THE LAND USE NAVIGATOR

A GUIDE TO MANAGING THE BUILT ENVIRONMENT

Richard E. Tustian

THE LAND USE NAVIGATOR

LAND

"any part of the earth's surface not covered by a body of water; the part of the earth's surface occupied by continents and islands"

(law) "any part of the earth's surface that can be owned as property, and everything annexed to it, whether by nature or by the human hand"

USE

"a way of being employed or used; a purpose for which something is used"

(law) "the enjoyment of property, as by the employment, occupation, or exercise of it"

NAVIGATION

"the art or science of plotting, ascertaining, or directing the course of a ship (or similar craft)"

Webster's New Universal Unabridged Dictionary

THE MANAGEMENT MAP

The Concept of Community

The foundation of this model is the concept of community, expressed graphically by the circular ideogram at the bottom center of the page. The dictionary definition of community is "a social group of any size whose members reside in a specific locality, share government, and often have a common cultural and historical heritage". The concept of Community, therefore, has two dimensions. It implies both a place *located in physical space* and a people *connected in virtual space.*

The Elements of Community

Within the circle, a number of component elements are depicted graphically, using symbolic shapes and icons. The first and most important division of the circle is the separation of the private sector from the public sector, as shown in the upper right diagram. The second is the division of these two "fields" into three sub-sectors (called Jobs, People, & Housing in the private sector, and Transport, Community, & Nature in the public sector), as shown in the upper left diagram.

Growth Management: The Policy Wheel

The left hand column, from top to bottom, illustrates the process set in motion as change occurs within the community, in particular change generated by growth (also decline) in one or more of the elements of the private sector. The stimulus of this change generates a private sector demand for either public facilities and services in the form of Transport (roads, sewers, utilities, etc.), and/or Community (schools, police, fire, historic resources, etc.), and/or Nature (parks, open space, natural resources, etc.). Governmental provision of these facilities generates a public sector demand for revenue to pay for them.

These two cyclical actions generate two counter cyclical actions: a tax resistance (c.f. public goods) by the private sector, and citizen pressure to enact more land use controls (c.f. externality amelioration). Together these opposing forces create a policy field with strong tension between the private and public sectors, with conflict centered on two separate, but connected, focal points: a "north pole" of land policy and a "south pole" of fiscal policy. What goes around, comes around. Thus governments must constantly adjust the set of their "Policy Wheel", seeking to balance their constituency's land use desires against their municipality's fiscal and legal resources in a dynamic political process that recycles over time.

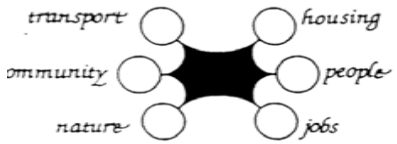
Growth Management: The Action Arrow

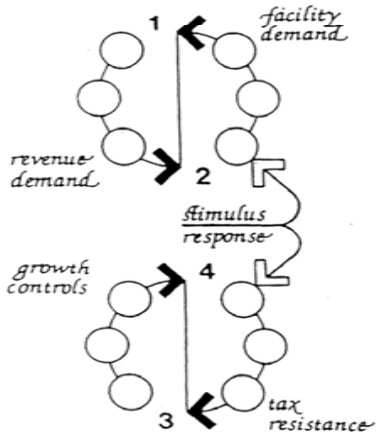
The right hand column, from top to bottom, illustrates the the basic process if a government seeks to manage the changes generated within the private sector of its community. Within the legal framework of the Constitution, the foundation of any such effort is the Comprehensive Land Use Plan. This plan may be very broad, general, and procedural in its guidelines, or very local, specific, and substantive.

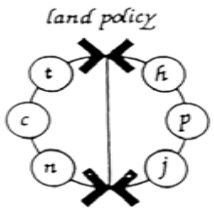
In theory, a good plan will guide all the actors in both sectors whose many decisions produce the built environment. In practice, if the administration of zoning, subdivision, and building approvals (i.e. private regulations) and the fiscal investment in services (i.e. public facilities) both follow the plan, then the plan can incarnate in reality. But if enough individual property owners act contrary to the plan, and enough independent public agencies also, the goals of the plan will not be realized. Two mechanisms that can help to coordinate the implementation of plans after they are adopted are the Capital Improvements Program (an iterative governmental evaluation of all public facilities proposed over a four-to-six year time frame) and the Annual Growth Policy (an analogous governmental evaluation of all new private developments seeking approval over the same time frame).

Finally, the effectiveness of any such system always can be challenged legally (by citizens as property owners bringing lawsuits) or politically (by citizens as taxpayers opposing tax increases). Thus both the judiciary (through court decisions) and higher levels of government (through transfer payments of tax revenues) play a very large role in determining what local governments can accomplish. Eventually enough change occurs that a new cycle of the "Action Arrow" should be initiated by revising the plan.

