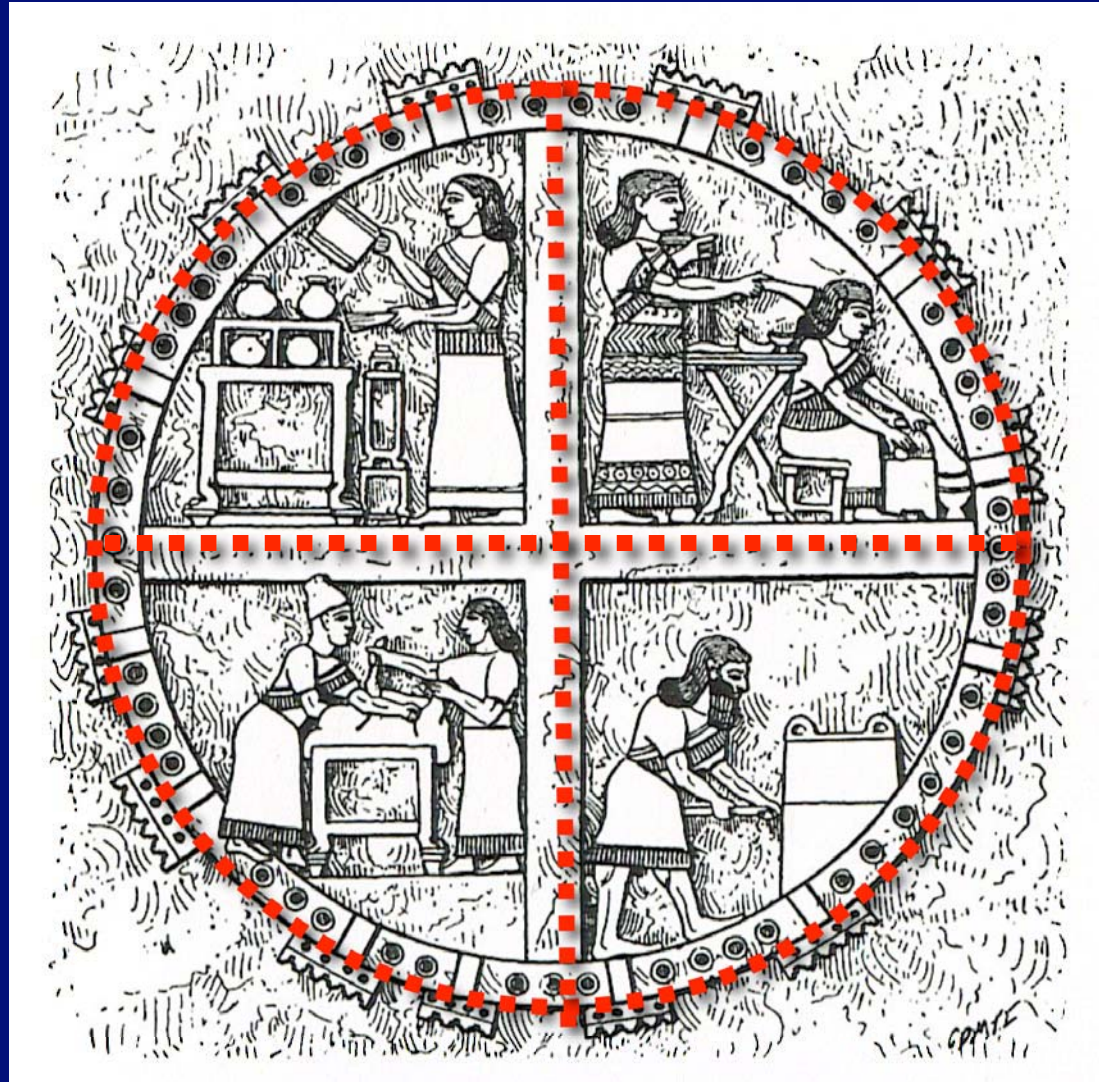


# THE “ARK MODULE”



**Jaime Correa**

University of Miami and Jaime Correa and Associates



The most basic representation of the city (Egyptian Hieroglyph + Assyrian Figures)  
Non-linear archetypal image of the city (**Art and Science**)

THE LATTICE

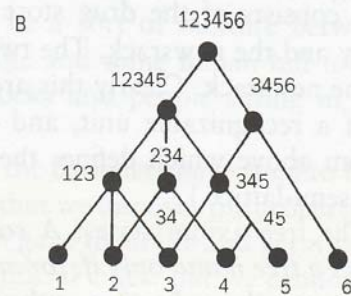
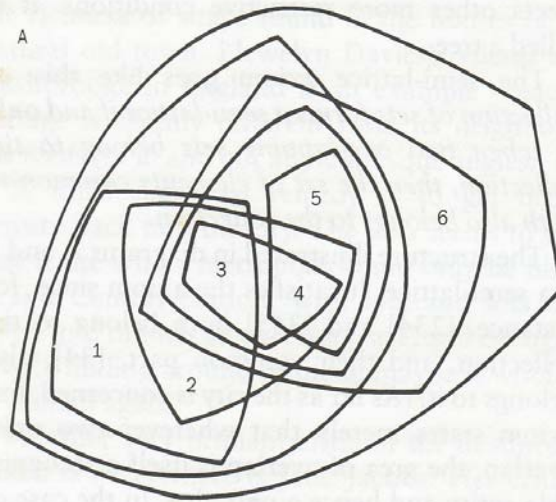
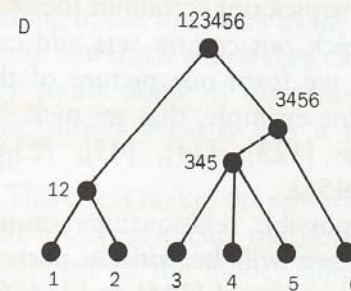
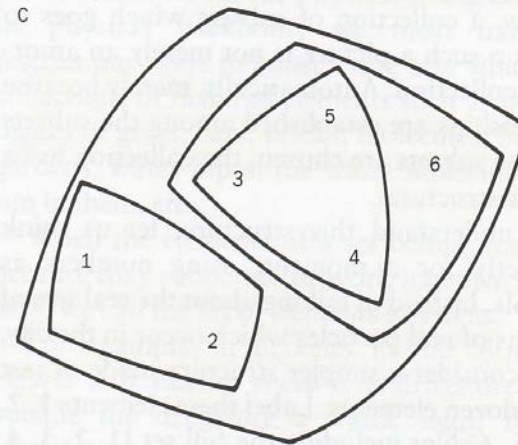


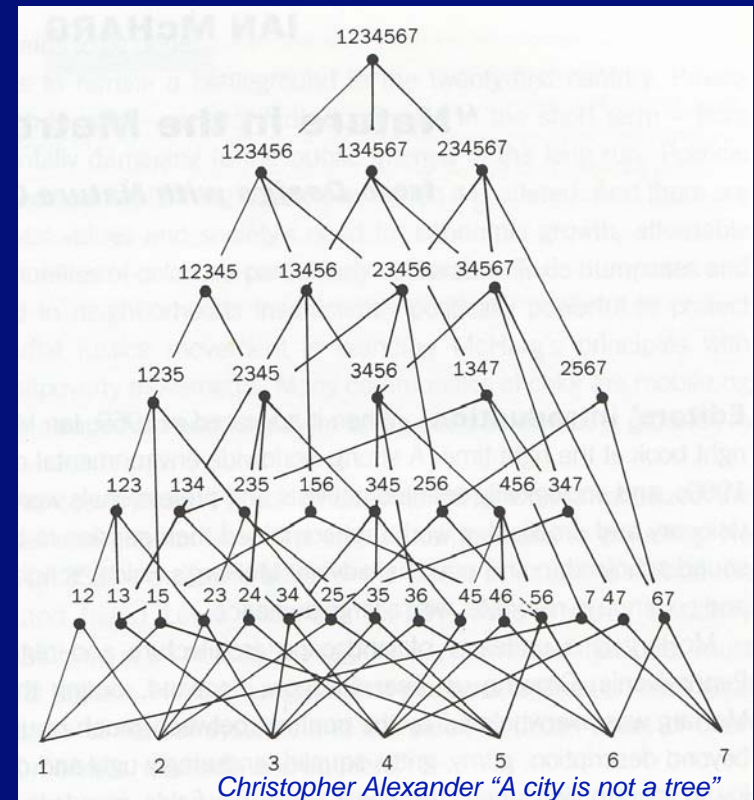
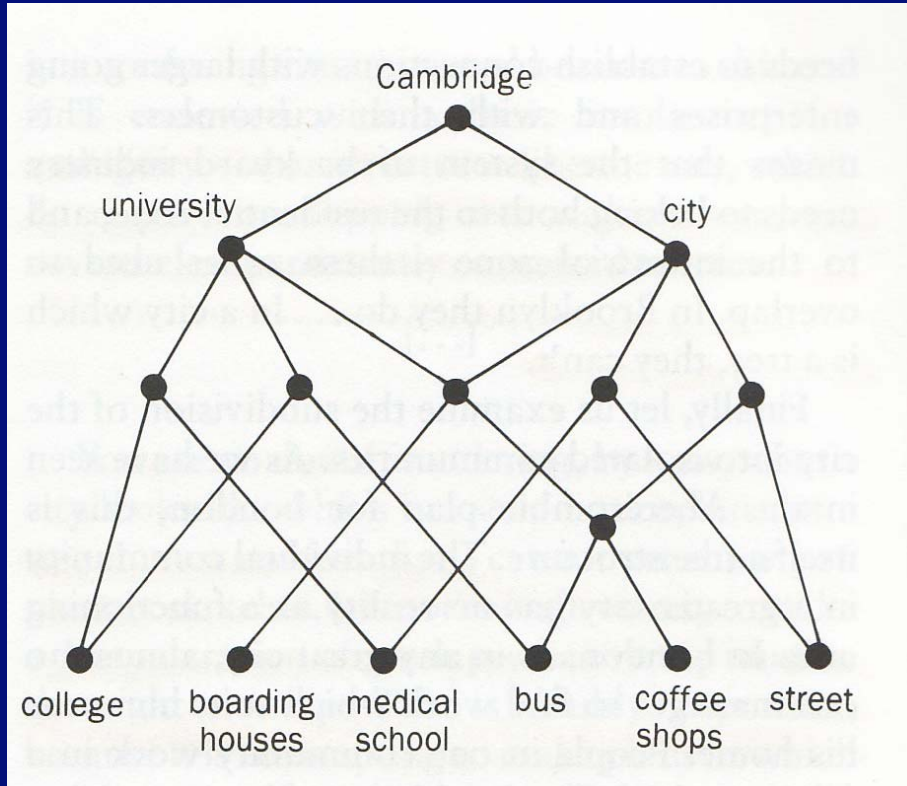
Figure 1



