

- documents the interrelationships between actions and information storage points;
- traces the flow of information
 - from outside the system
 - within the system
- depicts the process as dynamic.

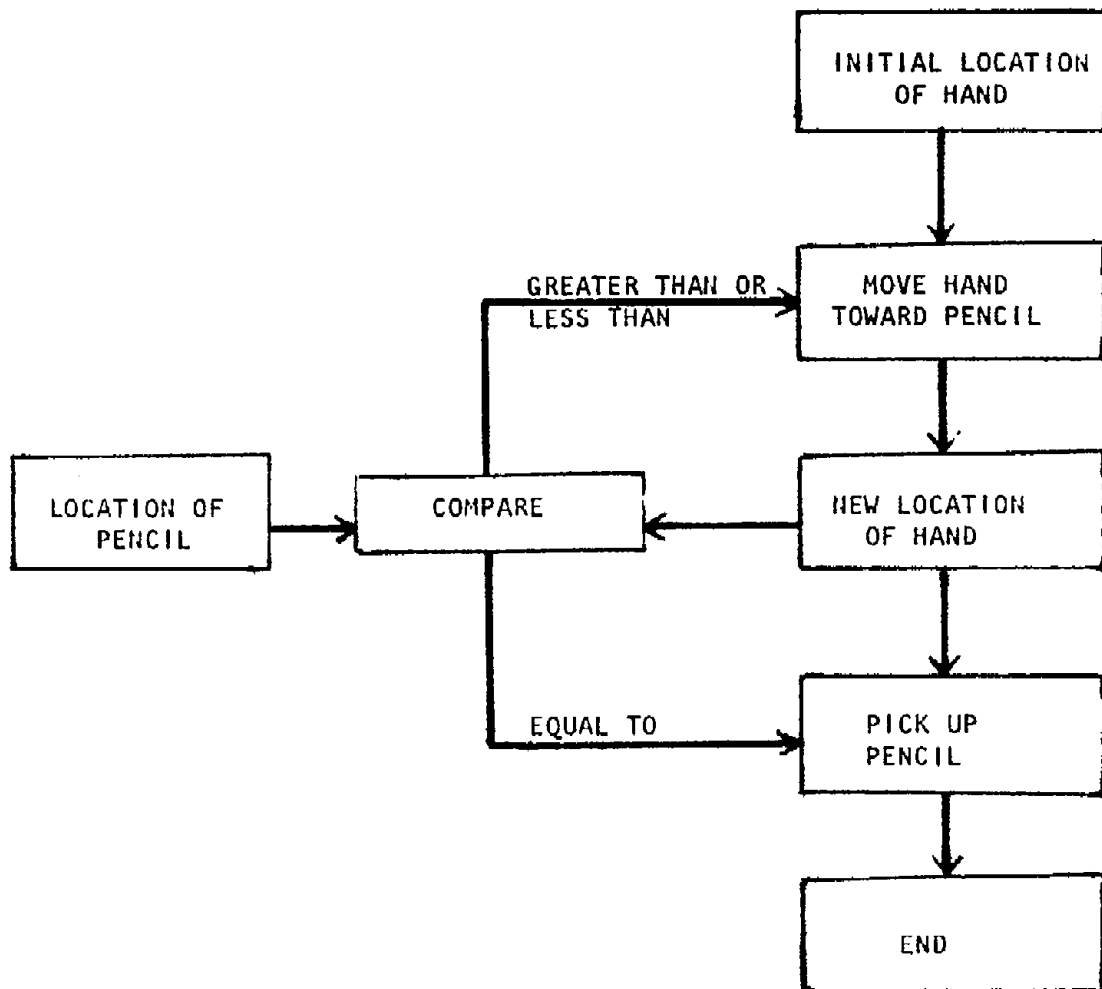
This model, supported by the explanations, is helpful in providing a basis for assessing the validity of common presumptions; it should provide fair warning that policy-making/opportunity-selecting cannot be adequately understood by simply viewing it as "a process that man performs through the act of decision-making."

- C. Information plays the critical role in the process. To construct acceptable operating systems or models one must draw on information sources both inside and outside the decision making organization--- a real estate enterprise.

Outside: Information about alternative kinds of operating systems that can be constructed to supplement

Inside: Existing knowledge and skills relating to the construction of operating systems;

Inside: Inside information about existing standards for constructing operating systems, which in turn, are the product of information flows that come in part from within the organization,



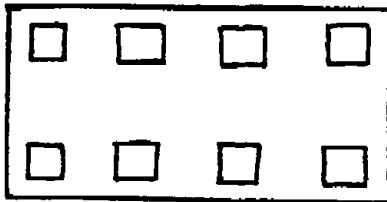
Lecture #6
Urbanization Today
Part I: Spatial Clustering

- I. Spatial clustering is the principal physical attribute of urbanization and the basis for agglomeration economies. Wallace Smith describes four abstract levels of spatial clustering in his textbook on urban land economics entitled Urban Development (1975). The four abstract levels of clustering are illustrated in Figure 1.
 - A. The first level of spatial clustering is called "scatter."
 1. Individuals are as far apart as possible (suppose individuals have a strong preference for isolation).
 2. This maximizes the aggregate cost or potential cost of an exchange of visits, messages, or commodities.
 - Think of the cost of delivering the mail in Northern Wisconsin.
 - B. The next level is called a "cluster."
 1. Space is a free good - a person can have as much as he wants - its just that all holdings are consolidated within the minimum convenient perimeter.
 2. More efficient than scatter:
 - a. The cost of getting together is less as less time is spent going back and forth.
 - b. Think of the cost of delivering the mail in Dane County as compared to Northern Wisconsin.
 3. The savings are considerable, but they cannot be attributed to any specific individual or piece of land.
 - C. The third concept is that of "dense cluster" and here the economics recognizes that space is not a free good. Comparing two communities with the same number of households but one town has quarter-acre lots and the other has one acre lots, it is obvious that the lower density community will have a much greater occupied area and, therefore, the average household is farther from the center of town than his high density counterpart. The result is that all costs of travelling to the center of town or to any other household are increased (depending on the available technology).
 1. As space is no longer a free good, aggregate transportation costs for commodities, messages, and persons will rise as the density of the city falls. The marginal cost of lower density is represented by the MC line in the diagram next to 'dense cluster.'

The intersection of the marginal cost line with the marginal utility function for more space establishes the optimum density for the community. This optimum is necessarily greater than the density based on zero marginal utility. Consequently, cluster gives way to dense cluster in which the group of squares are smaller for housing each activity.
 2. There is a surrender of isolation and space control in the interest of economy in interaction. The savings that result occur because space is not a free good. It is a form of wealth which individuals simply pocket in the form of spending less on transportation.

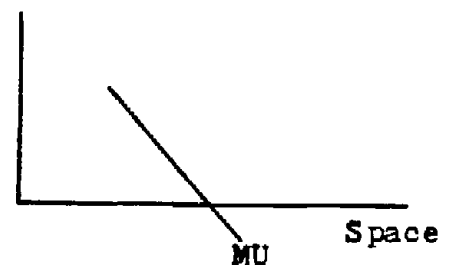
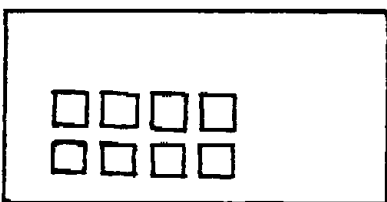
Figure 1.
The Economic Imperative for Density

1. Scatter

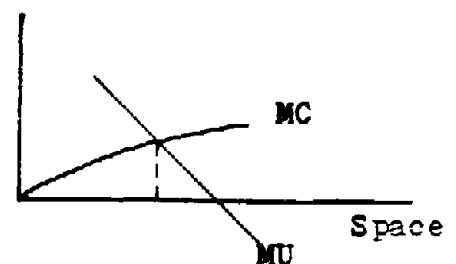
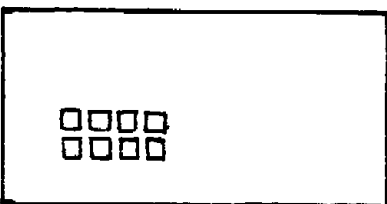


Max $\sum T.C.$

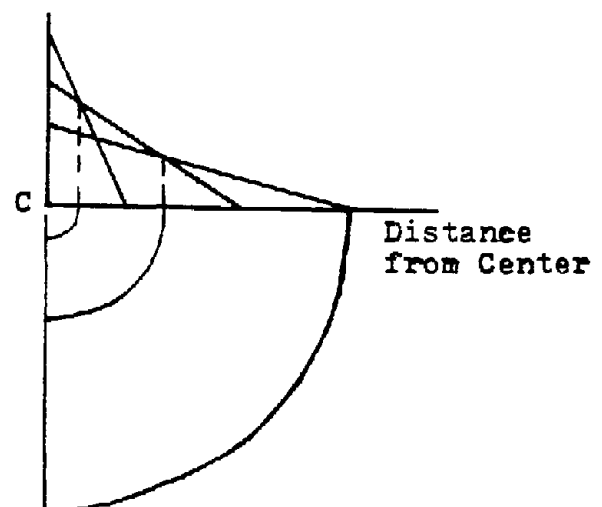
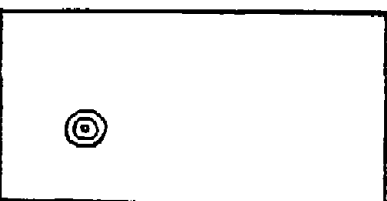
2. Cluster



3. Dense Cluster



4. Ordered Dense Cluster



Source: Smith, Wallace. Urban Development, Univ. of Calif. Press, Berkeley, CA, 1975, 381 pp.

3. A dense cluster is more efficient than a cluster.
 - a. The savings are attributable to the process - to recognize that space in a community is not a free good.
 - b. The savings are still not attributable to the individual users or pieces of land.
 - c. Think of the cost of delivering the mail in a development like Eagle Heights or Parkwood Hills as compared to Dane Co.
 - d. These benefits come at a cost which is social and economic which society has difficulty funding since it is so difficult to tax the benefit.
- D. The fourth stage of clustering Smith calls the "ordered dense cluster":
 1. The urban community now includes several categories of land users - e.g., retailers, manufacturers, apartment dwellers, and single-family homeowners.
 2. Economy in aggregate transportation is achieved by arranging uses in specific patterns. These patterns tend to put high density uses at the center surrounded by rings of decreasing density of people who will have to travel greater distances to the center.
 3. Within the city the transportation saving characteristic of a particular piece of land is translated into a structure of land prices. These prices allocate land among competing categories of users.
 - a. In the diagram the center is labeled C and the horizontal axis measures the radial distance from the center. The vertical axis measures the value of land resulting from savings in transportation costs as an alternative to residing on the fringe where land would be free.
 - b. Just as four students can outbid one working man for an apartment, four apartment dwellers can outbid the single-family homeowner for a building site.
 - c. The problem is to maintain an efficient spatial order despite constantly changing circumstances - population growth, change in transportation, or a change in the linkages which people value most in their list of preferences.
- E. The four concepts are brought together in a simple-minded trade-off diagram shown in Figure 2. Given all economic resources of a community, the greater the amount of transportation output, the less 'useful' output it will enjoy.
 1. The arrows labeled 1, 2, 3, and 4 show how output will be divided between transportation and useful output given increasing degrees of clustering.
 2. If transportation itself becomes cheaper, all of the arrows would slide upward and closer together. The economic payoff of clustering would be reduced and we might, therefore, choose to have less spatial order in our cities or lower densities, or both.

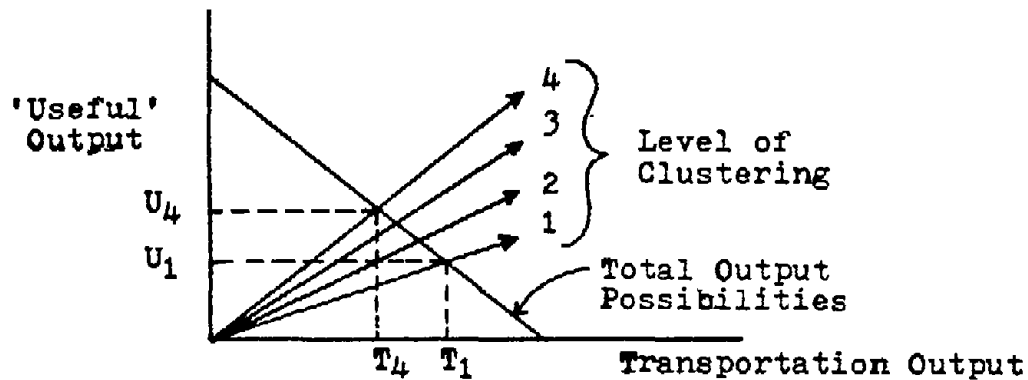


Figure 2.

F. Clustering also permits internal and external economies of scale.

1. Internal economies of scale are realized by increased specialization and reduced distribution costs.
2. External economies are the result of the increased logistical support from agglomeration.
3. Not only are the costs of production and delivery reduced, but the diversity of services available in a city may provide the consumer more collective satisfaction. There is more utility when you have a large number of choices. In addition, choices require that one is aware of the alternatives. This is more feasible in urban areas where diversity of experience is a form of education.
4. Communication is an essential by-product of clustering because it fosters innovation and reduces the costs of mistakes to many people.
5. Nevertheless, the original and most dominant cost affecting the location of each cluster relative to one another and the internal ordering of land use priorities within a cluster was transportation costs. The greater the effort, the more product allocated to transportation, the less net output any enterprise can enjoy (the appetite of the horse for oats reduces the net surplus from the farm).

II. Today the social consensus reflects a preference for highly structured density.

A. Modified Pioneer Ethic

- Land is no longer a free and unlimited good.

B. Ethic of Interdependence

- 1954 - First significant federal assistance to the art of city planning
- 1960 - Beginning of significant and comprehensive effort to organize urban development
- 12 member task force headed by Lawrence Rockefeller--
"When the protection of natural, cultural, or aesthetic resources or the assurance of orderly development are involved, a mere loss in land value should never be justification for invalidating the regulation of land use."

Lecture #7
Urbanization Today
Part II: Locational Concepts

- I. Assuming that the economic and social benefits of clustering are positive in the abstract, there remains the next question of which places are best for a cluster as this will further refine spatial relationships among various communities. There are many different theories by economic geographers as to what is an efficient location for different types of enterprises. There are several useful answers here as there are many possible situations.
 - A. A weight-gaining process would be one in which the product gets heavier as it reaches the market - that is, there is an increase in the cost per mile of transportation as the product becomes more complete. A bottle of pop is an example, so is a house.
 1. The more significant the weight-gaining process, the closer the enterprise should be located to its market, assuming the other costs of production are identical (see Figure 1.a.). Transportation cost not only reflects weight and distance but also bulk (e.g., modular homes), perishability (e.g., bread), and fragility (e.g., glass).
 2. In general, we are talking about the costs borne by the firm and not the real cost to the economy, so if suppliers conceal costs with discriminatory rating, delivered pricing, etc., eventually the pattern of business location is less than efficient for the economy as a whole.
 3. It is also assumed by the chart in Figure 1.a. that the firm is free to locate anywhere along the line between raw material and market when, in fact, locations with the desired logistics are limited and there are irrational goals as well.
 - B. A location diagram for a weight-losing process is shown in Figure 1.b. Examples of weight-losing processes include steelmaking and the use of water power to generate electricity. In both cases major inputs - coal and water power, respectively - disappear in the process of production and are very difficult or expensive to transport. Hence, in general, the more significant the weight-losing process, the closer the enterprise should be located to the source of raw materials, again assuming the other costs of production are identical.
 - C. Multiple sources and multiple markets involve location vectors as shown in Figure 1.c. There is a point P at which the aggregate transportation cost per unit of finished product is least (e.g., Gary, Indiana). This point is modified when new industrial facilities need an environment in which labor is available, urban services are available, etc. As a result new facilities are not often set down in the wilderness and the result is that existing communities grow.
 - D. Urban areas are generally involved in exchange processes, one of which is that of being a transportation break point - i.e., a change in the mode of transportation occurs (e.g., from barge to rail or from rail to truck). The economic

advantage of locating at a transportation break point is shown in Figure 1.d.

- E. There are foot-loose enterprises in which transportation and convenience costs are minimal in relation to value added, such as diamond cutting or the manufacture of transistor diodes. Many foot-loose enterprises choose to locate in high amenity areas.
- F. The way station function of accommodating transients is a major function and many California towns are built around a system of 21 missions started by the Franciscan order, one day's journey from one another to provide overnight accommodations. Missions were replaced by hotels near the railroad station, then by motels at the highway interchanges, and more recently by motels at the airport. Hence, transportation advantages changed the way station function quickly and drastically.
- G. In any event, there is a rough economic logic concerned with transportation linkages that determines where urban clusters locate and continue to grow once they reach a certain critical mass of population and services.

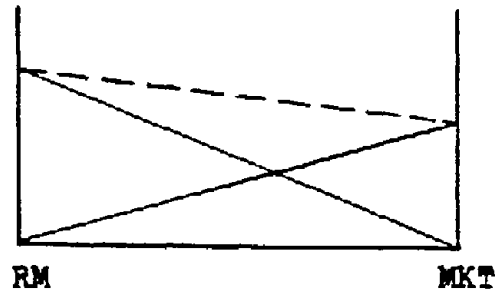
II. Assuming that urban clusters make sense and are spaced out with some logic, the question remains as to what goes where within a single urban center - i.e., what will or should be the pattern of urban land uses. Such a pattern is relative and not absolute. For the moment, our consideration of pattern will assume a "featureless plain" so that topography, water, subsurface conditions, and political boundaries have no significance. Even with this assumption, pattern can have a number of dimensions.

- A. The first dimension to consider is the relative direction of various uses - such as oil refineries should be located at the opposite end of town from homes, or factories should be located outside the green belt buffer.
- B. Another dimension is density expressed as the number of dwelling units per acre, workers per square foot of floor area, or perhaps the ratio of building/floor area to land area.
 - 1. Density should be expressed as a frequency distribution over sections of the city rather than as a city-wide average. Density measures lead to many different sociological topography maps.
 - 2. Frequency distribution modes influence values, patterns of retail and public facilities, and particularly the transportation system.
 - 3. The high density of employees in office buildings as compared to the low density of employees in factory buildings will influence their relative locations and transportation linkages.
- C. A third dimension is the definition of land use categories which will influence our ability to study spatial arrangements in terms of diversity of land uses and locational tendencies of these uses. Figure 2 shows the average distri-

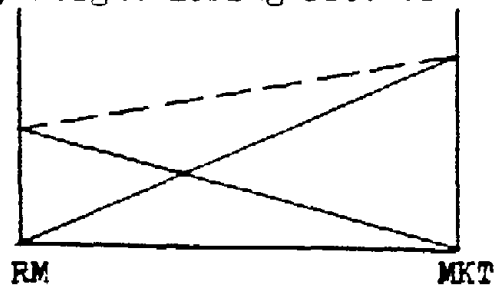
#3

Figure 1.
Location of Processing Activities

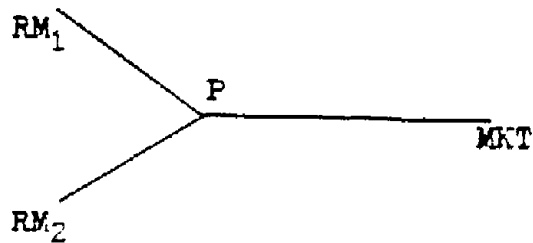
a) Weight-Gaining Process



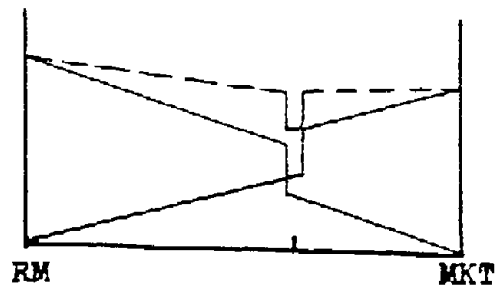
b) Weight-Losing Process



c) Multiple Sources (or Markets)



d) Transportation Break Point



Source: Smith (1975).

Lecture #7 Outline
The Real Estate Process
Business 550 & 705

Economic Base - Town Builders & Town Fillers

- I. Key Proposition: The rate and direction of growth (employment, income, population, establishments) of a region or a city is determined by its function as an exporter to the rest of the world.
- A. Proof: The level of Aggregate Demand (or income, output, employment) called Y is the sum of household consumption, C_H (food, etc.); household investment, I_H (housing); business investment, I_B (machines); government consumption, C_G (typewriters, etc.); government investment, I_G (schools); plus net spending by people living outside the city (city exports minus imports) $X-M$. Thus,
- $$Y = C_H + I_H + I_B + C_G + I_G + X-M$$
- But if households, businesses and government buy everything they consume or invest from non-residents then,
- $$C_H + I_H + I_B + C_G + I_G = M$$
- and therefore
- $$y = x$$
- or a city's level of income, of output and of employment is totally dependent on it's ability to sell outside the city!
- B. Basic sector activities (town builders) are sales to the rest of the world in the form of goods, services, and labor that flow out of the region (also expenditures by "foreigners.")
- C. Non-Basic Sector Activities (town fillers) are the numerous supporting activities necessary to service workers in basic industries and the basic industries themselves.
- D. Both sectors are related to exogenous demand. If outside demand for the product of the region increases the basic sector expands (direct effect) which generates expansion in the non-basic sector (indirect effect).
- E. Result of all this: Basic employment (or income) plus non-basic employment (or income) equals total employment (or income).
- II. For every community there is a relationship between basic employment (or income) and non-basic employment (or income) called the BASE RATIO =
- $$\frac{\text{Basic employment}}{\text{Non-basic employment}} \quad \left(\text{or} \quad \frac{\text{Basic Income}}{\text{Nonbasic Income}} \right)$$
- A. Eg. This means that if for every basic worker there are 2 non-basic workers, the base ratio would be 1:2.
- B. Implications: For every new job (or dollar of income created) in the basic sector, two new jobs (or dollars of income) will be created in the supporting activities of the non-basic sector.
- III. For every base ratio there is a BASE MULTIPLIER.
- A. Eg. If the base ratio is 1:2, the base multiplier is 3, i.e., when basic employment increases by one, a total of three new jobs (basic

and non-basic) will be created.

B. Implications - Allows an estimate of the total impact on the regional economy that results from a change in demand for basic goods.

C. Useful relationships:

1. $\text{Base multiplier} = \frac{\text{total employment}}{\text{basic employment}}$
2. $\text{Total employment} = (\text{base multiplier})(\text{basic employment})$
3. $\text{Change in total employment} = (\text{base multiplier})(\text{change in basic employment.})$

IV. Implications and Uses

A. Projections

Given: B:LM = 1:1.5

B:TE = 1:2 1/2

TE:TP = 1:2

B:TP = 1:5

B = Basic employment

LM = Local market or nonbasic employment

TE = Total Employment

TP = Total Population

Suppose basic employment for Madison increases 500 employees at Oscar Mayer as a result of increased sausage demand in Chicago. You can calculate the resulting increased population, income, level of services demanded, locational preferences. (All are long-run effects.)

B. Implications

1. Fill gaps in historical data.
2. Aids in understanding past & current developments.
3. Evaluate & estimate impact of expanding or new industry.
4. Estimate future demand for types of land use (housing, retail, industrial, etc.).
5. Provide insight into nature of regional economy through interareal and intertemporal comparison.
6. Formulate growth strategy to stabilize base.
 - a. Attract enterprises with stable production.
 - b. Emphasize diversity with many small export firms.
 - c. Continuing promotion of export firms.

C. Applications

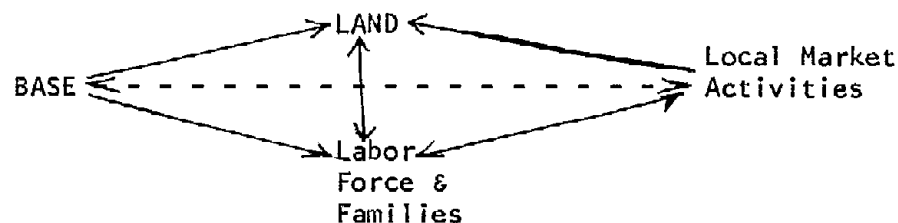
1. Housing market demand and value.
 - a. The one employer town - Seattle and Cape Canaveral.
 - b. Population effects - hold or sell decisions.
2. Feasibility analysis and appraisal.
 - a. Skill mix changes: impact on consumption patterns: ratio between real and personal property holdings.
 - b. Base ratio changes alter the market basis of appraisal and value.
 - c. Disposable income and savings levels with employment level, employment type, skill level, and age of work force.

Lecture #5 Outline
Urban Land 550

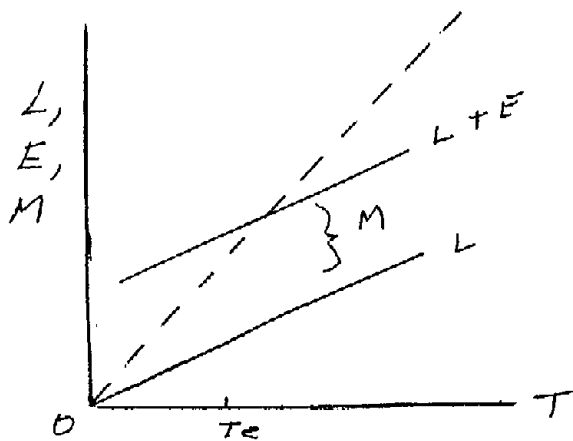
Economic Base - Town Builders & Town Fillers

- I. Growth of employment, population, and number of establishments is referred to as urban economics which in turn leads to measures of demand for space-time products to house activity and is referred to as Urban Economics.
 - A. Economic base activities (townbuilders) and service or local market activities (town Fillers).
 - B. An economic base activity is one with exports goods and services or imports investment capital or outside income.
 - C. Export activities may be pure or mixed.
 - D. Base activities pay for jobs with outside money or finance local consumers with income earned elsewhere.
 - E. The export function not the size of the enterprise is critical to community economics.
 - F. Local market activities are those which provide goods and services within the urban district.
 1. Each enterprise is export or service to a different degree.
 2. They may be a seedbed for future base activity, improve external economy or base industries and may employ twice as many people as the base industries.
- II. For every community there is a relationship between employment and total employment and population which can be measured as the economic base multiplier.
 - A. Measurement of the multiplier is a critical planning input.
 - B. Oversimplified it is a pattern of ratio:
 1. Assume pattern of employment ratios:

| | | | | | | | | | | | |
|-----|----|---|---|---|---|---|---|-------|---|-------|---------|
| B: | LM | : | : | 1 | : | 2 | - | 1,000 | : | 2,000 | persons |
| B: | TE | : | : | 1 | : | 3 | - | 1,000 | : | 3,000 | " |
| TE: | TP | : | : | 1 | : | 2 | - | 3,000 | : | 6,000 | " |
| B: | TP | : | : | 1 | : | 6 | - | 1,000 | : | 6,000 | " |



C. Economic base multiplier graph:



$$\begin{aligned} T &= L = E \\ T &= L + M \\ \frac{L}{T} &= g \\ I &= g + \frac{E}{T} \\ T(1 - g) &= E \\ T &= E \cdot (1 - g)^{-1} \end{aligned}$$

But: $g = \frac{L}{T} = (1 - \frac{M}{T})$
Increases as T grows because M can be replaced with local production (L)

- D. Suppose $g = 1/2$; then $1/(1 - g) = 2$ which the total employment is twice the number of jobs in the base.
- E. A fraction of $3/4$ means multiplier of 4.
- F. At the outset a primary industry like gold mining means all employment is based and all income spent outside community - growth is positive until opportunities for substituting L for M are exhausted.
- G. Growth strategy to stabilize base:
 - 1. Enterprises with stable revenue sources
 - 2. Great diversity of many small export firms.
 - 3. Diversity through size.
 - 4. Continuous promotion to replace one unstable export firm with another.
- H. Eventually size of city infrastructure reaches a critical mass so that the L to M equation cannot be reversed.
- I. Population mix in terms of age groups, skills, flexibility, mobility, politics, favoritism, etc.

III Practical application of economic base theory is subject of Urban Land 557 but some techniques can be identified.

- A. Techniques relate to SIC classification of department of Commerce
- B. The whole industry method
- C. The value added method
- D. The minimum requirement method
- E. Input-output analysis

- IV. Economic base theory is recognized in many different levels of reports and analysis.
- A. Appraisal reports may simply list time series data to infer growth and demand.
 - B. Planners may use body count for public facilities, utility budgeting, or retail location.
 - C. Regional economic models are limited only by data available.
 - D. Some growth models become self fulfilling prophecies as land use decisions are made as a result of the forecast.
 - E. Economic base can be a means of reducing the risk for a long term real estate project.

Lecture #5 - Urban Land 550 (4)

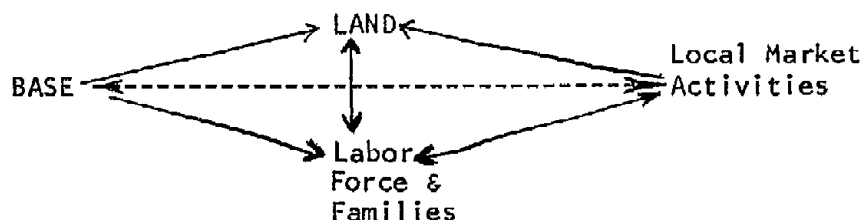
Economic Base - Export and Service Industries

- I. The ordered city density cluster has a tendency to grow or contract as a result of something called its economic base. It is possible to forecast this growth and project the land and real estate requirements which are the consequence of this growth. The growth of employment population and economics is often referred to as urban Economics and this in turn leads to the inputs for space-time products to house urban activities which is the subject of urban Land economics.
 - A. Urban economic activity is composed of economic base activities called town builders and service activities which might be called town fillers.
 - B. Economic base activities represent a minority of total employment but are the most significant relative to community help. An economic base activity in any community is one which exports goods and services or im~~ports~~ports capital for local investment or income for local consumption.
 - C. These export activities which bring money into the local cash cycle can be classed as pure or mixed export activities.
 1. Oscar Mayer sells virtually all its products outside of Madison and so would be virtually a pure export industry.
 2. Professional services offered by University Hos~~pital~~pital serve both local residents and people from far beyond the city limits.
 - D. Economic base activities can take many subtle forms.
 1. Government is a major economic base activity because it brings tax dollars from all over the nation or all over the state to support employees and buildings in Madison.
 2. Retired people are spending their savings from the north while they live in St. Petersburg.
 3. The University is a prime activity not only because of it attracts students who earned their income in other parts of the state during the summer but because it brings out-of-state students and their expenditures to Madison and various reserach grants which are spend in part in the Madison community.
 4. An insurance company collecting premiums at its home office in Madison only provides economic base to the degree that its revenues are spent on Madison employees and services. An insurance agency working within the local market would only be a service industry.
 - E. An export firm with 10 employees is more importatn to a community in many ways than a non-export firm with 50 employees. It is the export function, not the size, which is critical because it is bringing dollars back into the community that leaked away from citizen consumption patterns otherwise.
 1. When the export dollar is spent locally it creates non-export dollars in the community and eventually these dollars are used to pay for imports.
 2. Bur first the export income circulates in town and it is the circulation that does the trick. Obviously it is important to maintain the

circulation despite the need to pay for imported goods so continual injections of export income is necessary.

- F. Local market activities are those which sell the principle portion of their goods, services and capital within the confines of the urban district. The urban district may be defined many ways - metropolitan area within a toll free phone call, standard market statistical area, or political boundary.
1. While local service may predominate each may have some degree of economic base activity. The barber shop at a hotel is different than one in the neighborhood and a department store like Marshall Fields may draw in part from the nation as a whole.
 2. Local market activities are basically urban service enterprises - town fillers.
 3. They are significant because they can be a seed bed for base activity, improve the external economies available to base industries and may employ twice as many people as economic base.
- G. However, the urban economist attempting to measure the urban economy may tend to overlook these activities in detail because:
1. Their response lags changes in economic base.
 2. They are more stable in the long run as they may increase their services without necessarily increasing their need in land and buildings.
 3. They have less economic impact because they are small scale, neighborhood oriented, and often marginal activities.
- II. Because consumer spending habits are impossible to project how a given number of new jobs in export industries will affect employment in non-export industries, residential construction, and land consumption. For every community there is an economic base multiplier. For the average city there are two jobs among local market services for each job in the export base, the ratio being lower for younger communities and higher for large cities regardless of age.
- A. Each city at its own point in time has its own economic base multiplier with which banks, stores, and city hall can forecast changes in their volumes of deposits, their sales, their need for city services and all the rest.
- B. One way of illustrating this pattern of ratios between base (B) employment and local market employment and total population would be as follows:
1. Assume pattern of employment ratios:

| | | | | | | | | | | | |
|-----|----|---|---|---|---|---|---|-------|---|-------|---------|
| B: | LM | : | : | 1 | : | 2 | - | 1,000 | : | 2,000 | persons |
| B: | TE | : | : | 1 | : | 3 | - | 1,000 | : | 3,000 | " |
| TE: | TP | : | : | L | : | 2 | - | 3,000 | : | 6,000 | " |
| B: | TP | : | : | 1 | : | 6 | - | 1,000 | : | 6,000 | " |



Disequilibrium short run
loses 500

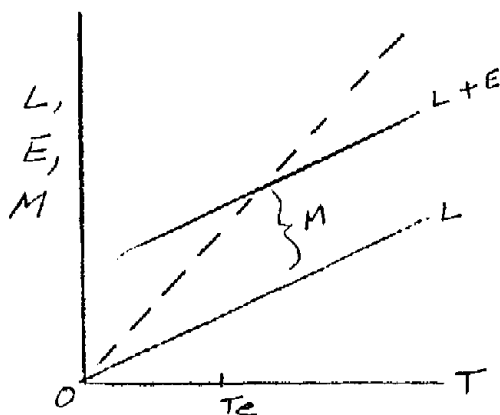
B : LM :: 1 : 4
B : TE :: 1 : 5
B : TP :: 1 : 12

Equilibrium - long run

B : LM :: 500 : 1,000 (1:2)
B : TE :: 500 : 1,500 (1:3)
B : TP :: 500 : 3,000 (1:6)

- C. In economic terms the economic base multiplier is quite similar with the Keynesian investment multiplier which is defined with the relationship⁴ increase investment spending and the consequent increase in ~~ANY~~ national income.

a) Economic Base Multiplier

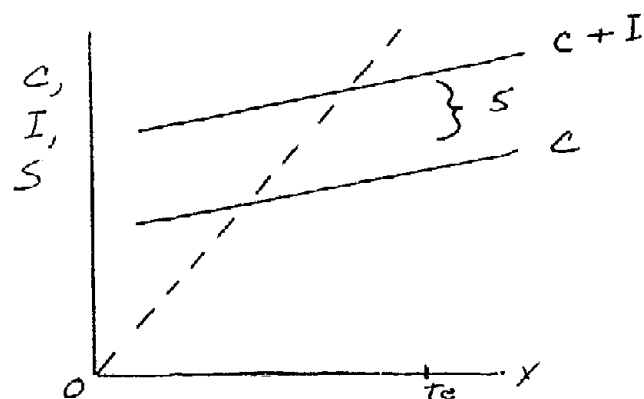


$$\begin{aligned} T &= L + E \\ T &= L + M \\ \frac{L}{T} &= g \\ 1 &= g + \frac{E}{T} \\ T(1 - g) &= E \\ T &= E \cdot (1 - g)^{-1} \end{aligned}$$

$$\text{But: } g = \frac{L}{T} = (1 - \frac{M}{T})$$

Increases as T grows because M can be replaced with local production (L)

b) Keynesian Investment Multiplier



$$\begin{aligned} Y &= C + I, \Delta Y = \Delta C + \Delta I \\ Y &= C + S, \Delta Y = \Delta C + \Delta S \end{aligned}$$

$$\frac{\Delta C}{\Delta Y} = k$$

$$1 = k + \frac{\Delta I}{Y}$$

$$\begin{aligned} \Delta Y (1 - k) &= \Delta I \\ \Delta Y &= \Delta I \cdot (1 - k)^{-1} \end{aligned}$$

1. Horizontal axis measure total number of jobs in a community.
2. The vertical axis measures, alternatively, the number of jobs in export businesses (E) or in local non-export businesses (L)
3. The vertical axis also measures the job loss because of imports (M) which is just equal numerically to the number of export jobs since savings and investment must equal unity in Keynes.
4. In the algebraic summary T = total employment and since E and M are numerically equal in equilibrium then total employment can be expressed as the sum of local employment in employment created elsewhere by community imports.
5. The critical assumptions is that people in a community spend their money so that the relation between total number of jobs in a community and non-export jobs (L) is a constant (g) so long as there is a range of variation it is reasonable to assume that L/T is constant

- D. Suppose $g = 1/2$; then $1/(1 - g) = 2$ which the total employment is twice the number of jobs in the base.
- E. Since $g = L/T$, if the people in the community have spending habits which make this fraction $3/4$ instead of $1/2$ - spending more of their money on local goods and services, then the base multiplier is 4 instead of 2. Thus the multiplier numerical value and sensitivity of total employment to changes in export employment are derived from customary household patterns. The more ~~desirable~~ people prefer to spend their money outside the community the lower total employment in the community will be.
- F. A community may begin with a primary industry such as gold mining or logging which means all the employment is economic base and all income spent outside of the community. Eventually people with no intention of digging gold or sawing wood come into the area and provide services so that the pattern changes to favor local market expenditures - i.e. L and g are initially 0 and gradually grow positive until the opportunities for substituting L for M are exhausted. At some point people will feel importing goods are preferable so New York does not manufacture its own auto, grow its own food, or make its own movies. Each service has its own economies of scale requiring a certain size population base.
1. Obviously these relationships are not strictly linear but nevertheless provides a useful base of forecasting adjustments over time. The adjustments will lag the change in economic base.
 2. In Belvidere home construction lags construction of the Chrysler plant by three to five years.
 3. When a factory employing 1,500 people shuts down and the multiplier is 2, eventually another 1500 are going to lose their jobs or go on shorter hours. hence the concern in Madison when Gisholt Johnson, Red Dot and other closes up or the legislature decides to relocate state offices to other communities.
- G. Leaving aside the issue of 0 growth in population or national product the city fathers must at least stabilize their employment through one of four separate strategies:
1. Preference to enterprises which vary stable markets and revenue sources, such as government, hospitals, etc. The alternative is to face heavy cycles such as Seattle, once dependent on Boeing or Huntsville, Alabama dependent on missile contracts.
 2. Encourage diversity of small export firms such as a resort community with many small shops and resorts rather than one giant hotel. This is an application of the principle of diversification such as is occurring in Orlando or Phoenix. (30,000 new jobs and a 100,000 new people and consumption of 640 acres of ground per year on each side of town).
 3. Diversity through size as Chicago is protected against massive economic instability.
 4. Continuous promotion to replace one unstable export employment company with another, perhaps having the community provide low rent industrial space or other concessions.
 5. Eventually the size of the city reaches a critical mass which simply does not go out of business. The infrastructure of durable goods such as houses, streets, water mains, and schools are not easily abandoned. Ghost towns may be found where the economic base was

a single mineral resource but these days the local sector of the economy tends to be part of the resource which attracts new industry because it provides real external economy. A good place to live is a good place to work and so the neat economic explanations of location theory in the 19th century are being reversed. There is a danger to date that if a city is too nice to live in it will grow too fast and be ruined making other areas more attractive. In effect the quality of an urban area tends toward a level of equal attractiveness.

H. One must also dimension total population by detailing the population mix in terms of age distribution, skills, adaptability to changing times and mobility.

I. Over time diversity and imbalance will lead to a process of adaptation, favoritism and chance modifying the work pattern and time will modify the age groups. The population mix affects the governmental process and quality of its services just as in Madison the student mix is beginning to have its impact on city hall.

III. To make practical use of the economic base concept we must be able to identify those firms or activities which make up the economic base and the approximate value of the economic base multiplier.

- A. While other courses particularly Urban Land 557 are concerned with these problems in more detail, we can suggest different techniques which are employed to identify or measure economic base.
- B. Typically the identification system to relate to available information the SIC classifications in the Dept. of Commerce Survey of Current Business.
- C. The first method for determining economic base is the whole industry method, which means all the employment in particular categories is counted as export, for example, all manufacturing, federal employment, wholesale, etc.
- D. The value added method is the most complex, the most expensive to do and perhaps the ideal. It requires a survey of all business firms to determine the difference between the selling of price of products in sales outside of the community and all the amounts paid to other firms or governments outside the city. This will pick up export activities from basic local market services which have some sales outside the community. The work of government agencies must be proportioned by using the population of the city relative to the population the region serves. There is a danger that sub-contractors in the city supplying export firms will be counted as a local market activity.
- E. The third method is the minimum requirement method which assumes that every city requires a certain work force in each industry category just to meet local needs. It is then possible to compare the excess jobs with the minimum required to measure employment attributable to economic base but the location quotient may understate export activities.
- F. Input-output analysis is an important refinement of the economic base idea. Computer simulation of the process is required for useful application for a city but the important point is that there are multiplier impacts

from an increment of production of one export firm on the product of another export firm as well as a multiplier effect on local activities. Firm A buys a gazonta from Firm B who eventually becomes a specialist in gazontas and sells to Firm C in another town which makes widgets instead of gizmos. The interaction between of input-output relationships if the city gets one new industry it may gain a new complex of new firms as Boston gained the research power of MIT and eventually a spin-off of electronics firm started by a professor.

- IV. Very careful analysis can produce rather detailed identification of growth patterns and the need for land of certain types and locations derivative of economic base. Too often the real estate professional simply infers from an implied cause and effect what the potential may be.
 - A. Appraisal reports will often simply list time series of information and then make the leaping assumption that since business is good an apartment house is needed at this site.
 - B. Planners and real estate analysts are just beginning to learn how to build econometric models which forecast population and employment trends and convert these to land use decisions. Various types of land users apply different types of criteria to make their judgments.
 1. The fire department or the school board determine site and location requirements 3 to 5 years in advance.
 2. Utility firms have programs which convert economic base data to system requirements to forecast capital budgeting needs to transformers, transmission lines and generating capacity many years in advance. Indeed their meter records are excellent current data on the growth and stability of any particular population group.
 3. Department stores are acquiring shopping center sites years in advance of actual development based on elaborate demographic models which have become more feasible with elaborate census tract data on tape coordinated with charge account sales and customer spotting by census tract and block.
 - C. Regional economic models are coming into their own. A UCLA graduate school of business forecasting model indicated that the closing of Lockheed's plant would cost Southern California 24 to 31,000 jobs and \$500,000,000. Each geographic and metropolitan region in the U.S. has an economic life of its own and business cycles in each area may differ from national cycles.
 1. The south Atlantic region is continuing to grow strongly through national recessions though sectors in this region are growing at different rates.
 2. Some regions with large non-durable goods industries are sensitive to smaller market areas than durable goods and therefore may be insulated from much of the national economic picture.
 3. On the other hand the Chicago-Detroit area seems directly tied to the national scene because of a heavy concentration of durable manufacture with the result that the region tends to overshoot the turns in the economy.
 4. Economists believe that with an adequate data base we can build from 230 metropolitan areas and 50 states to 8 economic regions and then generate a total GMP instead of working down from GMP estimates to the community level the way they do now.

- D. These economic base models are beginning to affect urban land use patterns as investors use them to forecast absorption rates and land prices and governments base capital improvements policies on them with the result that there is a tendency toward self fulfilling prophecies.
1. Elk Grove, Illinois, was given a forecast of growth by Real Estate Research Corp. The builder created a certain amount of space each year according to the schedule and the town grew at the same rate the economist had forecast leading the economist to claim that his techniques were highly accurate.
 2. In Milwaukee SEWRPC is developing a model to forecast which areas will develop first for what use in order to build a transportation system which would be best for that future situation.
 3. San Francisco in the bay area region created BART and then built an economic model to show how population would be redistributed for convenience to the station and then attempted to buy land for the public treasury ahead of construction of the station.
- E. Risk is the variance between risk and expectation. For the real estate investor much of the risk is the result of the long term character of improvements and the short term character of his market. He desperately needs models of his long term community economic base trends to have some control of his future prospects.

CITY DEVELOPMENT---THE PRIVATE VIEWPOINT

- I. The term "property development" is rather vague and elastic, a generic term like theft, which covers a multitude of sins .
 - A. The development process spans vastly different periods of time and scale of undertaking
 1. Building a duplex or building a city
 2. Subdividing a single lot or converting raw land into neighborhoods of home sites.
 3. One idea and a few weeks time or creative management of one project for twenty years time
 4. Leasing of a gas station site or leasing of a regional shopping center.
 5. Creative use of old buildings or placement of old businesses in new buildings.
 6. Creative administration of public agencies for urban renewal or creation of private agencies to specialize in urban renewal.
 - B. Property development cannot be distinguished from property management. Development assumes property will be marketed and managed in a certain way for many years following the construction or remodeling phase.
 1. Real estate is a classic example of the second law of motion--it very quickly declines and goes under without successive sustaining creative inputs in the future. Men give their lives to the maintenance of a single large building, maintaining every mechanical detail, supervising the clean-up crews at night or the emergency crew for a leaking compressor at five in the morning.
 2. Real estate is therefore essentially a service product, but these services are intangible or invisible as they are often performed when the public is not around or the public takes for granted.
 - C. Various phases of the development-management cycle take different combinations of entrepreneurial abilities or administrative skills.
 1. Passive investment anticipating future events
 2. Control, concept, and securing political approval
 3. Sight development and preparation for wholesaling
 4. Construction of improvements and retailing to satisfy
 5. Long-term management and consolidation to optimize
- II. Your experience with your own development project taught you that the developer must fit his project to many constraints, not only cash flows but also zoning, shape of site, pedestrian behavior and a host of others. Today we would like to explore some of the other complications which constrain the developer in his choice of alternatives
 - A. Selection of a grand strategy
 1. Matching the development to the talents of the firm--entrepreneurship (concept) or management (control)

2. Willingness to accept cost of high public silhouette
 3. Maximum potential loss which can be absorbed
 4. Time line or planning horizon of firm
 5. Number of profit centers which can be secured from control of project
 6. Non-financial objectives
 - a. Stabilized current investment
 - b. Generate advertising and public image benefits
 - c. Capture values created by primary enterprise
- B. Determination of legal-political feasibility within acceptable time periods has become a major risk-decision factor for developers. Every political approval or political action reduces the probability that the project can go forward.
1. Need for zoning change or variance in building code
 2. Need for annexation
 3. Assistance of capital from public utilities or municipal budgets
 4. Control of public attitudes by local media
 5. Harassment by public officials
 6. Erosion of the political base of public good will
- C. Ethical and aesthetic suitability
1. Is the project consistent with control of sprawl, conservation, public safety?
 2. Are the capacities of the developer sufficient to protect his subcontractors?
 3. Does the design advance the environment of both the user and the neighbor?
 4. Is the project compatible with the developers image of himself and the time and energy he has to invest?
- D. Many of the above considerations are taking the largest and most effective organization out of real estate development; at this point the political moves of consumer and environmental advocates may be counter-productive as they frighten off large developers and or unwilling or unable to concentrate on small developers who continue to make their own mistakes at a duplex or single-family home pace.
- III. As you may recall, the common denominator between space-time and money-time is time.
- A. Capital cost and revenue schedule equated by timeline of development
 - B. Value is a function of time lapse between outlay dollar and revenue dollar
 - C. Time is critical resource to be controlled through planning and management according to plan
 - D. Capital budget schedules, operating schedules, and time schedules
 1. Lead time for planning and regulatory review
 2. Construction in process time
 3. Start-up or rent-up time

4. Receipt schedule--the collection lag
 5. Schedule for refinancing of equity buildup
- E. A nightmare of deadline dates; for example:
1. Option date to acquire site
 2. Regular meetings of regulatory boards
 3. Lead time dates to meet completion dates to serve a market
 4. Take-down dates on loan agreements
 5. Seasonal limitations on construction factors
 6. Occupancy clauses in tenant leases
 7. Repayment dates on temporary financing
 8. Employment dates for staff
- F. Talent, time, and money have become interchangeable raw materials in the real estate development process as in no other industry.
1. Entrepreneurs trade their unique talents for equity and mortgage money
 - a. Joint ventures
 - b. Stock options--Levitt and ITT compensation methods
 - c. Packaging for percent of profits through control of land, tenant, or concept
 2. Fast track construction through intergration of design and construction phase
 - a. Through full-service contractor
 - b. Through architectural firm offering construction management
 - c. Pre-packaged buildings
- G. Very few firms have all the talent required in their own organization since they cannot carry the overhead and specialists are too scarce. Therefore the developer is becoming a central manager of a multi-business venture.
- IV. Until recently, the development process was basically a disorganized series of individual investment decisions which failed to relate one aspect of the process to another.
- A. Historical division by function meant the land was developed by one party without relation to a city plan, the buildings were constructed by another, and the space was sold or leased by a third party. For lack of capital or significant effective demand, projects were small scale. The developer was interested only in the physical aspects of the development. Not so today.
- B. Contemporary relationship is to the total consumption system for the use of urban space. Land developers today are more often than not builders who tailor sites to the style of improvements.
1. As neighborhoods are constructed, the builder takes a permanent position by maintaining rental property, leasing gas station sites or developing shopping centers.
 2. In the past, the developer took all the risks and made the biggest promotion effort to attract people to his area and then others generated a safe income from this captive market.

3. Today the smart developer continues to service the homeowner for many years after the initial home sale by servicing the mortgage, selling the insurance; owning the local utility company, and taking a percentage on sales at the local shopping center.
 4. Of course, there is always the brokerage commissions as old customers move and remodeling business as satisfied customers expand their investment.
- C. The current trend to develop larger units at one time a neighborhood instead of a site or a complex of related primary and ancillary units leads to new terminology such as:
1. Planned unit development (PUD)--balanced residential community complexes
 2. Industrial or office parks
 3. Shopping centers
 4. New towns
- D. The increasing scale of development means big up front money and mistakes mean larger amounts of back up money as well. To generate big capital, the real estate industry is witnessing :
1. Creative new multiple approaches to the capital market
 2. Large corporate investors--most of whom have taken
 3. Insurance company equity participation
 4. Vertical integration of contracting and construction material industry
- E. Since the entrepreneurship and management abilities required in real estate have never been notable attributes of government administration, public agencies have found it advantageous to utilize private enterprise skills
1. The entrepreneurial ego in public administration
 2. Turnkey projects

PUBLIC SERVICE COST/BENEFIT--PUBLIC SOLVENCY

- I. There is an interplay between capital expenditures by one governmental agency and operating costs funded by local real estate taxes which illustrates the problems of who benefits and who pays.
 - A. Federal projects removing tax base.
 - B. Federal grants and gifts.
 - C. Federal seed money to promote new governmental functions
 - D. State aid formulas
 - E. Political fragmentation at the local level
- II. Federal policies may be very unfair to local residents even though the objective of government policies is good. Consider the question of who pays for the Federal wild river program.
 - A. Professor Barrows of Agricultural Economics studied the impact of wild river acquisitions of the National Park Service on the town of Springbrook in Washburn county, where it is protecting the Namekagon River. The goal is approximately 3200 acres of privately owned land which will be purchased and removed from the tax role even though the families thereon may be permitted to stay for up to 20 years as tenants. The town still must provide services including education, nevertheless.
 - B. NPS makes no payment to local government. In contrast the town of Springbrook receives 50¢ per acre on 43 acres preserved by the State DNR and 20¢ per acre on 7500 acres of county forest plus a share of timber sale revenues.
 - C. NPS had acquired in 1974 approximately 600 acres of its goal which was valued at \$260,000 or 10% of the total tax base in the township. The first impression is that if the tax base drops 10%, the mill rate must increase by the same amount to make up the loss. However the issues are more complex.
 - D. The \$260,000 tax base loss in the town of Springbrook is only 0.2% of the tax base of Washburn County and 0.3% of the school district tax base. The School tax accounts for 70% of the total property tax so the loss of tax base would hurt if it were not neutralized through the state formula for share income tax. As a result the net change in taxes looks like this:

| | |
|-------------------------------|----------------------------------|
| Change in school tax rate | - .2¢ per \$1,000 property value |
| change in county tax rate | -1.0¢ per \$1,000 property value |
| change in town tax rate | - .5¢ per \$1,000 property value |
| change in state shared taxes | + .4¢ per \$1,000 property value |
| change in property tax relief | + .2¢ per \$1,000 property value |
| TOTAL TAX RATE IMPACT | -1.1¢ per \$1,000 property value |
 - E. As a result state taxpayers are paying the consequences of a federal land use reservation program while federal income taxes are being used to pay acquisition.
- III. Federal programs once gave communities block grants for very specific purposes.
 - A. Truax Field
 - B. Public housing facilities
 - C. Open space capital grants

- IV. The federal government has recently recognized that urban renewal without additional social services falls short of desired impact.
 - A. Temporary funding of new planning positions.
 - B. Temporary funding of experiments in small business assistance, police, and social work, property rehabilitation, etc.
 - C. Administration of government grants which are conditional on maintenance of relocation services, local education programs, building code enforcement, etc.
- V. State aid formulas often encourage urban sprawl or misdirection of resources.
 - A. Road aids to townships encourage excessive paving.
 - B. Fire dues for volunteer fire departments.
- VI. Political fragmentation at the local level leads to misallocations of resources because of debate as to who benefits and who pays.
 - A. University Avenue project delayed
 - B. Township of Madison vs. City of Madison
 - C. City of Wausau vs. Marathon County
 - D. Private utility districts and public boundaries

BUSINESS 550/705 - PUBLIC-PRIVATE PARTNERSHIP

- I. Merger of public/private interests is always required for a real estate project. The question is how that merger will be accomplished:
 - A. Negotiated confrontation
 - B. Pre-annexation agreement
 - C. Project invitation and competition initiated by the City
 - D. Tax abatement incentives
 - E. Special assessment for infrastructure (Hill Farms)
 - F. Subordinated development loans
 - G. City owned space frames
 - H. Joint ownership
 - I. Exactions and fees
- II. Co-development requires a strong, knowledgeable government, patient developer, and a local business leadership structure with clout and money.
 - A. Milwaukee Development Corporation/City of Milwaukee Development Agency
 - B. Inner Harbor Development Corporation/City of Baltimore/private developers
 - C. Separate development corporations instigated by City objective but separate from civil service, patronage, and political changes in City Hall make it possible to hire expertise and sustain commitment for long periods of time.
- III. Federal urban development programs have been scuttled by Nixon and Reagan and HUD is one of the few federal agencies where employment has been cut by more than half.
 - A. Urban development action grants - financing the gap on a "but for basis"
 1. Eligibility
 2. Private capital must exceed $2\frac{1}{2}$ times public capital
 3. Jobs created per dollar of federal money
 4. Fiscal impact on sales, real estate, or other local taxes
 5. Rehabilitation preferred to demolition or relocation
 6. Public hearing and review
 7. Minority business participation
 - B. The UDAG grant goes to the City who in turn makes a soft loan to the development as a second mortgage at non-market rates which must repaid to the city to become a revolving fund for future urban development.
 - C. The HODAG program was intended for housing
- IV. Community block development grants provide a capital pool which a city committee can allocate to various public groups who are pushing to advance various community organization projects.

- V. Local cities can also contribute access to tax exempt financing by means of:
 - A. General obligation bonds
 - B. Project revenue bonds
 - C. Tax incremental financing
 - D. Housing revenue bonds (20% of residence must have income below 80% of county)
 - E. Industrial revenue bonds
 - F. Land leases
 - G. Leasebacks

TRANSPORTATION AND SITE VALUE IN USE

- I. It may be that the principal economic function of the city is to bring about co-ordinated congestion to facilitate the exchange of goods and services. The cities which have grown fastest are those which have taken the lead in transportation innovation in their era, including rivers in Europe, inland canals and waterways in America, the railroad, the auto, and the airplane
 - A. Others will talk on the macro-economics of urban transportation so I have been asked to discuss the implications of transportation access to individual parcels or building sites and to suggest some of the analytical techniques which may be appropriate.
 - B. To operate within a 50 minute period and permit as much discussion as you wish I thought I would try to make my points by reference to Madison projects which should be familiar to you although illustrative of more universal problems.
 - C. For discussion purposes on the economics of transportation I thought I would discuss shopping centers, filling stations, and condemnation of access rights.
- II. Interior mall shopping centers under construction by Penney's on the east side and west side .
 - A. 2500 cars per hour must move on and off the lots or exits at the end of the day. Assuming one lane can handle 3 cars a minute or 180 cars an hour, one needs a minimum of 12-14 lanes of access to surrounding street systems.
 - B. Street system must have capacity to absorb these without impeding flow hence the necessity of widening Gamin and Mineral Point Roads to 6 lanes.
 - C. State Highway Department data only recognizes projections from existing data so that Pyramid Interchanges were obsolete when built.
 - D. Danger or inconvenience of parking means conditioning of shopper to go elsewhere but building to peak parking requirement of week before Christmas means carrying excess land on tax rolls for balance of year. In Milwaukee they are leasing space for employee automobiles at a near-by drive-in theatre to make parking space more elaborate.
 - E. Two other sites on West side lost out because of limited frontage due to shape of Frisch farm and judgment error by doctors owning the Dohm Plat.
 - F. To separate goods, people and cars cars are circulated by an outside loop and drive-in services such as banks and TBA sales are held to the outside of the Loop. Hilldale Center is improperly designed relative to its circulation and entrance route.

