

# *Relocalize Our Food*

Supporting food sovereignty in areas  
of high urban water stress



*“The professor exemplifies and surpasses all criteria for excellence in architecture education... Her leadership is truly remarkable as it effectively bridges the realms of classroom, studio, and community work while adhering to the highest standards of professional practice.”*

**Garden Executive Director and County Sustainability Manager**



Public Government



Student Designers and Researchers



Academic Researchers



Private Practice



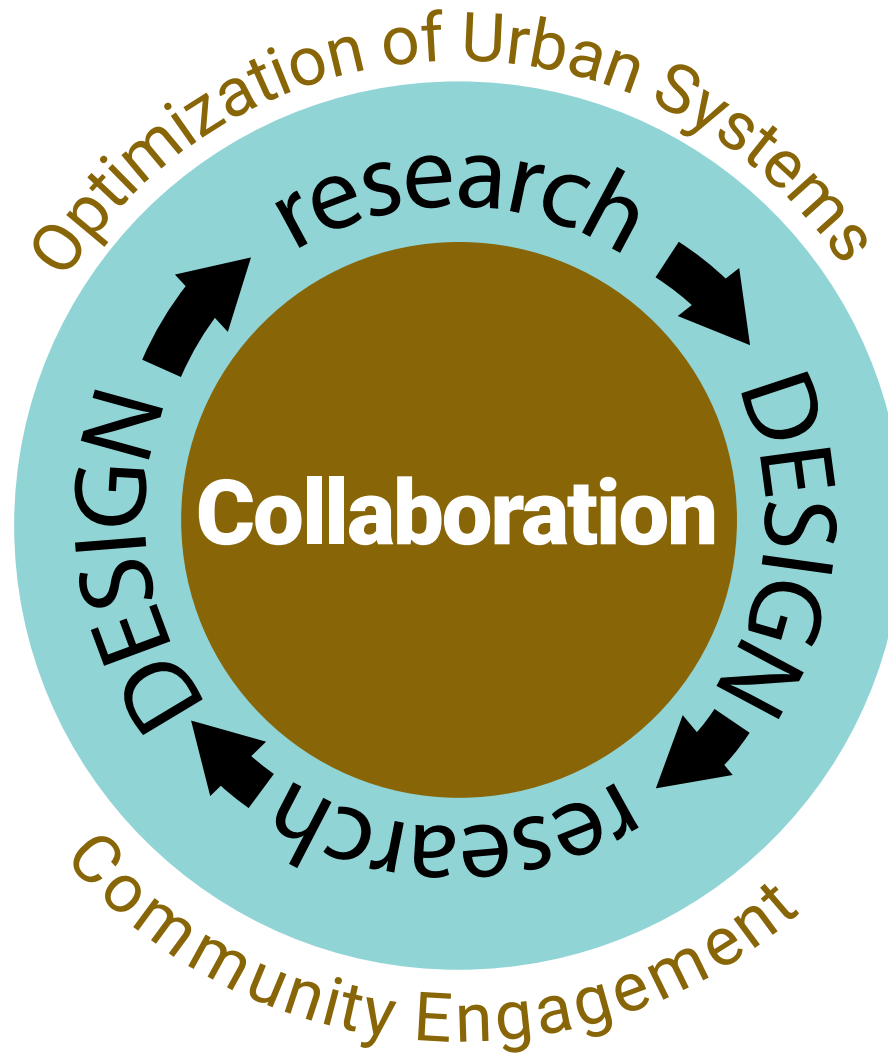
Food Cultivators



Community Food Educators



Hydrologists



## Relocalize Our Food is a public-private-academic partnership

### Public Government Partners

*Pima County Regional Flood Control (hydrological modeling)*  
*City of Tucson and Tucson Water*  
*Pima County Community and Workforce Development*

### Academic Partners

*Arizona State University (geo-spatial analyses)*  
*University of Arizona faculty and B.Arch students*

### Private Practice Partners

*GLHN Architects and Engineers*

### Food Cultivator and Educator Partners

*Community Food Bank of Southern Arizona*  
*Las Artes Art and Education Program*  
*Merchants Garden*  
*Mission Garden (Pima County)*

# Project Typologies



**A**

**B**

**C**

**D**

*River  
Adjacent*

*Urban  
Alley*

*Community  
Garden*

*Indoor  
Agriculture*

**A***Project:*  
*Typology:*  
*Landowner:***Mission Garden**  
**River Adjacent**  
**Pima County****B***Project:*  
*Typology:*  
*Landowner:***Las Artes School**  
**Urban Alley**  
**Pima County****C***Project:*  
*Typology:*  
*Landowner:***Los Nopales**  
**Community Garden**  
**Pima County****D***Project:*  
*Typology:*  
*Landowner:***Merchant's Garden**  
**Indoor Agriculture**  
**City of Tucson**

# Project Map

**A**

Project: **Mission Garden**  
 Typology: **River Adjacent**  
 Landowner: **Pima County**

**B**

Project: **Las Artes School**  
 Typology: **Urban Alley**  
 Landowner: **Pima County**