Christopher Alexander "A city is not a tree"

THE TREE

The mind's first function is to **reduce ambiguity and overlap** in a confusing situation

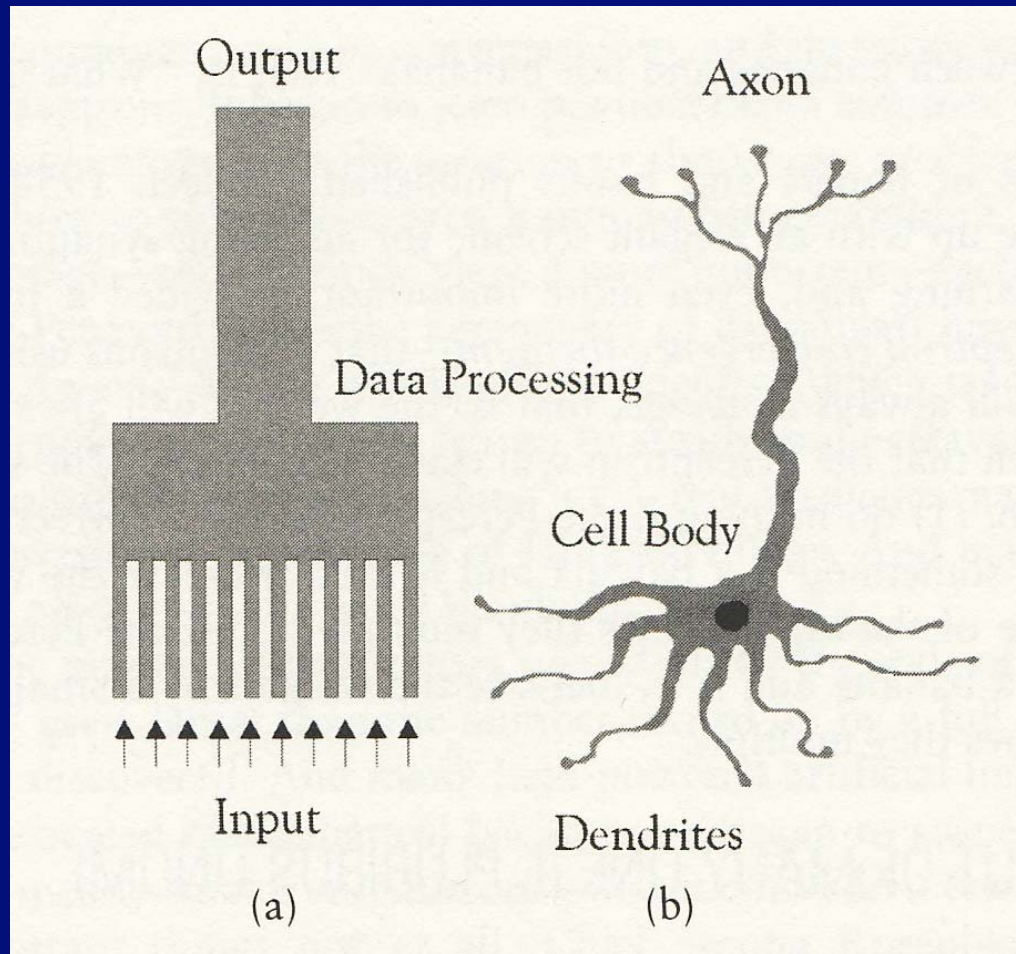


For the human mind, the tree is the easiest vehicle for complex thought.

But the City is not, cannot, and must not be a tree.

**THE CITY IS A RECEPTACLE OF LIFE ... A RECEPTACLE OF WHOLENESS**

ART



SCIENCE



The retina is not really a “part” of the eye at all.

It is organized not merely to gain light but to intelligently process visual data.

**THE RETINA IS A DISCRIMINATOR AND A CLASSIFIER.**

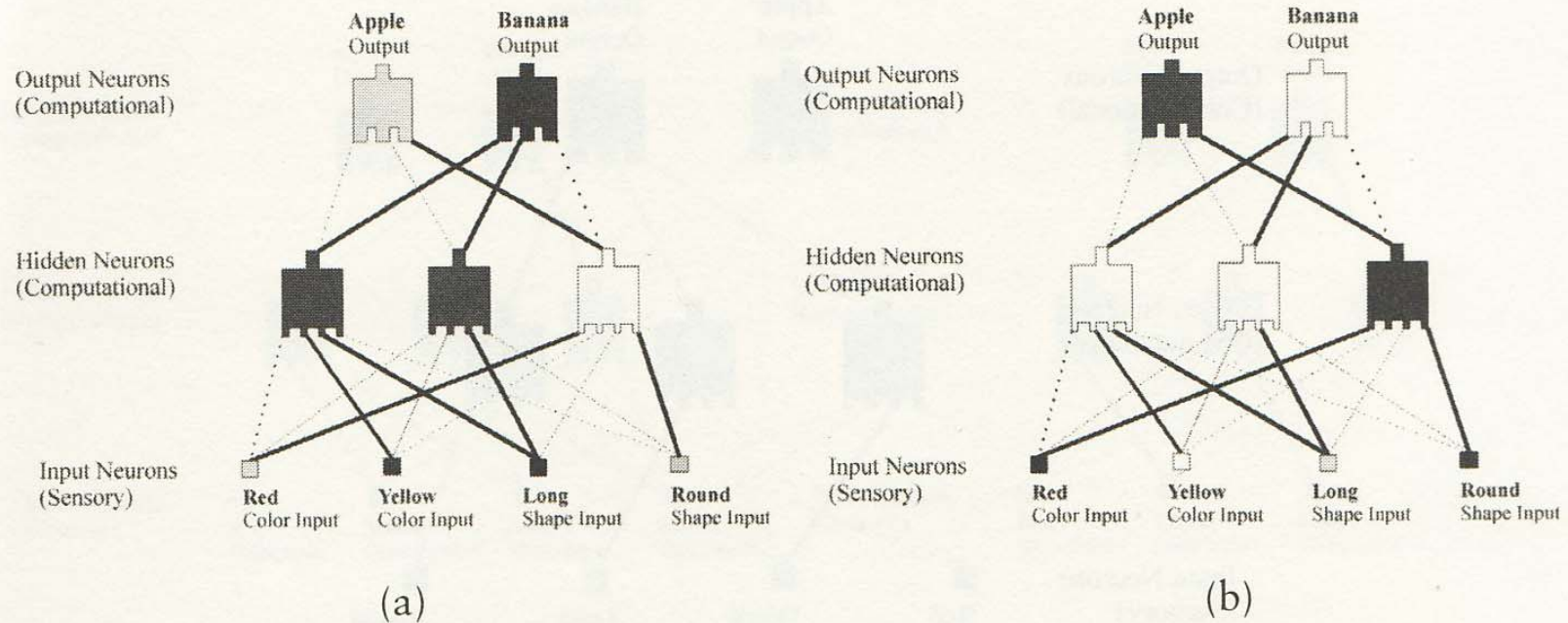


FIGURE 4-1 (a) Banana. (b) Apple.

