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2. "Redefinition of Fundamental Real Estate Concepts as a Key to Land Use Control and Investment Strategy", transcript of a talk presented to Gruen, Gruen & Associates, November 8, 1974

REDEFINITION OF FUNDAMENTAL REAL ESTATE CONCEPTS  
AS A KEY TO LAND USE CONTROL AND INVESTMENT STRATEGY

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As a property developer turned real estate professor, I have an obligation to make common sense difficult when approaching the subject of property rights in land and the issue of land use control. To approach control from a business strategy viewpoint, consider a few basic definitions or concepts upon which we are building our entire real estate program at the University of Wisconsin. We distinguish between real estate, the real estate business, and the real estate process.

Real estate is defined as artificially delineated space (cubage) with a fourth dimension of time, given a fixed reference point to the surface of the earth. That definition includes areas marked by a pylon on the Nile, time share condominiums at Lake Tahoe, or a space lab hovering over a fixed bearing point on the earth. The real estate produced is always described in units of space-time, apartments by the month, square foot by the year, room per night, tennis court hours, event days for coliseums, and today a wilderness area is artificially delineated and protected - a forest eternal.

Understanding a real estate problem first requires definition of the basic space-time unit involved. In our town, medical space is no longer the doctor's office per year but rather the clinic per decade, the time it takes for medical science to obsolete the facility. To the space-time abstraction can be added additional attributes of HVAC, beauty, or functional capability needed to house a specific activity within that space-time envelope. All real estate improvements are essentially devices for artificially delineating space or providing desired functional attributes. Legal instruments are primarily concerned with the definition of time, in terms of how long to include or exclude or benefit and the 'what if's' of changes in condition over time.

It was ever thus. Somebody rolled a rock in front of a cave at some point or other, and artificially delineated that void from the rest of the natural void around it. Essentially therefore, the economic product of real estate is not in hardware, but in the space environment which it encloses. It is the void which is productive and the solids which are in fact mostly negative benefits.

The real estate enterprise is concerned with the conversion of space-time to money-time. Real estate enterprises are any organized undertaking controlled by a cash cycle, a definition which includes the space user, the space producer, and the public infrastructure. For example, the producer of real estate space begins with the basic unit of product. A 100-unit hotel provides 36,500 room nights of inventory per year and to convert the space-time unit to a money-time unit for the producer enterprise, it is necessary to make a great many assumptions about the occupancy ratio (divided among many consumer groups for the transient, the tourist, mini-vacation crowd, and so on). Each may provide a different average price per room night, a different occupancy potential, a variety of derivative costs and revenues all of which must be projected over long spans of time. Risk for this cash cycle enterprise is the variance between its proforma assumptions and its actual accounting realization. Much time is spent devising ways to lay off the risk of variance by means of fixed price contracts, escalator clauses, leasing strategy, and financial structures. More on that later.

Space-time and money-time are reversible equations, as land planners and architects discover when plans are reworked to provide more acceptable sets of financial assumptions about a real estate proposal. The basic function of the space producer is to create artifacts which generally ease the fit of people to the land. The rock at the cave entrance (the world's first solid core door) was, in fact, easing the irritation that man found with the land in its basic form, by either making the cave more exclusive, more protective from the elements, more defensible or whatever. All of the attributes which we attach to our space-time improvements are designed in one form or another to reduce an irritation or anxiety of particular people. Perception of those needs is the source of a marketing edge for the producer.

The real estate process is the dynamic interface of all three cash cycle enterprises, the space user, the space producer, and the public infrastructure who all arrive at a compromise solution which ultimately impacts upon the land. At the University of Wisconsin we teach that the land is a finite natural resource, at most a public utility, and more likely a more restrictive public stewardship. Within their cash means space users express their cultural preferences collectively through the body politic and individually through the marketplace. Collective space-user requirements are provided by cash cycle, public infrastructure enterprises including school boards, sewer districts and all manner of government entities. The space producer can only respond where he can meet individual space user requirements within a framework of public infrastructure and mutual solvency. Suburban family home production falters when all families cannot afford the monthly payments, apartments are abandoned when there is no future hope of eliminating negative cash flows, and cities like New York crumble from inept cash management and land planning, to the financial loss of space-user and space-producer. In short, the interface of consumer, producer, and public agency involves cash cycle enterprises with a common need for solvency, both short and long term. A socially desirable equilibrium occurs when the real estate process serves the needs of cultural preference within the constraint of land as a resource in a manner which permits the consumer, producer, and governmental cash cycle to achieve solvency including the cash costs of money. Solvency provides a tool for resolution of public/private conflicts where value, which depends on subjective capitalization of cash, does not.