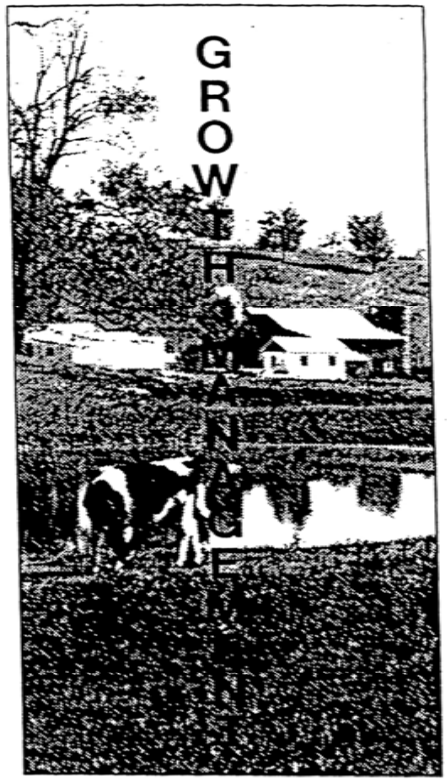
GROWTH



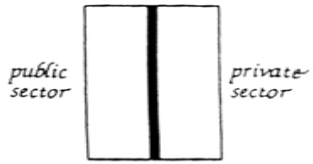


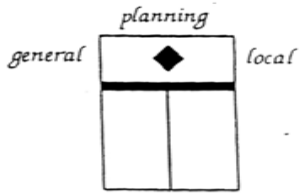


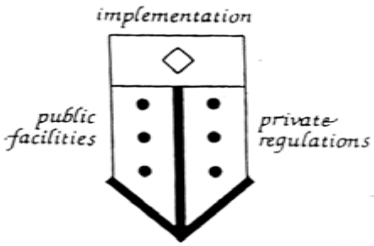
POLICY

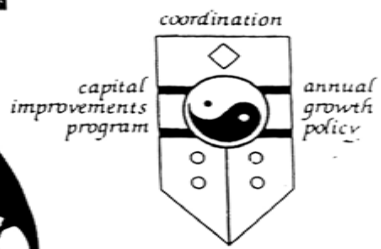


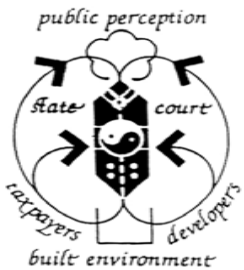
MANAGEMENT



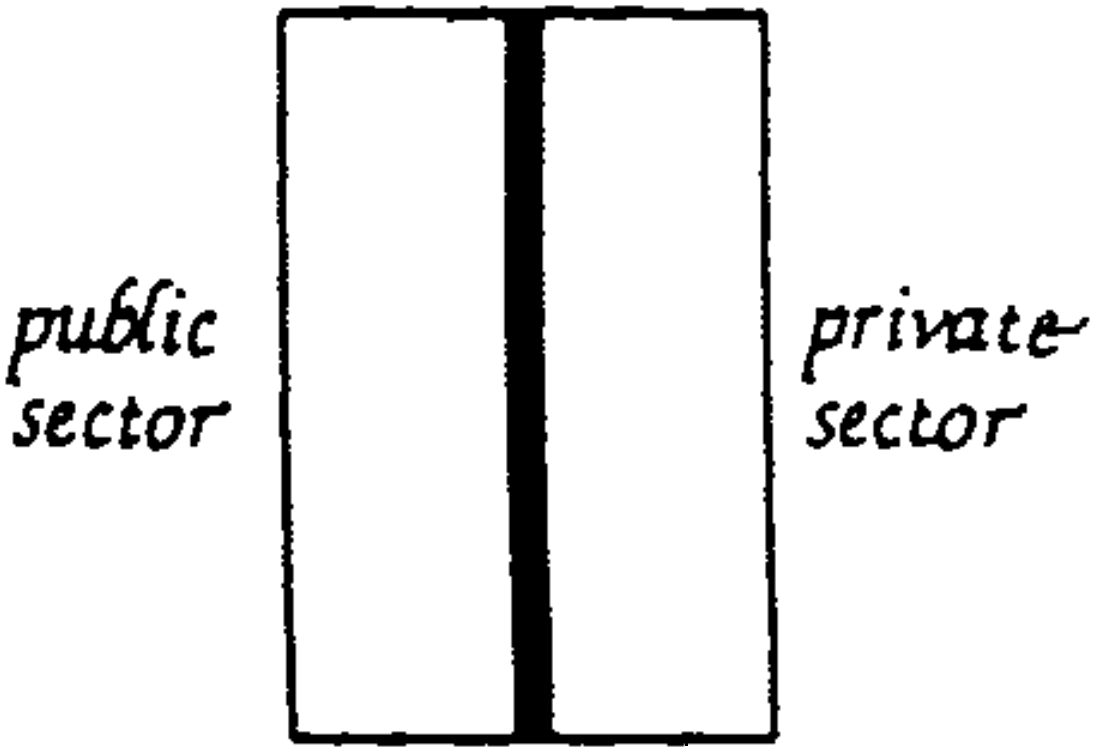








PROCESS


public
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private
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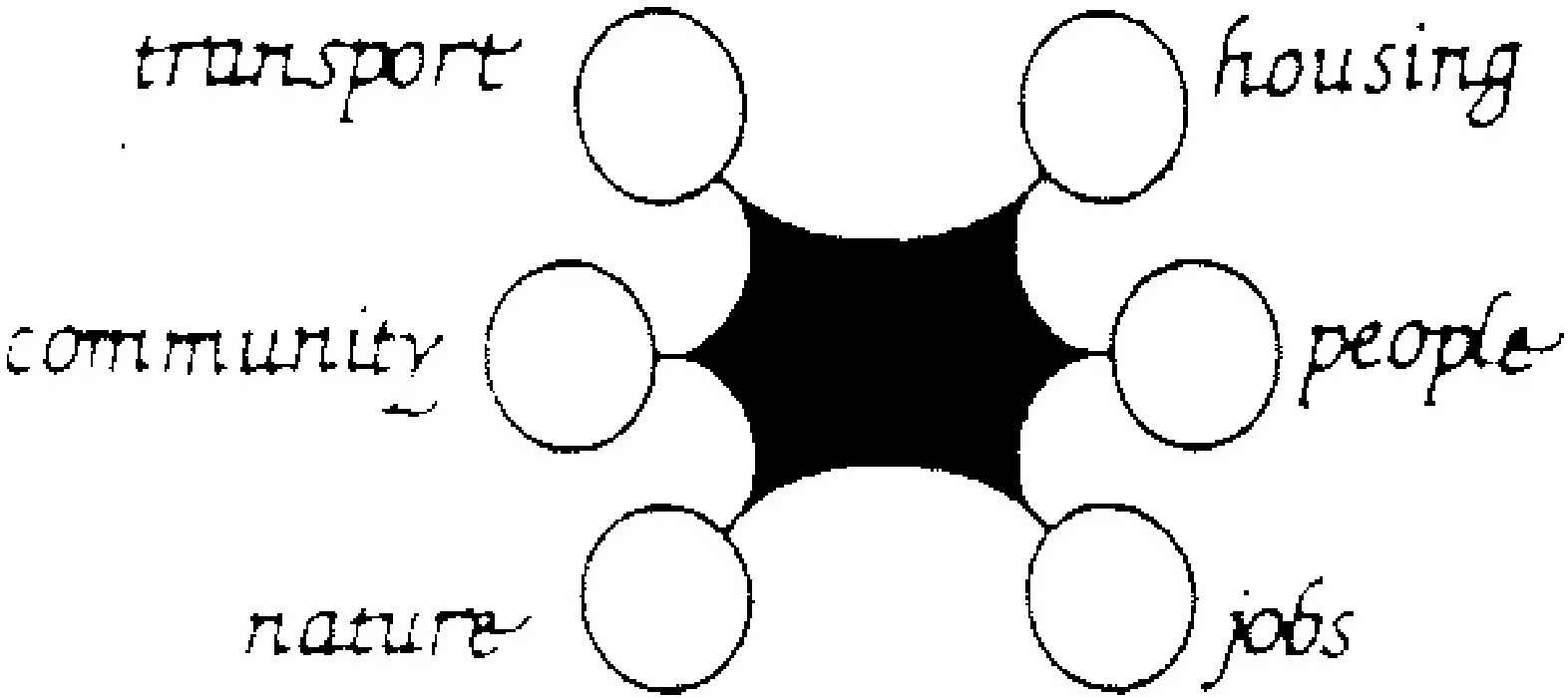
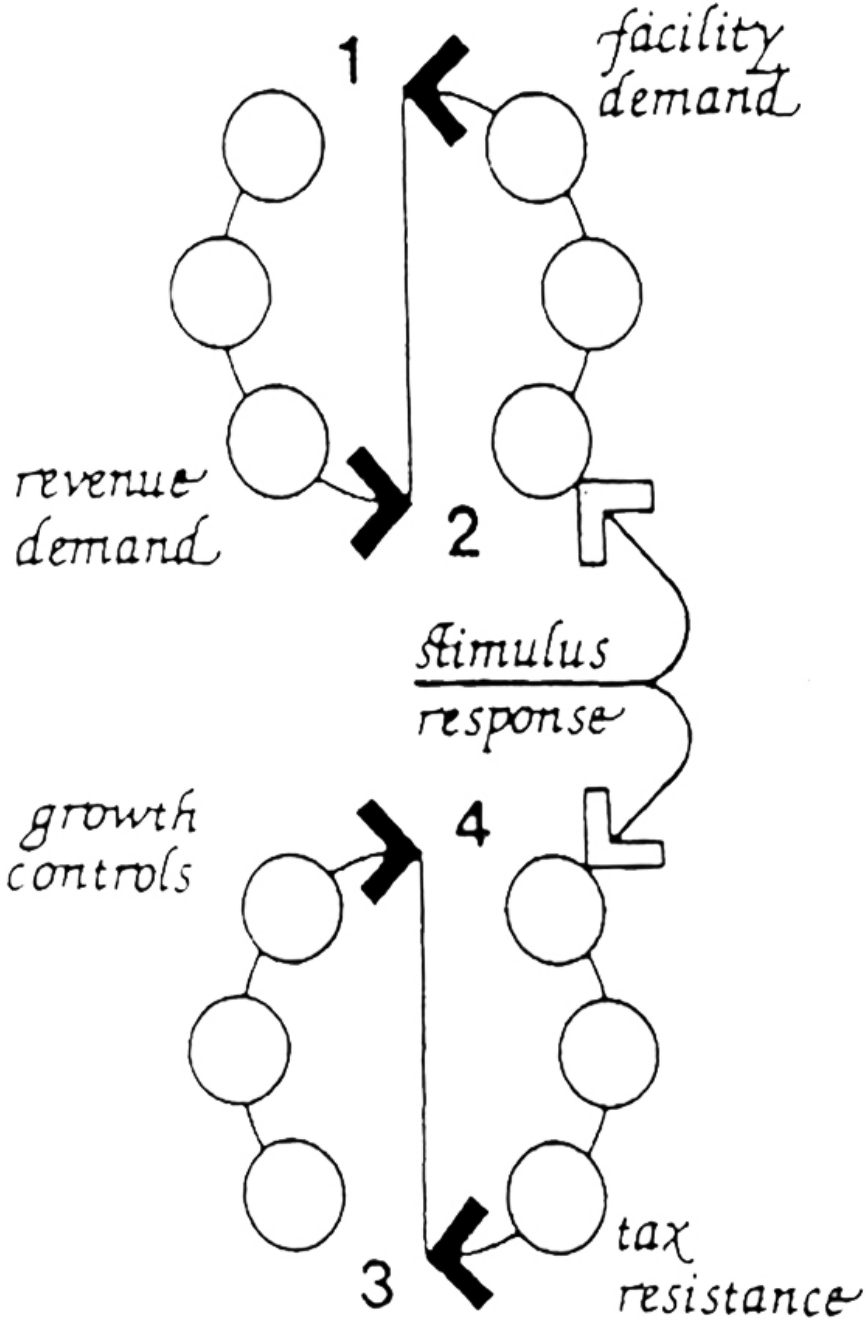
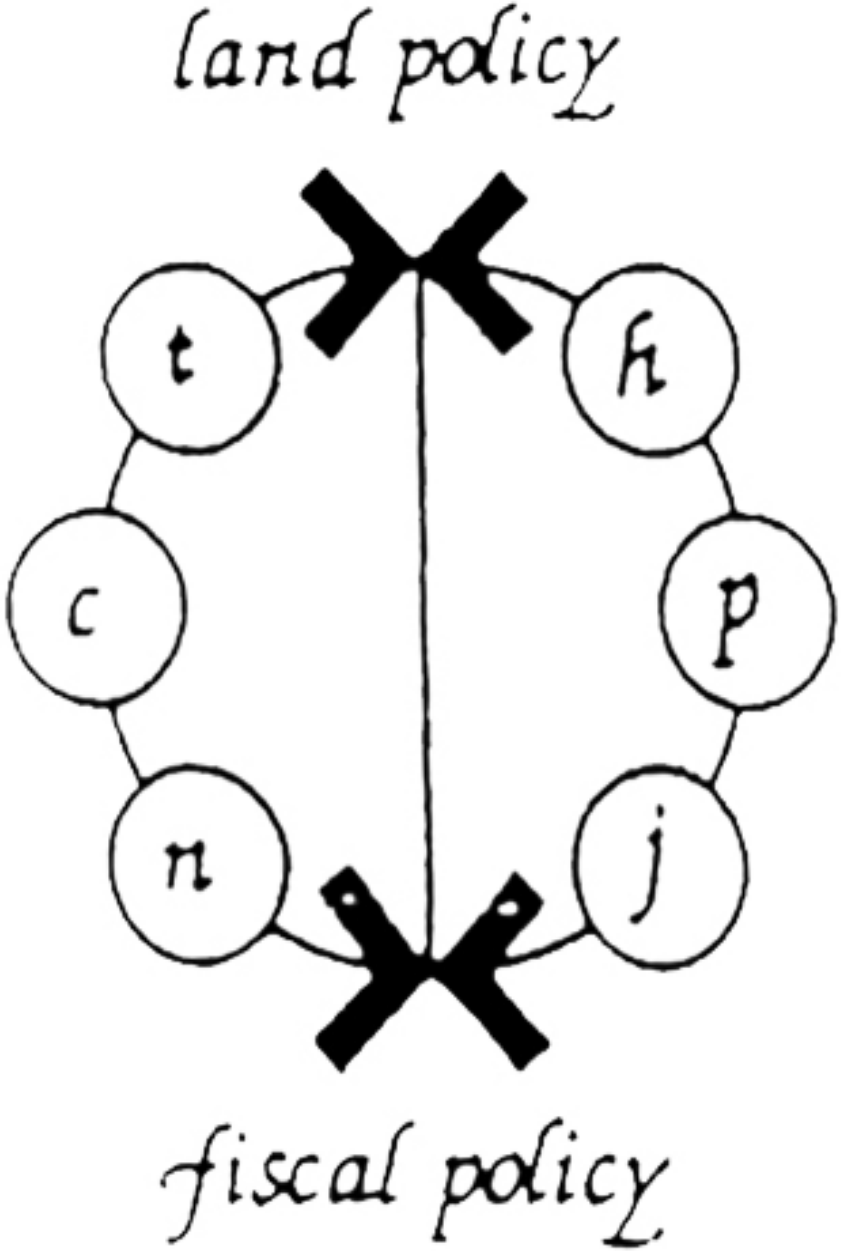

transport
housing
community
people
nature
jobs


1
facility demand
revenue demand
2
stimulus response
growth controls
4
3
tax resistance


land policy
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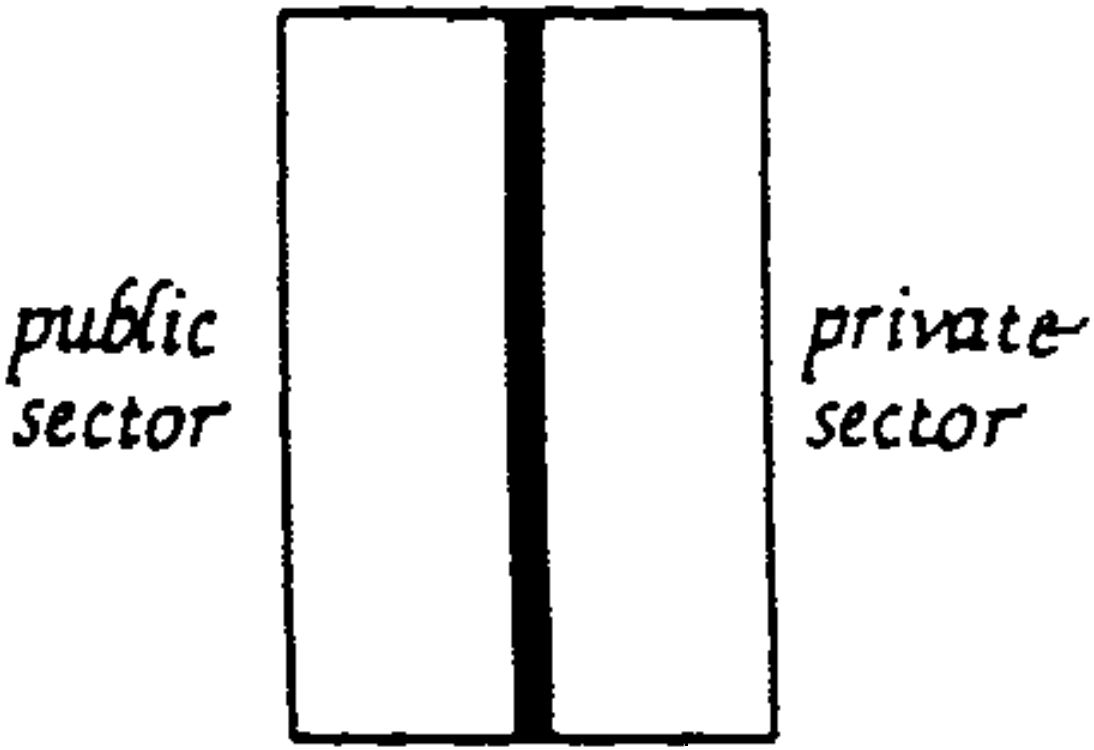
fiscal policy

