

# The Patterns of Patterns - Pattern Language and Beyond

MICC Experten/innen-Workshop, November 2010

## Beyond Patterns: From Pattern Language to the Language of Centers

### Patterns and A Pattern Language

- A. New Developments of Patterns and Adaptation as Archetype
- B. Patterns for Projects based on the book A Pattern Language APL

### A Pattern Project Language

Based on APL plus the Formulation of a Set of new Patterns

### A Project Language

Based on Visions, Concrete Imaginations, Projects, and Patterns

### A Center Language

Based on Fifteen Geometrical Properties of Natural Morphology

### Architecture Process and Projects

Based on Pattern Language, Language of Centers, and Adaptation as Process

# PORLAND URBAN ARCHITECTURE RESEARCH LABORATORY

## PUARL Director Hajo Neis

The Portland Urban Architecture Research Lab attempts to “**integrate wholeness and sustainability into the urban design process by conducting basic and applied research throughout the region and beyond in urban morphology, urban building typologies, and urban processes** for civic groups, public agencies, professional firms, and development interests. *Urban Morphology:* We investigate patterns that enhance sustainability at the urban scale, including street networks, block and neighborhood layouts, transportation and land use systems, and urban landscapes. *Urban Building Typologies:* We investigate building types that contribute to greater densities and decreased vehicle use with a focus on urban housing, mixed-use buildings, and other typologies located in the central city, inner city neighborhoods, and at the urban/rural boundary. *Urban Processes:* We investigate processes that enhance our understanding of the emerging structure of the city and help us create urban places in an incremental and participatory manner in support of urban sustainability.”

[puarl.uoregon.edu](http://puarl.uoregon.edu)

PUARL Portland Urban Architecture Research Laboratory - Portland OR (US)  
CES Center for Environmental Structure - Berkeley (US) and Binsted (UK)

Prof. Dr. Hajo Neis - Portland/Berkeley

Meiji University Tokyo Japan

November 2010

Portland Urban Architecture Research Laboratory PUARL

# **PUARL Fields of Research and Investigation: Wholeness and Sustainability**

## ***Urban Morphology and Urban Patterns***

Portland Urban Atlas Project

## ***Urban Building Typologies and Building Patterns***

City of Tigard Downtown Vision and Improvement Project

## ***Design, Urban Process and Generative Process***

University of Oregon Portland User and Pattern Design Process

## ***Urban Ecology and Urban Landscapes, Patterns***

City of Tigard Urban Corridor Project  
Eco-Pattern Districts and Neighborhoods

## ***Quality of Structure and Process***

Wellness Project

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# THEORY: PATTERNS & PATTERN LANGUAGES

What are patterns and pattern languages and how are they defined and applied in your field?

A **Pattern Language** is a structured method of describing good design practices within a field of expertise. In Architecture and Urban Planning the pattern language approach has received new interest because of its potential to contribute to solving urban problems.

What is a pattern language?

What is a pattern?

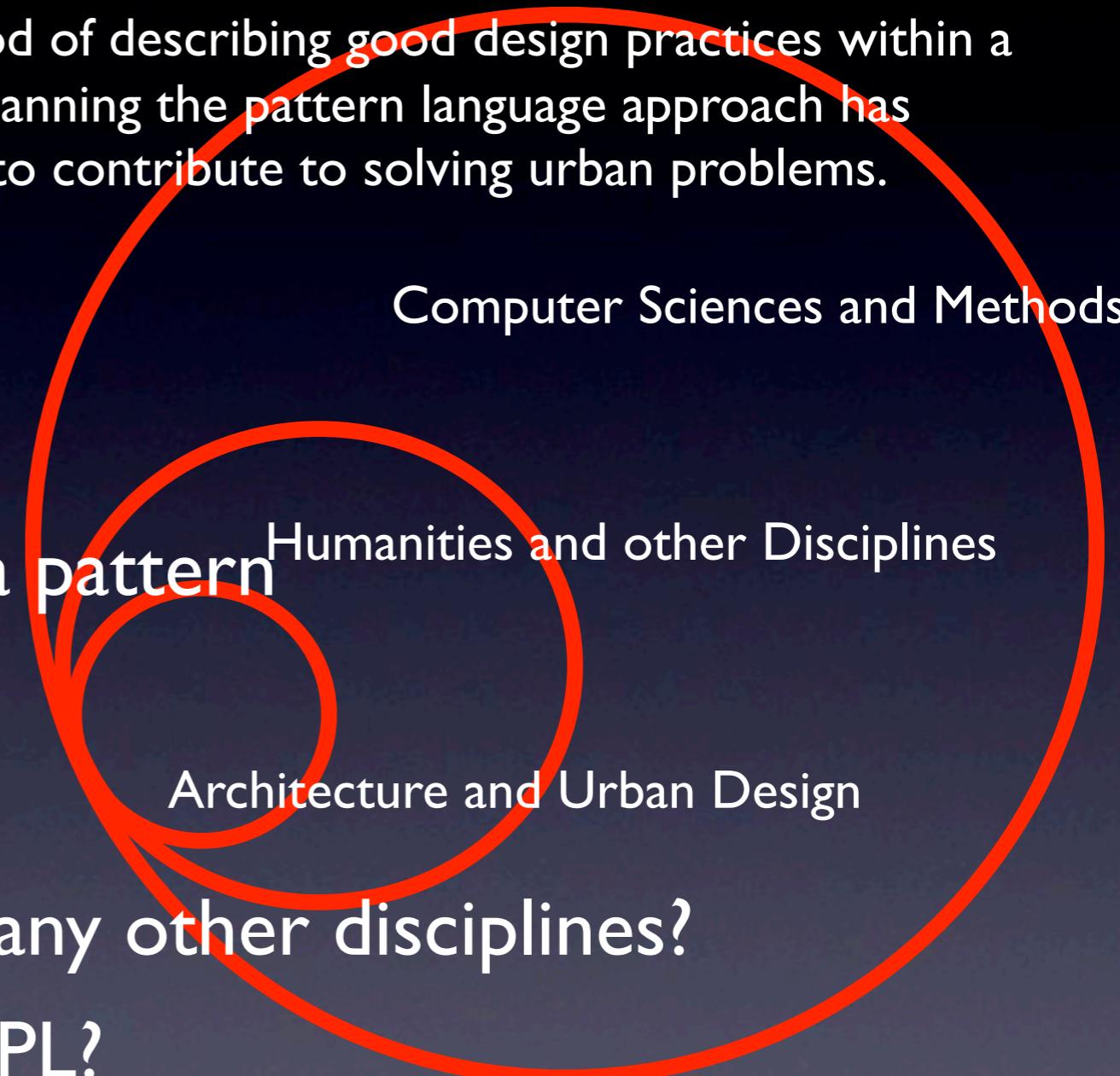
What is the formal built-up of a pattern

How are patterns evaluated?

Which concept of pattern?

Why are patterns used in so many other disciplines?

Why work with patterns and APL?



The Application of Patterns in Different Disciplines and Fields has increased manifold, and opens up new possibilities for interdisciplinary and integrated work.

# THEORY: PATTERNS & PATTERN LANGUAGES

## Was sind Patterns und Pattern Languages, wie werden sie definiert und angewandt in ihrem Fachgebiet?

1. Q: Welche Theorie/welches Konzept von Patterns steht hinter der Arbeit mit Patterns in Ihrem Arbeitsbereich? A: Patterns sind archetypische Lösungen zu Umweltproblemen in meinem Gebiet von Architektur und Städtebau. Das Konzept des Pattern basiert daher auf der Idee des Archetypen.

2. Q: Was ist das disziplinaerische Verständnis von Patterns? Computer Sciences and Methods  
Warum wird mit ihm gearbeitet, wie entstehen sie, wie werden sie beschrieben? A: Patterns werden angewandt als grundsaetzliche Lösungen zu Umweltproblemen, die dann als Phenotypen konkrete Formen annehmen können.

3. Q: In welchen Bereichen werden sie angewandt. Was sind kritische Erfolgsfaktoren? Welche Wirkungen sind zu beobachten? A: Patterns werden hauptsächlich in der Phase der Programmierung von Projekten und im Zusammenhang mit Benutzerbeteiligung angewandt.

4. Wo Sehen Sie Anschlussfähigkeiten und -notwendigkeiten zu anderen Disziplinen? In der Lösung von Problemen, die interdisziplinaer besser zu lösen sind.

The Application of Patterns in Different Disciplines and Fields has increased manifold, and opens up new possibilities for interdisciplinary and integrated work.

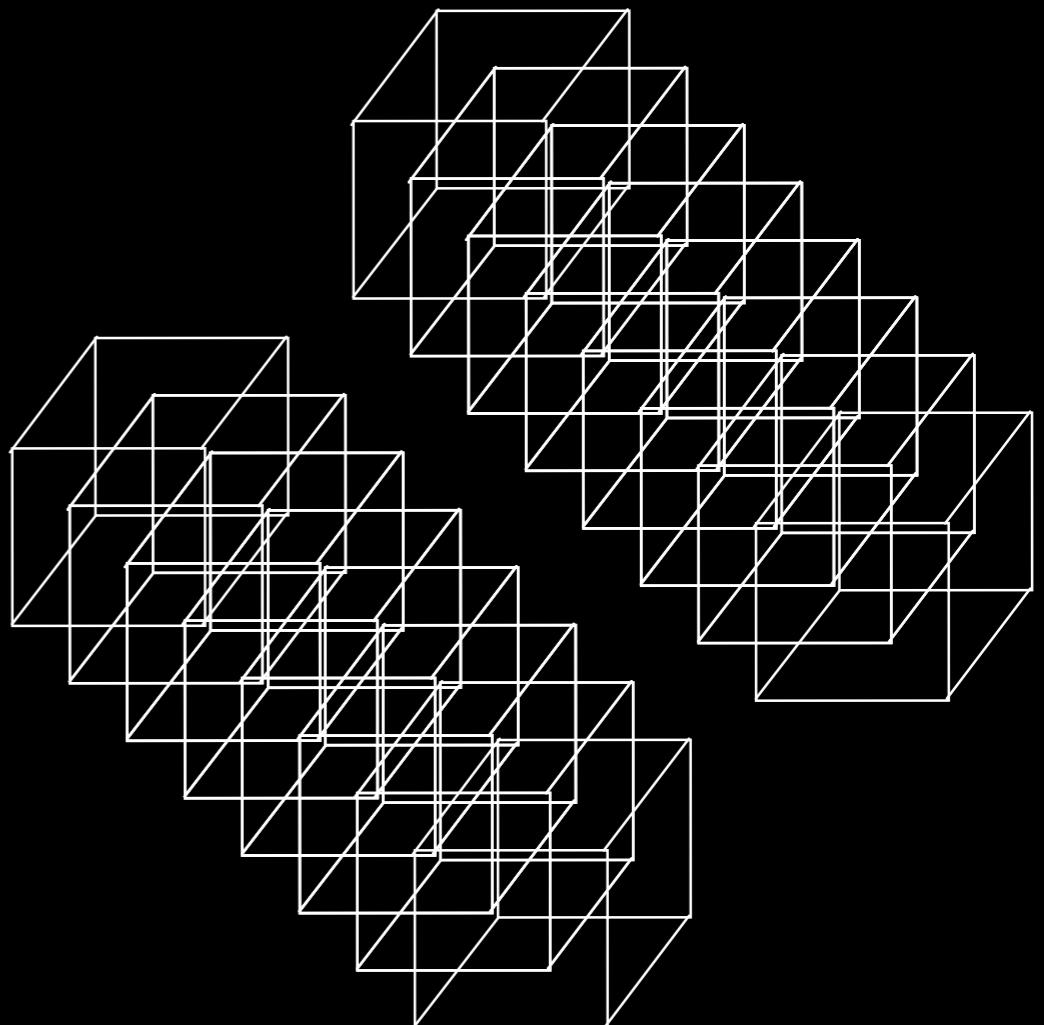
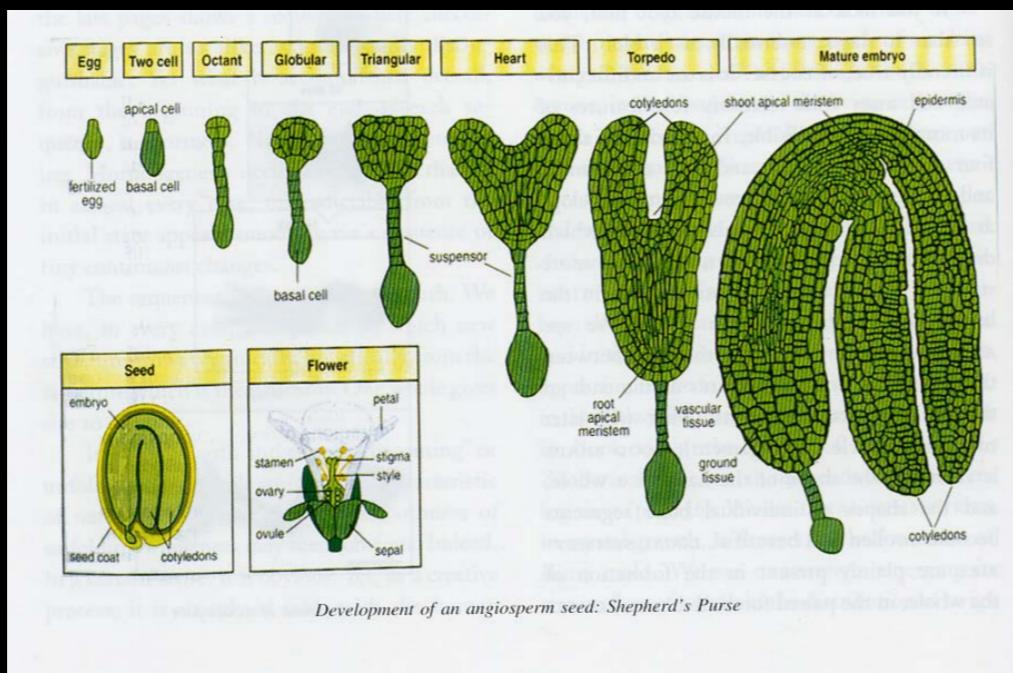
Music/Innovation/Corporate Culture

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In einem durchgaengigen Architekturprozess werden weitere Prinzipien benutzt wie das wichtige Prinzip der Adaption.

