

Diagramming: Abstract / Synthesis



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Indexes and Series



index: a value that identifies and is used to locate a particular element within a data array or table.

series: a group or a number of related or similar things, events, etc., arranged or occurring in temporal, spatial, or other order or succession; sequence.

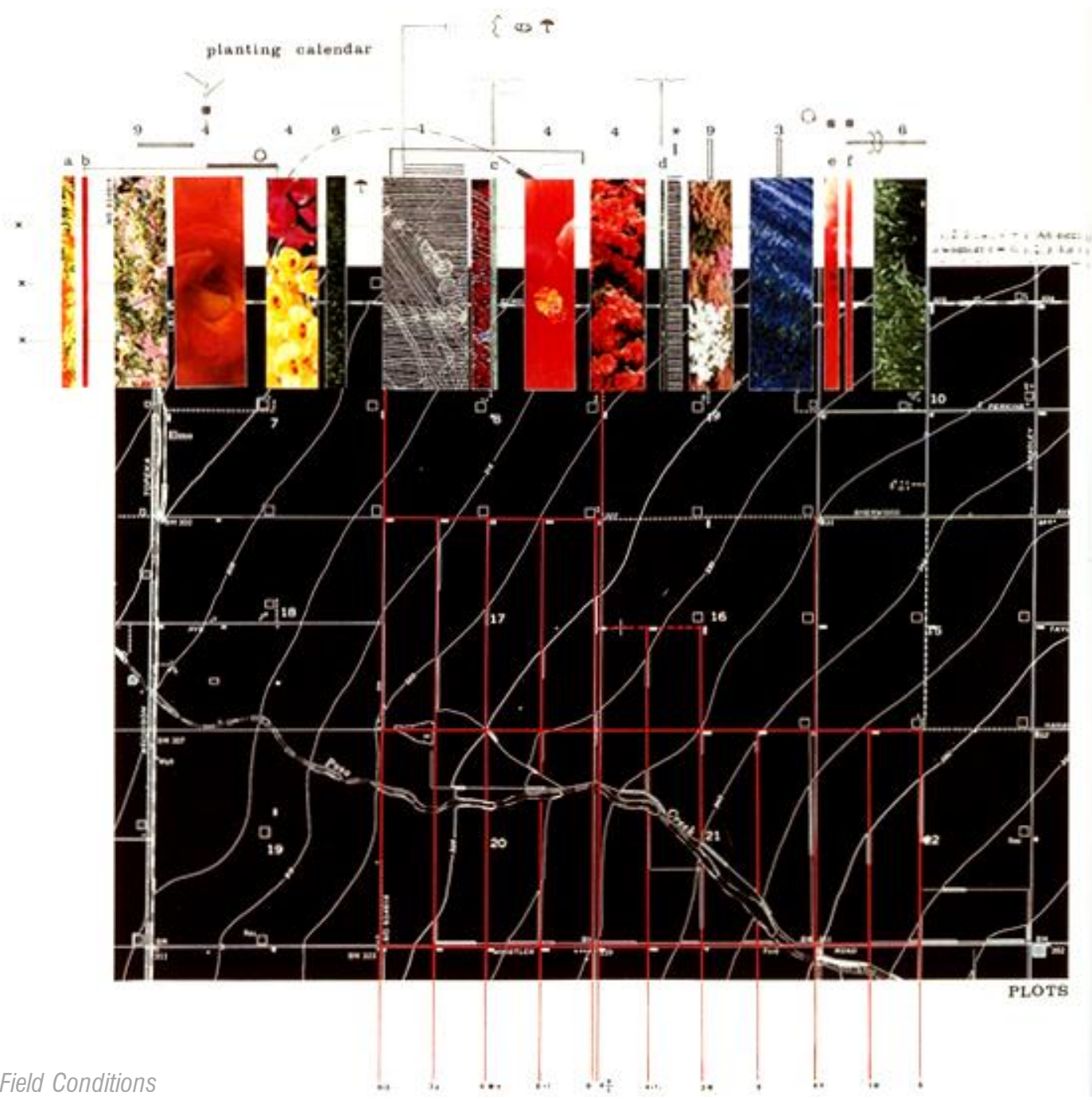


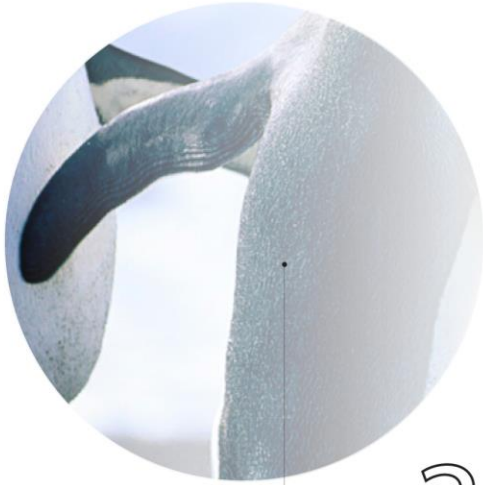
Class Objectives:

- **Lecture 1.21: Data Visualization** + Time, Series and Indexes
- HOPES: Schedule, Carlo Ratti, MIT Senseable Cities Lab and Andrew Heumann, NBBJ Seattle
- Not Unlike Life Itself
 - Strategies - systems
 - Organizations of process