desires

resources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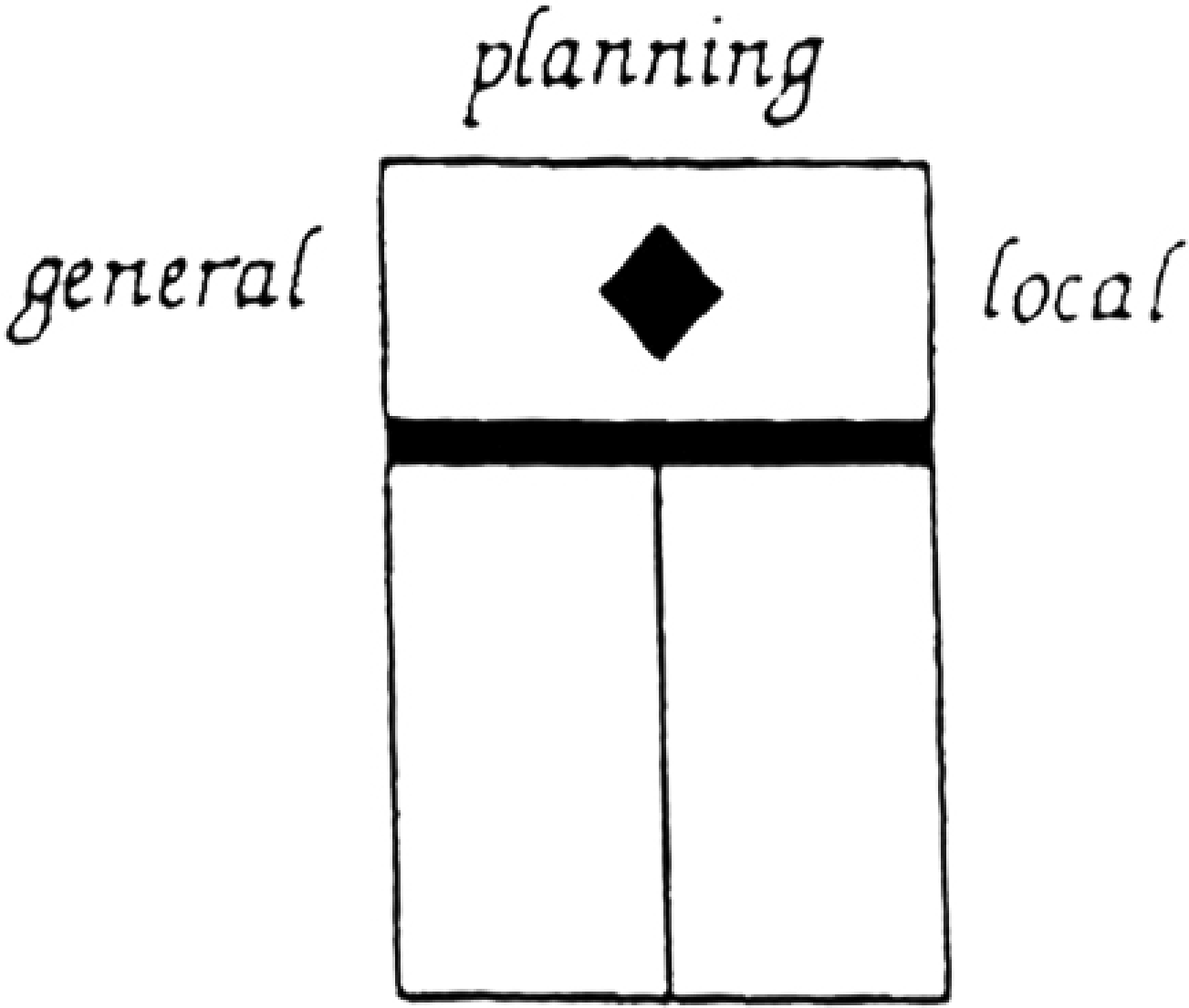
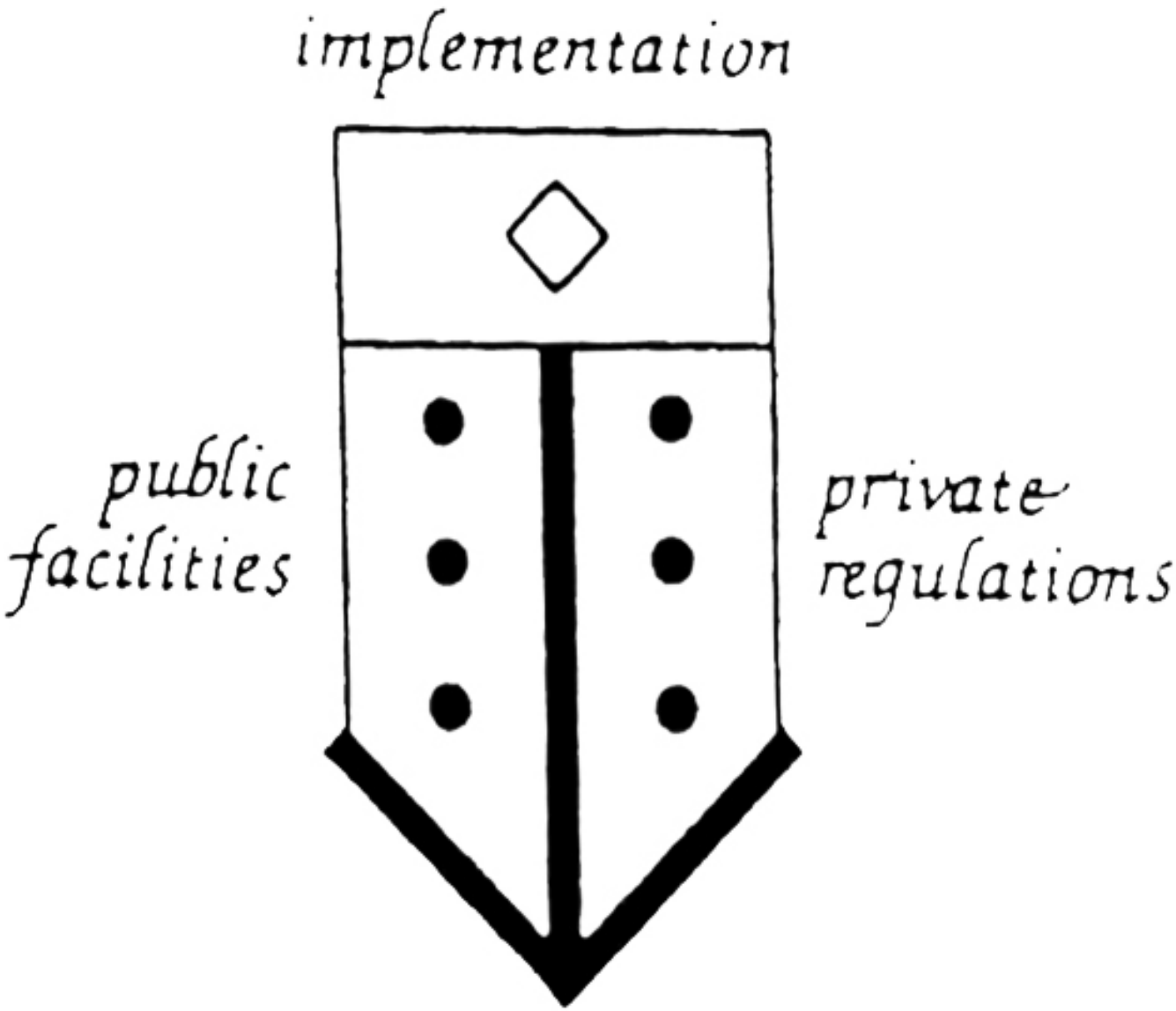
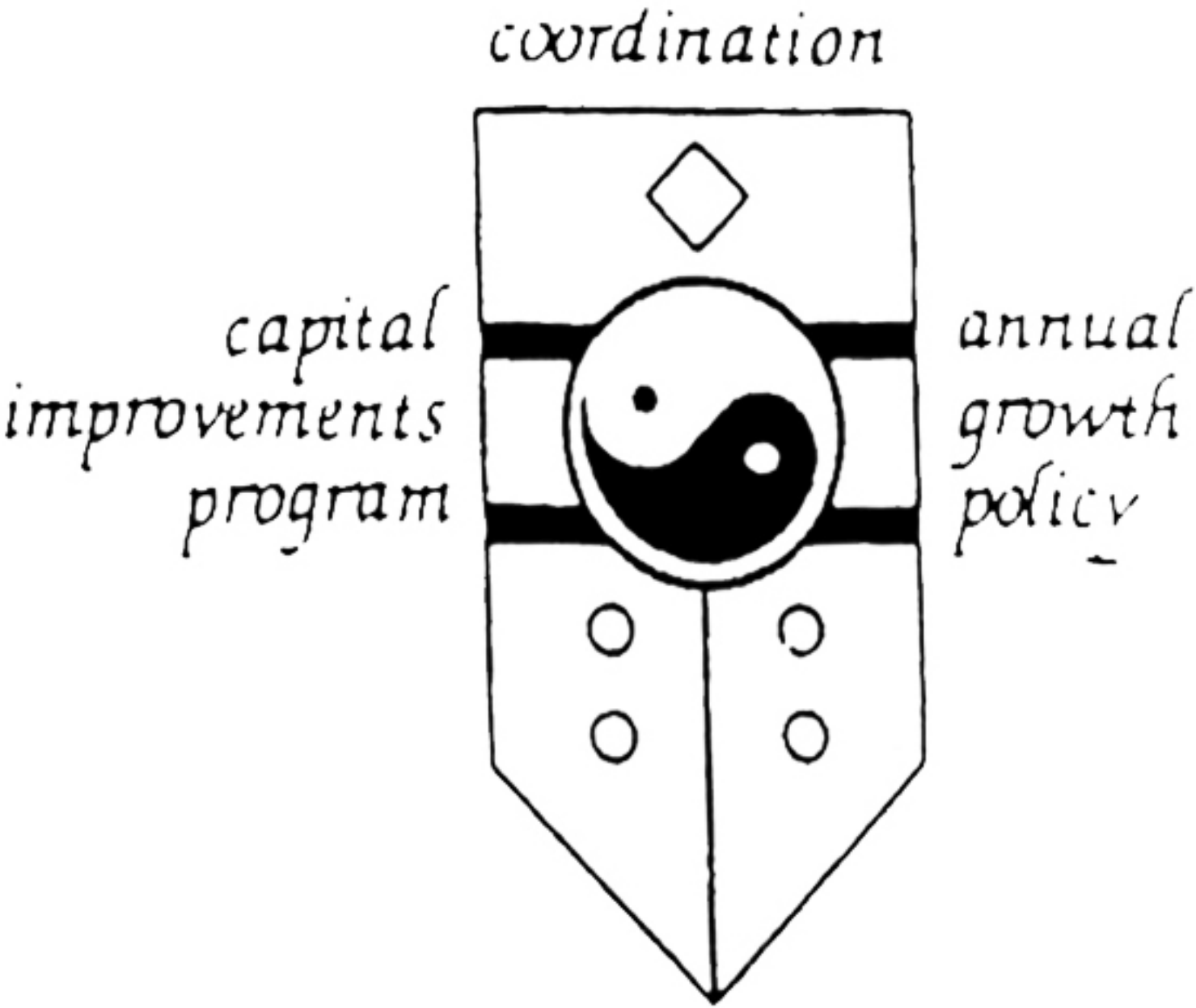

planning
general
local


implementation
public facilities
private regulations


coordination
capital improvements program
annual growth policy


public perception
state
court
taxpayers
developers
built environment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A MODEL BY RICHARD E. TUSTIAN