## 5. Adaptive morphogenesis vs. non-adaptive replication of standard or ideal types



# Emoto Building Tokyo



Prof. Hajo Neis Ph.D. - Portland/Berkeley

Meiji University Tokyo Japan

November - 2010

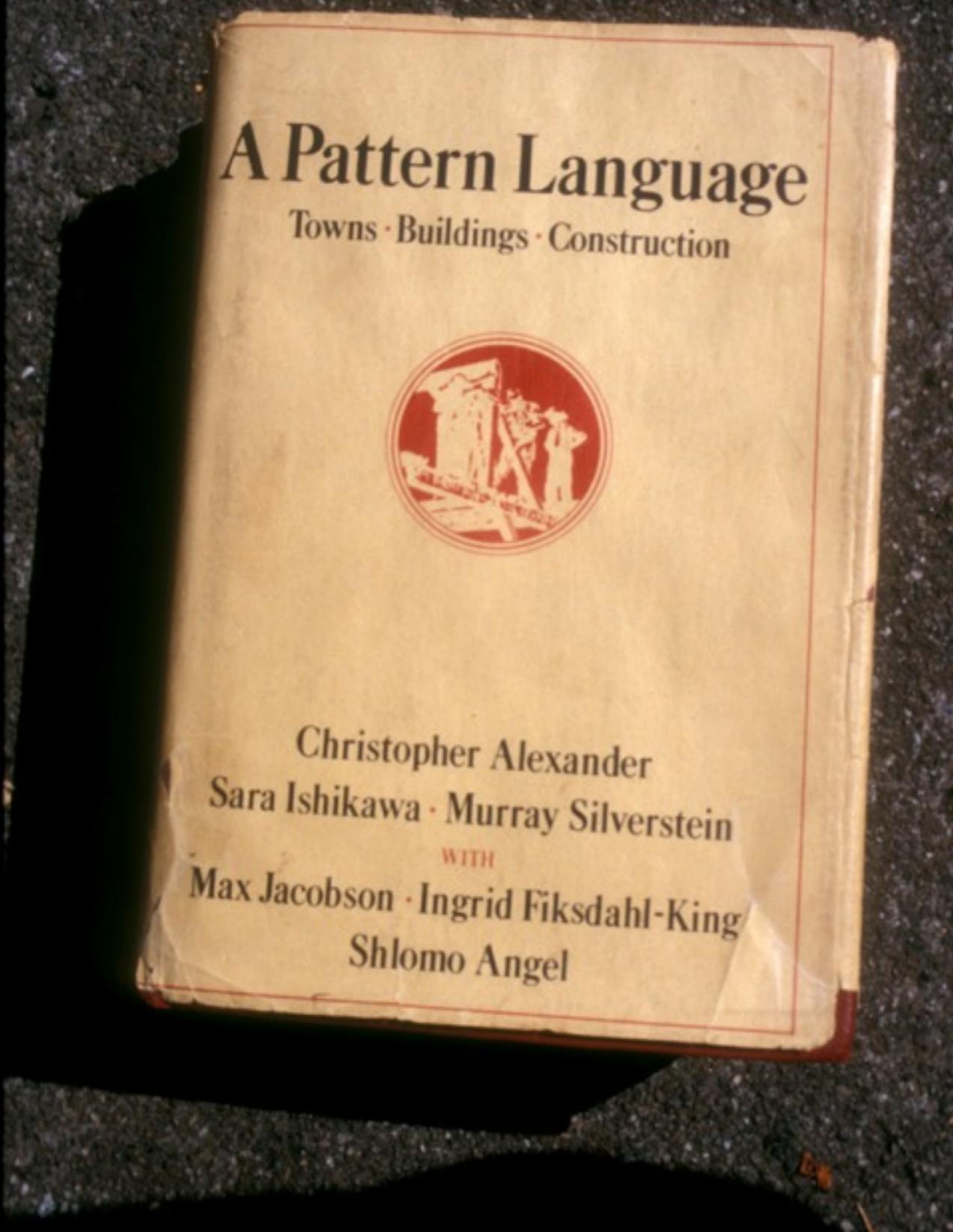
# Process of Adaptation through Mock-up Experimentation during Design Process and Building Process



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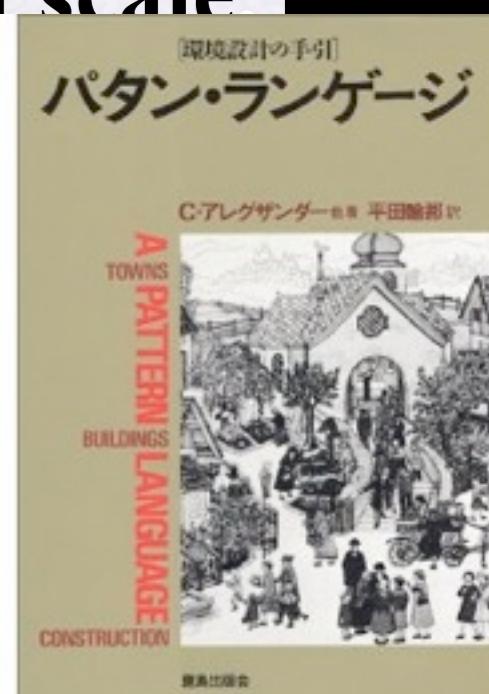
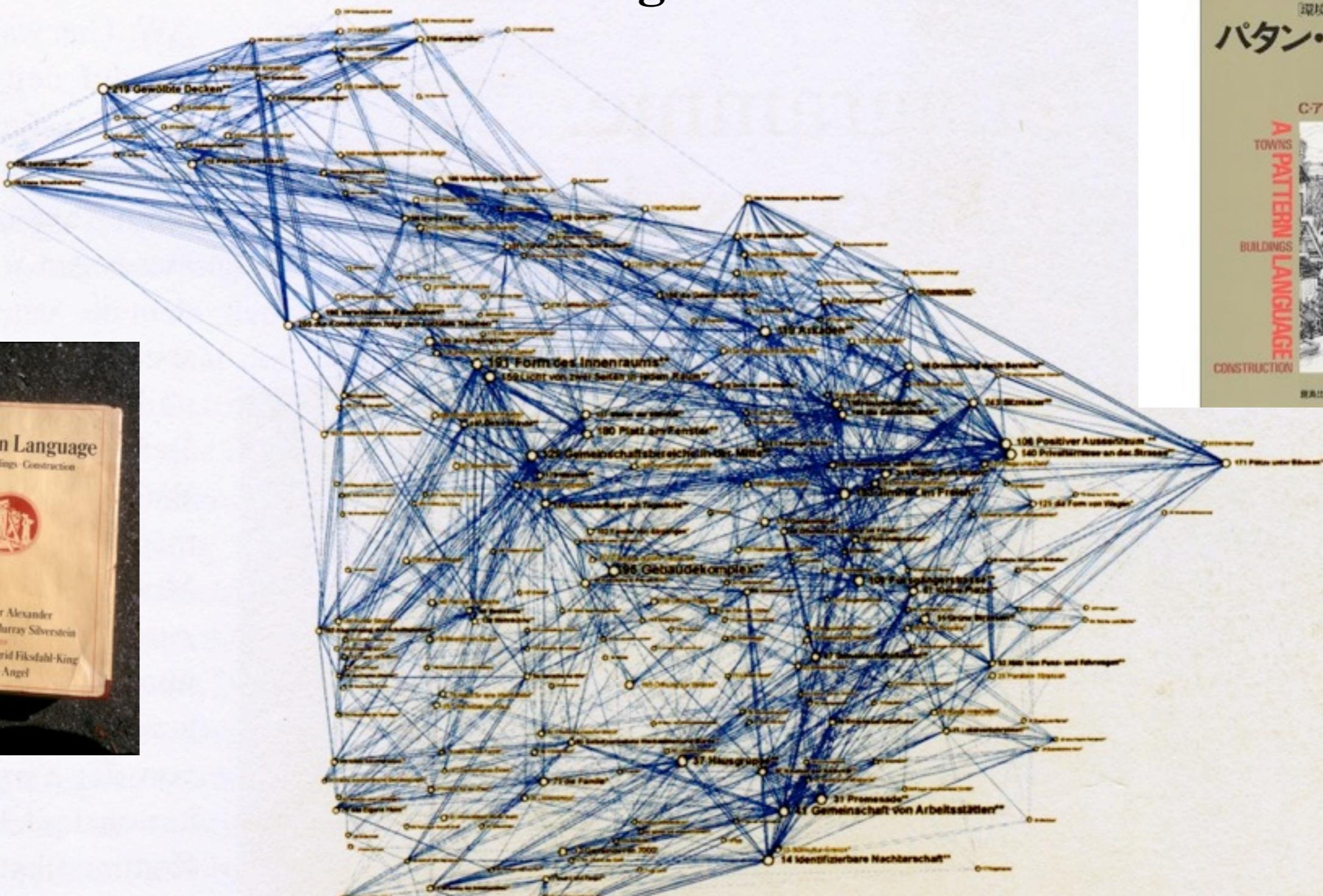
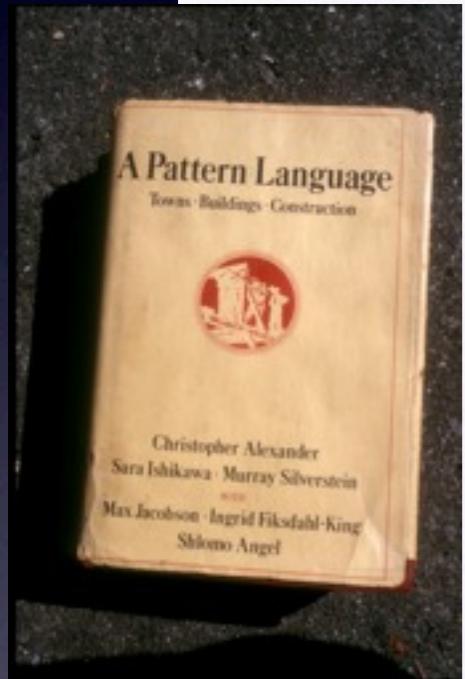


# A Pattern Language is a Book with 253 Patterns



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# PATTERN LANGUAGES are design systems for urban structures and buildings at different levels of scale



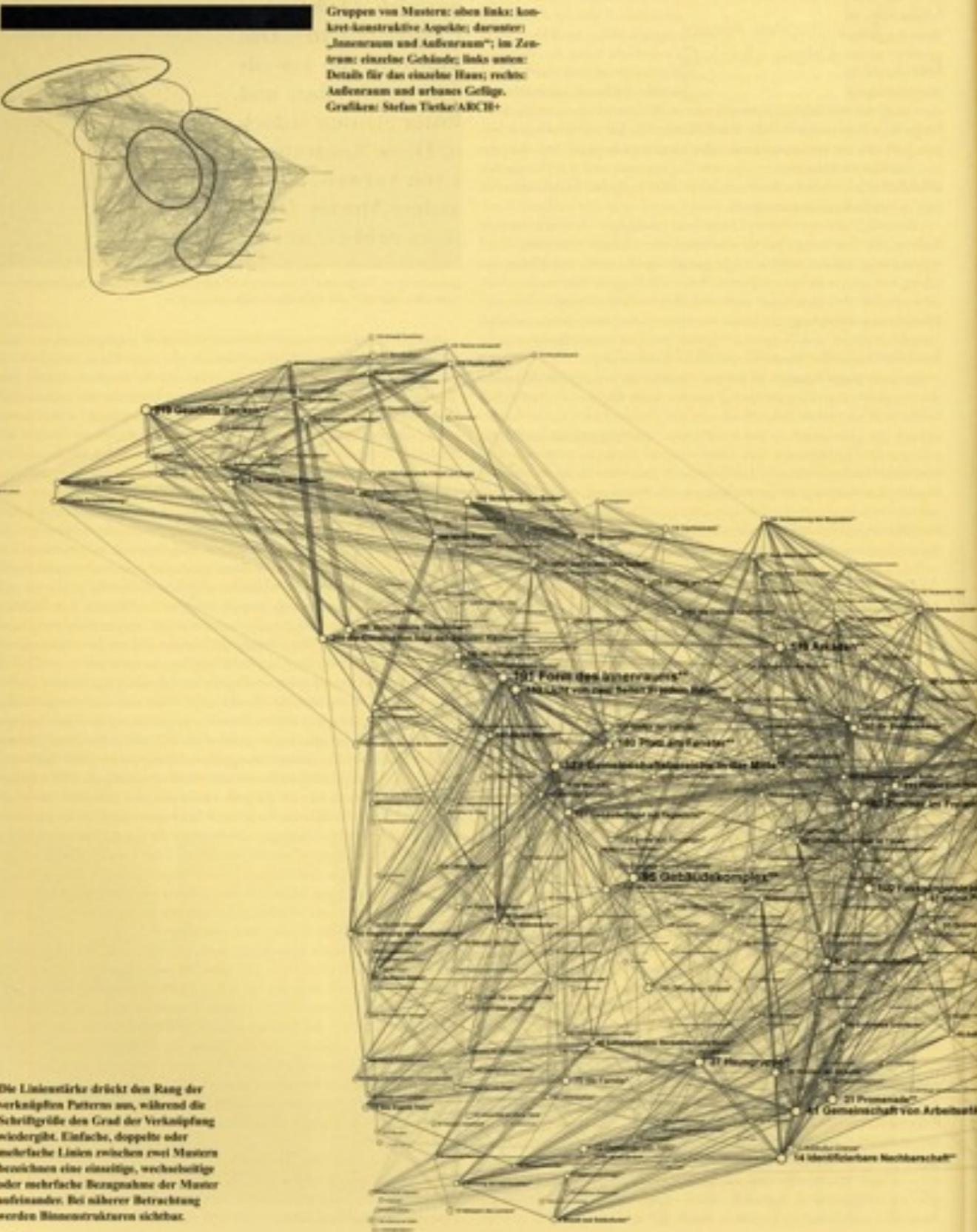
## A Pattern Language as Urban Network System

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# Pattern Languages as Generative Systems and Processes



## Hyperpattern Language

Dreißig Jahre nach ihrem Erscheinen entpuppt sich Christopher Alexanders „Pattern Language“ als Hypertext *avant la lettre*. Das Buch ist eine Sammlung von 253 Entwurfsmustern, die jeweils einen klar umgrenzten architektonischen Aspekt beschreiben und Handlungsstrategien vorschlagen. Keines der Muster existiert jedoch losgelöst von seinem architektonischen Kontext. Diese Kontextualisierung erfolgt durch ein differenziertes System von Verweisen (einfach, wechselseitig, mehrfach, qualifiziert) auf andere Muster. Diese systemische Verknüpfung der Muster untereinander hebt die lineare Struktur des herkömmlichen Buchs auf: Der Benutzer kann an jeder Stelle in den Text einsteigen und den Verweisen folgend durch das Buch navigieren.

Komplementär zur scheinbar egalitären Struktur des Musternetzes gibt es zumindest zwei formale Gliederungsebenen. Zum einen ist das Buch in die drei Abschnitte „Städte“, „Gebäude“ und „Konstruktion“ unterteilt. Zum anderen werden die Muster qualifiziert: Diejenigen, die allgemeine Gültigkeit beanspruchen, werden mit zwei Sternchen markiert, wohingegen Muster mit nur einem oder ohne Stern entsprechend geringere Bedeutung haben.

Mit der Software zur Graphenvisualisierung „GraphViz“, die aus der Verknüpfungsstruktur selbstständig eine graphische Darstellung generierte, haben wir die verborgenen Strukturen der Pattern Language sichtbar gemacht, indem wir alle Muster mit ihren Verknüpfungen auf einen Blick zeigen. Stefan Tietke

**A Pattern Language is also a generative system or process, defined as a combination of principles, parameters and rules that interact and work together to form or maintain a system, a structure, an organization, cities, buildings, parks, and gardens.**

## REGELBASIERTES ENTWERFEN

Ongoing Discussion and Publications since 1966

# NOTES ON THE SYNTHESIS OF FORM

CHRISTOPHER ALEXANDER



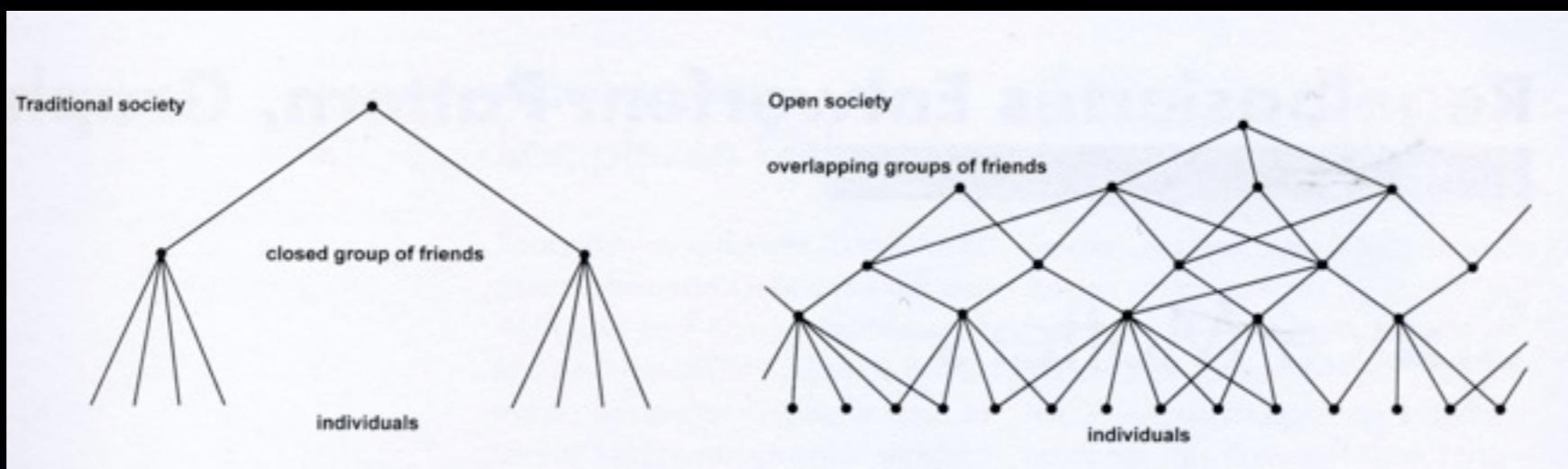
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Hierarchy  
("Tree")



Network  
("Semi-Lattice")

#### 14. Identifiable Neighborhood

177. Vegetable Garden

#### 26. Life Cycle

35. Household Mix

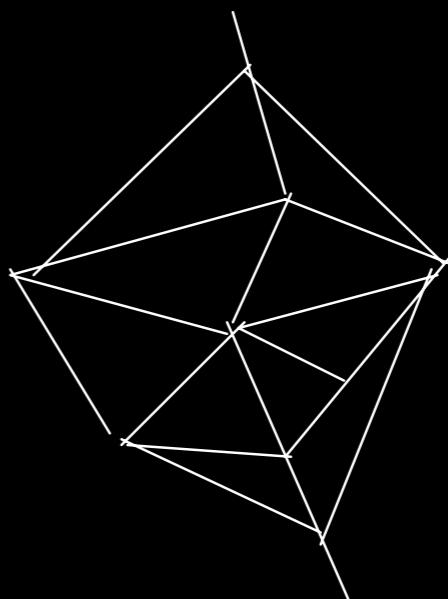
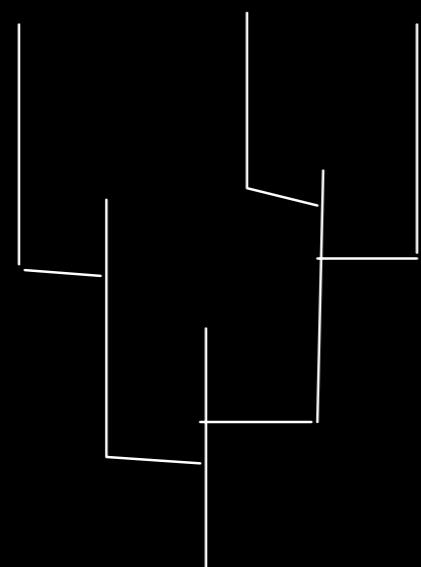
18. Network of Learning

#### 40. Old People Everywhere

156. Settled Work

86. Children's Home

75. The Family



*Rational Hierarchy  
("Planned")*

*Complex Network  
("Emergent")*

# FUNDAMENTAL RESEARCH QUESTIONS:

What are good structures?