 - “In design terms, landscapes and field organizations set up the conditions for life to evolve.”
 - “In other words, arguments for staging uncertainty, for indeterminacy and open-endedness, for endless scenario gaming and datascaping-in fact anything to do with the whole notion of free flexibility and adaptation do not make sense in a world without **specific** material form and precise design organizations.”
- **Rhino**
 - **Drafting systems of lines – 3D to 2D workflow.**
- */// workshop break ///*



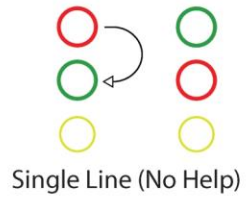
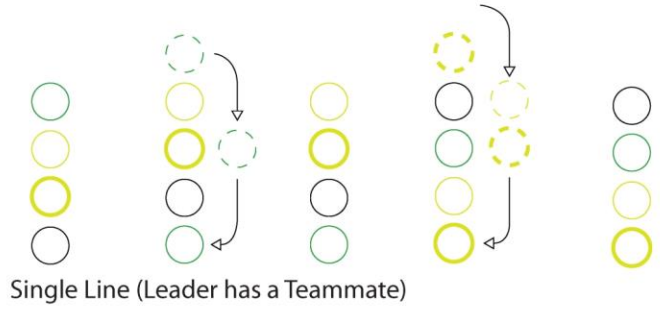
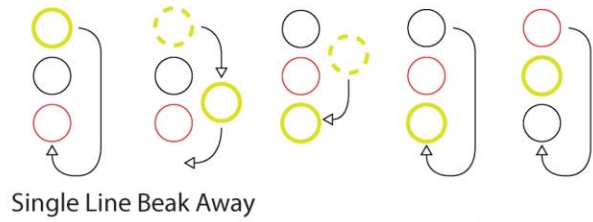
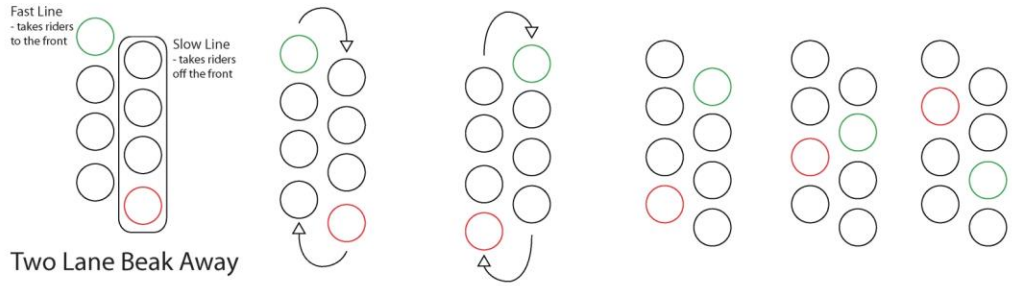
Material
Location (plan)
Time