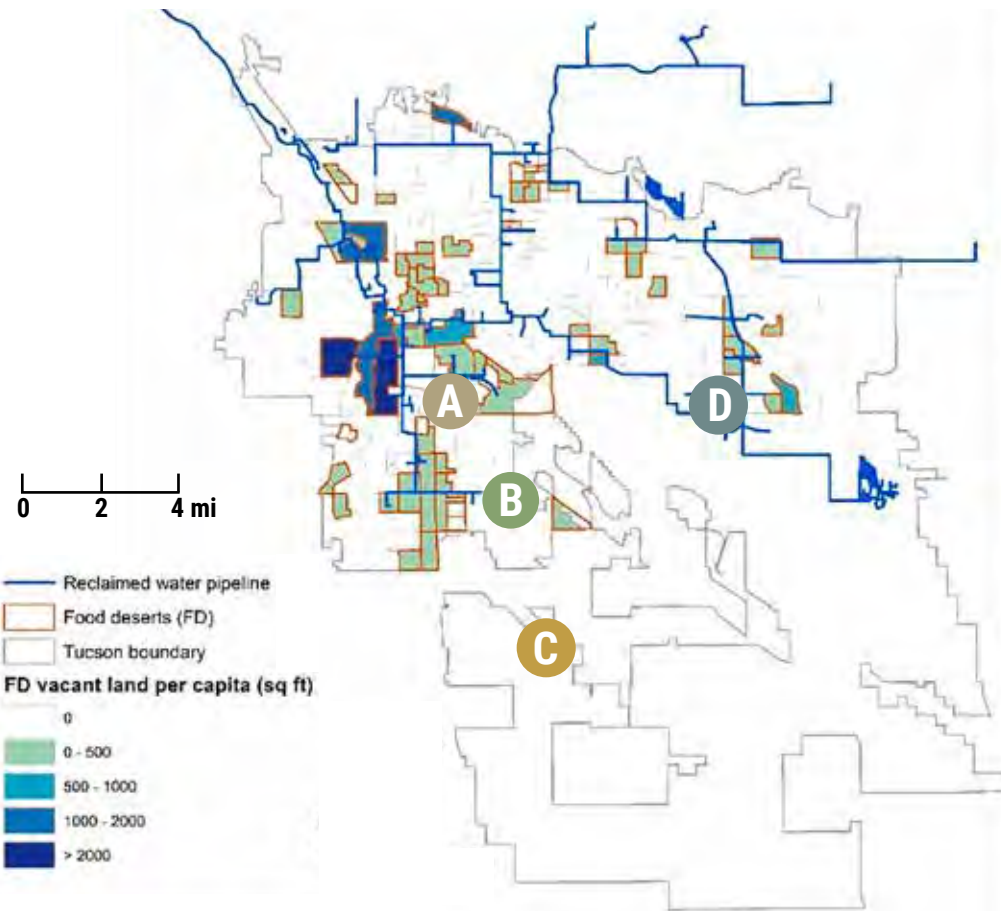
**C**

Project: **Los Nopales**  
 Typology: **Community Garden**  
 Landowner: **Pima County**

**D**

Project: **Merchant's Garden**  
 Typology: **Indoor Agriculture**  
 Landowner: **City of Tucson**

# Water Infrastructure



# A

Project:  
Typology:  
Landowner:

**Mission Garden  
River Adjacent  
Pima County**

## Project Objectives

Natural  
Cultivation

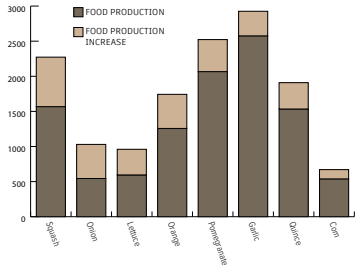
Historical  
Preservation

Water  
Procurement

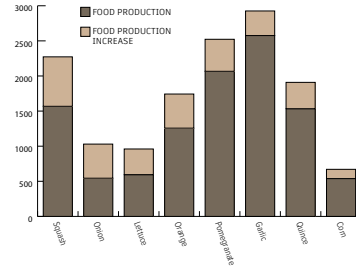
Community  
Involvement

Trail  
Connection

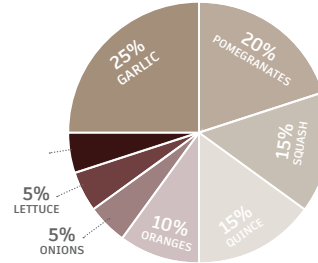
### LEAST INCREASE IN PRODUCTION: CORN



### MOST INCREASE IN PRODUCTION: SQUASH



### OVERALL FOOD PRODUCTION



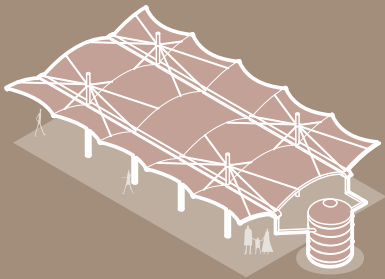
*"Growing up in the Tucson community with a background in agriculture, this studio was a turning point in my education to steer me into focusing on how architecture can bridge the gap between urbanization and food systems, especially in my city."*

