

CELL: Reconfiguring Systems

Design an urban research station for Monsanto. The focus of this project is to identify pressing issues in the social, political and ecological context of biotech research, and re-vision agri-business practices for a new kind of public engagement with emerging new plant species. We will develop material/spatial ideas through physical model studies and section drawing.

The Project:

You are to design a research station for scientists to test Monsanto products in the New York City environment. Scientists will use this station to grow and examine new strains of genetically modified fruits, vegetables, flowers or medicinal plants. The research station is to be inhabited by two scientists at a time, who will monitor aspects of the hydroponic system (e.g. water pH, water pollutant makeup, airborne pollen, CO2 levels, solar exposure, presence of animals, pest impact, pollination phenomena, human impact, psychological effects, plant yield, nutrient levels, etc.). Scientists will analyze and enter data at two computer stations. You are to design some public kind of direct or indirect public interface for the research station. Each student can determine the water and power sources for their station as long as there is reserve water storage and a backup generator.

Design Parameters:

- Site: 125th Street Subway station on the 1 train
- Maximum Dimension: 10'w x 12'd x 14'h
- Minimum plant growing area: 400 square feet
- Minimum water storage: 300 gallons

Step One: Research

Begin by researching a system common to production, consumption, and/or research in the agricultural biotech industry. Examples include methods of pest control, climate control, soil renewal, nutrient supply, shelf life extension, increasing yield, testing in controlled laboratory conditions, genetic segregation, displaying in a marketplace, advertising, shipping, etc. Identify the protocols, spatial concepts and material logics of your system. Through this process, expand your conclusions to explore larger cultural values and expectations in the industry. Consider: consumer desire, risk perception, monoculture, organic v. nonorganic, biodiversity, food yield, efficiency, human health, etc. Your research drawing is to collect and communicate evidence of your system, and use layout to offer a critique of this system.

Step Two: Abstract Model

Based on your research, identify spatial/material concepts in your chosen system. You might, for example, consider thick insulated layers, ventilation surfaces, nested enclosures, or shiny objects. Create abstract models to imagine how you can produce and transform these qualities. Consider how qualities of the materials you use (planar, thickened, multi-ply, absorbent, transparent, porous, elastic, striated, etc.) affect your ideas.

Step Three: Design Proposal

Connecting ideas from steps one and two, design the research station. Use section drawings to imagine desired actions and effects, and to test spatial/material concepts from your abstract model at the scale of your structure. Rhino modeling is optional as process work.

Deliverables:

- Research Drawing: 1800 sq. in
- 8"x8"x8" Abstract Physical Model
- Horizontal and Vertical Section Drawing demonstrating the station, the testing equipment, its use, siting, and relationship to significant external/environmental factors as follows:
 - 1800 sq in
 - one piece of paper
 - scale: 1' = 1/2"

Required Reading:

“Biotechnology and Empire: The Global Power of Seeds and Science,” Sheila Jasanoff

Schedule

week two:	Sep 16 Fri	pin-up Avery Hall 412 Collect photographs, patents, charts, quotes, etc. etc. on Illustrator board + print Discuss Michael Pollan, “Potato” chapter
week three:	Sep 19 Mon	desk crits developed research + full draft of Research Drawing
	Sept 21 Wed	desk crits Develop research + research drawing
	Sep 23 Fri	pin-up Buell Hall 300 South Final research drawing 3 abstract models Jasanoff reading discussion
week four:	Sep 26 Mon	desk crits 2-3 abstract models
	Sep 28 Wed	desk crits final abstract model + design sketches
	Sep 30 Fri	pin-up final abstract model + Sections
week five:	Oct 3 Mon	desk crit Develop sections
	Oct 5 Wed	desk crit Develop sections
	Oct 7 Fri	REVIEW Avery Hall Room 115 (Our studio)
Week six:	Oct 10 Mon	REVIEW (Other studios)