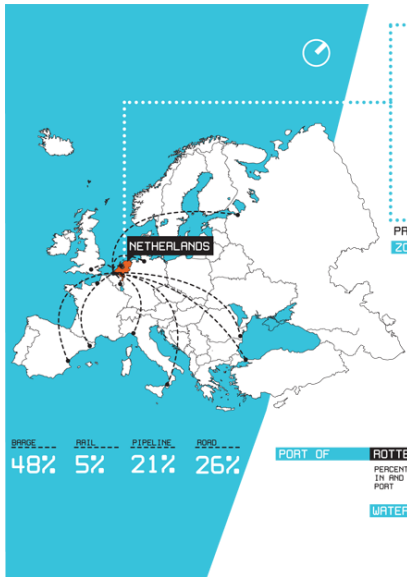




-32°

Antarctica





PROBLEM

ZONES OF MILD FLOODING TO WORST CASE SCENARIO

- 0-0.2M
- 0.2-0.5M
- 0.5-0.8M
- 0.8-2.0M
- 2.0-5.0M
- 5.0-ABOVE

CLIMATE CHANGE IS EXPECTED TO INCREASE THE FREQUENCY AND SEVERITY OF FLOODING IN THE NETHERLANDS. THE QUESTION IS WHETHER THE NETHERLANDS CAN ADAPT TO INCREASING FLOOD RISK.

DRIVEN BY THE INCREASING CONCERN WITH THE NATURAL ENVIRONMENT AND BY THE CONSIDERATIONS ON THE EFFECTS OF CLIMATE CHANGE, "WORKING WITH NATURE" HAS BECOME A NEW PARADIGM IN THE WORLD OF DUTCH PLANNING AND DESIGN.

PORT OF ROTTERDAM
PERCENTAGE OF CARGO IN AND OUT OF THE PORT

WATER THREATS IN 4 DIRECTIONS:

- 01 SEA LEVEL RISE
- 02 RIVER DISCHARGE
- 03 GROUNDWATER
- 04 PRECIPITATION



ZONES OF LEVEE RINGS

NETHERLANDS IS DIVIDED IN 53 ZONES OF LEVEE RINGS.