- G. Truck routes were once placed in tunnels under shopping centers but the bay spaces required for semi-trailers was incompatible with bay spaces required for retailing above. Tunnels were abandoned for screened unloading docks at multiple points of entrance.
 - H. Cost of providing space in a shopping center prohibits excessive warehousing on site so that the semi is regarded as a link to a local warehouse point. Indeed heavy merchandise is shipped directly from the warehouse rather than the center so that distribution is separated from display functions (opposite illustration for obsolete store locations such as Sears and Schuster's in Milwaukee)
 - I. Dispersion of autos requires perimeter while shopping center requires area. Develop concept of pads, sandwich, cross easements, and leasing covenants to share accessibility costs.
 - J. East side project illustrates problem of split road elevations preventing left turns and widening of two lane road to permit queuing for turns. These costs are borne by developer so that raw land values depend on costs of correcting for off-site accessibility
 - K. Right turn from lane serving customer origin dominates value. Howard Johnson, Holiday Inn and Ramada Inn examples. U.S. Post Office
 - L. Left turns kill value as witnessed Red Owl vs. Kohl's, Arbor Hill Subdivision and Treasure Island.
- III. Accessibility is a function of visibility, decision-span, safety attitudes, habit, and declining frustration tolerance with increasing proximity.
- A. For filling stations accessibility depends on distance travelled by the car during the decision-making process after station becomes visible.
 - B. A \$50,000 tower sign for an interstate filling station increases the decision span no more than 2 seconds but gives the driver an opportunity to commit to the exit ramp. (Pure attributes 100,000 gallons a month to its sign)
 - C. The filling station on the right on the way home from work at the far side of a controlled intersection is the preferred location by far. A red light provides a decision span but creates a frustration factor which is relieved by crossing the intersection on a green light before turning off the road for gas.
 - D. A narrow apron from road to fillings station ramp requires too much precision and therefore generates frustration for the woman driver just as she sees the station she wishes to use and this often is transformed into a negative attitude relative to the brand.
 - E. Brand reinforcement can occur from frequent sightings of a particular brand even when access may be less than ideal - Shell Oil in Madison.

- IV. A major source of litigation relative to condemnation cases involves the loss of value to the site as a result of a partial taking which disturbs accessibility.
- A.
 - B. It's a general premise in real estate that you cannot sell a piece of land without access without implying a floating easement over the adjoining land to reach the nearest public right of way.
 - B. Similarly, a land-locked parcel means almost total loss in value
 - 1. Before and after valuation to measure damages as a result of a taking
 - 2. Constructive loss of access as in the West Virginia Steel Plant Case puts an economic constraint on highway design within available budgets
 - C. A partial taking of access may mean a drastic change in highest and best use of a parcel and therefore its value. The problem comes in determining when the after-value reflects the impact of police powers which are not compensable and when the loss of access is directly due to the taking. (For example, the state line restaurant and truck stop which lost farm acreage and diversion of traffic stream)
 - D. While the law requires access it does not compensate for circuity of travel explicitly but may do so implicitly as a result of change in highest and best use. (Milwaukee auto dealer case)
Improved access may mean an increase in value which negates any award at all for the taking.
 - E. Platting and all development adjacent to a state, - county- or city street requires approval by the appropriate authorities.
 - F. Invisible prohibitions of access will wipe out proximity values such as at the intersection of 12-18 and Interstate 94. There is virtually no appeal from the State Highway Department's rulings on access and no compensation for properties not contiguous and suffering a partial taking.

Real Estate & Transportation Policy

I. Introduction to the Urban Transportation Problem.

If there is anything more talked about and less acted upon than the weather, it must be the crisis in our public and private transportation systems. Despite the clamor of the public, legislators, and transportation service suppliers; the flush of recent funding to public transit from the feds; plus the energy shortage and increasing travel costs; our transit problems are getting worse every day.

It is the battle ground of computer-age hardware and antiquated public policy decisions.

A. Public transportation got off to a good start with:

1. Long haul railroads in mid 1800's.
2. Short haul commuter systems like the New York Subway opening in 1904.
3. Inter-urban railroad electric street cars introduced at the end of the nineteenth century.

B. Off setting this pattern of a strong primary public transportation system were:

1. Henry Ford and his model T priced to be financially accessible to every American family.
2. The American love affair with the automobile for its status potential, source of mobility, and mechanical appeal.
3. The introduction of truck transports and the bias freight rates in favor of truckers.

C. The result of this conflict is that today:

1. Only 8 out of the world's 46 urban rail systems are located in American cities.
2. Since World War II inter-urban rail service has been cut by 80% while one quarter of all railroad passenger cars still in service were built before 1940.
3. Detroit has transformed the modestly priced and efficiently designed "tin Lizzie" into a genuine plastic wood grain vinyl four-on-the-floor super eight overhead cam 380 horse power magnesium hubcapped stereo-
phonic automatic 36-month-to-pay gas-guzzling polluter!
4. Americans are now chained to the private automobile and its accessories: The super highway, parking lots, and traffic jams because of uncoordinated and distant home to work commuter patterns.
 - a. Highways and automobiles consume space in an urban fabric originally designed with minimum space to spare.

- b. Forced land use activities to over crowd in some urban areas while spreading them too thin in other places.
- c. The automobile and bus have so conquered their opposition: The train, street car, and pedestrian that there is very little freedom of choice left in the urban structure--accept the auto or become a prisoner of space.

II. The Dilemma of New Urban Land Use Problems in Old City Perspectives

- A. Frank Lloyd Wright--"Big cities are 'vampires' that must die. The universal use of the automobile has made conventional patterns of urban living indefensible." Is there any going back in time or space?
- B. We live in central cities which are the product of nineteenth century thinking; or the blighted urban grey areas which were strongly influenced by the linear travel patterns of the street car routes, or more preferably the suburban fringe where distance is measured in minutes rather than miles.
- C. The contemporary urban man has responded to the motor age in much the same way that the renaissance man yielded to the first pressures of urban growth by breaking down the town walls to afford more land for his swelling urban structure. Both have found themselves vulnerable to the unknown forces that wish to disrupt the process.
- D. Transportation developments have combined with the telephone, television, and other communications to turn the whole country into one giant metropolis.
 - 1. By 1970 the suburbs contained 74 million people, 19 million more than in 1960; the central cities contained 62 million, an increase of less than 3 million.
 - 2. 70 percent of the population is living on 1 percent of the land.
 - 3. Bus patronage in 1970 was only 7.3 billion rides, less than half the volume of 1930.
 - 4. Rapid transit has declined almost 30 percent over the same period.
 - 5. Railway commuting is carrying less than half of the 440 million passengers it served in 1930.
 - 6. In 1910 ninety percent of the urban work force either walked or used a street car to reach their place of work (a 3 mile trip that took 30-45 minutes).
 - 7. By 1930 the same 3 miles now only consumed 10-15 minutes by automobile.
 - 8. By 1970, the average daily commuting distance was between 8-10 miles and the travel time rose to a little less than 30 minutes.
- E. The cities already built cannot be abandoned, but in the process of maintaining, replacing, and expanding them it is possible to begin transforming them.

1. The volume of movement in cities can be reduced substantially by making good housing and neighborhoods accessible to work places.
2. Providing service and commodities distribution easily accessible to the residential dwelling unit.
3. Design and redesign streets and other transportation infrastructure to help bring about new uses of land, reduce the pollution resulting from motorization, create new sites for housing, shopping and industry, and also possibly enhance the appearance of the city.
4. Return to the concept that walking is the most efficient method of short-haul movement.
5. Consciously match transportation technology and impacts to all densities of the urban structure.
 - a. The average cost of maintaining an automobile for commuting purposes is over \$1000./year.
 - b. 25 to 30 percent of the U.S. city is devoted to the automobile, while more than 50 percent of the usable land in the central business district is dedicated to the streets and parking lots.
 - c. Ten miles of freeway in a city may cost \$100 million and remove 2500 housing units from the market as well as an equal number of business locations. For every one dollar it takes to build an elevated super highway, it takes two dollars to build a roadway at grade and four dollars to build a depressed roadway.

III. The Interrelationship of Housing and Urban Transportation

- A. Urban households choose their housing locations and urban transportation modes so as to maximize their total real incomes.
 1. Make trade-off decisions to either maximize housing satisfaction and economy while sustaining high transportation costs, or reduce transportation costs at the expense of higher cost and less satisfactory housing accommodations.
 2. Work-trips will vary in length and expense in relation to the type and quality of housing the wage earner desires (assuming his work place is in the CBD).
 3. Substitutions can also be made between travel time and travel cost.
 - a. Travel slower but cheaper.
 - b. Go public and travel cheaper.
 4. As residential densities decreases, the travel time, cost, inconvenience and sheer technological incapacibilities of the various public transportation systems increase rapidly.
 5. American commuting households apparently have made the choice of spending more on transportation and less on housing.

- a. Large housing cost savings per mile traveled for those residing at the lowest densities encourage long-distance travel.
 - b. As distance traveled increases, commuters are encouraged to spend more money on transportation in order to obtain time savings obtained from using faster commuter systems.
 - c. Wage earners with high incomes and larger families normally will desire considerable amounts of housing and yard space. They thus go to the fringe of the city where it is the cheapest and thus trade personal time lost in commuting and higher travel costs for benefits of more satisfactory housing.
 - d. For people who choose to reside at high density, potential housing cost savings from commuting longer distances are diminished and they have little incentive to spend much money on transportation.
 - e. Lower income people working in downtown areas will accept either higher residential densities closer in or very long trips (in time or distance) to obtain the housing services they desire. They are also more likely to use slower but cheaper transportation.
6. Theoretically the worker will select the dwelling unit location which ensures the greatest degree of economic equilibrium between the internal economics of arrangement of space and scale of the dwelling unit and the external economics of locational requirements and expense.
- a. This abstract expression of the ideal residential location for every household overlooks the fact that:
 - dispersed economic activity results in job opportunities being located in areas other than the CBD.
 - no such thing as a single "local labor market."
 - this prevents a single residential site from being accessible to all employment possibilities.
 - thus the number of sites available to a household which provides the potential for equilibrium between the internal and external economies increases.
7. The "price" the wage earner pays for a certain property in his attempt to capture the most perfect locational advantage for his residential location, the highest utility; is called position rent.
- position rent = pure wage minus (transportation cost + manifest daily wage)

Wingo states that an equilibrium set of rents may be defined as:

$$kR_i + kX_{i-o} = L, \quad \begin{matrix} k=1,2,3,\dots,g \\ i=1,2,3,\dots,h \end{matrix}$$

where kR_i = the position rent for worker k at any point i

kX_{i-o} = the annual transportation costs to worker k of the journey-to-work from any point i to the employment center at o

L = location costs, a constant for all i and k

h = position at which a set of g (g less than h) households may locate with respect to a single employment center o .

Given the transportation function expressed as a function of distance from the center s_o , it becomes possible to express the spatial structure of position rents by rephrasing the preceding equation.

$$kR_i = L - kX_{i-o} = kX_{m-o} - kX_{i-o}$$

where L = location costs

kR_i = position rent at point

kX_{i-o} = transportation costs between center and point i for household k

kX_{m-o} = transportation costs to the margin point m from the center o for household k .

The following functions relate to the expressions listed in the model diagram:

i = residential site for worker k

j = employment site for worker k at employment center o

m = marginal location wage

R = position rent

v = policy variables for constrained velocity

kW = hourly wage for worker k at employment site j

$N\&n$ = population and relative characteristics

X_{i-j} = distance between home and work

9J. R. Meyer, J.F. Kain, M. Wohl, The Urban Transportation Problem (Cambridge, Massachusetts, Harvard University Press, 1965), p. 108

URBAN LAND ECONOMICS 550
Lecture Outline - REAL ESTATE AND SOCIAL DISORGANIZATION

- I. The land and building decisions in real estate form the walls and lid of society's terrarium. Churchill - "We first shape our buildings and then they shape us."
 - A. ~~RMX~~ Real estate form has some direct influence on
 1. Individual mental illness and isolation
 2. The strength of the family unit
 3. Social stratification and conflict
 4. Street crime and vandalism
 - B. Potential conflict between what individual consumer wants and aggregate consequences of consumer preferences must be considered in land and building decisions.
 1. Culture creates environment which then modifies cultural behavior,
 2. Recent studies on interaction of space and society include the Hidden Dimension by Hall, Defensible Space by Newman, or Community and Privacy by Chermayoff and Alexander.
- II. From Community and Privacy consider the six domains of urbanity, or a hierarchy of real estate spaces affecting community and private social behavior:
 - A. Urban-Public. The places and facilities in public ownership: Highways, roads, paths, civic parks.
 - B. Urban-Semi-public. The special areas of public use under government and institutional controls: City halls, courts of justice, public schools, post offices, hospitals, transportation exchanges, parking lots, garages, service stations, stadia, theaters.
 - C. Group-Public. The meeting ground between public services and utilities and private property requiring joint access and responsibility: Places requiring mail delivery, garbage collection, utilities control, access to fire-fighting equipment or other emergency rescue devices.
 - D. Group-Private. Residential components under control of management acting on behalf of private or public interest for the benefit of tenants or other legal occupants: Reception, circulation, and service spaces; community gardens; playgrounds; laundries; storage; etc.
 - E. Family-Private. The spaces within the private domain controlled by a single family that are devoted to communal family activities such as eating, entertainment, hygiene, and maintenance.
 - F. Individual-Private. The "room of one's own," the innermost sanctum to which individuals may withdraw from their family.
- III. A variety of detailed courses are available in Urban Sociology, Urban and Regional Planning and Psychology but the 6 domains of urbanity can be illustrated to show impact of land planning and building design on social disorder.
 - A. Jane Jacobs - Death and Life of Great American Cities - Rittenhous Square
 1. The one use time ghetto of office buildings surrounding a park leads to a social vacuum which attracts the social outcasts.
 2. Rittenhous Square has heterogeneous land uses which generate continuous pedestrian traffic which provides a self policing activity level and therefore an unusually low rate of street crime.
 - B. Physical design can provide automatic surveillance and therefore remove opportunity for concealment or secrecy for anti-social behavior.
 1. Design of a library control point
 2. Design of open parking ramps and stairwells
 3. Design of public buildings with see-through corridors.

2.

- C. Group-public spaces as typified by shopping center
 - 1. Separation of truck and car
 - 2. Separation of circulating traffic from building zone with peripheral roads and free standing traffic generators
 - D. Group-private is well demonstrated in book called Defensible Space.
 - 1. People relate to small areas which are close to their own units and shun large plazas where everyone is a stranger and therefore a threat.
 - 2. Control of corridors and stairwells
 - 3. Channeling of pedestrian traffic through subtle use of curbs, textures, and views.
 - E. Family-private can be affected by design.
 - 1. Family life and the kitchen
 - 2. Front entry colors and textures affect attitude
 - 3. Circulation patterns which permit communication or reduce anxiety
 - F. Private spaces with both visual and auditory privacy
- IV. In addition to individual building design and location contributing to social disorder, land use and financing policies have long term impacts in the aggregate which are undesirable.
- A. The FHA Home Loan program led to suburban sprawl, excessive dependence on the automobile, and social stratification by income required or mortgage loan eligibility.
 - 1. The NAREB virtue of neighborhood homogeneity has indirectly led to exclusion of land uses and certain minority groups when heterogeneity of land use and social groups would reduce conflict for lack of communication or understanding.
 - 2. Unwillingness of mortgage lenders to lend in declining neighborhoods accelerates decline and increases quality gap between central city and suburbs.
 - B. A change in loan restrictions imposed suddenly leads to price inflation and further flight to the suburbs.
 - C. The Rockford experiment at scattering public housing units throughout the community.
 - D. Court pressure toward dispersing public housing can be nullified by legislative or administrative action catering to suburban pressure.
 - 1. The NOCHA case - equity vs. social environmental impact
 - 2. Defusing HUD as a force for social reform
 - 3. Clipping the wings of the New York Urban Development Corp.
 - E. Real estate decisions create a spatial fabric of society which modifies social behavior for good or bad.

URBAN LAND - 550
URBAN RENEWAL AND RECYCLING OF THE CITY HARDWARE

- I. Title I of the Housing Act of 1949 began federal program of financing urban redevelopment efforts, with an emphasis on residential areas and new residential construction.
 - A. Planning grants and loans to a local urban renewal authority (LPA) for communities certified as having a workable program.
 - B. LPA would assemble parcels through purchase and condemnation, remove old structures and improvements, provide a reuse plan, complete public improvements, and market to private developers.
 - C. Sale subject to detailed conditions of master plan would be at a price only a fraction of cost to acquire. The loss or write down between total cost of assembly and clearance and sales price would be split - 2/3's paid by federal government, 1/3 by local community.
 - D. Local government share could include cash, cost of public improvements, or credits for a new investment by public institutions like Universities, hospitals, or state government.
 1. Legislation gradually liberalized credit system so fed's contributed 100% of cash.
 2. City vulnerable to blackmail by institutions with credits
 - E. Original definition of eligible areas required high percentage of dilapidated or substandard dwelling units and 90% of resold area had to be for residential construction. Over the years housing laws liberalized definition of eligible area and percentage of re-use area to go into non-residential purposes.
 - F. Beginning with Eisenhower, purpose of urban renewal was shifted from demolition to conservation with 3 project types:
 1. Total clearance: concerned with the demolition and clearing of areas whose physical components are incapable of being salvaged.
 2. Rehabilitation: concerned with the rehabilitation of the areas that can be economically restored.
 3. Conservation: long-range aspects of maintaining the physical condition of urban housing components.
 - G. A major innovation and feature of urban renewal was the requirement that property acquisition was contingent on proper relocation of residents and businesses before their existing buildings could be demolished.
 1. This requirement caused delays which public associated with urban renewal.
 2. The equity of the urban renewal approach led to reform of federal and state rules of compensation for victims of eminent domain actions.
- II. A variety of real estate economic factors gradually distorted the original intent of the federal program and of projects which resulted.
 - A. City Hall became obsessed with re-use plans to increase the real estate tax base via high residual land value and intense building construction per acre.
 1. Tax revenue would give rapid payback of city's 1/3.
 2. Plans favored high-rise apartments, offices and commercial buildings.
 3. Public uses of cleared land provided political clout or stabilized surrounding private property values.
 - B. After 1954 Universities, hospitals, or politically powerful private interests use federal programs to push back blight from their property and provide cheap land for expansion.
 - C. Planners lacked real estate sense by failing to provide necessary linkages or creating awkward sized development parcels subject to impossible design constraints.

1. Clearance isolated in center of ghettos
 2. High-rise projects with big open areas, a planning ideal, proved unworkable.
 3. Successful projects began at the edge of natural border of stabilized areas and moved toward blighted blocks.
 4. Re-uses which focused on middle or upper income family not only provided more tax base but also meant fewer welfare costs.
- D. Planners in charge resented sale of land to private redevelopers and therefore made acquisition program extremely expensive and unpleasant so that no one came forward to purchase sites.
1. Complicated bidding, design competition, and negotiated acquisitions
 2. Restrictive covenants which often made titles unmarketable or purchase too risky.
 3. Adverse publicity and incredible delays of the developer after developer had committed funds.
- E. Original emphasis on residential uses and residential re-use either forced existing commercial and industrial job opportunities to migrate into the suburbs or freed firms wishing to relocate from unsaleable fixed assets which tended to hold them where they were most needed.
- F. Racial segregation and lack of low priced housing alternatives for relocated families meant disequilibrium in supply and demand with several results:
1. Useful lives of blighted properties were artificially extended, preventing natural land use succession.
 2. Segregation in the suburbs meant failure to disperse the ghetto and break the poverty cycle by reducing educational and economic segregation.
 3. Overcrowding led to creeping blight.
 4. Constant dislocation meant break-down of neighborhood social and political fabric.
- G. As the complex problems of urban renewal were better understood from the mistakes of simple-minded idealism and institutional opportunism, 2 factors appeared:
1. A political backlash against urban renewal in any form
 2. More generalized block grants for multiple fact^eted software as well as hardware renewal.

Urban Land - 550
Low and Moderate Income Housing

- I. There is no such thing as low cost, decent housing. All the basic physical elements of land, structure, mechanicals, and operating services are expensive. There is some evidence that these elements are more expensive for the government to buy than for private enterprise but whoever must purchase land, labor, materials, and management expertise - the result is an expensive problem and it is growing more so.
 - A. A 980 squ. ft. 3-bedroom minimum National Homes prefab costs about \$13,500 or \$14,000 on a minimum city lot with sewer and water about 1962 when I first taught the appraisal course. The same unit today, new, in Madison, would cost about \$23,000 but most families wouldn't qualify to buy such a house today. Only 50% or less of Wisconsin households might even qualify at the margin for such a house and probably less at today's 9 1/4% interest rate.
 - B. Therefore we are really looking for methods for reducing the monthly cost to buy or rent modest housing, the monthly cost for the family, that is, as somebody else must somehow make up the difference.
 - C. Following the back door to feasibility we must approach the problem by determining the payment that a given family can afford to pay and then adjust the cash flows of the desired housing to conform within that payment. For the family with \$10,000 a year income, they can only afford a maximum of \$200 a month rent including all utilities and parking.
 - D. It will be useful to consider all the cash outlays which must be covered by this \$200 and the mechanisms by which we can reduce each outlay.
- II. The cash costs to the renter or buyer include:
 - A. Operating costs for heat, light, maintenance, and repairs
(subsidy as in public housing, increased quality of construction, self help by tenant or buyer, location)
 - B. Real estate taxes
(fee in lieu of taxes as in public housing, homestead exemption for assessed value, state or federal subsidy, shift of tax collection to other sources to reduce mill rate)
 - C. Collection losses due to delinquency and default servicing charges
 - D. Administrative costs
(incurred in marketing, managing, debt servicing, subsidy administration, etc.)
 - E. Interest cost on permanent financing
(non-market terms, subsidy as in 236, reduce loan required, reduce market rates of interest)

- F. Principal payment - repayment of loans outstanding
 (Extend terms up to 50 years, reduce original loan balance)
 (Reducing loan required can be by subsidy of land cost, reduction of construction cost, government subsidy of construction cost, or reduction of indirect cost including interest on construction loans and administration of government paper work, or attracting more equity capital).
- G. Cash return to equity is the spendable cash to the equity investor
 (Cash income to equity can be increased as a ratio by increasing leverage if terms of larger loan will still mean lower interest and principal payments; or cash profits to equity can be increased without increasing rental dollars by increasing tax savings to other income by means of investment tax credits, shorter useful life, higher percentage of accelerated depreciation, more liberal capital gains definition or tax offsets).
- H. Equity appreciation due to equity buildup or appreciation in resale price.
- III. Cash flow computer models permit one to test alternative proposals for housing assistance to determine which one accomplishes the most for a subsidy dollar. Housing policy cannot be based on cash sensitivity alone. (Otherwise public housing seems to be cheapest but it leads to undesirable social spinoffs or political resistance which impede the speed and scale of additions to the supply of housing choices within the effective demand of low income families).
- A. The sensitivity of rents to alternative forms of subsidy might analyze four alternative projects and sponsorship type as was done by O'Block for the New Jersey Finance Agency:
1. New construction, nonprofit sponsorship
 2. New construction, limited-dividend sponsorship
 3. Rehabilitation, nonprofit sponsorship
 4. Rehabilitation, limited-dividend sponsorship
- B. A summary of the tables which follow which should not be generalized too indiscriminately would indicate the most efficient way to allocate a \$100,000 subsidy in terms of rent reduction per dollar spent would be:
1. Construction or rehabilitation cost
 2. Land acquisition or land and building acquisition
 3. Debt service payment as a function of interest rate
 4. Debt service payment as a function of mortgage term
 5. Real estate taxes
- C. The following tables are from Chapter 9, Urban Analysis, Harvard Graduate School of Business Administration 1970.

URBAN LAND 550
Land Economics, Urban Blight, and Origins of HUD

- I. The growth in the urban character of America has paralleled growing recognition urban blight or the spread of slums in the popular vernacular. Blight is an elusive concept.
 - A. Blight has become a broad generic term for areas where social disorganization or economic or artificial economics barriers have had a tangible and visible impact on the spatial product.
 - B. Social disorganization may be marked by high rates of crime, suicide, disease, and psychosis.
 - C. In the vernacular or popular useage blight may refer to:
 1. A structure(s) in a state of disrepair.
 2. Mixing of land uses, usually industrial and residential with a connotation of cause and effect
 3. High density residential areas of relatively lower income, education, or social status groups.
 - D. In more technical publications, "blight" may refer to:
 1. Old residential areas in an advanced stage of obsolescence and deterioration, ie. "slums".
 2. Areas of declining population and property abandonment except in times of acute housing shortage or economic depression.
 3. Residential areas serving successive waves of nationality and racial groups during assimilation.
 - E. Before 1900 Congress authorized a study of blight in 7 cities and found a correlation between slums and alchoholism. Eventually, Congress concluded prohibition was the answer to slums.
- II. A symptom of blight is physical deterioration but causes are more difficult to identify, anticipate or correct.
 - A. Blight can be typical of all urban land use classes in their pure form.
 1. Obsolete or socially isolated residential neighborhoods
 2. Obsolete commercial-retail strips
 3. Outmoded schools and parks
 4. Obsolete manufacturing districts
 - B. Historically zoning has defined a heirarchy of preferred land uses by exclusion of presumeably less desirable land uses.
 1. Only recently have planning concepts pushed for heterogeneous compatible land uses, zoning which defines an area by what is should be rather than by what is ain't.
 2. Physical homogeneity seems to lead to social disorganization.
 3. Physical heterogeneity seems to promote a more stable succession of uses.
 - C. From an urban economics ~~xxxxxxx~~ viewpoint, blight is a symptom of institutional disorganization and failure of the land use succession process. That is the process or cycle by which investment decisions recognize a decline in productivity of a particular land use to a point where a competitive use can afford to purchase the real estate and alter management, remodel, or replace existing improvements with more profitable use.
 1. The ideal pattern of succession would expect that as a land use area and improvement became obsolete, parcels would be reassembled and converted to more profitable land uses.
 - a. Conversion of mansions to boardinghouse to apartment
 - b. Langdon Street
 - c. The famous Plaza Hotel

- D. Blight becomes virtually irreversible if the pattern of succession due to economic logic is distorted through:
 - 1. Renewal or appearance of next use pattern too often blocked or delayed by many factors. (zoning, shortages, financing)
 - 2. Effect of the blighted condition of the dead or dying use pattern. (Cleland Urban Renewal High-Rise or Bluff Street)
 - 3. The cumulative effects of this deterioration on the succession process, on investment incentive for new uses or small groupings in isolation; situs of new uses, environment and approaches, accessibility may be excellent. Blight of shopping areas and school.
 - 4. Low grade transition devices, rooming houses, gas stations, parking, and inferior conversions (both commercial and residential).
 - 5. Continuing demand for low cost units; profitability of decaying structures; low pressure for maintenance; heavy overcrowding and deterioration.
 - 6. Community segregation of racial and nationalist groups. (closes door on replacement through economic substitutions and causes supply to remain constant relative to increasing quantity of demand or level of effective demand)
- E. Anything which provides non-economic income, permits a non-economic charge for operating costs, discourages reinvestment of capital earned in the area, or otherwise provide a negative investment incentive disrupts succession of uses.
 - 1. Demand through segregation prolongs economic life.
 - 2. Reduced operating costs due to milding or reduced real estate taxes prolongs economic life.
 - 3. Anything which discourages developers from undertaking redevelopment because of public relations, city hall attitude, or uninformed citizens means that succession must wait on dramatic overreaction rather than subtle progressive economic adjustment.
- F. The rigidity of real estate in terms of land layout and improvements on the land creates an inherent inability to adjust to change and therefore obsolescence is a coexistent fact. The amazing thing is that our real estate has proven sufficiently elastic to adjust to drastic changes in every aspect of our society:
 - 1. Family size and life style
 - 2. Economic restructuring of the society from agricultural to industrial to service activities.
 - 3. Modification of our institutions in terms of real estate laws, union rules and social customs.
 - 4. Technology of transportation and marketing distribution.
 - 5. Technology of building equipment, etc.
- G. Currently the blight of accumulated mismanagement of land use succession coupled with the social revolution and political awakening of the silent minority is exerting a push for exodus from blighted areas at a pull to the suburbs - a time of social disorganization which accelerates the impact of economic barriers and the obsolescence of immobile and far too durable real estate investments.
- H. It should be understood that there are some permanent and some temporary groups who find blight to their advantage:
 - 1. Those who have resigned from society - the Skid Row halfway point.
 - 2. Economic circumstance or romantic preference may find the lowest priced real estate useful to begin a new business, a new life in a new country, or identification with common causes of a neighborhood.
 - 3. Blight can be cheap and compassionate or exploitive and cancerous.

III. Problems of urban decay were considered to be local problems until World War I.

- A. First recorded move of Congress relative to blighted housing was recorded July 20, 1892 when they spent \$20,000 on research of slums in the nation's 4 cities of over 200,000 population.
- B. The first federal public housing was built by the U.S. Shipping Board Emergency Fleet Corporation which financed housing built by real estate companies owned by shipbuilding companies.
- C. The depression led to the Federal Home Loan Bank Act of 1932 and the Home Owners Loan Corporation in 1933, both ideas conceived by the Hoover Administration.
- D. Roosevelt organized a four man committee to develop a national housing program and their recommendations together with legislative review produced the National Housing Act of 1934, which created:
 1. The Federal Housing Administration
 2. The Federal National Mortgage Association
 3. Federal Savings & Loan Insurance Corporation
- E. The National Industrial Recovery Act produced the first public housing for the poor.
 1. A Constitutional misunderstanding led to concept of local public agency
 2. Local public agency and States' rights vs. efficient Fascist solution
- F. Roosevelt started the "Settlement Administration" under the NIR and built a number of Greenbelt towns in Maryland, Greendale Milwaukee, and Indianapolis.
- G. In November of 1941 Roosevelt was about to propose a major national effort at urban revitalization but plans were shelved until 1945 and bogged down when the Omnibus Bill began an urban-rural split in Congress. The National Housing Agency was created during World War II and provided a core for the Housing & Home Finance Agency in 1947.
 1. Bulldozer clearance was the initial concept. Legislation was premised on the simple view that social disorganization was largely the product of physical environment.
 2. The initial skirmishes of urban vs. rural led to considerable "pork barrel" provisions for rural areas and log rolling for some of the more debatable agricultural subsidy legislation.
- H. The 1948 Housing Act authorized 95%, 30 year loans for low cost home and 90% mortgages with 40 year ~~term~~ terms for low cost cooperative housing. The 80th Congress shelved the bipartisan Wagner-Elender-Taft Housing Bill which became the major theme of the Truman campaign against the "Do Nothing" Congress.

URBAN LAND 550
Lecture Outline- Dept. of Housing and Urban Development

- I. HUD has undergone an incredible and confusing metamorphosis in both organization and philosophy in only 25 years time. Because of its rapid series of reorganizations, its impact is often underestimated or scorned and its management talent not given credit fairly for what it has accomplished.
 - A. Its principal functions can be attributed to its antecedent agencies now merged into HUD:
 1. The Public Housing Administration (PHA)
 2. The Federal Housing Administration (FHA)
 3. The Community Facilities Administration (CFA)
 4. The Urban Renewal Administration (URA)
 5. Federal National Mortgage Association (FNMA)
 - B. Approach to housing and urban renewal philosophy growing out of the problems of PHA, CFA, and URA.
 - C. PHA was a Roosevelt program to have the federal government condemn slums and build modest but decent housing for the urban poor.
 1. The local public housing agency as a pattern based on mistaken Constitutional law.
 2. LPA's retained parochial-political narrow-mindedness of the community which the federal government tried to correct by progressively tighter specifications and conditional incentives.
 3. Public housing in Milwaukee was an outstanding exception.
 4. Public housing violently opposed by National Assoc. of Real Estate Boards and other conservative groups of industry.
 5. The result was a strict income limitation on those eligible to rent public housing, a concept which still persists.
 - a. Policy is counter-productive in that it discourages self improvement.
 - b. It forces separation of best peer group example and leads to adverse selection of tenants without effective social structure or motivation.
 6. Public housing failed to get much money at the federal level and little support at the local level despite well meaning local public housing people. Public housing projects became a social and community stigma.
 - D. Alternatives to public housing were developed using subsidized loans to encourage housing producers to deliver rental housing with cash requirement. low enough so that poor families could afford them despite private ownership.
 1. Non-market interest and mortgage terms.
 2. Special income tax incentives
 3. Special incentives such as 100% loans for non-profit failed because non-profits lacked managerial discipline.
 - E. To avoid strict income limitations and to provide choice between renting and buying, the 235 and 236 programs were developed.
 1. Eligibility tied to artificial definition of income limits of public housing to a maximum of 1.35 of public housing limits.
 2. A sliding subsidy paid to the landlord of a 236 project tied to tenants' income and not to exceed an amount which would be more than the interest payments on the mortgage less 1% interest on the balance.

3. Developer able to sell tax shelter for more than the required equity, stimulating construction despite faulty projections as to operational revenue and expenses. In 1968, subsidized housing represented 10% of the nation's total, by 1970 it was 29.3%, and in 1972 fell to 14%.
4. 236 operating experience in central cities has been terrible. Tax shelter--a tax trap.
5. Smart money built 236 in the suburbs and rented to lower, middle income college educated families.
6. The work ethic and equity between those who qualified for new and those with income too high to qualify but too low to buy new led to restrictive government specifications undermining quality.
7. High cost of 2.5 billion per year and 50 billion by 1980 suggested subsidies might be 2 1/2 times actual cost to construct indicating it might be cheaper although slower to make outright grants.
8. These subsidy programs are strongly advocated by the housing producers such as the national association of home builders and the mortgage bankers and generally depend on FNMMA or GNMA for investment money.
 - a. It is profitable but inequitable.
 - b. It applies only to the most expensive form of housing, new construction, encouraging urban sprawl.
9. On Jan. 8, 1973 Nixon terminated all subsidized housing programs, a decision which is being contested in the courts and of doubtful legality.

F. Nixon housing policy statement and legislative proposal recently released purports to foster freedom of choice by type and location of housing for low income people, freedom from project stigmas, and lower cost of administration.

1. It proposed a gradual development of a housing allowance or direct cash assistance program.
2. Administration proposal is suspect as experiments give local realtors significant control of base allowances.
3. The housing allowance is suspect because it has problems in Europe and Sweden where producer's subsidies were also required to avoid price inflation created by an increase in effective demand without an increase in supply.
4. The President's program is more interested in improving supply of money for middle class suburban home buyers.
5. Nixon administration wants "out" of federal housing programs and HUD, thus reversing the cycle.

II. Community Facilities Administration was a pork barrel agency with administrative responsibility for construction of a variety of public works.

- A. CFA began as an agency to build public facilities for communities suddenly overwhelmed by federal installations such as a military base or defense plant.
- B. Its role expanded into construction supervision and grants in urban areas so it gave HUD the opportunity to include something for everybody in its housing bills and thereby maintain congressional support.
- C. The staff of CFA eventually became the core for a variety of open space, water pollution, education, and similar programs within HUD.
- D. All these programs were on a specific grant basis, item by item, so the time delays became enormous. Each time developers found a way to subvert federal intentions of social reform or assisting a particular low income group, more red tape was added to control the 10% who cheated.

1. To break red tape jam, HUD decentralized ~~the~~^{to} regions and eventually to each state.
 2. Delegation of detail work to certified lenders and turnkey contractors.
 3. A partnership of federal money and local private and public expertise was faster, cheaper, and more sensitive to local needs.
- E. Experiments with block grants for broad range hardware and community software.
1. Liberals lost control of specific programs which would bribe localities to overcome racism, vested interest, or apathy.
 2. Block grants avoided red tape of federal bureaucratic efforts to have comprehensive social-political-economic approaches to urban problems.
 3. Remains to be seen if local communities are now sufficiently enlightened in their power structure to use the funds to equalize opportunities and reduce economic and social segregation.

Notes on the New Direction of HUD

- I. On January 8 outgoing secretary of HUD, George Romney, loyally completed his last piece of messenger boy service for Nixon by announcing at the annual convention of the NAHB in Houston that he had instructed HUD offices to freeze on all applications on subsidized housing that had not received feasibility approval as of the close of business January 5.
 - A. The three programs affected were public housing of all types, FHA 235 home ownership assistance program and FHA 236 rental assistance program. These programs had accounted for 300,000 units of new construction in 1972 or 12% of all new units built in 1972.
 - B. Also frozen were commitments for three categorical aid programs to local communities - water and sewer grants, open space grants and public facility loans. Said Mr. Romney the freeze would last until these programs could be replaced by the community development special revenue sharing package that congress had failed to act on when it was proposed in 1972. While called a "temporary hold", Mr. Romney indicated that these programs would remain frozen and the urban renewal and model cities programs would expire so that congress would have to enact the administration program.
 - C. In addition, the Farmers Home Administration which has subsidized 70,000 units of rural housing plus disaster relief loans for farmers, farm labor housing loans and rural elderly programs were all discontinued "for budget cutting".
 - D. While congressmen called Nixon's action political blackmail, the elderly John Sparkman, Chairman of the Committee of Banking, Housing, and Urban Affairs and grand champion of NAREB and NAHB rumbled "We cannot let stand this arbitrary exercise of executive power taken in violation of the intent of congress and in complete disregard of the housing needs of the poor and ill housed of our nation." Representative Patman said he would start to hold hearings on the matter immediately.
 - E. By the end of July the rumor mills claimed that some funds for housing the elderly will be available and perhaps there will be funding to complete some urban renewal projects but it looks by 1973 that there will be a new ball game in terms of the federal role in real estate credit and housing policy priority.
- II. It would appear that much of the federal HUD central Washington program will be dismantled in favor of state administered programs funded in large part by block grants and specially controlled revenue sharing funds. Manipulation of capital markets and the market of mortgages and mortgage base securities will continue in the federal domain.
 - A. While some states already have statewide development agencies or housing programs and a few like Wisconsin have enabling legislation which must be tested in the courts, most states would need to set up some type of development control agency for utility, open space, and public facilities to allocate funding and subsidies. Any agency with money to spend which has not been levied directly from the legislators districts will have great political clout and spark a tremendous amount of maneuvering.

F. Enough commitments have already been made that these programs will contribute 250,000 units to 1973 production but the lead time on these matters is one or two years so that there is a question as to what will be done in 1974 and 1975. Another 7.3 million is already in the pipeline for community development programs for sewer and water and Nixon stated that any additional funds would simply raise prices rather than output.

11. Since housing has always enjoyed strong lobbies and emotional critics 1973 will be noteworthy for a legislative battle on housing policy,

A. Some strong arguments can be put forward for continuation of housing and community development subsidy programs.

1. Cutbacks hurt the poor people directly and can create discontent which may hurt all of the citizens in the community.
2. Labor can point out that with existing overbuilding in real estate areas, cutbacks in housing may cause severe unemployment and unnecessary shutdown and startup costs for suppliers.
3. Some charge that Nixon is renegeing on the national housing goals passed by congressional statute.
4. There are those who argue priorities should produce budget cuts in other places such as defense.

B. There are some good arguments for suspending or terminating present programs.

1. Housing subsidies have already committed the American taxpayer to future payments ranging from 57 billion to 82 billion depending on ones assumption about inflation and rising income.
2. If the same programs were used to improve shelter for 6 million families now living in sub-standard conditions it would cost another 180 billion and that Americans will not pay out a quarter of a trillion dollars for programs that have had only mixed results and have profited the wrong people.
3. Nixon could document the failures of current programs by playing back examples dramatized by the Democrats last year and indeed he has put the Democrats on the defensive by having them advocate continuing programs which were scandalous before November 1972.
4. Income eligibility limits are too high in many areas so that developers get subsidized financing while housing middle income families.
5. Subsidies are tied to the structure or the house, not the family inhibiting the poor from relocating to take advantage of jobs or integration into the community at large.
6. Evidence suggests that FHA efforts to regulate make the cost of subsidized units higher and the quality lower and that there are less expensive ways to help the poor to quality housing.

C. On balance less expensive subsidy program must be found while government remains involved to lower the cost of housing to the poor. Over the long run however the government must reduce the cost of housing units by drastic reformation of building codes, building style, and land planning which will be fought by labor, material suppliers, and NAREB who have a vested interest in the wasteful practices of the present. Aggressive consumer action in the style of Ralph Nader is the only hopeful political counterforce.

D. For community development programs there will be a definite shift to broad gauge federal funding rather than special purpose project by project grants. Both the Senate (using the term consolidated grant) and the House (using the block grants) are working on approaches much like special revenue sharing and there is opportunity for agreement. The housing scene is much less clear and housing production will fall.

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A. While some states already have statewide development agencies or housing programs and a few like Wisconsin have enabling legislation which must be tested in the courts, most states would need to set up some type of development control agency for utility, open space, and public facilities to allocate funding and subsidies. Any agency with money to spend which has not been levied directly from the legislators districts will have great political clout and spark a tremendous amount of maneuvering.

B. Already HUD is allocating such resources as it has to state housing agencies where they exist and it is thought that the states that would be able to take over existing federal personnel in order to staff up for their new role.

1. Given the fact that the poor and minority groups within a state have found much less sympathy than they have in federal civil service agencies, the state's rights theory is playing right into the hands of the Nixon-Wallace block and will disperse and defang the relatively liberal socially oriented staffing of HUD.
2. That means no one will be pushing very hard to desegregate the suburbs when the suburbs control the legislature or to house migrant farm workers who don't vote locally at all. Social reform through the leverage of federal finance will be lost.

C. One bright spot is further impetus to experimental housing allowance program. Since 1932 various housing studies have suggested a test of providing a direct subsidy to low income families in need of housing to improve effective demand rather than a direct subsidy of a special supply of subsidized housing units.

1. The 23 lease program and the special welfare assistance program represent the first kind of direct family subsidy programs.
2. However, HUD has constructed a major test for direct family subsidy and the details of this very elaborate program are provided in a supplementary handout.
3. These studies are not only concerned with impact on individual households but the long term impact on supply, filtering, and demolition of obsolete substandard units. Moreover, the direct subsidy method is being designed for efficiency of administration and a 5 year test is under way. If the tests work and the systems work it would be the first time a federal program was designed and tested in the field before it was recommended to Congress.

The present crisis may not permit the nation to wait for the nation to wait for the test.

THE REAL ESTATE PROCESS AND THE ECONOMICS OF URBAN POLLUTION

- I. Location of economic activity is finally graduating from the "Cowboy Economy" approach to "Spaceship Earth"
 - A. "Free" goods and limitless natural resources
 - B. Rising expectations & environmental concern - a matter of pollution perception.
 1. Income elasticity of demand
 2. The affluent society
 - C. Rapid urbanization concentrates and emphasizes abuse. Rural per capita waste discharge probably higher but less noticeable.
 - D. Solution requires awareness, technology, financing and social mechanisms for pollution decisions
- II. What is Pollution? A set of interdependent externalities to the economist.
 - A. Basic malfunctioning of the market system through External Effects: actions of one person or institution may affect the welfare of another in ways difficult to regulate by private agreements
 - B. Interdependencies: Smallest environmental program has major impact on Real Estate Process
 1. Impact on individual consumption decisions (demand side) Altered housing patterns
 2. Impact on developers, altering cash flow, solvency, feasibility, present value of investment. (supply side)
- III. Types: Water, Air, Solid Waste (litter, garbage), Aesthetic deterioration (scenery), social tension (neuroticism), Noise.
 - A. Water as an environmental sink is naturally limited in assimilative capacity.
 1. In 1963 industrial waste amounted to 75% of the total. In 1973, the percentage was closer to 80%
 2. Suspended solids, heat, nutrients (phosphates and nitrates), long-lived inert chemicals complete the picture
 3. Trends:
 - a) Sewage separation, home oxidation systems both imply increased housing costs & corresponding demand effects
 - b) More complicated & costly sewage treatment financed by real estate taxation, bond issues imply increased land development costs, faster land turnover. The sanitation engineer ascendancy - cost benefit fallacies
 - B. Air Pollution - extensive, unavoidable, long term social costs
 1. Sources nationwide: 60% automobiles (L.A. 95%), industry 16%, electrical generation 14%, space heating 5.5%, refuse disposal 3.5%
 2. Classic example of lack of property rights, pervasive effects, no market transactions, huge private transactions cost and reliance on government intervention.
 3. Criteria: $MSB=MSC$ of successive increments of abatement or marginal increment in damage equals the marginal cost of additional abatement
 4. Real estate effects
 - a) Changing land values as consumers seek to minimize pollution impact
 - b) User charges will increase transportation costs in absence of viable alternatives - trend to greater concentration less sprawl
 - c) Burden of public transportation measures falls on taxpayers,

homeowners, land developer holdings through bond issues, real estate taxes

- d) Increased building cost as firms adjust to new space heating & waste burning regulations.

C. Solid waste disposal

1. Facts: 365 million tons per year, 10 lbs. per capita per day. Only 50% collected. Industrial waste burned (10%), 90% of municipal waste is dumped on land fills. Substantial industrial recycling.
2. Trends: Increasing cost of removal implies increasing efforts to recycle, re-use, re-power, restrain wasteful and inefficient use. Awareness of real social cost creates incentive to find alternative uses.
3. Effects on real estate process: increased emphasis on separators, efficient intra-firm collection, sophisticated (and costly) public facilities for recycling. All imply increased land and structure taxation, greater land acquisition cost and more costly structure requirements.

D. Noise, Privacy, Aesthetics

1. Close relationship between income & level of privacy. Social tension increases not in high density urban areas but in housing with many individuals per room.
2. Privacy is a resource whose value is measured by the productive and creative potential of the central city. Privacy is a space attribute leading to essential sensory regeneration.
3. Residential design to enhance privacy, aesthetics, and freedom from noise, imply greater development costs.

IV. Economic Solution: Internalize Costs

A. Methods:

1. Legal penalties
2. Subsidies
3. Effluent fees (Right-to-Pollute?)

- B. Problems: Individual investor is subject to cash flow solvency limits. Any economic entity will suffer to a greater degree when costs cannot be shifted. But some market reallocation of goods and activities is required because of long-term pollution products misallocation. (it is cheaper to pollute)

C. Final guidelines

1. Avoidance of the catastrophic loss
2. Maintenance of large choice set for future generations
3. Maintenance of institutional flexibility and ability to change.

ECONOMICS OF URBAN POLLUTION

- I. Location, location, location is now environment ecology and effluent
 - A. Population density and take-off principle
 - B. Tolerate is both physical and mental
 - C. Urban technology or environmental quality requires hardware, money, and a social mechanism for decisions and financing.
- II. Technology of water and air quality is obsolete. Problem of water and air quality is interrelated.
 - A. Water is used as vehicle for solid waste disposal but limited in capacity both in nature and in processed form.
 1. Primary treatment
 2. Secondary treatment
 3. Advanced treatment
 4. Sewer taps limit urban growth
 5. Recycling of sewage water in Denver
 6. Cost to transport fresh water or remove waste water
 7. Combining waste disposal with agricultural irrigation
 8. Recycling of sewage sludge as animal feed
 9. Grinding sewage and pumping solids
 10. Vacuum systems
 11. Oxidizing of sewage
 - B. Water quality and solid waste
 1. Vacuum system to collect garbage
 2. Sanitary land fill and water table pollution
 3. Incineration, sterile fill, and recharged area
 - C. Industrial waste such as sulphite liquor
 1. High volume, low quality by-products
 2. High value, low value by-products
- III. Air pollution related to invention of fire and use of fossil fuels
 - A. Economics of smoke control

- B. Air pollution result of single family home and car
- C. Electric capacity related to coal and natural gas
 - 1. Purification of exhausts means contamination of water
 - 2. Transmission problems mean inefficient land use
 - 3. Inert gas and transmission line insulators
- D. Atomic power, water pollution, and air pollution
- IV. The gasoline engine and the private automobile
 - A. Paving for automobile destroys necessary green oxygen producers
 - B. Exhaust is major source of urban pollution
 - C. Public transportation or electric automobile requires urban density and compactness.
 - 1. Modern location theory implies private mobility and inertia of convenience.
 - 2. Environmental theory for urban economics requires public systems of mobility and consumer preference for active motion.
- V. Privacy is a resource
 - A. The hierarchy of residential design layout for privacy
 - B. The counterpoint of natural environment
- VI. Market economy does not work well to internalize cost of environment controls. Economics of controls differ for society as opposed to individual investor in the urban site.
 - A. Marginal benefit vs marginal cost for society
 - B. No benefit for cost incurred for investor
 - C. Competing claims for investment productivity
 - D. Some urban environment has benefit for developer
 - 1. Good esthetics can be good merchandising
 - 2. Environment undisturbed lowers cost
 - E. Legislative mechanisms to internalize cost
 - 1. Uniform cost allocations shifted to consumer through price
 - 2. Legal penalties

3. Incentive in the form of subsidies, tax relief or privilege
 4. Education to create social approval or disapproval for individual actions.
- F. Problem remains to define environmental quality required, rate of investment innovations, consumer education and political implementation.
- To be discussed in final lecture on the next 20 years.

Lecture - Urban Land Economics - The Next 25 Years

- I. Urban space problems may be grouped for discussion purposes into problem areas which are converging into a major crisis:
 - A. Unresolved mechanical problems
 1. Population pressure - space users
 2. Urban construction technology bottlenecks - space forms
 3. The money constraint - space quantity and quality
 - B. Technical solutions need implementation through decision making:
 1. The urban political constraint - space control through community action.
 2. Space control - a consensus on environment desired
 - C. Luxury of democratic process versus efficiency of autocratic management.
- II. Population pressure magnified physical urban problems and reduces opportunity to create intangible sense of community.
 - A. Population estimate - 250,000,000 by 1987 and 324,000,000 by 2015. 85% of increase in present metropolitan statistical areas.
 - B. A fall in the average number of children per family from 3 in 1957 to only 2 in 1965 reduced the forecast from 360,000,000 by the year 2000 and 500,000,000 by the year 2015!
 - C. Rising population - require increasing economic base for jobs, increasing productivity as percentage of population at working age falls, further productivity increase to provide rising standard of living.
- III. Technical constraints on urban engineering
 - A. Inadequate natural capacity to absorb sewage contamination.
 - B. Inadequate water resources to operate water flush sewage system.
 - C. No acceptable engineering alternative to present sewage systems available for a mass market adaptation.
 - D. Air pollution is primarily attributable to the family car, the family home furnace, and electric power production for home consumption.
 - E. A fossil fuel shortage will complicate choice of energy system requiring a transportation alternative to the automobile which presently determines all urban planning.

- F. A codified residential building system and style which wastes resources as well as land and capital.
 - G. Construction materials are finite. Resource conservation requires that we respect the resource rather than the user - Malthus still has something to say to an industrial society with rising standards of resource consumption per capita combined with increasing number of heads.
- IV. Technological innovation is subject to the money constraint, both private and public.
- A. Annual income of \$9,200 a year required for minimum standards in good life suburbia. (Department of Labor study)
 - B. In Madison in 5 years useable land has increased 80% in value and construction costs more than 15%.
 - C. A national prefab of 920 sq. ft. sold new for \$13,000 in 1960 including a \$3,000 lot. Virtually the same house today by the same builder costs \$17,500 with a lot costing at least \$4,200.
 - D. Housing costs are outstripping purchasing power gains of the young family requiring new space.
 - E. Public budgets are increasing. Madison tax increase of 6 mills over 48 mills previous year is an increase of over 12½%.
 - 1. 40% of population in Madison is under the age of 9 and about 50% of our city budget goes for education. Average age in Madison is 10 years below the national average so Madison is a prototype for other communities in the 70's.
 - 2. Area serviced by city has tripled in 10 years so that lower density of population means public transportation cannot operate at a profit, sewer is not immediately available, and public services are increasing in cost per capita.
 - 3. Public budgets cannot build or service existing public plants so there is little public financing power to research and install innovations for air and water pollution, transportation, energy systems, inequities in education, or reconstruction of decaying areas.
- V. Basic constraint is the value system of urban residents as the form and quality of future cities will reflect standards operating through the urban political structure.

- A. Political division is between pro-urbanites and non-urbanites.
 - 1. The pro-urbanites are those actively engaged in developing a community life, ironically the rich elite and the under-privileged minority.
 - 2. The non-urbanite is the city dweller who is essentially disengaged and alienated from the process of creating a sense of community. This group is preoccupied by the insecurities of job, family, and home.
- B. This working American in the \$6,000 to \$10,000 income group involves 20,000,000 American families and is the dominant political force in the center city.
- C. All his aspirations are basic American images of accomplishment through work and family independence which requires so much of his time that he is relatively isolated from much of his community and non-sympathetic to other elements in the community.
- D. Most zoning, land planning, political systems, and real estate financing require homogeneity and conformity of isolated land uses. Political action toward a consensus requires social bridging, cooperative activity, and land use diversity. Diversity requires security, economic and social until the political majority are pro-urbanites.

URBAN LAND ECONOMICS - The Next 25 Years

- I. It is said we are living in the space age, and by my definition, the space age is the age for urban land economics. Earlier in the semester I defined urban land as manufactured space for urban activities, and since we must produce, finance, and allocate more space in the next 30 years then we have built in total since the beginning of history - I view the next 30 years as the space age - rental space, open space, private space, and even classroom space.
 - A. It is very gratifying to a worrier to see that more people are worrying about the same problems. Perhaps the frontier of space could be divided for conversation purposes as follows (Chart 1):
 1. Population pressure -- space users.
 2. Urban technology bottleneck -- space forms.
 3. The money constraint -- space quality.
 4. The urban political issue -- space control thru community action.
 5. The space industry -- opportunity for the pro-urbanite.
 - B. As I suggested in a previous lecture, form of the urban structure has always reflected the value system of the people living within it. Remember the medieval fortress town, the African village, and the Chinese temple city? In exploring our space age problems above, it should be clearly understood that the decisions to solve these problems are not automatic once solutions are found.
 1. Instead a majority of our citizens must agree to what shall be done and only then can urban land economics suggest satisfactory contributions.
 2. City building requires not dollars and cents but rather a community sense - a consensus on what the community should be.
 3. The worry is not that technology cannot find solutions - the worry is that communities will not find agreement and sufficient collective sacrifice to take advantage of the solutions at hand.
- II. Population pressure magnifies our physical urban problems and reduces our opportunities to create a sense of community.
 - A. The Bureau of Census suggests that even if the size of the family averages two children or slightly less our population, now almost 200 million, will reach 250 million by 1987 and 324 million by the year 2015 - 3/4 the size of India today. 85% of this increase will be located in our present metropolitan statistical area.
 - B. If the number of children per family stayed at the level of 1957 births, the average family would have 3 or 4 children, not 2. In that case, our population would be 250 million by 1980, 360 million by the year 2000 and almost 500 million in the year 2015. A difference of one in the average number of children born to each woman means a difference of 275 million in the national population growth in the next half century!

slide #1

- C. While those people who will live in the U.S. in the first quarter of the 21st century are only guesses, all those who will be age 24 or over in 1990 are already born. Family formation and the market for homes and the space for jobs is primarily concerned with the age people 24 or over.
 - D. (On Chart # 2) Notice the tremendous increase of percentage in population in the 15-24 age group from 1960-70; 8.4 to 17.5% and in the 25-44 age group which moves from 2.4 to 29.2% of the population in 1970-80. The first age group are apartment dwellers while the second age group are the home buyers who populate the suburbs.
 - E. This bulge is reflected in the marriage trend - family formation per year (Chart #3).
 - F. These new families will be able to afford increasingly higher rent or higher priced homes as family income dramatically shifts to favor people in the \$10 to 15,000 dollar income range (Chart #4).
 - G. This market is here today coming up through high school and the first years of college. If national expectations of economic growth prove to be true, then these families will have effective income to demand something better than our present \$17,500 dollar house or town house in the suburbs.
 - H. Ironically, there is a real question as to whether we can even provide the current standard of urban life to an adult population of the size we know we shall have, for reasons that are technical, economic, and political.
- III. We only have time to identify some of the critical technical bottlenecks:
- A. If the city became possible because of the development of cast iron pipes for sewer and water, it is soon to become impossible because we do not have the water resources to continue expansion of water operated sewerage plants. The most efficient sewerage plants of any size are 90% effective at best and the balance of the contamination is processed naturally in our rivers and lakes. However the 10% of the increase in untreated sewage related to the population of 1990 greatly exceeds the natural capacity of all of our surface waters to absorb and to process. Moreover the majority of our sewerage treatment facilities are nowhere near 90% efficient. If we burn sewerage or oxidize it as fuel we will create both an air pollution problem and a heat problem. We can postpone the problem by using vacuum systems rather than water flushing systems but nowhere in the United States is such a system permissible or under experimentation. The deadline is 25 years away.
 - B. The primary contaminant of air is the family car and the family home furnace, not the industrial smokestack. The thick and billowing black clouds of even the industrial smokestacks will soon be eliminated. The real problem is invisible sulphur dioxide and carbon monoxide and related gases, all derivative of fossil fuels for energy. The urban area is possible because of 20th century energy conversion systems. The natural balance does not have a tolerance for doubling of consumption of fossil fuels.

- C. Urban areas form around transportation and communication systems. While communication is making great strides, transportation has stopped dead center. The use of the automobile must be drastically changed to maintain present levels of convenience and safety and operating costs not to maintain its relationship to pollution.
- D. You have heard enough of the problems of changing our building technology for the structures which form our urban space.
- E. My objective in just suggesting the existing and very real technology bottlenecks is to point out that in the next 25 years the form of our land and buildings and their mechanical dependence on what we call utilities and transportation must change drastically.
1. The family house will be assembled from factory built module components, self contained, generating electricity from its sewage, reprocessing its water quota, having a useful life of 20 years, built on a leased site as part of a larger neighborhood complex, which in itself has a cooperative shopping complex and grade school system. The neighborhood will be tied to a larger town structure which has other divic activities built around the high school, which will be further tied to a metropolitan complex through a system of electric cars, buses, and trains. The family car will be for trips to the country, the monthly payment to the savings and loan will include the entire residential package including taxes, insurance, furniture and appliances and escape clauses to permit relocation by cancelling the lease rather than selling a house.
 2. These things not only will come, they must come as in the next 25 years we will have to prove that cities can be made to work. The first objective is not to build cities better but just to prevent their being any worse.
- IV. The introduction of technology to maintain and improve the quality of urban space is always subject to the money constraint, both public & private.