What are good processes?

What are good processes that create good structures?

How are patterns evaluated?

The question is not only: What is a structure or a pattern?

But the question is: What is a good structure, a good pattern?

The question of quality or good structures and processes plays a central role in the work of CES and PUARL.

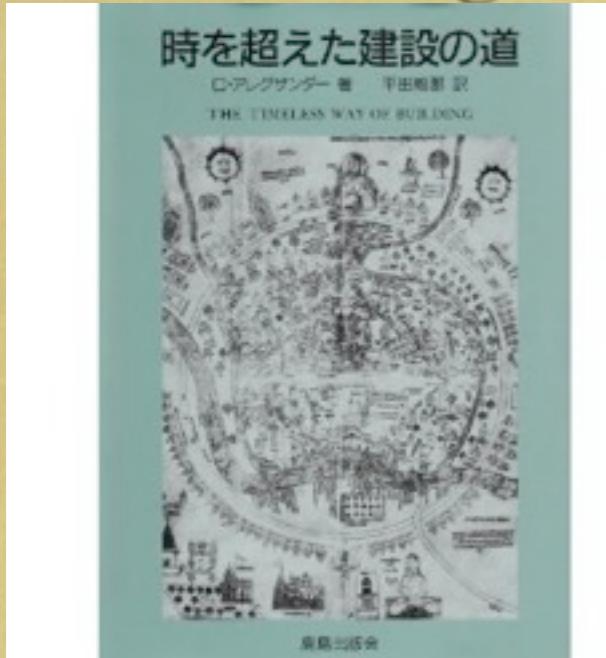
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[puarl.uoregon.edu](http://puarl.uoregon.edu)

[patternlanguage.com](http://patternlanguage.com) (CES)

# The Timeless Way of Building



Christopher

MICC  
Verbindung

Prof. Dr. Hajo Neis Portland/Berkeley



Music/Innovation/Corporate Culture



QUWAN

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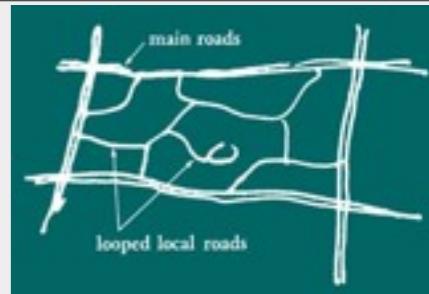
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# FORMAL BUILT-UP OF A PATTERN (Example: 49 Looped Local Roads)



- **Pattern Title** (with or without stars)
- **A Picture** that represents the Pattern
- **Hyperlinks**, which connect the pattern with other patterns at a higher scale (local transport area, identifiable neighborhood, etc)
- **Description of Problem** in bold letters (“**Nobody wants fast through traffic going by their homes.**”)
- **Main Text:** Here the empirical evidence and/or analytical reasoning for the validity of the pattern is demonstrated. A series of applications of the pattern are shown.
- **Proposal for solution:** Text in bold, which shows the solution of the problem, that is the physical actions and social connections, that are proposed to solve the problem. The solution is given in form of an instruction so that one knows what to do or how to proceed. (“**Lay out local roads so that they form loops. A loop is defined as any stretch of road which makes it impossible for cars that don't have destinations on it to use it as a short cut. Do not allow any one loop to serve more than fifty cars and keep the road really narrow - 17-20 feet is quite enough.**”)
- **Sketch**, which shows the solution of the problem in form of a diagram.
- **Hyperlinks**, which connect the pattern to other more specific patterns at lower scales, and which help to complete this pattern for specific contexts.

**49 LOOPEd LOCAL ROADS\*\***



... assume that neighborhoods, house clusters, work communities, and major roads are more or less defined—LOCAL TRANSPORT AREA (11), IDENTIFIABLE NEIGHBORHOOD (14), PARALLEL ROADS (23), HOUSE CLUSTER (37), WORK COMMUNITY (41). Now, for the layout of the local roads.

♦ ♦ ♦

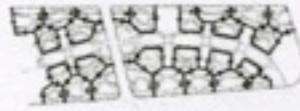
**Nobody wants fast through traffic going by their homes.**

Through traffic is fast, noisy, and dangerous. At the same time cars are important, and cannot be excluded altogether from the areas where people live. Local roads must provide access to houses but prevent traffic from coming through.

This problem can only be solved if all roads which have houses on them are laid out to be “loops.” We define a looped road as any road in a road network so placed that no path along other roads in the road network can be shortened by travel along the “loop.”

The loops themselves must be designed to discourage high volumes or high speeds: this depends on the total number of houses served by the loop, the road surface, the road width, and the number of curves and corners. Our observations suggest that a loop can be made safe so long as it serves less than 50 cars. At one and one-half cars per house, such a loop serves 30 houses; at one car per house, 50 houses; at one-half car per house, 100 houses.

Here is an example of an entire system of looped local roads designed for a community of 1500 houses in Peru.

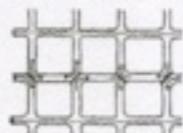


Looped local roads in Lima.

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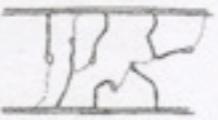
**TOWNS**

Even a simple grid can be changed to have looped local roads.



A way of closing streets to form looped local roads.

Dead-end streets are also loops, according to the definition. However, cul-de-sacs are very bad from a social standpoint—they force interaction and they feel claustrophobic, because there is only one entrance. When such traffic forms a dead end, make sure that the pedestrian path is a through path, leading into the cul-de-sac from one direction, and out of it in another direction.



Pedestrian paths which go beyond a dead end.

Recognize also that many roads which appear looped are actually not. This map looks as though it has looped roads. Actually, only one or two of these roads are looped in the functional sense defined.



These are not looped local roads.

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## Aufbau eines Pattern aus dem Buch: A Pattern Language (Beispiel Looped Local Roads)

- **Pattern Titel** (Sternchen als Qualitaetsempfehlung)
- **Ein Bild** welches das Pattern beispielhaft darstellt
- **Hyperlinks**, die das Pattern nach oben zu anderen Patterns verbinden (local transport area, identifiable neighborhood, etc)
- **Beschreibung des Problems** in fettter Schrift (“**Nobody wants fast through traffic going by their homes.**”)
- **Haupttext:** Hier wird der empirische oder analytische Nachweis gefuehrt fuer die Gueltigkeit des Pattern und eine Reihe von Anwendungsmoeglichkeiten werden aufgezeigt.
- **Loesungsvorschlag:** Text in dicker Schrift, der die Loesung des Problems darstellt, also die physischen und sozialen Verbindungen, die noetig sind um das Problem zu loesen. Die Loesung ist in der Form einer Instruktion gegeben, damit man weiss was man machen soll oder wie man vorgehen soll. (**“Lay out local roads so that they form loops. A loop is defined as any stretch of road which makes it impossible for cars that don’t have destinations on it to use it as a short cut. Do not allow any one loop to serve more than fifty cars and keep the road really narrow - 17-20 feet is quite enough.”**)
- **Skizze**, die die Loesung des Problems in Form eines Diagramms aufzeigt.
- **Hyperlinks**, die das Pattern nach unten zu weiteren spezifischen Patterns verbinden, die hilfreich sind oder helfen dieses Pattern fuer bestimmte Kontexte zu vervollstaendigen.

**49 LOOPEd LOCAL ROADS\*\***



... assume that neighborhoods, house clusters, work communities, and major roads are more or less defined—LOCAL TRANSPORT AREAS (11), IDENTIFIABLE NEIGHBORHOOD (14), PARALLEL ROADS (23), HOUSE CLUSTER (37), WORK COMMUNITY (41). Now, for the layout of the local roads.

♦ ♦ ♦

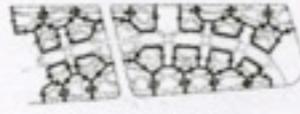
**Nobody wants fast through traffic going by their homes.**

Through traffic is fast, noisy, and dangerous. At the same time cars are important, and cannot be excluded altogether from the areas where people live. Local roads must provide access to houses but prevent traffic from coming through.

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*Looped local roads in Lima.*

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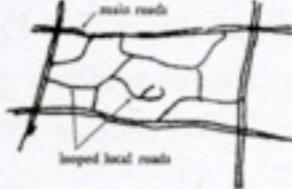
**TOWNS**

Even a simple grid can be changed to have looped local roads.



*A way of closing streets is from looped local roads.*

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*Pedestrian paths which go beyond a dead end.*

Requires also that many roads which appear looped are actually not. This map looks as though it has looped roads. Actually, only one or two of these roads are looped in the functional sense discussed.



*These are not looped local roads.*

49 LOOPEd LOCAL ROADS

Therefore:

**Lay out local roads so that they form loops. A loop is defined as any stretch of road which makes it impossible for cars that don’t have destinations on it to use it as a shortcut. Do not allow any one loop to serve more than 50 cars, and keep the road really narrow—17 to 20 feet is quite enough.**

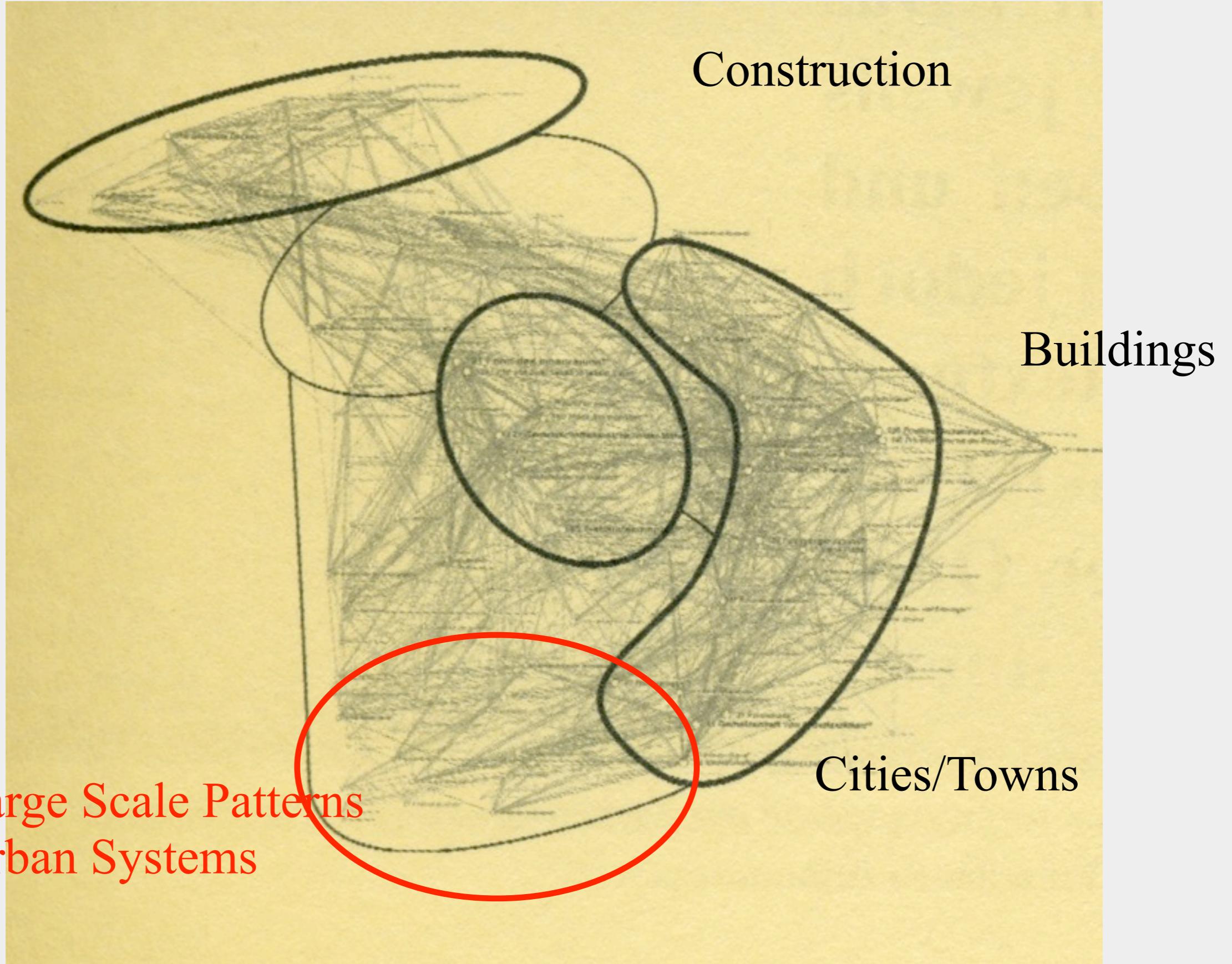
♦ ♦ ♦

Make all the junctions between local roads three-way T junctions, never four-way intersections—T JUNCTIONS (30); wherever there is any possibility of life from buildings being oriented toward the road, give the road a very rough surface of grass and gravel, with paving stones for wheels of cars—GREEN STREETS (51); keep parking off the road in driveways—SMALL PARKING LOTS (103) and CAR CONNECTIONS (113); except where the roads are very quiet, run pedestrian paths at right angles to them, not along them, and make buildings open off these paths, not off the roads—NETWORK OF PATHS AND CARS (52). . .

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# How are patterns in the book *A Pattern Language* APL clustered?