FLOOD BARRIER
LEVEE



ZONES OF WET LANDS

- WETLANDS BELOW 5M
- RIVER-RELATED WETLANDS



LAND USE:
ARABLE LAND= 26.71%
PERMANENT CROPS= 0.5%
OTHER= 72.78%

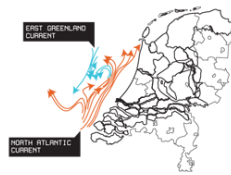


ZONES OF GROUND

- DUNES
- LOW GROUND
- HIGH GROUND



1900-2000
1920-1960
1980-1990
2000-PRESENT



ZONES OF OCEAN CURRENTS

- COOL CURRENT
- WARM CURRENT
- WATER FLOW DURING A STORM SURGE

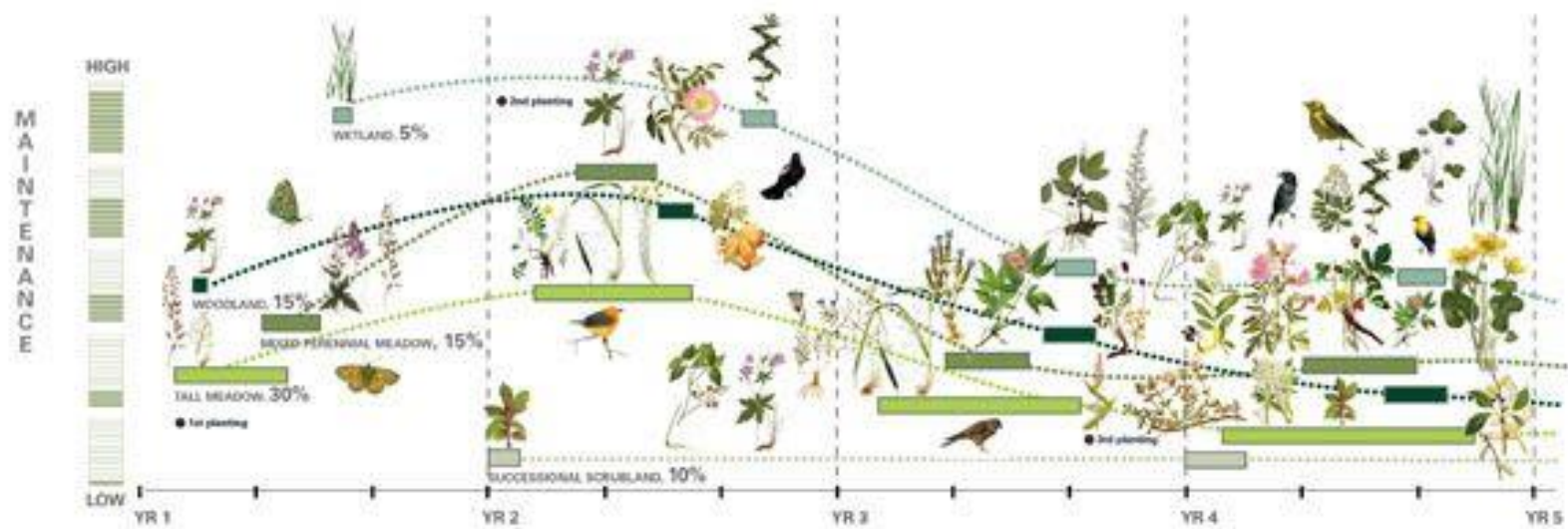