LAND POLICY

The Comprehensive Plan *(multi-colored)*
The touchstone protocol for land policy is the Comprehensive Plan. Somewhat like a constitution, it is intended to provide guidance to all actions affecting land use within the commuity. The aim of the comprehensive plan is to achieve a land use pattern that works well on the ground from a multiple number of perspectives: *economic, domestic, social, and political.* The test of the pattern is how well it functions as a physical framework for the dynamic operations and psychic well being of the community-as-people. A good plan will work well until change outreaches its vision, when it then becomes time to update it and start a new cycle.

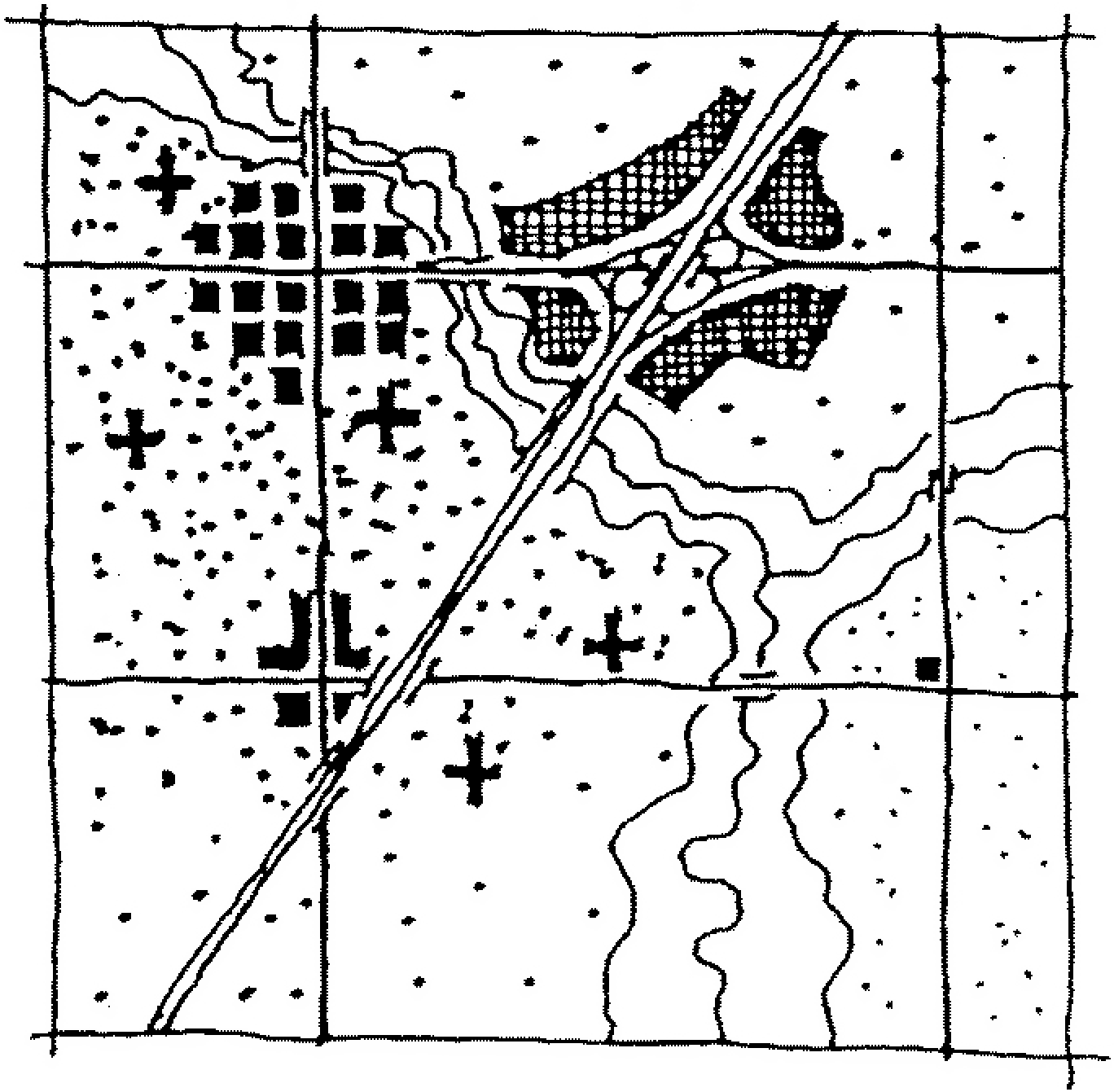
The Jobs Component *(color code red and brown)*
Employment land uses tend to be classified by type of operations performed (e.g. agricultural, industrial, commercial, institutional, etc.), density of buildings/people per unit of land, and degree of negative externalities produced (natural resource extraction, manufacturing, storage, sales, services). Similar employment types tend to cluster together for economies of scale, forming spatial nodes or strips at points of high Transport accessibility.

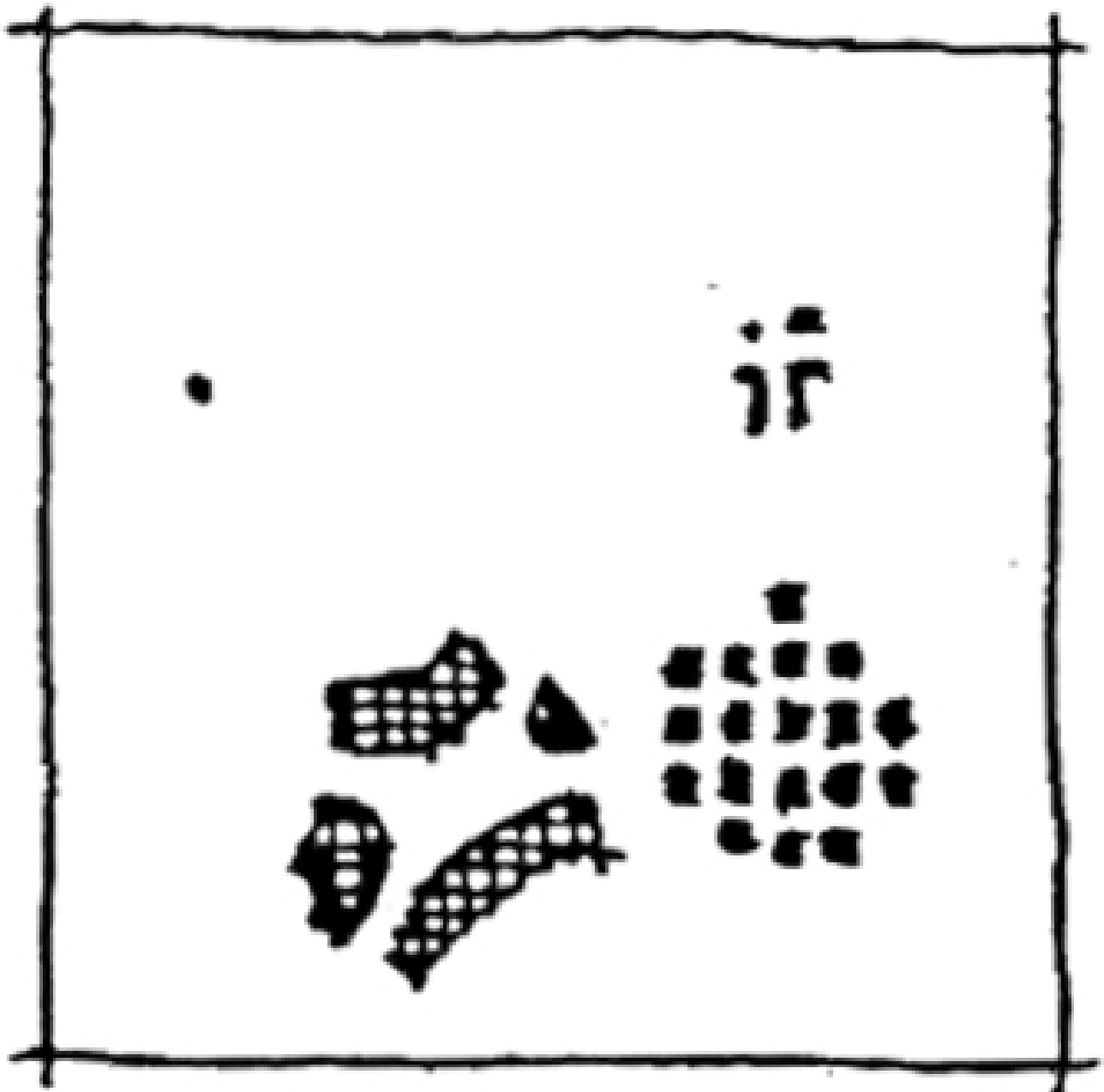
The Housing Component *(color code yellow and orange)*
Residential land uses tend to be classified by type of structure (e.g. attached /detached units, garden apartment, high rise), number of occupants per structure (e.g. single/multi-family), and density of housing units per unit of land. Residential uses prefer sites with access to good community services and natural or built scenic beauty, with transport access to jobs an important but secondary concern. They spread widely over the natural landscape.