A multilayer Perceptron discriminating between a BANANA and an APPLE.

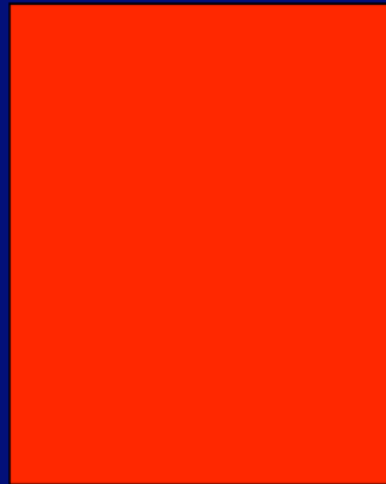
The person who builds the system decides the connections and the relationships.

**ALGORythms OF COMBINATIONS AND PERMUTATIONS CREATE EMERGING TYPOLOGIES.**

**SIMPLE ALGORYTHM (Science)**

**Lot**

**Building**

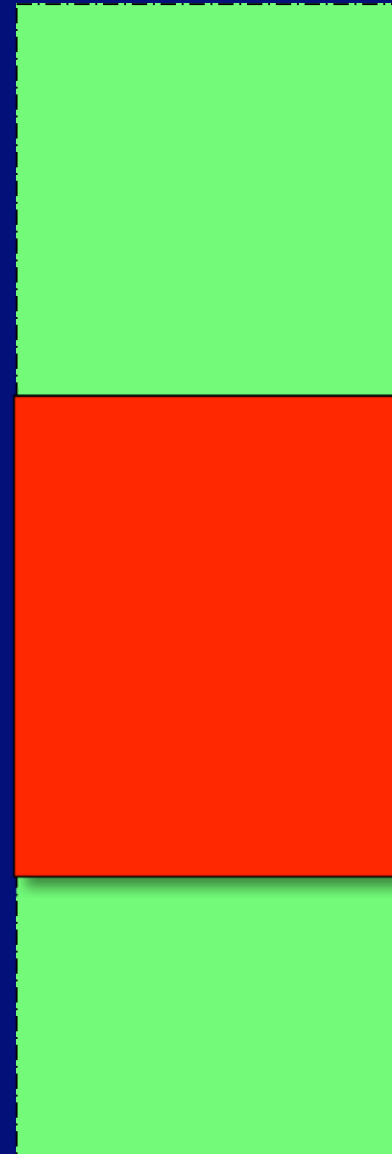
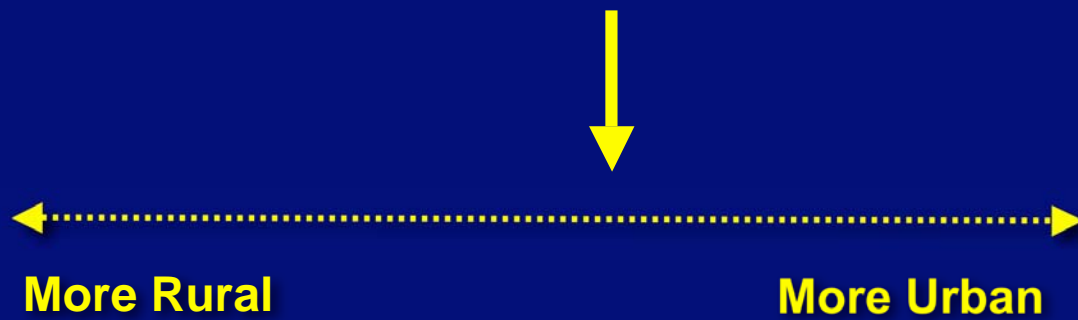


# SIMPLE ALGORITHM (Science)

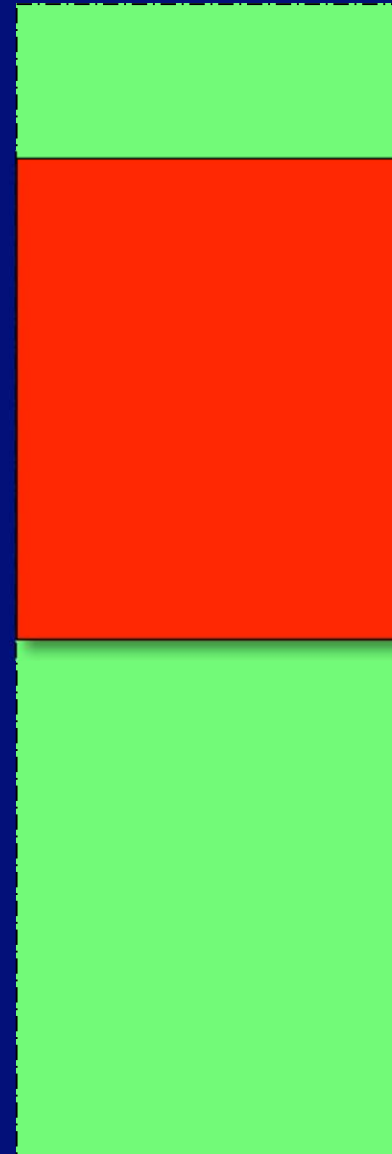




# SIMPLE ALGORYTHM (Science)



# SIMPLE ALGORITHM (Science)

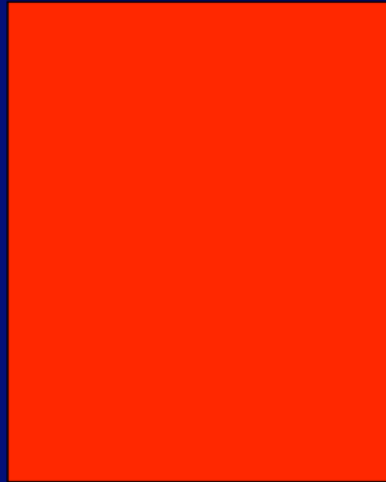
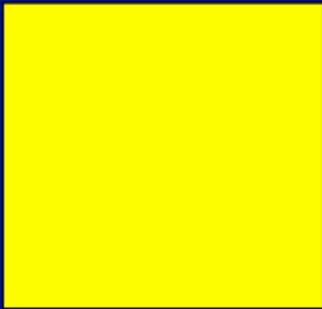