SEA LEVEL RISE

DELTA COMPARISON

- FLOODABLE AREA
- WETLANDS
- LEVEE



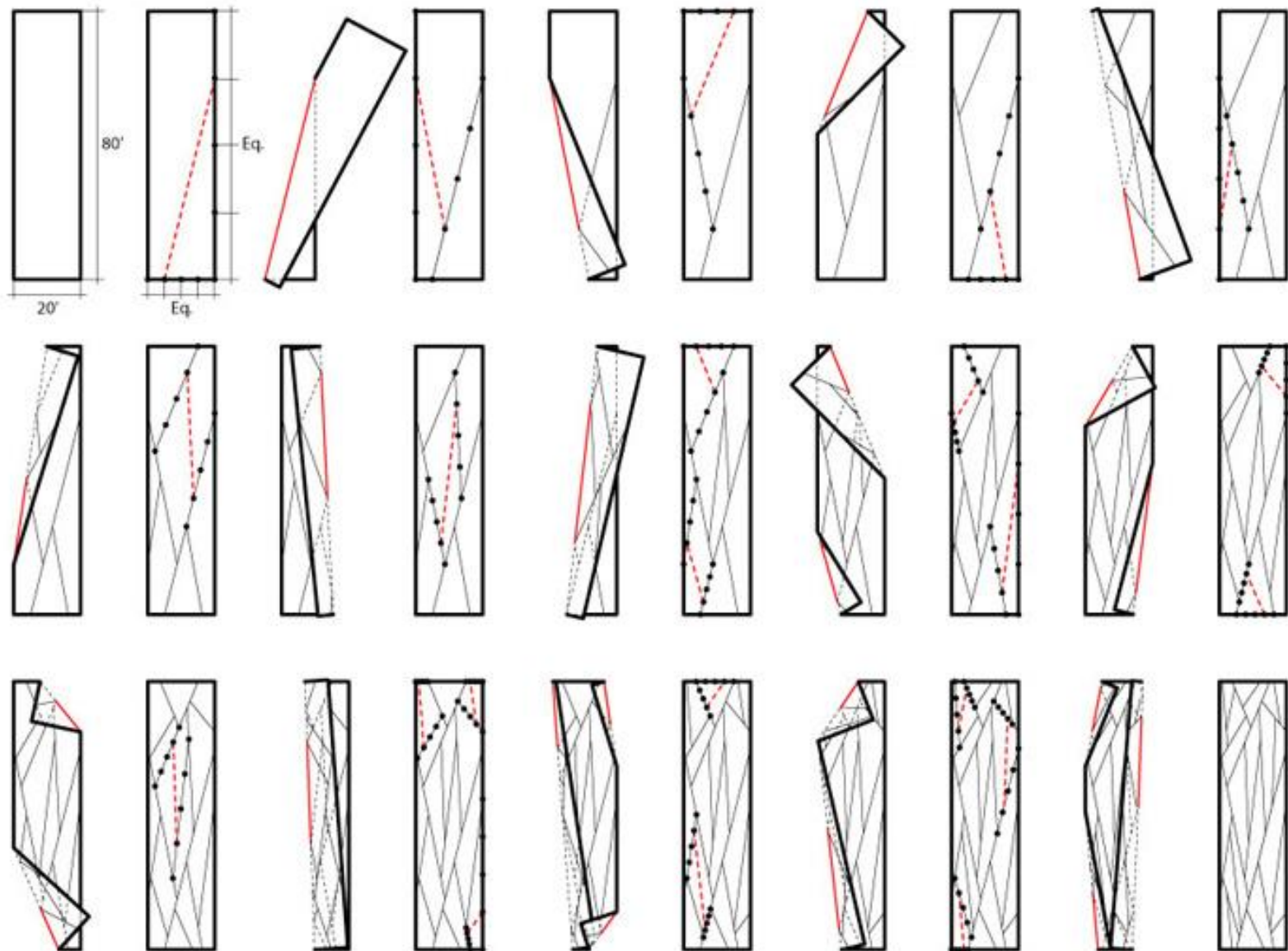


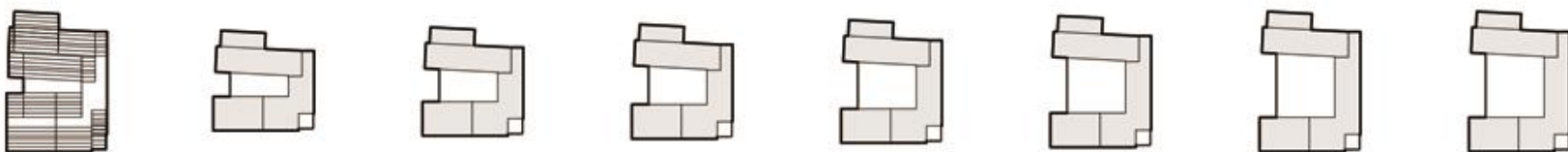
DIVERSIFICATION IN TIME (STABILIZED MAINTENANCE / ENHANCED BIODIVERSITY)

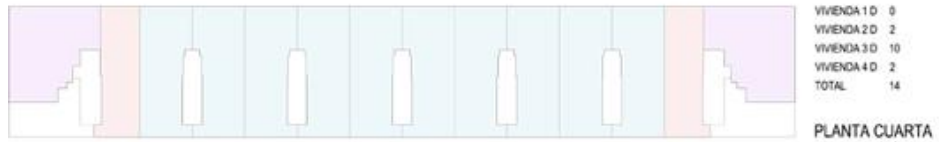
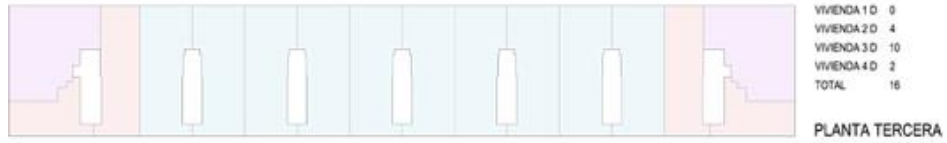
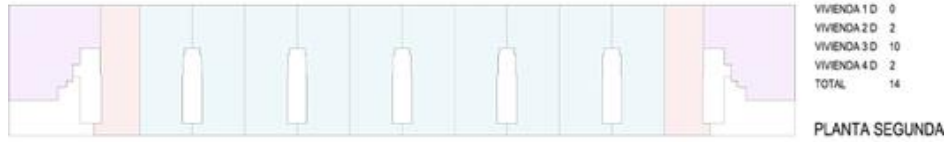
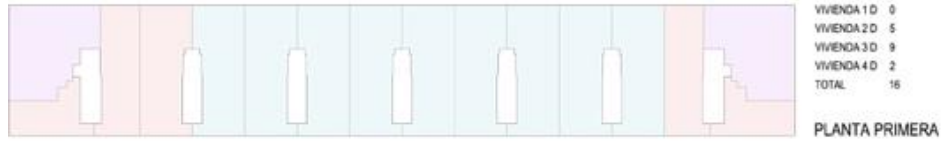
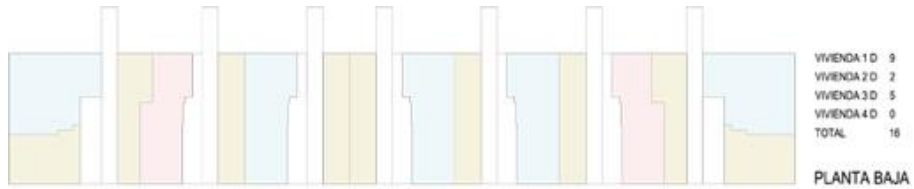