AXIOM: SOLVENCY OF THE TOTAL PROCESS, NOT VALUE OF THE PARCEL, IS THE CRITICAL ISSUE.

These simple definitional building blocks for analysis of real estate dynamics and the axiom above contain some startling implications and insight for both planner and investor.

1. Land is first a resource and secondly a device to control space-time potential, convertible to money-time only under conditions of uncertainty and only due to utility creating elements of money and expertise. If the most fitting use for a particular site must consider the sum of the economic costs and benefits for consumer, producer, and the public infrastructure then the concept of highest and best use falters since it is constrained only by what is legal, prudent, and solvent relative to costs internal to the borders of the site. The classic definition of highest and best use, the cornerstone of fair market value, is therefore highly suspect.
2. But if the sophistry of appraisal theory could readjust the definition of returns which is fundamental to determining the highest present value among alternative uses, it falters further when cash flow projections rather than economic surplus is the game. Classic economic surplus is dealing with long term projections from a single set of assumptions under a fictional scenario which may be internally consistent but which depends on the assumption of certainty. However, cash flow techniques can permit analysis of potential variance in any set of assumptions. Professional appraisal organizations are already in ferment on the need for restructuring appraisal theory to accommodate probability analysis.

3. There is considerable legal support for the view that interest in a real estate right is ultimately a cash interest. Eminent domain can make awards only in cash and not in kind, and many challenges to the constitutionality of police power succeed on the basis of the damage caused by public action as measured in terms of a reduction in cash liquidating value of the property relative to the owners cost. Judges certainly are confused as to whether the benchmark of damages is historical cost or potential expectation. Recognition by the courts that the purchase of land is no more than acceptance of a set of assumptions and that those assumptions are vulnerable to a great amount of variance will lead the courts to address the question of why the public must compensate the owner for expectations with little provision for variance and the singular skill necessary to capture the opportunity. Even the deer in the woods is common property until the hunter's skill captures the opportunity and certainly more skill may be required today to develop the land successfully. Why not compensate the owner for cash costs in the event of a taking rather than the fictional scenarios of certainty in fair market value? Is not a future opportunity common property in a free enterprise system?
4. If solvency of the process is a necessity because insolvency of any one of the parties, producer, consumer, or public infrastructure, leads to the deterioration of the cash position of the other two, then these elements must solve their problems in concert rather than confrontation. Cash equilibrium, as I understand it, is the core of impact zoning concept presently being debated by lawyers and planners alike. (Computer models exist which can simultaneously produce the cash consequences of any land plan to the developer, consumer, and community and which could permit these vested interests to

search for a mutually acceptable land use mix and distribution of financial responsibility. But beyond that it is my observation that few people object to a profit system as long as they are within the system dividing up the profits. A lot of people feel they have been excluded from such surpluses, either because they don't understand the accounting or because they are conditioned to the old-fashioned static concept of real estate as a privately owned parcel rather than a cash flow enterprise with as many vested interests as there are related spin-off profit centers. One can co-opt the Socialists, the rent control advocates, the outright Marxists, or the environmentalists once they understand the primary and secondary cash flow consequences on rent levels, home prices, real estate taxes or other re-divisions of profits that occur as a result of their proposals).

What then is the nature of private real estate enterprise and how does it accommodate and adapt to increasing public control? My daddy taught me that free enterprise is the art of creating your own monopoly, if only for a moment, because you never compete on price. As soon as you compete on price, someone else will do it for less, and by the time he knows his costs you're both broke. There's nothing wrong with monopoly--it's always been treated as a dirty word, but it's not--it's risk management device which controls variance in the cash flow outcome. To control a real estate project is to hold captive an enterprise which must buy large amounts of services and each service is a potential profit center. The essence of real estate business is providing services including access to land, construction, insurance, architectural and engineering services, and hopefully economic consulting services, too. To the degree that you control the project (as land owner or general partner) you can divert



the cash cycle of that enterprise to purchase those services where the residual profit centers accrue to your benefit. All of the outlays necessary to create or operate the real estate enterprise represent revenue and profit centers to someone, even possibly including the real estate tax. The shopping center developer who annexes his project to a community with a higher real estate tax than before may be actually substituting the increase in real estate tax for the prohibitively high fire insurance rate characteristic to the non-incorporated area. Thus, there are more profits above the net income line or cash after debt service line than there may be below these points.