**5th year B.Arch student**

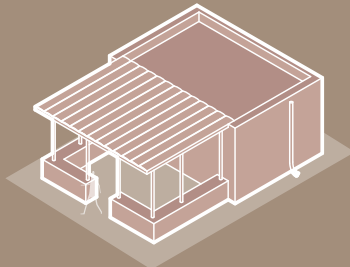


*Walking from trail to Mission Garden*

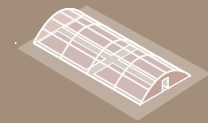
# Shading Structure



# Distribution Store



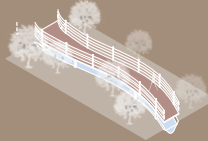
# The Garden



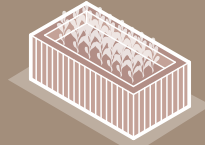
Greenhouse



Seed Library



Water Walk

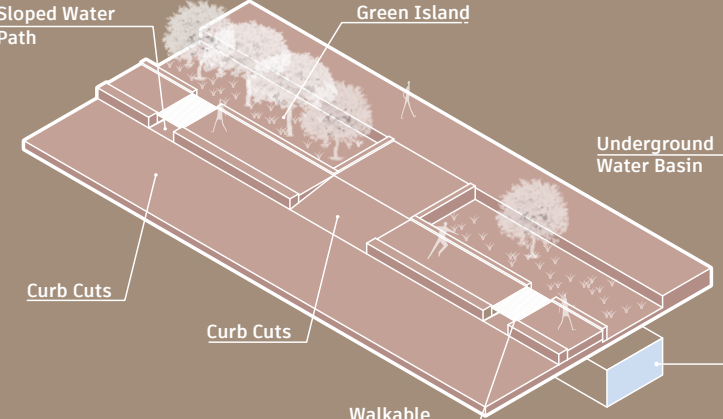


Demonstration Garden

# Kits for Water & Veggies

Sloped Water Path

Green Island



Underground Water Basin

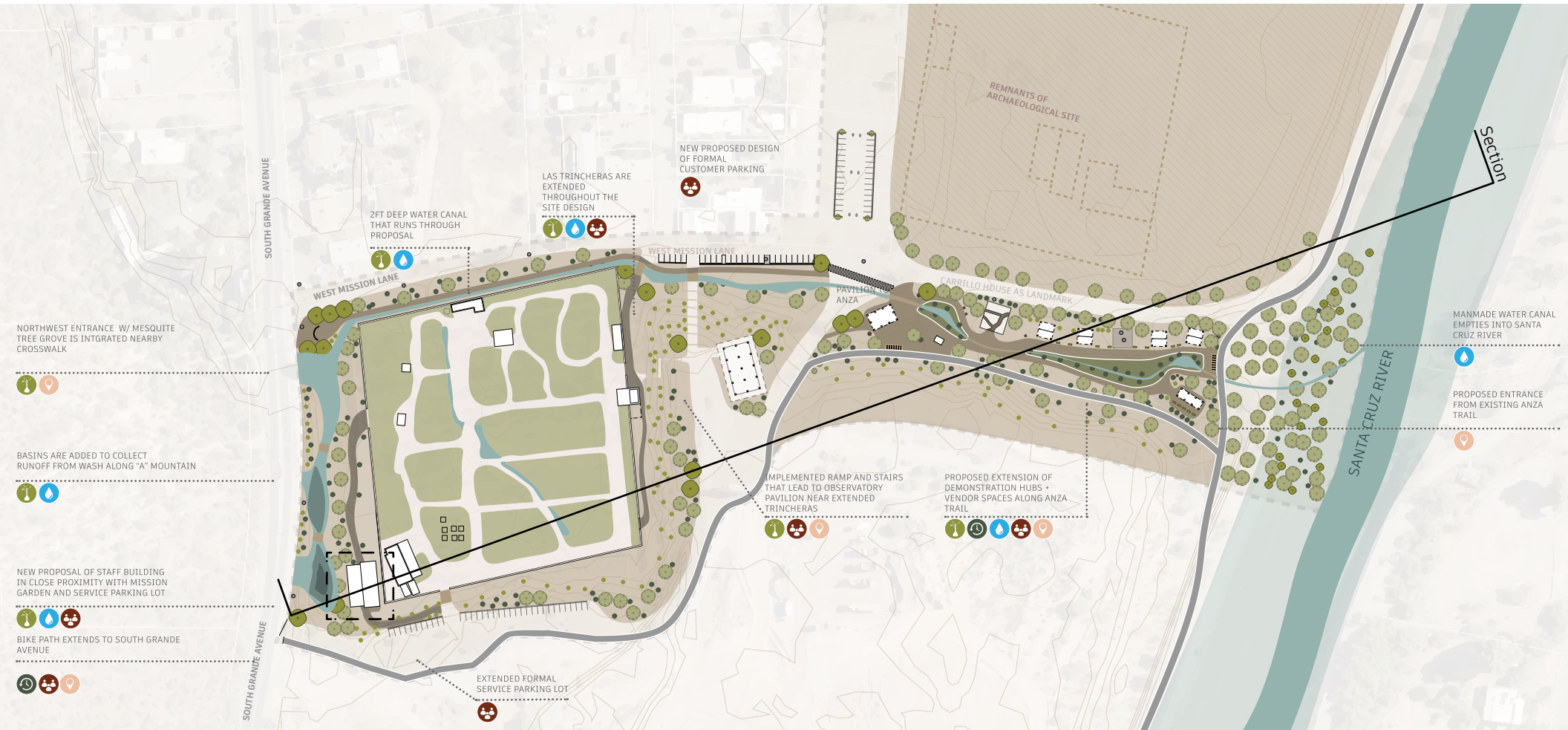
Curb Cuts

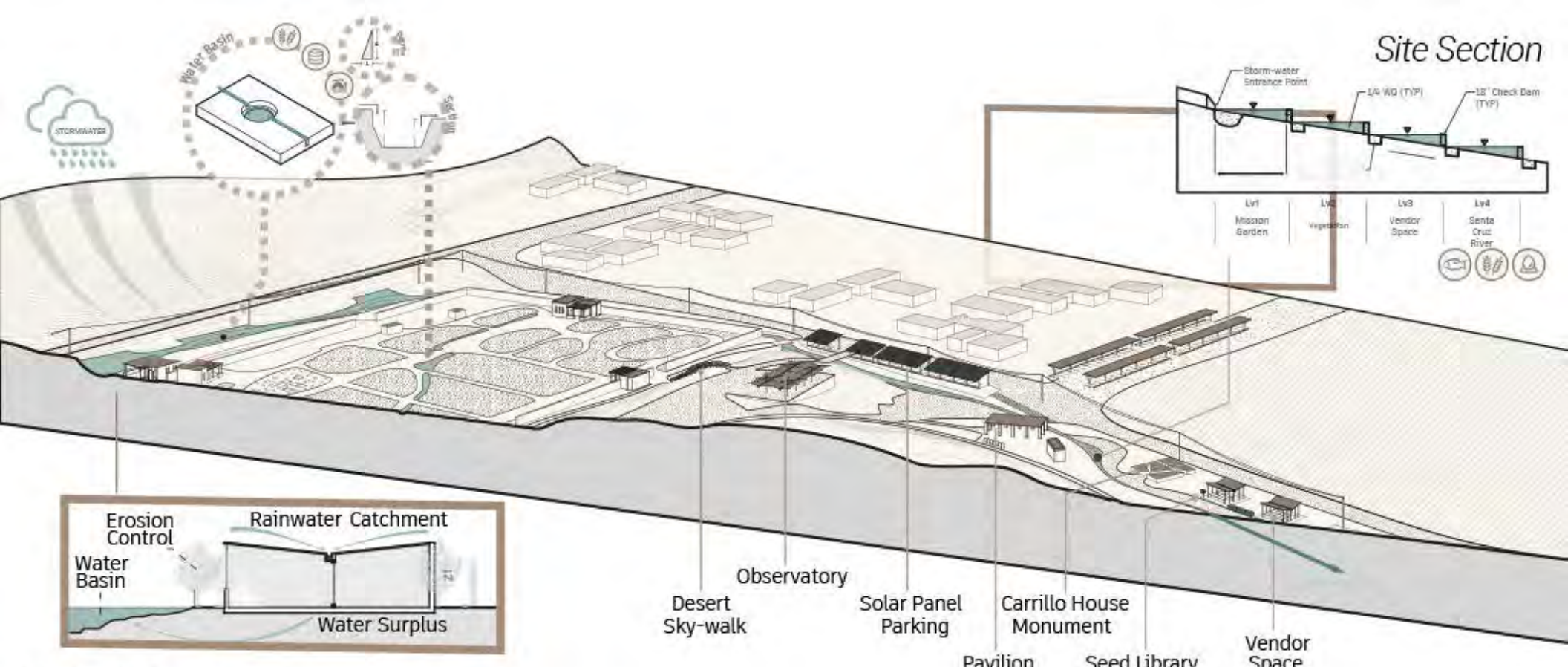
Curb Cuts

Walkable Water Device

## Kit of Parts

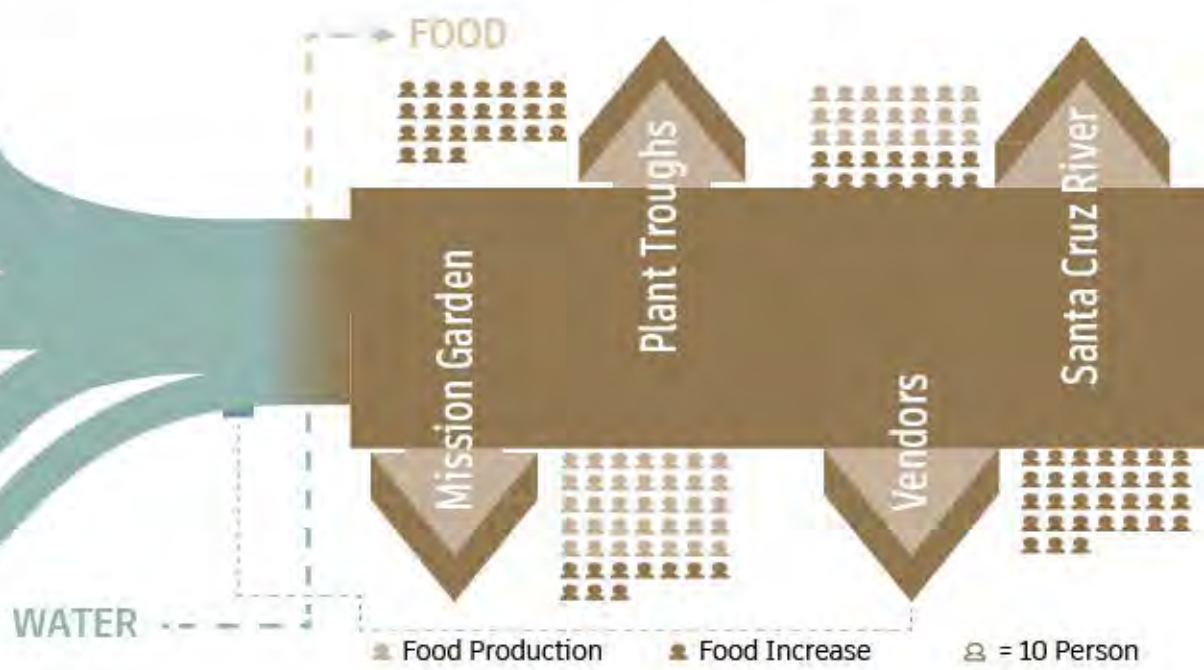
## Site Plan





## Water Diagram

- "A" Mountain:**  
 Annually Water Budget: 44,815  
 Water Loss: 20%
- Parkings**  
 Annually Water Budget: 13,657  
 Water Loss: 10%
- Water Basin**  
 Annually Water Budget: 1,4753  
 Water Loss: 10%
- Observatory**  
 Annually Water Budget: 3,468  
 Water Loss: 5%
- Staff Office**  
 Annually Water Budget: 2,312  
 Water Loss: 5%





# B

Project:  
Typology:  
Landowner:

**Las Artes School**  
**Urban Alley**  
**Pima County**

## Project Objectives

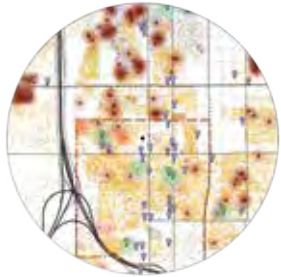
Equity and  
Empathy

Community  
Interaction

Water  
Self-Sufficiency

Food  
Literacy

Food  
Agency



### gentrification study

- built 2010-2021; list price > \$200k
- built 2010-2021; list price < \$200k
- built 2000-2010; list price > \$200k
- built 2000-2010; list price < \$200k