- A. For the private family, the U.S. Department of Labor has recently estimated that it is necessary to have an income of \$9200 a year if it is to enjoy even a modest participation in the good life of suburbia.

*Consumer Housing
Dollar*

- Cost of money - 42¢* 1. In the past five years, there has been an average yearly increase of 15% in the price of raw useable land, a total 80% increase. In the same period, construction costs have risen in Madison about 15%.
- Cost of building - 33¢*
- Cost of land - 25¢* 2. A minimum prefabricated house in Madison at 920 sq. feet sold for \$13,000 in 1960 including a \$2000 lot. Today virtually the same house new costs \$17,500 on a lot worth a minimum of \$4200.

- B. On a national basis we must reconsider the practices, instruments and institutions that govern the financing of home purchase as cost gains are outstripping purchasing power gains in this area of need for young families - the 20 to 40 year old group which will grow so explosively so soon.

Waukegan - March 1967 - \$22,200 home lumber cost

1967 - ~~lumber~~ - \$2,920

1968 - \$3,469

1969 - \$4,712

currently - \$3,895

C. By the same token municipal and state budgets and taxes on land are mushrooming. Madison has a tax increase of 4% this year over last despite a proposed tax on cars and a slight increase in the state income tax rebate.

1. The city budget was slightly reduced and much of the cost was related to school cost. Madison has an average age of 25, almost 10 years below the national average, and 40% of its population are under the age of 9. Madison is therefore a good representation of what will happen to other communities in the 1970's. Obviously we must restructure our real estate tax assessment and educational tax policies.

2. In addition, the geographic area served by city services has exploded - tripling in the past 10 years. With lower density of population in this area, the result has been that public transportation cannot operate at a profit, public water and sewer is not immediately available, and public maintenance cost increase per capita and per tax unit.

D. Since public budgets cannot service the existing public plant, there is little local financing power to advance the innovations required for problems of air and water pollution, inequities in the pattern of education, decay at the core, improvement of public transportation, or research and development of new building methods and energy systems.

E. Thus we reach an impasse which can be sketched as follows:

1. Population pressure relative to the balance of land and technology requires significant change and innovation in the techniques of city building.
2. Technical solutions to the predictable problems of population increase are not at hand but will require total reformation of our land use, construction methods, utility systems, transportation patterns, and financing institutions.
3. Redesign and reform of each segment of the city building process requires research and political action and public investment which the public cannot make because the present tax structure cannot carry present programs equitably and the political tax issue blocks any increase in taxes even for researching long term economies.
4. Thus the form of our future cities must first be determined by the electorate operating through the urban political structure. Here lies the nub of the problem for the urban land economist who must operate within goals determined by the community - values backed with an allocation of private and public money, both of which have real constraints and limitations even in a rich country such as ours.

V. In essence the urban crisis is a political crisis which is not solved by lowering interest rates, changing building codes, or permitting higher density development. Robert Wood, an undersecretary of HUD, has described the problem this way:

- A. When America was a collection of small towns, there was a sense of community - a cohesive society of some quality. The challenge today is to retain a sense of community, a consensus of value and cooperative effort as in the small town, at the same time that we double the volume of fixed structures in less than 40 years.
- B. The modern American city is no longer divided between urbanites and suburbanites so much as it is divided between pro-urbanites and non-urbanites.
 - 1. The pro-urbanites are those of widely differing backgrounds who are actively engaged in developing community life at some level, be it the neighborhood, the city, or the region. Ironically the educationally rich elite and the underprivileged minorities have the strongest sense of community and join together in common educational, cultural, and political endeavors.
 - 2. The non-urbanite is the city dweller who is essentially disengaged and alienated from the process of creating a sense of community.
- C. The non-urbanite is the greater majority of working Americans in the \$6 to \$10,000 income group, the working American, the backbone of the community.
 - 1. The working American is not the hollowed, mute, exploited, and poverty stricken hero of Grapes of Wrath.
 - 2. Neither is the man sitting before the TV set for football and westerns and oblivious to the great issues of the day a fold-hero.
 - 3. He is the steady, employable, contributor to the gross national product. He has a better record of family stability than the pro-urbanite from the central city or the established suburb. 70% own their own homes and 94% drive their own cars, even where they earn only \$6 to \$7,500 a year.
 - 4. There isn't time to provide a picture of the working American family, but it involves about 20 million American families, the great political center.
 - 5. At an average age of 35, his career expectations are fixed and he has too many obligations, too much family, barely enough income for a reasonable standard of living, and few skills to match opportunities to aspirations. These aspirations are innerdirected.
 - 6. The working American is preoccupied now with the nation, not with community, or even neighborhood, but with the protection of highly personal possessions - his job, his family, and his home.
- D. Insecurity is a real economic fact - job security is still tough to come by during a time when rapid economic change (impersonal and unpredictable) means layoff, reduction, strike, plant relocation, or technical unemployment.
 - 1. Yet we are appealing to him to bring about upward mobility of the minority by sharing his job opportunities, and his neighborhood.

2. If job protection is his first concern, family and home is his second major concern.
3. He has no elaborate concept of neighborhood or community. The working Americans' contact with the world are basically two - his family and his fellow workers. He need only conform to their beliefs.
4. Home serves as a haven against the outside world. It is a place for family and close neighbors to get together. It keeps out other people, legally and easily from other minorities -- the upper middle class, the political action worker, or the Negro. Property rights are a gut issue as witnessed by the strength of political resistance to open housing, condemnation, building code and zoning changes.
5. The homes justify an unconscious and pervading attitude. The working American compares his new house, new car, refrigerator and patio to what the media tell him about the core of the city - the drabness of slums, the rising crime rate, welfare costs, and rising costs of special education. He wants no part of them as they present only a threat to his home and family.
6. The working American still holds political power in the major urban cities. Until he chooses to endorse public expenditures for major reform of the institutions of urban land economics, nothing significant will happen. The form or formlessness of our present urban community has its roots in the failure of the great political center to share in the aspirations for construction of a better urban America.

VI. Robert Wood further expressed this problem as follows:

"The future of city-building in modern America, turns less on the indignation of the disprivileged or the conscience of the exceptional than commonly supposed. The issue becomes increasingly how to dispose the working American to reorient his life from one of relative isolation and alienation and to find real aspirations in participation in a genuine community. How does he find new satisfaction in a modern metropolitan area akin to the old town atmosphere of mixed population - where butcher, blacksmith, baker, give life and character to the community."

- A. Most of our zoning, land planning, political structures, and real estate financing require homogeneity and conformity of isolated land uses. Yet political action requires building bridges from one area of isolation to another by means of creating special opportunities for cooperative and collective activities. Diversity in land use must also have diversity in the people who benefit from these land uses. City building does not begin with land and brick but rather with a design to build a sense of community from our basic resource - decent, working Americans in search of an identity and income security in a metropolitan population already too large.

- B. City building may begin from such wasteful and seemingly low priority items as:
 - 1. Job security and guaranteed income.
 - 2. Insured equities to protect the homeowner from property value cycles.
 - 3. Subsidy of community heroes in professional sports, extravaganzas, and other devices to build common interests.
 - 4. Financing for individual aspirations to have a small shop, a family business, further education - to realize that fantasy can produce concrete goals and is in the old American mythology to strive is to succeed.
- C. Security, expansion of participation level from family and job to other levels of community life, identification with the city would gradually transform non-urbanites to pro-urbanites who may one day become the source of a consensus on urban form.
- D. Careers in real estate offer an opportunity to participate, to gain a sense of identity, and to succeed financially as in days of old. This course is teaching a system of economics that soon will be obsolete - but it is a subtle way of bringing some of you into the ranks of the pro-urban minority.

Lecture # 5
Bus. 550 & 705

- I. Lecture introduces the concept of market segmentation as applied to real estate decision making. Recall the definition of real estate as: artificially delineated space over time with a fixed reference point to the earth.
 - A. Implications of definition
 1. artificial delineation; the modification of given resources, production of space/time.
 2. the time nature of modification
 - a. short-run; success determined by consumption
 - b. long-run; success determined by design of offering, how does it fit demand.
 - c. examples of space/time perspectives and impact, short term
 - building significant new housing to satisfy temporary demand; ie. student housing if not for shortage at present
 - building low quality housing because of locked in market segment; student housing
 - d. long term perspective can frustrate objectives also
 - VIP Plaza, carrying costs while not rented-up
 - Medical Office building on corner of Regent and Park
 - efficiency apartments in CBD, geared to influx of single, generally clerical employees--student market temporary user until demand by more desirable workers
 - B. Identification of the relevant space/time unit; the Revenue Unit
 1. Nature of Use
 - a. motel/hotel; room/night
 - b. Blackhawk Ridge; camper/night, skier/day
 - c. Tennis Club; court/day
 - d. Coliseum; event/week
 - e. Football Stadium; tickets/game
 2. Distinction of Buyer vs. consumer/user. It is critical to identify the decision-maker. Who pays the tab?
 - a. motel; the salesman or his company
 - b. Tennis Club; the tennis player or the socialite
 - c. Coliseum; the promoter or the spectator
 - d. Football Stadium; the fan or the scalper
 3. Criterion of success

Given the correctly identified space/time concept, the ultimate measure of success is determined by the acceptance of the offer by the ultimate consumer. Problem exists where producers receive their pay-off prior to utilization.

 - a. elderly housing example; developer.
 - b. condominium developer; unscrupulous ones
- II. The Real Estate Process; An Historical Perspective
 - A. Traditionally, the real estate developer has been the initiator/synthesizer of the various production entities: the owner, lender, government, buyer, and market.

- B. Relative satisfaction was determined by the bargaining strength, or lack thereof, by the participants.
 - 1. strength of position = f(nature of offering + ability to pay)
 - 2. multi-family housing example
 - a. for those who could not afford a single-family home
 - b. product by observation and convention
 - c. little innovation, primary research
 - d. today, apartments/condominiums/etc. often selected by those who prefer ease of living, mobility etc.
 - e. characterized by ability to pay, available alternatives, effective demand for product
 - f. product based on extensive research, observation (ie. Owens-Corning Glass, The Waiting List etc.); product designed with effective demand user in mind.
- C. Today, the developer must respond not only to those with ability to pay, but also to consumer-oriented, organized users.

III. The role of market segmentation; the determination of the offering

- A. Site/Structure in Search of Use
 - 1. begin with space/time concept
 - 2. identify attributes of concept (static, situs, behavioral)
 - 3. identify probable buyer segment of aggregate market; recall buyer/user relationship
 - 4. construct rank-order of attributes for segments
 - 5. select segment which best fits attributes of offering perceived
 - 6. merchandising decisions; the offering = product + price; what is the value? Value=Benefits+Cost; subjective to segment
- B. Illustration
 - 1. 25 year-old, 32 unit apartment building in CBD
 - 2. Space/time concepts: renovate; redevelop
 - 3. Redevelop due to physical obsolescence
 - 4. Alternative concepts: commercial, office or retail; residential, condominium or rental, family or single
 - 5. Identify attributes of site/structure concept
 - 6. Select segment which fits rank-order of attributes; highest value segment
 - 7. Refine concept through research, as needed
 - 8. Produce and present offering; monitor success, feedback merchandising
- C. Use in Search of Site/Structure
 - 1. aware of opportunity; aggregate data, market feedback
 - 2. delineate segments; breakdown to merchandising target
 - 3. identify selection criteria of target market; rank-order
 - 4. search for suitable space/time concept (define situs and dynamic needs, then interface with product)
 - 5. present offering, monitor and feedback

D. Illustration of Use Search

1. Aware of demand; Questions to Answer

Oscar Mayer announces hiring of 1,000 new employees
- determine how many employed from existing supply
of unemployed; say 250.

2. Define and Delineate Segments: Method

- a. use reverse directory/City Directory to determine where people work who live around Oscar Mayer in apartments
- b. survey those apartment residents to profile, determine product/price needs
- c. determine nature of the Oscar Mayer employee; look at present, assume certain degree of homogeneity; 40% live in houses, 60% apartments; 75% married, 25% single of those in apartments; married apartment residents have 75% no children, 20% one child, 5% two plus; pay \$175-200/month rent in 1974.
- d. Select site; design with pre-architectural program unit mix, size, amenities, price range etc.

E. Other examples of Use search; the role of observation and primary research.

1. observe no vacancy in one-bedroom apartments in CBD
2. review survey by City Planning showing buildt-up, stable demand.
3. observe construction activity by sector; by type of revenue unit.
4. monitor rental advertising in newspaper; free rent, trips etc.
5. look at turnover in ownership or businesses; State Street.
6. seek to identify dissatisfaction of users by survey.

F. Other Methods to Segment non-residential

1. survey competition, note nature of tenants' business
2. spot license numbers
3. get trade publication mailing list
4. charge account customers
5. survey customers of uses which would be supportive of concept

Urban Land 550
Lecture Outline #6

- I. Any cash cycle begins with a customer who has a certain number of dollars to spend.
 - A. The home buyer
 - B. The residential or commercial tenant
 - C. The industrial owner-tenant
- II. Refer to housing cost calculator matrix.
 - A-D. Matrix
 - E. Limits on family housing costs including utilities, etc.
 1. FHA low income family tenants - 25% of adjusted income
 2. Low Income owners - 20%
 3. Lender rule home should not exceed 2 x regular disposable income
 4. Average value is 1.5 x income
 - F. Effective demand is a function of:
 1. Downpayment
 2. Borrowing power and monthly cost
 3. Definition of disposable income
 - G. Housing matrix suggests that real estate market is many little micro-markets with different combinations of consumer preferences and needs.
- III. Tenant is borrowing use of a capital asset.
 - A. With some obvious exceptions tenant is a tenant by choice.
 - B. Cost of mobility, flexibility and total care services is high.
 - C. Tenant can find infinite variety of trade-offs but there is a pattern of market segmentation.
- IV. Location decision of a manufacturing firm involves qualitative constraints and eventually a return on investment to consider location or relocation alternatives.
 - A. One criterion is net income/total capital or equity capital at each alternative site.
 - B. Net income is a function of:
 1. Sales
 2. Cost of raw materials
 3. Cost of distribution
 4. Cost of labor
 5. Cost of occupancy
 6. Cost of management

Outline #6

- C. Total capital at alternative locations may be affected by:
 - 1. Cost of money
 - 2. Scrap value of plant abandoned
 - 3. Cost of new site (net of subsidy)
 - 4. Cost of new plant and equipment (net of subsidy)
 - 5. Cost of retraining (net of subsidy)
 - 6. Impact of additional financing cost considering the subsidy.
- D. Highest rate of return is chosen.
- E. Alternatives are first narrowed down by technical or qualitative criteria.
- F. Value of site varies differently with marginal cost marginal revenue characteristics of user.
 - 1. Sellers can only guess at effective demand.
 - 2. Buyers very secretive on formula by which they make decision.
 - 3. Real estate is therefore the last great camel bazaar.
- G. Monday we will look at an investment formula which is more precise than buy low, sell high.

Lecture #6 Outline

Intro to Real Estate Investment Analysis

- I. Intellectual hostility to the city is contradicted by urban expansion.
 - A. Is there no choice, or do people see life better in the cities?
 - B. Urbanization and growth of economic product are highly correlated.
 - C. Four abstract levels of clustering (see attached diagram)
 - D. Scattering versus some cluster leads to a net social product gain from cluster even where land is a free good.
 - E. The concept of dense cluster results from removing the assumption of land as a free good since lower density communities will have higher aggregate transportation costs.
 - F. The ordered dense cluster results when density differences are used to weight transportation advantages which is translated into land price.
 - G. Social product of clustering reflects trade off between cost of transportation output and net useful output.
 - H. Clustering also permits internal of external economics of scale.
 1. Internal economies are realized by increased specialization and reduced distribution costs.
 2. External economies are the result of the increased logistical support from agglomeration.
 3. Consumer satisfaction is increased by diversity of choice from clustering.
 - I. Clustering increases communication which fosters innovation and reduces error and duplication.
- II. To put last three lectures in perspective it is first useful to recall that there are two basic real estate decisions situations:
 - A. A site and structure in search of a use for which there is effective demand.
 - B. An effective demand in search of the best combination of site features and structural attributes.
 - C. Effective demand means that there are uses which can pay the costs of the space-time unit desired.
 - D. Because tastes and requirements differ so greatly there is no single real estate market. Instead there are hundreds of sub-sets in small user groups each seeking a special set of site attributes and prices.

Business 550
Risk Management Lecture Notes

Concepts for Basic Financial Analysis of Real Estate

- I. Risk - variance between assumptions and realizations, or between proforma budgets and historical accounting record.
 - a. static risks - those contingencies which only cause a loss
 - b. **dynamic risks**
 - c. explicit assumptions
 - d. implicit conditions
- II. Risk management is the control of variance due to contingencies which upset assumptions and conditions of the budget plan.
 - a. priority of risk management objectives:
 1. preservation of existing net worth
 2. realization of future income expectations
 - b. functional steps to risk management:
 1. identification of significant sources of variance (sensitivity study)
 2. identification of alternative risk management methods available
 3. selection of a risk management method
 4. monitoring cost effectiveness of risk management procedure
 - c. alternative risk management methods include:
 1. avoidance
 2. shift by insurance contract
 3. shift by private contract
 4. limited liability
 5. hedge
 6. improve forecasting through better data collection and analysis
- III. Heuristic models identify one set of projections which follow from a single set of assumptions, assuming conditions of certainty
 - a. capacity for variance indicates vulnerability to surprise
 - b. percent of equity recovered (payback) as a cumulative ratio to original cash-investment
 - c. default ratio - cash break even point as a ratio of gross potential rent
 - d. net income as a percent of market price is the reciprocal of the price-earnings ratio

CONSTRAINTS ON THE REAL ESTATE CONSUMER

- I. Each establishment which needs a location and shelter has a series of constraints imposed on its choice or set of alternative courses of action. Many of these constraints are personal or technical but often they constraints boil down to the question of money and some basic value judgements about location, density, ~~size and quality~~^{cost} and quality. ~~To illustrate the basic constraints within~~^{the} a cash constraint we want to look at the household as an owner, as a tenant, and then at the business firm as an owner and tenant.
 - B. For the household the decision to rent or buy may involve value judgements about mobility and fixed cost vs. roots ~~and~~ and equity investment.
 - C. For the business we will assume the classic arguments of opportunity costs and liquidity in the buy-lease decision.
- II. A housing cost calculator was developed by Stanford Univ. some years ago to indicate the order of magnitude of monthly cost differentials or different types and sizes of dwelling units. The original concept was to create a national housing corporation which would allow you to move about the country while retaining your ~~status and~~ eligibility for a housing unit and status as a tenant, a tenant with option to buy, or as an owner of scattered sites with maintenance provided by the local branch of the national corporation.
 - A. Size and quality of the improvements is indicated across the top of the chart ranging from one to five bedrooms.
 - B. Location and density are indicated on the left hand margin. The improved cost per acre ranges from \$20 to \$100,000 and that divided by the density provides the land cost per unit.
 - C. Building types range from detached single family to moderate-rise elevator apartments.
 - D. At the bottom of the chart is an explanation of items included in arriving at an annual cost of 12% of total land and improvement costs. Note interest cost was 5%--today it is 9% so you might add ~~25%~~ 32% to monthly cost just because interest costs have risen and there is nothing which can be built for \$6 or \$9 a sq. ft. and \$20,000 land per acre isn't available either.

NOTE: THE MONTHLY COST OF HOUSING = .01[Cost of Building (size x quality) + Cost of Land (Location/density)] with...

| | |
|--|--|
| <p>E X A M P L E A 1,600 sq ft, three bedroom (12 to the acre) row house of \$12 per sq ft quality on \$60,000 per acre land costs</p> <div style="border: 1px solid black; padding: 2px; display: inline-block;">\$242/Mo</div> | <p>SIZE ranging from 800 sq ft for a one bedroom apartment to 2,400 sq ft for a detached home TYPE ranging from 4 units per acre for detached homes to 20 per acre for elevator apartments LOCATION ranging from \$20,000 per acre to \$100,000 per acre for land with community services QUALITY ranging from a \$6 per sq ft to an \$18 per sq ft in-place cost of building construction Annual cost of MONEY* invested in the building and in LAND* calculated at 5 percent per year Annual cost of BUILDING* maintenance and UTILITY* services calculated at 4 percent per year Annual cost of COMMUNITY* taxes, insurance, and MANAGEMENT* calculated at 3 percent per year monthly cost is 1 percent of total value or one twelfth of an annual cost of 12 percent per year Variations in any of the SIX INGREDIENTS (*) of housing that change the annual total by 1.00 per cent (like MONEY from 5% to 6%) result in a corresponding change in monthly cost of 8.33 percent.</p> |
|--|--|

The above figures include the same interest rate on both equity and mortgage money invested in the property but no amortization. Life-time maintenance and planned replacement of building components precludes obsolescence, thus eliminating depreciation of the property.

- E. There are a variety of rules of thumb about how much a family should spend on housing. The FHA says low income families should spend no more than 25% of income on rental housing or 20% on single family plus utility. They are talking an adjusted income which reflects disposable income and we will look at their formulas later in the semester.
 - 1. Lenders often state that the price of the home should not exceed twice the family income and then provide various definitions of income which may discount or ignore the wife's income, or not include car payments and income deductions on a check-off system, or use average income for self employed professional, etc.
 - F. The important point to remember is that effective demand for housing depends on savings available for a downpayment and income which will meet the lenders criteria for a loan and a loan balance no higher than you can carry with the debt service consistent with the lenders definition of your income.
 - 1. Once the consumer has a definition of dollars available for housing there are a wide number of alternatives which you can choose for the matrix we had looked at this morning could be further be refined in terms of new or old, urban, suburban and rural, contemporary or traditional in style and so on.
 - 2. As a result there is no such thing as a single housing market but rather there is a complex set of micro-markets for which it is necessary to design a consumer profile with much detail to both their effective means and their priorities in terms of all the trade-offs which they could make. The real estate industry is obly now beginning to do the detailed market research which has characterized many other industries.
 - G. Since the cash cycle of any real estate enterprise begins with a consumer expenditure, in this case, for housing, a major technical problem becomes the forecasting of the price and unit mix of a real estate marketing program.
- III. The tenant in a real estate project is borrowing the use of a capital asset, an apartment, an office building, a store, or what have you. The student is given the key to a \$15,000 apartment unit so it is not surprising that there is some tension on both sides of the transaction when you consider the reluctance you would have to turn over the car keys to your \$3,000 automobile to a virtual stranger.
- A. Since 95 and 100% loan can be available, a tenant is generally a tenant by choice. He has placed a high priority on having freedom to move, fixed costs for a specific period of occupancy, and a provision of services to some degree that he might otherwise have provided for himself.
 - B. The cost of mobility or flexibility is high:
 - 1. A motel room for the night with a high level of service amenities may be \$20.00 or \$600.00 a month.
 - 2. A motel room by the month might be \$12 a day or \$360 a month.
 - 3. An efficiency apartment for 9 months may be \$150 a month so there is no need to sublease during the summer and you're expected to make your own bed, do your own cleaning, take out your own garbage, etc.

Lecture #6

4. Signing a year lease may bring the cost to \$130 per month but note that the savings have come at the cost of considerable mobility and increased responsibility to provide ones own domestic services. Gross rents do represent a fixed cost no matter what happens to real estate taxes or maintenance, etc.
- C. The prospective tenant could look for an infinite variety in terms of trade-offs between full service and self help (rental bungalow versus recreation community), between mobility (no lease versus 5 year contract) or pooling of group costs versus direct user charges (gross rent versus meters for all utilities and services).
- D. The business tenant may also be looking for a variety of trade-offs to house his activities.
 1. Cheap cubage versus locational linkage (warehouse location versus display location)
 2. Customer appeal and impression versus employee convenience and efficiency (A. O. Smith)
 3. Financing decision (lease or buy arguments)
- E. The matrix of tenant alternatives is even more complex than that of residential.
- IV. The location decision for a manufacturing firm may involve a variety of considerations to measure the true cost or the amount of money which it may pay to buy or rent.
 - A. One decision criteria will be net income divided by total invested capital or equity capital.
 - B. The net income will be a function of how the location will affect:
 1. Sales
 2. Cost of raw materials
 3. Cost of distribution
 4. Cost of labor
 5. Cost of occupancy
 6. Cost of management
 - C. The total capital and alternative locations may be affected by:
 1. Cost of moving
 2. Scrap value of plant abandoned
 3. Cost of new site (net of subsidy)
 4. Cost of new plant and equipment (net of subsidy)
 5. Cost of retraining (net of subsidy)
 6. Impact of additional financing cost considering the subsidy.
 - D. Whichever location results is the best income to capital used to the preferred location.
 - E. Of course the alternatives to be studied will first be narrowed down by a set of screens or criteria on the technical requirements or living environments of alternative communities and neighborhood.

Lecture #6

- F. Each commercial enterprise will significantly differ marginal revenue and cost which a seller can only guess at. Thus a filling station might be willing to pay \$100,000 for a filling station site which is worth only \$40,000 to somebody else because internal economics of scale.
1. The seller may never know how much his buyer might have been willing to pay.
 2. Buyers may never wish to reveal the precise formula by which they are making their decision.
 3. Thus real estate is the last of the great camel bazaars where value is determined by negotiation ability and careful intelligence gathering of information, there is often a great disparity between asking price and the actual transaction price.
- G. Our first task will be to look at cash cycle approach to real estate investment as a decision tool for investors which is more precise than buy low, sell high.

Lecture #7
Urban Land 550

PROBLEMS OF RISK AND YIELD FOR REAL ESTATE INVESTMENT

I. Measuring yield - risk - problems in definition and viewpoint

A. The question of yield

1. Definition of dollar benefits - which profit centers and which line on the P & L?
2. Definition of equity - net historical cash or liquidating value
3. Should ratio be average (retrospective) or marginal (prospective)?
4. Present value or internal rate of return or modified internal rate

B. The question of Risk and Risk Management. Facts of fixed dollar investments must be replaced by assumptions in real estate made under conditions of uncertainty.

1. Risk is the variance which could occur to these assumptions, a variance measured as the probable difference between expectations and realizations.
2. First priority of risk management - conservation of existing net worth and good will.
3. Second priority is to reduce variance and future expectations.
4. Static risks can only cause a loss and are external to organization while dynamic risks reflect entrepreneurial ability and could produce a profit or a loss.
5. Tools of risk management:
 - a. Adequate information about costs
 - b. Adequate information about consumers
 - c. Shift of variance by contract
 - d. Scheduling to provide liquidity and holding power
 - e. Incentive contract for entrepreneurial execution of plan

II. Some initial measurements of the risk characteristics are useful in dimensioning the business and financial risk of the project.

- A. After tax cash recovered - cash equity ratio (payback) =
Accumulated spendable cash after taxes + accumulated tax
on other income

Cash Equity required

- B. Default ratio =
Operating Exp. + R.E. Taxes + Prin. & Interest on Mtge. + Working
Cap. Loan Prin. Repayment

Gross Income

- C. Net Income - cost to acquire ratio

Net Income

Market Value for the same period

- D. Prospective yield is measured by one of four standards.

1. Current period return on Net Worth before taxes =

Cash Throw-off + Change in Net Worth

Net Worth at End of Previous Year

2. Current period return on net worth after taxes =

$$\frac{\text{Spendable cash} + \text{tax savings on other income} + (\text{change in net worth} - \text{change in cap. gains tax})}{\text{Net worth at the end of previous year less capital gains tax of previous year}}$$
3. Cash Return on original cash equity before taxes =

$$\frac{\text{Cash throw-off}}{\text{Total initial investment less initial Mortgage Debt}}$$

(This is adjusted for staged projects)
4. Cash Return on original equity cash after taxes =

(This is adjusted for staged projects)

$$\frac{\text{Spendable Cash after taxes} + \text{Tax savings on other income}}{\text{Total initial investment cost less initial mtge. debt}}$$

- E. The assumption relative to resale price is handled differently by many investors.
1. One appraisal method tests value at alternative resale prices
 2. Insurance company equity departments assume 100% decline in 50 or 60 years
 3. Resale price should be reduced by transaction costs
 4. Others count spendable cash at 100%, equity build up at 50%, and appreciation at 25%.

III. The 3 last lines of mini-mod present alternative measures of retrospective yield. The appraisal fraternity emphasizes present value concepts while the financial fraternity relates to internal rate of return.

- A. Present value of project before taxes =

$$\text{Original mortgage balance} + \text{PV of received stream of cash throw-off} + \text{PV of net worth if sold at end of year indicated by column number.}$$
- B. Present value of project after taxes =

$$\text{Original mortgage balance} + \text{present value of received stream of spendable cash after taxes} + \text{PV of received tax savings on other income} + \text{PV of (net worth less capital gains tax) if sold at end of year indicated by column number.}$$
- C. The internal rate when applied to real estate has 2 problems, the opportunity cost of capital issue and the computational problem of the non-conventional investment.
1. Low equities in real estate mean high rates of return but projects are discreet and separated in time. Temporary reinvestment occurs at a low rate while opportunity costs for real estate investors with risk preference are volatile. These elements conflict with assumption of IRR of reinvestment at the discount rate.
 2. IRR equation has as many routes as there are a change in direction from net outlays to net receipts.
 - a. Conventional investment has one or more outlays followed by one or more receipts.
 - b. Non-conventional investment has one or more outlays interspersed with one or more receipts - hence, multiple routes for IRR

- D. Modified internal rate in mini-mod converts non-conventional investment to the conventional and permits setting of an opportunity cost - reinvestment rate different from the IRR rate.
1. The modified IRR is the rate which equates present value of the outlays and the future compound value of receipts.
 2. There is theoretical difference of opinion as to whether receipts should be compounded.
 3. Computer computation involves the use of logs and so a negative equity means a negative log and rejection of the run by the computer.
 4. The modified IRR rate equals $\text{Exp } (Y) - 1$

$$Y = [\text{Log } (X) - \text{LOG } (\text{Original Investment})] / N$$

$$S = \sum_{t=1}^N [(\text{Spendable Cash After Taxes} + \text{Tax Savings}) * (1. + \text{Cost of Equity Cap})^{N-1}]$$
- E. Yield will be highly sensitive to the amount and timing of equity capital investment.
1. An increase in cost financed with mortgage increases of interest and principal payments reduces cash throw-off over many years and may reduce equity yield slightly.
 2. An increase in cost which requires additional equity immediately and drastically reduces yield because the leverage is reduced.
 3. Two strategies follow from this fact and the present value of money. You make your money when you buy, not when you hope to sell well.
 4. Yield is very sensitive to cost to acquire and price negotiations when it means additional equity money for the investor and relatively insensitive to price when the additional price can be financed at favorable rates for long term.

Yield and Risk Analysis in Real Estate

- I. A cash flow forecast for real estate produces so many different numbers, some basic approach for analysis is important, particularly an approach which is relevant to alternative strategies and tactics.
 - A. The basic elements of financial analysis or format are useful to review without adding the embroidery of profit centers, finance packages or taxes. These are:
 1. Timeline
 2. Cash outlays
 3. Cash receipts
 4. Measures of yield
 5. Measures of risk
 - B. In measuring yield there are a number of problems in establishing definitions and a viewpoint. There is no one measure of yield or one correct approach. It must be regarded as a decision tool and whichever tool works best for a particular investor is the right one. (10% ain't a bad margin) Among the problems we'll cover today are:
 1. Definition of a return - is it net income as the Finance Dept. would claim, cash throwoff as the appraisors claim, spendable cash after taxes or should there be some adjustment for equity build-up ?
 2. Definition of equity investment as original cash, unrecovered cash balance, liquidating value at end of previous or an average carefully defined standard?
 3. The ratio of returns to equity may be retrospective or prospective - i.e., and average rate for the entire timeline of the investment or the marginal rate for one year at a time.
 4. A major argument today is the need to modify internal rate of return for real estate equity to reflect the opportunity cost of money and possibly the reinvestment rate.
 - C. When investing in a bond all the necessary assumptions are provided by the contract or the transaction. There's a coupon rate, a purchase price, a par value, and a maturity date. The possibility of prepayment is covered by a call feature. In real estate all these assumptions are provided by the development. All those numbers in a cash flow seem like hard numbers but many are subject to variance.
 1. Risk is the variance which could occur to the various assumptions on cost to acquire, operating results, and resale and therefore some way is needed to qualify the ratios of yield anticipated by conditions of uncertainty. Risk is a variance between our assumptions or expectations and our realizations.
 2. The highest priority of the risk manager is to conserve our existing assets and net worth, to minimize loss to existing assets including our credibility with those involved in the operation.
 3. The second priority is to reduce the uncertainty of future expectations.
 4. The risk manager is concerned with both static risks - those contingencies which could only cause a loss, and dynamic risks those entrepreneurial matters which can produce a profit or loss.
 5. The techniques of risk management include:
 - a. adequate information and planning for cost control
 - b. adequate information about the number, the means, and motivation of consumers.

- c. shift of unforeseeable variance by contract
 - d. scheduling of financial plans to provide liquidity and holding power
 - e. incentive contracts for management to penalize or reward achievement in reaching assumptions as to cost and revenue
11. Reference to the minimod output will provide demonstration of the various ratios.
- A. After tax cash recovered - cash equity ratio (payback) =
$$\frac{\text{Accumulated spendable cash after taxes} + \text{accumulated tax savings on other income}}{\text{Cash equity required}}$$
 - B. Default ratio =
$$\frac{\text{Operating Exp.} + \text{R.E. Taxes} + \text{Prin. \& Interest on Mtge.} + \text{Working Cap. Loan Prin. Repayment}}{\text{Gross Income}}$$
 - C. Net Income - ~~market value~~ ^{cost to acquire} ratio =
$$\frac{\text{Net Income}}{\text{Market Value for the same period}}$$
 - D. Prospective yield is measured by one of four standards.
 - 1. Current period return on Net Worth before taxes =
$$\frac{\text{Cash Throw-off} + \text{Change in Net Worth}}{\text{Net Worth at End of Previous Year}}$$
 - 2. Current period return on net worth after taxes =
$$\frac{\text{Spendable cash} + \text{tax savings on other income} + (\text{change in net worth} - \text{change in cap. gains tax})}{\text{Net worth at the end of previous year less capital gains tax of previous year}}$$
 - 3. Cash Return on original cash equity before taxes =
$$\frac{\text{Cash throw-off}}{\text{Total initial investment less initial Mortgage Debt}} \quad \text{(This is adjusted for staged projects)}$$
 - 4. Cash Return on original equity cash after taxes =
$$\frac{\text{Spendable Cash after taxes} + \text{Tax savings on other income}}{\text{Total initial investment cost less initial mtge. debt}} \quad \text{(This is adjusted for staged projects)}$$
 - E. Other real estate investment models may discount the paper profit of equity build-up or appreciation. Insurance companies assume the value of improvements to decline 100% in fifty or sixty years. Resale price should be reduced by transaction costs, which are as much as 6%.
 - F. Many conservative investors just consider spendable cash after taxes and tax savings to other income
- III 1. The last three lines of minimod analyze retrospective yield.
- A. Present value of project before taxes =
$$\text{Original mortgage balance} + \text{PV of received stream of cash throw-off} + \text{PV of net worth if sold at end of year indicated by column number.}$$
 - B. Present value of project after taxes =
$$\text{Original mortgage balance} + \text{present value of received stream of spendable cash after taxes} + \text{PV of received tax savings on other income} + \text{PV of (net worth less capital gains tax) if sold at end of year indicated by column number.}$$

- Q. While the appraisal fraternity thinks in terms of present value the financial fraternity thinks in terms of internal rate of return. The internal rate applied to real estate has two problems, the opportunity cost of capital and the problem of the nonconventional investment.
1. Low equities can mean high yields and without continual reinvestment since projects are discrete and separated in time, temporary reinvestment is necessary. Real estate investors are risk preference investors so opportunity costs may be high, too. Both these facts conflict with the internal rate assumption of reinvestment at the same rate at IRR.
 2. A conventional investment has one or more outlays followed by one or more returns. Many real estate investments involve a series of outlays interspersed with a series of receipts. This situation provides as many roots to the IRR equation as there are changes in direction so a modified internal rate maybe more appropriate.
 3. In minimod the modified rate is determined by discounting outlays by the opportunity cost and compounding receipts by the reinvestment rate. Then the IRR is computed which equates the present value of the outlays and the future value of receipts. The formula involves the use of logs and so a negative equity cannot be calculated for minimod.
 4. The modified IRR rate equals $\text{Exp } (Y) - 1$
 $Y = (\text{LOG } (X) - \text{LOG } (\text{Original Investment})) / N$
 $X = \sum_{t=1}^N [(\text{Spendable Cash Aft Taxes} + \text{Tax Savings}) * (1. + \text{Cost of Equity Cap})^{N-1}]$
 5. It is important to note that yield will be highly sensitive to how soon equity capital must be invested and relative changes in equity. An increase in cost which can be financed with the mortgage increases interest and principal payments and decreases cash throwoff over many years. However an increase in cost which requires additional equity hits the leverage factor immediately and drastically reduces yield.
 6. Two corollaries follow from this fact:
 - a. You make your money when you buy, not when you sell.
 - b. Yield is very sensitive to price negotiation when it means additional equity and relatively insensitive to price when additional price can be financed for the mortgage on longterms at favorable rates.

Business 550/705
Real Estate Risk Management

- I. As you begin to struggle with cash flow forecasting it should be very apparent that as an investor all you buy is a set of financial assumptions about the future, about the interaction of the project with users, the infrastructure, and management. Stocks and bonds are risky too, in both a general market system and individually but real estate does not depend primarily on random walk methods of risk management through diversification. Real estate management is the control of risk.
 - A. Risk is the variance between assumptions and realization, between proforma budgets and actual P&L statements.
 - B. Risk management is the control of variance, a reduction of financial upset and insolvency in terms of frequency and severity as the result of surprise or unpredictable obligation.
 - C. A real estate enterprise faces a great variety of risk types but they can be basically divided as follows:
 1. Static risks - external, sudden, and generally destructive such as fire, death, earthquake and which can only cause a loss of resources by surprise to upset a plan.
 2. Dynamic risks - partially controllable, internal occurrences over time which can produce a profit or a loss depending on management finesse and forecasting ability.
 - D. Most static risks can be controlled by insurance while many dynamic risks can be minimized through management. Dynamic risks facing the real estate investor would include:
 1. Non-systematic business risks (those inherent in the management and marketing of the property).
 2. Systematic business risk (those inherent in the level of general economic activity).
 3. Financial risk (adequacy of cash available for debt service on time each period and in the aggregate in the event of foreclosure).
 4. The interest risk (the possibility that interest rates will rise relative to contract mortgage rate, transferring value from lender to borrower).
 5. Liquidity risk (the rise in interest rates will depress resale price of the mortgage so that if lender needs cash, he must sell mortgage investment at a loss).
 6. Inflation risks (loss of purchasing power of dollars which remain invested in outstanding balance).
 7. Creditor risks (redefinition of remedies in the event of non-payment by statutory or judicial actions or innovative legal gambits).
 - E. Risk management has two objectives
 1. First priority - conservation of existing enterprise assets despite surprise events.
 2. Second priority - realization of budgeted expectations of income despite surprise events.
 3. It is both a philosophy of inquiry in terms of validating assumptions or a management process of attempting to answer systematically the "What if..." questions.

- F. The alternative methods for controlling variance, avoiding loss, which everyone subconsciously uses, include:
1. Eliminating risk exposure
 2. Reducing the frequency or severity of loss (fire proof construction versus sprinklers or diversification or lower loan to value ratios).
 3. Combine risk exposure to improve predictability - scale of operations, research.
 4. Shift risk by contract (sub-contracting, escalator clauses, variable rate mortgages.
 5. Shift the risk by insurance contract
 6. Limit maximum loss (corporate shell, limited partnership, exculpatory clause)
 7. Hedging (options, contingent sales, sale and leaseback, Change in conditions clause)
- II. A real estate project becomes a complex web of contractual arrangements which adjust and allocates the risk among all the parties of interest more or less in proportion to their vested interests and the benefits. Different parties are making different assumptions about the future and therefore approach their risk management plan differently.
- A. A land lease tied to the cost of capital for a savings and loan.
- B. Consider a mortgage closing:
1. Title
 - Survey
 - Construction contract
 - Mechanics liens
 - Property and liability insurance
 - Mortgage guaranty insurance
- C. Control of dynamic risks with positive, negative, and bailout incentives (pleasure pain and bailout principle)
- D. The percentage lease - base rent to protect the landlord, overage rent, to reduce the tenants financial risks.
- E. Shared appreciation mortgage - protect the borrower against high interest rates and a high default point - protect the lender against devaluation due to continued inflationary pressure on interest rates.
- F. Physical design for flexibility of future use, capacity for the 100 year storm.
- G. Public regulation is intended to eliminate the worst of land layout, construction technique, or other variance from the public land use plan with sanctions to control small levels of variance.
- III. Cash flow forecasting is not important in itself but as a base for developing risk measures, including:
1. Default ratio, payback ratios, debt cover ratios, etc.
 2. Sensitivity studies as to capacity for errors in the basic assumption
 3. Identification of revenue and cost elements to be controlled and defined by contract
 4. Development of risk/yield payoff matrices for the decision maker

Lecture #8
Operating Revenue - Expense Determination

- I. Some basic patterns or concepts of relationships between values or budgets and income or cash flows.
 - A. $\text{Purchase Value} = \text{PV of payments to lender} + \text{PV of cash stream to equity investment} + \text{PV of reversion or salvage value to fee owner}.$
 - B. The reversible equation - if seller names the price, then buyer may name the terms.
 - C. One approach to financial feasibility ignoring income tax:
 1. Front door approach:
 $\text{Total project cost} = \text{mortgage balance} + \text{equity capital}$
 $\text{Cash dividend on equity} + \text{debt service} = \text{net income}$
 $\text{Net income} + \text{expenses} + \text{real estate tax} + \text{vacancy} = \text{required gross receipts}$
 $\text{Required gross receipts/space units} = \text{rental price/unit}$
 2. Back door approach:
 $\text{Gross rents} - \text{vacancy} + \text{expenses} = \text{net income available for debt service} + \text{equity dividends}$
 $\text{Gross rents} \times \text{desired default point} = \text{maximum expenses and outlays}$
 $\text{Break even cash} - \text{expenses} = \text{income available for debt service}$
 $\text{Income available for debt service} / \$1,000/\text{year of loan debt service} = \text{maximum loan}$
 $\text{Maximum loan} + \text{equity capital to be committed} = \text{total project budget}$
- II. Assuming for the moment the real estate investor's only profit center is in the net income line or below, cash flow analysis begins with productivity analysis.
 - A. Productivity analysis is concerned with the attributes or features of the space-time product which prospective users or investors convert into expectations of future flows of services or dollar return; it is these expectations which are the basis of bids and offers in the market.
 - B. Services expected by a tenant are translated into the rent he is able or willing to pay.
 - C. To understand the problem of translating the space-time product to money, it may be useful to:
 1. Correctly describe the space-time product, such as apartment per semester, clinic per year, motel room per night, GLA, front foot, building site, access to an opportunity.
 2. Identify who really signs the check or the lease.
 3. Determine devices for creating a prospect list.
 - D. Definition of amenities and services or features of space-time unit.
 1. the competitive standard
 2. the competitive edge
 - E. Converting potential space-time to potential money-time (ie. gross revenue).
 1. $\text{Gross revenue} = \text{number of time units} \times \text{rent per unit of time} \times \text{units per year}.$

For example: 12 apartment units x 12 months = 144 unit months
 x 150 per month = potential gross rent

100 motel rooms x 360 days = 36,000 room nights space-time

2. The vacancy rate is also determined in terms of space-time units.
 For example: If it was assumed that 1/2 of the apartments would turn over to new tenants each year and it would take one month to make the transfer, then:
 12 apartments x .5 turn over x 1 would = 6 unit months of vacancy x 150 would = a \$900 vacancy loss
 3. Vacancy may include at least four elements, including:
 - a. Normal vacancy turn over rate
 - b. Seasonal rent adjustments or concessions (unit months at seasonal price cut)
 - c. Collection losses (loss per unit month)
 - d. Franchise fees, deposit returns, sales taxes, etc.
 4. Details provide a gross rent schedule
 - F. The gross potential rent less the vacancy adjustment = effective gross rental income.
- III. There are 2 viewpoints for revenue and expenses - productivity as economic surplus or productivity in terms of hard cash.
- A. Economic viewpoint that of the appraiser over long term of 10 to 40 years.
 1. Economic rents rather than actual cash rents and average expenses smooth over projection period, all in constant dollars.
 2. Expenses include a non-cash item called reserve for replacement for special components in the structure & like roof or boiler which may be replaced before the end of the forecast period.
 - B. Cash cycle analysts make projections for each year and sometimes by quarters as plan becomes refined. Short term forecast is for 5 or 10 years at most. Cash rents are the basis and cash expenses can be classified into 4 basic outlays further subdivided by account to arrive at cash income available for debt service:
 1. Fixed expenses excluding real estate taxes
 2. Variable expenses
 3. Repairs and maintenance (which are deductible for income tax purposes)
 4. Replacements (items which must be capitalized and then depreciated for income tax purposes)
 - C. Fixed expense includes insurance, accounting, and legal. Variable expenses are costs which vary by occupancy or by season.
 - D. Repairs and maintenance vs. scheduled replacements,
 - E. Sources of expense data:
 1. (Best) Similar buildings managed by the same people
 2. Reliable trade sources such as:
 - a. Dollars and Cents of Shopping Centers - ULI
 - b. Office Building Managers and Owners Annual Report
 - c. Apartment Building Owners and Managers Report
 3. Local property management firm with estimating manual

- F. Common denominators for expense comparison:
 - 1. Percentage of gross rent or effective gross
 - 2. Pennies per sq. ft. of total building area
 - 3. Pennies per sq. ft. of GLA (gross leaseable area)
 - 4. Per room or per guest (motels)
 - 5. Gross cubic footage (industrial)
 - G. Expense projections can be subject to much variance and variance in revenue and expense estimates is called Business Risk.
 - 1. Risk shifted by means of percentage rents or escalator clauses
 - 2. Percentage rent as a base rent as against a percent of tenants sales, whichever is more.
 - 3. Escalator clauses shift in increase and expense above some base number to the tenant.
 - H. Real estate taxes vary greatly across the country - Milwaukee 33% - Phoenix 12%.
- IV. Cost of money as a demand on cash cycle varies greatly by time loan was made, type of property, location, ratio of loan to value, etc.
- A. Essential points are interest cost and rate at which loan must be repaid.
 - 1. A 7 1/2% interest monthly payment loan to be repaid over 15 years would cost \$11.14 per year per thousand.
 - 2. The same loan with a 25 year repayment would only cost \$8.87 per thousand.
 - 3. At today's rate of 10% the 25 year loan would cost \$10.90 per thousand which means you could borrow about 19% less money for the same debt service.
 - 4. For 15 year amortization at 10% the cost would be \$12.90 per thousand.
 - B. Credit crunch changes both cost and other selection criteria such as default point or preference for property type.
 - C. Financial risk reflects coverage of debt service commissions by net income (debt cover ratio) or cash break even (default point) as a percent of gross cash flows.

The Real Estate Process - 550

Lecture Outline #9
Introduction to Real Estate Law

- I. The shift from an agricultural to a technological society is producing a corresponding shift in our definition of property rights.
 - A. The status of a person receives increasing protection as job seniority, pension, rights to welfare, etc. have been advanced to the status of property which cannot be taken without due process.
 - B. Great majority more dependent for economic well-being on status rights than rights in land.
 - C. Greater awareness of the dependency of society as a whole on land as the source of life is producing a corresponding contraction of traditional European and English doctrines of land rights.
 - D. To the American Indian the land was the "mother of life". The white man thought in terms of survey lines as a way of defining legal possession and control. Essentially pantheism versus an anthropocentric religion which demanded man exercise dominion over the earth and the lesser creatures.
 - E. Only the environmental sciences have sensitized Americans to the inextricable interrelationships of one parcel to another which flow across artificial legal boundaries.
 - F. Elements of law - space definition, time dimension, rights of use.
 - G. The critical legal problem of real estate is to create a body of law which recognizes that land cannot be neatly divided into mine and yours.
- II. In the desperate, makeshift search for control of land use decisions real estate has already become the most regulated industry in the U.S.
 - A. The mythology of private property gives the citizen a greater sense of independent action than he really has.
 1. Private rights of claim and access
 2. Public rights of claim and access
 3. Common rights of claim and access
 - B. Claim rights - the rights of benefit
 - C. Access rights - the rights to control decisions about use
 - D. The constitution gives government:
 1. First claim on productivity (the real estate tax)
 2. First prerogative of decision making (the Police Power)
 3. Priority to recover private rights (eminent domain) for cash

- E. The concept of private property is therefore defined by what is not public or common and it is therefore shrinking. The semantics remain middle English common law but the substance of private property varies inversely with the growth of social interdependence.
- III. Much laudable legislation for environmental control has been blocked by the constitutional dichotomy between "taking" and "regulating" property.
- A. A taking is eminent domain and requires compensation. Regulation is use of the police power and does not, even though it causes great economic hardship.
 - B. Distinction between these concepts is very complex because courts can apply the doctrine of de facto taking, where it feels economic hardship is unacceptable and thereby declare law unconstitutional.
 - 1. That possibility makes many environmental controls well beyond cash resources of government who must pay for taking.
 - 2. What is definition of value cash cost to acquire or present value of potential future expectations.
 - 3. Must risk of eminent domain be compensated by payback of original cost or present value of future benefits?
 - 4. To what degree must society pay as though future benefits were certain rather than risky, what set of assumptions provides indemnity?
 - 5. Dilemma is clear - regulation may not be extensive enough to solve a land use problem - such as flood plain or reducing development potential from multi-family to single family in a water recharge area - but legislation forceful enough to do the job is a taking and government may not have enough money to buy the flood plain of the Kickapoo or the coast of California.
 - C. In about 60 years our law may have gone full circle. At one time government powers for land regulation were much broader and more powerful than today. Three cases may hint at this cycle: (the advanced student may wish to read "This Land Is Whose Land? Changing Concepts of Land as Property," Prof. Donald Large, Wisconsin Law Review, Vol. 1973 #4).
 - 1. Hadacheck v. Sebastian was a brick yard outside of Los Angeles that was zoned out of existence by the city in 1910 although it was there long before the city. No compensation was provided, apparently because the court thought its many profitable years had refunded the owners original money outlay, and it suggested that as a matter of constitutional law government could eliminate pre-existing non-conforming uses.
 - 2. United States Supreme Court in 1922 in Pennsylvania v. Mahon struck down a state law which forbade the mining of coal in such a way as to cause the houses above to collapse. The court held in favor of future expectation. "What makes the right to mine coal valuable is that it can be exercised with profit. To make it commercially impracticable to mine certain coal has very nearly the same effect for constitutional purpose as appropriating or destroying it."

3. However in Just v. Marinette County in 1972 in Wisconsin the court established a simple distinction between eminent domain and the police power. According to the Wisconsin Supreme Court a taking occurs when government restricts an individual's use of his land to secure an affirmative benefit for the public. Police power occurs when government only wishes to preserve the status quo or prevent an act of the land owner that may cause harm to the public.

- D. Further redefinition of what is private, public, or common interest in land and who bears the cost of regulation and what is the benchmark of indemnity will occupy the balance of our century in our courts. Nonetheless a quiet revolution in property is well along, perhaps further along than those on the left really understand.

IV. Real estate law covers a variety of subjects from contracts to buy and sell, contracts to lease between landlord and tenant, contracts to lend, and degrees of tort between all persons and the land. The advocates of consumerism have won almost as many victories affecting the law of contract for real estate as environmentalists have won relative to land use controls.

- A. Regulation of land use and buildings can be studied across a spectrum including:

1. Private controls among users of a particular site
2. Association of users with a common interest
3. Local municipal zoning, building codes, subdivision rules, etc.
4. Metropolitan joint action
5. Regional planning constraints
6. State regulation, both direct and indirect
7. Federal regulation, both direct and indirect

- B. For a long time federal government delegated land use control to the states by default and states generally transferred its powers to municipalities at the very local level by enabling legislation.

1. Result is political fragmentation and lack of coordination
2. Financial interest within artificial boundaries bias local land use regulation
3. States are reluctant or unable to recover powers
4. Federal government interested in bribing states to carry out federal land use policy by funding planning costs

- C.

Thus our series of lectures will first trace regulation of land use on a site basis and local government basis to show where it falters. Then we'll look at the federal government ferment to see why it wants to shift land use policies to the state. Finally we'll look at the state level to see how legislatures are responding to the squeeze.

Lecture #9
Urban Land 550

- I. To date we have expanded the elements of real estate cash flow analysis to a point where some decision rules are necessary relative to yield and risk.
 - A. Basic elements and their expansion are:
 1. Time line of project onset and liquidation
 2. Cash outlays
 - a. Capital costs
 - b. Operating expenses
 - c. Debt repayment
 - d. Tax payments
 3. Cash receipts
 - a. Profit centers in construction
 - b. Profit centers in operation
 - c. Operating revenues
 - d. Financing proceeds
 - e. Tax savings to other income
 4. Measures of yield
 5. Measures of risk
 - B. Measuring yield - problems in definition and viewpoint
 1. Definition of dollar benefits - which profit centers and which line on the P & L?
 2. Definition of equity - net historical cash or liquidating value
 3. Should ratio be average (retrospective) or marginal (prospective)?
 4. Present value or internal rate of return or modified internal rate
 - C. Facts of fixed dollar investments must be replaced by assumptions in real estate made under conditions of uncertainty.
 1. Risk is the variance which could occur to these assumptions, a variance measured as the probable difference between expectations and realizations.
 2. First priority of risk management - conservation of existing net worth and good will.
 3. Second priority is to reduce variance and future expectations.
 4. Static risks can only cause a loss and are external to organization while dynamic risks reflect entrepreneurial ability and could produce a profit or a loss.
 5. Tools of risk management:
 - a. Adequate information about costs
 - b. Adequate information about consumers
 - c. Shift of variance by contract
 - d. Scheduling to provide liquidity and holding power
 - e. Incentive contract for entrepreneurial execution of plan
- II. Some initial measurements of the risk characteristics are useful in dimensioning the business and financial risk of the project.
 - A. After tax cash recovered - cash equity ratio (payback) =
$$\frac{\text{Accumulated spendable cash after taxes} + \text{accumulated tax savings on other income}}{\text{Cash equity required}}$$

B. Default ratio =

$$\frac{\text{Operating Exp.} + \text{R.E. Taxes} + \text{Prin. \& Interest on Mtge.} + \text{Working Cap.}}{\text{Loan Prin. Repayment}}$$

Gross Income

C. Net income - cost to acquire ratio

$$\frac{\text{Net Income}}{\text{Market Value for the same period}}$$

D. Prospective yield is measured by one of four standards.

1. Current period return on Net Worth before taxes =

$$\frac{\text{Cash Throw-off} + \text{Change in Net Worth}}{\text{Net Worth at End of Previous Year}}$$

2. Current period return on net worth after taxes =

$$\frac{\text{Spendable cash} + \text{tax savings on other income} + (\text{change in net worth} - \text{change in cap. gains tax})}{\text{Net worth at the end of previous year less capital gains tax of previous year}}$$

3. Cash Return on original cash equity before taxes =

$$\frac{\text{Cash throw-off}}{\text{Total Initial Investment less Initial Mortgage Debt}}$$

(This is adjusted for staged projects)

4. Cash Return on original equity cash after taxes =

(This is adjusted for staged projects)

$$\frac{\text{Spendable Cash after taxes} + \text{Tax savings on other income}}{\text{Total initial investment cost less initial mtge. debt}}$$

E. The assumption relative to resale price is handled differently by many investors.

1. One appraisal method tests value at alternative resale prices
2. Insurance company equity departments assume 100% decline in 50 or 60 yrs.
3. Resale price should be reduced by transaction costs
4. Others count spendable cash at 100%, equity build up at 50%, and appreciation at 25%.

III. The 3 last lines of mini-mod present alternative measures of retrospective yield. The appraisal fraternity emphasizes present value concepts while the financial fraternity relates to internal rate of return.

A. Present value of project before taxes =

$$\text{Original mortgage balance} + \text{PV of received stream of cash throw-off} + \text{PV of net worth if sold at end of year indicated by column number.}$$

B. Present value of project after taxes =

$$\text{Original mortgage balance} + \text{present value of received stream of spendable cash after taxes} + \text{PV of received tax savings on other income} + \text{PV of (net worth less capital gains tax) if sold at end of year indicated by column number.}$$

C. The internal rate when applied to real estate has 2 problems, the opportunity cost of capital issue and the computational problem of the non-conventional investment.

1. Low equities in real estate mean high rates of return but projects are discreet and separated in time. Temporary reinvestment occurs at a low rate while opportunity costs for real estate investors with risk preference are volatile. These elements conflict with assumption of IRR of reinvestment at the discount rate.

2. IRR equation has as many routes as there are a change in direction from net outlays to net receipts.
 - a. Conventional investment has one or more outlays followed by one or more receipts.
 - b. Non-conventional investment has one or more outlays interspersed with one or more receipts - hence, multiple routes for IRR.
- D. Modified Internal rate in mini-mod converts non-conventional investment to the conventional and permits setting of an opportunity cost - reinvestment rate different from the IRR RATE.
 1. The modified IRR is the rate which equates present value of the outlays and the future compound value of receipts.
 2. There is theoretical difference of opinion as to whether receipts should be compounded.
 3. Computer computation involves the use of logs and so a negative equity means a negative log and rejection of the run by the computer.
 4. The modified IRR rate equals $\text{Exp}(Y) - 1$
 $Y = (\text{LOG}(X) - \text{LOG}(\text{Original Investment})/N$
 $S = \sum_{t=0}^N [(\text{Spendable Cash Aft Taxes} + \text{Tax Savings}) * (1. + \text{Cost of Equity Cap})^{N-1}]$
- E. Yield will be highly sensitive to the amount and timing of equity capital investment.
 1. An increase in cost financed with mortgage increases of interest and principal payments reduces cash throw off over many years and may reduce equity yield slightly.
 2. An increase in cost which requires additional equity immediately and drastically reduces yield because the leverage is reduced.
 3. Two strategies follow from this fact and the present value of money. You make your money when you buy, not when you hope to sell well.
 4. Yield is very sensitive to cost to acquire and price negotiations when it means additional equity money for the investor and relatively insensitive to price when the additional price can be financed at favorable rates for long term.