**SIMPLE ALGORITHM (Science)**

**Lot**

**Building**

**Garage**

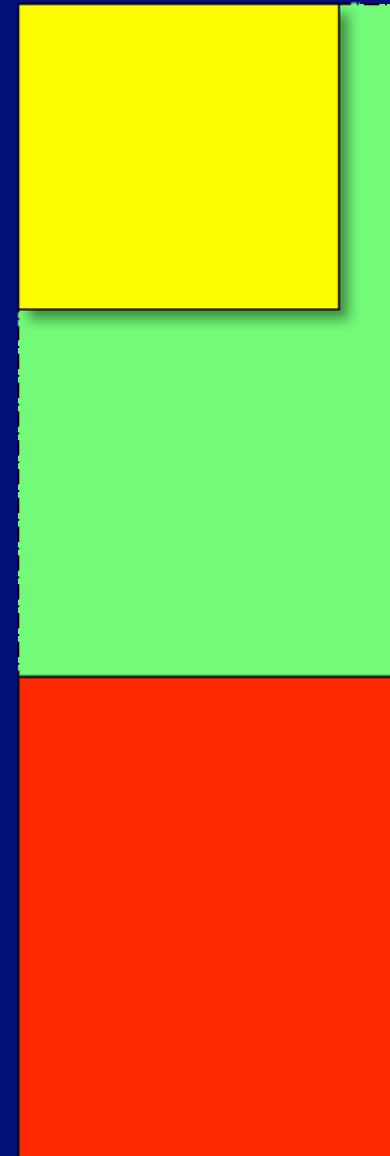


## SIMPLE ALGORYTHM (Science)

Lot +

House +

Garage = **Townhouse**

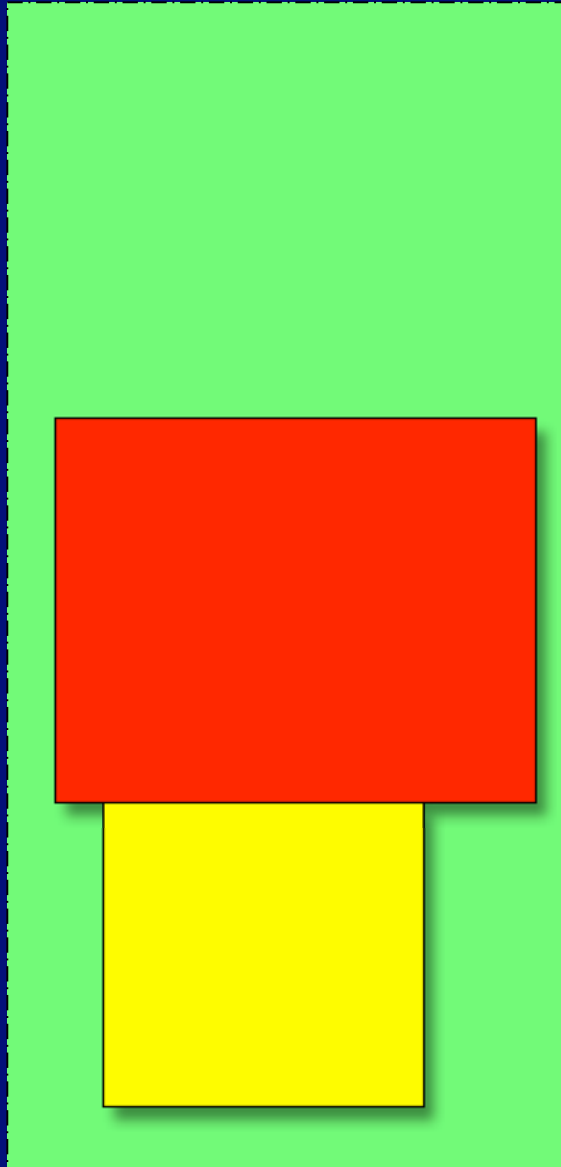


## SIMPLE ALGORITHM (Science)

Lot +

House +

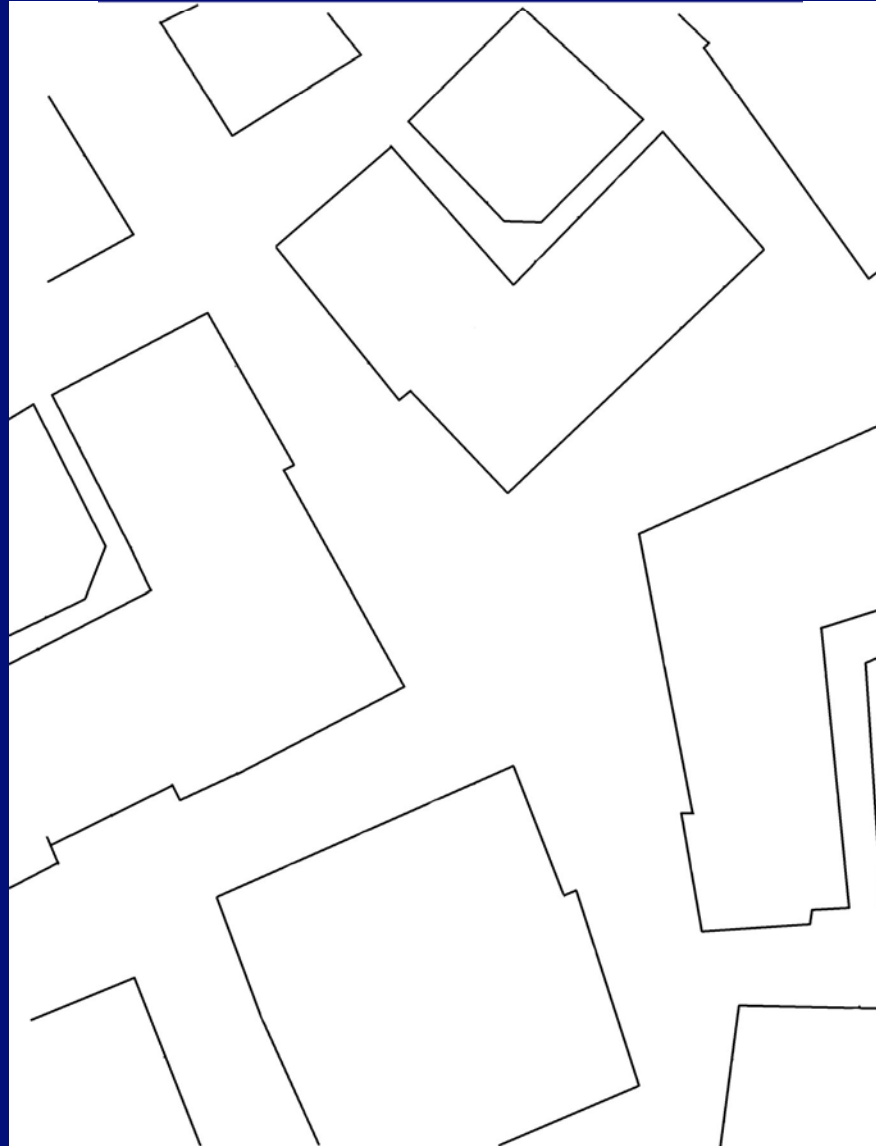
Garage = **Snout House**



Not every combination will result in something agreeable or correct!

## COMPLEX ALGORYTHM (Art)

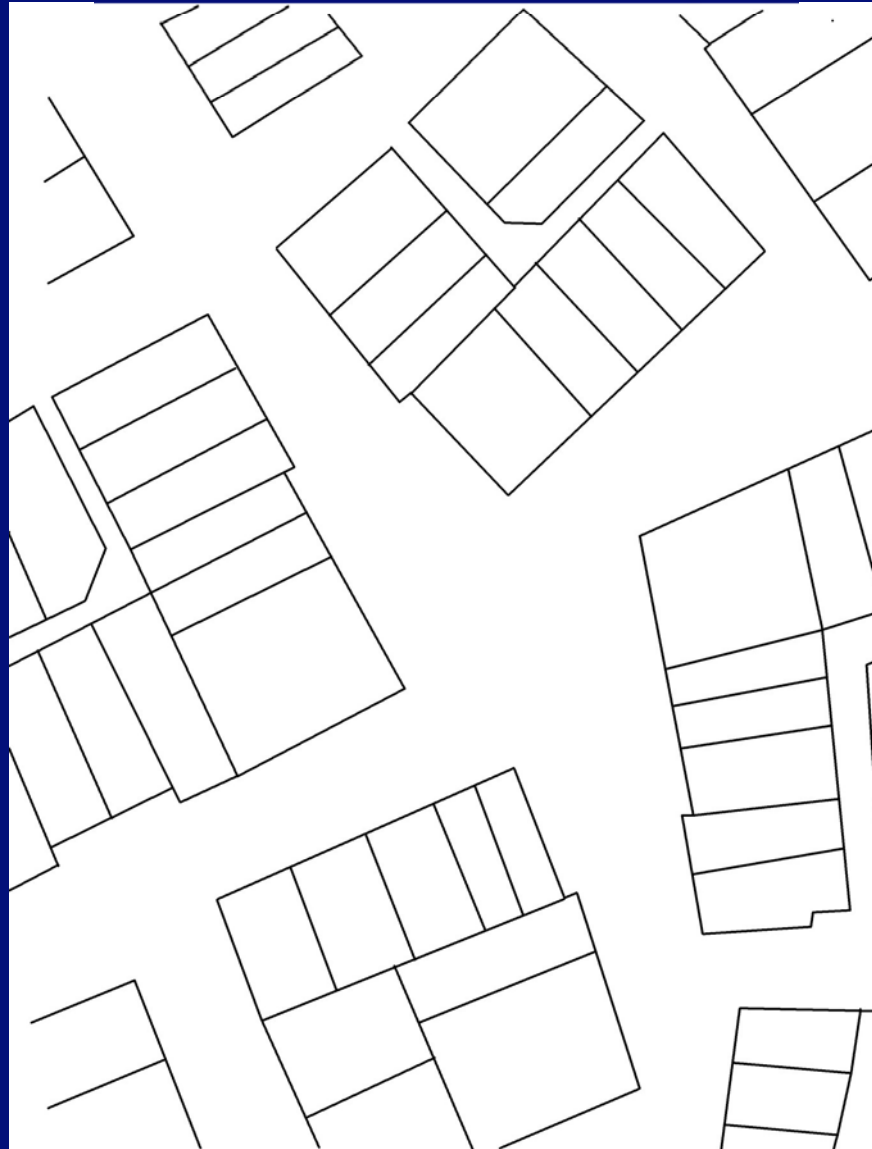
**Blocks**



The same type of “ALGORYTHMIC” design may be used to generate complex urban forms.

## COMPLEX ALGORYTHM (Art)

Lots



The same type of "ALGORYTHMIC" design may be used to generate complex urban forms.

## COMPLEX ALGORYTHM (Art)

### Sidewalks



The same type of “ALGORYTHMIC” design may be used to generate complex urban forms.