# 10 Large Scale Regional/Urban Patterns

WORLD

1. Independent Regions

REGION

2. The Distribution of Towns

3. City Country Fingers

4. Agricultural Valleys

5. Lace of Country Streets

6. Country Towns

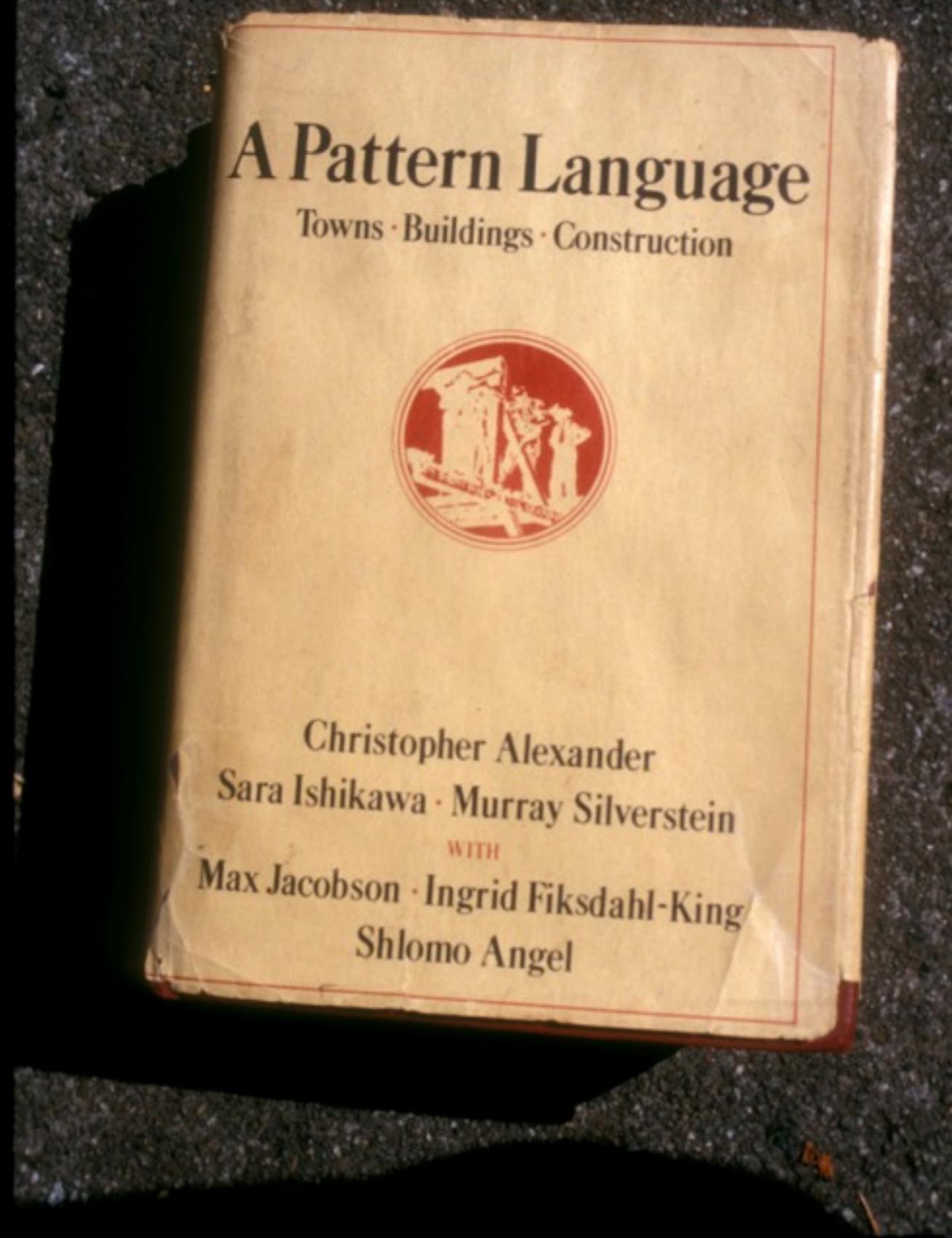
7. The Countryside

CITY

8. Mosaic of Subcultures

9. Scattered Work

10. Magic of the City



# I. Independent Regions

## 1. INDEPENDENT REGIONS



Metropolitan regions will not come to balance until each one is small and autonomous enough to be an independent sphere of culture.

"There are four separate organisations which have led us to the conclusion: 1. The norms and forms of federal government; 2. Separatism among regions in a world community; 3. Regional planning commissions; & 4. Support by the university and diversity of business interests."

"...there are scattered stories to the size of groups that can govern themselves in a federal way. The biologist J. R. A. Mahan has commented on this in his paper, 'On Being the Right Size'..."

"Just as there is a limit not far away animal, or the more it tries for every human institution, in the federal type of government the size of the country must be in a series of regions and state diversity in government of regions. When their populations fall this is small cities are the larger groups disappears into..." (J. R. A. Mahan, "On Being the Right Size," *The World of Mathematics*, Vol. II, D. R. Wilkins, ed., New York: Simon and Schuster, 1956, pp. 102-3).

"It is not hard to see why the governments of a region become less and less manageable with size, by a proportion of N per cent, where N is the order of  $N^2$  growing increases. Data studied at long channels of communication open. Naturally, when N goes beyond a certain limit, the channels of communication needed for democracy and justice and information are simply too clogged, and the complex bureaucracy overwhelming human processes."

"And, of course, as N grows the number of levels in the hierarchy of governmental functions may be small countries like Denmark there are no local levels, but our present cities can have up to ten to fifteen levels of government. But this kind of cities would be quite impossible in large countries like England or the United States."

"We believe the cities are reached when the population of a region reaches over 4 to 10 million. Beyond this size, people begin to move from the geographical processes of government. This increase may seem extraordinary in the light of modern history; the nation-state has grown rapidly and small governments hold power over tens of millions, sometimes hundreds of millions of people. But these large governments close to home a central core."

## 2. Discussion- Analysis

What cannot change is the fact that the balance between the size of towns and continents is not yet balanced. In order to do this, we must work on the part of the world which is not yet balanced, there must be a balance between the size of towns and continents.

"A. When a region has at least several million people in it, it will not be large enough to have a seat in a world government, and will therefore not be able to regulate the power and authority of private businesses."

"We found this point expressed by Paul Wootton of Warwickshire, England, in a letter in the New York Times, March 12, 1972:

### Wootton's comments on metropolitan regions

"The economic functions mean the world functions on a decentralised basis, because of regionalisation within continental government areas." (Wootton's main point is that world government is failing in most respects, while each regional government is independently equal portions of the world's population. Working towards an increase in the size of the global population is the real issue, which is anticipated to rise to the twenty million mark. I suggest that we should be thinking in terms of an ideal region, rather than a real one, which is a very difficult task. But such cities will be given greater freedom. This will allow them to act in the name of the majority of people of course regional governments, it will be much easier to continue to offering to the truly representative of the majority population."

"Wootton believed that Western Europe could take care of the functions by supporting the emergence of world government. He felt that the functions for regional autonomy to take hold in the European Parliament at Strasbourg, and hopes that power can probably be transferred from Westminster, Paris, Bonn, etc., to regional councils, situated in Strasbourg.

"I am suggesting that in the Range of the issues we shall see replaced after these two European, American, English and French, nothing, with an independent States, West and East, and South and North. Other European examples will include Britain, Russia and Canada. The national identities of our contemporary Europe will lose their political significance."

"B. Cities like regions have the power to be self-governing, free

and independent, and to have a seat in a world government. This will be possible if the size of the city is large enough to represent an auto-regional position in a town and formally other way.

An economic and political analysis of this is to have given by the French economist Gouba, who has proposed a series of books and papers, the concept of a "Region of the Regions," a Europe demarcated and separated under regional control and administration boundaries. For example, the Randstad region includes parts of France, Germany, and Switzerland. The European Region includes parts of England and parts of Wales, the Benelux countries, Europe, the regions of Spain, Italy, Portugal, and so on. In this same volume we find Harry Jones, "The Conflict of City Regions and Administrative Units of Regions," pp. 101-11.

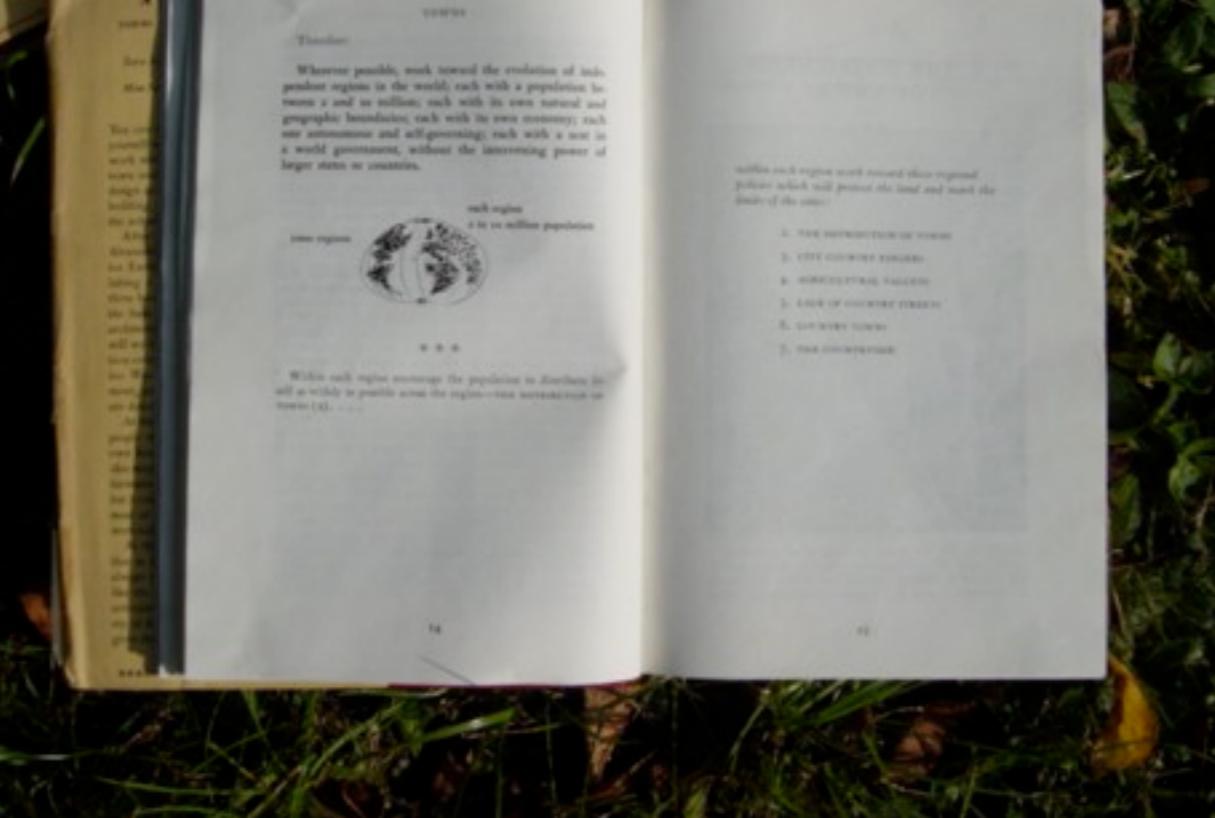
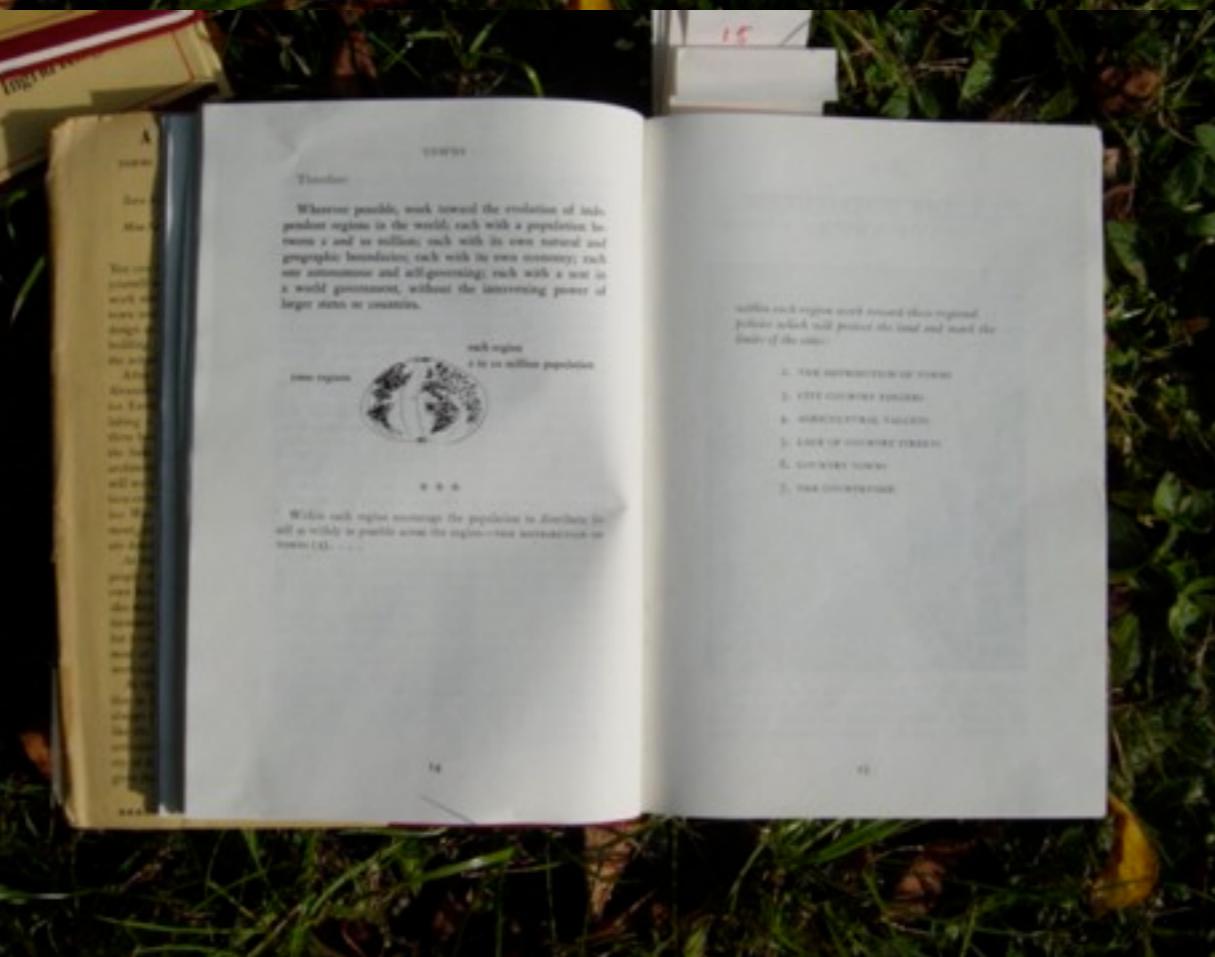
"Finally, nothing can prevent big cities from their power greatly increasing, this increased and differentiated large groups, national, economic, and cultural life of the world's people, due to the health of the planet, will change. In short, we believe that independent regions are the natural integration for language, culture, commerce, and law and that such regions should be separate and independent enough to increase the strength and depth of its actions."

"The fact that human culture within a city can only flourish when they are at least partly separated from neighbouring cultures is discussed in great detail in recent publications (8). We are suggesting here that the same argument the regions in regions - that the regions of the world need the time their histories and their dignity in order to survive as cultures."

"In the face of modern times, the cities performed this function. They provided protection and several systems of cultural influences, social, and economic exchange, they had great resources, whose citizens were cosmopolitan, such as most of the city's history. We believe that the independent regions are because the modern polis - the new communities - that human entity which provides the space of culture, language, law, services, economic exchange, equality, which the old model city to the polis provided for its members."

## I. Problem Statement

Metropolitan regions will not come to balance until each one is small and autonomous enough to be an independent sphere of culture.



## 3. Suggestion, Solution, Action

Wherever possible, work towards the evolution of independent regions in the world; each with a population between 2 and 10 million ; each with its own natural and geographic boundaries; each with its own economy; each one autonomous and self governing, each with a seat in the world government, without the intervening power of larger states and countries."