Real estate as a captive buyer of services leads to the interesting premise that equity in real estate is the degree to which one can control the diversion of real estate cash cycle to increase spendable cash or liquidate net worth. It follows that everyone who controls the profit centers is a partial owner and most of these partial owners need have no interest in the underlying fee which leads to a number of strategy statements.

1. If equity goes with the ability to divert cash flows, then in a manner of speaking the public already owns 30% of all the income property in Milwaukee, Wisconsin, because it's diverting 30% of collected rents to the public coffers. That perspective suggests that from a planning viewpoint, public expenditures could be used to increase gross rents of the private sector to the margin justified by 30% annual share of the increase!
2. In Madison this realization was partly responsible for changing plans to build a new performing arts center on the lakefront

surrounded by public park land to the purchase of an old 2200 seat theater built in the glory days of the movies. Not only does it cost less to refurbish the existing structure, but the economic decline of the private properties on the street has been reversed, assessments are increasing and so are cash flows to the City. The public expenditure becomes seed money which ultimately increases the City's interest in private property as well as serving the public interest in the arts.

3. Traditional semantics of ownership falter in this concept. The limited partner in real estate, who thinks of himself as an owner, has absolutely no power to divert cash flows to his benefit so that his contingent cash flows really define him as a second mortgage revenue bond holder who enjoys the sweetener of tax losses. On the other hand, whoever provides the service of property manager takes 5-6% right off the top, well ahead of government or mechanics, and yet the property manager doesn't need to own a thing.

Cash flow of the consumer, public infrastructure, and developer enterprises represent continuous flows which can be simulated both on the private and public side. There are computer models which simultaneously produce the cash flows of the developer and the cash flow consequences of development to the municipality. The real estate tax revenue segments are simple but the model could also simulate various state aids for education, roads, safety, water and sewer and all the rest. Community planners and citizen boards could have thereby a way in which to negotiate with the developer to find an acceptable land use mix which allows the developer to meet his cash need, including cost of capital, and permits the

municipality to balance its books, too.

A cash investment in real estate is really purchase of a set of assumptions about the future. If you can't buy the assumptions, the software, you shouldn't touch the hardware. It's important for the public and the private sectors to communicate about these assumptions. Cash flow modeling forces both parties to be explicit, and where possible, empirical rather than emotional. Considerable misunderstanding and eventual litigation is inherent where these assumptions cannot be articulated and communicated or revealed as untenable. Synthesis of opposing viewpoints is possible where each viewpoint can contribute or verify the assumptions critical to its expectations.

Of course, buying a set of assumptions is the first step toward forecasting under conditions of uncertainty. Uncertainty or risk measures the variance which may occur between expectations and realizations, between your assumptions and the actual facts. Cash budgeting permits us to bring into play the strategies of risk management, which is fairly well developed in the capital market although the semantics of real estate disguise the risk controls of various investment positions completely. Look what this insight can do for both strategy and negotiation objectives.

1. A mortgage with an esculatory clause is a straddle. If the project succeeds, the borrower has a call on its future value, and if it fails, the borrower can put it to the lender. Thus a mortgage is a straddle.

2. An escalator clause shifts the risk of unpredictable variance in cost from the owner to the tenant.
3. A sale-leaseback with option to buy is a hedge against the cost of money and future values of a space-time product.
4. Conversion of space-time to money-time forecasts makes real estate, for all its uniqueness, a fungible commodity with a futures market for which joint ventures trade current profit centers for future cash flows, present tax shelters for long term residuals, and so on.