## COMPLEX ALGORYTHM (Art)

**Buildings**



The same type of “ALGORYTHMIC” design may be used to generate complex urban forms.

## COMPLEX ALGORYTHM (Art)

### Encroachments



The same type of “ALGORYTHMIC” design may be used to generate complex urban forms.

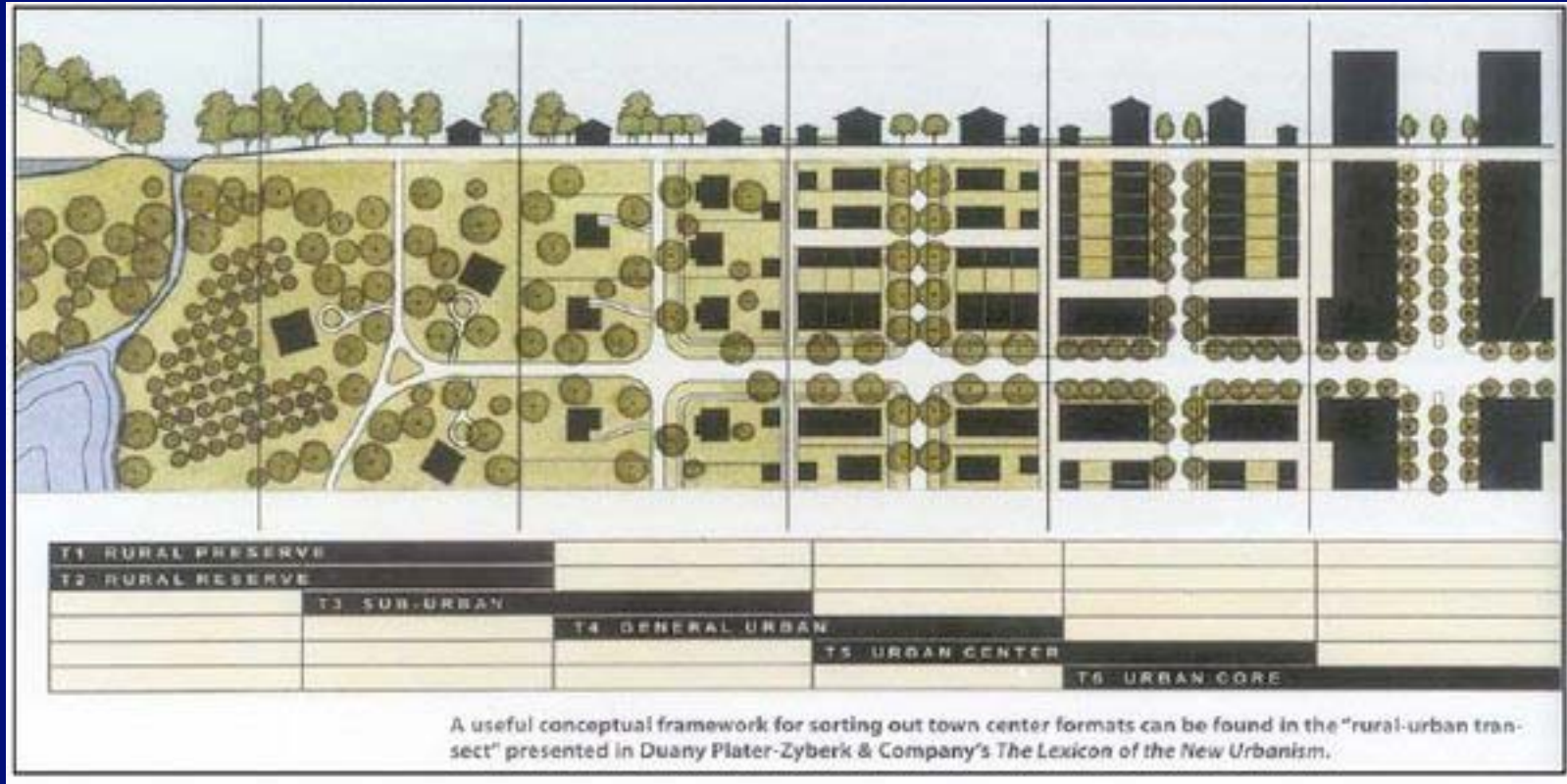
## COMPLEX ALGORYTHM (Art)

### Landscape



The same type of “ALGORYTHMIC” design may be used to generate complex urban forms.

## EXTREMELY COMPLEX ALGORYTHM (Science and Art)



## THE TRANSECT

The same type of "ALGORYTHMIC" design may be used to generate complex urban forms.



The same kind of **EXTREMELY COMPLEX ALGORythMS** exist in this metaphor of sustainability.

# THE STORY

---

“Then the people begun to multiply ... The Lord observed the extent of human wickedness ... and he was sorry he had ever made them ... but, Noah found favor in the Lord” (Gen. 6: 1-8)

“Build a 250 feet long boat from cypress wood and waterproof it with tar, inside and out; then construct stalls through out the interior” (Gen. 6: 14-15)

“Enter the boat with your family and bring a pair of every kind of animal” (Gen. 6: 19)

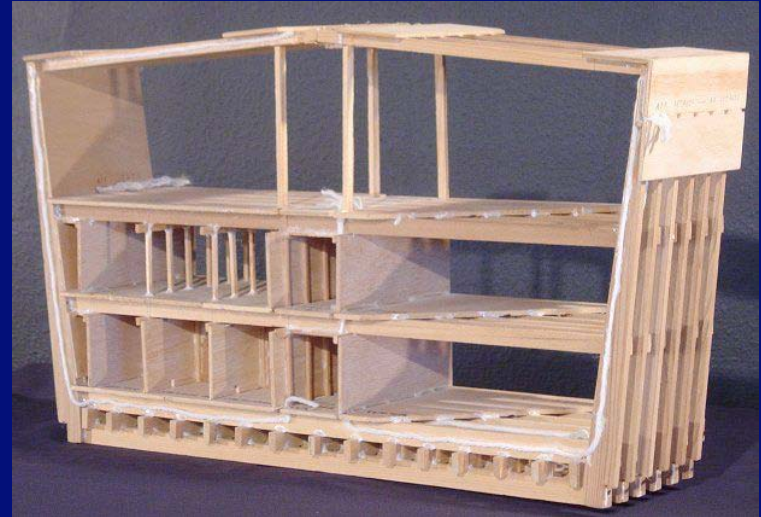
“... and be sure to bring enough food ... take seven pairs of each animal I have approved for food and sacrifice” (Gen. 7:19)

**1. FIND FACTS AND DEVELOP A GENERAL CONSCIOUSNESS**

**2. BUILD SUSTAINABLE ARCHITECTURE AND COMPACT CITY FORM**

**3. IT'S ALL ABOUT BIO-DIVERSITY**

**4. DON'T FORGET YOUR FOOD SUPPLY**



**THE ARK is a receptacle of WHOLENESS ... a metaphor for the SUSTAINABLE CITY.**

# THE STORY

---

“The rain fell in mighty torrents from the sky ...  
God wiped out every kind of living thing” (Gen.  
7: 11 and Gen. 7: 23)

## 5. START ANEW

“It is not about recycling”

“It is not cradle to grave”

“It is cradle to cradle”

“Cradle to cradle requires:

**INNOVATION**





# THE STORY

---

“Then Noah built an altar ... and there he burnt offerings” (Gen. 8: 20)

“Every living creature will look at you with fear and terror. I place them in your power” (Gen. 9: 2)

**6. BUILD A TEST SETTLEMENT**

**7. MOBILIZE CITIZENS AND  
CREATE POWERFUL POLICIES**



**THE ARK is a receptacle of WHOLENESS ... a metaphor for the SUSTAINABLE CITY.**

# THE STORY

---

“... And when I see a rainbow, I will remember the eternal covenant with God ... never again will earth be flooded” (Gen. 7:19)