PHASING









■ VIVIENDA 1 D
■ VIVIENDA 2 D
■ VIVIENDA 3 D
■ VIVIENDA 4 D

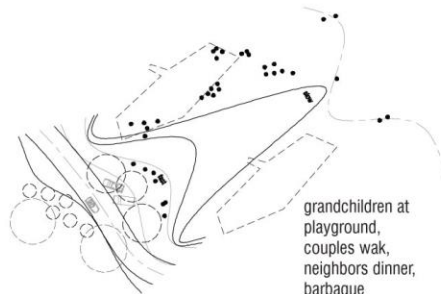
VIVIENDA 1 D	9
VIVIENDA 2 D	17
VIVIENDA 3 D	54
VIVIENDA 4 D	8
TOTAL	88



food shopping,
morning walk,
gardening

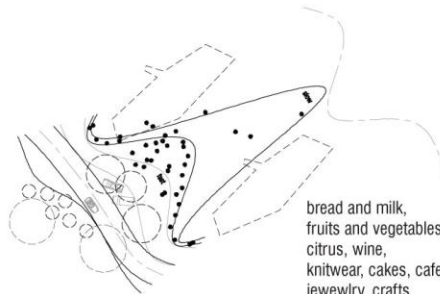
SCENARIOS

Tuesday Morning Food Shopping,



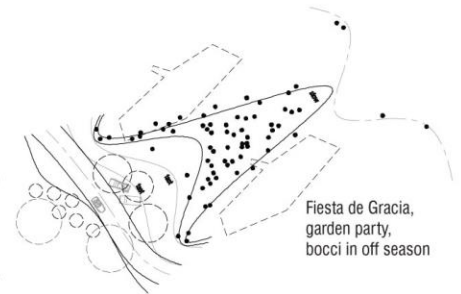
grandchildren at
playground,
couples wak,
neighbors dinner,
barbaque

Sunday afternoon with Family



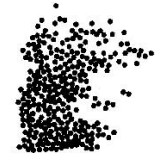
bread and milk,
fruits and vegetables,
citrus, wine,
knitwear, cakes, cafe,
jewelry, crafts

Saturday morning Farmer's Market



Fiesta de Gracia,
garden party,
bocci in off season

Novato Harvest Day



01.04 Path generation in processing

Initial/agent simulation is generated based on parameters. Aggregate from previous steps updated from generation. The network lines are changed to new efficient paths. The agent see about the phenomena from previous steps.



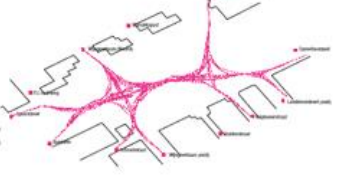
02.04 Path generation in processing

Initial/agent simulation is generated based on parameters. Aggregate from previous steps updated from generation. The network lines are changed to new efficient paths. The agent see about the phenomena from previous steps.



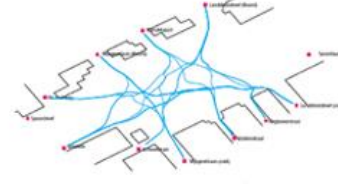
03.04 Path generation in processing

Initial/agent simulation is generated based on parameters. Aggregate from previous steps updated from generation. The network lines are changed to new efficient paths. The agent see about the phenomena from previous steps.



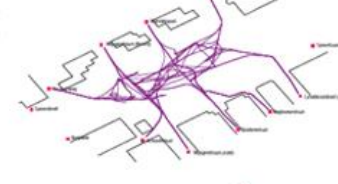
01.07 Dijkstra algorithm (shortest path evaluation of the generated network)

The network generated at 01.04 is used to calculate the shortest paths from the agent (01.01) to all other nodes in the network. A Dijkstra algorithm is used to calculate the shortest paths.



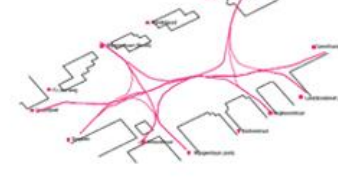
02.07 Dijkstra algorithm (shortest path evaluation of the generated network)

The network generated at 02.04 is used to calculate the shortest paths from the agent (01.01) to all other nodes in the network. A Dijkstra algorithm is used to calculate the shortest paths.



03.07 Dijkstra algorithm (shortest path evaluation of the generated network)

The network generated at 03.04 is used to calculate the shortest paths from the agent (01.01) to all other nodes in the network. A Dijkstra algorithm is used to calculate the shortest paths.