Lecture #9

- I. Analysis of a specific site and improvements may lead to identification of appropriate uses because the patterns of static, linkage, law and dynamic attributes suggests the most probable users.
 - A. The critical questions are "who needs it?" and "can they afford it?"
 1. Short term perspective - highly specialized
 2. Long term perspective for full capital recovery - full flexibility
 - B. Necessity of correctly identifying space-time unit of demand
 1. - motel - room per night
 2. Shoreline frontage or consumption of a weekend
 3. Office space - per doctor or per clinic
 4. Colliseum - ticket per game or event/day
 - C. Need to identify buyer vs. consumer
 1. Husband buys home chosen by wife
 2. Office branch located by corporate real estate manager
 3. Elderly housing bought by citizen board
- II. At this point it will now be useful to tie clustering concepts, economic base, market segmentation inherent in site analysis all together.
 - A. The University in Madison is a major component of the Madison economic base; a change in enrollment or location will have many impacts on different land use patterns. Consider housing with the following tree diagram by consumer segment:

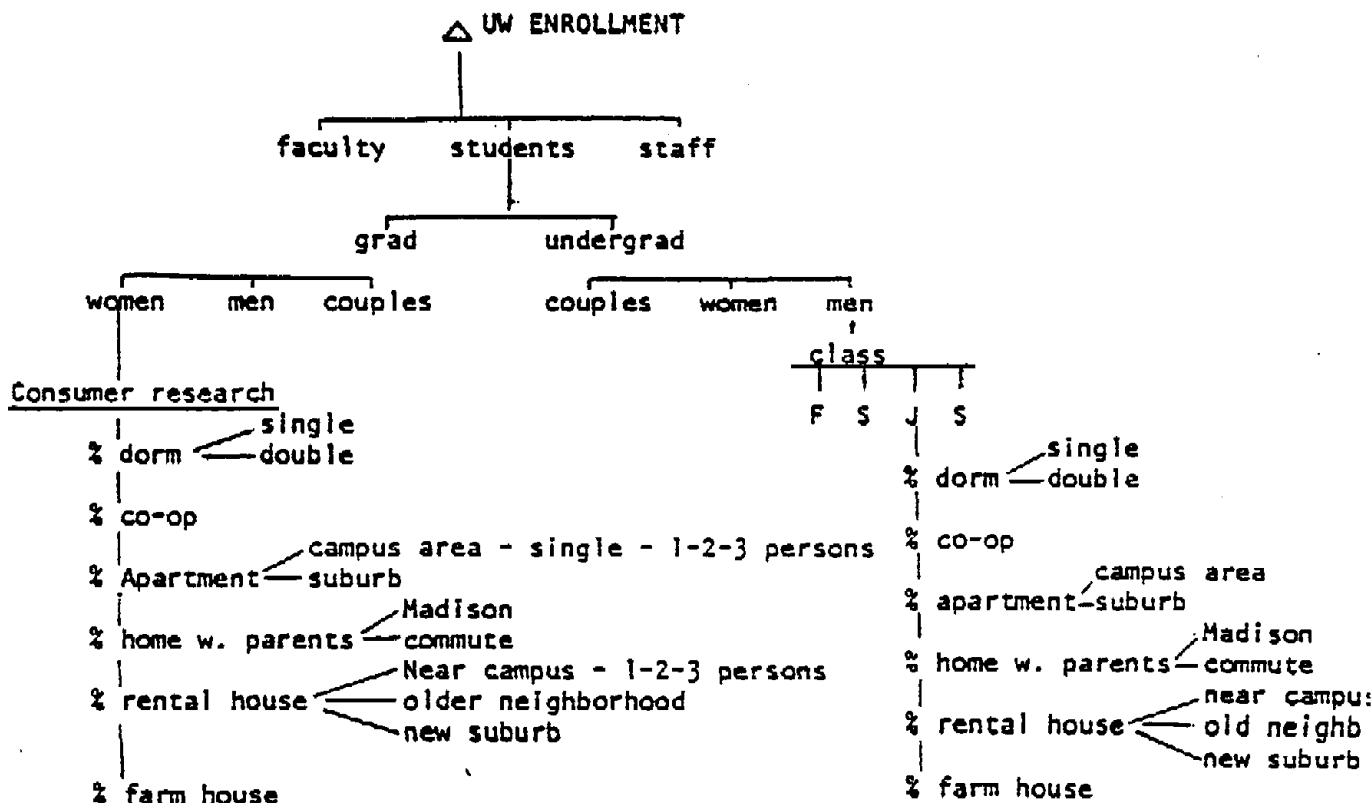


EXHIBIT 2

DEMAND FOR ELDERLY RESIDENTIAL CARE UNITS

| | |
|--|--------------------------|
| Persons in County age 65 and over in 1970 | 21,914 |
| Adjustment 1970-1974 to reflect the number of persons moving into the 65+ bracket and the application of mortality rates by age and sex | <u>245</u> |
| Estimated persons in County age 65 and over in 1974 | 22,159 |
| Less persons 65+ presently in nursing and residential care facilities in County | 1,792 |
| Less persons 65+ presently in government subsidized housing for the elderly | <u>638</u> |
| Persons age 65+ in the conventional housing market in County in 1974 | <u>2,430</u> 19,729 |
| Estimated number of persons financially qualified for and seriously interested in moving into the proposed residential care development | 4,270 |
| Household equivalent (+ 1.519 persons per household) | 2,811 |
| Less estimated number who will not convert serious interest into any form of action (50%) | 1,406 |
| Less the percentage who, while seriously interested, said (before they heard the hypothesis) that their next home would probably be outside County (13.3% from survey questionnaire) | 187 |
| Less those disqualified because their current health status necessitates care beyond the scope of services to be provided in the residential care units (5.4% (from survey) | <u>76</u> |
| Elderly households in County qualified for and seriously interested in moving into the proposed development | <u>263</u> 1,142 |
| Plus an allowance for those elderly households coming from outside County to enter the proposed development (10%) | <u>127</u> |
| Elderly households qualified for and seriously interested in moving into the proposed development | 1,269 |
| Share of market opportunity area who stated in survey that for their next dwelling unit their first preference would be an apartment, in a highrise, midrise, or garden building: | |
| Highrise or midrise | 28.0% |
| Garden | 49.1 |
| | <u>77.1%</u> |
| Less estimated numbers of households who might move into competitive developments available supply of units | <u>978</u> <u>270</u> |
| Households that can be considered candidates for the proposed development | 708 |
| That share of households who said they would be willing to move: | |
| Within 1 year from now | 15.6% - 110 households |
| Within 2 years | 31.2% - 220 " |
| Within 5 years | 53.4% - 378 " |
| | <u>708</u> |
| A project of 100 units requires a capture rate of: | |
| 91% for a 1 - year absorption rate | |
| 90% for a 2 year | " |
| 14% for a 5 year | " |

Lecture #10 — Users as Cash Cycle Enterprises

- I. The choice of location and building type for any particular user has profound and subtle influences on the internal cash flows of the user. Implicit in location or situs factors are a series of opportunities for revenue, intangible satisfactions, as well as shifts in cost and benefits among the various parties. Keep in mind in each case who benefits and who pays since the consequences are not all reflected in the bank account or the asset position of each user.
 - A. Consider a small manufacturer who can choose between his current Site A in a northern city where he has operated for 25 years and Site B in a southern town, closer to raw materials but more distant from his market. The southern town will subsidize the cost of land and building to attract the firm as an addition to their economic base.
 1. Refer to Table 1
 2. Note that most of the workers are left behind in the city of Site A which must pay unemployment benefits, perhaps lose real estate tax income and eventually suffer the losses of a declining economic base.
 3. On the other hand capital must be efficient and the company remain competitive
 - B. Consider the constraints on a supermarket in terms of the variables which will affect its ability to pay rent, build a quality building, and find a site of both adequate size and accessibility.
 1. Refer to Table 2
 2. Consider the mayor's proposal for a 40,000 sq. ft. supermarket on Block 53 and compare that to the average grocery budget of residents of the neighborhood. Valuable land and expensive construction means higher grocery prices or higher volume. Higher volume means smaller neighborhood stores lose the minimum sales necessary to survive which makes other neighborhoods less desirable and rents falter. Who pays and who benefits?
 - C. Consider the cash cycle of a family buying a house. Today it takes family income of \$20-22,000 of income a year to buy a small house, even if they devote 35% of family income for shelter costs.
 1. Consider the example in Table 3
 2. If interest rates fell or repayment terms were extended they could buy more house or use less income
 3. If they don't have the downpayment, they must borrow more and have higher income for debt service.
 4. There are many tradeoffs to be made in terms of residential density, neighborhood status and amenities, amount of lot area, and quality of design.
- II. Public real estate decisions have the same impact. Consider the MATC fight. A Truax site was cheapest for MATC but a high cost risk for the federal government FAA, expensive for the city, and expensive for a student to drive longer distances or rent more expensive apartments in the suburbs. The city would lose taxable values down town and share new private construction with the Town of Burke. A more expensive site costs MATC and residents in 7 counties but lowers cost of transportation for students and stimulates development for Madison.

TABLE 1
Industrial Site Alternatives

| | <u>Site A</u> <u>Northern City</u> | <u>Site B</u> <u>Southern Town</u> | |
|--|--|---------------------------------------|-----------|
| Unit sales | 11,000 | 10,000 | |
| Price per unit | \$110 | \$110 | |
| Dollar sales | \$1,210,000 | 1,100,000 | |
| Freight costs (materials) | \$11,000 | \$5,000 | |
| Raw materials | \$110,000 | \$100,000 | |
| Productive labor hours per unit | 10 | 10 | |
| Productive hours as % of clock time | .8 | .95 | |
| Total hours on wage bill | 12.5 | 10.5 | |
| Direct labor costs | \$4 | \$4 | |
| Indirect labor cost | \$1 | \$.50 | |
| Total labor cost per unit | 62.50 | 47.25 | |
| Total labor cost | \$687,000 | \$472,500 | |
| Real estate taxes | 60,000 | 20,000 | |
| Heat, light and power | 75,000 | 60,000 | |
| Administrative salaries | 90,000 | 150,000 | |
| Shipping and sales expenses | <u>55,000</u> | <u>110,000</u> | |
| | \$1,088,000 | \$ 917,500 | |
| Net profit before tax | 122,000 | 182,500 | |
| Investment in land | 50,000 | 20,000 | |
| Investment in buildings and machinery | 400,000 | 150,000 | |
| Cost of relocation | <u>0</u> | <u>100,000</u> | |
| Net capital employed | 450,000 | 370,000 | |
| Rate of return on capital | .27 | .49 | |
| Number of years for payback of relocation cost | $\frac{100,000}{80,000 - 50,000 + 60,000}$ | | = 1.1 yrs |

TABLE 2

Retail Store Cash Cycle - Store Rent

| | |
|----------------------|---|
| 5,000 | Families |
| .20 | Market penetration |
| <u>1,000</u> | Families visit store |
| x \$20,000 | Average family income |
| x .12 | % family income spent in supermarkets |
| <u>24,000,000</u> | Total potential supermarket sales |
| .5 | 1-5 leakage of food purchases to other sources |
| <u>12,000,000</u> | Potential sales |
| ÷ \$300 | Sales per sq. ft. of sales floor area/year |
| <u><u>40,000</u></u> | Sq. ft. optimum building size |
| 12,000,000 | |
| .05 | % of sales allocated to rent expense |
| <u>96,000</u> | Net rentable per annum or \$2.20/sq. ft. net |
| | 8 parking stalls/1,000 sq. ft. GLA |
| | 80 stalls x 300 sq. ft. = 24,000 sq. ft. |
| | Gross building coverage = <u>44,000</u> |
| | Minimum site area <u>68,000</u> sq. ft. or 1.56 acres |
| | 2.20 ÷ .10 cap rate = construction budget of \$22/sq. ft. GLA |
| | or <u>40,000</u> x 22 = .9 x 22 |
| | <u>44,000</u> |
| | or 19.80/gross sq. ft. of building |

TABLE 3

Household Cash Cycle - Home Purchase

| | |
|-----------------|--|
| \$20,000 | Family Income |
| .35 | % family income for shelter |
| <u>\$ 7,000</u> | |
| .30 | % of housing cost for utilities, maintenance, etc. |
| <u>\$ 2,100</u> | |
| \$ 4,900 | Available for debt service, real estate taxes and insurance |
| .11 | = Annual mortgage constant for 9.75% interest loan |
| .018 | = Annual real estate tax at 2% of assessed value or 90% of market |
| <u>.002</u> | = Insurance for fire and liability |
| .130 | = Cash outlays capitalized per annum |
| <u>.13</u> | |
| <u>12</u> | = .01083. |
| \$ 4900 | = \$45,370 ÷ .9, mortgage value |
| <u>.01083</u> | |
| | = \$50,000 house with \$5,000 down payment. |
| | Tradeoff between neighborhood, lot size, building size and quality |

Inflation chart

| Build a home today: | | In one year that same house will cost: | | | | |
|---------------------|---|--|-------------------------------|--|---|---|
| Price \$ | Monthly payment (principal & interest) \$ | Price one year later \$ | Additional down payment \$ | Additional monthly payment (principal & interest) \$ | Additional yearly payment (principal & interest) \$ | Salary increase required to offset payment increase \$ |
| 30,000 | 211 | 33,000 | 600 | 21 | 253 | 1,011 |
| 35,000 | 246 | 38,500 | 700 | 25 | 295 | 1,180 |
| 40,000 | 281 | 44,000 | 800 | 28 | 337 | 1,349 |
| 45,000 | 316 | 49,500 | 900 | 32 | 379 | 1,517 |
| 50,000 | 351 | 55,000 | 1,000 | 35 | 421 | 1,686 |
| 55,000 | 386 | 60,500 | 1,100 | 39 | 464 | 1,854 |
| 60,000 | 421 | 66,000 | 1,200 | 42 | 506 | 2,023 |
| 65,000 | 457 | 71,500 | 1,300 | 46 | 548 | 2,192 |
| 70,000 | 492 | 77,000 | 1,400 | 49 | 590 | 2,360 |
| 75,000 | 527 | 82,500 | 1,500 | 53 | 630 | 2,528 |
| 80,000 | 562 | 88,000 | 1,600 | 56 | 670 | 2,692 |
| 85,000 | 597 | 93,500 | 1,700 | 60 | 713 | 2,860 |
| 90,000 | 632 | 99,000 | 1,800 | 63 | 756 | 3,030 |
| 95,000 | 667 | 104,500 | 1,900 | 67 | 798 | 3,196 |
| 100,000 | 702 | 110,000 | 2,000 | 70 | 840 | 3,360 |

Numbers rounded to nearest dollar; monthly payment calculations assume 20% down, 10% interest, 30-year term; cost of new construction assumed to increase 10% annually based on recent trends; salary increase assumes principal and 25% of gross income; present homeowners will have increased equity to offset some inflation in new house prices. Chart courtesy of John Pollis, Wick Building Systems, Inc. Additional source: NAHB Economics and Statistics Division.

Monthly Cost of different type and size dwelling units

MONTHLY COST
CALCULATED AT
1 PERCENT
OF THE
TOTAL UNIT COST
PER

SIZE (area in sq ft)

200 39 24

1200 sq ft
(3 bedroom)

1600 sq ft
(3 bedroom)

2000 sqft
(- bedroom)

2400 sq ft
(5 bedrooms)

QUALITY (dollars per sq ft)

1. $\text{C}_2\text{H}_5\text{Br}$ (b.p. 38.4°C)
 2. $\text{C}_2\text{H}_5\text{I}$ (b.p. 72.3°C)
 3. $\text{C}_2\text{H}_5\text{Cl}$ (b.p. 12.3°C)
 4. $\text{C}_2\text{H}_5\text{F}$ (b.p. -37.7°C)

1911-1912

၂၄၂

(87-1044)

Detrac:efl (4)

LOCATION COST (thousands of dollars per acre)

| | | | | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 222 | 223 | 346 | 370 | 394 | 322 | 352 | 374 | 430 | 466 | 346 | 374 | 442 | 470 | 423 | 370 | 430 | 470 | 550 | 610 | 374 | 446 | 522 | 610 | 622 |
| 242 | 272 | 296 | 320 | 344 | 272 | 302 | 344 | 380 | 416 | 296 | 344 | 392 | 440 | 388 | 350 | 350 | 440 | 500 | 560 | 344 | 416 | 488 | 560 | 622 |
| 198 | 222 | 246 | 270 | 294 | 222 | 252 | 274 | 300 | 336 | 246 | 294 | 342 | 390 | 332 | 270 | 330 | 390 | 450 | 510 | 294 | 346 | 422 | 510 | 572 |
| 142 | 172 | 196 | 220 | 244 | 172 | 202 | 244 | 280 | 316 | 196 | 244 | 292 | 340 | 288 | 220 | 220 | 340 | 400 | 460 | 244 | 316 | 388 | 460 | 522 |
| 98 | 122 | 146 | 170 | 194 | 122 | 152 | 194 | 230 | 266 | 146 | 194 | 242 | 290 | 232 | 170 | 230 | 290 | 350 | 410 | 194 | 246 | 322 | 410 | 472 |
| 173 | 187 | 221 | 245 | 269 | 197 | 233 | 269 | 305 | 341 | 221 | 269 | 317 | 365 | 413 | 245 | 305 | 365 | 425 | 485 | 269 | 341 | 413 | 485 | 547 |
| 148 | 172 | 196 | 220 | 244 | 172 | 202 | 244 | 280 | 316 | 196 | 244 | 292 | 340 | 288 | 220 | 220 | 340 | 400 | 460 | 244 | 316 | 388 | 460 | 522 |
| 123 | 147 | 171 | 195 | 219 | 147 | 183 | 219 | 255 | 291 | 171 | 219 | 267 | 315 | 263 | 195 | 255 | 315 | 375 | 435 | 219 | 291 | 363 | 435 | 497 |
| 98 | 122 | 146 | 170 | 194 | 122 | 158 | 194 | 230 | 266 | 146 | 194 | 242 | 290 | 232 | 170 | 230 | 290 | 350 | 410 | 194 | 246 | 322 | 410 | 472 |
| 73 | 97 | 121 | 145 | 169 | 97 | 133 | 169 | 205 | 241 | 121 | 169 | 217 | 265 | 213 | 145 | 205 | 265 | 325 | 385 | 169 | 241 | 313 | 385 | 447 |
| 123 | 155 | 179 | 203 | 227 | 155 | 191 | 227 | 263 | 299 | 179 | 227 | 275 | 323 | 271 | 203 | 263 | 323 | 383 | 443 | 227 | 299 | 371 | 443 | 505 |
| 115 | 139 | 163 | 187 | 211 | 139 | 175 | 211 | 247 | 283 | 163 | 211 | 259 | 307 | 255 | 187 | 247 | 307 | 367 | 427 | 211 | 283 | 355 | 427 | 489 |
| 98 | 122 | 146 | 170 | 194 | 122 | 158 | 194 | 230 | 266 | 146 | 194 | 242 | 290 | 232 | 170 | 230 | 290 | 350 | 410 | 194 | 246 | 322 | 410 | 472 |
| 81 | 105 | 129 | 153 | 177 | 105 | 141 | 177 | 213 | 249 | 129 | 177 | 225 | 273 | 221 | 153 | 213 | 273 | 333 | 393 | 177 | 249 | 321 | 393 | 455 |
| 65 | 89 | 113 | 137 | 161 | 89 | 125 | 161 | 197 | 233 | 113 | 161 | 209 | 257 | 205 | 137 | 197 | 257 | 317 | 377 | 161 | 233 | 305 | 377 | 439 |
| 111 | 135 | 159 | 183 | 207 | 135 | 171 | 207 | 243 | 279 | 159 | 207 | 255 | 303 | 251 | 183 | 243 | 303 | 363 | 423 | 207 | 279 | 351 | 423 | 485 |
| 98 | 122 | 146 | 170 | 194 | 122 | 158 | 194 | 230 | 266 | 146 | 194 | 242 | 290 | 232 | 170 | 230 | 290 | 350 | 410 | 194 | 246 | 322 | 410 | 472 |
| 56 | 110 | 134 | 158 | 182 | 110 | 146 | 182 | 218 | 254 | 134 | 182 | 230 | 278 | 226 | 158 | 218 | 278 | 338 | 398 | 182 | 254 | 326 | 398 | 460 |
| 73 | 97 | 121 | 145 | 169 | 97 | 133 | 169 | 205 | 241 | 121 | 169 | 217 | 265 | 213 | 145 | 205 | 265 | 325 | 385 | 169 | 241 | 313 | 385 | 447 |
| 61 | 85 | 109 | 133 | 157 | 85 | 121 | 157 | 193 | 229 | 109 | 157 | 205 | 253 | 201 | 133 | 193 | 253 | 313 | 373 | 157 | 229 | 301 | 373 | 435 |
| 98 | 122 | 146 | 170 | 194 | 122 | 158 | 194 | 230 | 266 | 146 | 194 | 242 | 290 | 232 | 170 | 230 | 290 | 350 | 410 | 194 | 246 | 322 | 410 | 472 |
| 88 | 112 | 136 | 160 | 184 | 112 | 148 | 184 | 220 | 256 | 136 | 184 | 232 | 280 | 228 | 160 | 220 | 280 | 340 | 400 | 184 | 256 | 328 | 400 | 462 |
| 72 | 102 | 126 | 150 | 174 | 102 | 138 | 174 | 210 | 246 | 126 | 174 | 222 | 270 | 218 | 150 | 210 | 270 | 330 | 390 | 174 | 246 | 318 | 390 | 452 |
| 63 | 92 | 116 | 140 | 164 | 92 | 128 | 164 | 200 | 236 | 116 | 164 | 212 | 260 | 208 | 140 | 200 | 260 | 320 | 380 | 164 | 236 | 308 | 380 | 442 |
| 53 | 82 | 106 | 130 | 154 | 82 | 118 | 154 | 190 | 226 | 106 | 154 | 202 | 250 | 248 | 130 | 190 | 250 | 310 | 370 | 154 | 226 | 298 | 370 | 432 |

Figure 2
Industrial Site Alternatives

| | Site A Northern City | Site B Southern Town |
|---|------------------------------------|-------------------------|
| Revenues: | | |
| Unit Sales | 11,000 | 10,000 |
| x Price/Unit | \$ 110 | \$ 110 |
| = Dollar Sales | \$1,210,000 | \$1,100,000 |
| - Expenses: | | |
| Raw Materials | \$ 110,000 | \$ 100,000 |
| Transportation: Raw Materials | 11,000 | 5,000 |
| Finished Goods | 65,000 | 110,000 |
| Labor: Productive Labor Hours/Unit | 10.0 | 10.0 |
| + Productive Hours as Per cent of Clock Time | 0.8 | 0.95 |
| = Total Hours on Wage Bill | 12.5 | 10.5 |
| Direct Labor Cost/Unit/Hr | \$ 4.00 | \$ 4.00 |
| + Indirect Labor Cost/Unit/Hr | \$ 1.00 | \$ 0.50 |
| x = Total Labor Cost/Unit/Hour | \$ 5.00 | \$ 4.50 |
| = Total Labor Cost/Unit | \$62.50 | \$47.25 |
| Total Labor Costs | 687,500 | 472,500 |
| Administrative Salaries | 90,000 | 150,000 |
| Real Estate Taxes | 60,000 | 20,000 |
| Utilities: Heat, Light, Power | 75,000 | 60,000 |
| Total Expenses: | 1,088,500 | 917,500 |
| = Net Profit Before Taxes: | \$ 121,500 | \$ 182,500 |
| Capital Costs: | | |
| Land | 50,000 | 20,000 |
| Building and Machinery | 400,000 | 250,000 |
| Cost of Relocation | 0 | 100,000 |
| Net Capital Employed: | \$ 450,000 | \$ 370,000 |
| Rate of Return on Capital: | 0.27 | 0.49 |
| Number of Years for Payback of Relocation Cost: | 450,000-370,000 182,500-121,500 | = 80,000 61,000 |
| | | = 1.3 years |

Figure 3
Retail Store Cash Cycle

i. Determination of Optimum Store Rent:

| | |
|--|--------------|
| Number of families in area | 5,000 |
| x the store's capture rate | .20 |
| = Number of families visiting the store | 1,000 |
| x Average family income in area | \$20,000 |
| x % of family income spent in supermarkets | .12 |
| = Total potential sales for the store | \$24,000,000 |
| x Leakage of food purchases to other sources | .60 |
| = Expected potential sales for the store | \$12,000,000 |
| + Sales/(sq. ft. of sales floor area)/year | \$400 |
| = Sq. ft. optimum building size | 30,000 |

| | |
|---|--------------|
| Expected potential sales for the store | \$12,000,000 |
| x % of sales allocated to rent expenses | .075 |
| = Net rent allowed per year | \$90,000 |
| + Optimum building size | 30,000 |
| = Optimum net rent/sq. ft. | \$3.00 |

ii. Determination of Optimum Building Cost:

| | |
|---|------------------|
| Parking stalls required/300 sq. ft. GLA | 1 |
| 100 stalls x 300 sq. ft. each | 30,000 |
| + Gross building coverage | 34,000 |
| = Minimum site area | 64,000 |
| x Price of land/sq. ft. of \$2.00 (approx. \$88,000/acre) | \$128,000 |
| x 10% interest on land | 12,800 |
| = Annual budget for improvements | 77,200 |
| + Capitalization rate of 11.5% | .115 |
| = Total budget for building and site | 671,300 |
| + 34,000 gross feet | \$19.75/sq. ft.* |

* This budget is too low for 1980 building costs; developer must reduce size of store and cost of site or capture more of potential market of grocery sales.

- C. The monthly payment calculator could be expanded to include duplexes, townhouses, condominiums, low-rise and high-rise apartments, both new and old in a variety of locations from downtown in the big city to a small rural site in the country. Most consumers have a significant number of trade-offs and choices they may make relative to housing price and monthly cost.
- D. Monthly cost data is actual cash outlay and may not reflect the real cost and purchasing power for a variety of reasons:
 - 1. Indirect costs of transportation from site to work and other consumer services.
 - 2. Opportunity cost of equity money invested in home.
 - 3. Value of their own self-help services for maintenance, construction, etc.
 - 4. Appreciation of asset value offsetting debt service cost.
 - 5. Inflationary increases in income at the expense of fixed dollar cost of mortgage, shifting purchasing power from lender to creditor.
 - 6. Modification of both net spendable and net worth position due to income tax subsidies to home ownership.

II. There are a variety of cash flow programs available which attempt to compare costs of ownership vs. renting or to optimize the proper purchase price for a home relative to an individual's income tax. For example:

A. RENTBUY analysis for (name?) 6314 Hammersley Rd.

- 1. Monthly rent? 195
 - 2. Rent growth rate? .02
 - 3. Purchase price? 40000
 - 4. Down payment? 2500
 - 5. Mortgage interest rate? .095
 - 6. Term in years? 25
 - 7. Resale value growth rate? .0175
 - 8. Real estate tax mill rate (\$/1000)? 47.65
 - 9. Equalization rate? .65
 - 10. Income tax rate? .27
 - 11. Savings interest rate? .0525
Additional data optional, do you wish to enter it? Yes
 - 12. Growth of real estate taxes? .015
 - 13. Rental area (sq.ft.)? 1350
 - 14. Purchased area (sq.ft.)? 1350
 - 15. Real estate sales commission rate? .05
 - 18. Special charges? 0
 - 19. Special charge growth? .0
- Enter years for analysis
(E.G. for 1st, 5th, and 10th years, Enter: 1,5,10)
? 1,3,6

MONTHLY ANALYSIS
FOR
6314 HAMMERSLEY RD.
AT THE END OF

| YEAR 1 | YEAR 3 | YEAR 6 | MONTHLY |
|---------|---------|---------|--------------------------------------|
| 33.55 | 40.54 | 53.85 | PRINCIPAL PAYMENT |
| 294.09 | 287.10 | 273.79 | MORTGAGE INTEREST |
| ----- | ----- | ----- | |
| 327.64 | 327.64 | 327.64 | MORTGAGE PAYMENT |
| 103.24 | 110.15 | 121.38 | PLUS:REAL ESTATE TAX |
| -107.28 | -107.26 | -106.70 | LESS:INCOME TAX SAVINGS AT 27.2 |
| ----- | ----- | ----- | |
| 323.60 | 330.53 | 342.32 | AFTER TAX CASH COST |
| -33.55 | -40.54 | -53.85 | LESS:EQUITY ACCUMULATION |
| 10.94 | 10.94 | 10.94 | PLUS:LOST INTEREST ON DOWN PMT |
| ----- | ----- | ----- | |
| 300.99 | 300.93 | 299.41 | EFFECTIVE COST |
| -59.28 | -61.39 | -64.69 | LESS:RESALE VALUE APPRECIATION |
| ----- | ----- | ----- | |
| 241.80 | 239.63 | 234.82 | ECONOMIC COST |
| 195.00 | 202.88 | 215.30 | RENT |
| 1.24 | 1.18 | 1.09 | RATIO:COST/RENT |
| 179.11 | 177.50 | 173.94 | ECON. COST/1000 SQ FT |
| 144.44 | 150.28 | 159.48 | RENT/1000 SQ FT |
| 1.24 | 1.18 | 1.09 | RATIO ECON. COST/RENT FOR EQUAL AREA |

CUMULATIVE ANALYSIS
FOR
6314 HAMMERSLEY RD.
THRU

| YEAR 1 | YEAR 3 | YEAR 6 | CUMULATIVE |
|----------|----------|-----------|--------------------------------------|
| 1,291.92 | 3,877.12 | 7,746.95 | TAX SAVINGS |
| 385.64 | 1,275.54 | 2,969.80 | EQUITY ACCUMULATION |
| 705.64 | 2,154.49 | 4,425.03 | RESALE APPRECIATION |
| ----- | ----- | ----- | |
| 2,383.20 | 7,307.15 | 15,141.78 | TOTAL SAVINGS |
| 2,977.86 | 8,783.23 | 17,372.63 | ECONOMIC COST |
| 2,340.00 | 7,161.34 | 14,761.00 | RENT |
| 2,035.28 | 2,107.72 | 2,221.25 | R.E. COMMISSION ON SALE |
| 2,205.82 | 6,506.10 | 12,868.61 | ECON. COST/1000 SQ FT |
| 1,733.33 | 5,304.69 | 10,934.08 | RENT/1000 SQ FT |
| 1.27 | 1.23 | 1.18 | RATIO ECON. COST/RENT FOR EQUAL AREA |

- III. Family cash income and real income do not always parallel their needs for residential space and services. These may be out of phase due to the life cycle, occupational cycle, or economic cycle of family income and inflation.
 - A. Life cycle moves from single person household with few services, to couple, to couple with children, to empty nesters desiring more services, and the elderly single person household requiring a high level of supplementary services.
 - B. The family occupation-income cycle will peak as the couple approaches the empty nester stage and has less need for space, while the elderly find it increasingly necessary to move to new locations at a time when they are less able to cope with the resulting disorder and disorientation.
 - C. Since baby booms move in clusters as does the migration of people to jobs, families with the most needs and the lowest means generally find themselves in a sellers market. Since debt service is fixed and incomes inflate the buyer typically spends a declining amount of real income on housing over the years.
- IV. Housing preferences don't seem to change very much relative to income in terms of idealized objectives. Limits on purchasing power mean that different groups trade off one objective for another in different ways. Market researchers are just beginning to study how cash power of the consumer leads to compromise on his ideal housing objectives in order to keep his choice within his means.
 - A. Locational preference for a specific parish or neighborhood will typically lead to a trade off of new for old housing, smaller lot, and even less than superior education for the kids.
 - B. The family with two working parents will trade away the suburban ideal with one commuting parent for a residential location close to the wife's employment.
 - C. Families will trade off transportation costs for outlying locations to avoid real estate taxes (and broader services) to reduce housing cost at the expense of transportation cost without perceiving the pay-off.
 - D. Families will accept smaller lots and structures if sight lines are controlled to provide trees on the skyline and water views, etc.
 - E. Ultimately each household will include in their housing costs trade offs in location, amount of space, transportation cost, recreation cost, and opportunity cost of employment adjustments to location so that the cash cost of housing is more subtle than the rent or buy program suggests.
 - F. Much federal intervention in the area of residential finance has been designed to reduce cash costs or improve effective demand of selected housing groups without recognizing the tendency of people to have the same idealized preferences as their contemporaries regardless of income.

Lecture #10 (8)
Urban Land Economics 550

Real Estate Finance - The Mortgage

- I. The mortgage is one of the more amazing forms of ~~the~~ financial documents as it succeeds in bringing together a lender and borrower whose motivations in theory are virtually incompatible.
 - A. The investment objectives of ~~a~~ mortgage lender are safety of principal, reliable yield, and planned recapture of the initial investment.
 - B. Investment objectives of a mortgage borrower however, reflect a number of concepts:
 1. The cost of mortgage money is cheaper than the yield on investment real estate.
 2. Real estate is so risky, one wants an early payback of equity to reduce losses.
 3. Leverage permits increase in the span of control while increasing the risk of default.
 - C. Mortgage lender is looking at a preferential position on productivity of the property while the equity investor is seeking control of real estate cash outlays and it is this essential difference in viewpoint which permits each one to think he made a good deal.
 - D. Strategic dimensions of a mortgage loan
 1. The pleasure, pain, and bailout theory of the lender - motivation versus collateral.
 2. The managerial control or discretion [★] ownership versus the oblique pressure of the creditor.
 3. Constant dollars versus inflation dollars
 4. Present hard dollars versus speculative future dollars - real estate can be a media for money market futures because of its long term character.
 5. Yield versus safety through planned recapture
 - E. Mortgage literally means death pledge in that the motivation to repay was the alternative of a death pledge by jousting or simple forfeiture of one's life. Eventually the landed poor who are about to lose their property were provided a postponement by the king's chancellor, a process which evolved into a split concept of legal title and equitable title. Foreclosure originally meant final elimination of your equitable rights rather than transfer of title. Since the Magna Carta borrowers and lenders have been seeking techniques to give one or the other the upper hand in the event of non-payment.
- II. There are two elements to a mortgage loan transaction, a note recognizing the debt and a pledge of collateral real estate which is referenced into the note, thus making it a real estate mortgage.
 - A. The lender can sue for specific performance on the note as a simple contract or for damages for breach of contract without taking the real estate.

- B. The pledge of the real estate is a third of the alternative remedy for the lender. There is no reason to foreclose as long as the property is worth more than the mortgage and is operating above its default point or the borrower has other assets.
 - C. Breach of contract occurs whenever the borrower has failed to perform any of the covenants in the note which are not limited to only payment on time. Covenants may include:
 - 1. Payment of real estate taxes
 - 2. Payment of insurance of adequate amounts
 - 3. Use and maintenance of the property to prevent waste
 - 4. ~~Removal or destruction of improvement~~ ^{prohibition of}
 - D. While the note with the covenants might be operational, the mortgage would have some supplementary clauses to make it easier to administer:
 - 1. Acceleration clause
 - 2. A real estate insurance and escrow clause
 - 3. Restrictions against other encumbrances or liens
 - 4. No assignment or sale subject to the mortgage
 - 5. Esculpatory clauses
- III. The vocabulary of mortgage finance and cash flow.
- A. Loan ratios - ratio of mortgage balance to market value or purchase price.
 - B. The contract rate on a mortgage differs from the actual yield to the investor for 3 reasons:
 - 1. Debt servicing charges of collection agency
 - 2. Actual dollars of outlay by the lender will differ depending on loan fees and discount points - one point = 1/8% yield on a 20 year note.
 - 3. Repayment proceeds may differ in amount due to penalties and rate due to premature repayment.
 - 4. Yield is therefore actual dollars received over net dollars outlay over time and is measured in terms of 100 points = 1%.
 - C. Methods of repayment may differ
 - 1. A straight or flat loan is interest only with principal on maturity
 - 2. A balloon loan is interest and principal reduction which matures before principal has been fully repaid.
 - 3. A constant term loan is one in which payments are calculated to repay loan in a fixed period of time, say 20 years or 25 years.
 - 4. A constant payment loan is one in which payments are held constant relative to original balance and as interest is adjusted the length of the mortgage fluctuates until it is fully repaid.
 - 5. Participation loans are those in which in addition to a contract rate of interest and repayment the lender receives a supplementary payment tied to gross rent, net income, cash throw-off or resale price

6. A closed loan is one which does not permit repayment for a certain period of time.
 7. A prepayment penalty is a charge for when the borrower prepays the loan, like a call position on a bond.
- D. The proper name for a mortgage can be very deceptive depending on the real estate interest pledged because one can assign the right to possession through a lease, the right to operate through a management contract or even the right to the reversion as a real estate interest pledged to secure a note. Thus on one property in which the land is owned by one party and leased to another to build a building to be operated by a third party:
1. First mortgage on the leasehold fee
 2. First mortgage on a leasehold right to use the fee
 3. First right on the operating lease to possess the building built on the leased fee
- IV. You can build whatever you can finance, whether it's a space ship to the moon or a pyramid in Egypt or a football stadium.
- A. Downpayment required determines demand as the higher the downpayment the smaller the number of buyers who qualify, whether it is a house, a farm, or an office building.
1. We have already seen that a smaller downpayment may accelerate your rate of payback and therefore reduce your risk.
 2. Since yield is very sensitive to a small downpayment of ownership cash the desirability as well as the availability of real estate depends on the downpayment.
 3. The downpayment depends on the loan ratio required by the lender or your ability to combine your financing in tiers. Of course tiers may lead to many tears as a consequence.
 4. For example, the Hilton Hotel in Madison has sold the lands to a real estate trust and leased back the site, then it raised additional amounts of money on a leasehold mortgage to which the real estate trust is subordinate. Then they sold the tax shelter to limited partners for the third tier of financing and will lease equipment and furnishings for a fourth tier of financing leaving the general partner without a downpayment - as a matter of fact, with a net profit.
- D. Leverage has many dimensions in real estate - it may have to do with span of control, the cost of money, or soft dollar profits from tax savings.
1. Strictly defined leverage means that the interest cost of money is less than the investment yield on that money. If you can borrow at 8% and invest at 10% you are enjoying a 2% return on somebody else's dollar.
 2. Generally one has to repay some principal as well as some interest so one is looking at the cash throw-off rather than the difference between net income and interest payments. Many investments are made for the spread between the rent constant and the loan constant. For example, an industrial building where the net income is 12% of cost and the loan constant is 9 1/2% means that with no investment of cash the developer takes in \$12,000 on a \$100,000 investment,

pay out 9500 on interest and principal, have \$2500 for income taxes and spending and an 18 or 20 years own the building outright as a reversion interest.

3. Obviously it is much easier to play this game when interest rates are low and lenders are generous than under the current situation.
 4. Tax leverage we will discuss another day.
- C. The push to mortgage out, that is to eliminate equity money, is limited to the loan ratios by the lender and the desire to control risk by holding debt obligations within some cash breakeven or default point. (motel default point versus low income rentals)
- D. There are a variety of other financing strategies which we will look at later, such as:
1. Creating a refinancing surplus
 2. Converting income to capital gain by providing financing in the sales price, etc.

V. The relationship of leverage to value can be stated as follows:

- A. $\text{Net income/OAR} = \text{value}$
 $\text{OAR} = Y - mc + \text{or } -\% \text{ change in resale price } (1/s_1)$
 $M = \text{mortgage ratio and } y = \text{pretax yield to equity}$
 $C = Y - f + P(1/s_1)$
 $F = 12 \times \text{the monthly debt service while } P = \text{the proportion of principal paid off during the projection period and } 1/s_1 = \text{the sinking fund factor at the equity rate for the projection period}$
1. If the mortgage ratio is smaller then OAR is larger and value will be less. If F is smaller then C is larger which reduces the gap between y and mc so that OAR will be smaller and values will be higher.
2. We can adjust the overall rate to anticipate an increase or decline in the resale price or reversion from the property by converting the reversion value to an annuity by the use of the sinking fund equivalent.
- B. To understand the variety of financing devices, it is necessary to look at the revolutionary forms which have been taking place among financial institutions which is the subject of the next lecture.

THE MORTGAGE

The mortgage is one of the more amazing forms of financial documents as it succeeds in bringing together a lender and borrower whose motivations in theory are virtually incompatible.

- A. The objectives of the mortgage lender:
 - 1. Safety of principal.
 - 2. Reliable yield.
 - 3. Planned recapture of initial investment.
- B. The objectives of the mortgage borrower:
 - 1. Cost of money is cheaper than yield on investment "Leverage".
 - 2. Real estate is so risky the investor seeks an early payback of equity to reduce risk of loss.
 - 3. Leverage permits increase in the span of control while increasing the risk of default.
- C. Important ratios for measurement of objectives:
 - 1. Default Ratio--Measures financial risk from lenders view point.
 - 2. Payback Ratio--Measures equity exposure of investor.
- D. Positioning of participants:
 - 1. Lender = looking at a preferential position on project productivity. Lender gets his before owner gets his.
 - 2. Borrower = "Equity Investor" is seeking control of real estate cash outlays.

Note that within the construct of the mortgage each can feel as though a good deal has been made.
- E. Strategic Dimensions of Mortgage Lending (5):
 - 1. The pleasure, pain, and bailout theory.
 - 2. Direct managerial control versus oblique pressure of creditor.
 - 3. Constant dollars versus inflation dollars.
 - 4. Present hard dollars versus speculative future dollars--the quick and dependable nickel versus the slow quarter.
 - 5. Yield versus safety through planned recapture.

II. The Mortgage

Mortgage literally means death pledge in that the original motivation to repay was the alternative of a death pledge by jousting or simple forfeiture of one's life.

Foreclosure originally meant final elimination of your equitable rights rather than transfer of title. Since the Magna Carta borrowers and lenders have been seeking techniques to give one or the other the upper hand in the event of non-payment.

- A. A mortgage is the creation of an interest in property as security for the payment of a debt or the fulfillment of an obligation. Consists of two basic documents:
 - 1. Note or contract of debt.
 - 2. Pledge of real estate as collateral.

- B. Essentials of the mortgage elements of a contract:
 - 1. Competent parties.
 - 2. Offer and acceptance.
 - 3. Consideration.
 - 4. Legality of object.
 - 5. Because it is real property and subject to the Statute of Frauds, it must be in writing and signed.
- C. The parties to the mortgage:
 - 1. The mortgagor--the party pledging the property and borrowing the money.
 - 2. The mortgagee--the party to whom the pledge of property is made and the lender or the money.
- D. General clauses of the mortgage:
 - 1. Covenant to Pay Indebtedness.
 - 2. Covenant to Insurance.
 - 3. Covenant Against Removal.
 - 4. Covenant to Pay Taxes.
 - 5. Covenant to Maintenance to prevent waste.
- E. Supplementary conditions to basic mortgage:
 - 1. Acceleration clause.
 - 2. Real estate^{tax} insurance, and escrow clause.
 - 3. Restrictions against other encumbrances or liens.
 - 4. Esculpatory clause.
- F. Recourse on Default:
 - 1. Sue for specific performance.
 - 2. Sue for damages for breach of contract without taking item.
 - 3. Foreclose and take property.

III. Mortgage Lending is Risk Management

- A. Collateral
 - 1. Title
 - 2. Survey
 - 3. Property insurance
 - 4. Mortgage insurance
- B. Income of borrower
 - 1. Job history
 - 2. Insurance
 - 3. Economic base
- C. Interest
 - 1. ARM vs. FRM
 - 2. Portfolio management
 - 3. Hedging
- D. Purchasing power of capital
 - 1. SAMS
 - 2. Participation mortgages
 - 3. Convertible mortgages

INSTITUTIONAL STRUCTURE OF MORTGAGE LENDING

- I. Introduction: An historical perspective.
 - A. Pre-depression mortgage lending
 - 1. Mortgage features
 - 2. Market features
 - B. Collapse of the mortgage market
 - C. Post-1929 reconstruction of the mortgage market
 - 1. Mortgage features
 - 2. Market features
- II. Sources of Mortgage Funds
 - A. Savings and Loan Associations
 - 1. FSLIC
 - 2. FHLBB
 - B. Commercial Banks
 - C. Mutual Savings Banks
 - D. Life Insurance Companies
 - E. Pension and Endowment Funds
- III. Supply and Demand for Loanable Funds
 - A. Some factors influencing supply
 - 1. Federal Reserve buys/sells bonds
 - 2. Changes in the discount rate
 - 3. Changes in reserve requirements
 - 4. Changes in short-term treasury bill rates

LECTURE OUTLINE

Page 2

III. Supply and Demand for Loanable Funds

B. Some factors influencing supply

1. Anticipated inflation
2. Institutional restraints: i.e. usury laws
3. Employment and income levels

IV. Primary and Secondary Mortgage Markets

A. Primary Market characteristics

1. Local
2. Supply and demand disequilibrium
3. Parties: Primary lender and borrower

B. Secondary market characteristics

1. National
2. Third-party investors
3. Standardized mortgage packages

C. Institutions in the secondary market:

1. Fannie Mae (FNMA)
2. Ginnie Mae (GNMA)
3. Freddie Mac (FHLMC)

New Institutional Sources of Real Estate Capital

- I. National Policy Responses to Capital Shortage
 - A. Modification of the propensity to save - Economic Recovery Act.
 - B. Modification of institutional specialization--monetary Institution's Reform Act of 1980.
 - C. Channeled Capital Distribution
 1. Tax incentives
 2. Yield incentives
 3. Subsidy of special groups
 - a. Housing
 - b. Industrial
 - c. Infra-structure and urban redevelopment
- II. Real estate in general must compete with all other capital needs without subsidy of its cost of funds.
 - A. Since real estate does not provide enough income on capital invested situation will require:
 1. Raising rents or
 2. Shifting cost and risk to tenant just as borrower must pay cost of inflation and economic risk
 3. Less leverage--more equity to protect break-even point or default point.
 4. More indirect profits from operations, estate planning, value creation.
 5. Exploitation of tax benefits for new capital investment
- III. New Institutional Forms of Equity Capital
 - A. Pension funds
 - B. Syndications - Balfour - Consolidated Capital
 - C. Public corporations - Wisconsin Housing Finance Authority
 - D. Co-ops--Creatwood
 - E. Condominiums
 - F. - Public/private consortium (Capital Centre, Jackson Clinic)
- IV. New Sources of Regulation
 - A. Group investment brings in SEC and state securities regulation
 - B. Pension fund brings in ERISA (employee retirement insurance + security act) and creates fiduciary status real estate managers

Annual Compound Interest Table

Effective Rate = 8% Base = 1.08

| Years | 1 Amount of 1 at compound interest $S^n = (1+i)^n$ | 2 Accumulation of 1 per period $S_n = \frac{S^n - 1}{i}$ | 3 Sinking fund factor $1/S_n = \frac{i}{S^n - 1}$ | 4 Present Value reversion of 1 $V^n = \frac{1}{S^n}$ | 5 Present Value Ord. Annuity 1 per period $a_n = \frac{1 - V^n}{i}$ | 6 Instalment to amortize 1 $1/a_n = \frac{i}{1 - V^n}$ |
|-------|--|--|---|---|---|---|
| 1 | 1.080000 | 1.000000 | 1.000000 | .925926 | .925926 | 1.080000 |
| 2 | 1.166400 | 2.080000 | .480769 | .857339 | 1.783265 | .560769 |
| 3 | 1.259712 | 3.246400 | .308034 | .793832 | 2.577097 | .308034 |
| 20 | 4.660957 | 45.761964 | .021852 | .214548 | 9.818147 | .101852 |

Assumptions

| | |
|--|----------|
| Annual net income before depreciation | \$11,000 |
| Economic life | 20 years |
| Land value in 20 years (reversion) | \$20,000 |
| Cash throwoff to equity required by the investor | 10% |
| Mortgage debt at 5% interest amortized in 10 years | \$38,610 |
| Annual payment on interest and principal | 5,000 |
| Present value of equity return | |

First 10 years

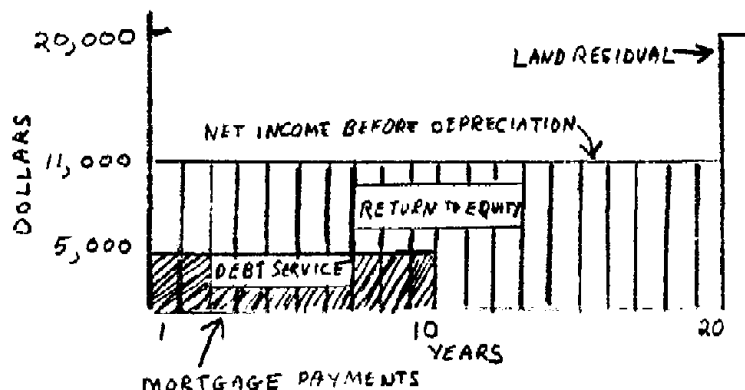
| | |
|---|-----------------|
| Cash throwoff to equity after debt service, \$11,000 less \$5,000 . . \$6,000 | \$2,000 |
| Present value factor (10%) | 6,145 |
| | <u>\$36,870</u> |
| | 12,290 |

Last 10 years

| | |
|--|----------|
| Return to equity | \$11,000 |
| Present value factor (10%) | 6,145 |
| Value 10 years removed | \$67,595 |
| Present value, \$67,595 x factor 0.3855 | \$26,058 |
| Present value of land residual (20 years removed), \$20,000 x factor . \$2,972 | |
| | 0.1486 |

Total present value of equity

| | |
|----------------------------------|------------------|
| Value of equity return | |
| First 10 years | \$36,870 |
| Second 10 years | 26,058 |
| Value of land residual | 2,972 |
| Total equity | \$65,900 |
| Mortgage loan | 38,610 |
| Total investment value | <u>\$104,510</u> |
| | 110,818 |



Lecture Outline #11 Institutional Structure of Mortgage Lending

- I. The High Cost of Real Estate Investment requires heavy debt financing or few people could afford the total capital required since over 2/3 of the nation's wealth consists of building and land in private ownership, and 50% of this wealth is mortgage, it follows that real estate requires access to a very large pool of capital.
 - A. A capital pool requires savings and therefore real estate depends on large part, on intermediary institutional devices which can pool the savings of many small investors into amounts of money large enough and willing to commit to mortgages.
 - B. Insurance companies, banks, and savings and loan associations are generally the intermediaries associated with mortgage finance but more recently the country has been undergoing significant reforms of its institutional structure in order to expand the availability of savings for a mortgage investor and reduce the cost of mortgage money for housing.
 - C. The analysis of intermediary institutions requires a little historical background and then a systematic comparison of institutional differences at 5 basic sub-system levels:
 1. A marketing system to compete for savings
 2. A marketing to compete for loans
 3. The transaction preference system of the policy makers
 4. The liquidity system
 5. The safety system
 - D. In our last lecture we took a look at the mortgage. In this lecture we want to relate to the mortgage to the history of financing in this country and the institutional reforms taking place currently in each of these 5 subsystems.
- II. Historically the mortgage has been the villain in every play about family or farm finance, skullduggery by the railroads or panic in the financial market. Even in the Monopoly it generally marks the beginning of the end for the owner of boardwalk.
 - A. Since the beginning of the country, national government policy encouraged land ownership by a policy of cheap land and cheap short-term credit. However, there was no federal real estate credit policy except for the negative view that mortgage loans should never be made by banks. (Jackson vs Nicholas Biddle in the First Bank of the United States)
 - B. Mortgage finance became a local business, often supported by investment money in the east which wish to speculate in land in the west. Mortgage companies would make the loans and sell them to individuals with money to invest. Some companies would issue ten year bonds in small denominations to finance farm improvements. From time to time local

real estate markets suffered terrible reverses, particularly on farms and urban lots, when speculative land prices would collapse. Even today vacant land is tainted as reliable mortgage collateral.

- C. However, the urbanizing of the United States brought about steadily rising urban land values and stable mortgage results during the first 25 years of this century. A mortgage banking industry grew up in each town.
 1. Loans were made and serviced by the banker and then sold to many small investors including bank trusts, estates, and many personal savers and insurance companies.
 2. To reach the individual saver, there were many forms of participation plans which allowed the individual to share in a mortgage, portfolio, or a bond issue secured by a mortgage for as little as \$10.
- D. However, there was a serious flaw in these developments. Most mortgages were balloon mortgages - that is, the borrower paid interest every six months or year but paid nothing on the principal.
 1. These mortgages were short-term, one year, five year, then ten years at most. The borrower expected to refinance rather than repay.
 2. Mortgages in general anticipated only the real estate as collateral and therefore were often legally limited to 50% of value with two consequences:
 3. There were many second mortgages at very high cost to the borrower which undermined his capacity to repay or his desire to repay should property resale values fall.
 4. Since the size of the loan depended on the appraisal, competition among mortgage bankers led to many appraisal abuses so that loan ratios rose well above 50% of value.
- E. The depression hit a house of cards. Real estate values fell which meant appraisals fell which meant borrowers could not refinance a maturing mortgage or did not wish to because total debt exceeded market value.
 1. As lenders acquired property through foreclosure they became unwilling to refinance any kind of mortgage.
 2. Institutional lenders such as mortgage bankers and savings and loans were unable to meet demands of their investors or to repay short-term bank loans with which they warehoused mortgages before they sold them.
- F. Since mortgage loans were not available, there was no effective demand for the purchase of property. At the same time the number of properties for sale increased rapidly and the result was an orderly market for real estate disappeared.
 1. Liquid investors bought sound properties for pennies on a dollar like old Joseph Kennedy in the Furniture Mart.

2. Since savings and loans were unable to meet withdrawals, pass books were selling with sharp discounts, sometimes 25¢ on a dollar. At the same time the S & L wanted to dispose of properties so it would accept a passbook at par value applied to property valued at 50¢ for every dollar of value only 2 years before. A \$2,000 investment in a \$5,000 pass book could purchase a property worth \$10-12,000 the year before.
 - 3.. Many people had income but were unable to refinance their short-term mortgages when they came due so the properties went into foreclosure even though the loan valances were relatively small.
- III. In a very remarkable period of federal action in response to a crisis, the federal government introduced a multiple program of reform which drastically altered all of the subsystems of mortgage intermediaries.
- A. For immediate assistance to home owners about to lose their home, it created the Homeowners Loan Corporation which introduced high ratio loans (75%) with terms tailored to fit the income of the homeowner. The Reconstruction Finance Corporation was also created to buy loan portfolios from lending institutions which needed cash.
 - B. To protect the saver and permit mortgage lenders to compete with the savings, the government created FDIC and the FSLIC to provide individual savings guarantees and liquidity. More importantly, deposit insurance required a constant review and audit of individual and institutional mortgage lending practices. These agencies still determine the portfolio distribution of members and the lending appraisal techniques which permit loans to be permissible assets.
 - C. For the borrower the government introduced long term loans, amortized by monthly payments which included interest, principal, insurance, and taxes. These loans were expected to eliminate the need for secondary financing or the need to refinance during economic recession. Moreover, the amortized loan reduced the loan balance as property depreciated and provided planned liquidity for the lender.
 - D. To bribe the lender into testing such a radical loan approach, the government created the federal housing administration and the mortgage insurance fund to guarantee the lender that he had nothing to lose by trying government sponsored techniques.
 - E. The FHA took on the responsibility of appraisal and credit analysis and in the hands like Babcock, Ratcliff and Fisher it began to reform appraisal procedure and credit analysis. FHA succeeded in standardizing the mortgage instrument and the lending process but it did so by performing these functions itself and thus usurping the traditional powers of the mortgage lender.
 - F. To provide regional liquidity and a device by which the federal government could inject treasury money into mortgages it created the Federal National Mortgage Association (FNMA). Using funds advanced by the U.S. Treasury or bonds sold in the bond market for Quasi federal bonds, and later selling stock to its customers, Fanny May was able to buy and sell FHA insured mortgages around the country. This enabled the government to support the mortgage market,

to provide mobility of mortgage money and liquidity for individual lenders wishing to liquidate some of their portfolio.

- G. Because insurance companies had relatively few problems during the 30's there was no federal attention to that segment aside from interest rates. Banks were limited in mortgage loans to the amount of their net worth and loan ratios were a conservative 2/3 and maturities were relatively short. Savings and loans were largely confined to single family residences.
 - 1. The savings and loans were giving a small advantage in competing for savings but were restricted in investment outlets to single family loan.
 - 2. To provide the S & L's with more liquidity the government created the Home Loan Bank to make loans available.
 - 3. The Home Loan Bank could also borrow in the bond market and lend to savings and loans.
 - H. The Depression taught the federal government that it could manipulate the total supply of money for mortgages by means of monetary policy, fiscal programs, and modification of the various reservations of FHA, FSLIC, FDIC, FIMA or the annual national budget itself.
 - I. The Depression and World War II which followed also taught the government it could channel real estate demand by its credit policy. It relied on special financing privileges to encourage:
 - 1. Housing for veterans
 - 2. Housing for college students
 - 3. Housing for the elderly
 - 4. Housing for low income groups
 - 5. Housing for those displaced by urban renewal
 - J. In the process of serving the needs of special groups the federal government learned that it could manipulate housing quality by the standards it required of builders and lenders, that it could be responsible for urban sprawl or land conservation, social fragmentation (urban renewal) or social integration, proliferation of the automobile or land use favoring public transportation, inflation of labor costs or labor saving innovative construction methods. In short manipulation of real estate credit was one of its most powerful tools for social change or the implementation of national priorities. Of course now we have the question of what are the national priorities particularly priorities of land use and social change?
- IV. Real Estate Finance 551 is concerned with the details of an individual mortgage transaction, the operating characteristics of each of the intermediary institutions and the flow of capital from the money markets into real estate. Obviously it is not possible to detail all of the technical innovations since 1960 which make real estate the most rapidly evolving area of finance we have both in this country and on the international scene. The following just suggests the institutional innovations which have appeared since about 1960 to drastically change real estate finance.