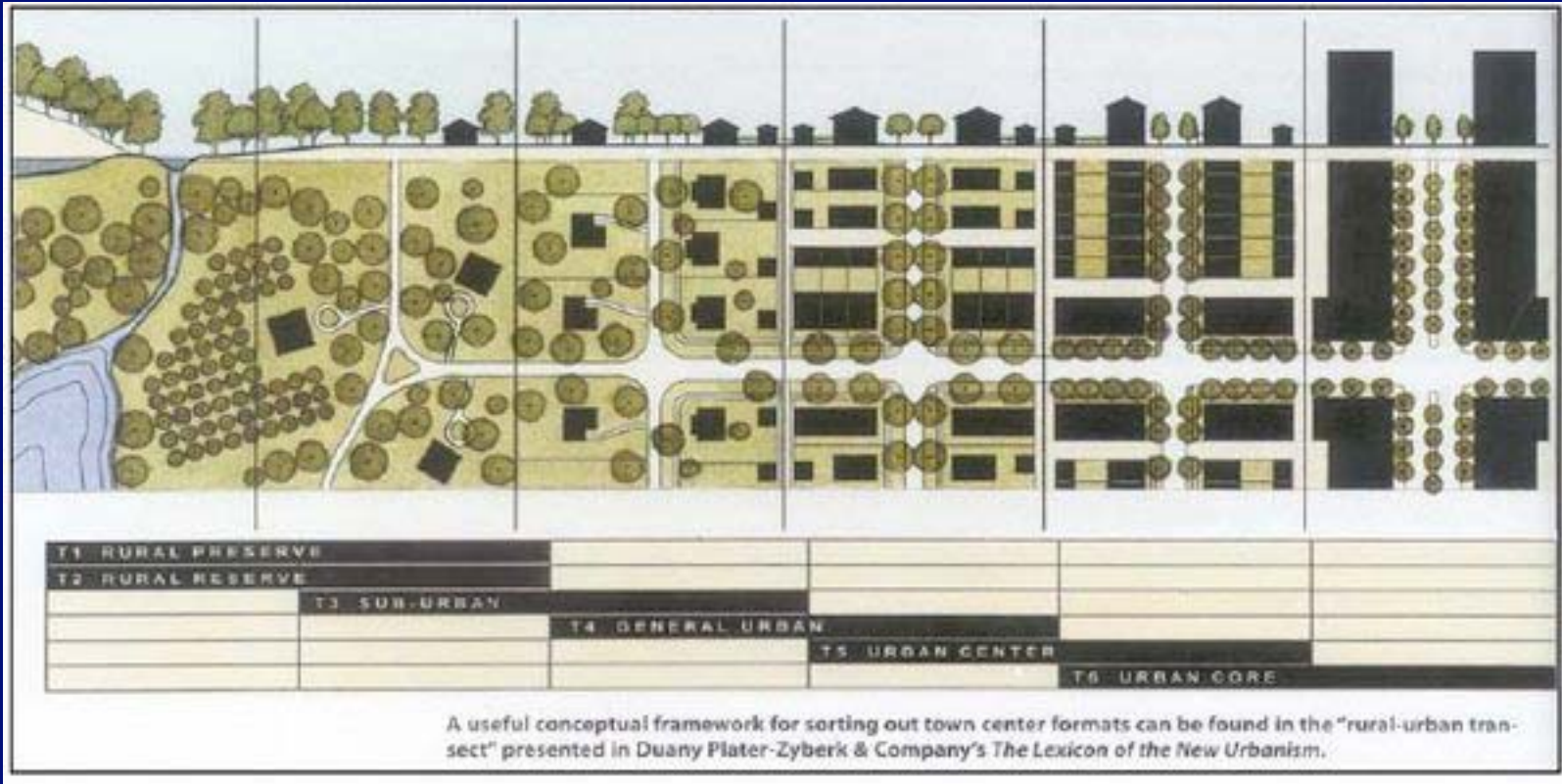
**8. CREATE A SUSTAINABILITY COVENANT (*a Charter*)**



9. BABEL... represents CULTURAL UNIQUENESS and GENIUS LOCI.

# HOW CAN SUSTAINABILITY BE PLUGGED INTO THE SmartCode®?

*(SmartCode® = Operational System for The Transect)*



HOW CAN SUSTAINABILITY BE PLUGGED INTO THE SmartCode®?

**BIBLICAL AGENDA**

**+**




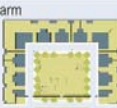

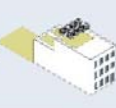

**ART AND SCIENCE**

---

**OPERATIONAL MODULE**

*(An addition / an Appendix to the Smart Code)*

TABLE 19: Food Production. This table shows ways of incorporating food production within the transect.

	T1	T2	T3	T4	T5	T6	SD	Specifics
Farm 	●						●	
Agricultural Plots 		●	●				●	
Vegetable Garden 		●	●	●				
Urban Farm 			●	●	●			
Community Gardens 			●	●	●	●		
Green Roof - Extensive - Semi Intensive - Intensive 	●	●	●	●	●	●	●	
Vertical Farm 					●	●	●	

Extensive Green Roofs are well suited to roofs with little load bearing capacity and sites which are not meant to be used as roof gardens. Semi-intensive Green Roofs fall between Extensive and Intensive Green Roof systems; they require more maintenance, higher costs and more weight. Intensive Green Roofs allow lawn, perennials, bushes and trees; they may have walkways, benches, playgrounds and ponds.

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## FOOD PRODUCTION

Farm

Agricultural Plots

Vegetable Gardens

Urban Farm

Community Gardens

Green Roofs

Extensive

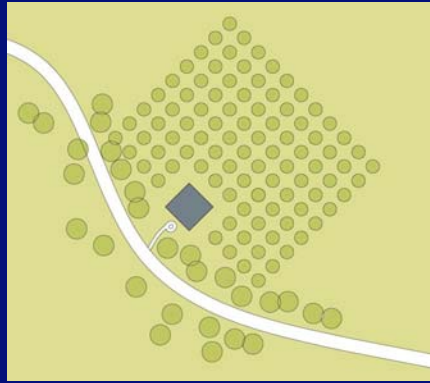
Semi-Intensive

Intensive

Vertical Farm



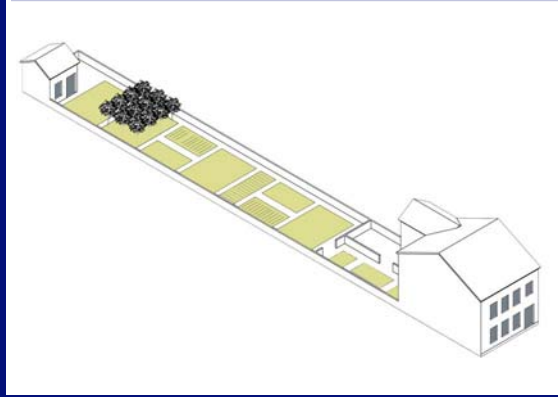
# FARMS



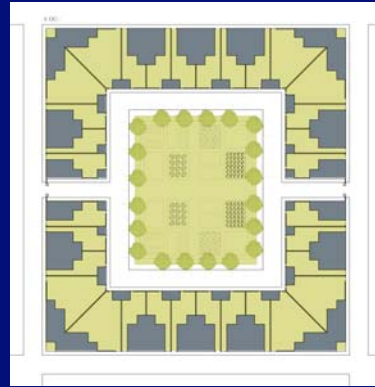
# AGRICULTURAL PLOTS



# VEGETABLE GARDENS

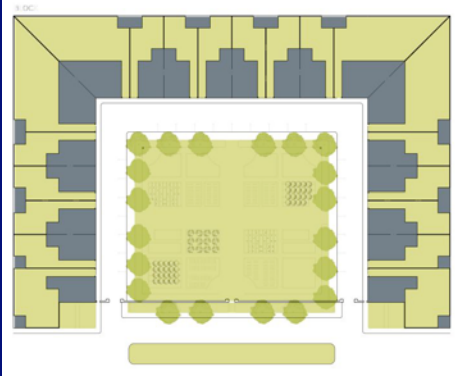


# COMMUNITY GARDENS



← More Rural  More Urban →

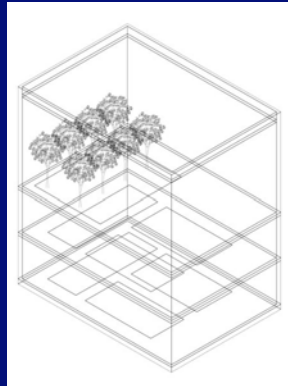
# URBAN FARMS



←-----→  
**More Rural** **More Urban**

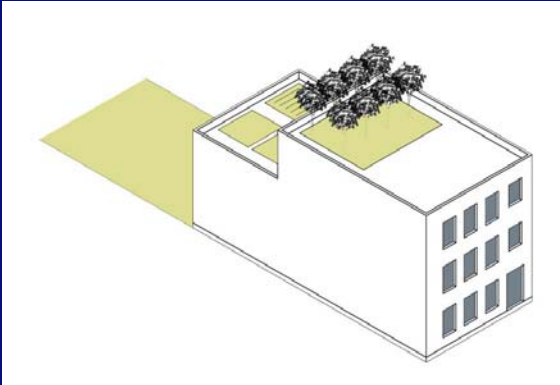


# VERTICAL FARMS



←-----→  
**More Rural** **More Urban**

# GREEN ROOFS



More Rural


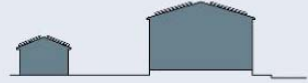

More Urban

# PUBLIC ART





TABLE 18: Solar Energy. This table shows opportunities for the placement of Solar Panels within the Transect.

