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Re-Imagining Round Rock

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In 2009 Round Rock, Texas, was the second fastest growing city in the United States, in large part due to the Dell Corporation Headquarters site just south of town. This project critiques the status quo - sprawling suburban company town - and aims to re-imagine the city of Round Rock as a denser, more diversified urban proposition through reclaiming the wasted space of the suburban lawn and leveraging the variety and fertility of the city's current soil types.

The project began with an analysis of Ebenezer Howard’s 1901 Garden City plan. While we recognize Howard’s entirely self-sustaining city proposal to be an unreachable ideal, we sought to apply his understanding of productive added value feedback loops within the city structure to Round Rock. We argue that farming the fertile suburban lawns of the city could not only provide some portion of the city’s food, but also diversify the city’s Dell-subsistent economy while simultaneously creating more community-oriented productive public space.

IF ROUND ROCK, LIKE GARDEN CITY, PRODUCED ALL ITS OWN FOOD, IT WOULD NEED AN AREA 12.8 TIMES ITS CURRENT SIZE
To implement the new suburban agriculture of Round Rock, we designed a series of land use protocols based on soil class, primary crop type, and single family housing lot arrangement. These protocols aim to maximize tractor pattern efficiency in plowing crops, as well as provide flexibility, multiple use options, and financial incentives for individual land owners.

**SUGGESTED LAND USE ARRANGEMENT**

1. Cultivate, at a minimum, 25% of the open space of your lot.
2. The first cultivated percentage should be along the short side of your lot that is not adjacent to the street.
3. The cultivated swath should have a minimum width of 15'.

**CROP RECOMMENDATIONS**

1. The first and second 25% increment of your lot cultivated should be the highest yield crop for your soil type.
2. The first two 25% increments in cultivation should be plowable crops consistent with your soil type capacity.
3. Crop recommendation 1 does not apply if the primary crop is pecans, as they are not a plowable crop.
4. You may choose any crop consistent with your soil type for the final 50% of open lot space.

**ADJACENCY RECOMMENDATIONS**

1. The second 25% increment in cultivation should maximize adjacency with already planted crops.
2. The second 50% of cultivation may be located on lot at your discretion.

**PROFIT SHARING STRUCTURE**

1. 50% of profit will go toward future investment.
2. 50% of profit is kept by the land owner.
This project aimed to diversify Round Rock’s Dell-dependent economy. We performed detailed budget analyses based on soil type and primary crop location, and from these calculations found that reclaiming the suburban lawn as productive space for Round Rock would add almost nine million dollars to Round Rock’s annual economy.
In order to maximize economic growth, crop yield, and land use efficiency, we charted the typical growing seeds of local crops. We found that a winter planting of nitrogen-fixing clover would replenish nutrients in the soil and open potentials for beekeeping and dairy cow grazing.

To support the new agricultural economy, we located a number of crop infrastructure nodes on vacant parcels throughout the city at areas of highest crop concentration.
Crop Infrastructure Node
Building Diagram: Tower + Base

TOWER
Functions:
- Miss sim tower for ease accessibility
- Houses 200+ head (maximum) for livestock functions
- 24% off area for dumping and filtering of excreted cow waste
- Grain storage also centrally located within tower for cattle feed
- 80% tower structure

Base Wine Area
- 9 ft of space needed for each face
- Total area per tower = (36 x 50 x 78) = 5,064 ft per tower max

Honey Processing Area Requirements:
- 6-12 spaces for dumping centrifuge honey
- 3 filtering tanks

Grain Storage & Elevator:
- House of 360 = 36,000 lb each (2 ft)
- Each holds 19 days of feed or 35 days total

Tractor & Cow Storage
Functions:
- Houses 400-600 dairy cows
- Smoke and soiling area for 180+ cases in silo storage facilities
- Storage for 7 tractors
- 6% sloped ramps required for cattle accessibility

Ramp slope = 6% maximum for accessibility in and out

Total Dairy Cow Stalls = 650
Stalls house cows and integrate systems for more effective waste remediation

TRACTOR & COW STORAGE
Functions:
- Turning radius of 9.8'
- Speed = x miles per hour maximum
- Storage spaces needed: 7 for x ft² area of plowable land
- Width of tractor paths = 7-10' (varies based on type of crop and attachments)

Crop Infrastructure Node
Building Diagram: Tower + Base

TRACTOR Protocols
- Turning radius of 9.8'
- Speed = x miles per hour maximum
- Storage spaces needed: 7 for x ft² area of plowable land
- Width of tractor paths = 7-10' (varies based on type of crop and attachments)
As Round Rock continues to grow, we found that appropriating the space of the suburban lawn for a new agricultural economy creates added value resources loops in the city for both local food production and cash crop distribution. In addition to economic gain, the repatterning of Round Rock based on soil type, land use, and tractor protocols, as well as new crop production infrastructure, produces new types of community public space for the residential neighborhoods of the city.