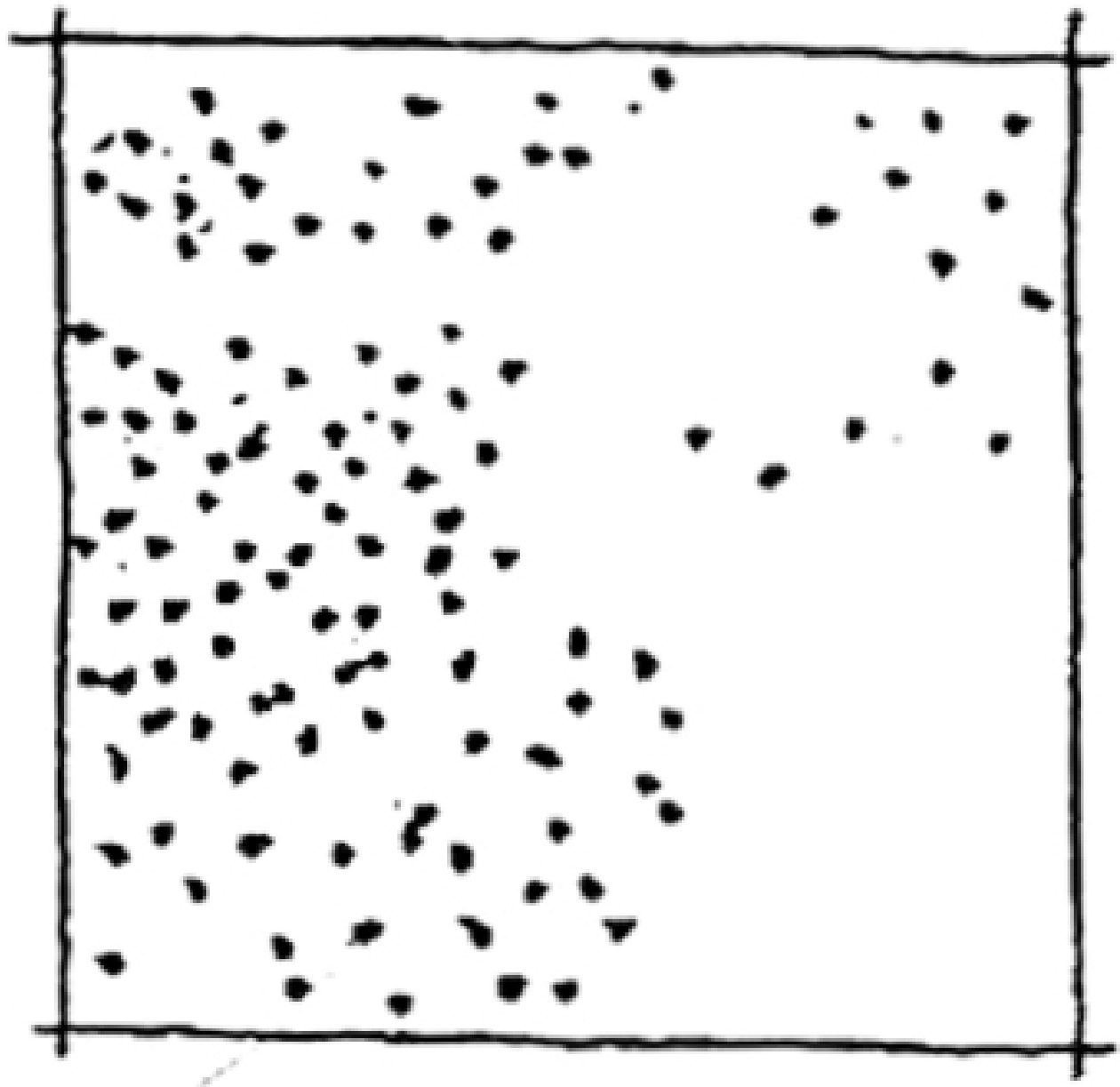
The Transport Component *(color code gray and black)*
Highways, railroads, gas and electric lines, storm drains, and all utilities strongly related to street systems, tend to form a rectangular grid network, whose locations, at large scale, are driven by origins and destinations outside the community. By contrast, sewerage lines may follow grid street patterns at small scale, but tend to form a large scale tree pattern because of gravity flow down branch watersheds to a central sewage treatment point.

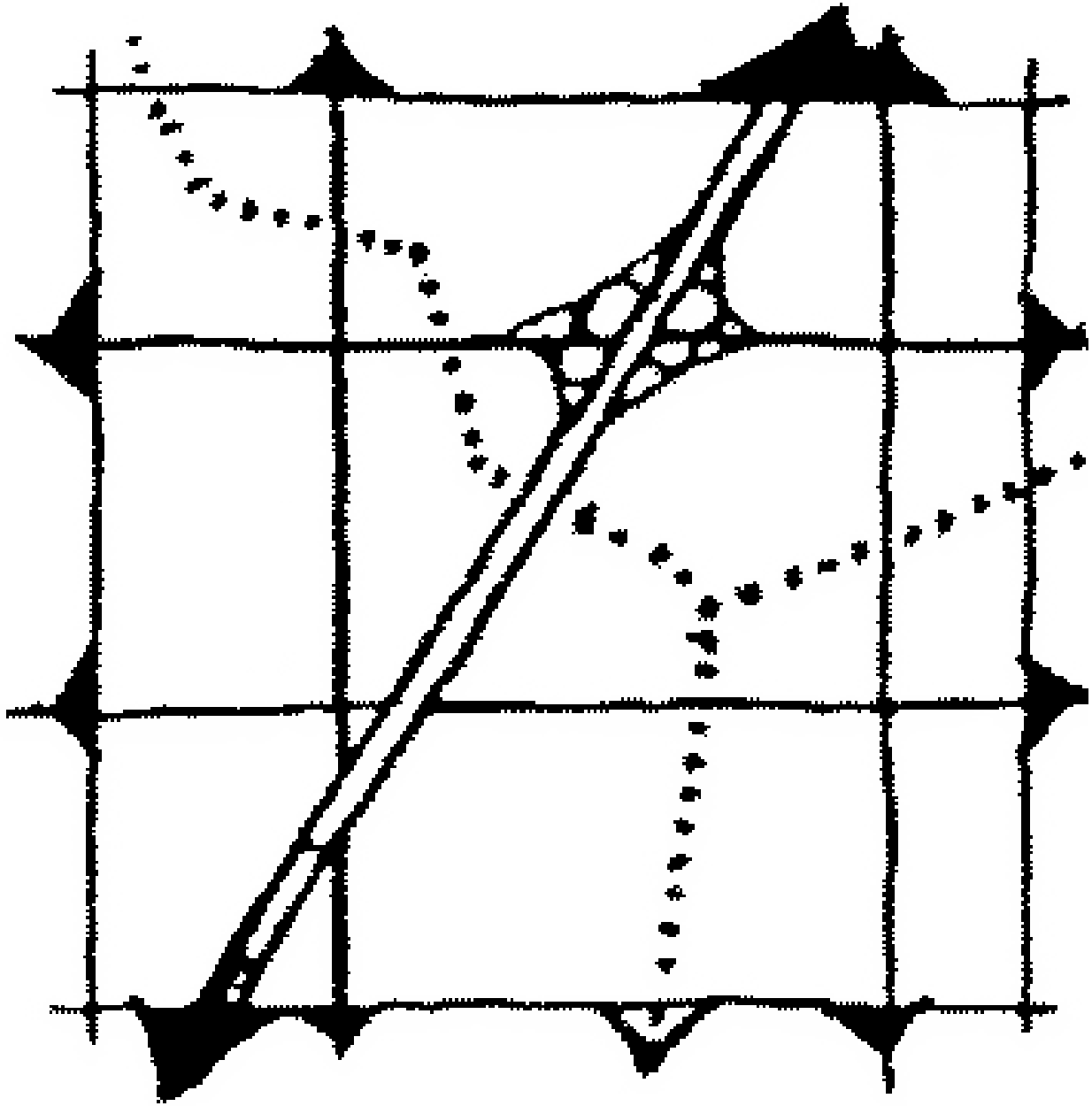
The Nature Component *(color code blue and green)*
Parks, open space, farmland, forests, rivers, lakes, mountains,and scenic vistas both surround and penetrate the fabric of the built environment. Within it the most logical large scale pattern of open space preservation is the tree network of the topological stream valley drainage system. Flora-fauna-water corridors provide ecological & scenic economies of scale, but their Nature tree network conflicts with the Transport grid network.

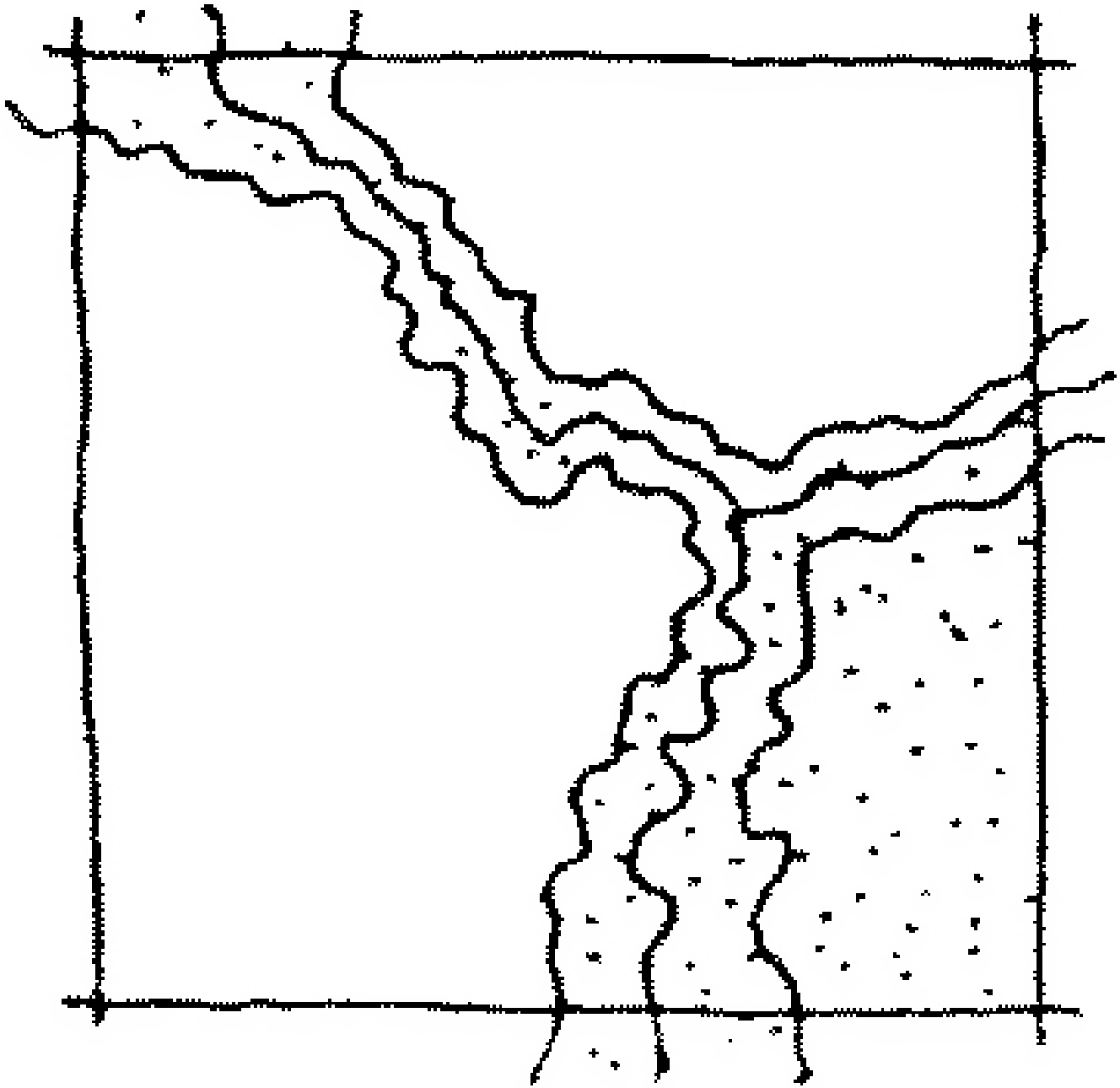
The Community Component *(color code purple)*
Schools, police stations, fire stations, hospitals, libraries, art centers, etc. are not connected to each other spatially, but rather sit alone at separate points within the Transport networks and the Jobs/Housing fields. Their accessibility criteria relate primarily to residential land uses, and they offer the greatest opportunity for symbolic strategic location. Their costs are more operational than capital, and higher than Transport or Nature.