□ south tucson boundary

### demographics

- hispanic
- white
- native american / multi-racial
- black
- asian

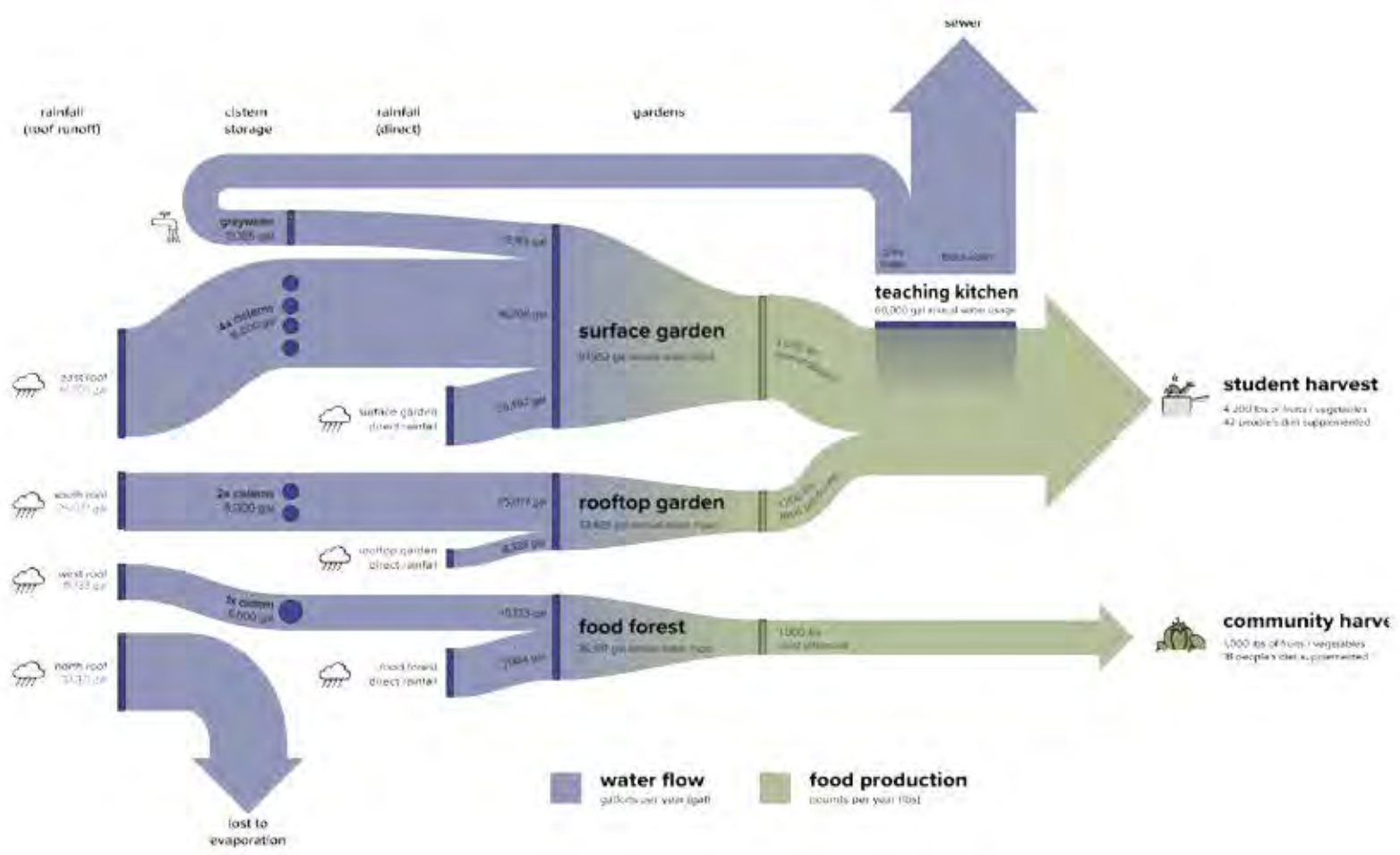
### local food sources

- fresh food sources
- processed / prepared food sources

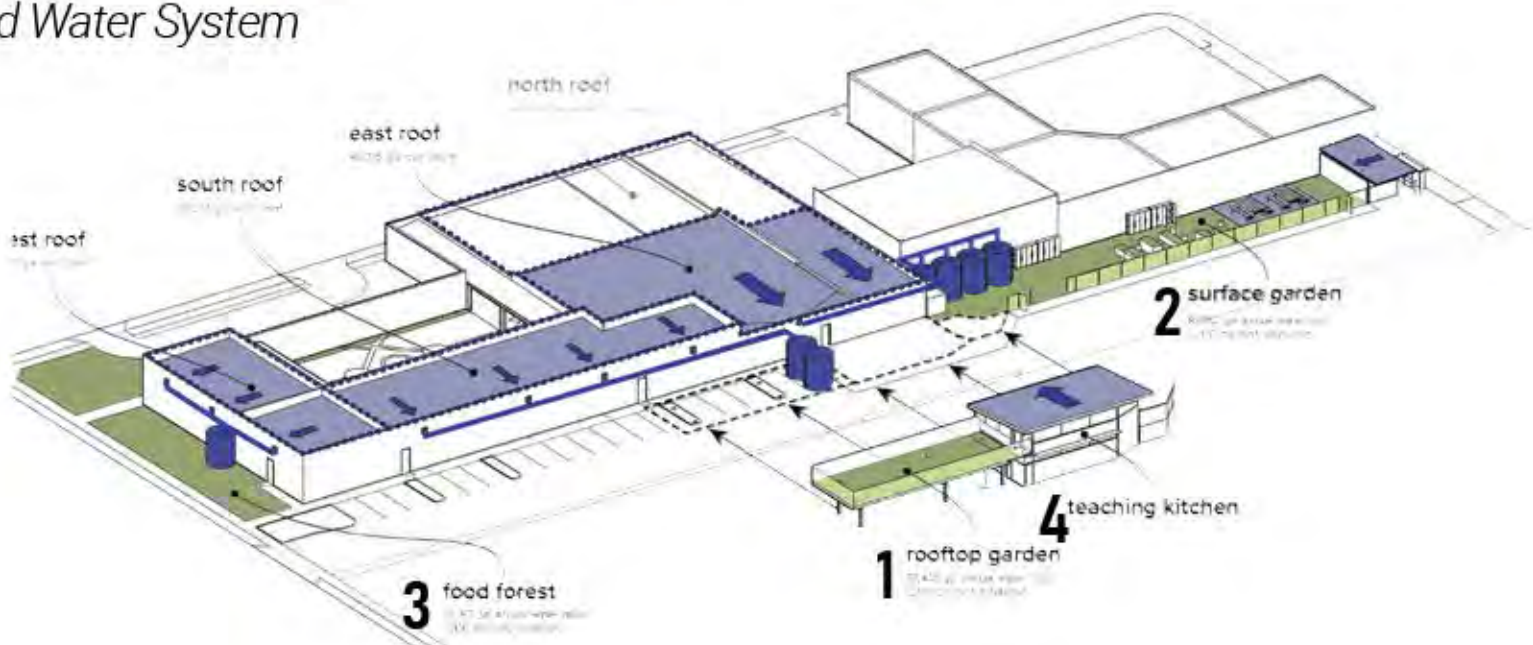
*"This studio was the most influential and impactful during my time in architecture school"*  
**5th year B.Arch student**