# 3. City Country Fingers

## 1. Problem Statement

**Continuous sprawling urbanization destroys life, and makes cities unbearable. But the sheer size of cities is also valuable and potent.**

## 2. Discussion-Analysis



## 3. Proposed Solution

**Keep interlocking fingers of farmland and urban land, even at the center of the metropolis. The urban fingers should never be more than 1 mile wide, while the farmland fingers should never be less than 1 mile wide.**



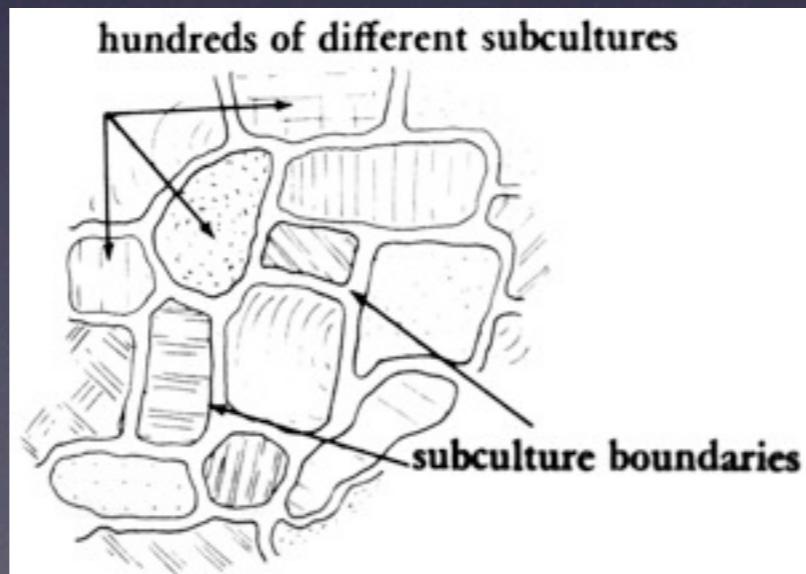
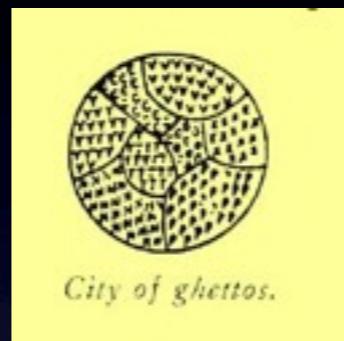
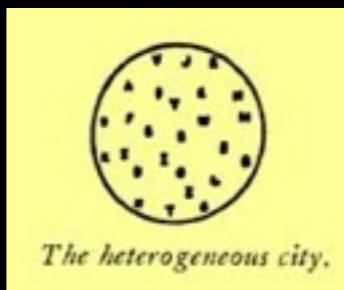
# 8. Mosaic of Subcultures

## I. Problem Statement

**The homogeneous and undifferentiated character of modern cities kills all variety of life styles and arrests the growth of individual character.**



## 2. Discussion-Analysis



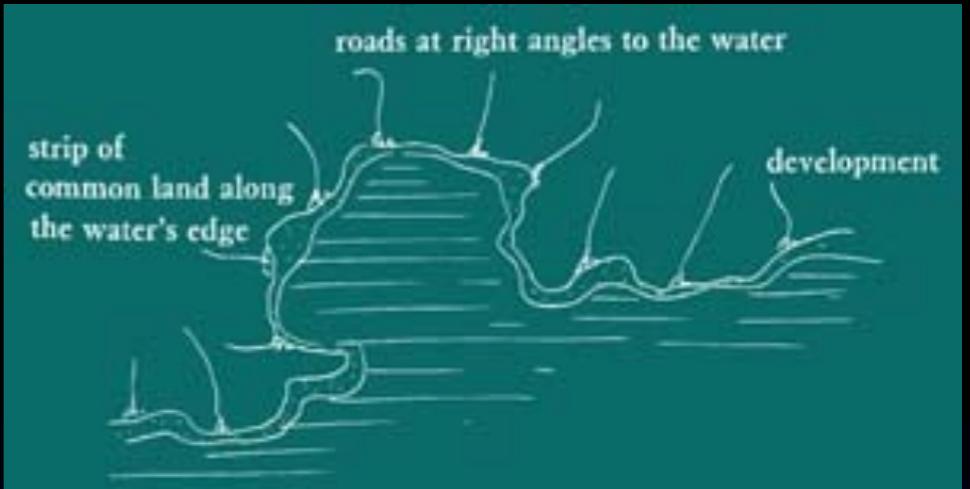
## 3. Proposed Solution

**Do everything possible to enrich the cultures and subcultures of the city, by breaking the city, as far as possible, into a vast mosaic of small and different subcultures, each with its own spatial territory, and each with the power to create its own distinct life style. Make sure that the subcultures are small enough, so that each person has access to the full variety of life styles in the subcultures near his own.**





## 25. Access to Water



[http://vasarhelyi.eu/books/A\\_pattern\\_language\\_book/apl.htm](http://vasarhelyi.eu/books/A_pattern_language_book/apl.htm)

### Problem Statement

**People have a fundamental yearning for great bodies of water. But the very movement of the people toward the water can also destroy the water.**

**Therefore:**

**When natural bodies of water occur near human settlements, treat them with great respect. Always preserve a belt of common land, immediately beside the water. And allow dense settlements to come right down to the water only at infrequent intervals along the water's edge.**

Prof. Dr. Hajo Neis Portland/Berkeley



Music/Innovation/Corporate Culture

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Main Gateways #53



# 53 Main Gateways



**Any part of a town - large or small - which is to be identified by its inhabitants as a precinct of some kind, will be reinforced, helped in its distinctness, marked, and made more vivid, if the paths which enter it are marked by gateways where they cross the boundary.**

**Therefore:**

**Mark every boundary in the city which has important human meaning - the boundary of a building cluster, a neighborhood, a precinct - by great gateways where the major entering paths cross the boundary.**



# PATTERNS AND A PATTERN LANGUAGE

## A. New Developments of Patterns and Adaptation as Archetype

A new Pattern is developed or an existing pattern is modified as an archetype. In this case adaptation is applied to the development or modification of a Pattern by itself (i.e. Thick Wall of Sakura Tsutsumi).

Archetype - Phenotype

Genotype - Phenotype)

Patterns are Archetypes not Genotypes because their Characteristics are not coded in some Genes but in archetypal Characteristics based on functional requirements or pressure.

An Archetype still needs to be translated into a Phenotype through the architectural Process.

## B. Patterns for Projects based on the book A Pattern Language APL

Only happens as initial Check of Patterns for particular Project Topics

See example of Housing Patterns from APL

Archetypes still need to be translated into Phenotypes

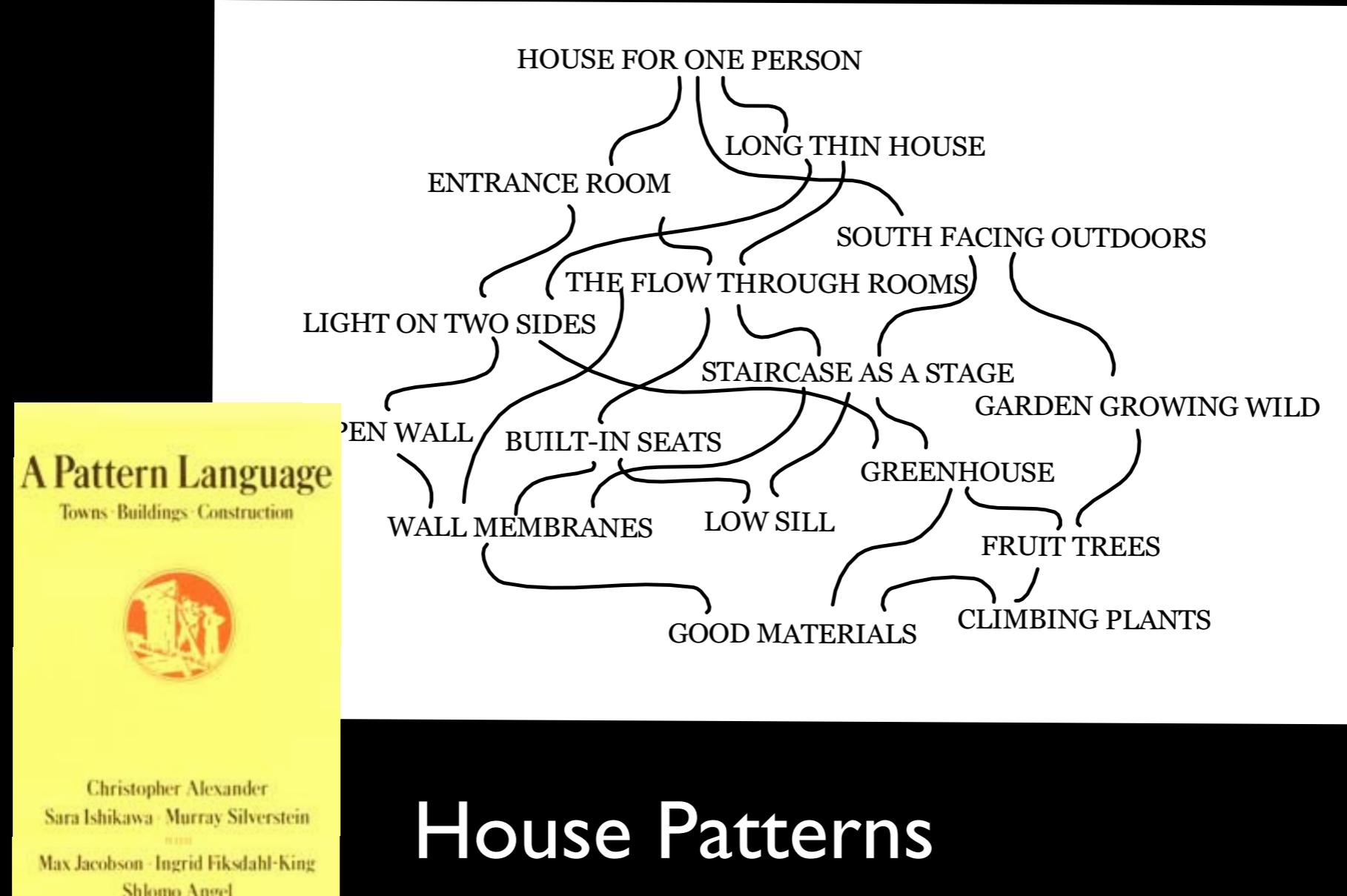
# The Sakura Tsutsumi Office and House in Tokyo

Wholeness and Sustainability  
Culture and Technology  
Kura and Comfort



# Patterns from APL: House Project

*A Pattern Language (1977)*

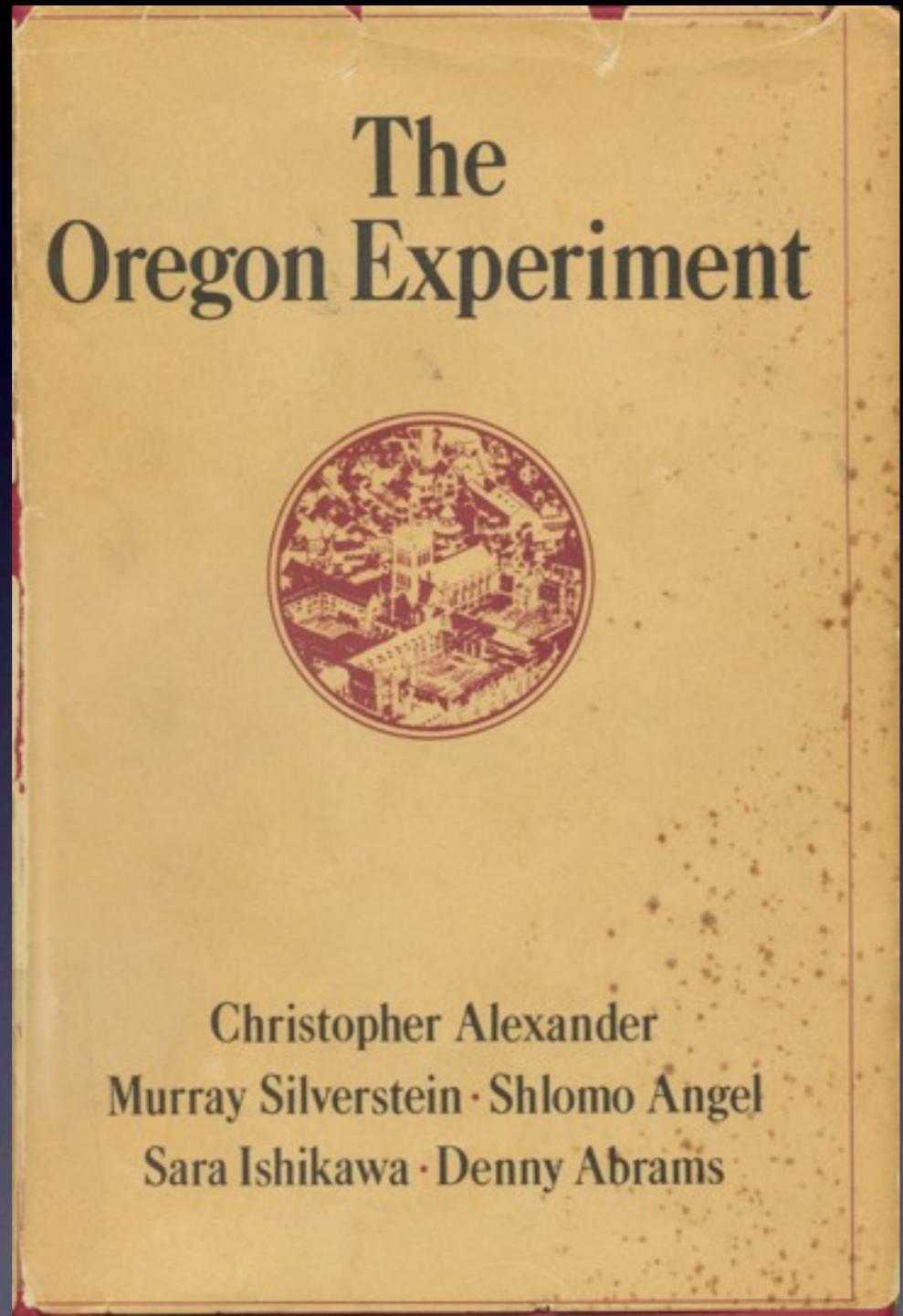


# A PATTERN PROJECT LANGUAGE

## Projects based on Patterns and Pattern Languages Plus a Formulation of New Patterns for a Project

Peru Housing Project  
Multi Center, NY  
Oregon Master Plan  
Mexicali Project  
Portland Campus  
etc

# The University of Oregon Campus Plan Eugene - Oregon 1974 - Present



## CONTENTS

INTRODUCTION	I
<i>Chapter 1</i>	ORGANIC ORDER 9
<i>Chapter 2</i>	PARTICIPATION 38
<i>Chapter 3</i>	PIECEMEAL GROWTH 67
<i>Chapter 4</i>	PATTERNS 101
<i>Chapter 5</i>	DIAGNOSIS 144
<i>Chapter 6</i>	COORDINATION 162
ACKNOWLEDGMENTS	189

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# The Oregon Experiment



Christopher Alexander  
Murray Silverstein · Shlomo Angel  
Sara Ishikawa · Denny Abrams

## CONTENTS

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<i>Chapter 6</i> COORDINATION	162
ACKNOWLEDGMENTS	189

## PATTERNS

board, adopted on behalf of the university community, and then, in some fashion, backed by incentives so that individual projects help to make them appear. They are:

LOCAL TRANSPORT AREA	SHIELDED PARKING
NETWORK OF LEARNING	PATHS AND GOALS
IDENTIFIABLE	BIKE PATHS AND RACKS
NEIGHBORHOOD	PATH SHAPE
FOUR STORY LIMIT	PEDESTRIAN DENSITY
ACCESS TO WATER	PUBLIC OUTDOOR ROOM
MINI BUSES	OFFICE CONNECTIONS
PROMENADE	NUMBER OF STORYS
ACTIVITY NODES	BUILDING COMPLEX
LOOped LOCAL ROADS	SITE REPAIR
T JUNCTIONS	TREE PLACES
PATH NETWORK	SOUTH FACING OUTDOORS
ROAD CROSSING	CONNECTED BUILDINGS
QUIET BACKS	MAIN GATEWAYS
ACCESSIBLE GREEN	MAIN ENTRANCE
SMALL PUBLIC SQUARES	FAMILY OF ENTRANCES
DEGREES OF PUBLICNESS	WINGS OF LIGHT
LOCAL SPORTS	POSITIVE OUTDOOR SPACE
SMALL PARKING LOTS	ARCades

This list of 37 patterns is extremely general: It deals with problems of density, buildings, open space, roads, and paths. It does not deal with the specific problems that a university confronts. And yet, of course, these special university problems are

105

Patterns from the book  
A Pattern Language

106

Patterns specifically developed  
for the Oregon Campus Plan

# university of oregon design procedures



# CAMPUS PLAN

May 31, 2005

*Universities are  
extraordinary  
places.*



UNIVERSITY OF OREGON

## Policy and Pattern Framework

This chapter describes the organization of the Plan's twelve policy chapters and defines the terms used within them. The next chapter, "Policies," summarizes the twelve policies. It is followed by the policy chapters, each of which sets forth policy refinements and patterns related to a specific policy.

