GREEN SKILLS FOR CITIES

LTP

Activities

Playing with parameters

IAAC
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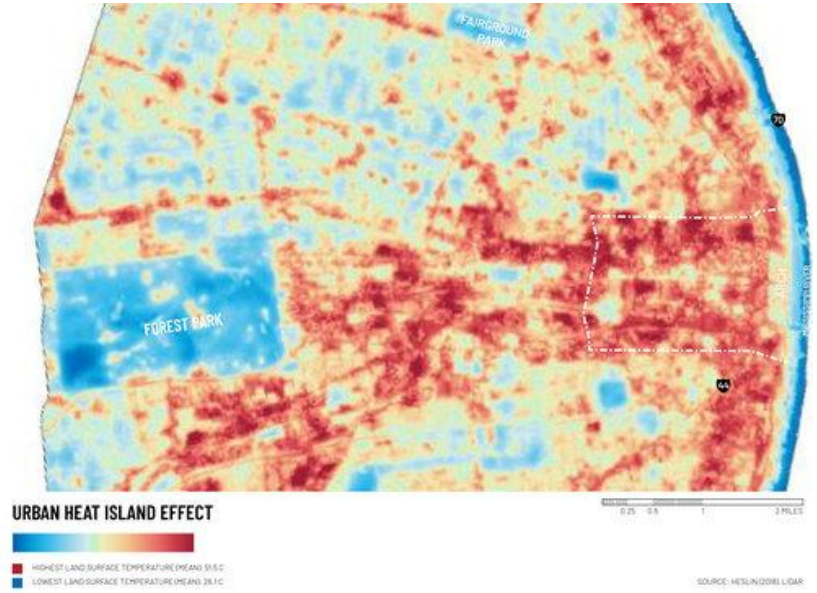
SECTION **ONE**

Goal of the Activity

To understand the logic behind parametric design tools used by architects and designers through the identification and mapping of parameters.



https://www.stoss.net/downtown-st-louis

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SECTION **TWO**

Resources You Will Need

- Paper - any size available
- Pens
- Laptops (if you want to do the exercise in a digital format)

SECTION **THREE**

Playing with Parameters Instructions

- ➔ Make groups of 5 learners
- ➔ Pick an urban ecological challenge
  Examples: flooding, urban heat island, landscape fragmentation, lack of biodiversity, scarcity, etc
- ➔ Pick a partner system that can help in responding to this challenge, either by mitigation or adaptation (they can be natural or anthropogenic)
  Examples: river system, forest patches, delta system, soil ecosystem, waste ecosystem, transport ecosystem, energy ecosystem, etc
- ➔ Identify 5 parameters of this partner system within each of the disciplinary contexts (botany, design, technology, business) that you can control or influence
- ➔ Make 2 metabolic mind maps of how the identified parameters connect to the ecological challenge you have selected, one for today, and one for in 20 years
- ➔ Discuss with your group colleagues and select the top 5 parameters that you believe would have the biggest impact on your ecological challenge
- ➔ Present your outcomes to the rest of the class for an open discussion

SECTION **THREE**

Playing with Parameters Instructions - Example

- *Make groups of 5 learners*
- Pick an urban ecological challenge

  Urban Heat Island
- Pick a partner system that can help in responding to this challenge, either by mitigation or adaptation (they can be natural or anthropogenic)

  Forest Ecosystem
- Identify 5 parameters of this partner system within each of the disciplinary contexts (botany, design, technology, business) that you can control or influence

  Botany: Biodiversity, Autochthonous vs invasive Species, Ecosystem Engineer (Squirrels), Landscape Fragmentation, Habitat Quality

  Design: Rewilding, Green Corridors, Co-Design, Urban Gardens, Planting

  Technology: Environmental Analysis, Simulation, Sensors, Data, Tracking

  Business: Collaborative platforms, Policy incentives, Biomaterial products, Co-creation ecosystem, Green business