01.05 Density calculation of network portfolio

The previous trails from the previous simulation are imported back to generate the network. The network lines are changed to new efficient paths. The agent see about the phenomena from previous steps.



02.05 Density calculation of network portfolio

The previous trails from the previous simulation are imported back to generate the network. The network lines are changed to new efficient paths. The agent see about the phenomena from previous steps.



03.05 Density calculation of network portfolio

The previous trails from the previous simulation are imported back to generate the network. The network lines are changed to new efficient paths. The agent see about the phenomena from previous steps.



01.06 Extreme gap problem distribution

The previous network that contains all the lines, which will be filtered with higher than the value of the extreme gap problem. The agent see about the phenomena from previous steps.



02.06 Extreme gap problem distribution

The previous network that contains all the lines, which will be filtered with higher than the value of the extreme gap problem. The agent see about the phenomena from previous steps.



03.06 Extreme gap problem distribution

The previous network that contains all the lines, which will be filtered with higher than the value of the extreme gap problem. The agent see about the phenomena from previous steps.



01.08 Network usage evaluation

The network from step 01.07 are checked with agents. Every part of the network is then checked on the basis of the network usage. The network lines are changed to new efficient paths. The agent see about the phenomena from previous steps.



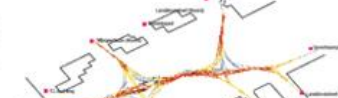
02.08 Network usage evaluation

The network from step 02.07 are checked with agents. Every part of the network is then checked on the basis of the network usage. The network lines are changed to new efficient paths. The agent see about the phenomena from previous steps.



03.08 Network usage evaluation

The network from step 03.07 are checked with agents. Every part of the network is then checked on the basis of the network usage. The network lines are changed to new efficient paths. The agent see about the phenomena from previous steps.



01.09 Characteristic/agent separation function generation

In this step the network generated at 01.08 is used to generate the characteristic/agent separation function. The network lines are changed to new efficient paths. The agent see about the phenomena from previous steps.