Lecture #11 Outline
Institutional Structure of Mortgage Lending

- I. High cost of real estate requires heavy debt financing. Real estate capital represents 2/3 of the nation's wealth and almost 50% of this is mortgage.
 - A. A capital pool for loans requires assembly of small savings through intermediary financial institutions.
 - B. Dominant institutions have been insurance companies, banks, and savings & loan associations but in the last decade several new institutional intermediaries have been created.
 - C. Differences between institutional intermediaries can be shown by comparison of five basic subsystems:
 1. A marketing system to compete for savings.
 2. A marketing to compete for loans
 3. The transaction preference system of the policy makers
 4. The liquidity system
 5. The safety system
 - D. This lecture will relate historical development and reform affecting subsystems above.
- II. Mortgage always associated with financial panic and brutality of capitalistic system.
 - A. Absence of federal real estate credit policy until after World War I. Cheap land was incentive for national development.
 - B. Mortgage business very local, provincial, and cyclical and subject to abuse by promoter.
 - C. Mortgage banking industry grew up after World War I to bring capital surpluses into contact with real estate development needs.
 1. Prosperity made mortgages the blue chip investment for the middle class.
 2. Savings pools were created by cooperative action (S & L's)
 - D. Flaws on mortgage instrument and lending procedures contributed to depression.
 1. Short term 1-5 year notes, interest only
 2. 50% loan ratios led to second and third mortgages to reduce down-payment.
 3. Decline in prices made borrower unable to refinance or unwilling to pay.
 4. Amount of loan depended upon appraisal so competition took advantage of distorted appraisal.
 - E. Depression made it impossible to finance which accelerated foreclosures which meant intermediaries were illiquid.
 1. Investors lost confidence in the mortgage form.
 2. Savers lost confidence in intermediary

F. Collapse of orderly market gave liquid investors tremendous buying power.

III. 1930's were a remarkable period of successful federal reforms of the individual mortgage transaction and mortgage lending intermediary.

- A. Immediate temporary relief through HOLC Home Owners Loan Corporation and Reconstruction Finance Corporation.
- B. Protection of the saver through FDIC and FSLIC.
- C. For the borrower - long term, monthly amortized loan including interest, principle, insurance and taxes at high ratios to eliminate need for large downpayments or second mortgages.
- D. Protection for the lender by insuring the loan against default by the Federal Housing Administration.
- E. Federal takeover of appraisal and credit analysis functions.
- F. Regional mobility and liquidity through Federal National Mortgage Association (FNMA). Injection of federal funds into mortgage money supply through Fannie May.
- G. Modification of lenders ability to compete for funds to favor savings & loans as a residential mortgage intermediary.
- H. Depression taught federal government it could manipulate total supply of mortgage money available.
- I. Control of money supply led to special credit for special housing problems.
 - 1. Housing for veterans
 - 2. Housing for college students
 - 3. Housing for the elderly
 - 4. Housing for low income groups
 - 5. Housing for those displaced by urban renewal
- J. While protecting special groups it learned it could manipulate housing quality or relate to other social issues or cause problems in:
 - 1. Urban sprawl or land conservation
 - 2. Social fragmentation or integration
 - 3. Proliferation of the auto or public transportation
 - 4. Inflation of labor costs or labor saving innovation

BUSINESS 550/705
REAL ESTATE RISK MANAGEMENT
LECTURE #11

- I. As you begin to struggle with cash flow forecasting it should be very apparent that as an investor all you buy is a set of financial assumptions about the future - about the interaction of the project with users, the infrastructure, and management. Stocks and bonds are risky, too, in both a general market system and individually, but real estate does not depend primarily on random walk methods of risk management through diversification as do stocks and bonds investments. Real estate management is the control of risk.
 - A. Risk is the variance between assumptions and realization, between pro forma budgets and actual P&L statements.
 - B. Risk management is the control of variance, a reduction of financial upset and insolvency in terms of frequency and severity as the result of surprise or unpredictable obligation.
 - C. A real estate enterprise faces a great variety of risk types, but they can be basically divided as follows:
 1. Static risks - external, sudden, and generally destructive events such as fire, death, earthquake, etc., and which can only cause a loss of resources by surprise or upset a plan.
 2. Dynamic risks - partially controllable, internal occurrences over time which can produce a profit or a loss depending on management finesse and forecasting ability.
 - D. Most static risks can be controlled by insurance while many dynamic risks can be minimized through management. Dynamic risks facing the real estate investor would include:
 1. Non-systematic business risks (those inherent in the management and marketing of the property).
 2. Systematic business risks (those inherent in the level of general economic activity).
 3. Financial risk (adequacy of cash available for debt service on time each period and in the aggregate in the event of foreclosure).
 4. Interest rate risk (the possibility that interest rates will rise relative to contract mortgage rate, transferring value from lender to borrower as a result).
 5. Liquidity risk (the rise in interest rates will depress the resale price of the mortgage so that if the lender needs cash, he must sell mortgage investment at a loss).
 6. Inflation risks (loss of purchasing power of dollars which remain invested in the outstanding balance).
 7. Creditor risks (redefinition of remedies in the event of non-payment by statutory or judicial actions or innovative legal gambits).
 - E. Risk management has two objectives:
 1. First priority - conservation of existing enterprise assets despite surprise events.
 2. Second priority - realization of budgeted expectations of income despite surprise events.

3. It is both a philosophy of inquiry in terms of validating assumptions and a management process of attempting to answer systematically the "What if..." questions.

F. The alternative methods for controlling variance (avoiding loss) which everyone subconsciously uses include:

1. Improving forecasts (reduce exposure to surprise).
2. Eliminating the risk exposure.
3. Reducing the frequency and/or severity of the loss (e.g., fire proof construction, sprinklers, lower LVRs).
4. Combine risk exposure to improve predictability (e.g., increase scale of operations, diversification).
5. Shift risk by two-party contract (e.g., subcontracting, escalator clauses, variable rate mortgages).
6. Shift the risk by insurance contract.
7. Limit liability for losses through form of ownership (e.g., use a corporate shell, limited partnership, exculpatory clause).
8. Hedging (e.g., use options, contingent sales, sale and leaseback, change in conditions clause).

II. A real estate project becomes a complex web of contractual arrangements which adjust and allocate the risk among all the parties of interest more or less in proportion to their vested interests and the benefits. Different parties are making different assumptions about the future and, therefore, approach their risk management plans differently.

A. A land lease tied to the cost of capital for a savings and loan.

B. Consider a mortgage closing:

1. Title
2. Survey
3. Construction contract
4. Mechanic's liens
5. Property and liability insurance
6. Mortgage guaranty insurance

C. Control of dynamic risks with positive, negative, and bailout incentives (pleasure, pain, and bailout principle).

D. The percentage lease - base rent to protect the landlord, overage rent to reduce the tenants' financial risks.

E. Shared appreciation mortgage - protect the borrower against high interest rates and a high default point - protect the lender against devaluation due to continued inflationary pressure on interest rates.

F. Physical design for flexibility of future use; capacity for the 100 year storm.

G. Public regulation is intended to eliminate the worst of land layout, construction technique, or other variance from the public land use plan with sanctions to control small levels of variance.

III. Cash flow forecasting is not important in itself but as a base for developing risk measures, including:

1. Default ratio, payback ratios, debt cover ratios, etc.
2. Sensitivity analysis as to the capacity for errors in the basic assumptions.
3. Identification of revenue and cost elements to be controlled and defined by contract.

4. Development of risk/yield payoff matrices for the decision-maker.

- F. It is important on the approach to a shopping center that the shopper be able to identify the major tenants from the shape of the building and the signing. Parking lot routes must be clear, lights on the lots played down, and changes of grade avoided. Access to a shopping center at two different levels forces the developer to use highly restrictive leases which alternate the mix of goods displayed on each level as well as an access and grading plan which will distribute customers arriving equally on all levels. (The Cannery)
- G. This brings us to a major element in site transportation, specifically vertical transportation by means of ramps, stairs, escalators and elevators.
 - 1. Station loads to reflect occupancy and use
 - 2. Organization of space uses to hold high concentration at ground level such as lecture halls with direct exits to the outside
 - 3. Escalators move people in bulk but very slowly. Elevators move people quickly but in small number and each elevator consumes usable space on each floor that it passes through.
 - 4. Therefore there is a trade-off between an increase in the cost of site, an increase in the cost of structure, and a change in the cost of the vertical transportation. (The horizontal system includes corridors, plazas, foyers, etc.)
 - 5. Sites which are too small or too large create inefficiencies which inversely affect value.
- H. The correct balance between usable space and space required for vertical and horizontal circulation creates plottage value for lands to be acquired to create more efficient sites or for access (the Anchor building in Madison and the Hopkins St. filling station)
- I. Safety attitudes, habits and linkages are also well illustrated by Gateway Center in Chicago and a proposed building for the IC tracks, Illinois Central Railway, for the latter "Indians" rode the IC while "Chiefs" rode automobiles. Both groups would not change their attitude in regard to transportation. Proposed office building had no parking for the men who would make the decision to sign the lease. Indians preferred Randolph St. station site where they could find an empty seat at rush hour. The visible advantages of the subject site and premise of accessibility by proximity were negated by values and behavior patterns of those who would occupy the building.
- J. Psychological barriers to entry despite proximity are illustrated by the closed mall shopping center. The barrier of a glass front door and the mental effort of intruding past that door are removed for the shopper by stage front store fronts which rise into the ceiling eliminating a sense of exclusion; raised ceilings in the mall with skylighting and vertical motives overcome accumulating claustrophobia of the small shop and generate a sense of excitement thereby reducing a sense of frustration which reduces the tendency to buy.

AFTER-TAX DISCOUNTED CASH FLOW ANALYSIS

Project Information

Building: i) Size: 100-unit apartment building
800 net sq. ft. per apt.
.85 building efficiency factor
ii) Cost: construction cost of \$35 per gross sq. ft.
soft (indirect) costs: 18% of constr'n budget

Furnishings: \$300,000 worth

Land: i) Size: zoning code limits density to 12 units per acre
ii) Cost: \$30,000 per acre

Apartment rent: \$400 per month; assume 6% simple annual growth

Vacancy: 5%

Real estate taxes: assume market value will equal the total
project cost initially; equalization rate = .92;
mill rate = \$.024; and also assume that real
estate taxes will grow at 6% simple annual rate

Operating expenses: \$2.20 per gross sq. ft. annually; assume 8%
simple annual growth

Depreciation: i) Building: 175% DB over a 15-year useful life;
15% salvage value when using S-L
ii) Furnishings: S-L over a 5-year useful life;
10% salvage value

Mortgage loan: loan-to-cost ratio = .70; interest rate = 9%;
term = 25 years; monthly payments

Working capital loan: interest rate = 11% (simple interest)

Investor info: requires 15% after-tax equity yield; plans to
hold property 4 years and then sell; tax bracket
is 50%

Market value: assume equal to total cost initially; 6% simple
annual growth rate

Supporting Calculations

Total cost of project:

1) Building cost: 100 units x 800 net sq. ft. / unit ÷ .85
= 68,000 gross sq. ft.
construction cost: 68,000 x \$35 = \$2,380,000
soft costs: 18% x \$2,380,000 = 428,400
Building cost = \$2,808,400

ii) Furnishings cost: 300,000

Continued...

Total cost of project (cont'd):

| | |
|--|----------------|
| i) Building cost: | \$2,808,400 |
| ii) Furnishings cost: | 300,000 |
| iii) Land cost: 100 units ÷ 12 units/acre = $8\frac{1}{3}$ acres 8.33 acres x \$30,000 / acre = | <u>250,000</u> |
| Total project cost = | \$3,358,400 |

Gross income: Year 1 -- 100 apts. x \$400/mth. x 12 mths/yr. = \$480,000;
simple growth at 6% annually

Real estate taxes: Yr. 1 -- \$3,358,400 x .92 x \$.024 = \$74,153;
simple growth at 6% annually

Operating expenses: Yr. 1 -- 68,000 gross sq.ft. x \$2.20 /gross sq.ft.
= \$149,600; simple growth at 8% annually

Depreciation:

| | |
|--|--|
| 1) Building: w/ 175% DB -- | |
| Yr. 1: 1.75 x 1/15 x \$2,808,400 = \$327,647 | } Accumulated depreciation = \$1,098,552 |
| " 2: " x " x 2,480,753 = 289,421 | |
| " 3: " x " x 2,191,332 = 255,655 | |
| " 4: " x " x 1,935,677 = 225,829 | |

Remaining depreciable basis @ end of yr. 4 = \$1,709,848

w/ S-L: Annual dep. = 1/15 x (\$2,808,400 x .85) = \$159,143
Accumulated dep. = 4 yrs. x \$159,143 = \$636,571

ii) Furnishings:

w/ S-L: Annual dep. = 1/5 x (\$300,000 x .90) = \$54,000
Accumulated dep. = 4 yrs. x \$54,000 = \$216,000
Remaining dep. basis = \$84,000

Adjusted (taxable) basis @ end of yr. 4
= Σ Remaining dep. basis + Land cost
= \$1,709,848 + \$84,000 + \$250,000 = \$2,043,848

Loan Info:

Original loan amount: .70 x \$3,358,400 = \$2,350,880
Monthly debt service: \$2,350,880 (A/P, .75%, 300mths) = \$19,728.50
Annual debt service: 12 mths. x \$19,728.50 = \$236,742

| | Yr. 1 | Yr. 2 | Yr. 3 | Yr. 4 |
|----------------|------------------|------------------|------------------|------------------|
| Beg. Yr. Bal. | \$2,350,880 | \$2,324,653 | \$2,295,965 | \$2,264,587 |
| - End Yr. Bal. | 2,324,653 | 2,295,965 | 2,264,587 | 2,230,265 |
| Prin. Rep'd | <u>\$ 26,227</u> | <u>\$ 28,688</u> | <u>\$ 31,378</u> | <u>\$ 34,322</u> |
| A.D.S. | \$236,742 | \$237,742 | \$236,742 | \$236,742 |
| - Prin. Rep'd | 26,227 | 28,688 | 31,378 | 34,322 |
| Int. Paid | <u>\$210,515</u> | <u>\$208,054</u> | <u>\$205,364</u> | <u>\$202,420</u> |

Market value:

Yr. 4 (end of) = \$3,358,400 x [1 + 4(.06)] = \$4,164,416

Business 550/705
THE REAL ESTATE PROCESS
Problem Set #5

Name SAMPLE

Disc. Sec. _____

| | Yr. 1 | Yr. 2 | Yr. 3 | Yr. 4 |
|------------------------------------|--------------------|--------------------|--------------------|--------------------|
| GROSS INCOME | <u>\$480,000</u> | <u>\$508,800</u> | <u>\$537,600</u> | <u>\$566,400</u> |
| LESS VACANCY ALLOWANCE | <u>24,000</u> | <u>25,440</u> | <u>26,880</u> | <u>28,320</u> |
| EFFECTIVE GROSS INCOME | <u>\$456,000</u> | <u>\$483,360</u> | <u>\$510,720</u> | <u>\$538,080</u> |
| LESS REAL ESTATE TAXES | <u>74,153</u> | <u>78,602</u> | <u>83,051</u> | <u>87,500</u> |
| LESS EXPENSES | <u>149,600</u> | <u>161,568</u> | <u>173,536</u> | <u>185,504</u> |
| NET OPERATING INCOME | <u>\$232,247</u> | <u>\$243,190</u> | <u>\$254,133</u> | <u>\$265,076</u> |
| LESS DEPRECIATION | <u>381,647</u> | <u>343,421</u> | <u>309,655</u> | <u>279,829</u> |
| LESS INTEREST | <u>210,515</u> | <u>208,548</u> | <u>205,364</u> | <u>202,420</u> |
| TAXABLE INCOME | <u>(\$359,915)</u> | <u>(\$308,779)</u> | <u>(\$260,886)</u> | <u>(\$217,173)</u> |
| PLUS DEPRECIATION | <u>381,647</u> | <u>343,421</u> | <u>309,655</u> | <u>279,829</u> |
| LESS PRINCIPAL PAYMENTS | <u>26,227</u> | <u>28,688</u> | <u>31,378</u> | <u>34,322</u> |
| CASH THROW-OFF | <u>(\$4,495)</u> | <u>\$5,954</u> | <u>\$17,391</u> | <u>\$28,334</u> |
| LESS TAXES | <u>0</u> | <u>0</u> | <u>0</u> | <u>0</u> |
| CASH FROM OPERATIONS | <u>(\$4,495)</u> | <u>\$5,954</u> | <u>\$17,391</u> | <u>\$28,334</u> |
| WORKING CAPITAL LOAN | <u>4,495</u> | <u>(\$4,495)</u> | <u>0</u> | <u>0</u> |
| DISTRIBUTABLE CASH AFTER TAXES | <u>\$0</u> | <u>\$1,459</u> | <u>\$17,391</u> | <u>\$28,334</u> |
| TAX SAVINGS ON OTHER INCOME | <u>179,958</u> | <u>154,390</u> | <u>130,443</u> | <u>108,587</u> |
| SPENDABLE CASH AFTER TAXES | <u>\$179,958</u> | <u>\$155,849</u> | <u>\$147,834</u> | <u>\$136,921</u> |
| PRESENT VALUE FACTOR AT <u>15%</u> | <u>.86957</u> | <u>.75614</u> | <u>.65752</u> | <u>.57175</u> |
| P. V. OF SCAT | <u>\$156,486</u> | <u>\$117,844</u> | <u>\$97,204</u> | <u>\$78,285</u> |
| WORKING CAPITAL LOAN (CUM BAL) | <u>\$4,495</u> | <u>\$0</u> | <u>\$0</u> | <u>\$0</u> |

x.11
 add it 1 yr. 2 interest = \$494

TAXES DUE AT TIME OF SALE

| | |
|-------------------------------|--------------------|
| HOLDING PERIOD | <u>4 years</u> |
| TAXABLE BASIS | <u>\$2,043,848</u> |
| SELLING PRICE | <u>4,164,416</u> |
| DEPRECIATION TAKEN ON IMPROV. | <u>1,314,552</u> |
| DEPRECIATION IF STRAIGHT-LINE | <u>852,571</u> |
| TAXPAYER'S INCOME TAX RATE | <u>50%</u> |

DETERMINATION OF TAXES DUE

TOTAL GAIN SUBJECT TO TAX

\$2,120,568

CAPITAL GAIN:

INCREASE IN PROPERTY VALUE

\$806,016

DEPRECIATION IF STRAIGHT-LINE

852,571

TOTAL GAIN TAXED AT CAPITAL GAIN RATE

\$1,658,587

ORDINARY INCOME (RECAPTURED):

EXCESS DEPRECIATION

\$461,981

TAXES DUE COMPUTATION:

CAPITAL GAIN TAX = \$1,658,587 x .20 = \$331,717

ORDINARY INCOME TAX = 461,981 x .50 = \$230,991

TOTAL INVESTMENT VALUE

TOTAL P. V. OF SCAT

\$449,819

TOTAL SALES PRICE

\$4,164,416

LESS TAXES ON SALE OF PROPERTY:

CAPITAL GAIN TAX

\$331,717

ORDINARY INCOME TAX

230,991

TOTAL TAXES DUE

562,708

LESS MORTGAGE BALANCE

2,230,265

CASH RECEIVED AT TIME OF SALE

\$1,371,443

PRESENT VALUE FACTOR AT 15%

.57175

PRESENT VALUE OF REVERSION

784,123

TOTAL PRESENT VALUE OF EQUITY INVESTMENT

\$1,233,942

ORIGINAL MORTGAGE BALANCE

2,350,880

TOTAL PROJECT VALUE

\$3,584,822

Business 550/705 Lecture Outline
Real Estate Investment and Federal Income Taxes

- I. For the past 25 years the American investing public has been fascinated with tax shelters by investing in exotics such as cattle, movie making, oil exploration, and real estate. Since 1981 Congress has responded to pressure by the IRS to eliminate tax shelters and to reestablish a neutral, equitable tax.
 - A. Congressional tax law strategy always involves shifting the weight placed on the following objectives:
 1. Collecting adequate revenues to finance government operations
 2. Encouraging investment in productive assets as opposed to current consumption to close the savings-investment gap and to stimulate employment while generating a larger taxable income in the future.
 3. To channel investment and consumption toward national priorities
 4. To redistribute wealth and break up extra large family fortunes
 - B. To channel investment and encourage high priority objectives for economic investment traditional tax laws gave the taxpayer certain ploys to postpone or reduce federal income taxes. These ploys were a combination of:
 1. Reducing that portion of net receipts which is recognized as taxable income.
 2. Reducing the marginal tax rate applicable to the taxable receipts.
 3. Postponing the payment of taxes due to recognize the opportunity costs of present value money.
 4. Avoiding one or more federal taxes through a change of involuntary shift in status of property ownership or condition.
 - C. Real estate investment had the same tax treatment as any other investment except real estate provided a higher depreciable asset ratio to total capital, a greater opportunity to leverage finances, more flexibility in postponing income, and more visibility.
 1. A building is a single machine for making money as compared to other businesses using many small machines which can be bought and sold individually at a smaller scale of entry.
 2. The impact of rising prices on business equipment is difficult to trace to product prices while the impact of construction costs, real estate taxes, etc. can have an almost immediate impact on rent which in turn is a major factor in household budgets.
 3. The popular literature of financial planning touted the romance of real estate to support real estate brokers, new construction, and all manner of financial management services, not to mention investment banking.
 - D. Ironically the single biggest loss of tax dollars to federal revenues can be attributed to tax benefits to the single family home, according to the Brookings Institute, because of special privileges.
 1. Deductibility of interest and real estate taxes for resident owners
 2. No capital gain tax on sale if you buy a home of equal or greater value in two years.
 3. A once in a lifetime exemption of \$125,000 in capital gains if the owner resident sells after the age of 55.

E. Objectives of federal income tax review in this course, plus some reference to the estate tax, is only interested in illustrating tax incentives and disincentives as a factor in city building and real estate ownership. Hopefully you will recognize:

1. The sensitivity of investment to tax matters
2. The use of tax law as a federal device for providing land use priorities
3. Some of the tax strategy in general with a few examples
4. The income tax law as a subsidy to make real estate competitive for capital

II. To encourage specific types of real estate development, capital investment in real estate, or national priorities such as landmark preservation, renovation of old buildings, energy conservation, or new housing or low income family, Congress continues to create features and rules for five basic ploys.

A. Reducing taxable income, particularly income subject to a progressive tax rate, to postpone income tax:

1. Accelerated depreciation understates taxable income in the early years but overstates taxable income in later years. Straight line depreciation is 100% depreciable asset value minus salvage value divided by useful life. Tax law might permit multiples of straight line or fictitious lives, such as 15 years.
2. Investment tax credits which apply directly to taxes due; for example, buildings more than 50 years old and classified as landmarks enable the developer to take an investment tax credit for 20% of all remodeling expense with long carryback to refund taxes paid in previous years, non-landmark buildings 10%.
3. Taxpayer option to expense certain capital expenditures such as development costs of a vineyard, irrigated farming, or holding costs on vacant land awaiting development. Tax reform has severely reduced those but still favors such election for subsidized housing.
4. In the old days depreciation could be applied against earned income so professional people bought syndication shares. Under the new law all income is classified into three categories:
 1. Income from passive activities
 2. Income from portfolio securities
 3. Income from earnings

Rental real estate is passive income and is available for shelter of only passive revenue; there can be unlimited carryover but no protection from earned income.

B. Converting taxable income to capital gain to reduce the applicable tax rate

1. Purchasing a home with a very large mortgage loan on which interest payments are deductible converts net income to a future capital gain if the home appreciates in value each year more than the after tax interest cost. This ploy is more feasible when interest rates are 7% rather than 17%.

2. Accelerated depreciation before recapture laws permitted investors to understate taxable income and then sell the property at an overstated capital gain, thus converting income to capital gain and its lower marginal rate. (Capital gain = net sale price - book value).
 3. Purchase at a low price and then increasing income through good management and marketing and then selling the property for the present value of the future income converts the rewards of your services and expertise from taxable income to capital gain.
- C. The new tax law places a full tax rate on capital gains so that the investor can no longer create new income, sell it for a capital gain and pay only half the taxes. Capital gains taxes are equal to income taxes so this will discourage reinvesting and improving property.
- D. It is possible to postpone the payment of capital gains taxes.
1. The owner-resident of a single family home can sell his property and postpone a capital gains tax by reinvesting in another home of equal or greater value within 24 months.
 2. Involuntary conversion of a property to cash as a result of a natural disaster, casualty loss, or eminent domain permits investor to rebuild or relocate within a specified time without paying a capital gains tax.
 3. The trade or exchange of like kinds of investment property is not taxed. Instead each party takes his old basis with him which is then adjusted for the net change in his debt position or the amount of "boot" he received. Boot is non-like property such as cash.
- E. Complete avoidance of all or part of the capital gains tax would result when:
1. The owner of a single family home is entitled to a one time exemption of \$125,000 profit or capital gain if he sells his home after age 55. The theory is a home is his major savings program and the cash is needed for retirement income.
 2. When investment property is held until the owner dies the estate receives a stepped-up basis equal to market value on the date the owner dies. No capital gains tax is paid if the property is then sold but market value is included in computing the taxable estate value.
- F. Real estate lends itself to reducing estate taxes in the transfer of wealth from generation to another.
1. Real estate in farm and small businesses will be included in the estate of the owner at their use value rather than their market value to reduce estate taxes and the need for cash if the heirs continue to operate the business or farm for at least 10 years following the death of the original owner, thus achieving a partial avoidance of capital gains and estate taxes up to a maximum of \$500,000.

111. Achieving the various tax plays is complicated because federal policy provides incentives and penalties for different priorities of property development, tax purposes of ownership, and the form of the ownership entity.
- A. There are three basic questions which need careful definition and structuring of answers for each investment.
1. What type of real estate is it for depreciation and other tax plays available?
 2. What is the tax purpose of the real estate ownership position?
 3. Is the ownership entity a single tax or double tax situation, a tax conduit to the individual or a corporate organization?
- B. First a property must be classified both on the physical facts and the actual or implied intent of the owner as one of the following:
1. The personal residence
 2. Farm or extraction properties
 3. Investment residential
 - a. First user, or second user
 - b. Residential rehab
 - c. Conventional financing or federally funded and subsidized
 - d. Date acquired
 4. All other properties (limited depreciation and full recapture)
- C. Tax rules differ depending on the presumed purpose of the investment imputed to the taxpayer in any given property. There are three alternatives defined by the IRS:
1. For use (users have more liberal ordinary income - ordinary loss elections)
 2. For investment income and long term appreciation (for which capital gain treatment is available with some elections to expense or capitalize holding costs)
 3. For trade or inventory (dealers status for which capital gain is almost never available)
- D. Because investors in real estate want some of the short term tax shelter benefits at the same time that they can participate in large group investments, real estate is very sensitive to whether ownership entity of a group investment is a single tax conduit or double tax corporate entity:
1. Single tax entities would include:
 - a. Single proprietorship
 - b. General partnership
 - c. Sub-Chapter S Corporation
 - d. Limited partnerships
 - e. Other non-corporate associations
 2. Double tax entities would include:
 - a. Corporations not exempt above
 - b. Associations for profit with three or more of the following characteristics.

3. In addition two or more people associated for profit is corporate if it has three or more of the following attributes:

- a. Limited liability or investors
- b. Centralized management
- c. Unlimited continuity
- d. Marketable interests

IV. There remains a general suspicion that real estate investment tax policy is a privileged domain of the rich. This may be because marginal rates are highest for the rich and tax savings to other income is highest to those with the highest marginal rate while interest cost has the lowest marginal cost to the same rich folks since we're soaking them pretty good. Then there is the fetish of the rich to spend \$1.50 to save \$1 in taxes which leads real estate promoters to produce the best tax shelters rather than the best people shelters.

A. Critics who oppose tax shelters argue that:

1. Present tax laws lead to excess building and misallocation of national resources and priority.
2. The cost in lost tax revenues of 2-3 Billion a year would be much more effectively used if collected and redistributed as a consumer subsidy for the low income family.
3. The capital attracted to real estate is siphoned off by developers and brokers up front since most of the property has almost 100% financed anyway.
4. The economic logic is faulty when it argues that to provide decent shelter for millions of Americans, the system must first produce several hundred thousand tax millionaires.

B. Such tax advantages that there are are justified according to some because:

1. Long term ownership is so risky, investors would not invest if payback was not accelerated by tax saving.
2. Unlike automobiles real estate depends on thousands of small investors for capital and could not compete for money unless there was an additional return in the form of tax benefits.
3. By attracting new capital to real estate housing construction is stimulated, but rents can be lower since the investor receives part of his return in the form of tax savings.
4. As a producer subsidy stimulates employment and maintenance of a competitive supply of space to reduce monopoly advantage of existing buildings.

Urban Land 550
Local Government Regulations of Real Estate - Lecture #12

- I. Real Estate has already become the most regulated industry, with the possible exception of the railroads, which having been destroyed by government and mismanagement are now largely subsidized by government.
 - A. The mythology of private property gives the citizen a greater sense of independent action than he really has.
 - 1. Private rights of claim and access
 - 2. Public rights of claim and access
 - 3.. Common rights of claim and access
 - B. Claim rights - the rights to benefit
 - C. Access rights - the rights to control decisions about use
 - D. The constitution gives government:
 - 1. First claim on productivity (the real estate tax)
 - 2. First prerogative of decision making (the police power)
 - 3. Priority to recover private rights (eminent domain) for cash
 - E. The concept of private property is therefore defined by what is not public or common and it is therefore shrinking. The semantics remain middle English common law but the substance of private property varies inversely with the growth of social interdependence.
 - F. The regulation of land and buildings can be studied from a spectrum ranging from the particular site, the neighborhood association, the local municipality, the region, the state, and the federal government.
- II. Controls on the individual site can take many forms, including:
 - A. The contract and common law relationships between buyer and seller, multiple owners, landlord and tenant.
 - B. Covenants running with the land
 - C. Easements transferring limited possession rights from a subservient property to a dominant property, such as a driveway easement.
 - D. A license - a revocable possessory interest
 - B. A condominium agreement
 - F. A property owners association
 - G. A merchants association
- III. Traditionally public regulation of land use and affecting real estate have been regarded as very personal and local and until recently the states have left these matters to the local government.

- A. Citizen can have direct administrative contact in situations like:
 - 1. Zoning variances and rezoning
 - 2. Appeal of tax assessment
 - 3. City services via intercession of the alder person
 - B. Indirect regulation of land use occurs through municipals policies for:
 - 1. Public works
 - 2. Building code enforcement and revision
 - 3. Traffic control and parking
 - 4. General property and assessment
 - 5. Viewpoints of the Board of Estimates and tax rates
 - C. Public administrator policies and attitudes have long term gradual effect on land use patterns:
 - 1. Influence of assessment policies over investment
 - 2. Attitudes toward annexation
 - 3. Public works planning and the five year capital budget
 - 4. Zoning policies to promote master plan
 - 5. Impact of government project
 - 6. Action of local government toward:
 - a. Pollution control
 - b. Efficiency of transit
 - c. Housing supplies
 - d. Desire for new industry
 - D. In any micro situation all of these inputs appears democratic but when viewed in light of political fragmentation and duplication the result may be anything but public control of land use, particularly land uses which reflect regional or national priorities.
 - 1. Competition for advantageous land uses
 - 2. Self interest in avoiding less desirable responsibilities of government
 - 3. Justified local fear of state or federal controls
 - 4. Progress requires means to break stalemate of local partisan politics
- IV. Dane County is a good example of political fragmentation and the patterns of government control of land use.
- A. (one) county
 - 1. Board of supervisors
 - 2. Executive administrator
 - 3. Regional planning commission
 - 4. Various boards appointed by executive administrator or by supervisor
 - B. (three) cities (Madison, Monona, and Middleton)
 - 1. Wards and alderman
 - 2. Mayor (full time or part-time)
 - 3. Department heads
 - 4. Commissions

- C. (20) villages
 - 1. Village board
 - 2. Village president
 - 3. Sub-committees of the board
- D. (25) townships
 - 1. Three elected supervisors
 - 2. Chairman of the board selected by the board
- E. (approx. 80) special districts and city authorities with real estate tax powers
 - 1. School, drainage, fire, water control, insect control, etc. (downtown
 - 2. Educational board elected but most are court appointed renovation districts)
- F. The Madison metropolitan area has 129 different units of government, the Chicago metropolitan area has about 300 and the New York metropolitan area has 1300 various little political worlds.
 - 1. The Port Authority of New York
 - 2. The Chicago Housing Authority
 - 3. Only a few big cities have tried to bring metropolitan areas under one government, such as Montreal and Miami and Indianapolis
 - 4. Milwaukee once considered voting itself out of existence so that all urban functions would be provided by the county
- V. To complicate local government, super-imposed problems of representation and apportionment, political parties, community power structure, and the urban-suburban clash.
 - A. Significant breakthrough of reapportionment
 - B. Geographic and party splits
 - 1. Economic segregation
 - 2. Fragmentation and abandonment of the city
 - C. Community power structure
 - 1. Local government not influenced by big corporate business
 - 2. Power structure represents associations of local interests
 - a. Chamber of Commerce
 - b. League of Women Voters
 - c. Board of Realtors or Home Builders Association
 - d. Neighborhood Associations
 - e. Variety of citizen pressure groups
 - D. Communications management
 - E. Public officials in a position to spend tax money or grant favors
 - F. Short-term politics with won-lost fascination of power structure
 - G. Regional planning commissions dilute political power of any one vested interest
 - 1. Bad example - the Commodore Building--township of Madison
 - 2. Good examples--SEWRPC--1969 San Francisco Bay Development Commission

- H. Dane County Regional Planning Commission recently proposed five alternative strategies for land use planning--value judgements which could be converted to objectives and specific criteria and regulation. The five alternatives:
 - 1. Existing trends--corrected for worst mistakes
 - 2. Modified trends--cluster planning and less sprawl
 - 3. New directions to preserve prime agricultural or environmental lands
 - 4. Reduced population growth by control of economic base
 - 5. Sharp reduction on land area acceptable for development to force higher densities in existing urban areas
- I. All strategies have violent resistance and emotional supporters. Thus, some compromise is being sought between exclusively local land use policies highly vulnerable to local political convenience and national land use control which would be too general and insensitive to special local needs and values.
- J. On Monday we will look at state control pushed by federal subsidies and penalties.

Lecture # 12

REAL ESTATE TAX, LAND USE & PUBLIC INFRASTRUCTURE SOLVENCY

- I. As a major cost of real estate ownership, the real estate tax has a significant impact on land use decisions, an impact which may advance community planning or be counter productive and cause those types of land use decisions which are against the public interest.
 - A. You have discussed factors which could reduce or increase the total revenue which would need to be collected from the taxes. Today we will discuss how the tax base can be manipulated to change the mill rate.
 - B. We will briefly discuss methods for defining assessable (ratable) property methods for land planning to encourage high assessment value, and the uses of public investment to stimulate new assessable private investment.
- II. Which property should be assessed and how much?
 - A. Government owned property is exempt from the real estate tax. It represents 40% of land in Madison and receives the benefit of fire, police, and other city services.
 1. State office buildings pay 15¢ a sq. ft. toward city services, public housing pays 10% of effective rents in lieu of taxes, and Eagle Heights pays so much a child toward school but these are negotiated and don't change often by inflation. Other government uses pay nothing.
 2. What happens to a township when a sizable portion of its land is taken by the federal government for a military base or a wild river reservation. Who benefits and who pays for the shift in tax burden?
 3. Should government installations be considered economic base items which support other real estate values in town or should it be taxed like everyone else. If so, what is market value of Bascom Hall?
 4. Failure to put a real estate tax on government land means it is under-utilized. The University can hold land at Charmany Farms on Whitney and Mineral Point Road indefinitely, speculating on future appreciation but causing unnecessary urban sprawl and duplication of urban services.
 - B. Churches, hospitals, and private schools are also exempt so long as the property is contiguous to its operating centers or actually used for charitable purposes. The argument is that the social good is well served by these organizations and that real estate taxes would just increase the cost of services or reduce their quality and scope. But when is there too much real estate so classified with no correspondent social benefit?
 - C. Recently Wisconsin voters voted to provide a partial exemption to farmers and conservation lands by constitutional referendum. In short, these lands could be taxed on the value of their actual use rather than market value. The Legislature has enacted a program which requires counties or townships to file a master land plan which defines prime agricultural or conservation areas. Property owners can then elect short and long term use value status subject to certain conditions.

The farmer near a growing area could continue to farm even though his land was now suitable for subdivision. Because his values are understated other taxpayers in his district pay a higher mill rate. The legislature has decided to replace lost revenue from state funds (as they do with forest land). There will be a 75% roll-back of real estate tax reductions charged against profits when a farmer sells his land.

- D. If we abandon market value as the benchmark for everybody, do we then exempt the elderly pensioner who owns his own home, the low income family, or other political favorites such as farmers and veterans?
- E. Some people propose exemptions for buildings and improvements, taxing only the land. The value of the land would reflect the assessors best guess as to its best use. In that way a high intensity site value would force the owner to build or improve his property to that use in order to pay the taxes. Site value taxation is being used in New Zealand, Australia, Pakistan, and Jamaica to force land owners to develop their property rather^{than} sit on it to speculate. This fosters economic development and the breakup of large land holders in areas ready for development, agricultural or urban. It assumes the land planner and the assessor know what they are doing.
 - 1. A variation is the graded tax, with a higher mill rate on land than on buildings.
 - 2. Which mechanism is more trustworthy, the marketplace or the government technocrat?

III. A desire of a community to discourage low value land uses or high service cost occupancies leads to what is termed fiscal zoning.

- A. Mobile homes provide a low real estate tax base but often provide many children for the schools and clients for the welfare program. Communities can make the specifications for the mobile home parks virtually impossible to meet.
- B. Large lot zoning typically mean expensive homes, high tax base, and low densities which require little public infrastructure in terms of roads, utilities, and schools. Can be ruled out as illegal.
- C. ^{Under} the urban renewal program, low income housing was replaced by luxury housing to increase real estate tax revenues with which to finance the city's share of renewal and at the same time force relocation of high service costs families and uses to other communities.
- D. Cities may underassess new industry to encourage their construction in town while at the same time real estate tax costs may gradually force certain industries to leave town to remain competitive.
- E. The cities wage the war for tax base with many tools, including city water, annexation, fire department services, and negotiated pre-annexation agreements with developers.

IV. Public land use decisions and capital expenditures must always be considered in terms of the net effect on city tax base and tax revenues.

- A. The city auditorium issue included the issue of locating the facility so as to stimulate private investment. The Law Park site was totally surrounded by publicly owned land and buildings so that it could not stimulate appreciation in private land value.

The State Street site stabilizes and may increase values in a declining area.

- B. A current issue is the relationship of an MATC campus to the viability of downtown Madison, particularly retailing and restaurants on the Square and on State Street.
 1. Some downtown sites would have meant the loss of several blocks of taxpaying real estate and the present value of that income stream would represent a tremendous loss to the city although it receives no compensation.
 2. On the other hand some would argue that locating the MATC site at the airport would undermine residential values and contribute to a more subtle and slow rate of downtown decline. A \$25,000,000 facility may have significant impact on the city tax base.
- C. The McCormick parking ramp might have been located down hill to the north of its present location. Some smaller older buildings would have been lost to the tax roll but a higher value, more intensely developed building might have been built on East Mifflin where the parking lot now stands.
- D. Government support of new towns can occur when the government chooses to build new government installations at the new town site. The Irvine Company astutely realized that it would increase its own value by giving 1000 acres free to the U. of California. That may also be true of the small developer who gives up 10 acres to the school board to capture a needed new elementary school.
- E. Early in the course ownership equity was defined " as the degree to which one can divert cash flow to their benefit." Since local government and the school board receives 16-20% of all rental income in real estate taxes, local government owns 16-20% of all tax paying rental properties in town. Conceivably government could make money by providing bonuses for certain types of development:
 1. For example, if apartment sites cost \$3,000 for each one-bedroom apartment and these apartments have a market value of \$22,000 each, then new construction might provide \$25,000 of tax base, paying \$700 a year towards government. If the City receives 30% of that, the result would be \$210 a year on \$3,000 investment or 7%. If the City could keep all the tax revenue, it would have its money back with interest in five or six years.
 2. Official recognition of this opportunity to stimulate private tax base with public investment is found in the new technique of tax incremental financing (TIF). This technique could keep nearly all the \$700 above for the City, cutting out the school board, the County, etc.
 3. TIF defines a specific district and its tax base in which all governments participate. Then the City can issue bonds to finance certain improvements within the district and pledge tax revenues from increased private property investment and values to pay off the bond. Bond holders require specific private investment already committed contingent only on the public improvement.

4. On Williamson Street the bond issue was used to reduce the cost of land for the Mollenhoff's so they could build a condominium on the Fauerbach site. The Carley proposal for Pinckney Street is to build two condominiums and redevelop the Emporium if the City will use TIF funds to build a parking ramp and restore the historical character of Mansion Hill. Others have proposed putting housing units above parking ramps so that the tax base can reduce the cost of the ramps meter fees required to finance the ramp.
- V. Building projects to house public offices or public housing can be regarded as cash flow investments. Because these may not have any revenue power, they should be analyzed with life cycle costing, i.e., the investment objective is to achieve the lowest present value of outlays over the life of the project to accomplish a given purpose.
- A. Since a state office building or city hall pays no real estate taxes and can borrow money at only 6% interest, the annual cash cost for operating expenses, debt service and maintenance should be less than that charged by the private sector. Nevertheless state office buildings like JEF-1 cost the state more out-of-pocket per sq. ft. of usable area than any comparable private office building. Why not lease space which can pay real estate taxes? Why the extra cost?
1. Architects have convinced government patrons that all public buildings must be monumental in size and material to impress people with government.
 2. If there is no cash measure of efficiency, designer arrogance is in control. The City-County Building has over 440,000 sq. ft. of space but only 290,000 is usable because of wide corridors, extra lobbies, etc.
 3. On the other hand the school board have been more sensitive to first cost with the result that the newer buildings had little insulation, cheaper one story construction, etc. so that they have excessive heating and maintenance cost. The result is the present value of outlays over the life of the building is greater than more expensive construction at the outset.
 3. Recently the City bought the Post Office Building which will require intensive remodeling for housing some city services. The County found ways to expand the City-County Building at lower cost and in doing so, left the City to find tenants for the balance of the remodeled Post Office Building. Some of those Alderpersons who endorsed the purchase, did so to prevent the State from buying it for the State Supreme Court. Now the State must acquire more land from the city tax base for another state office building. What is the true cost of the city office space? What would happen if the city gave away the land to someone who would build a quadrangle of apartments on that block? The City would gain some tax base, more residents downtown, and perhaps avoid creating a government office ghetto. The city planners are incapable of carrying off such a project because they lack the discipline of the numbers.
- B. Public servants who understand the power of cash flow when Legislators do not can be as dangerous as private developers who ignore public solvency in terms of who pays and who benefits. A developer, a planner, or a designer should read the biography of Robert Moses, The Power Broker, to appreciate every nuance in control of cash flows as the secret to control of land use and development.

VI. Federal policies may be very unfair to local residents even though the objective of government policies is good. Consider the question of who pays for the Federal wild river program.

- A. Professor Barrows of Agricultural Economics studied the impact of wild river acquisitions of the National Park Service on the town of Springbrook in Washburn County, where it is protecting the Namekagon River. The goal is approximately 3200 acres of privately owned land which will be purchased and removed from the tax role even though the families thereon may be permitted to stay for up to 20 years as tenants. The town still must provide services including education, nevertheless.
- B. NPS makes no payment to local government. In contrast the Town of Springbrook receives 50¢ per acre on 43 acres preserved by the State DNR and 20¢ per acre on 7500 acres of county forest plus a share of timber sale revenues.
- C. NPS had acquired in 1974 approximately 600 acres of its goal which was valued at \$260,000 or 10% of the total tax base in the township. The first impression is that if the tax base drops 10%, the mill rate must increase by the same amount to make up the loss. However the issues are more complex.
- D. The \$260,000 tax base loss in the Town of Springbrook is only 0.2% of the tax base of Washburn County and 0.3% of the school district tax base. The School tax accounts for 70% of the total property tax so the loss of tax base would hurt if it were not neutralized through the state formula for share income tax. As a result the net change in taxes looks like this:

| | |
|-------------------------------|----------------------------------|
| Change in school tax rate | - .2¢ per \$1,000 property value |
| Change in county tax rate | -1.0¢ per \$1,000 property value |
| Change in town tax rate | - .5¢ per \$1,000 property value |
| Change in state shared taxes | + .4¢ per \$1,000 property value |
| Change in property tax relief | + .2¢ per \$1,000 property value |
| TOTAL TAX RATE IMPACT | -1.1¢ per \$1,000 property value |

- E. As a result state taxpayers are paying the consequences of a federal land use reservation program while federal income taxes are being used to pay acquisition.

VII. The greatest sensitivity to real estate tax policy and land use decision is at the local metropolitan level where fragmented local government compete for land uses which produce the highest tax base value and the lowest service cost, or to avoid land uses such as low income housing which may have high service cost and little additional tax income. This war takes the form of fiscal zoning, annexation fights, tax abatement or investment stimulation.

- A. Fiscal zoning establishes land plan to encourage certain land uses and discourage others. For example large lot zoning, trailer park standards, conditional use of zoning, or reservation of large land areas for "conservation" are all examples of fiscal zoning.
 1. Kohl's shopping center on University Avenue
 2. Commodore Apartments, Town of Madison
 3. Madison Mobile Home Park rurals

- B. Annexation (voting acres and residents)
 - 1. Seybold Road and West Town Shopping Center
 - 2. Municipal control of utilities vs. efficiency of metropolitan systems
 - 3. Pre-annexation contracts

VIII. Almost everybody wants to favor some particular land use policies by means of tax abatement. The most common sort of objectives are conservation of open space, rehabilitation of dilapidated structures, construction of new industries, or the preservation of landmarks.

- A. Two years ago Wisconsin voters unknowingly removed the constitutional requirement that all real estate be taxed on market value to permit swamps and farmlands to be taxed on current use value if the legislature wished to do so.
 - 1. Conservationists want farm owners to accept tax relief in exchange for future development.
 - 2. Farmers want tax relief now and profits from development later.
 - 3. Politicians suggest temporary relief now and a rollback tax if the land is sold for a price higher than the land value of farmland.
 - 4. Townships want the State to replace the lost real estate taxes.
- B. Some people believe that repair and improvement of the whole property will increase real estate taxes more than income so that there is no incentive to modernize.
 - 1. A direct tax abatement is not legal in Wisconsin (Milwaukee Bank case).
 - 2. One alternative is to make grants for repair and then raise the real estate tax which ultimately refunds the grant.
 - 3. Of course many communities ignore the proper valuation approach and deliberately under assess remodeling or new industry. Competition among communities by favoring new industries was one of the reasons that State took over the assessment of all manufacturing facilities but of course State has an interest in competing with other states.
- C. Landmark buildings often represent underutilization of a valuable site, costing the owner and local government significant tax base.
 - Madison City Hall Project
 - Boston Old City Hall Project

Business 550/705
The Real Estate Tax - Outline ***11**

- I. The cash cycle for public infrastructure begins with the real estate tax, user fees, and federal grants, but the real estate tax provides almost 80% of revenues to support local government.
 - A. There is only one federal income tax to understand, 50 state tax systems, but more than 14,000 real estate tax jurisdictions.
 1. Lack of standardization and skill of application leads to monumental misunderstanding.
 2. Unlike income tax, tax payer does not participate in calculation
 3. Administrative costs are not properly funded
 4. 90% of taxpayers believe if they are underassessed they have beat the system and resist restoring equity.
 - B. Historical origins of real estate tax are in socage rents, and colonial taxes on agricultural productivity.
 - C. With development of cities, tax pay shifted to market values of improvements of land - an ad valorem tax.
- II. Current city systems are based on a process developed at the turn of the century in Minneapolis, Cleveland, and Milwaukee by a municipal engineer named Somers.
 - A. Somers tried to reduce political interference and arbitrary valuation by introducing the following concepts:
 1. Separation of assessment from municipal budgeting functions
 2. Definition of a mechanical procedure to assess each property consistently and reduce judgment calls to the minimum, permitting assessors to arrive at the same value conclusion on any specific property.
 3. Simplification in order to teach the public as well as field men low cost in administration and to facilitate a legal defense in the event of appeal.
 4. Recognition of assessment was to produce an aggregate base number for proportion distribution of municipal revenue needs among all property owners; consistency of relative differences was more important than accuracy in predicting sales price; distinctions had to be equitable and explainable.
 - B. The assessor is charged with mapping and describing each property and estimating an assessed value. All property values in the aggregate equal the community tax base.
 - C. At the same time each community budgeting unit would establish how many dollars they would require and the proportion to be generated from the real estate taxes as opposed to other revenue sources.
 - D. Each fiscal unit divides the required budget by the aggregate real estate tax base in its defined district to determine the tax rate.
 1. The tax rate is called the mill rate - the fraction of a penny of tax per dollar of assessed value.
 2. The technical mill rate may also be stated in common usage as dollars per \$1,000 of assessed value. In Madison in 1978 the total mill rate was 28.28 less a state credit of 4.127 mills.

Office of the Mayor

City of
Madison



F. Joseph Sensenbrenner, Jr., Mayor

City-County Building
210 Martin Luther King, Jr. Boulevard
Madison, Wisconsin 53710
608 266 4611
608 266 4443 (TDD/Device for Deaf)

December, 1987

Dear Madison resident:

Your property tax bill for this year is enclosed. Your payment will provide 1988 operating funds for the Madison Metropolitan School District, Dane County, the Madison Area Technical College and the State Forestry Program, as well as the City of Madison. Your total bill is actually a sum of the tax levies set independently by the public bodies overseeing each of these areas of government activity.

Improving service quality and customer response will be the highest priority for all city agencies in 1988. Specific quality improvement goals will be a critical component of the overall 1988 departmental goals and objectives. We are also implementing a new "customer response program" that will evaluate agency responsiveness to requests for service, questions or complaints by directly contacting the citizens who make those requests and asking them to report their level of satisfaction to me personally.

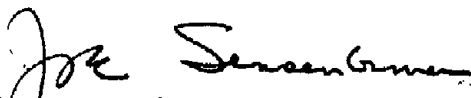
The City's 1988 capital budget contains a set of initiatives which provide a blueprint for Madison's future. Several of these projects have been assisted in the TIF process by the County, MATC and the Madison School District. Their help is appreciated.

Just over 30¢ of your property tax dollar will go to support all city services, including the Madison Public Library. City spending for next year, as approved November 24 by the Council, will total \$92.8 million. This is an increase of 3.7% over the 1987 budget. City spending increases for the five budgets under my administration, 1984-88, have averaged slightly over 2% per year.

This year messages are again enclosed from the School District, Dane County and MATC, and I hope you will read them, too. As always, I welcome any questions you may have about the city budget, as well as your comments and suggestions about city government policies, programs and services.

Best wishes for a safe and happy holiday season.

Sincerely,


F. Joseph Sensenbrenner, Jr.
Mayor



DANE COUNTY

Jonathan B. Barry
County Executive

December 3, 1987

Dear Dane County Taxpayer:

I appreciate the opportunity to provide information regarding the 1988 County Budget and to express my appreciation for your financial support of county government.

In 1988 less than 13% of your property tax dollars will go to Dane County government. While Dane County does not consume a large portion of your property tax payment, we have tried to be responsive to the need for services and the demands to hold down property taxes.

The 1988 County Budget, as adopted by the County Board, contains a 4.83% increase in the total county tax levy. The tax rate increase - which most accurately measures the impact on individual property owners - went up 2.34%. The owner of a home assessed at \$75,000 will pay \$7.50 more in 1988 than they did in 1987 for county government.

For the additional \$7.50, that "average" homeowner will receive:

- * Over \$1.5 million in new highway construction and repair
- * Creation of the 911 emergency response system
- * New human service initiatives, including shelter funds for homeless women and children, additional day care funding, early intervention programs and further progress in moving individuals off dependency programs and into productive employment.
- * Implementation of a 15-year park improvement plan
- * Significant new improvements for the Henry Vilas Zoo
- * New initiatives in conservation and clean-up programs for Madison's lakes
- * A commitment to study and purchase a new county landfill site

These major new initiatives to preserve and enhance the county physical infrastructure as well as the renewed commitment to human needs will have a significant positive impact on the quality of life in Dane County. While County government continues to pick up municipal services and state mandated programs, we have managed to stay lean and accountable to taxpayers who generously provide their support. Dane County will continue this dedication to efficient use of tax dollars and responsiveness to the taxpayers.

Please contact me if I can provide any further information regarding your investment in Dane County.

Sincerely,

Jonathan Barry
Dane County Executive

AREA VOCATIONAL, TECHNICAL and ADULT EDUCATION/DISTRICT No. 4

3550 Anderson Street, Madison, Wisconsin 53704-2599 • (608) 246-6100 • (608) 246-MATC

NORMAN P. MITBY, District Director

December 3, 1987

Dear Madison Residents:

The majority of the educational offerings of Area Vocational, Technical and Adult Education District No. 4 are provided by the Madison Area Technical College which has three major locations in Madison and four satellite campuses in Fort Atkinson, Portage, Reedsburg, and Watertown. The District encompasses all of five counties - Columbia, Dane, Jefferson, Marquette, and Sauk, and portions of seven others. The City of Madison is the largest of the 221 municipalities in the District.

Support of the District accounts for 4.85% of your 1987 property tax bill.

The building of the Truax facility has been completed, and the Downtown Education Center at 211 North Carroll Street will be opened for the second semester of the 1987-88 school year. The Apprentice Center at 2125 Commercial Avenue is in the process of being remodeled, and the new fire training facility located at 1750 Pearson Street which will meet the needs of the City of Madison, 85 volunteer fire departments throughout the District as well as the needs of the airport and the Air National Guard will be completed by June 1988. The value of all of these facilities located throughout the District amounts to \$90 million, and the good news at the property tax level is that the District will be out of debt in the year 1988.

Over 85 full-time vocational-technical and liberal arts programs are offered plus an extensive adult education program. Head count enrollment for the District amounted to 52,062 this last fiscal year of which 18,158 were citizens of the City of Madison. Technological advances have put great demands on the Board to provide modern equipment, as well as the need for new high-tech programs. At the same time we continue to offer adult basic education.

| <u>1987-88</u> | <u>Mill Rate</u> | <u>Tax Levy</u> | <u>Madison's Share</u> |
|----------------|------------------|---------------------|------------------------|
| Operations | 1.27821 | \$18,157,394 | \$6,293,554 |
| Debt Service | .29679 | 4,216,000 | 1,461,312 |
| Total | 1.57500 | \$22,373,394 | \$7,754,866 |
| Valuation | | \$14,205,329,523 | 34.66% |

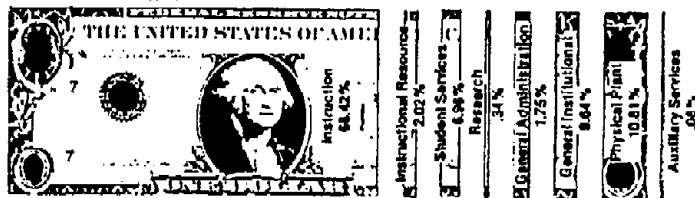
This District has had the lowest operational mill rate of any of the sixteen districts in the state and one of the lowest operational costs per FTE.

Budget

REVENUES



EXPENDITURES



We appreciate your continued support.

Sincerely,

James B. Hasler

James B. Hasler
Chairperson of the Board

Norman P. Mitby

Norman P. Mitby
District Director

Madison Metropolitan School District

E. James Travis, Superintendent

545 West Dayton Street
Madison, Wisconsin 53703-1967

December 1987

Dear Madison Residents:

In 1987-88 the Madison Metropolitan School District is providing quality education experiences for 21,866 students. An ongoing challenge is to control expenses without disrupting the programs of an excellent school system.

Salaries for staff represent more than 80% of the total budget and are determined through a negotiation process established by state law. Any increase in salaries has a major impact on the budget.

The remainder of the budget is expended for classroom supplies and equipment, building expenses, utilities, bus transportation, and School-Community Recreation activities. Throughout the budget development process, reductions were made in transportation costs, curriculum and staff development costs, and energy costs. Furthermore, in 1987-88 the Board of Education eliminated 2.5 administrative positions.

The portion of the budget related to non-salary items actually decreased for 1987-88. As a result, expenditure increases were limited to 4.46%. The resulting increase in your tax rate is 3.3% or \$35.00 on an average home valued at \$67,000.

These figures reflect the lowest increase in the property tax levy since 1979, and school property taxes are a smaller portion of your total property tax bill this year than last. We have been able to honor our commitment to contain the costs of public education.

While we continue to work hard to control costs, the needs of our students are becoming more diverse. Quality experiences for all students can be accomplished only if we continue to modify and improve instruction. Your 1987 tax monies will provide needed support for public school programs.

We are proud of our efforts to offer all children and youth of the District opportunities for learning and growth. We believe we can maintain our reputation for excellence by using limited resources wisely. We appreciate the strong support this community has consistently shown for public education.