## Community Garden





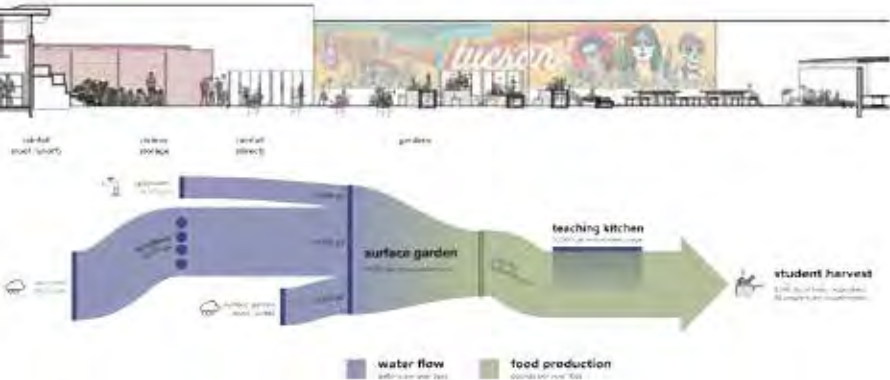
## Proposed Water System



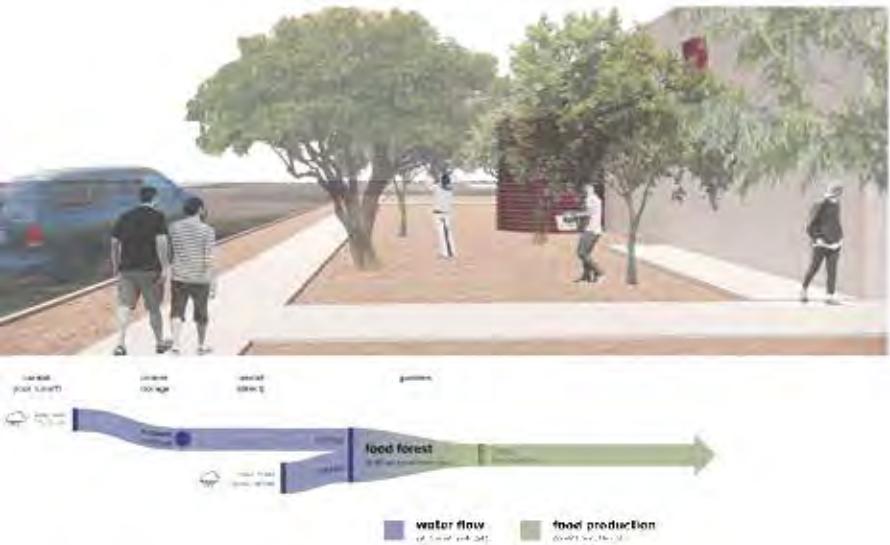
# 1 | Rooftop Garden



# 2 | Surface Garden



# 3 | Food Forest



# 4 | Kitchen



# C

Project:  
Typology:  
Landowner:

## Los Nopales Community Garden Pima County

### Project Objectives

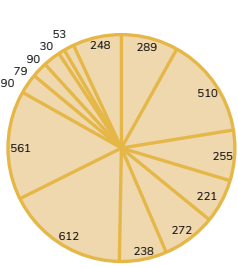
Walkable  
Network

Gardening  
Plots

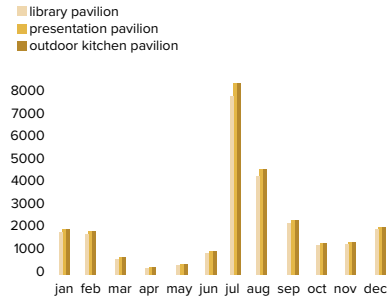
Sound  
Mitigation

Hands-on  
Education

Rainwater  
Harvesting



vegetable	quantity per harvest
bell peppers	289
cilantro	510
corn	255
jalapeño	221
spearment	272
squash	238
tomatillo	612
tomato	561
prickly pear	90
cholla	79
desert cotton	90
chia	30
yucca	53
jojoba	248