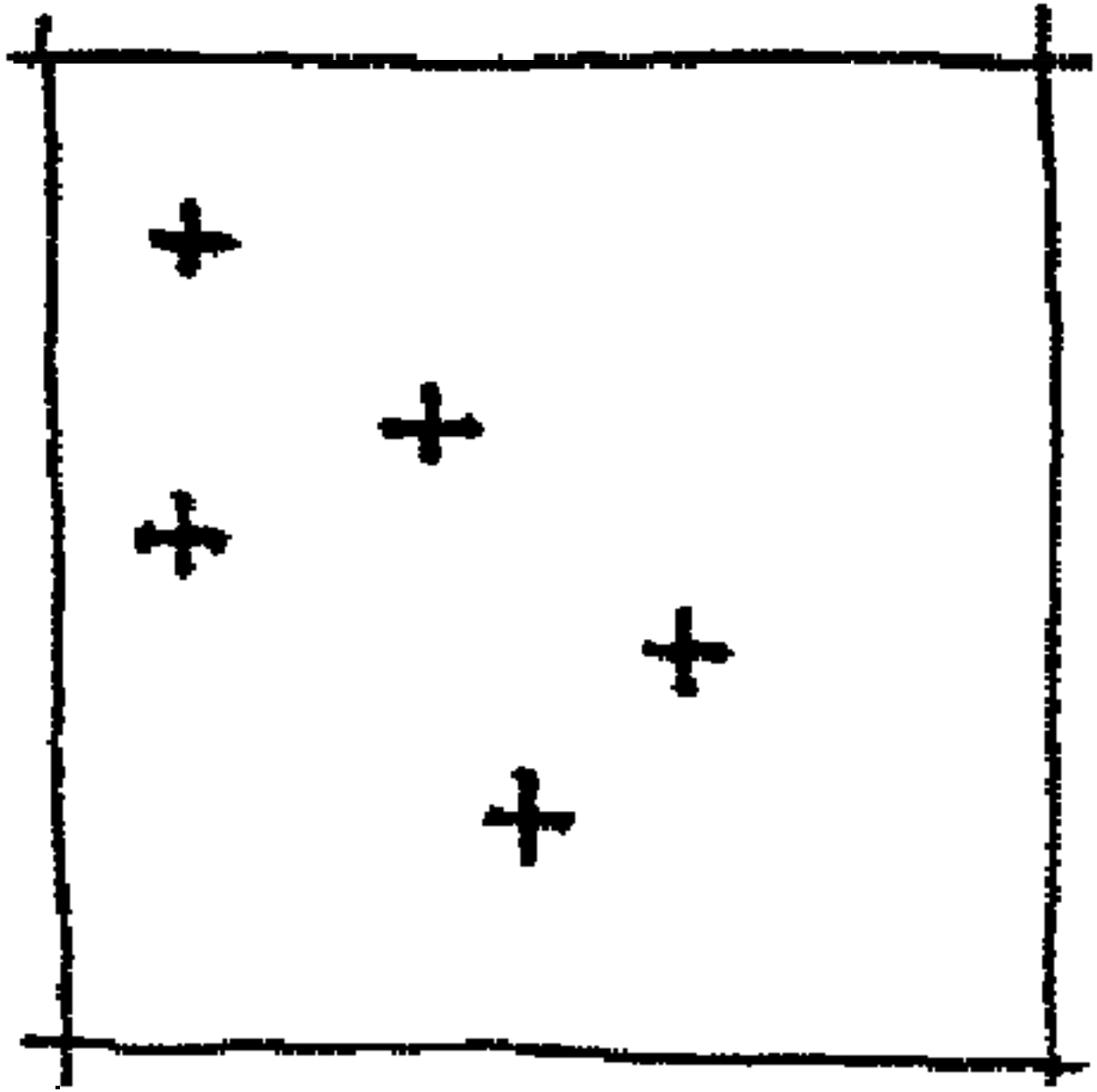












THE DUAL COMMUNITY

The term community implies both a geographic place (in physical space) and a group affiliation (in virtual space). All eight elements in the "policy wheel" can be viewed in both spatial dimensions, but it is useful to separate them into a "physical" set and a "virtual" set for the purposes of land use planning.

Community as a Geographic Place

From the physical space perspective, the most important elements in the policy wheel are the four "land uses" labeled: Jobs, Transport, Housing, and Nature. The physical presence of these four elements comprise most of the total land area in any community. Jobs and Transport have a natural affinity with each other along the economic axis (virtual-space) of the community, reflecting the way manufacture and trade seek access to resources and markets. Housing and Nature similarly have a natural affinity along the domestic axis (virtual-space) of the community, reflecting the way home life seeks enrichment by access to recreation and nature. It takes good urban design to reconcile the conflicts that are inherent in physical space between these two different axes of affinity in virtual space.

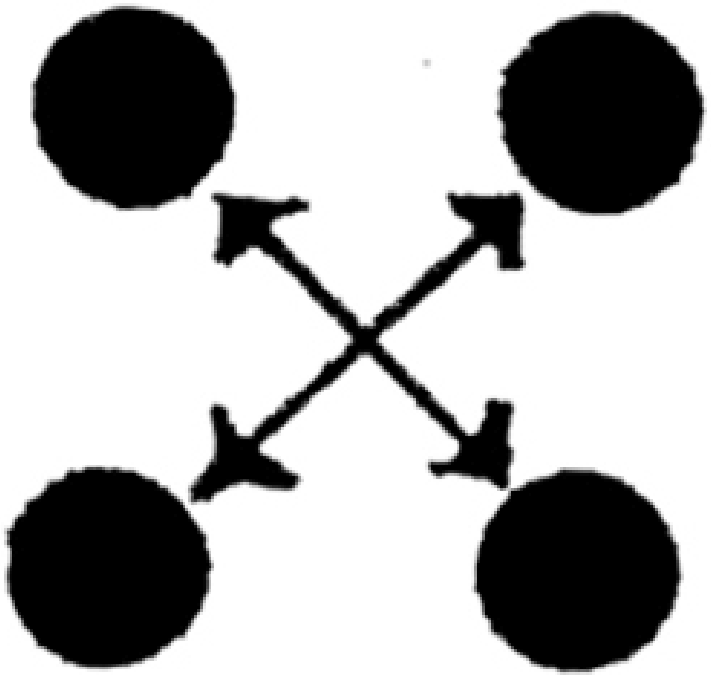
Community as a Group Affiliation

From the virtual space perspective, the most important elements in the policy wheel are the four labeled: People, Community, Fisc, and Land. Both the Fisc and the Land elements represent government protocols intended to rule the behavior of people, the Fisc by collecting money for government services (c.f. "public goods") and the Land by setting limits on the private use of land (c.f. "negative externalities"). People and Community are abstractions, representing opposite ends of the social dimension (virtual space) within the community, the way that individuals spontaneously come together to share with each other. The vertical axis, linking Fisc to Land, represents the political dimension (virtual-space) within the community, the way that governments mandate how individuals will share with each other. The triangle represents a key aspect of this political dimension, the constitutional framework of U.S. government, with its three vertical tiers (federal, state, & local) and horizontal (executive, judiciary, & legislative) branches. Of these four elements in virtual space, only Community has any significant presence in physical space.