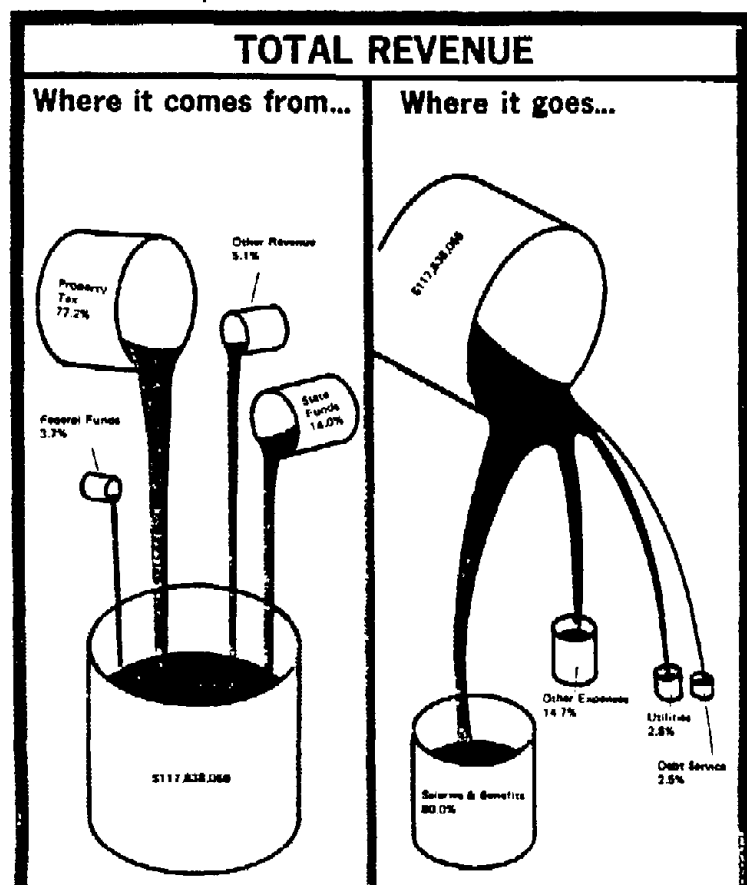
Sincerely,

Barbara B. Arnold

Barbara B. Arnold, President
Madison Board of Education

E. James Travis

E. James Travis
Superintendent of Schools



- E. The total mill rate is a combination of tax districts which may assess real estate taxes, including:

State - 21¢ per \$1,000
 County - \$2.38 per \$1,000
 Metropolitan sewer - 0
 Library - 77¢ per \$1,000
 School - \$15.6998 per \$1,000
 Vocational school - \$1.27 per \$1,000
 General city - \$7.96 per \$1,000
 Total tax - \$28.28

- F. Since each district combines different taxing areas and assessor, it is necessary to adjust between districts for the reliability of the ratio of assessed value to market value. This ratio is called the equalization rate, and the closer to 100% the better the assessment practice may be in that community. These rates are computed by a State district office of the State Department of Revenue.

- G. Therefore the basic elements of the real estate tax process represent a formula something like this:

$$\frac{\text{Public enterprise budget} \times \% \text{ from real estate tax}}{\text{Market values} \times \text{equalization rate}} = \text{mill rate or rate/1000}$$

$$\text{Market value of parcel} \times \text{equalization rate} \times \text{mill rate} = \$ \text{ tax per parcel}$$

- H. A special assessment is a charge for public capital improvements such as sidewalks, streets, the State Street mall which benefit a specific group of properties as well as the community. The capital budget may be shared 50-50 with the community and then prorated on a formula that is appropriate, such as front foot, square foot of lot size, assessed value of land, etc. The tax payer is given 3-10 years at a favorable interest rate to repay this special assessment. These special assessments can be pledged by the city to secure bonded debt for the cost of improvements.

- III. The Wisconsin Real Estate Tax assessment process is typical of many states throughout the country but considerably behind the best like California, New York, or Nebraska.

- A. There are 1100 or more assessment districts, no more than 50 of which have professional appraisers for their assessor. Most assessors are still elected at the township level.

1. Wisconsin has been unable to pass legislation consolidating assessment at the county level because of rural distrust of professionals in this sensitive area.
2. Wisconsin law does permit consolidation at the county level by referendum with the state then subsidizing most of the budget. For example, Kenosha County.
3. The state provides an assessment manual which attempts to standardize procedures which assessors must follow.
4. Responsibility for complex industrial appraisal has been taken over by the state.

- B. Statutes established seven general classes of property. Under special conditions agricultural and conservation may be taxed on use value; all others at market value:

- | | | |
|-----------------|----------------|-----------------|
| 1. Agricultural | 3. Commercial | 5. Retail |
| 2. Industrial | 4. Residential | 6. Mining |
| | | 7. Conservation |

- C. Assessor required to develop a tax map which shows every parcel in scale as to size, shape, streets, and public services.

1. The tax parcel is identified by a number which in Madison is a code, identifying a property as to its specific location:

| | | | | | | | | | | | |
|------|-------|---|------|----------|--|---|-----|-----|---|-------------|--|
| 07 | 09 | - | 14 | 3 | | - | 02 | 07 | - | 4 | |
| Town | Range | | Sect | 1/4 sect | | | Blk | Lot | | Check Digit | |

2. Tax parcel maps must be brought up to date as of May 1 each year, accounting for new streets, new subdivisions, changes of ownership, etc.
 3. For each tax parcel the assessor must then prepare a tax card which details the nature of the property within the tax parcel lines as of May 1, including percentage of completion of improvements of construction. Tax cards are public information in most states but in Wisconsin they are privileged information and can be viewed by the property owner or his agent.
 4. In practice tax cards are updated by inspection
- D. Each parcel must then be valued at the highest price it would sell to another user in the normal course of business, i.e., market value. The courts have determined the preferred way to measure market value is by comparison to actual sales of similar property, then by capitalized income, and only after those have been tried by the cost to replace method since appraisal is a difficult, inexact and expensive process, if done correctly assessors:
1. First divide unique properties from class properties such as single family home, filling stations, small rental properties, etc., and the majority are class buildings.
 2. Class buildings are then appraised by a methodology which defined the value of the land and the building separately; the building is estimated by determining the value new (cost to replace) and then deducting for depreciation. Strangely similar to a cost approach.
 3. Only recently after statistical techniques been applied to valuation of class properties such as single family homes by inference from actual market sales of similar property.

IV. The manual approach to land and building would be as follows:

- A. To value land the assessor usually establishes a unit foot or front foot base. In downtown Madison, this would be 1 ft. wide and 132 ft. deep and would be determined for the mid-block area. These provide a common denominator of value and they allow standard modifications to be made for parcel differences in size, topography, location, etc. For example:
1. A unit foot in a retail area would be modified by a depth factor which would state that 50% of the value might be found in the front 1/3 of the lot, and 80% of the value in the first 2/3's of the lot so a shallower lot than the standard dimension would not be reduced simply in proportion to its depth.
 2. Corner lots in a retail area might be given an increase in value of 1.5 for each unit ft. while in a residential area corner lots might be rates at only 90% of front foot value for an inside lot.

3. All these adjustments are standardized by tables in the assessor's manual so that each situation is processed the same way. The assessor can then defend his work simply by showing that he has properly classified the property of the appellant and then rigidly applied the adjustment process and made no mistakes in his arithmetic. The answer doesn't have to be right - only consistent with how everyone else was treated.
- B. To estimate the cost to replace of the building there are an endless variety of classification for improvements:
1. Construction types might fall into such basic categories as:
 - a. Wood frame
 - b. Masonry
 - c. Reinforced concrete frame
 - d. Steel frame
 2. For each use and construction type a standard building will be described and then cubic foot or sq. ft. values which somehow reflect both cost and market are provided.
 3. Differences between the property to be assessed and the standard are then itemized and specific charges or deductions are made. For example, the standard may have one bath but the subject property may have an additional 1/2 bath so an additional \$300 charge is made. Each class has a long list of adjustments for factual features such as porches, fireplaces, built-in cupboards, etc.
 4. A deduction is made to reflect the age and condition of the building. The manual may assume all improvements are 00% depreciated in 40 years. An average building would straightline at 2% but if the building were well maintained the effective age might be set at 10 or 12 years instead of 20 and if it was in poor condition the effective age might be set at 30 years.
- C. The sum of the site value and the value of the improvements net of depreciation equals the market value as of May 1. Market value is then reduced by the equalization rate to become the assessed value of record, divided between land and building. Those figures are available to the public for each property as a kind of self policing control on assessments.
1. The taxpayer may appeal his assessment
 2. A tax appeal board of seven citizens will accept the arguments of the taxpayer and the tax assessor and may amend the assessed value where it feels it is not derivative of market value. Due to public disclosure the appeal board can no longer meet in private with the assessor to reach its conclusions.
- V. The ability of government to divert cash flows of the home owner, farm owner, or building owner through its tax policy therefore make it an equitable owner of all the taxable property in the community.
- A. In this course and for those who tie the real estate tax to market value, we see the real estate tax as a form of profit sharing, a distribution of earnings and benefits on a pay-as-you-go basis.

8. Those who prefer the cost approach to value see the real estate tax as a method of collecting a debt, not unlike a continuous mortgage in payment of services rendered and public capital improvements in place.
- C. As a result the real estate tax system currently faces significant land use issues head-on:
 1. In Wisconsin the courts have said that the market value of a property for tax purposes is the highest price at which it would sell to another user. For some properties, such as residential properties, there are sufficient sales to permit market comparison appraisal. Most properties, however, are rather unique and the tax process that we just described is more like a cost approach to value.
 2. The result is a confusion as to whether the tax in Wisconsin is on cost or market. The courts have said that a low cost nursing home should be assessed at its resale value and that a high cost insurance company home office should be reduced to what it would sell for, even if sale was at only half of the purchase price.
 3. In New York state, the Seagram's case stated that the cost to build did indicate market value because a sophisticated corporation would not spend more on the building than it was worth in benefits and these benefits might take the form of public image and advertising or personnel efficiency as well as rental value.
- D. The assessor prefers to use the manual or cost approach so that he can defend his answer on the grounds of equitable consistency while the taxpayer prefers to use the market approach when it is to his advantage to do so.
- E. The assessors methods are too time consuming on the residential properties and too inaccurate for lack of good information on the larger one-of-kind properties.
 1. The market has been rapidly shifting and appreciating so that assessed values can be out of date in a year. Since the assessor does not have time to reassess everything each year assessments rapidly fall out of date.
 2. Inequity between assessments of owners of new property assessed on the basis of a recent transaction and older properties where assessments are out of date.
 3. Inequity between the residential class where sales data is plentiful and commercial or industrial classes where the absence of data permits all kinds of subjective assumption on sale to another user and thus lower assessment.
 4. Rapid obsolescence of land valuation, particularly in growth areas or in built up areas where there are no vacant land sales available.
- F. The real estate tax can also be counter-productive to land planning objectives. The sale of one farm for subdivision purposes might indicate a market value of \$1500 an acre. If all the other farms are taxed accordingly they cannot afford to continue farming and as a result prime agricultural land is prematurely or unnecessarily converted to urban use. A way must be found to make the real estate tax burden consistent with society's hopes for proper land use.

F. A number of states including Wisconsin are attempting to remove the administrative problems of the real estate tax with some reforms as:

1. Consolidation of tax assessment districts into county offices.
2. Creation of a state agency which audits, trains, and prescribes standards for the county offices.
3. Automation of market comparison projects for residential property by means of computerized market or cost approach appraisal.
4. Statutory changes in defining acceptable appraisal methods.
5. Statutory changes in required reporting of gross rents, etc., by owners or by pooling information with Internal Revenue Service.
6. Increasing budgets from .2 - .5% to .7 - 1.0% of collections to finance staff and modern techniques.

VI. The real estate tax was originally intended to finance collective services like police, fire, streets, and similar housekeeping functions. It is argued that the inequity of errors in the denominator are unnecessarily multiplied by including budget items in the numerator that should be collected by things like the income tax and the sales tax which may be a more progressive tax.

- A. A major burden on the real estate tax is the welfare program where the large cities carry the load and the suburbs escape what is a larger metropolitan responsibility.
- B. In California the courts determine on August 30, 1971 in the Serrano case that it was unfair to children to support education on a local real estate tax because different communities had drastically different capabilities to raise money for education. In Baldwin Park there was only \$2700 of tax base per child while in Beverly Hills there was over \$50,000 per child. Baldwin Hill residents spent over \$577 per pupil while Beverly Hills was spending over \$1200 per pupil, even though the taxpayer in Beverly Hills enjoyed a mill rate less than half as much as the home owner in Baldwin Hills. Unequal resources made the use of the real estate tax unconstitutional for supporting education and violates the 14th amendment providing equal protection under the law.
- C. In Wisconsin the Serrano case led to new formulas for redistributing the state income tax to school districts which now provides more than 25% of school budgets.
- D. Tax exempt property, such as a church, hospital, school, university campus, or federal installation are subsidized by taxpayers. Over 40% of the land in Madison is tax exempt. Public housing projects pay 10% of rent in lieu of taxes and state office buildings pay 10c/sq. ft. and communities can bill for riot police. Some argue that exempt property provides services and export industry which serve the taxpaying properties; others argue that it is impossible to appraise buildings which have no money. As we shall see tax exemption can lead to misuse of the land and counterproductive conservation.

W I S C O N S I N REALTOR® UPDATE

Special Edition

February 1, 1988

Special Update Edition

Property Tax Relief in Wisconsin

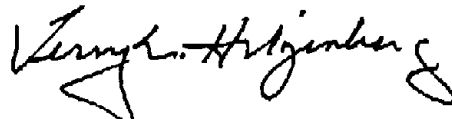
About eighteen months ago, the Wisconsin REALTORS® Association became a founding member of the Coalition for Property Tax Reform. The purpose of the coalition was to educate the citizens of Wisconsin of the state's excessive level of property taxation and to study the proposed methods for bringing about meaningful and sustainable property tax relief.

The Coalition for Property Tax Reform helped place the property tax issue at the center of the Gubernatorial and Legislative Campaigns of 1986. As a result, upon his election, Governor Thompson appointed a blue ribbon commission to study methods of reforming the property tax system in Wisconsin. That commission, headed by then Dane County Executive Jonathan Barry, produced a report that generated substantial comment in the halls of the Capitol. Although he would substantially modify it, the report provided a skeleton on which Governor Thompson could develop a plan that would bring about real estate tax relief.

This week, the property tax issue came to a head. In his state of the state address on January 26, Governor Thompson proposed a property tax relief initiative. While this step is, like those of the past eighteen months, still a predecessor of many more to come, we, the Wisconsin REALTORS® Association, have come to a critical point of a process that could ultimately lead to the greatest property tax reduction in Wisconsin's history. We are therefore publishing this special edition of the Wisconsin REALTOR® Update to inform, you, the members of the Wisconsin REALTORS® Association, of the contents of the Governor's plan, including its benefits and liabilities to our industry, and to let you know how you can help shape the property tax relief process.

From the beginning, we would like to make it clear that while we are excited at how far the property tax reform process has come, we are very concerned that the Governor has contemplated using revenue from a 5 percent sales tax on commercial leases as a method for reducing property taxes. The leadership of the WRA met with Governor Thompson immediately after his January 26 address, and made it clear to him that, as representatives of all members of the real estate industry, we could not accept this targeting of an important segment of our industry as a revenue source.

We have set forth a series of questions we think you might like to ask, and we present the answers of the leadership of the WRA.



Terry Hllgenberg, GRI
WRA President

What is the position of the WRA toward the Governor's plan?

The WRA leadership supports the broad outlines of the plan: it especially approves the 16 to 20 percent cut in property taxes statewide, and across all classes of property, and the implementation of stringent cost controls. However, the leadership is concerned about one of the sources of funding for the plan: the implementation of sales taxation of commercial leases.

What form will property tax reform take?

Under a new school-aids formula, the State will increase its share of school funding from 46 to 57 percent in FY 1989-1990. As a result, the portion of school funding deriving from property taxes will decline from 45 to 36 percent, which represents a twenty percent reduction. The total cost of the package over two years would be \$809 million.

How does a property tax cut benefit the real estate industry?

In essentially two ways. First, by reducing the monthly principal interest and tax cost of owner occupied housing, more people will be able to afford to buy their first house, and those who are buying houses will qualify for more expensive housing. Second, by increasing the after-tax rate of return of housing, a property tax reduction will promote higher property values.

How will the school aids formula be changed?

A new five-tiered equalization formula would be put into place by FY 1989-1990. The new formula will provide a higher percentage of aid to districts with limited property tax capacity and contain clear incentives to control spending. For a district with average property tax capacity, the 1989-90 state aid rates are expected to be:

**Per Pupil Cost
As Percent of State Ave.**

**State Share
of Costs**

Less than 70%
70% - 100%
100% - 110%
110% - 125%
More than 125%

75%
40%
0%
-25%
-100%

To illustrate what this means, let us assume the average school district spends \$4000. Now let us look at a district that has an average property tax capacity and spends \$3900 per pupil. The state looks first at 70% of the state average (in our example \$2800 {70%*4000}) and then picks up 75% of that total, or \$2100 (75%*2800). Because our hypothetical district spends less than the state average, the state picks up 40% of the difference between \$2800 and the amount the school district spends. In our example, that means on top of the \$2100, the state gives the school district 40%*1100 or \$440, meaning total school aids to the district total \$2540. Thus the school district that has an average tax capacity and spends a little less than the statewide average receives about 65 percent of its school funding from the state.

As a result of the formula, the highest level of school aids going to a school district with average property tax capacity would be \$2580. Moreover,

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as the level of school funding rises above 110 percent of the statewide average, the district would begin to lose its share of school aids; as spending rises above 125 percent of the statewide average, the district would lose one dollar of aid for every extra dollar it spends.

Nonetheless, the funding scheme would also contain a foundation payment, guaranteeing that the minimum amount of state aid provided to each pupil would be \$250. This assures that even school districts that currently receive no aid would benefit from the program.

How would property tax reduction be sustained?

The Governor has proposed a series of cost controls for both state and local governments. By controlling spending, property taxes can be kept in check. The controls in the plan would:

- Freeze state and local expenditures and levies in FY 1989-90. Compensation increases (within the overall freeze) would be limited to growth in the consumer price index. Excepted from the limits would be compensation increases already in place in existing labor agreements.
- From 1989 to 1992, prevent expenditures, levies, and compensation from growing faster than the CPI.
- After 1992-1993, prevent expenditures, levies, and compensation from growing faster than the growth rate of Wisconsin per capita personal income.
- Prohibit unfunded state mandates to local governments.
- Authorize only by local referendum spending that exceeds the above limits.
- Permit arbitration for municipal employee salaries only if the employer's offer was less than the above listed limits.
- The exceptions: these limits do not apply to capital budgets (i.e. bonding), gifts and grants, enterprise operations and fiduciary expenditures. School districts spending less than 80 percent of the statewide average per pupil expenditure are exempt from the limits.

How would the increase in school aids be funded?

Funding sources are essentially six, and include:

- The normal increase in General Purpose Revenues resulting from economic growth.
- The new state lottery.
- Expansion of the sales tax to non-residential and non-agricultural leases.
- Expansion of the sales tax to winter heating and utility charges.
- Expansion of the sales tax to sewerage charges.
- Adjustment of the two earner income tax credit.

Why does WRA leadership oppose employing a sales tax on commercial leases as a source of funding for property tax reduction?

Two reasons. First, a tax on commercial leases will disproportionately hit small businesses. Small businesses are more likely to lease their place of business than larger businesses, and tend to use more space per employee than larger firms. As a result, small businesses would pay a substantial share of the cost of property tax reduction. In light of how important small businesses are in creating jobs (several studies have shown that businesses with fewer than 100 employees have created substantially more jobs this decade than Fortune 500 companies), any additional tax burden on these businesses would hinder economic development.

Second, because of federal tax reform, commercial real estate has seen its share of the overall tax burden increase substantially, indeed punitively, over the past few years. To tax this sector again is unfair.

**What happens next,
and what can I do
to help mold the
process?**

The next few weeks are critical. Legislators (either the ways and means committee or the joint finance committee) will hold hearings in Madison and around the state over the next eight weeks to determine whether they wish to report the Governors' proposal, or some variant of it, to the floor of the legislature. It is almost certain that some kind of package will be put into place by the end of March. You can make a difference by getting in touch with your state Senator and Representative to let him or her know that you believe property taxes are a serious problem in Wisconsin, and that something needs to be done to reduce them. If you need to find out who your Senator or Representative is, call the WRA at (800)-362-7368.

Also, please remind your clients about the importance of the property tax issue, and ask them to act. If constituents do not tell legislators that this is a key issue, they will have no incentive to get something done. This is particularly true now, when Chrysler's devastating pullout from Kenosha will surely preoccupy legislators. It is also especially important that you attend REALTOR® and Government Day in Madison on March 9, when you can personally tell your legislators how important the property tax issue is to you.

Point out to your legislator that Wisconsin's property taxes are among the highest in the country, and they must be reduced to make the state economically competitive. Indicate that some sort of controls on spending (Wisconsin is the only state in the midwest without them) are important to you. And make it clear that a sales tax on commercial leases is the only impediment from making the plan a clear winner for the state of Wisconsin.

We cannot understate how important this issue is to every member of our Association. The ideas being put forth are creative and complex. It is especially important that our best interests not be undermined by miscommunication of any sort. Therefore, if you are still confused by any part of the Governor's proposal, please get in touch with the leadership of the Wisconsin REALTORS® Association, or association staff members William Malkasian, Michael Theo or Richard Green. They can be reached at (800) 362-7368.

Together, we, the association and its members, can bring meaningful property tax relief to Wisconsin. Thanks for your support.

REAL ESTATE TAX & LAND USE DECISIONS

- I. Because the real estate tax is a significant burden on the revenues of private property and the major source of revenue for a government districts, it has a significant impact on capital budget decisions in the short run, whicy may have counter productive results in the long run. By the same token there is a temptation among planters to manipulate real estate tax assessment, legally or by administrative arrogance, in order to achieve short term land use subjectives.
 - A. Ultimately the question is who benefits and who pays?
 1. Those who pay own property in a specific geographic district, but...
 2. Those who benefit may or may not be found to live in that local district so that there could be significant loss of equlty or Inadvertant shifts of income between those who pay and those who benefit.
 3. Community has conflict of interest since it has equity interest in each tax paying property and therefore a long-term interest in maximizing value while politicians have short-term interest in appeasing special interest.
 - B. For example, in California the courts determined on August 30, 1971 in the Serrano case that it was unfair to children to support education on a local real estate tax because different communities had drastically different capabilities to raise money for education. In Baldwin Park there was only \$2700 of tax base per child while in Beverly Hills there was over \$50,000 per child. Baldwin Hill residents spent over \$577 per pupil while Beverly Hills was spending over \$1200 per pupil, even though the taxpayer in Beverly Hills enjoyed a mill rate less than half as much as the home owner in Baldwin Hills. Unequal resources made the use of the real amendment providing equal protection under the law.
 - C. In Wisconsin the Serrano case lead to new formulas for redistributing the state income tax which favor the poorer counties or communities and a new formula for school aids.
 1. Wealthy communities like Madison with declining school population will have an increasing surplus of assessed value per child (assessed value in excess of \$70) would pay a part of school taxes into a state pool to help those communities with growing school populations and lower assess base.
 2. This negative school tax may encourage urban sprawl and poses a direct tax on one district for the benefit of another.
 3. The real estate tax is perceived as highly local and therefore taxpayers are incensed far more by this redistribution than by redistribution via the income tax. Governor Lucy has succeeded in shifting about 25% of local school cost to the state income tax; however any local change in the components of the distribution formula means sudden changes in state aid for local schools.
 4. So Madison finds itself with declining enrollments, some decline in state aids, and therefore magnified increases in the mill rate. Rise in mill rate cause families to move to Sun Prairie and Fitchberg perpetuating future declines in Madison enrollment and under utilization of public capital resources in Madison.
 - D. Another major burden on the real estate tax in urban areas is the welfare program required of large cities which is not required of rich suburbs.
 1. To the degree that welfare is financed by local taxes and is fragmented in terms of administration, it encourages the rural poor to move to the cities, either within the county or across state line.
 2. Rise in mill rates then drives those with a more expensive homes and

industries with jobs out of the central city.

3. Tax base declines while welfare costs increase, gradually accelerating the spiral of pressures bringing about relocation of taxpayers establishments who perceive no benefit from the burden of payment.

- E. Another major problem is the tax exempt property such as the church, hospital, university, or federal force products land or state office building. Over 40% of the land in Madison is tax exempt and does not contribute directly to the benefits of fire protection, street names, police security, libraries, etc.
 1. Some pay fees in lieu of taxes. State office buildings pay 15¢ per square foot and public housing pays 10% of gross rents collected. The city can charge state agencies for overtime work by police for things like strikes and riot control. Most properties would pay nothing, however.
 2. You could argue that these land uses are export industries creating jobs, and the income which supports assessed value in the community.
 3. On the other hand, if government pays taxes to another government district these would be paid by the taxpayers in another form. However changing the base from a geographic area to all state or federal taxpayers spreads the cost more accurately among those who benefit.
 4. Others argue that government property are exempt because it would be impossible to appraise the building in terms of market value in order to introduce them on the tax roles.

II. Federal policies may be very unfair to local residents even though the objective of government policies is good. Consider the question of who pays for the Federal wild river program.

- A. Professor Barrows of Agricultural Economics studied the impact of wild river acquisitions of the National Park Service on the town of Springbrook in Washburn county, where it is protecting the Namekagon River. The goal is approximately 3200 acres of privately owned land which will be purchased and removed from the tax role even though the families thereon may be permitted to stay for up to 20 years as tenants. The town still must provide services including education, nevertheless.
- B. NPS makes no payment to local government. In contrast the town of Springbrook receives 50¢ per acre on 43 acres preserved by the State DNR and 20¢ per acre on 7500 acres of county forest plus a share of timber sale revenues.
- C. NPS had acquired in 1974 approximately 600 acres of its goal which was valued at \$260,000 or 10% of the total tax base in the township. The first impression is that if the tax base drops 10%, the mill rate must increase by the same amount to make up the loss. However the issues are more complex.
- D. The \$260,000 tax base loss in the town of Springbrook is only 0.2% of the tax base of Washburn County and 0.3% of the school district tax base. The School tax accounts for 70% of the total property tax so the loss of tax base would hurt if it were not neutralized through the state formula for share income tax. As a result the net change in taxes looks like this:

| | |
|-------------------------------|----------------------------------|
| Change in school tax rate | - .2¢ per \$1,000 property value |
| change in county tax rate | -1.0¢ per \$1,000 property value |
| change in town tax rate | - .5¢ per \$1,000 property value |
| change in state shared taxes | + .4¢ per \$1,000 property value |
| change in property tax relief | + .2¢ per \$1,000 property value |
| TOTAL TAX RATE IMPACT | -1.1¢ per \$1,000 property value |

- E. As a result state taxpayers are paying the consequences of a federal land use reservation program while federal income taxes are being used to pay acquisition.
- III. The greatest sensitivity to real estate tax policy and land use decision is at the local metropolitan level where fragmented local government compete for land uses which produce the highest tax base value and the lowest service cost, or to avoid land uses such as low income housing which may have high service cost and little additional tax income. This war takes the form of fiscal zoning, annexation fights, tax abatement or investment stimulation.
- A. Fiscal zoning establishes land plan to encourage certain land uses and discourage others. For example large lot zoning, trailer park standards, conditional use of zoning, or reservation of large land areas for "conservation" are all examples of fiscal zoning.
1. Kohl's shopping center on University Avenue
 2. Commodor Apartments - town of Madison
 3. Madison Mobile Home Park rurals
- B. Annexation (voting acres and residents)
1. Seybold Road and West Town Shopping Center
 2. Municipal control of utilities vs. efficiency of metropolitan systems
 3. Pre-annexation contracts
- IV. Almost everybody wants to favor some particular land use policies by means of tax abatement. The most common sort of objectives are conservation of open space, rehabilitation of dilapidated structures, construction of new industries, or the preservation of landmarks.
- A. Two years ago Wisconsin voters unknowingly removed the constitutional requirement that all real estate be taxed on market value to permit swamps and farmlands to be taxed on current use value if the legislature wished to do so.
1. Conservationists want far owners to accept tax relief in exchange for future development.
 2. Farmers want tax relief now and profits from development later.
 3. Politicians suggest temporary relief now and a rollback tax if the land is sold for a price higher than the land value of farmland.
 4. Townships want the State to replace the lost real estate taxes.
- B. Some people believe that repair and improvement of the whole property will increase real estate taxes more than income so that there is no incentive to modernize.
1. A direct tax abatement is not legal in Wisconsin (Milwaukee Bank case).
 2. One alternative is to make grants for repair and then raise the real estate tax which ultimately refunds the grant.
 3. Of course many communities ignore the proper valuation approach and deliberately under assess remodeling or new industry. Competition among communities by favoring new industries was one of the reasons that State took over the assessment of all manufacturing facilities but of course State has an interest in competing with other state.
- C. Landmark buildings often represent underutilization of a valuable site, costing

the owner and local government significant tax base.
Madison City Hall Project
Boston Old City Hall Project

- D. The location of public facilities may contribute positive or negative stimulation to the surrounding tax base.
1. The Madison Center for performing arts - Lake Monona vs. State Street
 2. MATC loss of tax base vs. loss of retail sales vs. present value of transportation cost compared to land cost.
 3. Redevelopment could be stimulated by having a city give away vacant sites to developers which agree to build a certain amount of tax base. For example, apartment land in Madison might cost \$2,000 a unit to buy and clear. Even a small apartment will generate a \$20,000 tax base or \$250 a year in taxes. The city would have the money and interest back in less than ten years; it would enjoy a 10% return on its money less cost of services. A one-bedroom apartment will have no school children so the school district will enjoy \$350 gain; perhaps it should be paid to developed home sites for households without children.

REAL ESTATE TAX, LAND USE
& PUBLIC INFRASTRUCTURE SOLVENCY

- I. As a major cost of real estate ownership, the real estate tax has a significant impact on land use decisions, an impact which may advance community planning or be counter productive and cause those types of land use decisions which are against the public interest.
 - A. You have discussed factors which could reduce or increase the total revenue which would need to be collected from the taxes. Today we will discuss how the tax base can be manipulated to change the mill rate.
 - B. We will briefly discuss methods for defining assessable (ratable) property methods for land planning to encourage high assessment value, and the uses of public investment to stimulate new assessable private investment.
- II. Which property should be assessed and how much?
 - A. Government owned property is exempt from the real estate tax. It represents 40% of land in Madison and receives the benefit of fire, police, and other city services.
 1. State office buildings pay 15¢ a sq. ft. toward city services, public housing pays 10% of effective rents in lieu of taxes, and Eagle Heights pays so much a child toward school but these are negotiated and don't change often by inflation. Other government uses pay nothing.
 2. What happens to a township when a sizable portion of its land is taken by the federal government for a military base or a wild river reservation. Who benefits and who pays for the shift in tax burden?
 3. Should government installations be considered economic base items which support other real estate values in town or should it be taxed like everyone else. If so, what is market value of Bascom Hall?
 4. Failure to put a real estate tax on government land means it is under-utilized. The University can hold land at Charmany Farms on Whitney and Mineral Point Road indefinitely, speculating on future appreciation but causing unnecessary urban sprawl and duplication of urban services.
 - B. Churches, hospitals, and private schools are also exempt so long as the property is contiguous to its operating centers or actually used for charitable purposes. The argument is that the social good is well served by these organizations and that real estate taxes would just increase the cost of services or reduce their quality and scope. But when is there too much real estate so classified with no correspondent social benefit?
 - C. Recently Wisconsin voters voted to provide a partial exemption to farmers and conservation lands by constitutional referendum. In short, these lands could be taxed on the value of their actual use rather than market value. The Legislature has enacted a program which requires counties or townships to file a master land plan which defines prime agricultural or conservation areas. Property owners can then elect short and long term use value status subject to certain conditions.

The farmer near a growing area could continue to farm even though his land was now suitable for subdivision. Because his values are understated other taxpayers in his district pay a higher mill rate. The Legislature has decided to replace lost revenue from state funds (as they do with forest land). There will be a 75% roll-back of real estate tax reductions charged against profits when a farmer sells his land.

- D. If we abandon market value as the benchmark for everybody, do we then exempt the elderly pensioner who owns his own home, the low income family, or other political favorites such as farmers and veterans?
 - E. Some people propose exemptions from buildings and improvements, taxing only the land. The value of the land would reflect the assessors best guess as to its best use. In that way a high intensity site value would force the owner to build or improve his property to that use in order to pay the taxes. Site value taxation is being used in New Zealand, Australia, Pakistan, and Jamaica to force land owners to develop their property rather sit on it to speculate. This fosters economic development and the breakup of large land holders in areas ready for development, agricultural or urban. It assumes the land planner and the assessor know what they are doing.
 - 1. A variation is the graded tax, with a higher mill rate on land than on buildings.
 - 2. Which mechanism is more trustworthy, the marketplace or the government technocrat?
- III. A desire of a community to discourage low value land uses or high service cost occupancies leads to what is termed fiscal zoning.
- A. Mobile homes provide a low real estate tax base but often provide many children for the schools and clients for the welfare program. Communities can make the specifications for the mobile home parks virtually impossible to meet.
 - B. Large lot zoning typically mean expensive homes, high tax base, and low densities which require little public infrastructure in terms of roads, utilities, and schools. Can be ruled out as illegal.
 - C. The urban renewal program, low income housing was replaced by luxury housing to increase real estate tax revenues with which to finance the city's share of renewal and at the same time force relocation of high service costs families and uses to other communities.
 - D. Cities may underassess new industry to encourage their construction in town while at the same time real estate tax costs may gradually force certain industries to leave town to remain competitive.
 - E. The cities wage the war for tax base with many tools, including city water, annexation, fire department services, and negotiated pre-annexation agreements with developers.
- IV. Public land use decisions and capital expenditures must always be considered in terms of the net effect on city tax base and tax revenues.
- A. The city auditorium issue included the issue of locating the facility so as to stimulate private investment. The Law Park site was totally surrounded by publicly owned land and buildings so that it could not stimulate appreciation in private land value.

The State Street site stabilizes and may increase values in a declining area.

- B. A current issue is the relationship of an MATC campus to the viability of downtown Madison, particularly retailing and restaurants on the Square and on State Street.
 1. Some downtown sites would have meant the loss of several blocks of taxpaying real estate and the present value of that income stream would represent a tremendous loss to the city although it receives no compensation.
 2. On the other hand some would argue that locating the MATC site at the airport would undermine residential values and contribute to a more subtle and slow rate of downtown decline. A \$25,000,000 facility may have significant impact on the city tax base.
- C. The McCormick parking ramp might have been located down hill to the north of its present location. Some smaller older buildings would have been lost to the tax roll but a higher value, more intensely developed building might have been built on East Mifflin where the parking lot now stands.
- D. Government support of new towns can occur when the government chooses to build new government installations at the new town site. The Irvine Company astutely realized that it would increase its own value by giving 1000 acres free to the U. of California. That may also be true of the small developer who gives up 10 acres to the school board to capture a needed new elementary school.
- E. Early in the course ownership equity was defined " as the degree to which one can divert cash flow to their benefit." Since local government and the school board receives 16-20% of all rental income in real estate taxes, local government owns 16-20% of all tax paying rental properties in town. Conceivably government could make money by providing bonuses for certain types of development:
 1. For example, if apartment sites cost \$3,000 for each one-bedroom apartment and these apartments have a market value of \$22,000 each, then new construction might provide \$25,000 of tax base, paying \$700 a year towards government. If the City receives 30% of that, the result would be \$210 a year on \$3,000 investment or 7%. If the City could keep all the tax revenue, it would have its money back with interest in five or six years.
 2. Official recognition of this opportunity to stimulate private tax base with public investment is found in the new technique of tax increment financing. (TIF) This technique could keep nearly all the \$700 above for the City, cutting out the school board, the County, etc.
 3. TIF defines a specific district and its tax base in which all governments participate. Then the City can issue bonds to finance certain improvements within the district and pledge tax revenues from increased private property investment and values to pay off the bond. Bond holders require specific private investment already committed contingent only on the public improvement.

4. On Williamson Street the bond issue was used to reduce the cost of land for the Mollenhoff's so they could build a condominium on the Fauerbach site. The Carley proposal for Pinckney Street is to build two condominiums and redevelop the Emporium if the City will use TIF funds to build a parking ramp and restore the historical character of Mansion Hill. Others have proposed putting housing units above parking ramps so that the tax base can reduce the cost of the ramps meter fees required to finance the ramp.
- V. Building projects to house public offices or public housing can be regarded as cash flow investments. Because these may not have any revenue power, they should be analyzed with life cycle costing, i.e., the investment objective is to achieve the lowest present value of outlays over the life of the project to accomplish a given purpose.
- A. Since a state office building or city hall pays no real estate taxes and can borrow money at only 6% interest, the annual cash cost for operating expenses, debt service and maintenance should be less than that charged by the private sector. Nevertheless state office buildings like JEF-1 cost the state more out-of-pocket per sq. ft. of usable area than any comparable private office building. Why not lease space which can pay real estate taxes? Why the extra cost?
1. Architects have convinced government patrons that all public buildings must be monumental in size and material to impress people with government.
 2. If there is no cash measure of efficiency, designer arrogance is in control. The City-County Building has over 440,000 sq. ft. of space but only 290,000 is usable because of wide corridors, extra lobbies, etc.
 3. On the other hand the school board have been more sensitive to first cost with the result that the newer buildings had little insulation, cheaper one story construction, etc. so that they have excessive heating and maintenance cost. The result is the present value of outlays over the life of the building is greater than more expensive construction at the outset.
 3. Recently the City bought the Post Office Building which will require intensive remodeling for housing some city services. The County found ways to expand the City-County Building at lower cost and in doing so, left the City to find tenants for the balance of the remodeled Post Office Building. Some of those Alderpersons who endorsed the purchase, did so to prevent the State from buying it for the State Supreme Court. Now the State must acquire more land from the city tax base for another state office building. What is the true cost of the city office space? What would happen if the city gave away the land to someone who would build a quadrangle of apartments on that block? The City would gain some tax base, more residents downtown, and perhaps avoid creating a government office ghetto. The city planners are incapable of carrying off such a project because they lack the discipline of the numbers.
- B. Public servants who understand the power of cash flow when Legislators do not can be as dangerous as private developers who ignore public solvency in terms of who pays and who benefits. A developer, a planner, or a designer should read the biography of Robert Moses, The Power Broker, to appreciate every nuance in control of cash flows as the secret to control of land use and development.

VI. Federal policies may be very unfair to local residents even though the objective of government policies is good. Consider the question of who pays for the Federal wild river program.

- A. Professor Barrows of Agricultural Economics studied the impact of wild river acquisitions of the National Park Service on the town of Springbrook in Washburn County, where it is protecting the Namekagon River. The goal is approximately 3200 acres of privately owned land which will be purchased and removed from the tax role even though the families thereon may be permitted to stay for up to 20 years as tenants. The town still must provide services including education, nevertheless.
- B. NPS makes no payment to local government. In contrast the Town of Springbrook receives 50¢ per acre on 43 acres preserved by the State DNR and 20¢ per acre on 7500 acres of county forest plus a share of timber sale revenues.
- C. NPS had acquired in 1974 approximately 600 acres of its goal which was valued at \$260,000 or 10% of the total tax base in the township. The first impression is that if the tax base drops 10%, the mill rate must increase by the same amount to make up the loss. However the issues are more complex.
- D. The \$260,000 tax base loss in the Town of Springbrook is only 0.2% of the tax base of Washburn County and 0.3% of the school district tax base. The School tax accounts for 70% of the total property tax so the loss of tax base would hurt if it were not neutralized through the state formula for share income tax. As a result the net change in taxes looks like this:

| | |
|-------------------------------|----------------------------------|
| Change in school tax rate | - .2¢ per \$1,000 property value |
| Change in county tax rate | -1.0¢ per \$1,000 property value |
| Change in town tax rate | - .5¢ per \$1,000 property value |
| Change in state shared taxes | + .4¢ per \$1,000 property value |
| Change in property tax relief | + .2¢ per \$1,000 property value |
| TOTAL TAX RATE IMPACT | -1.1¢ per \$1,000 property value |

- E. As a result state taxpayers are paying the consequences of a federal land use reservation program while federal income taxes are being used to pay acquisition.

VII. The greatest sensitivity to real estate tax policy and land use decision is at the local metropolitan level where fragmented local government compete for land uses which produce the highest tax base value and the lowest service cost, or to avoid land uses such as low income housing which may have high service cost and little additional tax income. This war takes the form of fiscal zoning, annexation fights, tax abatement or investment stimulation.

- A. Fiscal zoning establishes land plan to encourage certain land uses and discourage others. For example large lot zoning, trailer park standards, conditional use of zoning, or reservation of large land areas for "conservation" are all examples of fiscal zoning.
 - 1. Kohl's shopping center on University Avenue
 - 2. Commodor Apartments, Town of Madison
 - 3. Madison Mobile Home Park rurals

- B. Annexation (voting acres and residents)
 - 1. Seybold Road and West Town Shopping Center
 - 2. Municipal control of utilities vs. efficiency of metropolitan systems
 - 3. Pre-annexation contracts

VIII. Almost everybody wants to favor some particular land use policies by means of tax abatement. The most common sort of objectives are conservation of open space, rehabilitation of dilapidated structures, construction of new industries, or the preservation of landmarks.

- A. Two years ago Wisconsin voters unknowingly removed the constitutional requirement that all real estate be taxed on market value to permit swamps and farmlands to be taxed on current use value if the legislature wished to do so.
 - 1. Conservationists want farm owners to accept tax relief in exchange for future development.
 - 2. Farmers want tax relief now and profits from development later.
 - 3. Politicians suggest temporary relief now and a rollback tax if the land is sold for a price higher than the land value of farmland.
 - 4. Townships want the State to replace the lost real estate taxes.
- B. Some people believe that repair and improvement of the whole property will increase real estate taxes more than income so that there is no incentive to modernize.
 - 1. A direct tax abatement is not legal in Wisconsin (Milwaukee Bank case).
 - 2. One alternative is to make grants for repair and then raise the real estate tax which ultimately refunds the grant.
 - 3. Of course many communities ignore the proper valuation approach and deliberately under assess remodeling or new industry. Competition among communities by favoring new industries was one of the reasons that State took over the assessment of all manufacturing facilities but of course State has an interest in competing with other states.
- C. Landmark buildings often represent underutilization of a valuable site, costing the owner and local government significant tax base.
 - Madison City Hall Project
 - Boston Old City Hall Project

Business 550/705
The Real Estate Tax - Outline

- I. The cash cycle for public infrastructure begins with the real estate tax, user fees, and federal grants, but the real estate tax provides almost 80% of revenues to support local government.
 - A. There is only one federal income tax to understand, 50 state tax systems, but more than 14,000 real estate tax jurisdictions.
 1. Lack of standardization and skill of application leads to monumental misunderstanding.
 2. Unlike income tax, tax payer does not participate in calculation
 3. Administrative costs are not properly funded
 4. 90% of taxpayers believe if they are underassessed they have beat the system and resist restoring equity.
 - B. Historical origins of real estate tax are in socage rents and colonial taxes on agricultural productivity.
 - C. With development of cities, tax pay shifted to market values of improvements of land - an ad valorem tax.
- II. Current city systems are based on a process developed at the turn of the century in Minneapolis, Cleveland, and Milwaukee by a municipal engineer named Somers.
 - A. Somers tried to reduce political interference and arbitrary valuation by introducing the following concepts:
 1. Separation of assessment from municipal budgeting functions
 2. Definition of a mechanical procedure to assess each property consistently and reduce judgment calls to the minimum, permitting assessors to arrive at the same value conclusion on any specific property.
 3. Simplification in order to teach the public as well as field men low cost in administration and to facilitate a legal defense in the event of appeal.
 4. Recognition of assessment was to produce an aggregate base number for proportion distribution of municipal revenue needs among all property owners; consistency of relative differences was more important than accuracy in predicting sales price; distinctions had to be equitable and explainable.
 - B. The assessor is charged with mapping and describing each property and estimating an assessed value. All property values in the aggregate equal the community tax base.
 - C. At the same time each community budgeting unit would establish how many dollars they would require and the proportion to be generated from the real estate taxes as opposed to other revenue sources.
 - D. Each fiscal unit divides the required budget by the aggregate real estate tax base in its defined district to determine the tax rate.
 1. The tax rate is called the mill rate - the fraction of a penny of tax per dollar of assessed value.
 2. The technical mill rate may also be stated in common usage as dollars per \$1,000 of assessed value. In Madison in 1978 the total mill rate was 28.28 less a state credit of 4.127 mills.

- E. The total mill rate is a combination of tax districts which may assess real estate taxes, including:

State - 21¢ per \$1,000
 County - \$2.38 per \$1,000
 Metropolitan sewer - 0
 Library - 77¢ per \$1,000
 School - \$15.6998 per \$1,000
 Vocational school - \$1.27 per \$1,000
 General city - \$7.96 per \$1,000
 Total tax - \$28.28

- F. Since each district combines different taxing areas and assessor, it is necessary to adjust between districts for the reliability of the ratio of assessed value to market value. This ratio is called the equalization rate, and the closer to 100% the better the assessment practice may be in that community. These rates are computed by a State district office of the State Department of Revenue.
- G. Therefore the basic elements of the real estate tax process represent a formula something like this:

$$\frac{\text{Public enterprise budget} \times \% \text{ from real estate tax}}{\text{Market values} \times \text{equalization rate}} = \text{mill rate or rate/1000}$$

$$\text{Market value of parcel} \times \text{equalization rate} \times \text{mill rate} = \$ \text{ tax per parcel}$$

- H. A special assessment is a charge for public capital improvements such as sidewalks, streets, the State Street mall which benefit a specific group of properties as well as the community. The capital budget may be shared 50-50 with the community and then prorated on a formula that is appropriate, such as front foot, square foot of lot size, assessed value of land, etc. The tax payer is given 3-10 years at a favorable interest rate to repay this special assessment. These special assessments can be pledged by the city to secure bonded debt for the cost of improvements.
- III. The Wisconsin Real Estate Tax assessment process is typical of many states throughout the country but considerably behind the best like California, New York, or Nebraska.
- A. There are 1100 or more assessment districts, no more than 50 of which have professional appraisers for their assessor. Most assessors are still elected at the township level.
1. Wisconsin has been unable to pass legislation consolidating assessment at the county level because of rural distrust of professionals in this sensitive area.
 2. Wisconsin law does permit consolidation at the county level by referendum with the state then subsidizing most of the budget. For example, Kenosha County.
 3. The state provides an assessment manual which attempts to standardize procedures which assessors must follow.
 4. Responsibility for complex industrial appraisal has been taken over by the state.
- B. Statutes established seven general classes of property. Under special conditions agricultural and conservation may be taxed on use value; all others at market value:
- | | | |
|-----------------|----------------|-----------------|
| 1. Agricultural | 3. Commercial | 5. Retail |
| 2. Industrial | 4. Residential | 6. Mining |
| | | 7. Conservation |

The Real Estate Tax - Outline

- I. The public infrastructure enterprises depend primarily on the real estate tax levy for the revenues in its cash cycle. The real estate tax provides more than 80% of all locally collected revenues which support local government enterprises. The amount of money collected through the real estate tax is only less than total federal income taxes and the total social security tax collected in both amount and numbers of taxpayers.
 - A. There is only one federal income tax process to understand, perhaps 50 state taxes, but over 14,000 real estate tax jurisdictions, each administering the tax in their own way.
 1. The different systems lead to monumental misunderstanding.
 2. Unlike income taxes, the taxpayer makes none of the calculations; thus he receives a bill but plays little part in the process.
 3. Despite the accounting burden placed on the local tax assessor and treasurer, local governments do not provide an adequate budget for collection so the cost of administering the tax per dollar of collections is less than any other tax. The consequences are inadequate or incompetent administration.
 4. Ironically 90% of the taxpayers believe they are underassessed and are therefore less interested in restoring equity by improving the system than they are in maintaining an inequity they perceive as favorable to themselves.
 - B. The historical origins of the real estate tax were in the Socage rents paid by yeoman and knights and lords to the king in exchange for tenure on their farms or castles. These rents could be paid by military service or labor on public project like road maintenance or in crops.
 1. Original colonial settlers acquired their tenure to the land through the trading companies which charged a socage rent in terms of the export surpluses of the colonies.
 2. Rents to the trading companies replaced by service to the local township in terms of road maintenance, etc.
 3. In the more sophisticated developed areas it became possible to make a cash payment in lieu of service.
 4. Once feudal tenure had been broken by the American revolution the socage traditions were converted to a real estate tax.
 5. Since the rural areas were agricultural, the tax was levied on productivity of the land, expected bushels of grain capacity to support a certain number of livestock per acre.
 - C. As the country became more urban the base for the real estate tax gradually shifted to the value of the improvements (cost to replace), rather than the land - an ad valorem tax.
- II. The basic elements of the urban tax system generally found today were developed about the turn of the century in Minneapolis, Cleveland, and other cities by a municipal engineer named Somers.

- A. To reduce political or discretionary valuation the system requires:
1. Separation of assessment administration from the municipal budgeting function.
 2. A mechanical procedure to assess each property to reduce judgment calls to the minimum and permit different assessors to arrive at the same conclusion.
 3. Since assessment was a device for proportionate distribution of municipal revenue needs among all property owners, it was not necessary that absolute values be correct; only that relative differences be consistent, equitable, and explainable.
 4. The process had to be simple to teach, low cost in administration, and simple to appeal or defend.
- B. First each property must be mapped and given an assessed value. All of the values in the aggregate are then added to total the tax base.
- C. At the same time the community budgeting process would establish how many dollars must be generated for the next fiscal year from the real estate tax as opposed to user fees, federal grants, and other miscellaneous revenue.
- D. Each fiscal unit divides the required budget by its real estate tax base to determine the tax rate.
1. The tax rate is called the mill rate - the fraction of a penny of tax per dollar of assessed value.
 2. The mill rate may also be stated in the vernacular in dollars per \$1000 of assessed value. In Madison last year the total mill rate was 51.90 but there was a state aid credit of 7.47 mills which reduced the net mill rate to 44.43.
- E. However, this total mill rate represented a combination of tax entities who may assess real estate taxes, including:
- | | |
|-------------|------------------|
| State | 32¢ per 1000 |
| County | \$4.73 per 1000 |
| Met. Sewer | 0 |
| Library | 12.8¢ per 1000 |
| School | \$29.44 per 1000 |
| Voc. School | \$1.88 per 1000 |
| Gen. City | \$14.25 per 1000 |
- F. Since each of these fiscal districts may include different geographic areas, the assessed values used as a base for the same tax may be done by different assessors. It is necessary to adjust between assessment districts for the reliability of the relationship of assessed value to market value. This function is performed by the state which establishes the historical relationship of assessed values to actual sales values in each district - a ratio called the equalization rate. In Madison in 1975 homes were assessed at 65% of expected sales price and commercial properties at 59%.

- G. Therefore the basic elements of the real estate tax process represent a formula something like this:

$$\frac{\text{Public enterprise budget} \times \% \text{ from real estate tax}}{\text{Market values} \times \text{equalization rate}} = \text{mill rate} \quad \text{mill rate or rate per 1000}$$

$$\text{Market value of parcel} \times \text{equalization rate} \times \text{mill rate} = \$ \text{ tax per parcel}$$

- H. A community may also charge properties receiving special benefits from public improvements such as sidewalks, streets, public malls, etc. a special assessment which prorates a portion of a municipal improvement to a selected group of properties. The taxpayer may be permitted to pay this special assessment over a period of 3 to 10 years and these special assessments may be pledged by the city to secure bonded debt for the cost of improvements.
- III. The Wisconsin real estate tax assessment procedure is typical of the general approach throughout the country, although some states are more sophisticated than Wisconsin.
- A. The Wisconsin statutes permit any unit of government, including the townships to have its own assessor so that there are over 1100 assessment districts, no more than 50 of which have professionally trained appraisers for their assessor. Most of them still elect their assessor.
1. Wisconsin has been unable to pass legislation consolidating assessment at the county level because of rural distrust of professionals in this sensitive area.
 2. Wisconsin law does permit consolidation at the county level by referendum with the state then subsidizing most of the budget. For example, Kenosha County.
 3. The state provides an assessment manual which attempts to standardize procedures which assessors must follow.
 4. Responsibility for complex industrial appraisal has been taken over by the state.
- B. The Wisconsin statutes establish seven general classifications of property and each of these may be given further sub-classification by the local assessor, most of whom follow suggested classes in Wisconsin Tax Assessors Manual.
1. Agricultural
 2. Industrial
 3. Commercial
 4. Residential
 5. Retail
 6. Mining
 7. Conservation
- C. To classify each parcel of property the assessor must first develop a tax map which shows every parcel in true relation to its size, shape, location, and general improvement.

Government Regulation of Real Estate at the Local Level

1. Traditionally public regulation of land use and affecting real estate have been regarded as very personal and local and until recently the states have left these matters to the local government.
 - A. Citizen can have direct administrative contact in situations like:
 1. Zoning variances and rezoning
 2. Appeal of tax assessment
 3. City services via intercession of the alderperson
 - B. Indirect regulation of land use occurs through municipals policies for:
 1. Public works
 2. Building code enforcement and revision
 3. Traffic control and parking
 4. General property and assessment
 5. Viewpoints of the Board of Estimates and tax rates
 - C. Public administrator policies and attitudes have long term gradual effect on land use patterns:
 1. Influence of assessment policies over investment
 2. Attitudes toward annexation
 3. Public works planning and the five year capital budget
 4. Zoning policies to promote master plan
 5. Impact of government project
 6. Action of local government toward:
 - a. Pollution control
 - b. Efficiency of transit
 - c. Housing supplies
 - d. Desire for new industry
 - D. In any micro situation all of these inputs appear democratic but when viewed in light of political fragmentation and duplication the result may be anything but public control of land use, particularly land uses which reflect regional or national priorities.
 1. Competition for advantageous land uses
 2. Self interest in avoiding less desirable responsibilities of government
 3. Justified local fear of state or federal controls
 4. Progress requires means to break stalemate of local partisan politics
11. Dane County is a good example of political fragmentation and the patterns of government control of land use.
 - A. (one) county
 1. Board of supervisors
 2. Executive administrator
 3. Regional planning commission
 4. Various boards appointed by executive administrator or by supervisor

- B. (three) cities (Madison, Monona, and Middleton)
 - 1. Wards and aldermen
 - 2. Mayor (full-time or part-time)
 - 3. Department heads
 - 4. Commissions
 - C. (20) villages
 - 1. Village board
 - 2. Village president
 - 3. Sub-committees of the board
 - D. (25) townships
 - 1. Three elected supervisors
 - 2. Chairman of the Board selected by the board
 - E. (approx. 80) special districts and city authorities with real estate tax powers
 - 1. School, drainage, fire, water control, insect control, etc. (downtown
 - 2. Educational board elected but most are court appointed renovation districts)
 - F. The Madison metropolitan area has 129 different units of government, the Chicago metropolitan area has about 800 and the New York metropolitan area has 1300 various little political worlds.
 - 1. The Port Authority of New York
 - 2. The Chicago Housing Authority
 - 3. Only a few big cities have tried to bring metropolitan areas under one government, such as Montreal and Miami and Indianapolis
 - 4. Milwaukee once considered voting itself out of existence so that all urban functions would be provided by the county
111. To complicate local government, super-imposed problems of representation and apportionment, political parties, community power structure, and the urban-suburban clash.
- A. Significant breakthrough of reapportionment
 - B. Geographic and party splits
 - 1. Economic segregation
 - 2. Fragmentation and abandonment of the city
 - C. Community power structure
 - 1. Local government not influenced by big corporate business
 - 2. Power structure represents associations of local interests
 - a. Chamber of Commerce
 - b. League of Women Voters
 - c. Board of Realtors or Home Builders Association
 - d. Neighborhood Associations
 - e. Variety of citizen pressure groups

- D. Communications management
- E. Public officials in a position to spend tax money or grant favors
- F. Short-term politics with won-lost fascination of power structure
- G. Regional planning commissions dilute political power of any one vested interest
 - 1. Bad example - the Commodore Building, Township of Madison
 - 2. Good example - SEWRPC, 1969 San Francisco Bay Development Commission
- H. Dane County Regional Planning Commission recently proposed five alternative strategies for land use planning - value judgments which could be converted to objectives and specific criteria and regulation. The five alternatives:
 - 1. Existing trends - corrected for worst mistakes
 - 2. Modified trends - cluster planning and less sprawl
 - 3. New directions to preserve prime agricultural or environmental lands
 - 4. Reduced population growth by control of economic base
 - 5. Sharp reduction on land area acceptable for development to force higher densities in existing urban areas
- I. All strategies have violent resistance and emotional supporters. Thus, some compromise is being sought between exclusively local land use policies highly vulnerable to local political convenience and national land use control which would be too general and insensitive to special local needs and values.
- J. Next we will look at federal controls and state controls pushed by federal subsidies and penalties.

URBAN LAND 550
LECTURE OUTLINE
Federal Regulation of Real Estate

- I. Federal control of land use can be direct or indirect, can relate to public or private land and might be subdivided among three areas.
 - A. Natural resources including public land holdings, coastlines, and off-shore bottoms and navigable rivers.
 - B. Rural hinterland - especially prime agricultural land
 - C. Urban land development
 - D. National policy has been to foster development and exploitation of agricultural land as land was considered an unlimited commodity
 - E. National recognition of land as a depletable resource has made land a pivotal issue:
 1. In environmental awareness
 2. Pressure for reform of governmental structure
 3. Adjustment negotiation power among producer, consumer, and public
 4. Legal view of property rights (Justice Hallows quote from Just vs. Marinette Co. - 1972 - 56 Wis 2d 7)
- II. Federal government owns 1/3 of U.S. - about 755 million acres. Legislative battles have begun to establish national priorities and centralized federal control since currently each government agency has its own land use program and land use policy.
 - A. Some agencies controlling huge numbers of acres are National Park Service, Dept. of Interior, Dept. of Defense, and GSA
 - B. Other agencies control infinite number of small parcels, including many surplus.
 - 1 U.S. Post Office
 2. FHA Inventory of Foreclosed Properties
 3. HUD particularly its Division of Urban Renewal
 - C. Current Congressional proposals include bills attributable to Senator Jackson and Congressman Aspinall.
 - D. Jackson approach to subsidize states which master plan land uses if state will
 1. Develop up-to-date inventory of resource data
 2. Establish single authority to administer land use policy
 3. Develop technical and professional expertise
 4. Identify priority areas subject to land use planning
 - E. Federal subsidy of coastal land planning on oceans, rivers and lakes
 - F. Aspinall proposal not only includes provisions for private land control as in Jacksonville but proposes bringing all federal lands under a single explicit land use policy.
 1. Present fragmentation permits frustration of single agency plan
 2. Conservationists violently oppose to Aspinall proposal as it would theoretically reduce segregation of protected uses such as parks and wild life and permit potential exploitation of federal lands by logging, mineral, and cattle interests.
 - G. At the federal level rational policies are difficult to sustain under the vocal and articulate lobbying of extremists on all sides.
 - H. Some rational techniques do exist which might establish rational land policies.
- III. A regional land use model can reduce facts to basic alternatives and provide standards for selection but value choices will remain political decisions.