02.09 Transferable function envelope generation

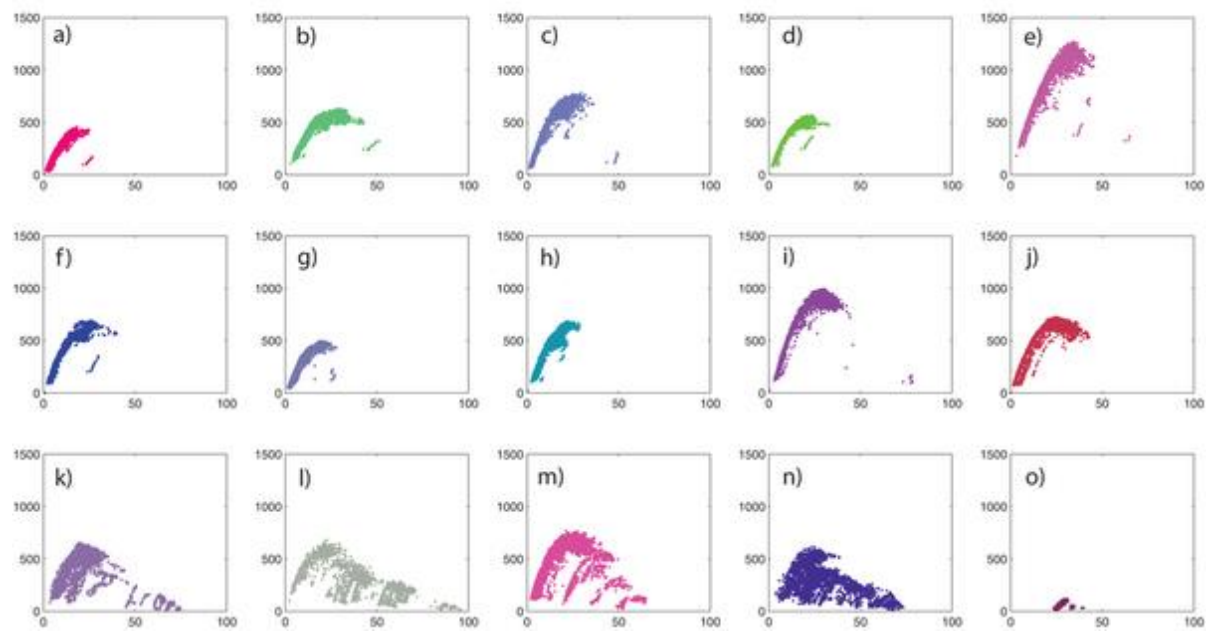
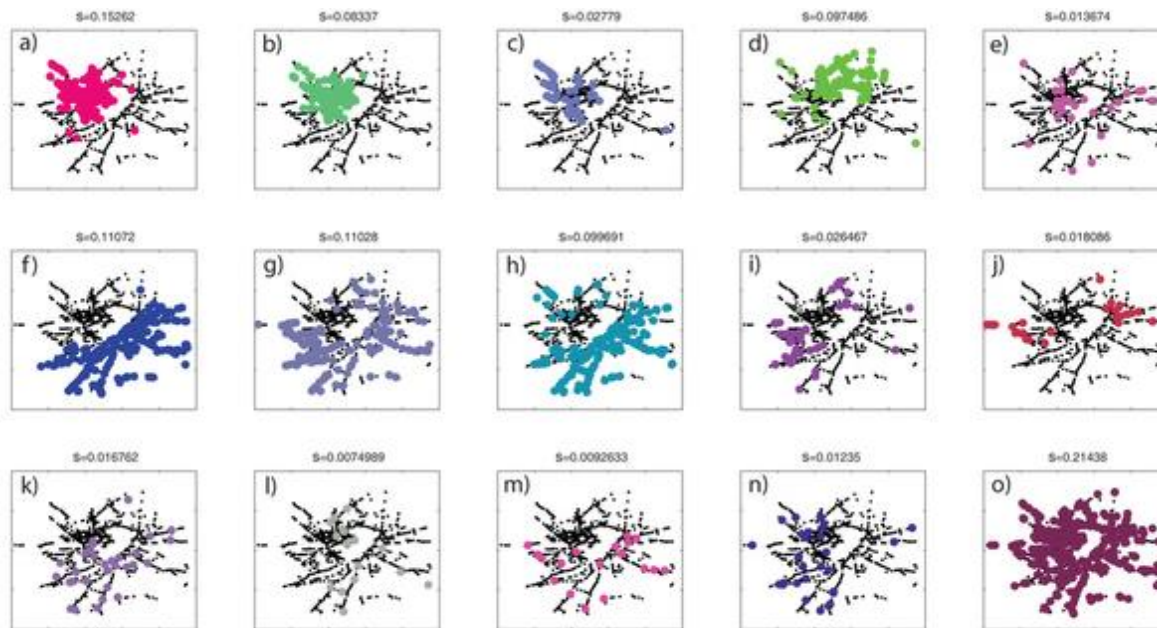
In this step the characteristic/agent separation function is used to generate the transferable function envelope. The network lines are changed to new efficient paths. The agent see about the phenomena from previous steps.

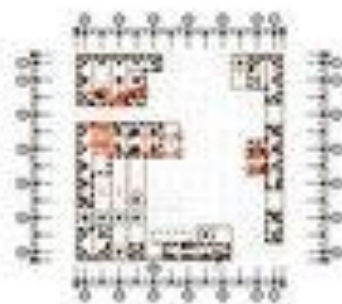


03.09 Cycle supporting function envelope generation

In this step the cycle supporting function envelope is used to generate the cycle supporting function envelope. The network lines are changed to new efficient paths. The agent see about the phenomena from previous steps.



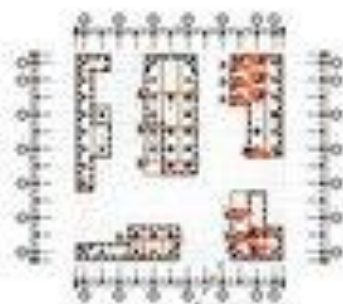




Level 08



Level 09



Level 10



Level 11



Level 04



Level 05



Level 06



Level 07



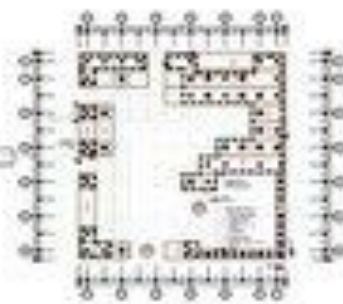
Level 00



Level 01



Level 02



Level 03