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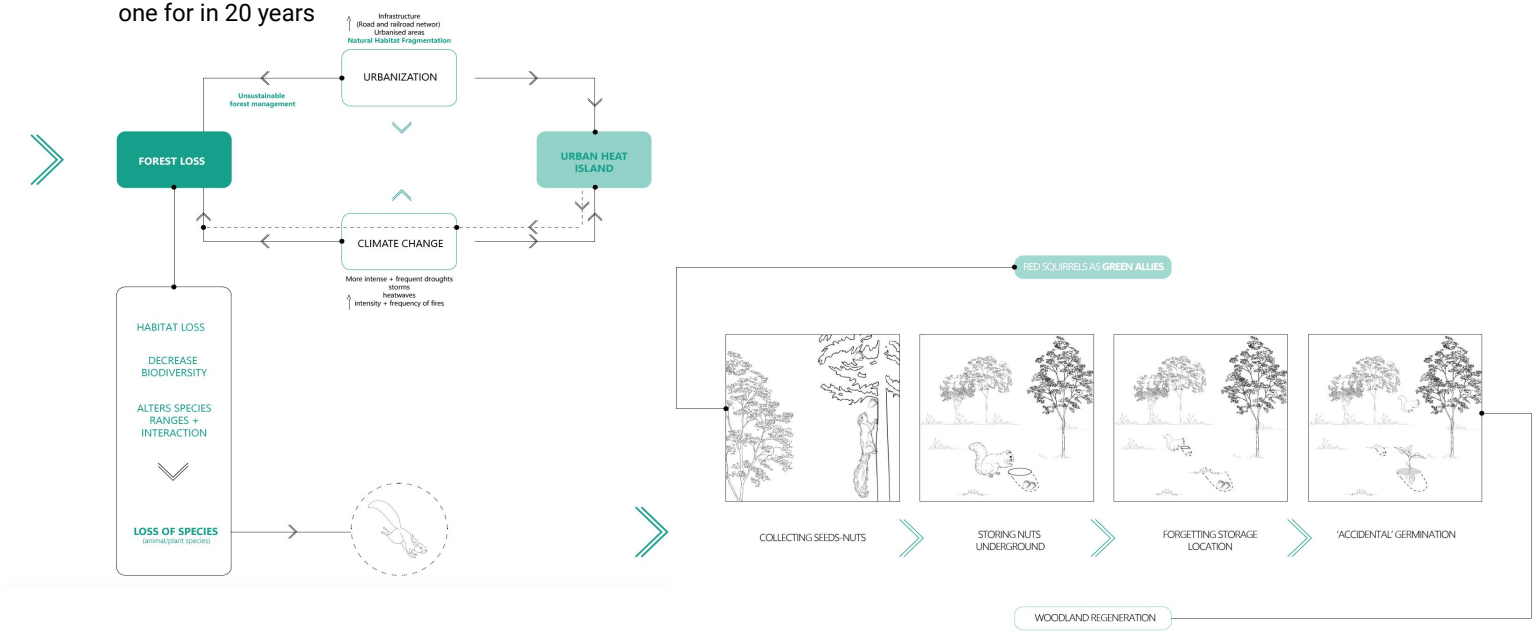
SECTION **THREE**

Playing with Parameters Example

➔ Make 2 metabolic mind maps of how the identified parameters connect to the ecological challenge you have selected, one for today, and one for in 20 years



➔ *Discuss with your group colleagues and select the top 5 parameters that you believe would have the biggest impact on your ecological challenge*

➔ *Present your outcomes to the rest of the class for an open discussion*

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SECTION **EXAMPLES**

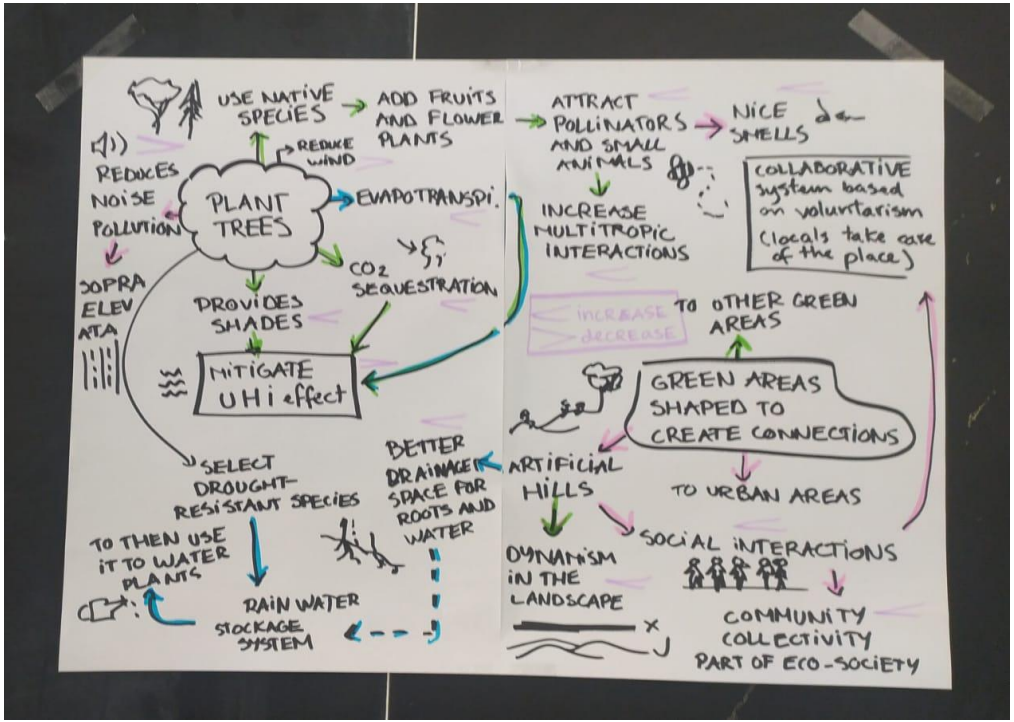
Example Results from Green Skills for Cities