- A. Aerial surveillance and computer data processing permits development of a suitability matrix to fit activities to the land.
- B. Consider proposal of Gruen and Gruen for a control system relative to the coastline of California.
- C. Physical factors already available included such static attributes as:
 - 1. Physiographic
 - 2. Pedologic
 - 3. Geologic
 - 4. Hydrologic
 - 5. Climatic
 - 6. Biotic
 - 7. Unique site of situation of high scenic value
- D. Dynamic site attributes available from existing information included factors:
 - 1. Population
 - 2. Historic-archeologic site
 - 3. Transportation
 - 4. Utilities
 - 5. Public recognition
- E. Competitive uses would be examined for compatibility with alternative sites and priority in terms of economic dependency on specific location.
- F. Economic dependency would be measured in terms of the opportunity costs of locating the establishment elsewhere for the private investor.
- G. The general decision process might follow the outline attached.
- H. Impact is not only a question of ecological or fiscal concern for eventually the choice means somebody gets hurt to benefit somebody else. Issues of impact can be reduced to:
 - 1. Who benefits by how much?
 - 2. Who pays by how much?
 - 3. When does a change in land use take place?
- I. Cost benefit must also deal the transfer cost of lost opportunities which are the price of doing nothing with a scarce resource which will be the inheritance of the next century.
- J. Value judgements are eventually political decisions. For example, what of the issue of jobs now vs. the future landscape? Who decides? and if the work week must be shortened who tells the public to choose recreation which does not waste energy or contribute to pollution?
- IV. Although federal government still lacks a total set of national priorities, one consensus already apparent in federal programs is that the flow of rural poor to the city should be stopped or reversed.
 - A. Programs for rural area development
 - B. The Farm Home Administration
 - C. The Small Business Administration and The Rural Assistance Administration
 - D. Federal loans for construction of new towns
 - E. Federal programs for rural poverty pockets such as Northern Wis. and Mich. or Appalachia
- V. Land use decisions in the private sector can be manipulated obliquely by the federal government through a wide variety of governmental agencies.
 - A. For example, IRS has shaped its depreciation policy to encourage or discourage investment decisions.
 - 1. Certain kinds of industries are permitted a 5 year write-off of new plants and equipment which are dispersed into rural areas.
 - 2. Renovation of old apartment units is encouraged by permitting a 5 year write-off of all remodeling expense if it exceeds \$3500 per dwelling unit.

3. Investment in subsidized low income housing is given more rapid relief from the tax on excess depreciation and if the building is eventually sold to its tenants the investor pays no capital gains tax if he reinvests in housing for low income families.
 4. Investment in farms by non-farmers has been discouraged by disallowing some of the interest and expenses as deductions to determine taxable income.
- B. FDIC and FSLIC can encourage or discourage certain kinds of land use by standards they establish for acceptable collateral on:
1. Mobile home parks
 2. Vacation homes
 3. Inner core renewal loans
 4. Subdivision design requirements
- C. The federal government presently has no coordinated national land use policy. Sometime this year it will establish a program to subsidize states in their battle to reestablish control over local municipalities relative to land use.

3. The externality criteria much go beyond the limited cost benefit question of whether the cost is positive or negative to the broader issue of who loses and who gains now and in the future. The paper mill may offer a high ecological cost but provide the only immediate employment opportunities to otherwise unskilled families. A value judgement must be made between preservation of the environment for the future and opportunities which are fair to those here now.
4. The question of who wins and who loses and when is involved in a basic social weighting of issues of equity and posterity. Each developmental decision now reduces the amount of choice which future populations will have.
- I. Systems thinking is just beginning ~~a~~ to operate on quantitative approached to "Cost Effectiveness" and capital investment efficiency test. These are the tools of logical argument. What are the transfer costs of lost opportunities which are the price of doing nothing with a scarce resource to be the inheritance of the next century?
- J. What will regional planning of land uses ^{do} the values of parcels determined to be appropriate for a certain use or to be refused permits for specific uses?
- K. Eventually these value judgements will have to be political. For example, an application to build a gravel pit and processing plant for making cement with a dependency on a specific site is clear and the fiscal benefits and costs are negative. However, the plant will provide 100 jobs in an area of high unemployment while creating some visual intrusion for 10,000 employed persons. Jobs now vs. the future landscape. Who decides?
- IV. Federal government is still searching for a total set of national priorities but there is one element on which Congress has already agreed - namely that the flow of rural poor to the city should be stopped or reversed in order to reduce the pressure of the poor on big city budgets.
 - A. Even Nixon pledged to give the rural hinterland economic assistance to create jobs in homes of a quality competitive with urban alternatives. As a result a number of rural area programs have recently developed.
 - B. The Farm-Home Administration (the other FHA) made possible no down payment and even subsidized loans to families in rural areas. While technically, a township is rural rather than urban if it has less than 25 residents, the FHA could make loans in communities of up to 50,000 people and it was creating new housing in areas where the majority of substandard housing in this country exist - in the rural areas. Most of its programs for low income families were frozen by Nixon in January of 1973.
 - C. Both the rural assistance administration and the small business administration have made special loans available to develop recreational industry and other employment opportunities in the hinterland and a wide array of government projects are given additional priority when they are located in high unemployment rural areas.

- D. Special federal loan programs for new towns are in part intended to divert population migration away from existing metropolitan centers.
 - E. In addition, federal government funds have subsidized the formation of agencies such as the Great Lakes Regional Planning Commission to see how land use affects use of our inland lakes systems and how pollution ~~can~~ can be averted or reduced.
- V. Land use decisions can also be affected obliquely by a wide ~~an~~ variety of governmental agencies.
- A. For example, the internal revenue service has shaped its depreciation policies to encourage certain types of investment decisions.
 - 1. Certain kinds of industries are permitted a 5 year write-off of new plants and equipment which are dispersed into rural ~~an~~ areas.
 - 2. Renovation of old apartment units is encouraged by permitting a 5 year write-off of all remodeling expense if it exceeds \$3500 per dwelling unit.
 - 3. Investment in subsidized low income housing is given more rapid relief from the tax on excess depreciation and if the building is eventually sold to its tenants the investor pays no capital gains tax if he reinvests in housing for low income families.
 - B. The FDIC and the FSLIC and the FHA all encourage certain kinds of land use by the standards they establish for acceptable collateral for mortgage loans on:
 - 1. Mobile home parks
 - 2. Vacation homes
 - 3. Inner core renewal loans
 - 4. Subdivision design and requirements
 - C. At the moment there is no coordinated national or regional land use policy. It is apparent that the federal government begins simply to establish some broad goals but leaves responsibility for its implementation to the states. Tomorrow we'll talk about the present war between the states and their own municipalities.
 - D. The Office of Interstate Land Sales regulates any residential development with sales of more than 50 lots which is marketed on an interstate basis, and while it does not directly regulate land use, it does require that the developer provide full disclosure in publicly filed reports which must be given each prospect before he buys. The assumption is that if the developer tells the truth about his soils, the availability of septic and building permits, the probability of flooding, the damage to the ecology, etc. that the consumer will not buy or invest in land which is not suitable for development.
 - E. Recently the Securities Exchange Commission has ruled that the sale of partial interest in real estate for investment purposes, including condominiums, syndications, and tenancies in common, are all securities under the meaning of the law and therefore must be registered and sold subject to state and blue sky laws. This regulation only indirectly affects land use to the degree that it increases cost to the developer for registration and thus changes the scale of the project, either forcing it to be small to avoid registration or forcing it to be bigger than planned to spread the cost over a broader number of units.
- Since the law exempts projects under 50 lots, many existing projects are off the market while pondering the cost to register.

URBAN LAND 550
Government Regulation of Real Estate - Part II

- I. Land use decisions have historically involved local participation by the citizen.
 - A. Citizen has direct give and take in:
 1. Zoning variances and reasoning
 2. Tax assessment appeal
 3. Correction of defects in city services
 - B. Citizen has indirect impact through citizen commissions on:
 1. Public works
 2. Building code enforcement and revision
 3. Traffic control and public transportation
 - C. Attitudes of public administrators have long term effects which are obscured from but sensitive to public opinion.
 - D. Fragmentation of metropolitan government makes long term priorities for regions impossible to sustain.
 1. Federal efforts to bribe regional planning lack legal clout
 2. Confusion of land use with balanced budgets makes local control parochial, partisan, and short term
- II. Dane County is an example of fragmentation.
 - A. Three cities
 - B. 20 villages
 - C. 25 townships
 - D. County Board of Supervisors
 - E. 80 special districts and city authorities
 - F. Expertise at each position varies greatly
 - G. Special districts and city authorities can be nearly autonomous in the short run or long run when membership is appointed by the courts. Their long range decisions may be internally logical but undesirable from metropolitan point of view.
 - H. While Madison has 129 different units of government, Chicago has 800 and New York has 1500 little political empires.
- III. In addition to formal governments there are problems of equal representation and apportionment, political parties, community power structure and urban-sub-urban clash.
 - A. Apportionment problems have been temporarily resolved.
 - B. Political split is between the lethargic majority and the poor and the rich who are most injured by present urban conditions.
 - C. Community power structure is a pyramid concept which is rearranged over each issue.
 1. Big business is not a significant factor
 2. Regretably, big business lacks a proprietary interest in community.
 - D. Urban political power is by association of special interest groups such as Chamber of Commerce, League of Women Voters, or neighborhood associations.
 - E. Communication media represent a local power.
 - F. Economic power of public officials with tax money to spend or favors to grant.
 - G. Politicians or citizen groups have short term viewpoints and a fascination with manipulation of the power structure per se.
 1. Each problem is dealt with as a separate crisis
 2. A comprehensive approach is frustrated unless there is a tremendous educational effort for each minor reform and consensus
 - H. Regional planning commission has had a little success in dilution of power of any one community but often its choices go against large groups of vested interest.

1. San Francisco Bay development commission
 2. Dane County Regional Planning Commission discussions of 5 master planning alternatives
 3. Most people not immediately effected are lethargic while vested interests are strongly represented.
 1. The search for a compromise between local land use control and federal control is focusing on state administered land use planning and control.
- IV. There are several approaches to state control ranging from total land use control to stand-by or floating control which allows the ~~xx~~ state to intervene locally in matters of special concern or appeal.
- A. Hawaii, first state to designate all land use as of 1961
 1. 4 designated uses for conservation, agriculture, rural and urban
 2. ~~As~~ proven more politically ~~a~~ stable than Island County politics
 3. Suitable land uses do not match existing population distribution or job distribution
 4. State must now work to develop jobs and voluntarily relocate people from Oahu to other islands. How do you match land use suitability to people's location preferences?
 - B. Vermont in 1970 set in motion a state master land plan. It is controlling speculative development but needs amendment so that tax assessment values are compatible with permissible uses.
 - C. In 1970 Maine enacted a Site Location Law for all developments in excess of 20 ~~xxx~~ acres. It has controlled residential recreational land and costs them rejuvenation of their industrial base.
 - D. Florida land and management acts permits states to intervene in areas up to 500 acres in size.
 - E. 20 states have some restrictive land use program
 - F. Fierce local resistance to removal of local zoning prerogatives as zoning has basic power to determine social mix, tax base, and burden of taxation.
 - G. A federal land use act of 1973 may strengthen state powers but answers will still be compromises.
- V. Land use control not only concerned with what goes where but also with the when of development
- A. No growth of slow growth policies due to court denial of exclusionary suburban land use zoning
 - B. The significance of the Ramapo ordinance in New York
 - C. In past zoning ordered land use spatially or regulated bulk and height of improvement.
 1. Since 1920 platting was only conditional on certain elements being present in the plan. No need to prove a market or favorable impact on community.
 2. Unique in Ramapo is that permit to subdivide is tied directly to schedule of capital improvements being built by the township for roads, sewage, etc. In short, township could expand at a rate that was fiscally prudent.
 3. Land acquires points as 5 basic facilities become available or were scheduled to be available according to an 18 year capital budget program.
 4. Developer can buy points from a contiguous site which he does not wish to develop.
 - D. Maryland is considering a state ordinance giving all land owners a certain number of points based on sq. footage or acreage. Developers with land suitable for development would have to buy points from landowners not wishing or unable to develop in order to have enough points to have economic density. The result would be to share land development profits from monopoly characteristics of developable land. Land use control is value control and income redistribution.

URBAN LAND 550
State and Federal Regulation of Land Use
Lecture Outline

- I. Regulation of land use and real estate decisions by the state and federal governments can take a variety of forms and can be further subdivided by several broad areas of policies affecting land use so that state and federal governments have a pervasive and growing role in land use decisions, big and small.
 - A. Several broad decision areas include
 1. Natural resources including timber, mineral, shoreline, and off-shore ocean bottoms.
 2. The rural hinterland, particularly agricultural land
 3. Urban land and the urbanization process
 - B. Direct control used by government include:
 1. Outright ownership
 2. Regulation of the property owner *(the regulation of the land)*
 3. Regulation of financing institutions
 - C. Some indirect controls would include:
 1. Creation of enabling legislation for political subdivision control of the property owner
 2. Subsidy of particular land uses
 3. Economic penalties on certain land uses
 - D. Political fragmentation at the local level has led to pressure for regional and state recovery of regulation rights and the federal government hopes to encourage state action by subsidy of the staffing requirement. Even more immediate is what the federal government will do with the lands which it owns.
- II. U.S. Government controls 755 million acres of land representing 34% of the 2.3 billion acres which make up the U.S. Almost every government agency has its own land program and land use policy.
 - A. Some agencies which control huge acreage are:
 1. Department of the Interior
 2. Department of Defense
 3. National Park Service
 4. Bureau of Indian Affairs
 5. Government Services Administration
 6. *BUREAU of LAND MANAGEMENT*
 - B. Other government agencies do not control large acreages but own an infinite number of small individual parcels, many of which are surplus:
 1. The U.S. Post Office
 2. Federal Housing Administration in its inventory of foreclosed property
 3. HUD-Division of Urban Renewal
 - C. Congressional Proposals for establishing a Federal Land Use Policy have passed at least one house;
 1. The Aspinall (defeated in re-election) Proposal to bring all federal government land under a single Federal Land Use Commission to pursue national priority without having one department defeat the objectives of another

2. Such an approach is in direct conflict with long term strategy of conservationists who are attempting to compartmentalize and segregate specific protected uses within government agencies they can control
 - D. The Senator Jackson approach would be to subsidize state efforts to create masterplans and public regulations for land use. Federal grants would probably require a state to provide and maintain:
 1. Inventory of resource data
 2. A single authority to administer land use policy
 3. Train an in-house capability for technical and professional expertise
 4. Identify those land areas subject to the public planning process
 - E. A similar federal proposal relates only to coastal lands on the oceans and the Great Lakes which would provide \$67 million to the state for shoreland regulation as in California or Wisconsin.
 - F. To achieve a legislative consensus on ground rules and priorities for land use, it is necessary to balance the interests of consumer, producer, and the public when the only articulate groups represent the view of extremists from among those who speak for:
 1. The no-growth viewpoint on the basis that we are rapidly exhausting the ability of earth to sustain life.
 2. The preservationists who regard it an aesthetic and moral issue to conserve the natural just because it is natural.
 3. The business viewpoint that all capacity to solve problems depends on unlimited business expansion.
 4. The opportunists who find the issues favorable to a selfish point of view so may want a new airport or powerplant but in somebody else's backyard.
 - G. It appears that legislative moves to kill the Federal Land Use Act have been successful for this year (as well as in the Wisconsin Legislature) as the lobbyists raise the emotional issue of private property rights.
- III. At the state level there has been more success in establishing some degree of land use law to control narrowness of viewpoint of the private land owner and political decision making in fragmented local government.
- A. Hawaii--the first in 1961--designated every square inch of its island as suitable for one of four uses
 1. Uses were conservation, agricultural, rural, and urban
 2. State Land Use Commission also serves as Board of Appeals
 3. Unbalanced population distribution due to decline in agriculture has made for housing shortages on island of Oahu.
 4. To balance demand and designated supplies it is now necessary to subsidize economic base employment on the other islands
 - B. 1970--Vermont Environmental Control Law--three stages
 1. Inventory
 2. Masterplan and zoning for entire state
 3. Correction of economic conflicts in terms of recreational development to correct unemployment, changes to market value and therefore tax base, etc.
 - C. 1970--Maine--Site Location Act requires state approval of major developments in excess of 20 acres.

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D. 1972--Florida Land and Management Act

1. Give state permission to regulate or prevent development anywhere in Florida designated an area of critical concern not to exceed 5% of state land area or 500 thousand acres
2. A fifteen Man commission has only two reps from land development industry

E. Twenty states have land use laws restricting development of special areas such as shorelines, scenic areas, or particular regions such as the Adirondack Park Regional Plan Commission.

F. In Wisconsin under present statutes the state may introduce zoning relative to shorelines, streams, subdivisions, and health when counties have no laws which meet state minimums.

1. Plotting laws may involve a variety of state agencies but control only areas in which five or more lots are less than one and a half acres
2. Administrative arrogance has a devise to project control beyond specifics of legislative intent.

G. Federal and state level land management has fierce opposition from local officials with a vested interest in zoning. Zoning is the basic power of a community to determine its social mix, its tax ratable base and who pays the tax. It determines land value and the character of the cash cycle. This resistance produces partial answers to broad scale land use control only when there is a consensus relative to wetland or large scale projects with negative consequences as found in Florida.

- States are also becoming major owners of the land within their borders and like the federal government have no clear policy for its best use. Often state land policies are counter productive even though they continue to create more reasons for ownership.

A. Environmentalists are reluctant to see the University sell its remaining farms within the city of Madison "to protect open space" even though this forces greater urban sprawl and extension of the city utilities and streets into the countryside prematurely.

B. Purchase of wilderness areas by the state from private purchasers creates public pressure for access as parks, ~~when~~ the private owners excluded everybody, thereby reducing encroachment on natural areas.

C. The state of Wisconsin owns vast acreages of woodlands on less desirable lakes and streams and little on deepwater lakes which feel pressure of excess development. Still it would be reluctant to sell the marginal wilderness land to generate funds to purchase land with more development pressure.

D. Thirteen states now have state housing or development agencies which can finance and build low income housing projects. In general, these require such large scale projects to be administratively efficient it requires demolition of the supply of low cost housing or locates in vacant areas without the desired amenities.

*Chapman
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- E. Some agencies like the New York Port Authority actually undermine the market demand and thus tax ratable base of private properties supplying the same need by creating a surplus. (dormitory housing in a university town for example)
- F. Scattered small parcel purchases without corresponding sales of surplus properties leads to a cumulative cost of maintenance, loss of tax base, and distortions of supplies in the private market.

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Business 550/705 Lecture Outline

Real Estate Investment and Federal Income Taxation

- I. Nothing Takes the place of productive profitable real estate but federal tax policies on income, capital gains, and estate transfer by gift or inheritance has had a significant impact on shaping real estate investment decisions.
 - A. Income taxes are oversold by brokers, over-valued by amateurs, and misunderstood by the public.
 1. Is it a loophole for the rich or inefficient federal subsidy for construction?
 2. Does benefit from strongest political lobby in Washington?
 3. Real estate development a major source of employment and assistance to fiscal desperation of municipalities
 4. Real estate business reverse of typical business - high fixed asset, low working capital ratio
 - B. Brookings Institute estimates single family home is the largest tax loophole in terms of tax dollars lost because of special privileges
 1. Interest and real estate tax deduction
 2. No capital gains tax on sale if you buy another in two years
 3. One time exemption of \$125,000 capital gain if you sell after the age of 55
 - C. Objectives of tax review in this course is not to teach you the intricacies of the new tax law but rather:
 1. To show the sensitivity of investment to tax matters
 2. To show the use of tax law as a federal device for providing land use priorities
 3. To teach you some of the tax strategy in general with a few examples
 4. Recognition of the income tax law as a subsidy to make real estate competitive for capital
 - D. Real estate has the same tax treatment as any other business asset but has a higher silhouette as compared to other businesses
 1. A building is a single machine for making money as compared to other businesses using many small machines which can be bought and sold individually at a smaller scale of entry.
 2. The impact of rising prices on business equipment is difficult to trace to product prices while the impact of construction costs, real estate taxes, etc. can have an almost immediate impact on rent which in turn is a major factor in household budgets
 - E. For the taxpayer any tax strategy can be classified as a combination of:
 1. Reducing that portion of net receipts which is recognized as taxable income.
 2. Reducing the marginal tax rate applicable to the taxable receipts.
 3. Postponing the payment of taxes due to recognize the opportunity costs of present value money.
 4. Avoiding one or more federal taxes through a change of involuntary shift in status of property ownership or condition.

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F. Government strategy relative to the income tax involves some combination of:

1. Collecting adequate revenues to finance government operations
2. Encouraging investment in productive assets as opposed to current consumption to close the savings-investment gap and to stimulate employment while generating a larger taxable income in the future.
3. To channel investment and consumption toward national priorities
4. To redistribute wealth and break up extra large family fortunes

II. The Basic Alternative Income Tax Strategies or Tax Ploys will be identified (underlined) and then a couple of illustrations of each discussed below:

A. Reducing taxable income, particularly income subject to a progressive tax rate, to postpone income tax:

1. Accelerated depreciation understates taxable income in the early years but overstates taxable income in later years. Opportunity costs of money must be higher than increasing marginal tax rates which would apply to recapture of tax shelter or overstated income.
2. Investment tax credits which apply directly to taxes due; for example, buildings more than 40 years old and classified as landmarks enable the developer to take an investment tax credit for 25% of all remodeling expense with long carryback to refund taxes paid in previous years.
3. Taxpayer option to expense certain capital expenditures such as development costs of a vineyard, irrigated farming, or holding costs on vacant land awaiting development. Tax reform has severely reduced those but still favors such election for subsidized housing.

B. Reducing the marginal income tax rate by shifting property to alternative forms of ownership or timing of proceeds.

1. Shifting ownership from the individual at the 50% marginal tax rate to a small corporation which enjoys a low progressive rate on the first \$1000 of taxable income. Income from real estate can be further reduced by payment of salaries to the investor to escape higher tax rates on investment income and by establishing tax deductible contributions to pension funds.
2. Distributing receipts from sale over time through installment sales contracts or avoiding sales profits by leasing vacant sites which have appreciated significantly in value.
3. Shifting income to individuals with low tax brackets by using short term trusts for the children, different classes of stock, or gifts of partnership units may put the income with the lowest marginal rate.
4. Ownership of a home to permit deduction of interest payments and real estate taxes on personal income

C. Converting taxable income to capital gain to reduce the applicable tax rate

1. Purchasing a home with a very large mortgage loan on which interest payments are deductible converts net income to a future capital gain if the home appreciates in value each year more than the after tax

interest cost. This ploy is more feasible when interest rates are 7% rather than 17%.

2. Accelerated depreciation before recapture laws permitted investors to understate taxable income and then sell the property at an overstated capital gain, thus converting income to capital gain and its lower marginal rate. (Capital gain = net sale price - book value).
3. Purchase at a low price and then increasing income through good management and marketing and then selling the property for the present value of the future income converts the rewards of your services and expertise from taxable income to capital gain.

D. Postponing the payment of capital gain taxes

1. The owner-resident of a single family home can sell his property and postpone a capital gains tax by reinvesting in another home of equal or greater value within 24 months.
2. Involuntary conversion of a property to cash as a result of a natural disaster, casualty loss, or eminent domain permits investor to rebuild or relocate within a specified time without paying a capital gains tax.
3. The trade or exchange of like kinds of investment property is not taxed. Instead each party takes his old basis with him which is then adjusted for the net change in his debt position or the amount of "boot" he received. Boot is non-like property such as cash.

E. Complete avoidance of all or part of the capital gains tax would result when:

1. The owner of a single family home is entitled to a one time exemption of \$100,000 profit or capital gain if he sells his home after age 55. The theory is a home is his major savings program and the cash is needed for retirement income.
2. When investment property is held until the owner dies the estate receives a stepped-up basis equal to market value on the date the owner dies. No capital gains tax is paid if the property is then sold but market value is included in computing the taxable estate value.

F. Real estate lends itself to reducing estate taxes in the transfer of wealth from generation to another.

1. Real estate in farm and small businesses will be included in the estate of the owner at their use value rather than their market value to reduce estate taxes and the need for cash if the heirs continue to operate the business or farm for at least 10 years following the death of the original owner, thus achieving a partial avoidance of capital gains and estate taxes up to a maximum of \$500,000.

- III. Achieving the various tax ploys is complicated because federal policy provides incentives and penalties for different priorities of property development, tax purposes of ownership, and the form of the ownership entity.
- A. There are three basic questions which need careful definition and structuring of answers for each investment.
 - 1. What type of real estate is it for depreciation and other tax ploys available?
 - 2. What is the tax purpose of the real estate ownership position?
 - 3. Is the ownership entity a single tax or double tax situation, a tax conduit to the individual or a corporate organization?
 - B. First a property must be classified both on the physical facts and the actual or implied intent of the owner as one of the following:
 - 1. The personal residence
 - 2. Farm or extraction properties
 - 3. Investment residential
 - a. First user, or second user
 - b. Residential rehab
 - c. Conventional financing or federally funded and subsidized
 - d. Date acquired
 - 4. All other properties (limited depreciation and full recapture)
 - C. Tax rules differ depending on the presumed purpose of the investment imputed to the taxpayer in any given property. There are three alternatives defined by the IRS:
 - 1. For use (users have more liberal ordinary income - ordinary loss elections)
 - 2. For investment income and long term appreciation (for which capital gain treatment is available with some elections to expense or capitalize holding costs)
 - 3. For trade or inventory (dealers status for which capital gain is almost never available)
 - D. Because investors in real estate want some of the short term tax shelter benefits at the same time that they can participate in large group investments, real estate is very sensitive to whether ownership entity of a group investment is a single tax conduit or double tax corporate entity:
 - 1. Single tax entities would include:
 - a. Single proprietorship
 - b. General partnership
 - c. Sub-Chapter S Corporation
 - d. Limited partnerships
 - e. Other non-corporate associations
 - 2. Double tax entities would include:
 - a. Corporations not exempt above
 - b. Associations for profit with three or more of the following characteristics.

3. In addition two or more people associated for profit is corporate if it has three or more of the following attributes:

- a. Limited liability or investors
- b. Centralized management
- c. Unlimited continuity
- d. Marketable interests

- IV. There remains a general suspicion that real estate investment tax policy is a privileged domain of the rich. This may be because marginal rates are highest for the rich and tax savings to other income is highest to those with the highest marginal rate while interest cost has the lowest marginal cost to the same rich folks since we're soaking them pretty good. Then there is the fetish of the rich to spend \$1.50 to save \$1 in taxes which leads real estate promoters to produce the best tax shelters rather than the best people shelters.

- A. Critics who oppose tax shelters argue that:

1. Present tax laws lead to excess building and misallocation of national resources and priority.
2. The cost in lost tax revenues of 2-3 Billion a year would be much more effectively used if collected and redistributes as a consumer subsidy for the low income family.
3. The capital attracted to real estate is siphoned off by developers and brokers up front since most of the property has almost 100% financed anyway.
4. The economic logic is faulty when it argues that to provide decent shelter for millions of Americans, the system must first produce several hundred thousand tax millionaires.

- B. Such tax advantages that there are are justified according to some because:

1. Long term ownership is so risky, investors would not invest if payback was not accelerated by tax saving.
2. Unlike automobiles real estate depends on thousands of small investors for capital and could not compete for money unless there was an additional return in the form of tax benefits.
3. By attracting new capital to real estate housing construction is stimulated, but rents can be lower since the investor receipts part of his return in the form of tax savings.
4. As a producer subsidy stimulates employment and maintenance of a competitive supply of space to reduce monopoly advantage of existing buildings.

- C. During the past several years gradual modification of taxes relative to real estate have been taking place in regulations, technical aspects of the law and auditing. Lobby interests have helped real estate fare better than the other tax shelter games such as cattle, professional sports, oil, corporate farming and shipping. Such organizations as The National Association of Realtors and the National Association of Apartment Owners have been able to convince Congress that the real estate industry really consists of hundreds of thousands of small investors who are relatively disorganized and whose real estate gains have cushioned the significance of inflation caused by Congress. As a result real estate investments have escaped to some degree the impact of such reforms as:

1. Preferential income tax of 15% of capital gains and accelerated appreciation, depletion of, etc.
 2. Limitation on depreciation to equity "at risk"
 3. Limitation on artificial accounting losses by expensing capital development costs
 4. The addition of special tax investment credit for renovation of older commercial buildings and elimination of architectural barriers for the handicapped.
 5. The addition of five year writeoffs for renovation of residential units and landmark buildings
 6. Special deductions for investment and pollution control, energy conservation, or gifts for environmental protection
- D. In 25 years federal policy on taxes has shifted from treating real estate like any other capital asset to detailed regulations providing penalties and bonuses for real estate investors that express national priorities relative to land use and urban development. Ironically the federal tax laws represent the most explicit and operational federal land policy we have today.

LECTURE SIX - outline
Introduction to Real Estate Cash Flow

- I. The clustering of activities which need certain locational attributes and the economic base and derivative needs begin to define the opportunity areas for real estate enterprise.
 - A. The facility to house any activity is a space-time product and the business of providing that product operates by converting space-time to money-time.
 - B. The forecasting of future money returns to a present investment is the ultimate business problem and the dynamics of these problems explains the actions of consumer, producer, and the society.
 - C. An investment in a bond can be defined as to when it begins in time, when it is sold, when coupons are collectable and total costs and total receipts under alternative outcomes. Thus, yield is easily computed and risk depends on whether you can rely on the promisor.
 - D. Real estate financial forecasting seldom enjoys such a rigid set of financial specifications and therefore seldom enjoys conservative conditions of certainty. An investment in real estate really means somebody "bought" a set of assumptions.
 1. Risk is the potential variance between assumptions and realizations, between proforma prospects and the historical balance sheet and P&L statement.
 2. Degree of professionalism is measured, ultimately, by the care with which assumptions are made and supported by careful research.
 - E. Financial analysis presumes rational decisions but later we can introduce the importance of the irrational or the intuitive.
- II. Basic cash flow analysis depends on four essential sets of assumptions:
 - A. Schedule of cash outlays (capital costs and expenses.)
 - B. Schedule of cash receipts (periodic and reversions.)
 - C. Net cash flows for each period (negative and positive.)
 - D. Devices for comparison of alternatives
 - E. However it quickly becomes apparent when accounting for the dollars "in and out" that not all dollars are the same. Some are current expenses while others represent acquisition of assets and many are shared with local and federal government through various tax processes.
 - F. If cash solvency or cash profits is the eventual objective of decision making, it is necessary to put all dollars on a common denominator -- after-tax dollars per period.
- III. In that light, the basic elements of outlays and receipts can be expanded to include details or assumptions about the following factors:
 - A. Definition of desired profit centers.
 - B. Definition of a timeline over which events will still take place
 - C. Assumptions on the capital budget and sequence of source and application of funds

1. Direct construction or purchase cost
 2. Indirect and capitalized carrying cost
- D. Assumptions on operating budget and sequence of source and application
1. Pattern of sales revenues
 2. Pattern of operating expenses
- E. Financial plan
1. Credit amounts and terms
 2. Equity amounts and terms
 3. Holding power
- F. Profits classified as to type and tax
1. Cash from operations
 2. Cash from capital gains
 3. Cash surplus from financing
 4. Cash from tax savings on other income
- G. Selected measures of profitability
1. Definition of investment
 2. Definition of profit
 3. Selected ratios of profit to investment
- H. Selected measures of risk
1. Payback periods
 2. Capacity for variance
 3. Variance controls
- IV. For a rental investment property the general format for determining after-tax cash flows for each period or year would generally be as follows:

PART I. ANNUAL (PERIODIC) RETURNS TO INVESTOR

- A. Estimate potential gross cash income; Cash income from space sales
- B. Deductions from potential gross
 1. Normal vacancy
 2. Seasonal income loss
 3. Collection losses
 4. Franchise fees, deposits returned, etc.
- C. Add "other" income from service sales
- D. Derive effective gross income
- E. Deduct operating expenses (on expected cash outlay without accrual reserves)
 1. Fixed expenses
 2. Variable expenses
 3. Repairs and maintenance
 4. Replacements
- F. Derive net operating income (NOI)
- G. Deduct annual debt service
 1. Contract interest
 2. Supplementary variable interest
 3. Principal amortization

- H. Derive cash throw-off
- I. Add back principal payments and replacements
- J. Deduct tax depreciation allowance
- K. Derive taxable income
- L. Determine marginal income tax on real estate income
- M. Deduct income tax from cash-throw off (H)
- N. Derive after-tax cash flow
- O. Add tax savings on other income (if K is negative)
- P. Add surplus from refinancing
- Q. Derive spendable after-tax cash

PART II. RESALE (REVERSION) RETURNS TO INVESTOR

- A. Estimated resale price (end of period)
 - B. Deduct broker's commission and other transaction costs
 - C. Derive effective gross proceeds from sale
 - D. Deduct all credit claims outstanding (end of period)
 - 1. Short and long term note balances due
 - 2. Prepayment penalties
 - 3. Deduct equity shares to non-owner interest
 - E. Derive pre-tax reversion to equity
 - F. Deduct tax claims on ownership interest
 - 1. Deduct capital gains tax
 - 2. Deduct income tax on disallowed accelerated depreciation
 - 3. Deduct surtax on taxable preferential income
 - G. Derive after-tax resale proceeds to investor
- V. Some modifications of this basic model
- A. Timeline could be extended to include construction phase and initial rent-up.
 - B. Profit centers are assumed to begin with net income line but could be modified to include profits inherent in expense outlays.
 - 1. Requires definition of single enterprise or degree of consolidated accounting
 - 2. Requires clear understanding and allocation of profits for use of land, labor, capital, or management inputs.
 - C. Definition of tax rate depends on whether investment is viewed alone or as part of larger portfolio.
 - D. One set of numbers represents a set of assumptions assuming conditions of certainty. In practice investor would test alternative sets of assumptions and outcomes for the best and the worst and the central tendency of possibility.

The Real Estate Process - Business 550

Windfall or Wipeout - Lecture Outline

- I. Assuming firm public control on land use both as to location and sequence, there are a number of undesirable impacts on cash flow:
 - A. Public planning creates monopolies and destroys long term income expectations simultaneously, in effect changing the rules throughout the course of the game.
 - B. The name of the game is therefore windfall and wipeout.
 1. The consumer may see his home price appreciate for a windfall gain or see his expectations of buying a home wiped out for lack of development land at a price he can afford.
 2. Existing businesses on long term leases gain a significant advantage since no duplicate facilities may be permitted or may find sites for future expansion devalued to virtually nothing due to greater technical precision in the definition of suitability.
 3. Communities may benefit by receiving the right to have industrial and economic base development or may be banned by regional planners from economic development which would restore employment and vitality. Communities may find they have overbuilt public service capacity in expectation of growth no longer permitted.
 - C. Limitation on what is developable may accelerate intensity in certain areas at the expense on landmarks, aesthetics, or public infrastructure capacity or social reform.
 1. Land is a residual value. Total present value less construction cost equals maximum value which can be paid for a site.
 2. Site cost may include demolition of functional buildings if the present value is less than the residual value of vacant site.
- II. Since increasing amounts of space will be needed to house even our present population as it matures, public policy must be able to channel the physical development onto those sites which are best suited for it while diverting the wealth created in land residuals to all those owning land, many of whom have been denied development opportunity.
 - A. The state has been conducting studies to compare the cost of alternative land use policies in terms of public capital and operating cost necessary to service 1,000 additional dwellings.
 1. Transportation and other utilities cost more in low density areas than in high density areas. Educational, protection, and recreational costs don't differ that much.
 2. The study recognizes all transportation costs as a regional cost system including private vehicles, public transit, etc. Utility costs include substitution of private septic for public system.

3. The study recognized five residential environments:
 - a. Urban
 - b. Suburban (Middleton, McFarland, etc.)
 - c. Exurban (open countryside near Madison)
 - d. Outlying Communities (such as Stoughton or Mount Horeb)
 - e. Rural
 4. The study concluded that rural was cheapest because the level of protection, education, and recreation were a little lower, although on a state-wide basis energy costs were 50% higher. Rural used existing road networks.
 5. Urban development was close to rural in cost because density reduced transportation and utility cost per dwelling unit.
 6. Suburban and outlying communities cost 25% more than major urban while exurban development might 50% more costly than compact urban development.
 7. The conclusion was that if saving money on community infrastructure is important to citizens, an increase in density and a reduction in exurban leap-frogging will save significant sums. The report seems to be suggesting a change in policy to urban containment or compression.
- III. That policy would increase land residual values for low intensity use sites in existing urban areas and create economic pressure for development of golf courses.
- A. The transferrable development right is thought to be a way to shift the economic pressure by giving the owner of a golf course or a landmark or wet land some of the residual land value created by transferring potential for intense development to another site.
 - B. A TDR must be a fundable unit of development which is an appropriate measure of development potential. Various units suggested include:
 1. Dwelling unit ratio per acre.
 2. Floor area ratio (FAR).
 3. People per acre.
 4. The cubit - one cubic meter or cubic foot including a permissible one-tenth of a unit of impervious surface.
 - C. Note that each of these is a space-time unit which implies a high degree of correlation with money-time, although that coefficient of correlation may change from place and time.
 - D. To maintain a space-time, money-time correlation the transferrable development right must be scarce or limited in supply, in constant demand, and easily available without permitting monopoly, undesirable speculation, or significant discrepancy manipulation by public officials. It must relate to major land use problems including taxation, eminent domain, land planning with equity, as well as the nature of real estate enterprise.

- E. TDR's first depend on definition of the geographic area within which they are transferrable. The New York plan limits the range to a single square block, the Chicago plan to the Loop, Maryland to the county. The rights always attach to another piece of property or a public TDR bank to prevent speculations by outsiders or non-landowners.
 - F. Public policy must define the measure of potential for the affected land and then grant increases in that potential to sites which the public would prefer to be developed. The increase is bought from potential development sites on which no development is desired.
 - 1. Note the result is to transfer wealth created in the form of land residuals from one location to another.
 - 2. Note that compensation to private owners under eminent domain might be made in TDR's rather than cash.
 - 3. Note that the cubit system would apply equally to private developers or public projects such as roads, airports, etc.
 - 4. Real estate taxes could be prorated in part on TDR's rather than values, creating a holding cost for tax exempt speculators like churches, private schools, or universities without the necessity of appraising their structures and facilities.
- IV. The TDR is now beginning to receive legislative attention in many states including Maryland, New Jersey, and Connecticut. However, the most significant legal recognition of the TDR has occurred in New York City relative to the Penn Central Station landmark.
- A. New York City began to evolve a TDR in 1961 with a series of zoning law amendments.
 - 1. The definition of zoning lot was changed to allow the merger of two separate but contiguous zoning lots when they came under common ownership. This permitted the construction of a taller building by "clustering" the unused development potential of both parcels onto one.
 - 2. In order to solve the dilemma presented by a landmark structure which was already surrounded by development on all contiguous lot lines, the city permitted unused development rights to be transferred across the street. This provided another means by which the city could equitably handle the possible negative economic impact of designations under the New York City Landmarks Preservation Law.
 - 3. Adding to the ability of the city to compensate landowners equitably for landmark designation was the 1969 amendment to the Zoning Resolution allowing the transfer of development rights to lots within a chain of common ownership.
 - B. The first transfer of this type began with an owner-initiated proposal. The owner of Amster Yard, a nineteenth century collection of small residential structures, open spaces, and stores in midtown Manhattan, was allowed to transfer a portion of his development rights to a nearby parcel for use in the construction of an office building. As a condition, the city insisted upon a promise to create a \$100,000 trust fund, the income of which would be used for maintenance of the landmark.

BUSINESS 550
Consumer Protection and Land Use

- I. The real estate process diagram shows a tension among consumers, producers, and public services. However, there is also a major conflict of interest among individual housing consumers, collective neighborhoods, and future consumers.
 - A. It can be easily documented that land use and real estate operations are the most regulated enterprises in the American economy.
 - B. Is the impact of all this regulation a better product or a more expensive one? In the land use game, who gets the monopoly on the good life?
 - C. Who pays and who benefits?
 1. Few of those who are responsible for housing policies and land use regulation understand impacts of what they do on housing price, quantity, and quality.
 2. Because the media tend to present complex subjects in a simple entertaining form, the housing consumer cannot identify who and what consumer protection systems are responsible for his not finding adequate housing at a price he can afford.
- II. Consumer protection in the real estate area has always responded to disasters that were the result of a collective failure in common sense or collective belief that cash costs for a select few could be reduced by externalizing responsibility on others not a party to the decision.
 - A. Land use controls reflected a consensus and a feudal tenure design to maximize food production with the resources at hand while placing the consequences of waste on those who did not husband the resource.
 1. Water rights and farmland in Mesopotamia.
 2. Territories for trapping on the Saint Lawrence Estuary.
 - B. Building codes for safety derived from disasters like the London fire, innovations such as the cannon, and building collapse due to soils and water.
 - C. Community infrastructure developed as health hazards were recognized from sewage and water supply as well as need for control of crime and crowds.
 - D. Zoning was originally designed to exclude land uses which were thought incompatible with residential neighborhoods and retail service areas because of noise, smell, safety, or health.
 - E. The real estate sales guilds were legitimized as self-regulatory agencies, presumably to protect the consumer from incompetence and

to lobby for policies conducive to home ownership in homogeneous neighborhoods. (Of course, licensing and peer group membership also encouraged monopoly pricing for commissions and political action to prevent public housing alternatives).

- F. Earlier lectures have shown that consumer savers protected by FSLDIC or FDIC and borrowers under FHA-VA, gave the Federal Government the ability to set housing standards in excess of community requirements and the ability to indirectly hold down rents by encouraging production and sale of single family housing with long-term purchase financing.
- G. To protect the individual consumer, the ten commandments which were originally on two small stone tablets have been converted into a million tons of rules and procedures.
 - 1. To control profits of loan closing, the Federal Government enacted controls on the indirect costs of a real estate transaction (RESPA, Real Estate Settlement Procedures Act, 1970-71).
 - 2. The Office of Interstate Land Sales Registration (OILSR - December 1973). Exemptions are a subdivision of less than fifty units or bulk sales to developers, cemetery lots, or units to be registered as securities.
 - 3. Since 1968, the SEC has regarded any partial interest in real estate which anticipates an investment profit from the management efforts of others to be an investment under either State or Federal blue sky laws. Sales must be by registered security sales people or by employees of the builder.

III. The future consumer and collective consumer is also protected by a variety of laws, rules and regulations to reduce damage to the environment. These regulations come into play where there is governmental involvement relative to approvals or financial assistance, or because of the proposed sites characteristics, or because the project will impact navigable waters, or discharge any type of pollutant.

- A. If federal financial assistance or approvals are required, it will be necessary to examine the project for compliance with the following:
 - 1. The National Environmental Policy Act of 1969
 - 2. The National Historic Preservation Act of 1966
 - 3. The Endangered Species Act of 1973
 - 4. Executive Order 11988 relating to activities in flood plains
 - 5. OMB Circular A-95
 - 6. Section 401 of the Federal Water Pollution Control Act ("FWPCA")
 - 7. Section 307 of the Coastal Zone Management Act ("CZMA")
- B. The first four impose review responsibilities on federal agencies while 5, 6, and 7 apply directly to private developers.
- C. If state financial assistance or approvals are required, then it is necessary to review a project for compliance, in Wisconsin, with The Wisconsin Environmental Policy Act and the administrative rules thereunder. Documentation may consist of:

1. An acknowledgment on the part of the agency's designated WEPA coordinator as to the actions taken by the agency in fulfillment of its WEPA responsibilities;
 2. A copy of the statement of estimated project cost and any EIS submitted by Sears or the property developer in connection with DNR permit application;
 3. A copy of any DNR environmental screening sheet, PER or EIS prepared in connection with the project;
 4. Where an EIS has been prepared, evidence that all required notices have been given and public hearings held.
- D. In the name of environmental protection and consumer protection, the primary approaches to limit residential construction are zoning, direct restrictions on growth through growth management ordinances, and indirect restrictions on growth by using the obstruction potential of environmental legislation to reduce governmental expenditures for utilities, roads and infrastructure.
- IV. The reduction in supply of residential lots, multifamily sites, and new land development will have a series of impacts easily forecasted but typically not considered by those concerned with protection of the consumer, the environment, or their little neighborhood.
- A. New construction represents one to three percent of the total stock but these housing units provide the safety valve that prevents demand from increasing the price of existing units or lowering the quality of some parts of the housing stock. Should new construction fall while demand remains constant:
1. Housing quality is polarized because the higher income consumer will see the value of his house continue to increase and therefore feel confident in investing more to improve their home.
 2. Consumers in the lower income spectrum will resist rents which permit maintenance of the apartments or strain to buy a basic house with little money left for improvements. Absence of vacancies removes competitive pressure on landlords.
 3. Restraining production means higher values for some, lower quality for others and a breakdown in markets providing choice and competitive pricing.
- B. From 1962-72, number of households increased by 12 million while 17.7 million new units were constructed. A ratio of 1.5 new units for every additional household meant the quality of the existing housing stock was improving while disposable income rose faster than housing cost.
1. From 1973-1975, U.S. households increased by 4.5 million and only 4.5 million new dwelling units were built. The recution paralleled growth management rules and government managed interest rates.

2. Lower growth rates also meant increased costs to developers but not lower profitability. Developers could sell whatever they could build and pass costs through plus monopoly profit. In several areas, houses were sold on lottery and that tells the developer he is charging less than the market will bear.
- C. Shifts from laissez-faire to severe restrictions often typify government actions to solve one social evil by substituting another. The question is why a more balanced land use system is so difficult to achieve?
- D. The reasons there is so little balance between residential, commercial, agricultural, recreational, and open space land uses are:
 1. The future consumer is never represented at the bargaining table when land use legislative compromise is necessary. Politicians speak for constituents who already own a home and live in their ward, not those who would like to move into the jurisdiction.
 2. Labor and material suppliers speak for those consumers who can afford new housing because that means construction jobs, material sales, and new developments.
 3. Taxpayers want to avoid infrastructure growth which must be funded from increased assessments or households who may require more in municipal services than they may provide in tax revenue.
 4. Households who already have what they want and will benefit from price increases of monopoly say they are preserving environment. Confronted with a dramatic increase in housing costs, they can salve conscience by advocating subsidized structures for the elderly.
 5. The housing consumer is difficult to represent because he is not a single entity in his values, like the Sierra Club, but represents many micro-markets.
 6. Those responsible for housing plans and regulations feel confident that they know what is best for the housing consumer or feel compelled to organize superficial surveys to support existing plans with favorable consumer input.
 7. Individuals responsible for housing principles and land use regulations don't understand the feedback and adjustment systems inherent in the real estate process.
- V. Land use policies for collective consumers which harm individual consumers can be reduced to some degree if the technology of impact models were considered more carefully and voters were allowed to choose between alternatives as they were not permitted to do in the MATC case.
 - A. However, many agencies will do what they wish to do because rationality in all group behavior is distorted by other motives.
 - B. In a reasonably free society, one is permitted to be a damn fool or selfish. The Supreme Court makes it possible for suburban jurisdictions to exclude the poor by zoning (Arlington Heights), restrict growth (Petluma

and Ramapo), or deliberately under-build sewer, (Fairfax County) water, and highway systems in order to plead environmental damage.

- C. Since the American way is that you get what you pay for, an approach to mitigate fragmented and self-serving land use policies is to shift cash from those exclusive growth management areas to those which suffer the consequences in terms of higher cost they can ill afford:
 1. This is the logic in Serrano vs Prest which requires equal distribution of school tax monies rather than allowing rich communities to have super systems and poor communities to have higher taxes or a minimal system. Governor Lucey wanted a negative school tax to shift funds from Madison and Milwaukee to areas of lower tax base per child.
 2. A second shift would be to shift Federal and State grants for sewer, water, open space, and roads from those areas unwilling to accept more housing or low income households to those that do.
 3. We could require that environmental protection agencies include the impact on consumer cost of housing, travel, and education over the life cycle of the decision as one element in the environment.
- VI. After all, consumer and environmental protection means we ought to be protected to some degree from decisions we cannot afford. In the real estate process, we require equilibrium in terms of the collective consumer and the individual consumer just as we do between the production sector and the consumer sector. Who will protect the consumer from the cost of consumer protection?

Lecture #11 Outline
Institutional Structure of Mortgage Lending

- I. High cost of real estate requires heavy debt financing. Real estate capital represents $\frac{2}{3}$ of the nation's wealth and almost 50% of this is mortgage.
 - A. A capital pool for loans requires assembly of small savings through intermediary financial institutions.
 - B. Dominant institutions have been insurance companies, banks, and savings & loan associations but in the last decade several new institutional intermediaries have been created.
 - C. Differences between institutional intermediaries can be shown by comparison of five basic subsystems:
 1. A marketing system to compete for savings.
 2. A marketing to compete for loans
 3. The transaction preference system of the policy makers
 4. The liquidity system
 5. The safety system
 - D. This lecture will relate historical development and reform affecting subsystems above.
- II. Mortgage always associated with financial panic and brutality of capitalistic system.
 - A. Absence of federal real estate credit policy until after World War I. Cheap land was incentive for national development.
 - B. Mortgage business very local, provincial, and cyclical and subject to abuse by promoter.
 - C. Mortgage banking industry grew up after World War I to bring capital surpluses into contact with real estate development needs.
 1. Prosperity made mortgages the blue chip investment for the middle class.
 2. Savings pools were created by cooperative action (S & L's)
 - D. Flaws on mortgage instrument and lending procedures contributed to depression.
 1. Short term 1-5 year notes, interest only
 2. 50% loan ratios led to second and third mortgages to reduce down-payment.
 3. Decline in prices made borrower unable to refinance or unwilling to pay.
 4. Amount of loan depended upon appraisal so competition took advantage of distorted appraisal.
 - E. Depression made it impossible to finance which accelerated foreclosures which meant intermediaries were illiquid.
 1. Investors lost confidence in the mortgage form.
 2. Savers lost confidence in intermediary

F. Collapse of orderly market gave liquid investors tremendous buying power.

III. 1930's were a remarkable period of successful federal reforms of the individual mortgage transaction and mortgage lending intermediary.

A. Immediate temporary relief through HOLC Home Owners Loan Corporation and Reconstruction Finance Corporation.

B. Protection of the saver through FDIC and FSLIC.

C. For the borrower - long term, monthly amortized loan including interest, principle, insurance and taxes at high ratios to eliminate need for large downpayments or second mortgages.

D. Protection for the lender by insuring the loan against default by the Federal Housing Administration.

E. Federal takeover of appraisal and credit analysis functions.

F. Regional mobility and liquidity through Federal National Mortgage Association (FNMA). Injection of federal funds into mortgage money supply through Fannie May.

G. Modification of lenders ability to compete for funds to favor savings & loans as a residential mortgage intermediary.

H. Depression taught federal government it could manipulate total supply of mortgage money available.

I. Control of money supply led to special credit for special housing problems.

1. Housing for veterans
2. Housing for college students
3. Housing for the elderly
4. Housing for low income groups
5. Housing for those displaced by urban renewal

J. While protecting special groups it learned it could manipulate housing quality or relate to other social issues or cause problems in:

1. Urban sprawl or land conservation
2. Social fragmentation or integration
3. Proliferation of the auto or public transportation
4. Inflation of labor costs or labor saving innovation

IV. Institutional innovation since 1960 brought about by tremendous demands for mortgage money and serious credit cycles.

A. For the saver looking for appropriate denomination, safety, and better yields.

1. Variety of thrift plan offered by banks and S & L's for deposits of alternative maturity dates.

2. Collateral trust bonds guaranteed by GMA.
 3. Real estate mortgage trusts.
 4. New bond series issued by Home Loan Bank, Freddie Mack, Fannie May and Ginnie May.
- B. For the lender looking for a better spread between cost of savings and yield on mortgages with liquidity, safety, etc.
1. One bank holding companies with mortgage company.
 2. Savings and loan savings corporation.
 3. Real estate investment trusts management company.
 4. Home Loan Bank subsidy by federal government.
 5. Private mortgage loan insurance.
 6. Secondary mortgage market for both FHA and conventional loans.
- C. The borrower enjoys more liberal terms due to:
- 95% loan ratio conventional loans.
2. Subsidized loan rates for low income families.
 3. Subsidized loans for industrial development.
 4. Piggyback loans to reduce points on multi-family projects via tandem plans through GMAA, and FHIA.
- D. Capital requirements for real estate target of 26,000,000 new and rehabilitated housing by 1980 will require further reform of:
1. Consumer savings patterns
 2. Reduction in non-durable financing
 3. Modification of building cost
 4. Further modification of credit delivery systems
 5. Long term stabilization of the dollar.

REAL ESTATE 550/705
Outline--Lecture #11

THE MORTGAGE

The mortgage is one of the more amazing forms of financial documents as it succeeds in bringing together a lender and borrower whose motivations in theory are virtually incompatible.

- A. The objectives of the mortgage lender:
 - 1. Safety of principal.
 - 2. Reliable yield.
 - 3. Planned recapture of initial investment.
- B. The objectives of the mortgage borrower:
 - 1. Cost of money is cheaper than yield on investment "Leverage".
 - 2. Real estate is so risky the investor seeks an early payback of equity to reduce risk of loss.
 - 3. Leverage permits increase in the span of control while increasing the risk of default.
- C. Important ratios for measurement of objectives:
 - 1. Default Ratio--Measures financial risk from lenders view point.
 - 2. Payback Ratio--Measures equity exposure of investor.
- D. Positioning of participants:
 - 1. Lender = looking at a preferential position on project productivity. Lender gets his before owner gets his.
 - 2. Borrower = "Equity Investor" is seeking control of real estate cash outlays.

Note that within the construct of the mortgage each can feel as though a good deal has been made.
- E. Strategic Dimensions of Mortgage Lending (5):
 - 1. The pleasure, pain, and bailout theory.
 - 2. Direct managerial control versus oblique pressure of creditor.
 - 3. Constant dollars versus inflation dollars.
 - 4. Present hard dollars versus speculative future dollars--the quick and dependable nickel versus the slow quarter.
 - 5. Yield versus safety through planned recapture.

II. The Mortgage

Mortgage literally means death pledge in that the original motivation to repay was the alternative of a death pledge by jousting or simple forfeiture of ones life.

Foreclosure originally meant final elimination of your equitable rights rather than transfer of title. Since the Magna Carta borrowers and lenders have been seeking techniques to give one or the other the upper hand in the event of non-payment.

- A. A mortgage is the creation of an interest in property as security for the payment of a debt or the fulfillment of an obligation. Consists of two basic documents:
 - 1. Note or contract of debt.
 - 2. Pledge of real estate as collateral.

- B. Essentials of the mortgage elements of a contract:
 1. Competent parties.
 2. Offer and acceptance.
 3. Consideration.
 4. Legality of object.
 5. Because it is real property and subject to the Statute of Frauds, it must be in writing and signed.
- C. The parties to the mortgage:
 1. The mortgagor--the party pledging the property and borrowing the money.
 2. The mortgagee--the party to whom the pledge of property is made and the lender or the money.
- D. General clauses of the mortgage:
 1. Covenant to Pay Indebtedness.
 2. Covenant to Insurance.
 3. Covenant Against Removal.
 4. Covenant to Pay Taxes.
 5. Covenant to Maintenance to prevent waste.
- E. Supplementary conditions to basic mortgage:
 1. Acceleration clause.
 2. Real estate^{*} insurance, and escrow clause.
 3. Restrictions against other encumbrances or liens.
 4. Esculpatory clause.
- F. Recourse on Default:
 1. Sue for specific performance.
 2. Sue for damages for breach of contract without taking item.
 3. Foreclose and take property.

III. Mortgage Lending is Risk Management

- A. Collateral
 1. Title
 2. Survey
 3. Property insurance
 4. Mortgage insurance
- B. Income of borrower
 1. Job history
 2. Insurance
 3. Economic base
- C. Interest
 1. ARM vs. FRM
 2. Portfolio management
 3. Hedging
- D. Purchasing power of capital
 1. SAMS
 2. Participation mortgages
 3. Convertible mortgages

REAL ESTATE FINANCE I: THE MORTGAGE

I. The mortgage transaction

A. The investment objectives of the lender:

1. Safety of principal
2. Reliable yield
3. Planned recapture or liquidation of the investment

B. The investment objectives of the borrower are:

1. Positive financial leverage
2. Using other people's money (OPM) to increase the investor's span of control
3. Reducing the amount of personal equity at risk if a nonrecourse mortgage loan is available

C. Strategic dimensions of mortgage lending (5)

II. Mortgage literally means "death pledge"

A. Under English common law, the "title theory" of mortgages decreed that the mortgagee (i.e., the lender) received "defeasible fee" title to the real property.

B. Viewing strict interpretation of the defeasance clause as being unfair at times, English courts of chancery (equity) began to decree what became known as the "equity of redemption."