	T1	T2	T3	T4	T5	T6	SD	Specifics
 <p>Solar Farm</p>	●						●	
 <p>Roof Mounted Solar Panels</p>	●	●	●	●	●	●	●	
 <p>Public Furniture</p>			●	●	●	●	●	

Note: A solar dish/engine system also utilizes solar collectors tracking the sun on two axes but it concentrates the energy at the focal point of a separate dish.

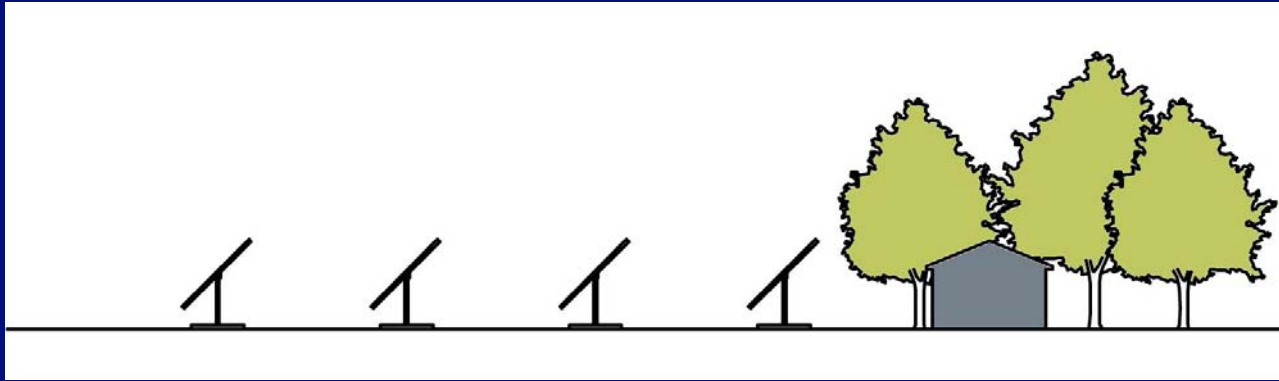
## SOLAR ENERGY

### Solar Farms

### Roof Mounted Solar Panels

### Public Furniture

# SOLAR FARMS

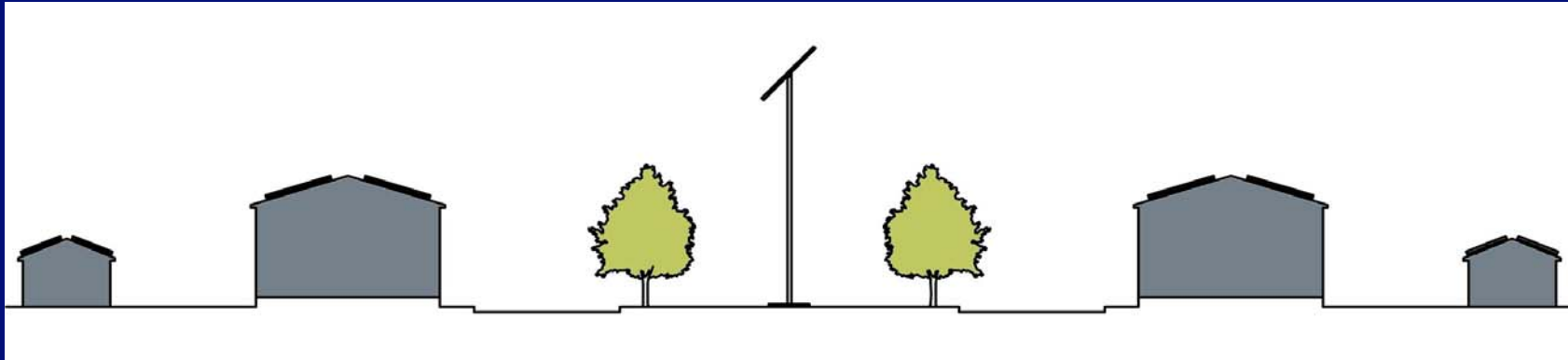


More Rural



More Urban

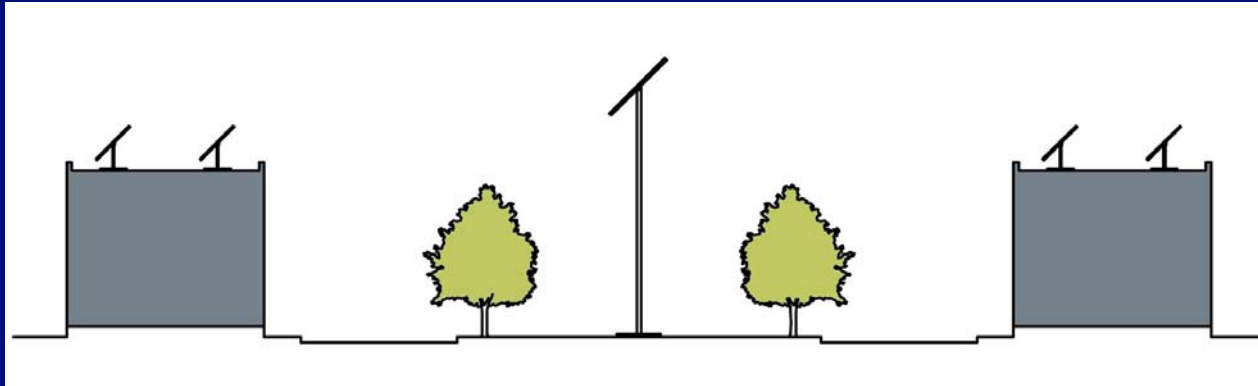
## ROOF MOUNTED SOLAR PANELS (RURAL)



← More Rural

More Urban →

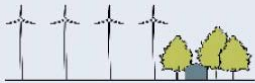



## ROOF MOUNTED SOLAR PANELS (URBAN)



←  
**More Rural**

↓  
**More Urban** →

**TABLE 17: Wind Power.** This table prescribes opportunities for the placement of Wind Turbines within the Transect.

	T1	T2	T3	T4	T5	T6	SD	Specifics
<b>Wind Farm</b> 	●						●	
<b>Horizontal Axis</b> 	●	●	●	●			●	
<b>Vertical Axis</b> 			●	●	●	●	●	
<b>Public Furniture</b> 			●	●	●	●	●	

Horizontal Axis: Most existing wind turbines are of the horizontal axis type. Horizontal axis wind turbines have blades like airplane propellers.

Vertical Axis: Vertical axis wind turbines have blades going from top to bottom.