- Pick an urban ecological challenge

  Urban Heat Island
- Pick a partner system that can help in responding to this challenge, either by mitigation or adaptation (they can be natural or anthropogenic)

  Forest Ecosystem
- Identify the parameters of the partner system

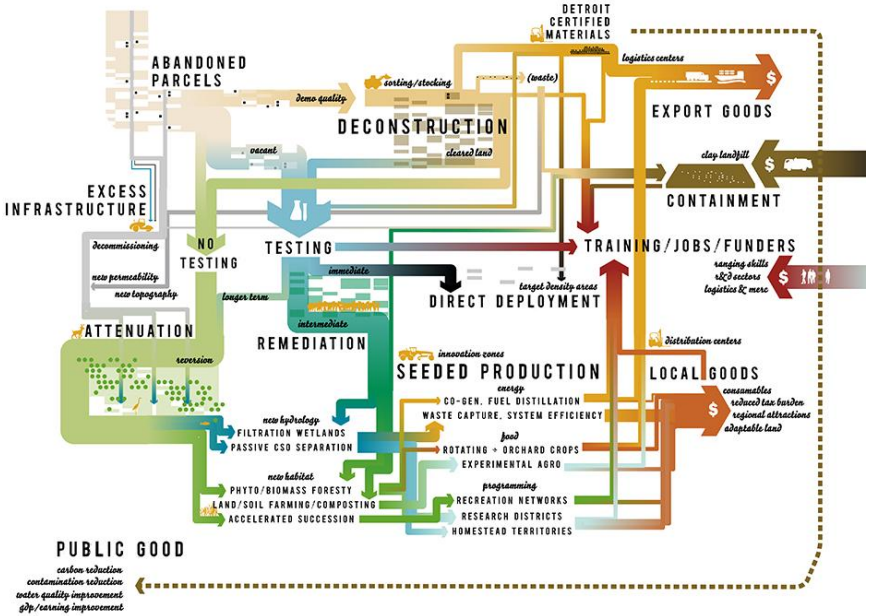
  Quantity of native species, Number of pollinators, Community collectivity, Drainage etc.
- Create a map of how the urban ecological challenge and parameters of the partner system relate

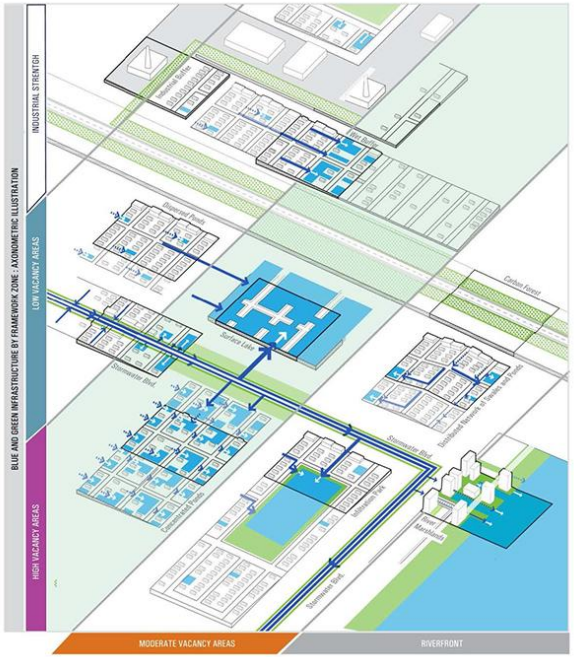


Results from the University of Genova Green Skills for Cities LTP In class activity

SECTION **EXAMPLES**

Other examples of Metabolic Diagrams





https://scenariojournal.com/article/wild-innovation/
https://www.stoss.net/projects/planning-urbanism/detroit-future-city

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LTP

Activities

Finding Ecological Friends in the City

GUIDING QUESTIONS FOR TRAINERS

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SECTION **FOUR**

Guiding Questions for Discussion

- How does your partner system respond to the urban ecological challenge?
- What are the 5 most important parameters that can have the greatest impact on the urban ecological challenge?
- What would the impact be on the urban ecological challenge if the parameters were increased or decreased?

- In 20 years time, how will the urban ecological challenge be impacted by a change in parameters related to the partner system?
- How important is it to address the urban ecological challenge now?

SECTION **FOUR**

Extra Info for Trainers

- The parameters should be defined from the partner system
  - Examples:
    - partner system = river system
    - Parameters → quantity of algae, fish population, number of sensors etc.
- The current map should demonstrate the relationship between the parameters selected and the urban ecological challenge
  - If the students don't know where to start, ask them to place the ecological challenge on the center of the page and add the parameters around the outside of the page. Ask them to start drawing lines between the parameters that relate.
- The map for 20 years later should demonstrate the relationship between the parameters selected and the urban ecological challenge, if the parameters were to increase or decrease. The students can use colours to demonstrate which parameters increase or decrease.
  - The students should be able to demonstrate or explain what happens when there is an increase or decrease of the parameters.

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