The Plan is organized as follows:

### POLICIES

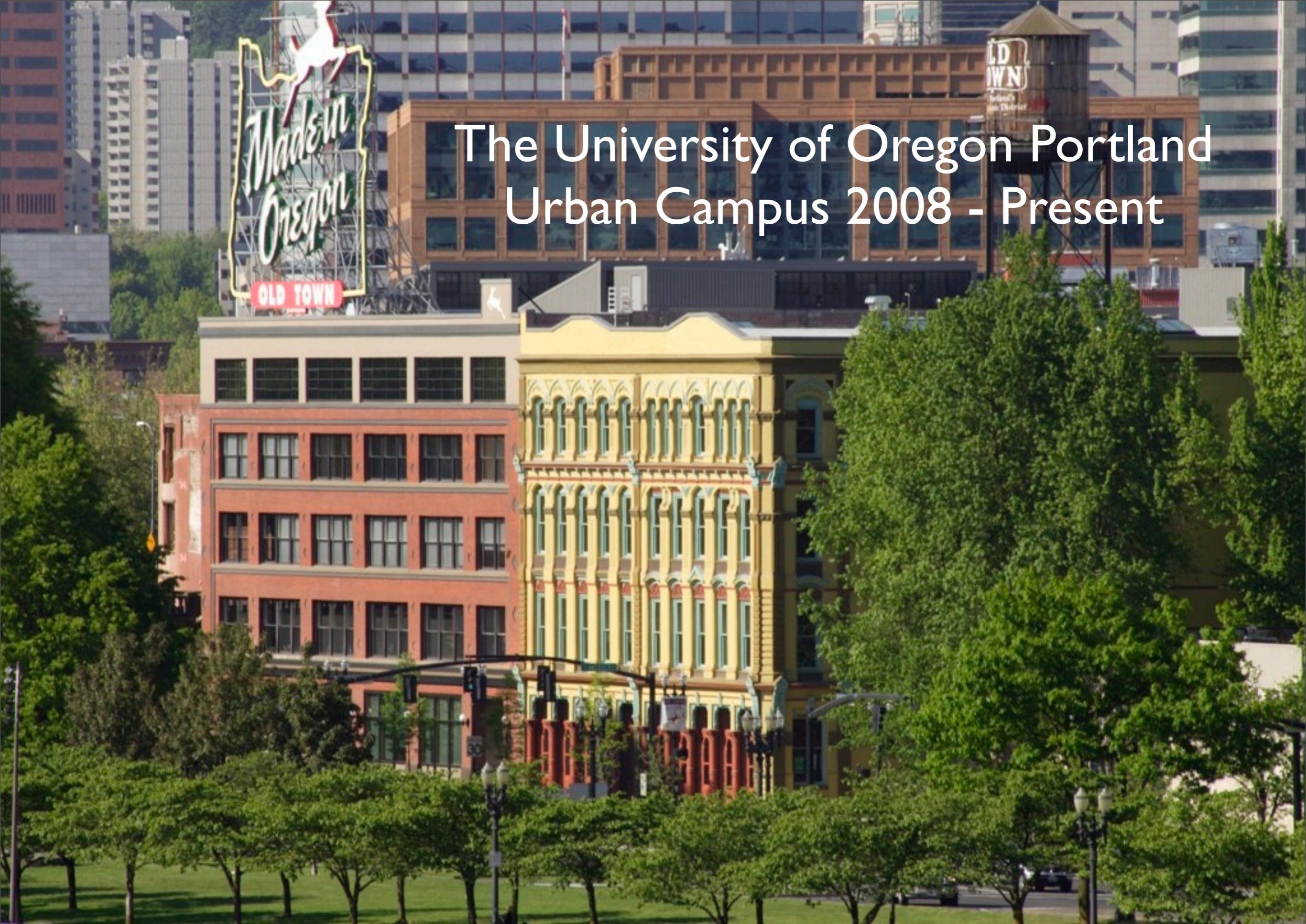
Policies are adopted methods that describe how to apply the Plan's vision. They are expressions of the university's requirements with respect to the physical development of university properties. Examples of policies are "Policy 5: Replacement of Displaced Uses" and "Policy 8: Universal Access." Policies apply to all development projects, as described in "Policy 1: Process and Participation" on page 11.

### POLICY REFINEMENTS

Policy refinements provide greater definition to each policy. They apply to all development projects, as described in "Policy 1: Process and Participation" on page 11. For example the policy refinements for the "Universal Access" policy describe specific design modifications to achieve maximum accessibility in new and remodeled facilities.

### PATTERNS

Patterns are design statements that describe and analyze design issues and suggest ways in which those issues might be resolved. In addition to the patterns that are included in the Plan, new patterns addressing specific issues will be developed during the planning phase of individual projects (See "Policy 11: Patterns" on page 51).



# The University of Oregon Portland Urban Campus 2008 - Present

# The Oregon Experiment



Christopher Alexander  
Murray Silverstein · Shlomo Angel  
Sara Ishikawa · Denny Abrams

## PATTERNS

board, adopted on behalf of the university community, and then, in some fashion, backed by incentives so that individual projects help to make them appear. They are:

LOCAL TRANSPORT AREA	SHIELDED PARKING
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ACCESS TO WATER	PUBLIC OUTDOOR ROOM
MINI BUSES	OFFICE CONNECTIONS
PROMENADE	NUMBER OF STORYS
ACTIVITY NODES	BUILDING COMPLEX
LOOPED LOCAL ROADS	SITE REPAIR
T JUNCTIONS	TREE PLACES
PATH NETWORK	SOUTH FACING OUTDOORS
ROAD CROSSING	CONNECTED BUILDINGS
QUIET BACKS	MAIN GATEWAYS
ACCESSIBLE GREEN	MAIN ENTRANCE
SMALL PUBLIC SQUARES	FAMILY OF ENTRANCES
DEGREES OF PU	
LOCAL SPORTS	
SMALL PARKIN	

This list of 30 patterns deals with problems of space, roads, and buildings. It is specific problem oriented, yet, of course, th

UNIVERSITY POPULATION

OPEN UNIVERSITY

STUDENT HOUSING DISTRIBUTION

UNIVERSITY SHAPE AND DIAMETER

UNIVERSITY STREETS

LIVING LEARNING CIRCLE

FABRIC OF DEPARTMENTS

DEPARTMENTS OF 400

DEPARTMENT SPACE

LOCAL ADMINISTRATION

STUDENT COMMUNITY

SMALL STUDENT UNIONS

PARKING SPACES



New Portland Patterns:  
Abundant Natural Light  
An Atrium for Architecture and Allied Arts  
Prominent Main Entry  
A Street Presence  
Galleries, Event Rooms, and a Cafe  
Studios as Social Classrooms  
Generous Hallways and Lobbies

## university of oregon design procedures

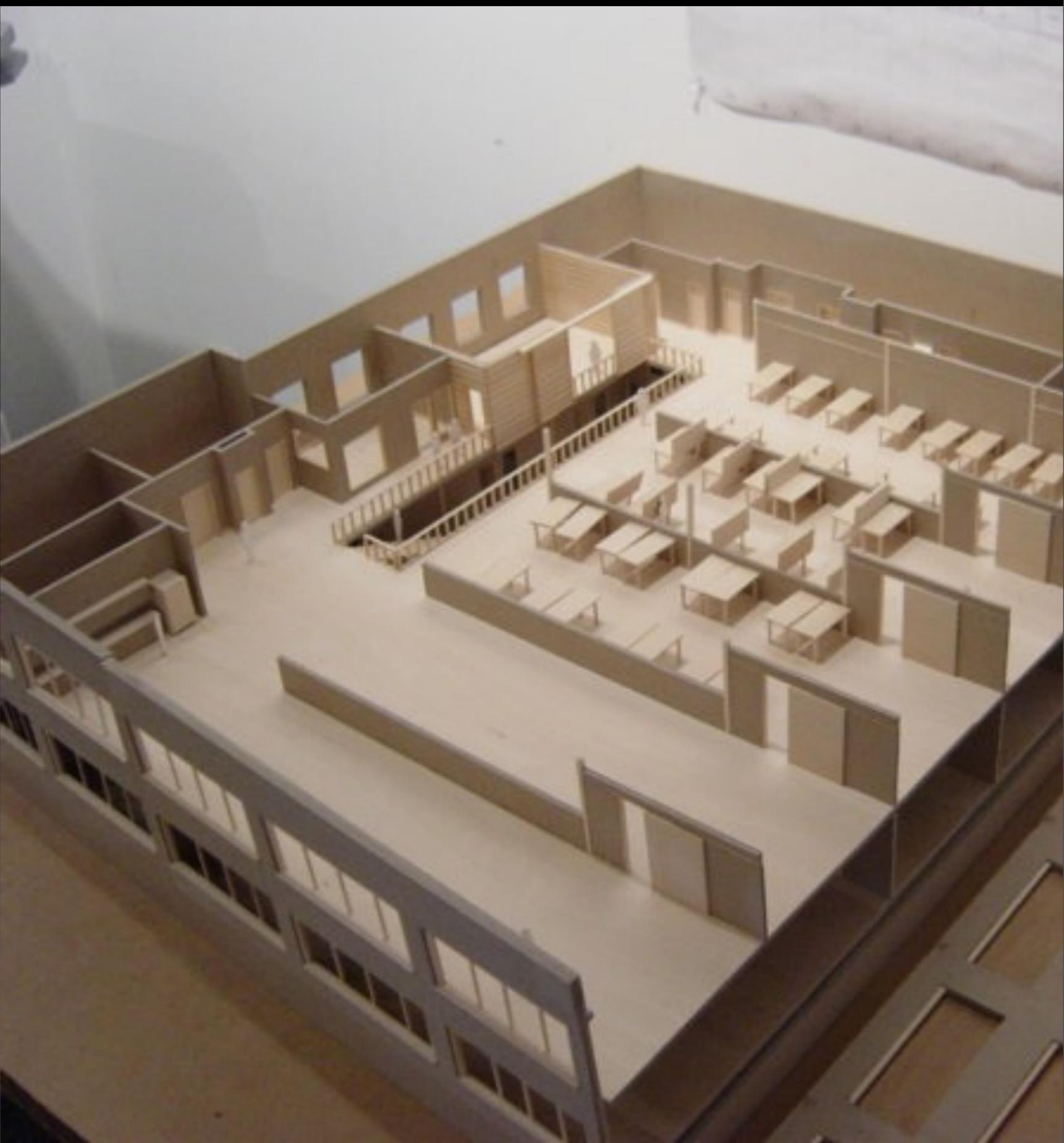
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interiors and furniture





Prof. I

r - 2010



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Meiji University Tokyo Japan

November - 2010



New White Stag Urban Campus - University of Oregon Portland

# A PROJECT LANGUAGE

Based on Visions, Concrete Imaginations, Projects, and Patterns

Eishin Campus Project Language  
Neustadt Project Language  
Sakura Tsutsumi  
etc

# The Eishin Highschool and College Campus in Tokyo - Japan 1983- Present



Prof. Dr. Hajo Neis - Portland/Berkeley

Meiji University Tokyo Japan

November - 2010

Principle Participation: All teachers, administrators, staff and a number of students are involved in the design process.

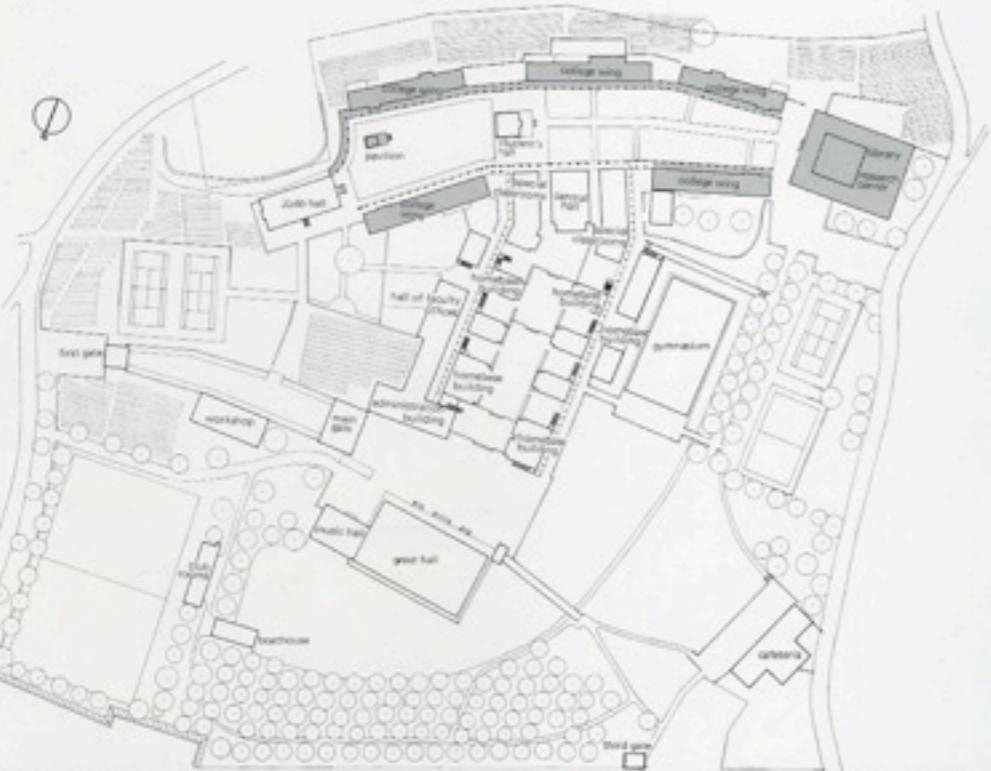


# Principle: Patterns and Pattern Language

**Data**  
 location: Iwama, Saitama Prefecture  
 architects and engineers:  
 C.E.S. (Center for Environmental Structure)  
 C. Alexander/H. Neis/I.F-King/G. Black/Astrid  
 Anninos/Ken Peterman/Neil Mathias/Astrid  
 Chiwoka/Kazuhiko Kasai  
 staffs of C.E.S. JAPAN  
 Torashichi Suntoryohi/Minoru Nishida/Hiroshi  
 Nakano/Takeshi Ishikubo/Tamio Shiohara/  
 Toshihiko Sasaki  
 mechanical engineers and general contractor:  
 Fujita Corporation  
 site area: 62,123m<sup>2</sup>  
 building area: 5,606m<sup>2</sup>  
 total floor area: 9,061m<sup>2</sup>  
 (homebase buildings)  
 buildings area: 1,499m<sup>2</sup>

total floor area: 2,446m<sup>2</sup>  
 structure: reinforced concrete; 2 stories  
 (central hall)  
 total floor area: 236m<sup>2</sup>  
 structure: wood; 1 story  
 (administration)  
 building area: 271m<sup>2</sup>  
 total floor area: 543m<sup>2</sup>  
 structure: block (1st floor) and wood (2nd  
 floor); 2 stories  
 (main gate)  
 building area: 173m<sup>2</sup>  
 total floor area: 463m<sup>2</sup>  
 structure: reinforced concrete; 3 stories  
 (gymnasium)  
 building area: 672m<sup>2</sup>  
 total floor area: 1,134m<sup>2</sup>

structure: wood and partly reinforced concrete;  
 2 stories  
 (great hall)  
 building area: 845m<sup>2</sup>  
 total floor area: 1,686m<sup>2</sup>  
 structure: steel frame; 3 stories  
 (auditorium)  
 building area: 233m<sup>2</sup>  
 total floor area: 233m<sup>2</sup>  
 structure: wood; 1 story  
 (dining hall)  
 building area: 352m<sup>2</sup>  
 total floor area: 401m<sup>2</sup>  
 structure: wood; 2 stories  
 completion date: August, 1985  
 photos: Hiroshi Kobayashi, Photo Dept., JA



Site plan; scale: 1/2,000. (Buildings under planning are expressed in grey).

General view from the northeast.



24 The Japan Architect 8508

The pattern language consists of the following eight sections:

1. *The Global Character*
2. *The Inner Precinct*
3. *The Building of the Inner Precinct*
4. *The Streets of The Inner Precinct*
5. *The Outer Precinct*
6. *The Internal Structure of the Main Buildings*
7. *The Special Details of the Exterior*
8. *Interior Building Character*

The following text shows the summary covering the section 1, 2, 3 and 8.