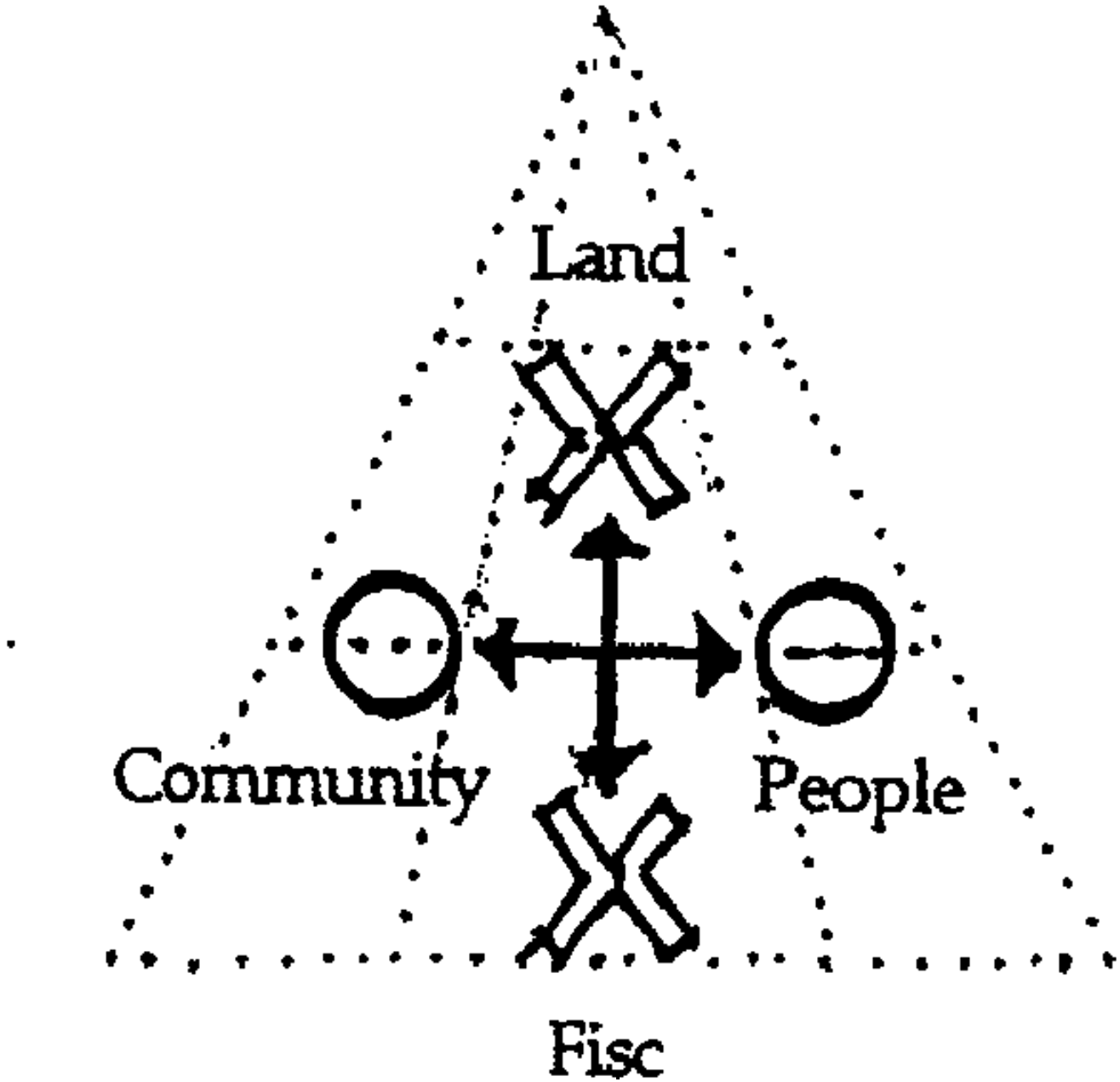
Community: The Lynch Pin Element

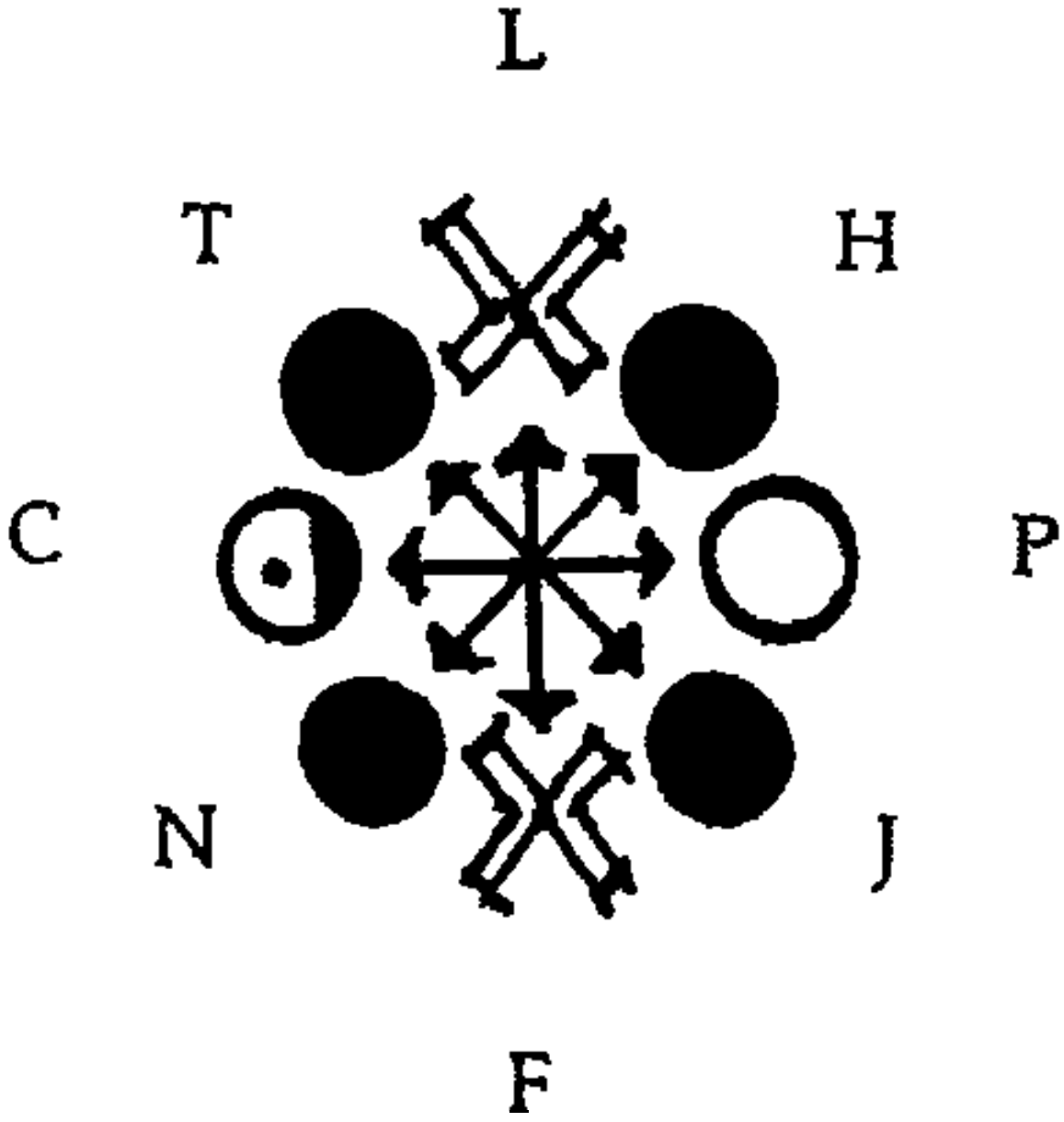
In virtual space, Community embraces a range of ideas from diffuse abstractions to concrete social, recreational, and governmental organizations. But in physical space, Community manifests itself in the form of sites and buildings, especially governmental buildings for police, fire, health, education, and welfare. The character and placement of these sites and buildings in physical space are powerfully significant, both as generators of traffic and architectural form and as symbolic metaphors of the invisible community in virtual space.

Transport Housing



Nature Jobs


Land
Community
People
Fisc


L
T
H
C
P
N
J
F

FISCAL POLICY

The Resource Inventory

The Resource Inventory is analogous to an investment portfolio, Ideally, it includes the market or appraised worth of everything of value within the community, as well as all outstanding debt for which these assets serve as collateral. Construed broadly, it is a measure of all the "assets" of the community, its total "wealth". Few governments analyze their assets comprehensively, but the Inventory can be a potent aid to making both fiscal policy and land policy. The most difficult unresolved question for contemporary society is how to value the Nature component of these assets.

The Investment Program

A program is a list of items to be accomplished with a schedule for completion.The most well known is the Capital Improvements Program, listing all public facilities to be built over a 4-6 year period of time, plus their target dates, estimated costs,and funding sources. Some local governments have experimented with Public Service Programs, which seek to measure the operating costs associated with capital costs. Others have adopted Growth Policy Programs to coordinate with Capital Programs.

The Operations Budget

The budget is an itemized estimate of expected income and expenses for a given time period into the future. Governments at all levels adopt them annually, and use them as controls over both the collection of revenue from the private sector and the provision of public goods and services by the public sector. Anayzing the budget in terms of the elements in the management map illuminates how the relative costs of the public sector elements relate to the relative revenues of the private sector elements. It highlights a key problem for local governments. Community generates a huge proportion of public sector costs (especially in education, whose needs originate in *virtual space* People), which are paid for mostly by revenue derived from *physical spaee* Jobs and Housing. This often is a source of confusion.

The Tax Mechanism

A tax is a monetary charge for governmental services which is applied uniformly to a class of assets within the Resource Inventory, while a fee is a charge limited to the cost of the specific service for which it is payment. Income, sales, and property are the assets usually taxed. Federal and State governments tend to rely primarily on income and sales taxes, and often refuse to grant approval to Local governemnts to levy taxes on either of these classes of assets. Thus Local governments are forced to rely heavily on property taxes and fees for specific services, including development impact fees.

resource inventory
comprehensive plan

capital improvements program

budget

taxation

growth policy program

zoning

subdivision

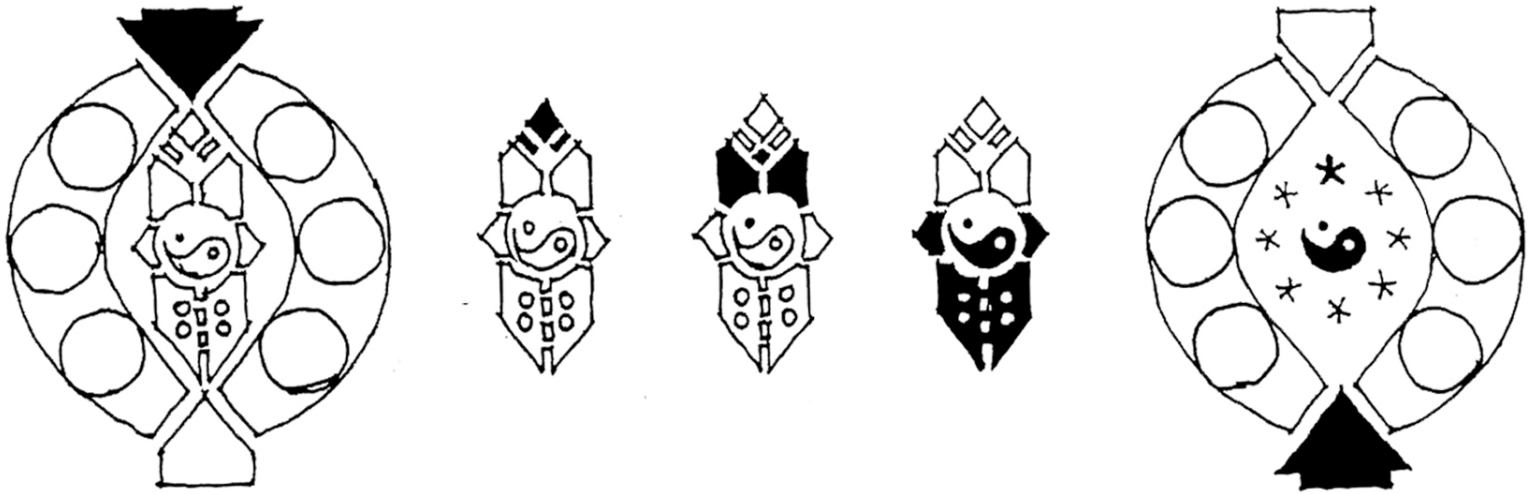
BUILT ENVIRONMENT

THE ACTION ARROW IN PERSPECTIVE
A Comparative Anatomy of Land Use Management and Other Professions

CRAFT
(knowing-doing)
versus
P R O F E S S I O N
(knowing) . . . . (modeshift) . . . (doing)

Domain	*Process step 1*	*Process step 2*	*Process step 3*	*Process step 4*	*Process step 5*
GENERIC	CATALYST	PROBLEM	SOLUTION	ACTION	APPRAISAL
PROFESSIONS *scope*	CLIENT *scale*	ANALYSIS *timeframe*	SYNTHESIS *character*	TECHNIQUE *science*	VALUE *theory*
Architecture *building*	**Owner** *singular*	**Desires** *future*	**Design** *spatial*	**Construction** *statics*	**Amenity** *esthetics*
Engineering *machine*	**User** *singular*	**Purposes** *future*	**Design** *spatial*	**Fabrication** *dynamics*	**Efficiency** *economics*
Medicine *organism*	**Patient** *singular*	**Diagnosis** *past*	**Prescription** *procedural*	**Medication** *physiology*	**Health** *ecology*
Law *government*	**Litigant** *singular*	**Trial** *past*	**Rule** *procedural*	**Enforcement** *psychology*	**Equity** *ethics*
Land Use Management *geomorphic* *community*	**Organization** *singular* + *plural*	**Goals/Trends** *future* + *past*	**Plan** *spatial* + *procedural*	**Implementation** *statics* + *dynamics* + *physiology* + *psychology*	**Welfare** *esthetics* + *economics* + *ecology* + *ethics*
PLANNER QUALITIES NEEDED	patience	knowledge	insight	skills	values