## WIND POWER

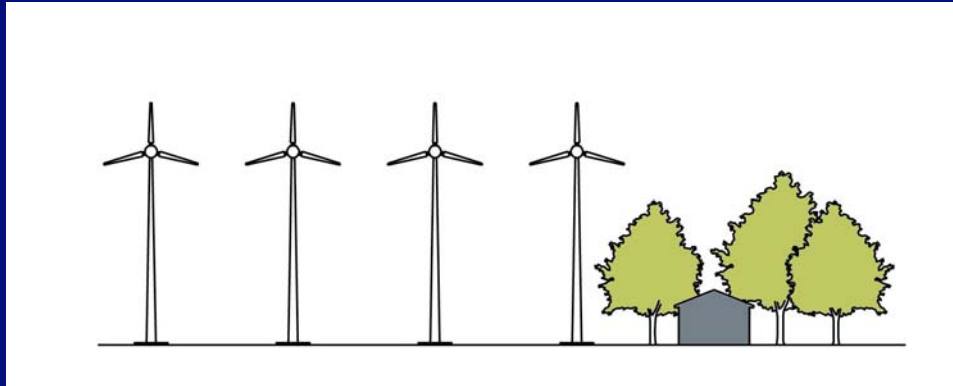
### Wind Farms

### Horizontal Axis

### Vertical Axis

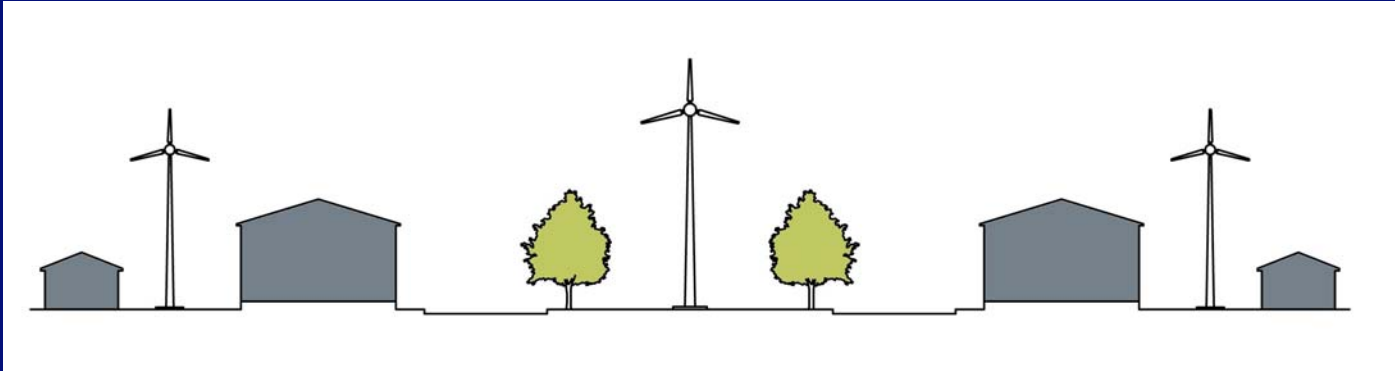
### Public Furniture

# WIND FARMS



↓  
←-----→  
**More Rural** **More Urban**

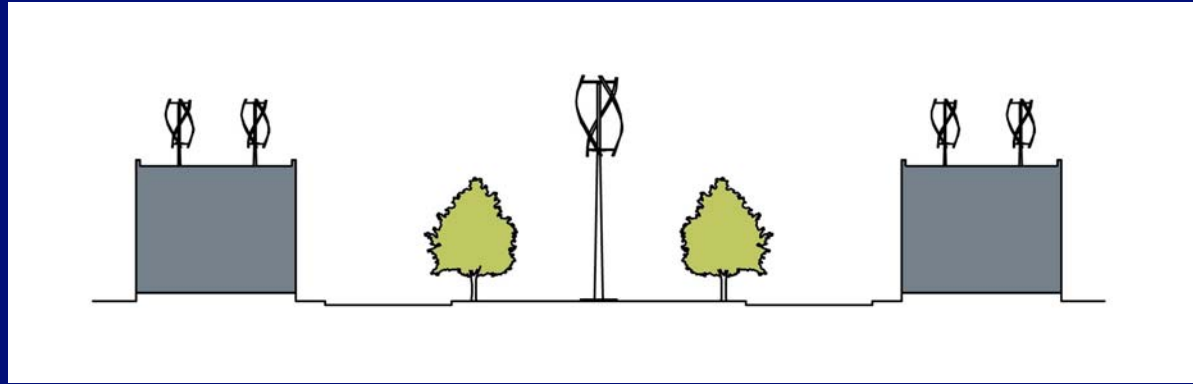
# HORIZONTAL AXIS



← More Rural

More Urban →

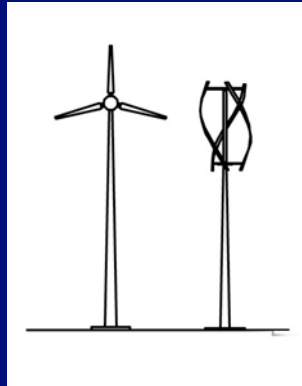
# VERTICAL AXIS



← More Rural → More Urban →



# PUBLIC FURNITURE



# BUILDING SUSTAINABILITY STANDARDS (The lot)

*The Building Gizmos*

a. Compost Bins:	 <p>T1 T2 T3 T4</p>	 <p>T4 T5 T6</p>	 <p>T5 T6</p>
b. Geothermal Wells:	 <p>T1 T2 T3 T4</p>	 <p>T4 T5 T6</p>	 <p>T5 T6</p>
c. Green Roofs:	 <p>T1 T2 T3 T4</p>	 <p>T4 T5 T6</p>	 <p>T5 T6</p>
d. Hot Water Panels:	 <p>T1 T2 T3 T4</p>	 <p>T4 T5 T6</p>	 <p>T5 T6</p>
e. Septic Tanks:	 <p>T1 T2 T3 T4</p>	 <p>T4 T5 T6</p>	 <p>T5 T6</p>
f. Solar Roofs:	 <p>T1 T2 T3 T4</p>	 <p>T4 T5 T6</p>	 <p>T5 T6</p>
g. Vegetable Gardens:	 <p>T1 T2 T3 T4</p>	 <p>T4 T5 T6</p>	 <p>T5 T6</p>
h. Water Harvesters:	 <p>T1 T2 T3 T4</p>	 <p>T4 T5 T6</p>	 <p>T5 T6</p>
i. Wind Turbines:	 <p>T1 T2 T3 T4</p>	 <p>T4 T5 T6</p>	 <p>T5 T6</p>

**Compost Bins**

**Geothermal Wells**

**Green Roofs/Walls**

**Hot Water Panels**

**Septic Tanks**

**Solar Roofs**

**Vegetable Garden**

**Water Harvesters**

**Wind Turbines**

Compost Bins



Green Walls



Hot Water Panels



Water Harvesters

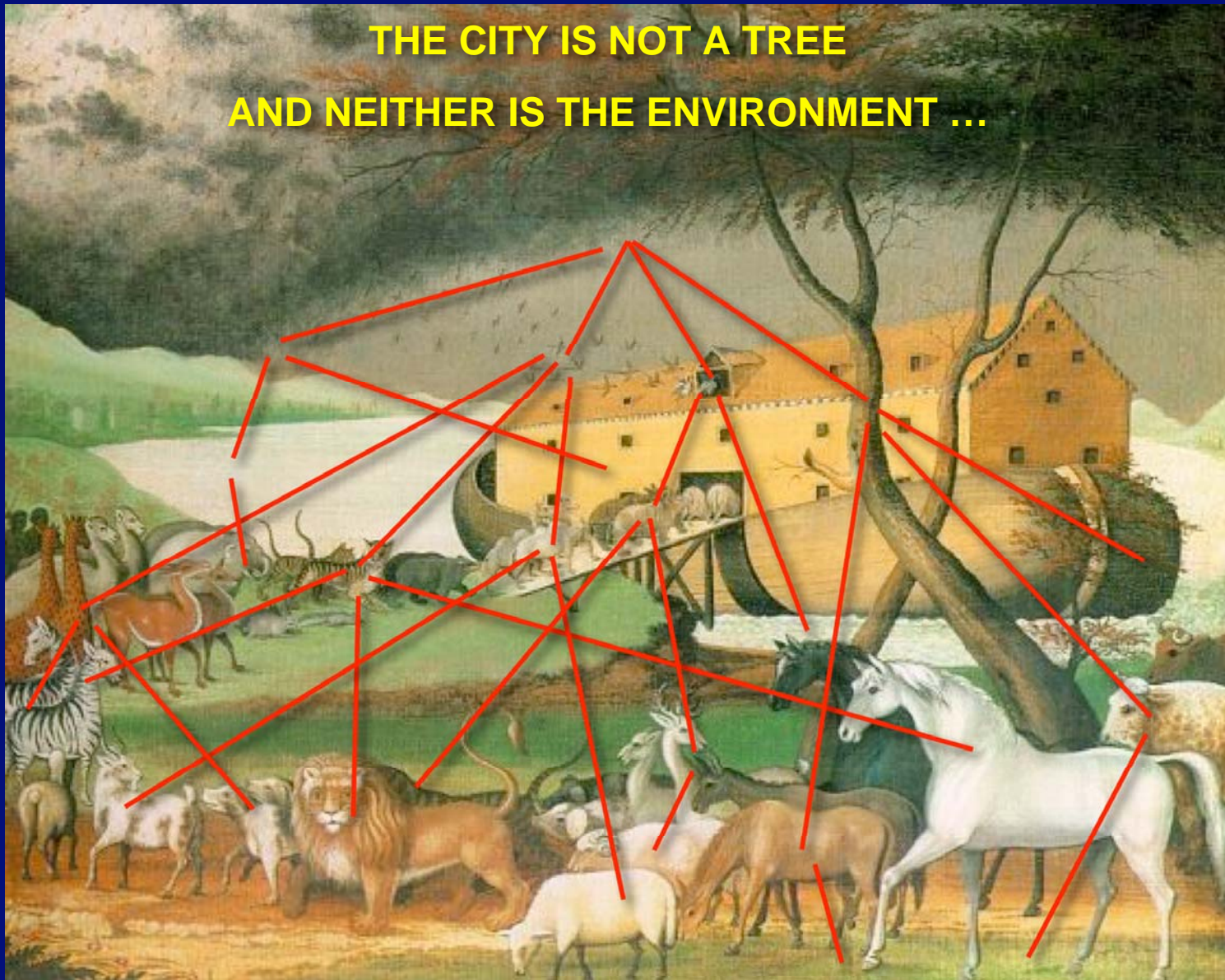


Vegetable Garden



Rooftop Turbines

**THE CITY IS NOT A TREE  
AND NEITHER IS THE ENVIRONMENT ...**



The mind's first function will be **TO INCREASE** ambiguity and overlap ... **TO IMITATE NATURE**

To produce classical imitations of nature with a high degree of lovability

**THE “*ARK MODULE*”**  
**Smart Code for Sustainability**

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