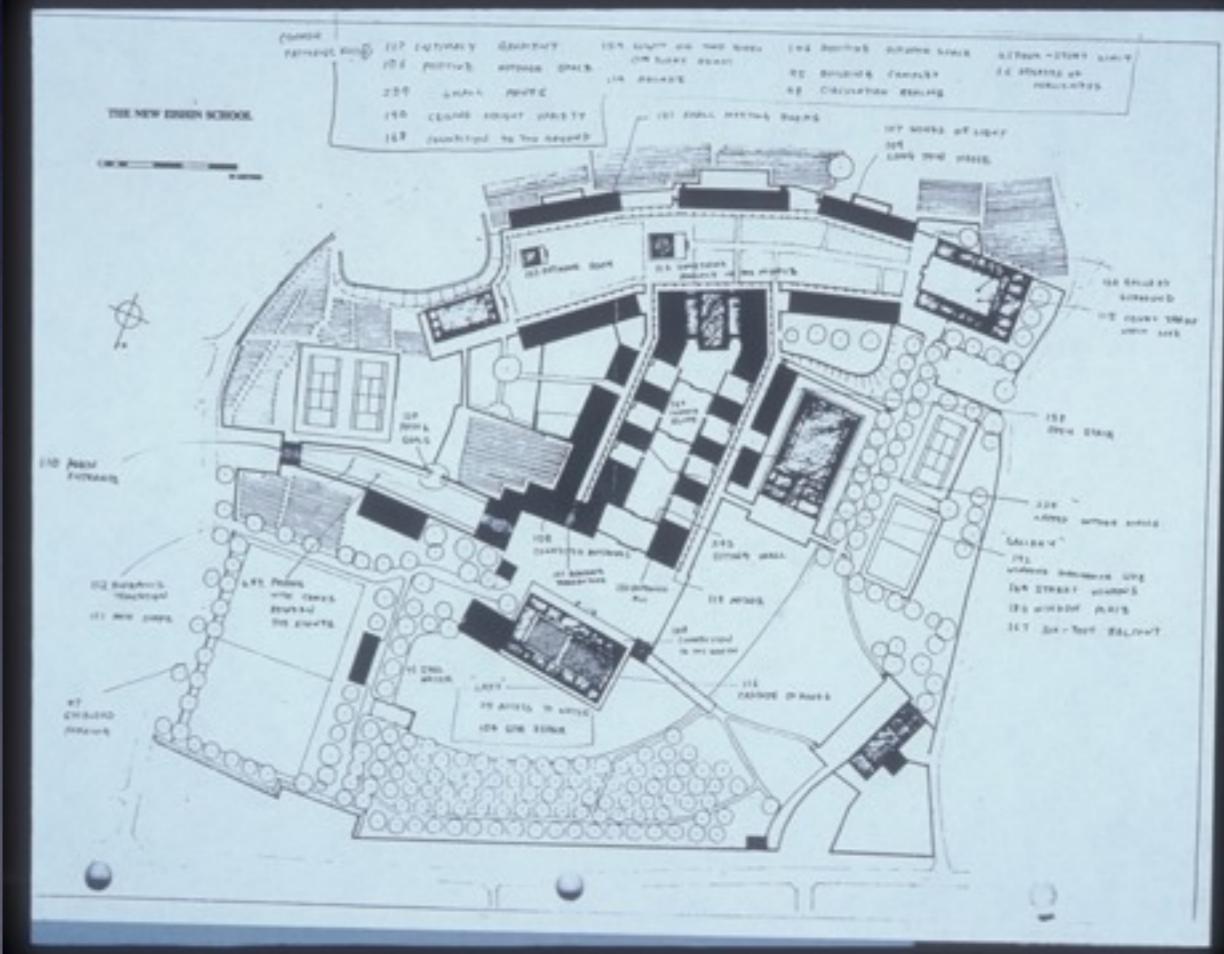
## 1. THE GLOBAL CHARACTER

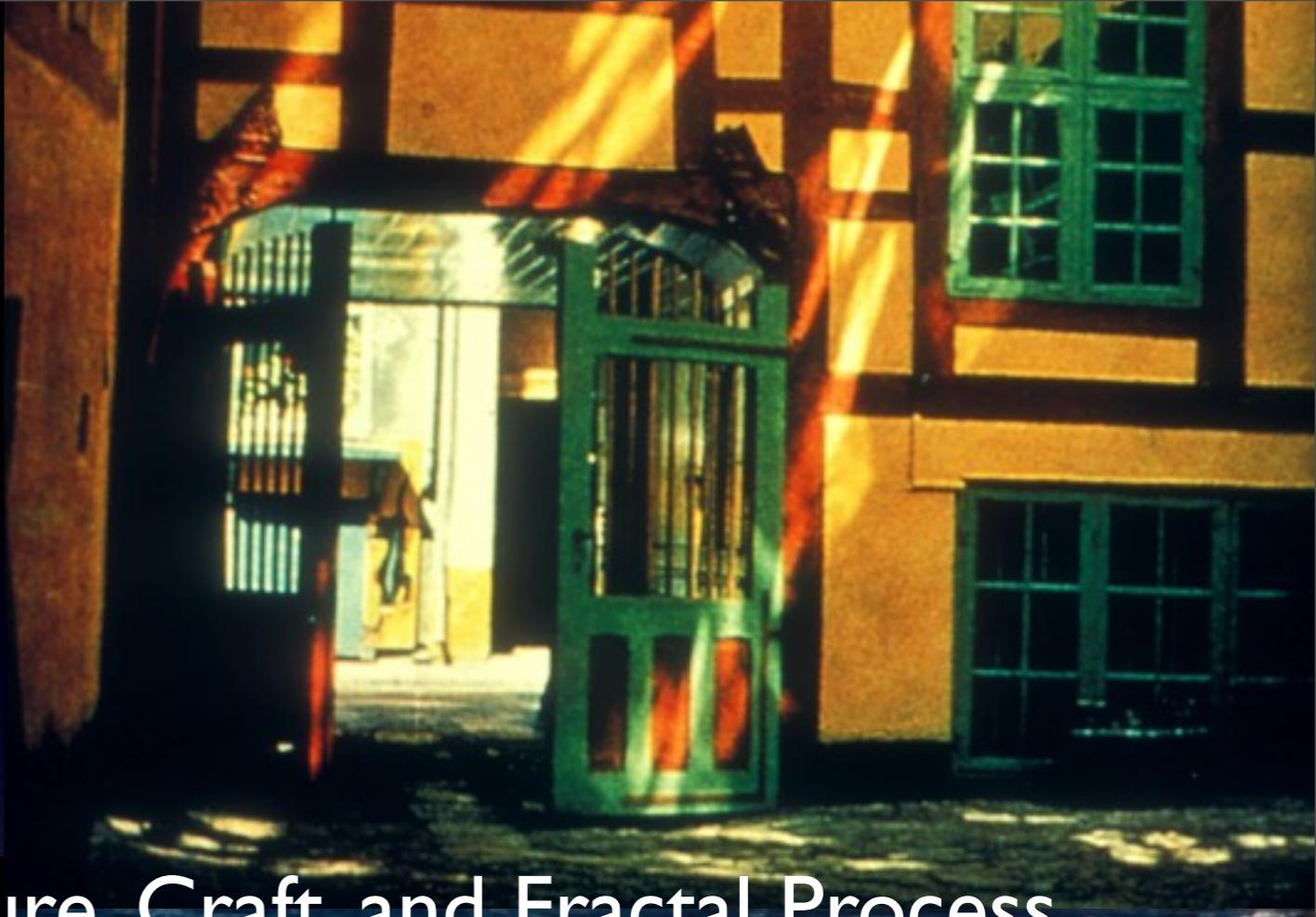
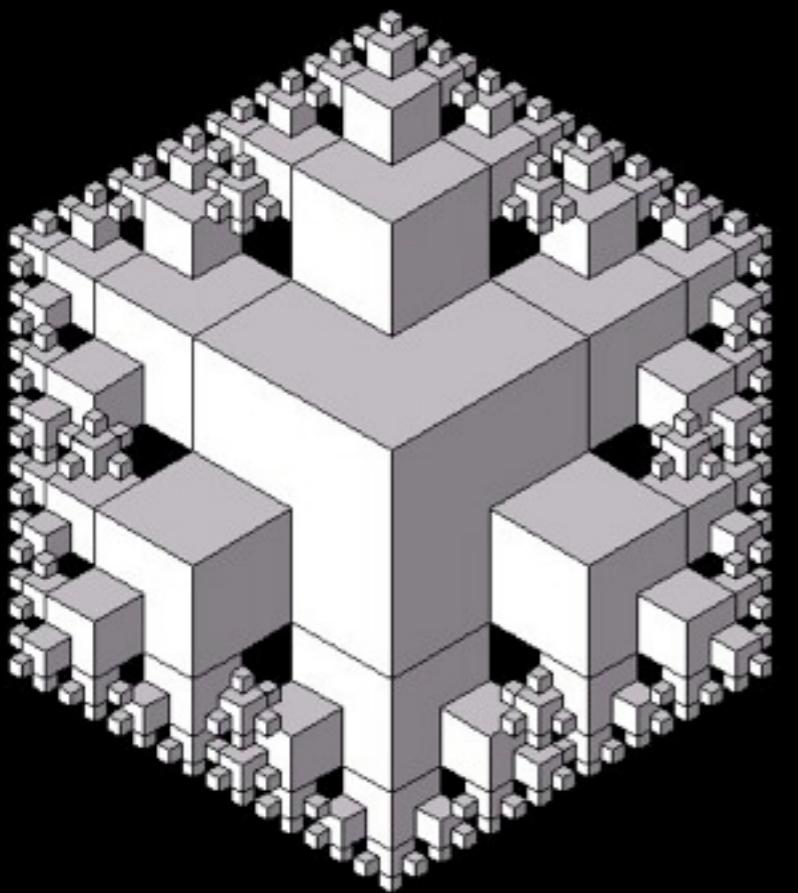
1. The buildings and the site are given their character by stone foundation walls, wood columns, white walls, a few special places with red lacquered wood, wide overhanging roofs, dark roof surfaces, stones and grass on the ground.
2. There is an outer boundary which surrounds the site.
3. Inside the outer boundary, there is an inner boundary which surrounds a smaller area; about one-fifth of the whole site.
4. The area inside the inner boundary is

8. This essential center is fairly large—itself a world, bounded, within the inner precinct and formed by paths and gates. This essential center contains a large part of the high school, and a large part of the university.
9. Since the essential center, is at one and the same time, the heart, and crossroads of the school and university, it has the rough form of a cross-formed by crossing paths. Because it resembles the Japanese character ( 田 ), we have therefore named it the *ta-no-ji* center.
10. At the crossing of the streets and paths which form the *ta-no-ji* center, there is a smaller center: this place is the *kernel* of the busy part of the *ta-no-ji* center.
11. And, opening from the far side of the *ta-no-ji* center, is a higher, and most peaceful place—we call the college cloister. This is the inner sanctum of the university, and the most peaceful place of all. It is chosen to be in a place which invites contemplation.
12. Also opening directly from the *ta-no-ji* center, is the homebase street. The homebase street is a wide, lively, sunny street formed by the individual homeroom buildings where the

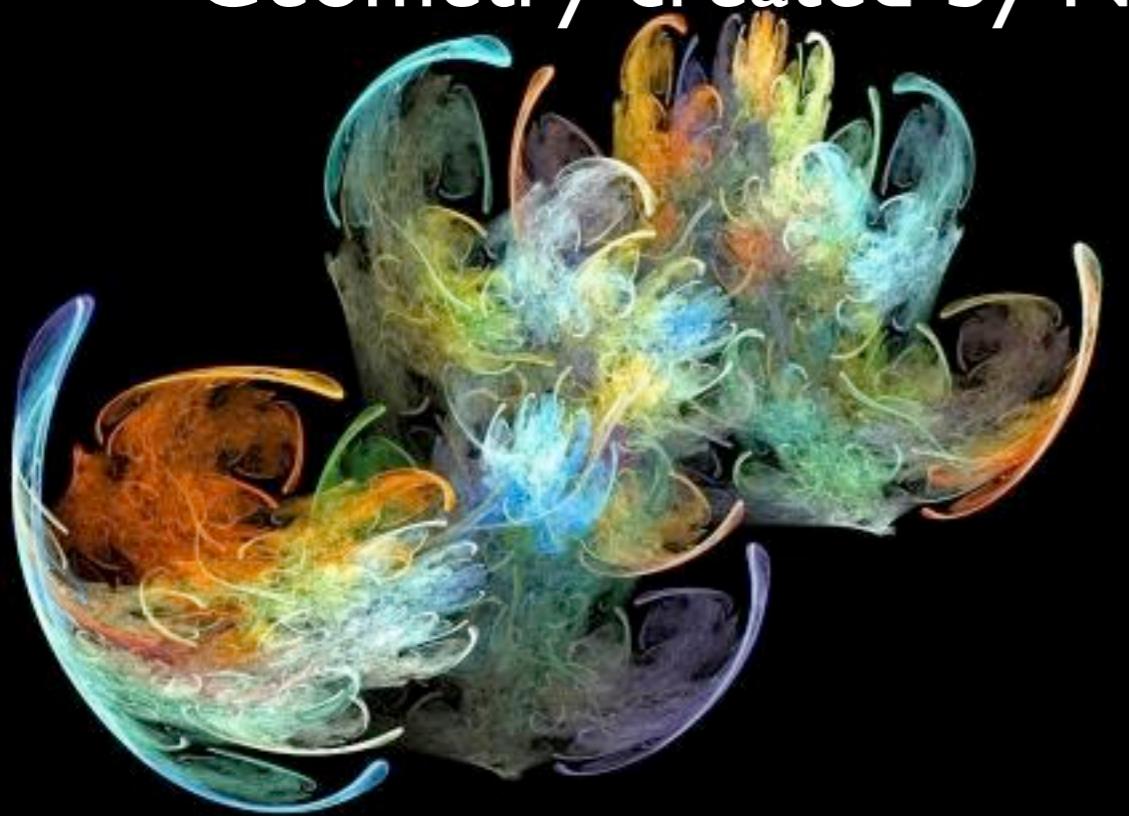
ings include the *judo* hall, a small gymnasium, clubrooms, smaller classrooms and lecture halls.

7. The buildings which form the homebase street, are the individual homeroom buildings. Each of these buildings is two storeys high, and has one classroom on each floor, the upper one with its own staircase leading to the ground.
8. Opening off the homebase street, the large gymnasium is placed to form a major center. Under some circumstances, this major center might move out into the outer precinct.
9. The secondary center of the homebase street, is the faculty hall, which stands somewhere near the middle of the street, as easily accessible to all the homerooms as it can be.
10. The buildings which form the college cloister, are the research buildings for the college faculty. These are buildings where intensive discussion about the problem of local government, and research, take place.
11. The main center of the college cloister is the library. It stands two storeys high, with the main reading room on