Of course the biggest risk of all for the real estate investor is finding and holding a customer at a profitable price. To control that significant variance about the availability of buyers and tenants at your price, monopoly is the ultimate risk management device of all. Monopoly advantages are almost impossible to achieve on a global scale, say to corner the rice market, but it should be possible to corner the canary seed market in Belevdere at least briefly. Monopolies are conceived by controlling very small micro-markets and real estate is unique in terms of its ability to create little monopolies based on market intelligence.

It takes only 24 households to fill a 24-unit building, which at \$20,000 a unit is a \$480,000 asset. Roughly speaking, it will take at least \$6,000-\$7,000 in gross rental per month or \$75,000-\$85,000 a year in sales. Twenty-four customers and you have a little business with more assets and gross sales than would be true of more than 50% of the businesses in the U.S. Those 24 customers can be had when you figure out what turns them on or off, that hidden anxiety, that unmet need, and at that point price comparison is no longer the critical competitive advantage. The cash flow cycle starts with the customer, and research on that customer is the fundamental approach

to risk management. Sophisticated behavioral research in real estate is a rather new application of techniques developed in other areas of marketing.

Once you understand that the real estate business is the manipulation of cash flows (derivative of private and public land use needs) and that ownership is the degree to which you control cash flows, one can forget about the distinctions between public and private ownership and the traditional legal semantics. One may also forget about the traditional roles in that the public can, in fact, manipulate cash flows on the private side and the private side, by the same token, can participate in the cash flows on the public side by shifting some of its burdens to the public and at the same time providing some of the services at a lower cash cost than the public would have been able to do for itself. Sovlency provides the opportunity for resolution where value is a perfectly subjective multiple of returns and, thus, there is no resolution of value issues.

Money-time and space-time are reversible equations so it is necessary to combine the concepts of enterprise and risk management with artifacts and physical attributes of the space-time product. It is useful to borrow a concept from the physical arts called "fit". Somebody once pointed out (I think it was Christopher Alexander of Berkeley) that one way of critiquing an art object is to look at its "fit" relative to its context. Context, in terms of creating a vase or pottery object, for example, has to do with what is the purpose of that particular vase; is it to boil water or is to hold rose buds? What are the limitations inherent in the material? If it were to boil water, what would be the coefficient of expansion of the clay? What kind of heat source would be applied and what happens to a certain shape in terms of its expansion and its potential to crack? Who is to lift the vase off the fire? All of these become elements in the context. One can't judge the success of the pottery vessel before the

context is defined. To the degree that it does fit those constraints, it succeeds, even if it's ugly as sin (not that anyone can define that anymore, either). What you have to look at is the ensemble before measuring success--the interplay between the context and the form of the solution. Physical form and financial flows interact for consumer, producer, and public agency. We teach our students the concept of most fitting use - that use which is appropriate to the physical capacities of the land and financial solvency for the three groups at interest. Unlike the arrogant and limited concept of highest and best use, most fitting use does not optimize by externalizing costs or ignoring consequences of decisions in the aggregate.

Cash flow assumptions and control of variance, and the fit of the physical space-time product to its environmental, site, and market context provide the ingredients or basic building blocks of feasibility analysis. A real estate project becomes feasible, then when a real estate analyst determines that there is a reasonable likelihood of satisfying explicit objectives when a selected course of action is tested for its fit to a context of specific constraints (both internal and external) and limited resources (both financial and personal). Now notice that we said "likelihood" we haven't quite reached the state, although we do have density models for financial planning, where we can say "probability." But we can still call a project a nag or a front runner; we can still distinguish on semantic probabilities even if financial mathematical and statistical ones are not acceptable at this time. And notice "explicit objectives." The real problem is first defining what it is you want, because otherwise how are you going to know when you get there?

Perhaps this is why it often seems the consultant is looking at the client's watch and telling him what time it is. We do have to know what kind of time you are on or how will we know if you are on schedule?

I see by Claude's watch it's time for me to stop.

About Professor Graaskamp and Gruen Gruen + Associates:

Dr. James A. Graaskamp is an internationally known expert in the field of real estate finance. He is a professor at the University of Wisconsin, at Madison, and a Consulting Associate of Gruen Gruen + Associates.

Gruen Gruen + Associates provides economic and sociological research for public agencies and companies who are involved in land use decisions and for other professional firms such as lawyers, architects and planners.

The firm's full time staff include economists, sociologists and planners with special expertise in urban and regional analysis.