C. In response to mortgagees' complaints about the time period for the equity of redemption being too liberal in many cases, the English courts developed the "decree of foreclosure."

1. A reasonable period of time for equitable redemption
2. A public sale (auction) of the real property pledged as collateral with any sale proceeds in excess of the debt obligation (and all of the expenses incurred in connection with the foreclosure suit and sale) being given to the mortgagor

D. The "lien theory" developed at a later date than the title theory and views the mortgage as merely a lien (claim) on the real property, not a transfer of title.

E. An additional legal right in about half of the states is the "statutory right of redemption." This right to redeem starts at the time of the foreclosure sale and runs for several months to two years (varies by state). In the meantime the purchaser receives only "nascent title" -- often represented by a "certificate of purchase" instead of a deed.

F. In general, the evolution of the mortgage has concerned the "give and take" between the lender's rights and equities and the borrower's rights and equities (also concerns the dynamics of the loan process from closing to termination).

III. A mortgage transaction consists of two basic documents -- a promissory note (i.e., a contract of debt) and a mortgage (i.e., a pledge of real estate as collateral).

A. Lender's recourse upon default consists of three alternative remedies:

1. Sue for specific performance of the terms of the promissory note.
2. Sue for money damages for breach of contract (without taking the collateral).
3. Foreclose on the pledged real estate.

B. Breach of contract means violation of basic covenants and is not limited to failure to make a payment on time. General covenants include:

1. Covenant to pay indebtedness on time
2. Covenant to maintain adequate insurance coverage
3. Covenant against removal
4. Covenant to pay taxes on time
5. Covenant to perform adequate maintenance to prevent waste

C. Supplementary conditions to the basic mortgage might include:

1. Acceleration clause
2. Real estate taxes and insurance escrow clause
3. Restrictions against other encumbrances or liens
4. No assignment or sale subject to mortgage
5. Esculpatory clause

D. The essential elements of the mortgage contract are:

1. Competent parties
2. Offer and acceptance
3. Adequate consideration
4. Legality of object
5. In writing and signed

IV. Key vocabulary terms of mortgage finance are:

A. The parties to the mortgage transaction (mortgagor/mortgagee)

B. Loan-to-value ratio (LVR) and lender's yield

C. Methods of repayment:

1. Fully-amortizing loan
2. Partially-amortizing loan (& ballon payment)
3. Interest-only loan (a.k.a. a bullet, straight, or standing loa
4. Constant term loan
5. Constant payment loan
6. Participation loan
7. Closed loan
8. Prepayment penalties
9. Blanket loan (& release prices)

- D. Priority of claims must be related to the nature of the real estate interest assigned or pledged (e.g., first mortgage on the leasehold interest).
- V. Essentially, you can build whatever you can finance. Thus, real estate deals ultimately depend on the financing terms available.
 - A. The downpayment required determines the effective demand by qualifying the number of buyers with sufficient means.
 - 1. Downpayments also control the rate of payback, yield on equity, and motivation to repay the loan.
 - 2. Efforts to reduce the downpayment may lead to "tiering" of the financing.
 - B. As noted previously, "leverage" has many dimensions, including the relative cost of borrowed funds, span of control, and the amount of equity at risk if the loan is nonrecourse.
 - C. The desire to "mortgage out," i.e., to eliminate equity money, is limited by legal loan ratios and the desire to limit risk by holding all obligations within cash breakeven or default point.
 - D. The variety of financing strategies that are commonly used include
 - 1. Creating a refinancing surplus
 - 2. Converting income to capital gain
 - 3. Covering principal payments with depreciation
 - E. To understand the variety of financing devices that are used in the real estate industry, it is necessary to look at the revolutionary changes which have been taking place among financial institutions which is the subject of the next lecture.

REAL ESTATE FINANCE II: THE INSTITUTIONS

I. A historical perspective

- A. Prior to the Great Depression of the 1930s most real estate loans were in the form of demand loans or one-year loans.
- B. Just as the stock market had crashed in 1929, the mortgage market collapsed during the Great Depression that followed. There were several reasons for the collapse:
 - 1. Low loan-to-value ratios were lowered even further making refinancing very difficult.
 - 2. Need for additional financing resulted in the use of short-term second and third mortgages. High effective interest rates made this a costly source of funds which resulted in many foreclosure actions.
 - 3. Primary lenders' demands for repayment usually came when the demand for new loans exceeded the supply of funds. This also made refinancing very difficult.
 - 4. Many borrowers shopped around for excessively high appraisals to overcome the low LVR constraint. Lenders were not very knowledgeable about appraisal techniques at the time and often got burned. As a result, lenders lost confidence in mortgages as security instruments.
 - 5. Capital funds were not very mobile geographically at this time. Thus, some parts of the country might have a surplus of funds while another part suffered from a shortage of funds.
 - 6. Construction quality varied considerably and suffered from a lack of standards.
 - 7. Many homeowners did not have the capacity to withstand disturbances to their economic situations. Foreclosures flooded the market causing real estate values to fluctuate even more.
- C. The collapse of an orderly mortgage market gave liquid investors tremendous buying power.
- D. Fortunately, Uncle Sam came to the rescue (albeit a bit late). The post-1929 reconstruction of the mortgage market was a remarkable period of federal action in response to a crisis.
 - 1. To provide immediate assistance to current homeowners:
 - a. Reconstruction Finance Corporation (RFC)
 - b. Homeowners Loan Corporation (HOLC)
 - 2. To protect the saver and to foster competition among financial institutions in attracting funds:
 - a. Federal Deposit Insurance Corporation (FDIC)
 - b. Federal Savings & Loan Insurance Corporation (FSLIC)

3. For the borrower:
 - a. Long-term loans were introduced (up to 40 years).
 - b. Amortized loans via monthly payments of PITI.
4. To protect the lender (and as a bribe to participate) the Federal Housing Administration (FHA) was created in 1934.
 - a. Three major objectives of the FHA are:
 - (1) to operate a housing loan insurance program designed to encourage improvement in housing standards and conditions,
 - (2) to facilitate sound home financing on reasonable terms
 - (3) to exert a stabilizing influence in the mortgage market
 - b. The FHA took over responsibility for appraisal and credit analysis. The result was a total reform of the appraisal industry.
 - c. The FHA succeeded in standardizing the mortgage instrument and the lending process.
 - d. Accomplished these objectives through its own initiative and thus usurped the traditional power of the mortgage lender.
5. To provide regional liquidity the Federal National Mortgage Association (FNMA) was created by Congress in 1938.
6. To aid returning veterans in obtaining home financing the Veterans Administration (VA) -- created in 1944 -- was allowed to introduce a loan guarantee program.
7. FNMA was rechartered by Congress in 1954 and assigned three objectives:
 - a. Secondary mortgage market operations (FHA/VA)
 - b. Management and liquidation functions with respect to the portfolio of loans that the previous FNMA had acquired
 - c. Special assistance functions
8. In 1968 the "old" FNMA was reorganized. The assets and liabilities connected with the secondary mortgage market operations were placed in a new private corporation which kept the FNMA name.
9. The remaining functions of the "old" FNMA were placed in the newly created Government National Mortgage Association (GNMA) in 1968. GNMA has three major objectives -- the two the agency inherited and the guaranteeing of pass-through securities.
10. After spinning off FNMA into a private corporation in 1968, Congress created the Federal Home Loan Mortgage Corporation (FHLMC) in 1970 as a government corporation under the sponsorship of the FHLBS. FHLMC has three major objectives:

D. 10. Continued...

- a. To circulate funds from capital surplus geographical areas to capital deficit areas.
- b. To develop new sources of funds during periods of credit stringency.
- c. To develop new financing instruments to aid in the development of the private secondary mortgage market.

II. Major sources of mortgage funds & their respective regulatory agencies

A. Savings & Loan Associations

1. Federally-chartered S&Ls are regulated by the Federal Home Loan Bank System (FHLBS) which consists of:
 - a. FHLBBoard
 - b. FHLBanks
 - c. FSLIC
 - d. FHLMC
2. State chartered S&Ls are regulated at the state level and at the federal level if they desire FSLIC coverage.

B. Commercial Banks

1. National banks are regulated by several federal agencies:
 - a. Comptroller of the Currency
 - b. Federal Reserve System
 - c. FDIC
2. State chartered banks are regulated at the state level and at the federal level if they desire FDIC coverage.

C. Mutual Savings Banks

D. Life Insurance Companies

E. Pension and Endowment Funds

- F. Note that all of the above groups are subject to IRS regulations and often are also subject to SEC regulations.

III. Factors influencing the supply of loanable funds

A. The Federal Reserve Board & Monetary Policy

1. Open market operations
2. Changes in reserve requirements
3. Changes in the discount rate

B. Other factors

1. Anticipated inflation
2. Institutional restraints (e.g., usury laws)
3. Employment and income levels

IV. Primary vs. Secondary Mortgage Markets

A. Primary mortgage market characteristics:

1. Local
2. Supply and demand disequilibrium
3. Primary lender & borrower

B. Secondary mortgage market characteristics:

1. National
2. Third-party investors
3. Standardized mortgage packages
4. Institutions in the secondary market include:
 - a. FNMA
 - b. GNMA
 - c. FHLMC

V. New institutional forces in the real estate capital markets

A. National policy responses to capital shortage

1. Modification of the propensity to save via the Economic Recovery Tax Act of 1981 (ERTA)
2. Modification of institutional specialization via the Depository Institutions Deregulation & Monetary Control Act of 1980
3. Channeled capital distribution via:
 - a. tax incentives
 - b. yield incentives
 - c. subsidy of special groups
 - (1) housing
 - (2) industrial
 - (3) infrastructure and urban redevelopment

B. New institutional forms of equity capital

1. Pension funds
2. Syndications
3. Public Sector Corporations
4. Cooperatives
5. Condominiums
6. Public/private consortiums

C. New sources of regulation

1. Employment Retirement Income Security Act (ERISA)
2. Securities & Exchange Commission (SEC)

D. In response to the above, we are now observing:

1. Escalation clauses in loan agreements and in leases
2. Less leverage (more equity) to reduce the risk of default
3. More indirect profits being structured into deals
4. Exploitation of tax benefits for new capital investment
5. A renewed emphasis on actual value creation (i.e., can the project stand on its own?)

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New Institutional Sources of Real Estate Capital

I. National Policy Responses to Capital Shortage

- A. Modification of the propensity to save - Economic Recovery Act.
- B. Modification of institutional specialization--monetary institution's Reform Act of 1980.
- C. Channeled Capital Distribution
 - 1. Tax incentives
 - 2. Yield incentives
 - 3. Subsidy of special groups
 - a. Housing
 - b. Industrial
 - c. Infra-structure and urban redevelopment

II. Real estate in general must compete with all other capital needs without subsidy of its cost of funds.

- A. Since real estate does not provide enough income on capital invested situation will require:
 - 1. Raising rents or
 - 2. Shifting cost and risk to tenant just as borrower must pay cost of inflation and economic risk
 - 3. Less leverage--more equity to protect break-even point or default point.
 - 4. More indirect profits from operations, estate planning, value creation.
 - 5. Exploitation of tax benefits for new capital investment

III. New Institutional Forms of Equity Capital

- A. Pension funds
- B. Syndications - Balfour - Consolidated Capital
- C. Public corporations - Wisconsin Housing Finance Authority
- D. Co-ops--Greatwood
- E. Condominiums
- F. Public/private consortium (Capital Centre, Jackson Clinic)

IV. New Sources of Regulation

- A. Group investment brings in SEC and state securities regulation
- B. Pension fund brings in ERISA (employee retirement insurance + security act) and creates fiduciary status real estate managers

Lecture #11 Outline
Institutional Structure of Mortgage Lending

- I. High cost of real estate requires heavy debt financing. Real estate capital represents 2/3 of the nation's wealth and almost 50% of this is mortgage.
 - A. A capital pool for loans requires assembly of small savings through intermediary financial institutions.
 - B. Dominant institutions have been insurance companies, banks, and savings & loan associations but in the last decade several new institutional intermediaries have been created.
 - C. Differences between institutional intermediaries can be shown by comparison of five basic subsystems:
 1. A marketing system to compete for savings.
 2. A marketing system to compete for loans
 3. The transaction preference system of the policy makers
 4. The liquidity system
 5. The safety system
 - D. This lecture will relate historical development and reform affecting subsystems above.
- II. Mortgage always associated with financial panic and brutality of capitalistic system.
 - A. Absence of federal real estate credit policy until after World War I. Cheap land was incentive for national development.
 - B. Mortgage business very local, provincial, and cyclical and subject to abuse by promoter.
 - C. Mortgage banking industry grew up after World War I to bring capital surpluses into contact with real estate development needs.
 1. Prosperity made mortgages the blue chip investment for the middle class.
 2. Savings pools were created by cooperative action (S & L's)
 - D. Flaws on mortgage instrument and lending procedures contributed to depression.
 1. Short term 1-5 year notes, interest only
 2. 50% loan ratios led to second and third mortgages to reduce down-payment.
 3. Decline in prices made borrower unable to refinance or unwilling to pay.
 4. Amount of loan depended upon appraisal so competition took advantage of distorted appraisal.
 - E. Depression made it impossible to finance which accelerated foreclosures which meant intermediaries were illiquid.
 1. Investors lost confidence in the mortgage form.
 2. Savers lost confidence in intermediary

F. Collapse of orderly market gave liquid investors tremendous buying power.

III. 1930's were a remarkable period of successful federal reforms of the individual mortgage transaction and mortgage lending intermediary.

A. Immediate temporary relief through HOLC Home Owners Loan Corporation and Reconstruction Finance Corporation.

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D. Protection for the lender by insuring the loan against default by the Federal Housing Administration.

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G. Modification of lenders ability to compete for funds to favor savings & loans as a residential mortgage intermediary.

H. Depression taught federal government it could manipulate total supply of mortgage money available.

I. Control of money supply led to special credit for special housing problems.

1. Housing for veterans
2. Housing for college students
3. Housing for the elderly
4. Housing for low income groups
5. Housing for those displaced by urban renewal

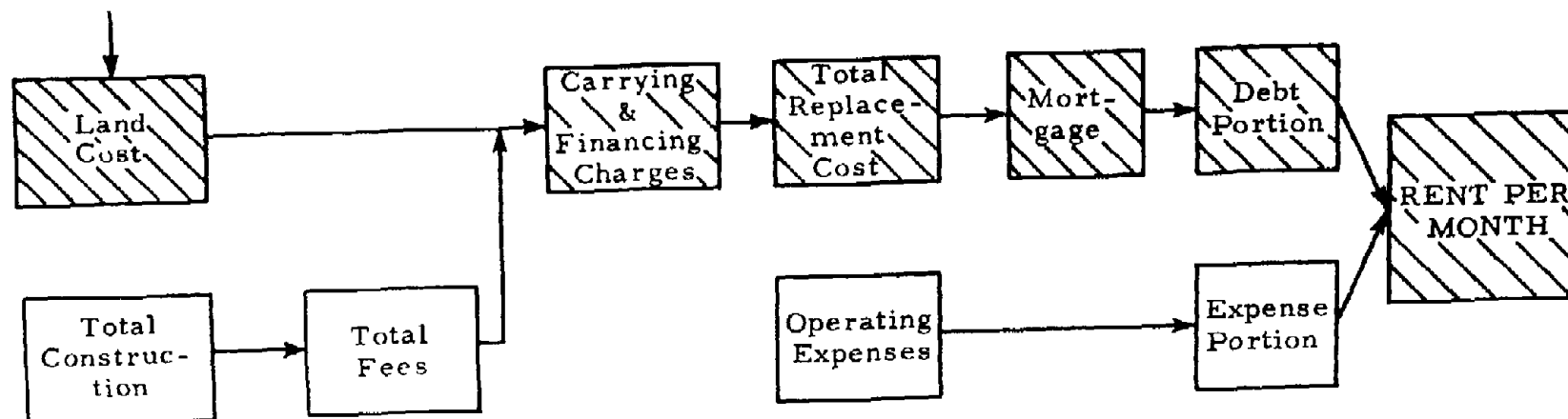
J. While protecting special groups it learned it could manipulate housing quality or relate to other social issues or cause problems in:

1. Urban sprawl or land conservation
2. Social fragmentation or integration
3. Proliferation of the auto or public transportation
4. Inflation of labor costs or labor saving innovation

| The Consumption Sector | The Financial Sector | | The Production Sector |
|---|---|---|---|
| OCCUPANT | PRIVATE INVESTOR | GOVERNMENT SUBSIDY | TECHNOLOGY |
| 1. Ability to pay rent 2. Requirements demanded of the product | 1. Type of investor 2. Rates of return (profit, present value) 3. The supply of units and/or dollars 4. Tax shields, depreciation, and tax bracket 5. Ability for training and organization | 1. Type of programs available [221 (d), rent supplement] 2. Quantity of funds 3. Efficiency of funds | 1. Land and/or building acquisition. 2. Rehabilitation and/or new constructions 3. Fees, financing and carrying charges 4. Operating costs 5. Standard conditions of the above 6. Forecast the impact of technology on the above and the other three sectors |

Figure 3. The Three Sectors in the Housing Study

I. Land Write-Down Subsidy



II. Construction Cost Subsidy

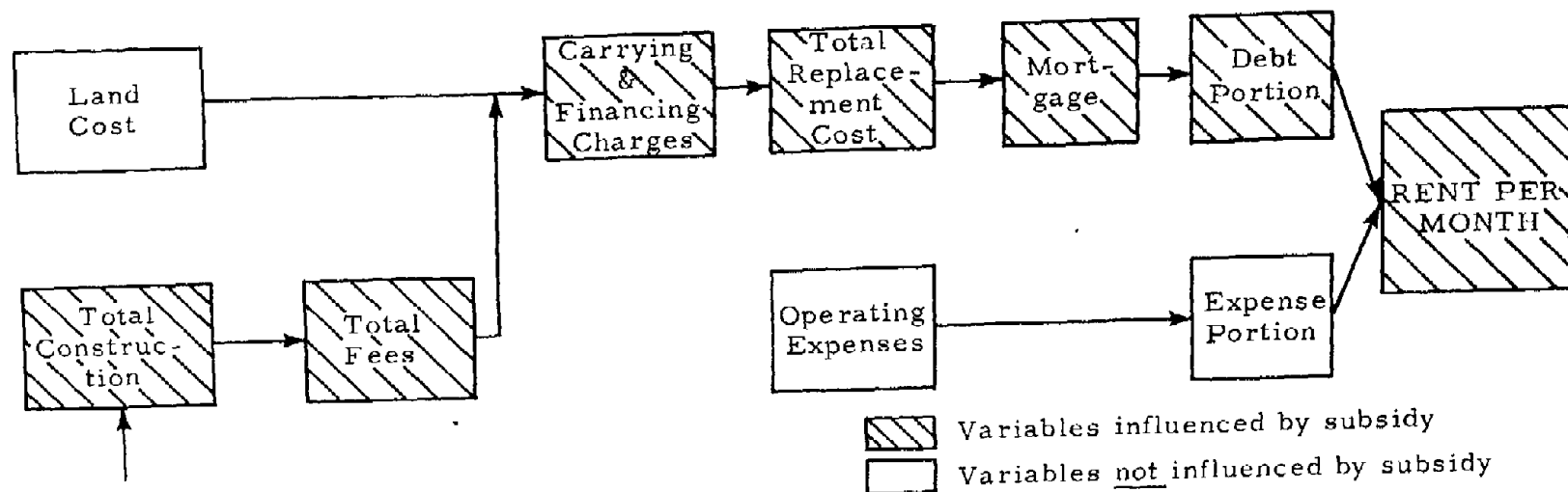
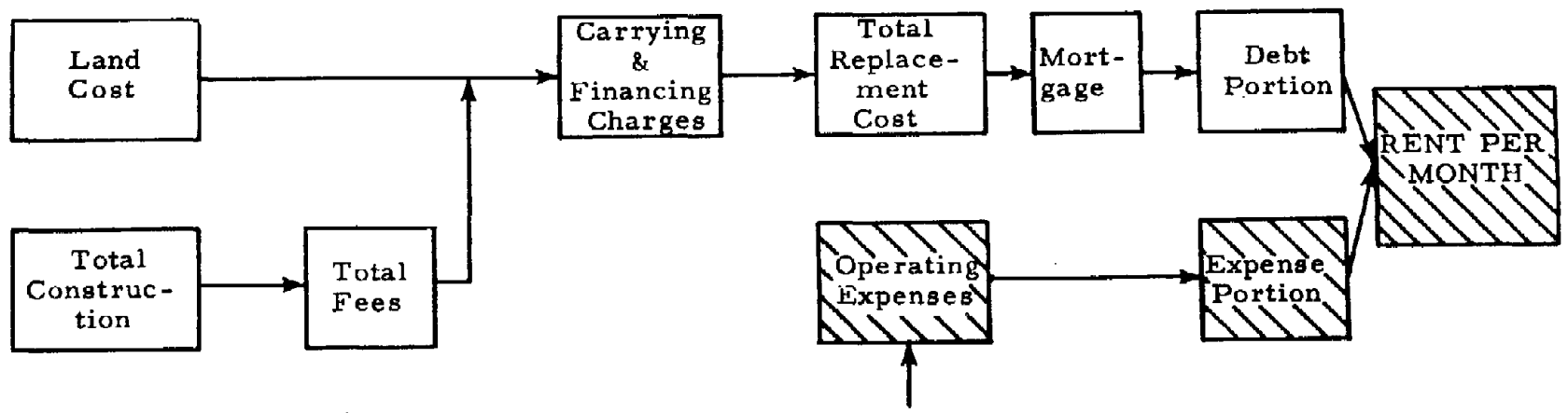


Figure 6. Schematic Representation of Alternate Subsidy Flows

III. Operating Expense Subsidy



IV. Interest Rate Subsidy

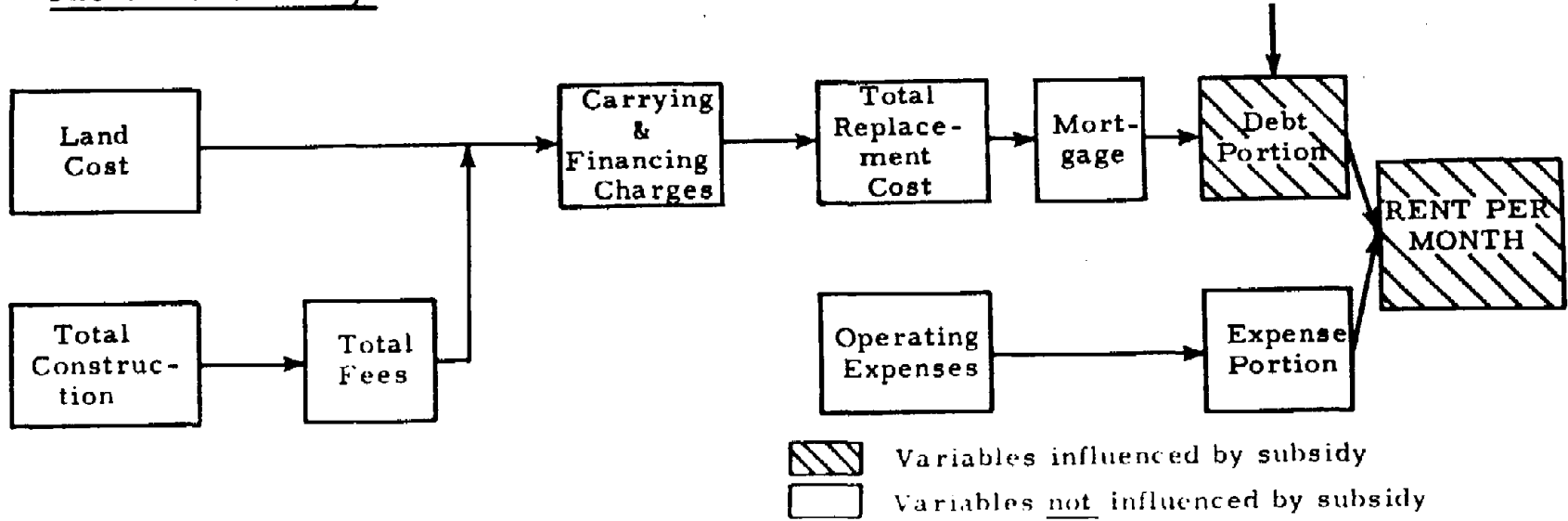


Figure C. Schematic Representation of Alternate Subsidy Flows (Continued)

THE MORTGAGE

The mortgage is one of the more amazing forms of financial documents as it succeeds in bringing together a lender and borrower whose motivations in theory are virtually incompatible.

A. The objectives of the mortgage lender:

1. Safety of principal.
2. Reliable yield.
3. Planned recapture of initial investment.

B. The objectives of the mortgage borrower:

1. Cost of money is cheaper than yield on investment "Leverage".
2. Real estate is so risky the investor seeks an early payback of equity to reduce risk of loss.
3. Leverage permits increase in the span of control while increasing the risk of default.

C. Important ratios for measurement of objectives:

1. Default Ratio--Measures financial risk from lenders view point.
2. Payback Ratio--Measures equity exposure of investor.

D. Positioning of participants:

1. Lender = looking at a preferential position on project productivity. Lender gets his before owner gets his.
2. Borrower = "Equity Investor" is seeking control of real estate cash outlays.

Note that within the construct of the mortgage each can feel as though a good deal has been made.

E. Strategic Dimensions of Mortgage Lending (5):

1. The pleasure, pain, and bailout theory.
2. Direct managerial control versus oblique pressure of creditor.
3. Constant dollars versus inflation dollars.
4. Present hard dollars versus speculative future dollars--the quick and dependable nickel versus the slow quarter.
5. Yield versus safety through planned recapture.

II. The Mortgage

Mortgage literally means death pledge in that the original motivation to repay was the alternative of a death pledge by jousting or simple forfeiture of ones life.

Foreclosure originally meant final elimination of your equitable rights rather than transfer of title. Since the Magna Carta borrowers and lenders have been seeking techniques to give one or the other the upper hand in the event of non-payment.

A. A mortgage is the creation of an interest in property as security for the payment of a debt or the fulfillment of an obligation.

Consists of two basic documents:

1. Note or contract of debt.
2. Pledge of real estate as collateral.

- b. Essentials of the mortgage elements of a contract:
 - 1. Competent parties.
 - 2. Offer and acceptance.
 - 3. Consideration.
 - 4. Legality of object.
 - 5. Because it is real property and subject to the Statute of Frauds, it must be in writing and signed.
- c. The parties to the mortgage:
 - 1. The mortgagor--the party pledging the property and borrowing the money.
 - 2. The mortgagee--the party to whom the pledge of property is made and the lender or the money.
- d. General clauses of the mortgage:
 - 1. Covenant to Pay Indebtedness.
 - 2. Covenant to Insurance.
 - 3. Covenant Against Removal.
 - 4. Covenant to Pay Taxes.
 - 5. Covenant to Maintenance to prevent waste.
- e. Supplementary conditions to basic mortgage:
 - 1. Acceleration clause.
 - 2. Real estate^{tax}, insurance, and escrow clause.
 - 3. Restrictions against other encumbrances or liens.
 - 4. Esculpatory clause.
- f. Recourse on Default:
 - 1. Sue for specific performance.
 - 2. Sue for damages for breach of contract without taking item.
 - 3. Foreclose and take property.

III. Mortgage Lending is Risk Management

- A. Collateral
 - 1. Title
 - 2. Survey
 - 3. Property insurance
 - 4. Mortgage insurance
- B. Income of borrower
 - 1. Job history
 - 2. Insurance
 - 3. Economic base
- C. Interest
 - 1. ARM vs. FRM
 - 2. Portfolio management
 - 3. Hedging
- D. Purchasing power of capital
 - 1. SAMS
 - 2. Participation mortgages
 - 3. Convertible mortgages

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 - C. Public corporations - Wisconsin Housing Finance Authority
 - D. Co-ops--Creatwood
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Lecture Outline
Plant Location Choice and Cash Flow Analysis

- I. Unlike the retail establishment which emphasises direct linkages to its consumers and their costs of travel when visiting the site, the industrial location decision is much more concerned with linkages to its input supplies and its own shipping cost and travel expense.
 - A. Choice of the Industrial location may affect every component of the income statement and the balance sheet of the firm.
 - B. While mathematical models may be used to determine the optimal location for a warehouse or a feed mill, many location judgments reflect strategic positioning in the politics of business, value judgments, and idiosyncracies of management, and matters of accident.
 - C. Nevertheless, once choices have been narrowed by qualitative screens or criteria, the final choice between alternatives must be measured in terms of which choice provides the best ratio of net cash flow to net equity investment of the firm.
 1. Understanding of the cash flow dynamics permits public planner to provide bonuses or penalties which will tend to channel industrial site decisions consistent with public planning.
 2. Understanding the dynamics will also help the manager look at the real estate decision as more than a simple question of the cost of land and building which may not be relevant.
- II. A simple format for the income statement and balance sheets of a firm might look something like this:
 - A. Gross sales
 Less: delivery expense
Less: returns and allowances
 Net sales
 Less: cost of raw materials and transportation cost
 Less: cost of manufacturing labor including indirect benefits/unit of production
 Less: cost of occupying plant (real estate taxes, insurance, maintenance, etc)
 Less: cost of machinery and equipment
 Less: cost of energy inputs
 Less: cost of management salaries and benefits
Less: cost of non-equity funds
 Net taxable income
 Less: local and state taxes
 Less: federal income taxes
Plus: state and federal investment tax credits
 Net Income available for distribution
 - B. At the same time one must compute the net change in investment assets required of a new site or relocation of an existing site.
 1. Cost of land including search and acquisition
 2. Cost of building off-site utility and transportation linkages including cost of time delays
 3. Cost of plant and equipment net of borrowed funds
 4. Cost of moving equipment, staff, inventories
 5. Cost of training new work force and start-up cost

6. Cost of maintaining double inventories or double plant facilities during change-over
-
- Total equity investment in new location
Less: net salvage from old plant
Less: State and federal grants toward relocation and retraining, defense or environment conservation investment, or income tax refunds in case of short term operating losses
-
- Net investment at new location

C. Δ net income available for distribution

Δ net equity investments at alternative locations

1. Compute for each location
2. Highest cash return is best alternative

D. The site with the return on investment may not be chosen when management considers certain qualitative or political factors but at least management will know the monetary cost or trade-off among alternative sites due to non-financial selection criteria.

III. Since the number of possible industrial locations may appear to be almost infinite management will narrow alternatives with a progressive series of yes/no or regional perimeter devices to exclude as many alternatives as possible:

- A. Definition of regional supply limitations on raw material and labor
- B. Definitions of marketing area to be served by facility
- C. Specification of energy source and price requirements
- D. Definition of selected interstate, regional or local highway systems, rail lines, and airport capacity
- E. Specification of labor pool which is under-employed or unemployed in terms of number, age, sex, and skill levels
- F. Environmental sensitivity and regulatory control systems within area
- G. Compatability with existing employers competing for same labor pool, raw materials, etc.
- H. Specification of maximum size of community preferred (10,000 or less, etc.)
- I. Quality of community water system or ground water
- J. Capacity of community sewer and solid waste disposal system
- K. History of union activity in community
- L. Availability of regional or community technical training schools
- M. Availability of ancillary supporting wholesalers, equipment dealers, trucking companies, etc.
- N. Community amenities or proximity to amenities desired by executive management

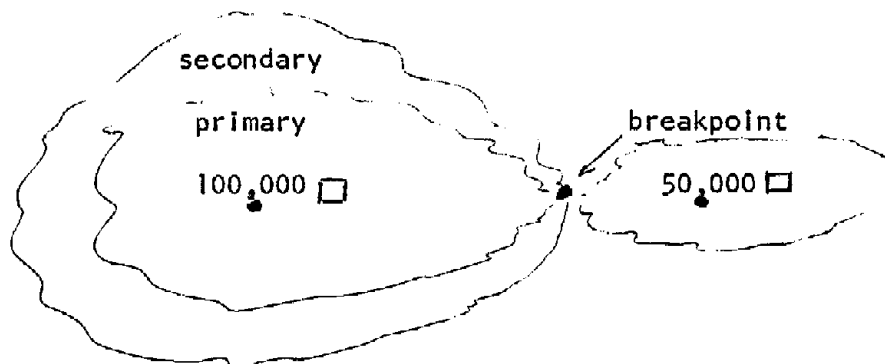
- O. These only suggest the type of criteria used to narrow the selection and each might have a different level of importance for individual firms
- P. Many trade-off decisions may be necessary in choosing between sites with similar investment advantage but dissimilar qualitative attributes. Often these trade-offs are implicit, unrecorded but should be made explicit:
 - 1. Statement of negotiation objectives for marketing, production, personnel management, etc.
 - 2. Simple list of "essentials" and "desirables"
 - 3. Point system scoring charts for qualitative comparison
- IV. Industrial location is constrained in part by cash flow parameters, in part by systematic analysis of qualitative factors, and in part by subjective and intuitive management bias.

Retail Enterprise Location Choice

- I. The significance of retailing models for a first course in real estate goes beyond the issue of where should a supermarket be because:
 - A. The retail concept is applicable by analogy to any land use requiring multiple customers which come to the site - store, dentist, restaurant, hotel, etc.
 - B. Retail potential measurement is instructive on devices for market segmentation.
 - C. Retail experience is instructive on the sensitivity of people's behavior relative to locational linkages, cost of friction, stress or their sense of security.
 - D. Retail strategies are instructive on how locations and improvements impact on total cash revenues and cash expenses of an enterprise.
- II. Most often retail location is a site in search of a market, although a given retail operation knows its market from past experience and is searching for a site which meets its specification.
 - A. A site must be referenced to a specific use to test it for suitability or fit as a supermarket, a florist, dentist, campground or whatever.
 - B. Identification of the proposed use implies identification of a customer group and the need to relate that group to the site. That relationship leads to ...
 - C. Definition of primary and secondary trade areas is a device for segmentation of the relevant. The primary trade area is typically that area which will provide 60-70% of the customers while the secondary trade area represents 10-20%. There is always a small random element to most enterprise sales. The perimeter of a trade area may be defined by a critical linkage of the retail use to:
 1. A general area by driving time and road pattern.
 2. By clusters of potential customers organized by income, employment or some other common interest such as school, recreation, etc.
 3. By linkage to primary centers of employment, etc.
 4. By the decision point of the consumer to utilize the given retail service such as the interstate filling station, a Fanny Farmer candy store, etc. Is it an impulse good, a carefully planned trip, a shopping item, or a search item.
- III. Ultimately the retailer will relate to the frequency of customer visitation the average expenditure of the customer per visit and the loyalty to the customer of a particular retail source, either by choice or necessity. The analysis of sales potential within a retail area as initially defined above may follow a pattern something like this:

- A. Typical expenditures per customer for selected retail items as a percent of disposable income or as a percent of some category of expenditure such as medical, travel, clothes, etc.
 - B. Reduction of that total expenditure by leakage of sales to:
 - 1. Other geographic areas
 - 2. Other non-competitive suppliers
 - 3. Special buyer reallocations of discretionary purchases
 - C. The potential demand must then be related to available retail capacity already available in the area before the next proposed unit goes on stream. Only capacity competitive with the proposed project must be considered if leakage has been reasonably identified.
 - D. If capacity is low relative to potential demand then the retailer can expect to penetrate that demand without necessarily encroaching significantly on existing retail sources. This may be correlated to significant leakage.
 - E. If capacity of existing retail services is high relative to existing retail demand and there is little leakage, then the retailer must make the competitive decision as to who he expects to replace competitively.
 - F. In either case the retail analyst makes a high and low estimate of the capture rate which the new facility would enjoy as a percentage of both unmet demand and competitive encroachment on existing sales of other retailers.
 - G. An estimate of potential sales must be made for a sequence of periods and the analyst must determine the reasonable level of sales that might be expected of operations following the initial entry into the market.
- IV. Potential sales volume can then be converted to determine both the total space requirements necessary to support a given sales volume and the dollars per space unit which should be paid for rent or to support the justified investment required of purchase.
- A. Gross sales can be converted by various standards to an indication of space needs and justified budget such as:
 - 1. Sales per sq. ft. of customer area, gross building area per table of four, per bowling alley, per bar stool, per parking space, per room, per gas pump, per 1000 cars of traffic count, etc.
 - 2. Established retailers have the advantage of either knowing who their customers are or of statistical analogs of various operations (filling station models, fast food models, Sears, Roebuck data on one out of every five families in the U.S., etc.)
 - 3. Laymen and outsiders can find public standards of rent as a percentage of sales, etc. in a variety of trade publications and services such as Dollars and Cents of Shopping Centers, published by the Urban Land Institute, bulletins by International Council of Shopping Centers, and many trade publications of NAR.

- B. Obviously the forecast of sales is subject to a good deal of variance with the landlord maintaining that the site will do wonders for sales volume and the retailer maintaining reluctance to accept a fixed cost for an unproven advantage.
1. Therefore retailers use a percentage rent lease. The landlord receives a percent of sales reported quarterly and a minimum rent calculated to cover the landlords cash breakeven point.
 2. Notice the variance due to error and estimating potential sales or the delay in reaching maximum market penetration is shared by contract.
 3. Percentage rents in excess of required minimum rents is called overage rent.
- C. However, retail management can relate rental cost to a variety of location strategies as they impact on his costs and sales volume:
1. The retailer of impulse goods must pay a premium rent to be at locations where people already are in sufficient density to give him adequate walk-in or drive-in volume.
 2. Retailers of shopping goods might decide that the congestion of popular locations and the high rents requiring higher prices reduces sales so that a strategy of a peripheral location with lower rents can capitalize on more convenience by increasing advertising expense (Sears, Roebuck).
 3. A retailer could start with a cheap location but create such an elaborate display or building that people are drawn out of their way to see the operation.
 4. A discount retailer could take a cheap location with obsolete improvement and presumably pass the savings of low overhead to the consumer and rely on demand elasticity to provide greater frequency of visit and more sales per visit.
- V. Many of these factors can be systematized by looking at the evolution of Reilly's Law (not Murphy):
- A. Diversity of merchandise attracts customers but they are discouraged in visiting the site by the distance necessary to reach those goods at an increasing rate. Therefore the relative draw between two competing retail centers is represented by the sq. ft. of retail area divided by the travel distance squared. This presumably measured the break point between the primary trade area of Store A and Store B.



- B. The age of the automobile modified that to be retail area (as a proxy for diversity) divided by travel time (from the consumer to the store) squared.
- C. Behavioral psychologists have greatly modified the concept of diversity by substituting the concept of mass for retail area and a concept of cost of travel for the old idea of time or distance squared.
- D. The concept of mass essentially modifies size by a factor representing perceived quality of bargain (fair pricing) and a comfort index in terms of (well being). If positive the factor is greater than one; if negative the factor is a fraction of 100%.
- E. The concept of travel costs includes both cash cost of the trip and the elements of time, mental stress, and temptation to trade-off short term convenience for long term satisfaction (interception by a competitor).
- F. Any site, transportation or neighborhood feature that increases the denominator will increase the numerator will increase the frequency of visits or the average of expenditure per visit or both. Anything that increases the denominator will reduce the drawing power or frequency of visit.
 - 1. The impact of increasing travel costs may actually increase the average purchase per visit as people travel to the center only for the most important purchases.
 - 2. The regional shopping center may eliminate high frequency low volume stores like a food market or a drug store if it creates so much congestion it discourages shoppers for higher ticket items.
 - 3. High frequency may reduce needs for parking area and permit more systematizing of the process. (4 of every 5 feet of retail land is for parking; only 20% is floor area).
- G. The value of mass leads individual establishments to cluster as two or more create more total volume for each than a single isolated enterprise might have enjoyed - thus the tendency of shopping centers, hotels, etc. to stick together.
 - 1. As an alternative the isolated enterprise must offer diversity and perceived uniqueness to create mass and drawing power of its own.
 - 2. Location analysts spend many hours analyzing traffic approach zones, anxiety caused by various traffic attributes, and the ability of the shopper to perceive traffic patterns, destinations at the center, and routes which are direct and free of stress, such as left turns, pedestrian conflicts or long walks uphill or downhill from parked cars to store.

Business 550 - Lecture Outline
CASH FLOW AND THE HOUSING LOCATION CHOICE

1. A number of recent surveys indicate the great majority of American families still plan or prefer purchase of a single family detached home as their housing objective. Nevertheless the cost of construction, land development, real estate taxes and interest rate suggest that less than 50% of American families could afford to purchase such a house at this time.
- A. The purchasing power of a family is set by the amount of savings in excess of cash reserve funds available for a down payment, the direct cost of maintenance and operation and the cost of borrowed money as determined by interest rate and term of loan available.
- B. As a housing cost calculator for purchase of a basic 1000 sq.ft. living area home consider the following:
1. Mortgage constant of .10 X 90% loan = .09
 2. Real estate taxes at .65 of value and 45 mils = .03
 3. Property insurance = .01
 4. Utility services (percent of value) = .035
 5. Maintenance (percent of value) = .015
- .18 per year
- or .015 or 1.5% per month of capital cost
6. The chart below assumes 5 different levels of construction quality from \$15 per sq.ft. for a basic house without garage, appliances, etc. to a \$27 per sq.ft. including a two car garage and basic appliances. Actually the \$15 price would be true only of an older home in the north, or the cheapest type of housing in the south.

Housing Cost Calculator

Size (area in sq.ft.)
Quality (dollars per sq.ft.)

| | | 15 15,000 | 18 18,000 | 21 21,000 | 24 24,000 | 27 27,000 |
|--|--------|------------------------------------|--------------|------------------------------------|--------------|------------------------------------|
| Location Cost (thousands of dollars per acre) | 6,000 | (\$15,120) * 315 (\$1260) ** | 360 | 405 | 450 | 495 |
| | 8,000 | 345 | 390 | 435 | 480 | 525 |
| | 10,000 | 375 | 420 | (\$22,360) * 465 (\$1865) ** | 510 | 555 |
| | 12,000 | 405 | 450 | 495 | 540 | 585 |
| | 15,000 | 435 | 480 | 525 | 570 | (\$29,520) * 615 (\$2460) ** |

* Annual income after tax

** Monthly take home pay

- B. Given a site which is a farmhouse or a co-op it is possible to identify how many consumers there are, the relative supply and demand, and the longer term influences of enrollment, distribution of grads. and undergrads., and impacts of trends on the long term perspective.
 - 1. There are a variety of ratios and models which begin to relate aggregate data or the scale of users to the capacity of a particular site. These demand models take many forms.
 - 2. The site may suggest the group and then it becomes desirable to name the prospect for primary survey research; conversely, a group may be segmented to identify significantly different subgroup patterns. Consider the elderly on the attached chart.
 - C. In a pioneer economy when space is short people are not too fussy about housing, office space, or whatever. Historically in America scarcity permitted the production segment to initiate construction and price on a take-or-leave-it basis.
 - 1. More recently a surplus of space requires that the producer first research the market and custom tailor to the special needs of small consumer groups - MICRO MARKETS.
 - 2. 24 customers today for 2-bedroom apartments requires a capital investment of \$500,000 and a rent roll approaching \$100,000 (annual sales).
 - D. The complexity of fitting space-time users to particular sites and structures is an exacting and creative marketing problem.
- III. Project feasibility therefore involves an iterative and reversible series of studies:
- A. Market trends (opportunity areas).
 - B. Merchandise targets (micro market consumer groups).
 - C. Physical-technical site/use context.
 - D. Legal-political context.
 - E. Financial context (frontdoor/backdoor approaches; long term cash flow).
 - F. Strategic objectives of producer and community.

Outline of Property Development Lecture

I. Definition of Property Development and Management

- A. The commodity "real estate" is manufactured space with service amenities
- B. The manufacturing process is termed property development
- C. Maintenance and services to create environment can be termed property management.
- D. Development includes great variety in type and scale of project
- E. In the long term view development is not distinct from management

II. Areas of Decision Making Giving Form to Development

- A. The grand strategy - value framework - objectives - criteria
- B. Identification of opportunity areas in demand sectors
- C. Selection of merchandising target
- D. Determination of legal-political feasibility
- E. Ethical and social acceptability
- F. Determination of physical-technical feasibility
- G. Elements of financial feasibility
 - 1. Profit centers
 - 2. Calendar of financial events
 - 3. Capital budget
 - 4. Pattern of operating revenue and expense
 - 5. Financial package
 - 6. Tax strategy
 - 7. Measures of yield
 - 8. Measures of risk
- H. Execution of development plan
 - I. Operation of project
 - J. Monitoring process for feedback cycle

III. Property Development and the Time Constraint

- A. Capital cost and revenue schedule equated by timeline of development
- B. Value is a function of time lapse between outlay dollar and revenue dollar
- C. Time is critical resource to be controlled through planning and management according to plan
- D. Capital budget schedules, operating schedules, and time schedules
 - 1. Lead time for planning and regulatory review
 - 2. Construction in process time
 - 3. Start-up or rent-up time
 - 4. Receipt schedule - the collection lag
 - 5. Schedule for refinancing of equity buildup
- E. A nightmare of deadline dates: For example:
 - 1. Option date to acquire site
 - 2. Regular meetings of regulatory boards
 - 3. Lead time dates to meet completion dates to serve a market
 - 4. Take-down dates on loan agreements
 - 5. Seasonal limitations on construction factors
 - 6. Occupancy clauses in tenant leases
 - 7. Repayment dates on temporary financing
 - 8. Employment dates for staff
- F. Talent, time, and money are interchangeable raw materials
 - 1. Trade talent for money
 - 2. Packaging - trade access to money for percent of gross
 - 3. Fast track construction - trade time for contract
 - 4. Developer is the central management of a multi-business venture

IV. Property Development Trends

- A. Historical segmentation by function and land use type
- B. Current trend - planned unit development

1. Balanced residential community complexes
 2. Balanced industrial-commercial complexes
 3. Balanced retail-residential complexes
 4. New town development
- C. Big business means big capital
1. Creative financing via multiple approaches to capital markets
 2. Large corporate investors
 3. Insurance company participation
 4. Construction material suppliers-vertical integration
- D. Partnership between public agencies and private enterprise
1. The entrepreneur ego in public administration
 2. Turnkey projects - integration of construction management
 3. Government subsidy for selected private projects

Business - 550
Urban Infrastructure Systems - Outline

- I. Real estate in an urban area depends on a complex web of mechanical and service systems to operate.
 - A. People create real estate value to the degree that they concentrate in a given area but as the concentration increases more and more of the life support systems must be artificial rather than natural until at some critical point the benefits of urban living are more than offset by the cost of maintaining an artificial terrarium.
 - B. Population and industrialization leads to a "take-off principle" of environmental imbalance and economic costs of urban environmental systems.
 - C. Human capacity to tolerate must be measured in physical, mental, and sociological standards and expectations.
 - D. As environmental problems become more complex so do the responsibilities of urban government in the development of systems to offset the problems:

Mechanical Systems

1. Water
2. Sewer
3. Solid waste
4. Air pollution
5. Transportation
6. Communication services
(including mail)

Professional Services Systems

1. Fire
2. Police
3. Education
4. Health
5. Recreation
6. Justice
7. Arts & culture
8. Political organization

- E. Lecture will focus on the real estate process, mechanical systems, and economic constraints related to environmental quality, or conversely urban pollution.
 1. Pollution has been defined as a resource in the wrong place at the wrong time.
 2. For the individual decision maker the impact of pollution leads to malfunctioning of the market system because the aggregate consequences would be difficult to regulate by private agreement.
 3. Impact on individual consumption decisions (demand side) such as altered housing pattern.
 4. Impact on investor-developer altering cash flow, feasibility, present value of investment (supply side) changing quantity and location of new real estate.
 5. Pure hearts and high standards do not make fresh water and clean air. Solution requires technology, financing, and social mechanism for pollution decision.
- II. Technology of water and air quality is obsolete. Water quality and air quality are interrelated problems.
 - A. Water is used as vehicle for solid waste disposal but limited in capacity both in nature and in processed form.

1. Primary treatment
2. Secondary treatment
3. Advanced treatment
4. Sewer taps limit urban growth
5. Recycling of sewage water in Denver
6. Cost to transport fresh water or remove waste water
7. Combining waste disposal with agricultural irrigation
8. Recycling of sewage sludge as animal feed
9. Grinding sewage and pumping solids

B. Vacuum systems, home oxydation systems, or home recycling means increased housing costs and resulting impact on demand.

C. Water quality and solid waste disposal

1. Facts: 365 million tons per year, 10# per capita per day. Only 50% collected. Industrial waste burned (10%), 90% of municipal waste is dumped on land fills. Substantial industrial recycling.
2. Sanitary land fill threatens water table pollution
3. Incineration for sterile fill creates air pollution
4. Trends: Increasing cost of removal implies increasing efforts to recycle, re-use, re-power, restrain wasteful and inefficient use. Awareness of real social cost creates incentive to find alternative uses.
5. Effects on real estate process: increased emphasis on separators, efficient intra-firm collection, sophisticated (and costly) public facilities for recycling. All imply increased land and structure taxation, greater land acquisition cost and more costly structure requirements.

III. Air pollution related to investment of fire and fossil fuels

A. Facts: sources are 60% from automobiles, 16% from industry, 14% from electrical generation, 5.5% from heating, and 3.5% from refuse disposal.

B. The gasoline engine and the private automobile

1. Paving for automobile destroys necessary green oxygen producers
2. Exhaust is major source of urban pollution
3. Public transportation or electric automobile requires urban density and compactness.
4. Modern location theory implies private mobility and inertia of convenience.
5. Environmental theory for urban economics requires public systems of mobility and consumer preference for active motion.

C. Electric capacity related to coal and natural gas

1. Purification of exhausts means contamination of water
2. Transmission problems mean inefficient land use
3. Inert gas and transmission line insulators
4. Atomic power, water pollution, and air pollution

IV. Noise, Privacy, Aesthetics

- A. Close relationship between income and level of privacy. Social tension increases not in high density urban areas but in housing with many individuals per room.
- B. Privacy is a resource whose value is measured by the productive and creative potential of the central city. Privacy is a space attribute leading to essential sensory regeneration.
- C. Residential design to enhance privacy, aesthetics, and freedom from noise, imply greater development costs.

V. Market economy does not work well to internalize cost of environment controls. Economics of controls differ for society as opposed to individual investor in the urban site.

- A. Marginal benefit vs. marginal cost for society
- B. No benefit for cost incurred for investor
- C. Competing claims for investment productivity
- D. Some urban environment has benefit for developer
 - 1. Good esthetics can be good merchandising
 - 2. Environment undisturbed lowers cost
- E. Legislative mechanisms to internalize cost
 - 1. Uniform cost allocations shifted to consumer through price
 - 2. Legal penalties
 - 3. Incentive in the form of subsidies, tax relief or privilege
 - 4. Education to create social approval or disapproval for individual actions.
- F. Problems: Individual investor is subject to cash flow solvency limits. Any economic entity will suffer to a greater degree when costs cannot be shifted. But some market reallocation of goods and activities is required because of long term pollution products misallocation. (it is cheaper to pollute)
- G. Final guidelines
 - 1. Avoidance of the catastrophic loss
 - 2. Maintenance of large choice set for future generations/
 - 3. Maintenance of institutional flexibility and ability to change.

- C. This chain of common ownership was the means sought to entice the owners of the Grand Central Terminal to transfer the development rights from the landmark on 42nd Street to various other lots they controlled. In 1967 a proposal by the Penn Central and a British developer to construct a 55-story tower on the roof of the terminal was rejected by the Landmarks Preservation Commission. In 1969 Penn Central and the developer were again before the commission, this time with a proposal for a 59-story tower requiring demolition of the terminal facade. When this proposal was rejected--the city still insisting on transferring the development rights--Penn Central and its partner sued.
1. The trial court's decision did not question the constitutionality of the Landmarks Preservation Law but did find the law's application to the Grand Central Terminal to be an "economic hardship" because it prevented the bankrupt railroad from earning the income it would receive from the office tower. For this reason, the court invalidated the landmark designation.
 2. The New York State appellate court, however, has recently overturned the trial court, conceding that hardship might be suffered by the Penn Central because of the landmark designation, but stating that "such hardship, in the proper exercise of the city's police power, must be subordinated to the public weal."
- D. On June 29, 1977, the Supreme Court in the State of New York held that TDR's are of value and can be used to determine whether or not a property owner can receive a reasonable return on his investment. A summary of the case of Penn Central Transportation Company versus the City of New York is attached.
1. It is unique because the development rights have been transferred to other properties owned by the plaintiff and also connected to the station.
 2. It is controversial because of the distinction it draws between privately created capital and socially generated capital.
 3. It distinguishes between existing management and potentially efficient management.
- E. TDR's are significant because it illustrates the transferrability of space-time units and money-time units, the significance of expertise in creating solvent real estate which fits social priorities, and the need for ingenuity to achieve social goals without placing an impossible or unfair burden on the individual property owner, the public treasury or the general taxpayer. Finally, it shows the measure of gain or loss is the net change in spendable cash or liquidated net worth and not unrealized potential.

I. Historical Examples

- A. Land Use Controls
- B. Building Codes
- C. Community Infrastructure
- D. Zoning
- E. Real Estate Sales Guilds
- F. FSLIC & FDIC
- G. FHA/VA Housing Standards
- H. RESPA
- I. Truth-in-Lending
- J. ECOA
- K. Regulation Q
- L. SEC
- M. Environmental Protection

II. Growth Management Issues

- A. Polarization of Housing Quality
- B. Increased Cost of New Housing
- C. Allowable Growth Management Policies
 - 1. Petaluma, CA
 - 2. Ramapo, NY
- D. Unacceptable Exclusionary Zoning Policies
 - 1. Mt. Laurel I & Mt. Laurel II (NJ) '75 & '83
 - 2. Knee v. Town of Atkinson (NH) '84
 - 3. Berenson v. Town of New Castle (NY) '75
 - 4. Asian Americans for Equality v. Koch (NY) '84
- E. Inclusionary Zoning

III. Reasons for Land Use Imbalance

- A. Future Consumer
- B. Labor & Materials Suppliers
- C. Taxpayers
- D. Existing Homeowners
- E. Heterogeneous Housing Consumers
- F. Planner, Designer, & Developer Arrogance & Ignorance

IV. Proposals to Improve Land Use Decision-Making &/or to Reduce Inequities

- A. More Insightful Studies of Alternatives
- B. Government Policies & Programs
 - A. School Funding
 - B. Public Works Funding
- C. Court Rulings

REAL ESTATE DEVELOPMENT AFFECTED BY MAJOR FEDERAL ENVIRONMENTAL REGULATIONS

July, 1975

| | Purpose of Regulation | Inter-Govt. Consistency | Overall Environmental Quality | | | Land Use Quality | Water Quality | | | Air Quality | | Noise Quality |
|----------------------|---|-------------------------|------------------------------------|--------|---------------|-------------------|-----------------|--------------------------|-----------------------------|----------------------|---|---------------|
| | Responsible Agency | (1) OMB | HUD/ (2) FIA | (3) VA | USDA (4) FmIA | HUD (5) FIA | (6) COMI. | EPA | | | HUD | |
| | Regulation | A-95 | Environmental Clearance Procedures | | Flood Ins. | Coastal Zone Mgt. | (7) Basin Plans | (8) Waste Treatmt. Plans | Pollution (9) Dischge Elim. | State Imp (10) Plans | Air Quality Maintenance & Signif. (11) Deter. | (12) Noise |
| <u>RESIDENTIAL:</u> | | | | | | | | | | | | |
| | Single-Family | x | x | x | x | x | x | x | x | x | x | x |
| | Multifamily (sales or rental) | x | x | | x | x | x | x | x | x | x | x |
| | Townhouse (sales or rental) | x | x | x | x | x | x | x | x | x | x | x |
| | Mobile Home Parks | x | x | x | | x | x | x | x | x | x | x |
| <u>COMMERCIAL:</u> | | | | | | | | | | | | |
| | Shopping Centers | | | | | x | x | x | x | x | x | |
| | Office Parks | | | | | x | x | x | x | x | x | |
| | Multi-Use | | | | | x | x | x | x | x | x | |
| <u>INDUSTRIAL:</u> | | | | | | | | | | | | |
| | Industrial Parks (Including warehouses) | | | | | x | x | x | x | x | x | |
| | Heavy Industrial | | | | | x | x | x | x | x | x | |
| <u>RECREATIONAL:</u> | | | | | | | | | | | | |
| | Second Home (Investment Properties) | | | | | x | x | x | x | x | x | |

Note: Numbers indicate description reference in text.

Urban Land 550 - Final Lecture

Final exam covers only last 1/2 of course including week #8, October 15-19.

Exam will be held in Chemistry, Room 1351, at 12:25 Thursday, December 13

Some lessons to be learned from Columbia:

1. Capital budgeting for 20 years established with an economic model using average costs per acre for different types of land use
2. Developers set up simultaneous equations to determine:
 - a. Budgets and funding for public resources
 - b. Budgets and funding for consumer services within their means
 - c. Devices for providing equity money with profit participation for long term risks.
 - f. A decision system which permits the social planners and physical planners complete latitude within the solvency constraints of the consumer, the county government, and the developer
 - g. Rouse provides the entrepreneurial management and Connecticut General supplies the money. Two former industrial cost accountants actually manage the day to day operation of Howard County Development Corporation.
3. Underlying the real estate physical structure are a large number of software delivery systems.
 - a. Medical health system
 - b. Recreational utility
 - c. Political system built on neighborhood-village modules
 - d. Educational system
 - e. Arts and culture system
 - f. Public transit system
 - g. County government system
 - h. Ecumenical church system stressing services rather than buildings
4. Some lessons learned for adaptation
 - a. The Hartford process - applying techniques to an existing city
 - b. Creation of smaller satellite of communities of village scale
 - c. Delivery of social systems by private expertise and capital

Collect course evaluation sheets

The pro-urbanite, the non-urbanite
The rational integration of private self-interest
(including property) & public self-interest
Any enterprise has a form and behavior which is a
negotiated outcome between external forces and
and internal capabilities