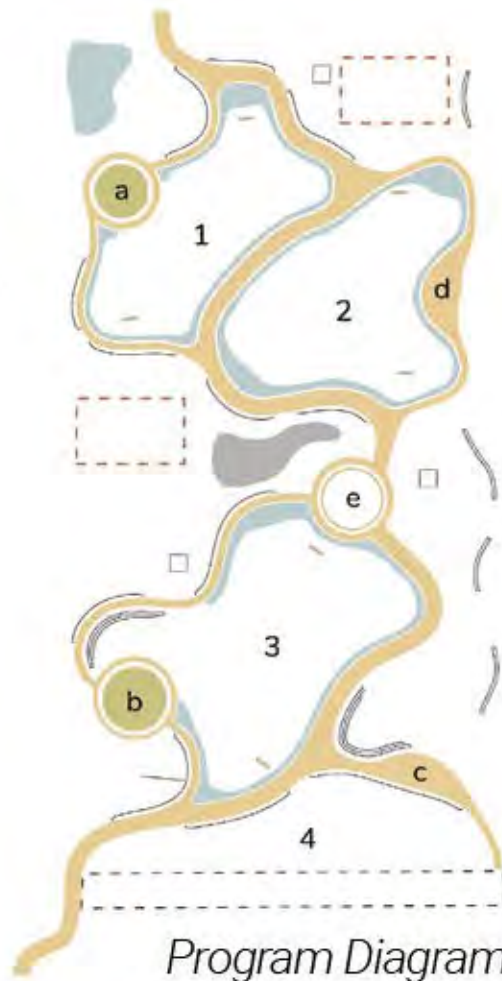


*"We were asked to imagine solutions for addressing food insecurity, food deserts, and agriculture literacy in the Tucson community and implement our ideas in a cohesive architectural project that addressed our specific community partner."*  
**5th year B.Arch student**



Presentation Pavilion

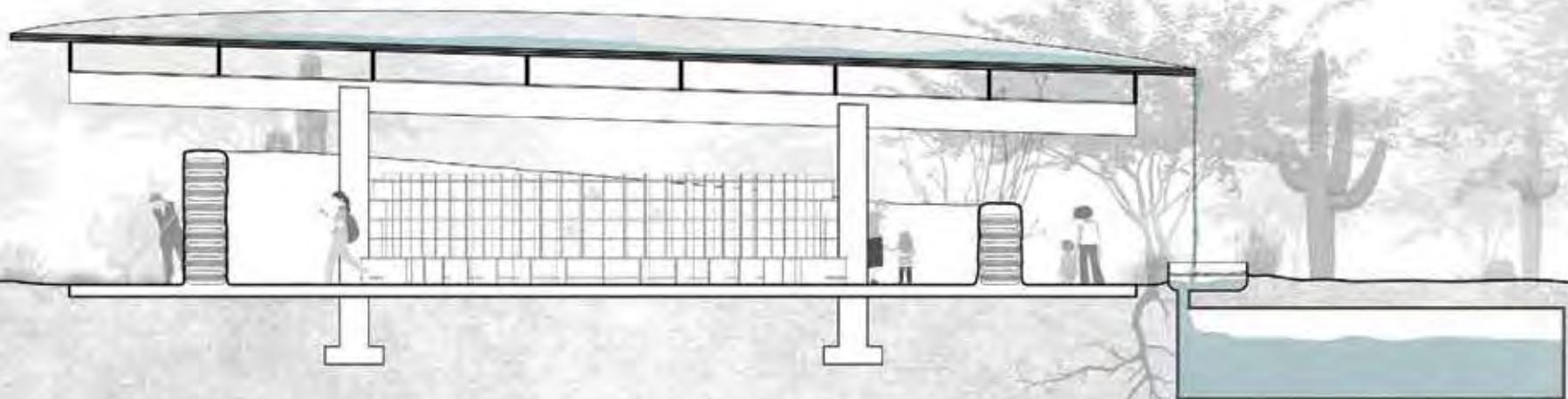
- site area (buildable) | 156522.96 sqft
- 1. agriculture field | 3500.58 sqft
- 2. agriculture field | 6148.46 sqft
- 3. agriculture field | 4824.84 sqft
- 4. material drop off space | 10596.40 sqft
- closed pavilions
- a. library | 966.60 sqft
- b. presentation room | 1179 sqft with 1776.8 sqft outdoor extension
- open-air pavilions
- d. craft space | 1230.51 sqft
- e. outdoor kitchen | 2360.21 sqft
- c. plant nursery | 1225.58 sqft
- composting toilets | 400 sqft
- natural playground | 1805.719 sqft
- water retention area | 8604.56 sqft
- packaging station | 120 sqft
- circulation | 26612.696 sqft
- ⋮ parking | 5795.17 sqft  
3 ada spaces near sidewalk  
21 regular  
4 loading to the far right  
28 total
- ⋮ wells | 5795.17 sqft



*Program Diagram*



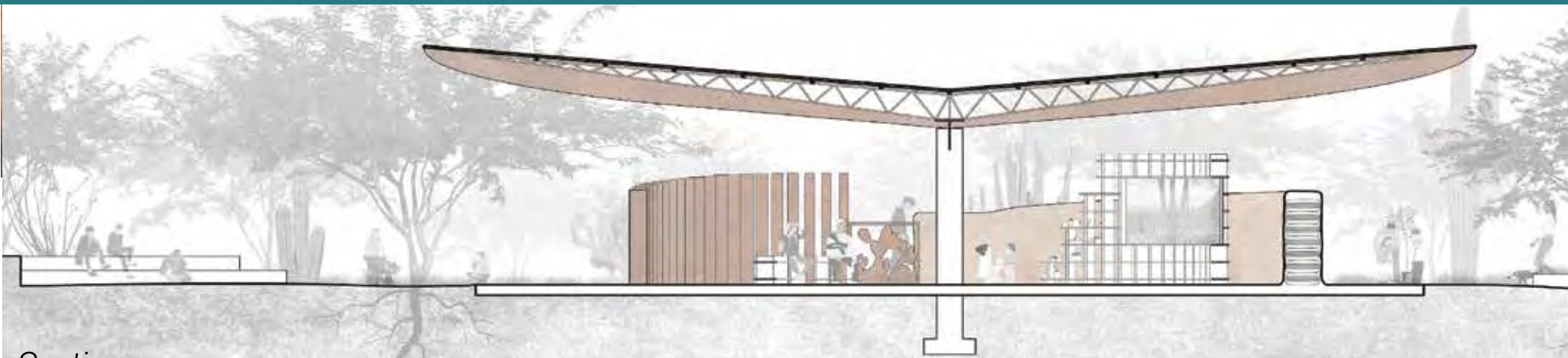
*Site Plan*



*Section*



*Outdoor Kitchen*



*Section*

# D

Project:  
Typology:  
Landowner:

**Merchants Garden**  
**Indoor Agriculture**  
**City of Tucson**

## Project Objectives

Water  
Efficiency

Aquaponic  
Production

Social  
Opportunity

Operational  
Transparency

*"The Food Systems Studio taught us what every architect's goal should be when they approach a project- to do good for the community. In the end each one of our projects carefully thought about how to conserve water (a precious resource in the Tucson desert), bridge the gap between urbanization and agriculture, and design projects with not only the community partner's budget in mind but the greater community as well."*  
5th year B.Arch student



## Section



# Future Food Network



*"The research-design conducted by the professor and students possessed a tangible and practical application in addressing the pressing challenges faced by local government entities and organizations tasked with navigating the multifaceted and compounding threats of poverty, food scarcity, and climate change in Tucson. Furthermore, the insights garnered from this research are highly transferable and applicable to other urban environments situated within arid landscapes."*

**Garden Executive Director and County Sustainability Manager**



# Community Engagement



*“Some of our most impactful experiences in the design process were sitting down with community members outside the local library and hearing their stories, listening to how they envisioned the greater neighborhood, and brainstorming with them about how we could bridge the gap between food and the community in an urban area.”*

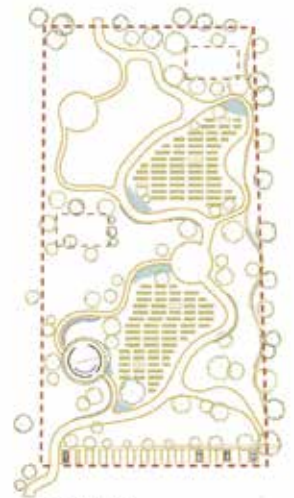
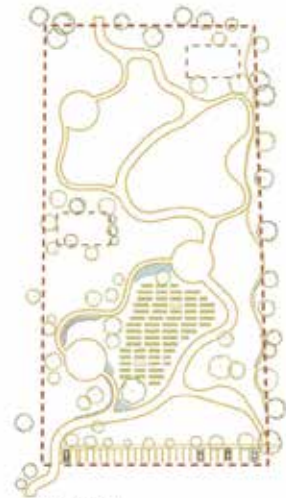
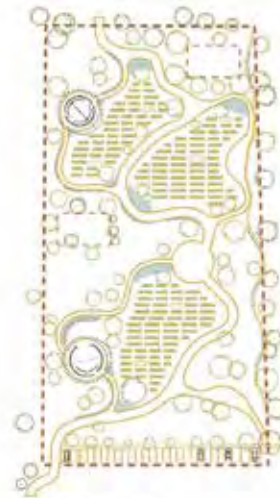
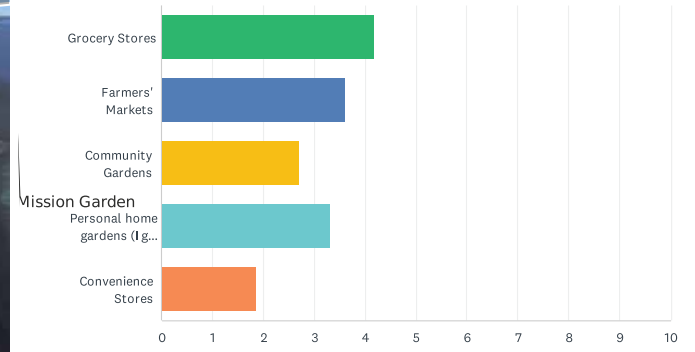
**5th year B.Arch student**

# DEAR VISITOR,

As Architecture students of the University of Arizona, we are doing a project that's based here in Mission Garden and we would love to get your feedback that could potentially be beneficial here. If you have the time today or any other day, please fill out our survey by scanning this QR code with your mobile device. It should only take a few minutes of your time. Thank you so much and we really appreciate it!



Q6 Rank these places from high to low (the highest is where you are most likely to get your produce)



PHASE ONE

PHASE TWO



# New research finds rainwater harvesting could be solution to Tucson food deserts



Data shows nearly 94,000 Tucson residents live in a food desert; those are low-income neighborhoods where the closest grocery store is at least a mile away.



By: **Jamie Warren**

Posted at 5:00 AM, Feb 09, 2021 and last updated 8:07 AM, Feb 09, 2021

## Neighborhood Farms Could be the Answer to Tucson's Food Deserts

A study co-authored by UArizona researchers makes a strong case that even in arid climates, urban farms can help neighborhoods get the nutritious food they need if the farms are irrigated in a sustainable way.

By Kyle Nathan, University Communications  
Jan 13, 2021



## Growing an Urban Farm

by Claire Rogers



Gardeners receive training at Los Miguiles de Cottonwood.

**A**long the west bank of the Santa Cruz River, south of "A" Mountain, an urban community farm flourishes with weekend activity, even in the midst of a national health crisis. Friends and neighbors plant, share, and play together. workshops to help new gardeners gain confidence; he also trains stewards to continue mentoring others. A community engagement coordinator helps families give back, by organizing work parties held each Saturday morning. An AmeriCorps youth education coordina-

*"Through a genuinely innovative course structure, students and practitioners were able to collaborate, effectively bridging architecture and urban agriculture in real-world contexts to achieve better social and ecological outcomes... The infectious enthusiasm displayed by the students was remarkable, and the professor's leadership..., adept at bridging the gap between academic learning and the practical requirements of project partners within the realm of desert food systems, was truly exceptional."*

**Garden Executive Director and County Sustainability Manager**