Compass Icons:

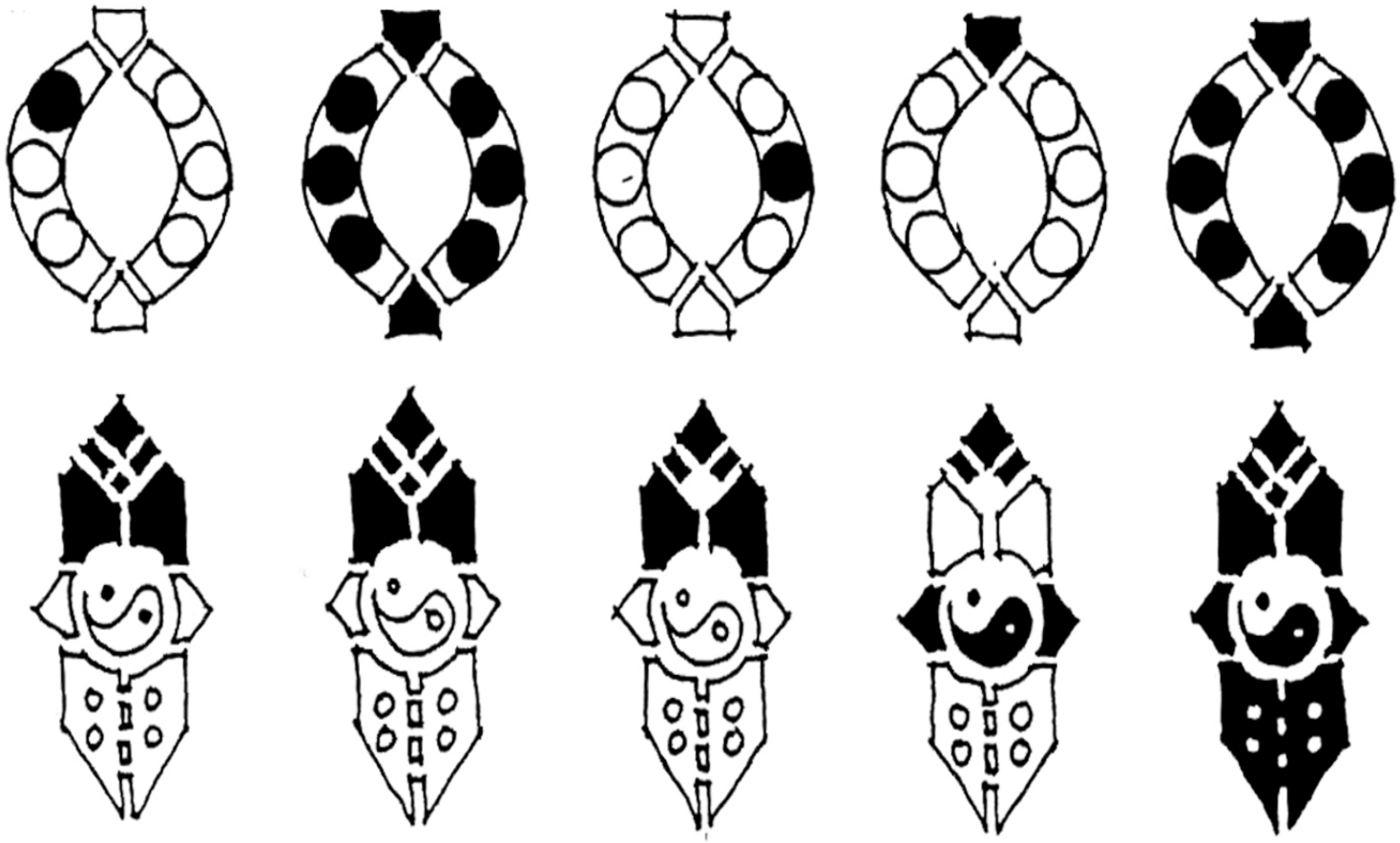


THE ACTION ARROW IN PERSPECTIVE
A Comparative Typology of Urban Planning Paradigms

	Functional Planning	***Land Use Planning***	*Policy Planning*	*Strategic Planning*	***Land Use Management***
Primary Client	Functional Stakeholders	**Land Use Stakeholders**	Issue Stakeholders	One Specific Stakeholder	**All Stakeholders***
Scope of Factors	All Relevant To Function	**All Relevant To Land Use**	All Relevant To Issue	All Relevant To Stakeholder	**All Preceding***
Primary Product	Systematic Plans	**Geo-social Plans**	Descriptive Policies	Procedural Programs	**All Preceding***
Spatial Dimension	Real + Virtual	**Real + Virtual**	Virtual	Virtual	**Real + Virtual***
Temporal Character	Mid-Range	**Long Range**	Short Range	Short Range	**All Preceding***
Focus of Attention	Problems	**Goals**	Issues	Adversaries	**All Preceding***
Focus of Analysis	System Efficiency	**Multi-Function Form & Fit**	Methods for Consensus	Strengths & Weaknesses	**All Preceding***
Political Attitude	Advocative	**Independent**	Collegial	Partisan	**All Preceding***
Agency Affiliation	Department	**Commission**	Legislature	Executive	**Independent***
Planner's Key Role	Forecaster	**Visionary**	Facilitator	Manager	**Leader***
Planner's Role Model	Expert	**Professional**	Politician	Entrepreneur	**Statesman***

*at different times to fit the situation

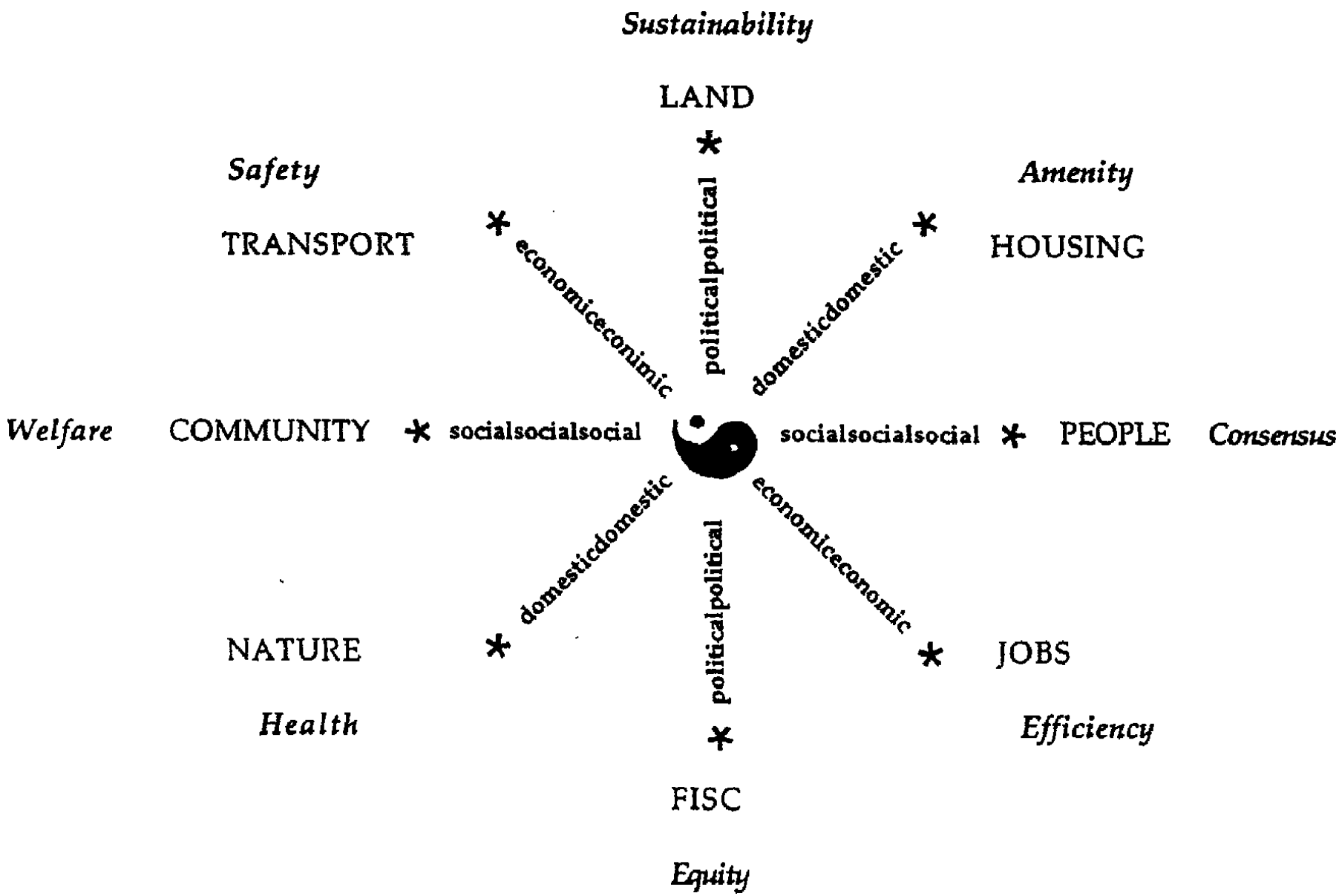
Compass Icons:



THE ACTION ARROW IN PERSPECTIVE

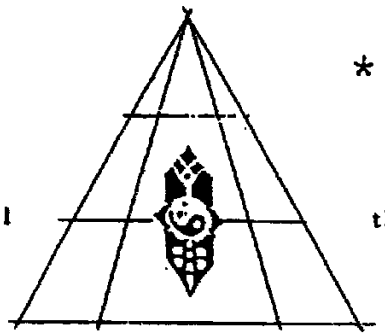
References for Setting Value Criteria for Land Use Management

higher order & more abstract	INDIVIDUAL NEEDS	DISCIPLINARY PERSPECTIVES	ZONING CRITERIA	MANAGEMENT VALUES
	Transcendence	Ideological	Welfare	Sustainability Welfare
	Esteem	Social		Consensus
virtual space	Affiliation	Political	(Morals)	Equity
physical space	Security	Economic Domestic		Efficiency Amenity
	Physiological	Biotic Physical	Health Safety	Health Safety
lower order & more concrete	*cf. Maslow's Hierarchy of Needs*	*cf. Feldt's Hierarchy of Orders*	*cf. Standard State Zoning Legislation*	*cf. ICMA-APA Practice of L.G. Planning 1,2,3*


Sustainability
LAND
Safety
Amenity
TRANSPORT
HOUSING
economiceconimic
politicalpolitical
domesticdomestic
Welfare
COMMUNITY
socialsocialsocial
socialsocialsocial
PEOPLE
Consensus
domesticdomestic
politicalpolitical
economiceconomic
NATURE
JOBS
Health
Efficiency
FISC
Equity

the action arrow

the policy wheel



the value compass

THE LAND USE NAVIGATOR