Geometry created by Nature, Craft, and Fractal Process



Roger Johnston

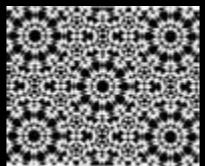
# Language of Centers

## 15 Properties of Natural Morphology

1. Levels of scale



2. Strong centers



3. Boundaries



4. Alternating Repetition



5. Positive Space



6. Good shape



7. Local Symmetries



8. Deep Interlock and Ambiguity



9. Contrast



10. Gradients



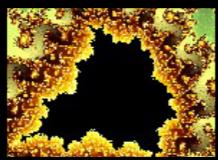
11. Roughness



12. Echoes



13. The Void



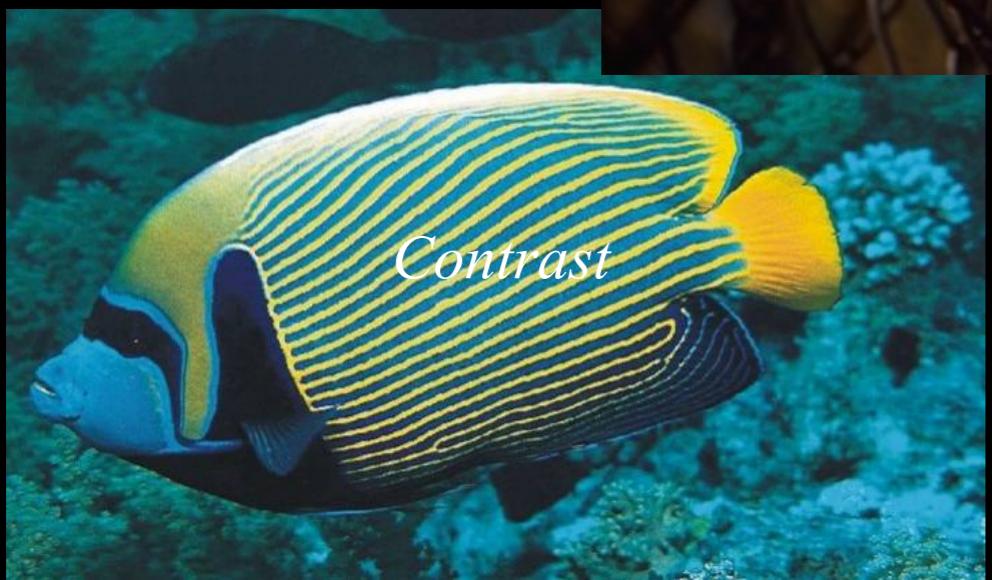
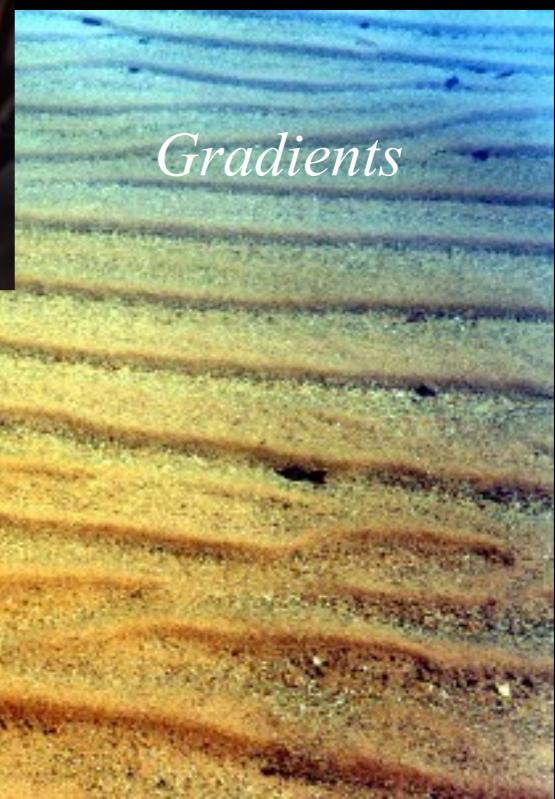
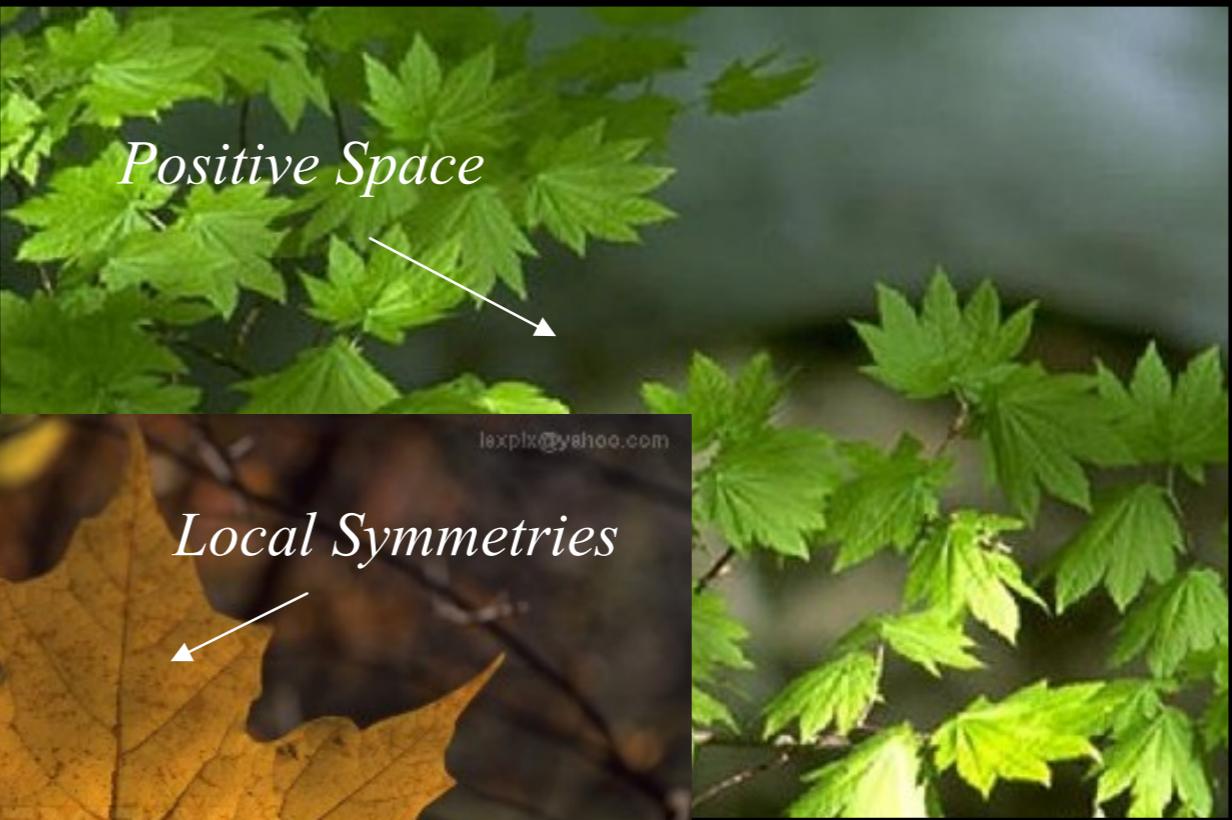
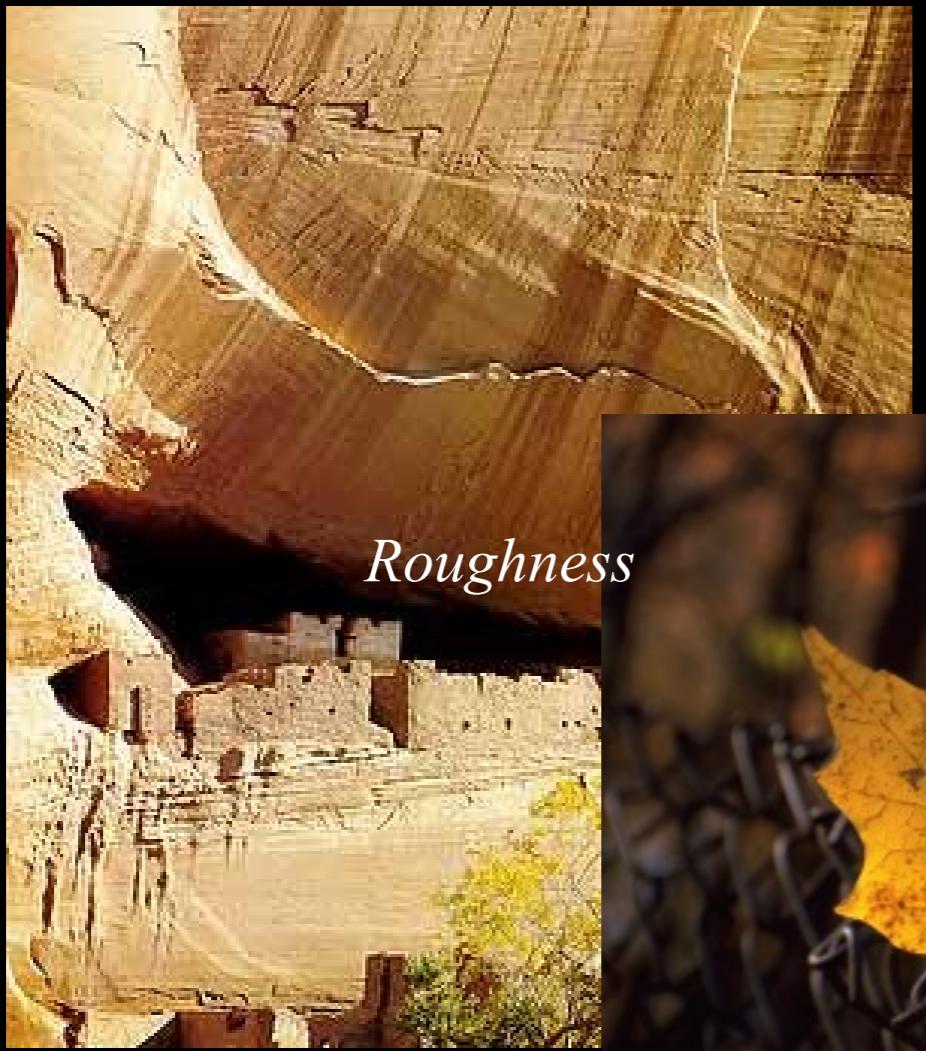
14. Simplicity and inner calm



15. Not-separateness







# ARCHITECTURAL PROCESS

Based on Pattern Language, Language of Centers, and Adaptation as Process

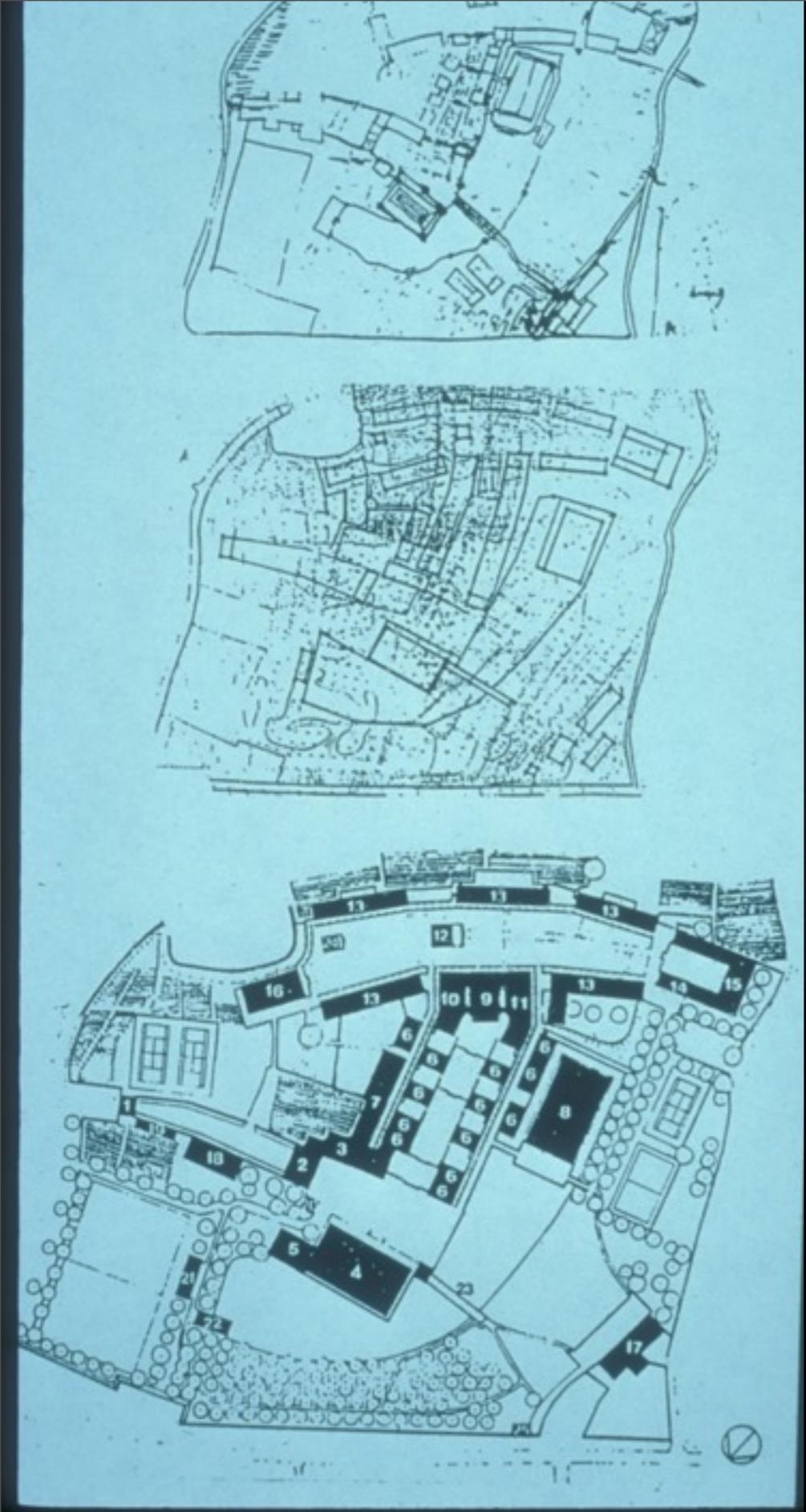
Eishin Campus Project  
Emoto Apartment Building  
Sakura Tsutsumi  
etc

Process of Adaptation in a Project largely  
depends on the Application of  
the Language of Centers or Geometry

# The Eishin Highschool and College Campus in Tokyo - Japan | 1984- Present

CES: Eishin Campus - Japan





## Formation of Site Plan: Staking out the Site





# Continuous Design and Construction





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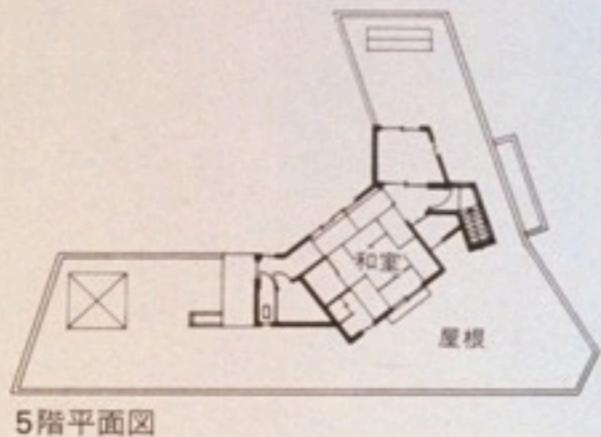
# Emoto Condo and Apartment Building in Tokyo Komagome

n

November - 2010



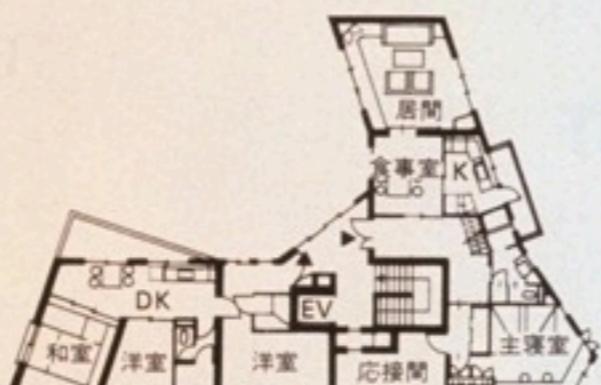
2階平面図



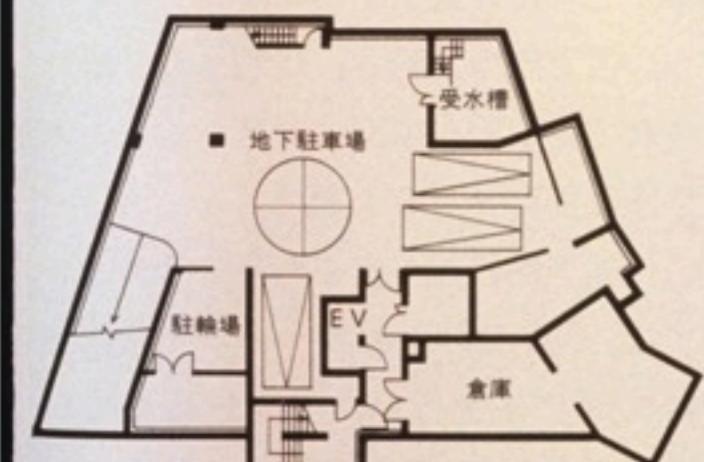
5階平面図



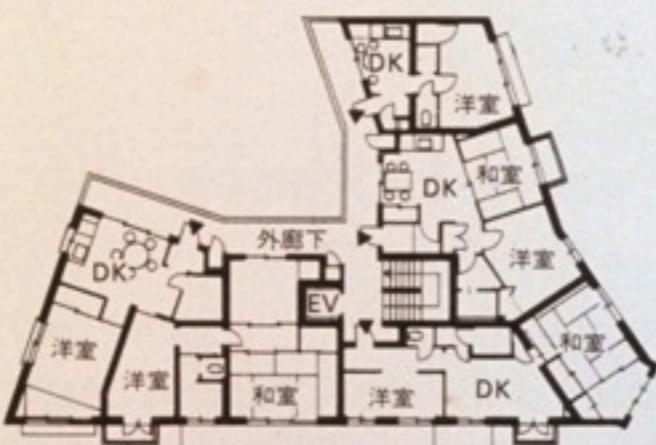
1階平面図 (1/500)



4階平面図



地階平面図



3階平面図



# The Patterns of Patterns - Pattern Language and Beyond

MICC Experten/innen-Workshop, November 2010

## Beyond Patterns: From Pattern Language to the Language of Centers

### Patterns and A Pattern Language

- A. New Developments of Patterns and Adaptation as Archetype
- B. Patterns for Projects based on the book A Pattern Language APL

### A Pattern Project Language

Based on APL plus the Formulation of a Set of new Patterns

### A Project Language

Based on Visions, Concrete Imaginations, Projects, and Patterns

### A Center Language

Based on Fifteen Geometrical Properties of Natural Morphology

### Architecture Process and Projects

Based on Pattern Language, Language of Centers, and Adaptation as Process

# Overriding Principles

Wholeness

Growing Whole and **Adaptation**

Wholeness in the Structure of the City

The City as a Growing Whole

Sustainability

## Primary Principles

Organic Order

Piecemeal Growth

**Participation**

**Patterns and Pattern Languages**

Structure Preserving Transformations

Formation of Centers and Fields of Centers

Formation of Larger Wholes

Formation of Positive Urban Open Space

**Centers and Geometrical Properties**

Application of Color Properties

Generative Design and Building Sequences

Integrated Design and Construction

## Other Principles and Techniques

Diagnosis and Coordination

Working Directly with the Building or Urban Area

Staking out the Site

Primary Responsibility to the Building

Innovation through Building

Music/Innovation/Corporate Culture

# *Vielen Dank*

**For more information on the award-winning Berkeley based Organization: Center for Environmental Structure:**

**<http://www.patternlanguage.com>**

**For more information on the Portland Urban Architecture Laboratory:**

**<http://puarl.uoregon.edu>**

**Contact:**

**[hajoneis@uoregon.edu](mailto:hajoneis@uoregon.edu)**

# Next PUARL Conference on Patterns and Process in Portland - Oregon October 2011

Stay Tuned

A Publication of the Portland Urban Architecture Research Laboratory

Fall 2009 International PUARL Symposium

Current Challenges for Patterns,  
Pattern Languages & Sustainability

Edited by Dr Hajo Neis & Gabriel Brown



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