

Antioch College Village
CHARRETTE

**Kick-off Presentation &
Hands-on Design**

Sunday, March 1 | 6pm

Open Design Studio

Monday □ Wednesday | 9am - 6pm

OPEN HOUSE Tuesday, March 3 | 6 □ 8pm

Work-in-Progress Presentation

TODAY | 6pm



ANTIOCH
COLLEGE

design team

Consilience LLC

Sandy Wiggins (team leader)

consilience.net

Dover, Kohl & Partners | doverkohl.com

Biohabitats | biohabitats.com

Integral Group | integralgroup.com



ANTIOCH
COLLEGE

Antioch College Village Charrette

Work-in-Progress Presentation

03.05.15

antiochcollege.mindmixer.com



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tonight's agenda

- welcome
- recap: this week
- draft vision
- your feedback

Antioch College Village



Touchstones

Antioch College Village will:

Establish a new paradigm for higher education by

- Contributing to the financial sustainability of the College
- Linking adult learning and participation with College life
- Providing an alternative lifestyle for "next chapter" individuals
- Nurturing cultural and intellectual engagement

Exemplify sustainable living through

- Carbon neutral energy use
- Preservation and enhancement of water resources
- Sustainable farming and food production
- Compact pedestrian and bike oriented environment

Enrich the community with

- Options for a diverse, multigenerational population
- Provisions for healthy, active aging in place
- Connections to each other, the town and the natural environment
- Channels to support the Yellow Springs local economy

A young girl in a black and white striped shirt and dark shorts is walking barefoot on a metal grate walkway. She is holding a small child in a white hoodie. The walkway is part of a larger structure with water flowing over it, creating a shimmering effect. The background is a bright, sunny outdoor setting.

NOW IS THE RIGHT TIME FOR A WORLD OF LIVING COMMUNITIES

Living Community Challenge 1.0

A visionary path to a regenerative future

Imagine a city block or a college campus sharing resources from building to building, growing food and functioning without a dependency on fossil fuels.



INTERNATIONAL
LIVING FUTURE
INSTITUTE



PLACE



Photo: iHtteny / Shutterstock.com

WATER



Photo: aeshoft / Shutterstock.com

ENERGY



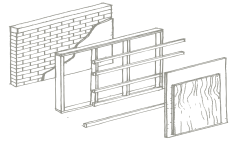
Photo: CreativeNaturer.nl / Shutterstock.com

HEALTH & HAPPINESS

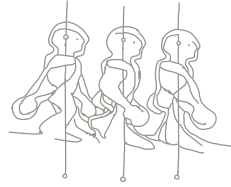


Photo: Crdjan / Shutterstock.com

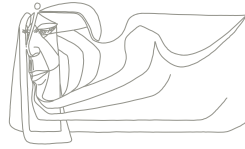
MATERIALS



EQUITY



BEAUTY



quick poll

recap





Kick-off & Hands-on Design Session



Kick-off & Hands-on Design Session



Antioch College Village CHARRETTE
Hands-on Design Session

3 Top Ideas
Table # 4

1. Different types housings - closer
2. Community space

Antioch College Village CHARRETTE
Hands-on Design Session

3 Top Ideas
Table # 5

1. relationship + connectivity of the Glen

Antioch College Village CHARRETTE
Hands-on Design Session

3 Top Ideas
Table # 6

1. Multitype sustainable housing scattered throughout community/campus

development + design
 leaving open space
 ↓
 VARIETY OF LOCATIONS - "EXPLORATORY" college
 - science -

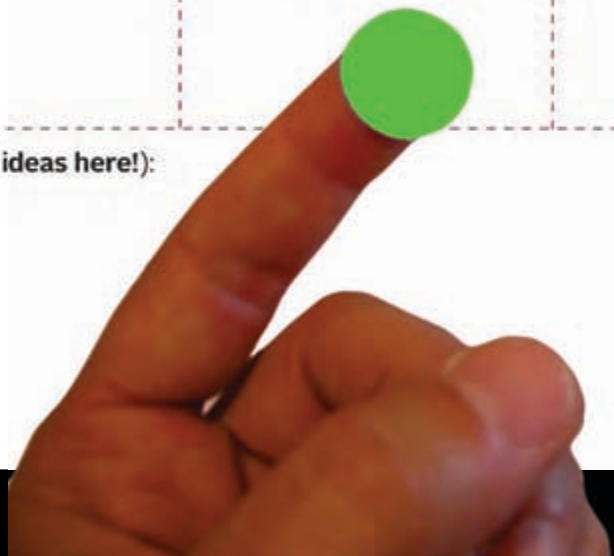
Kick-off & Hands-on Design Session

exercise 1: goals

Of many potential goals to pursue, which are **MOST IMPORTANT TO YOU**:

enable environmentally sustainable lifestyles through design	include a variety of housing types and tenancies	create walkable and bikable places	provide connectivity with nature	utilize green building & site design systems (for energy, water, etc.)
increase the number of families who will use our schools and spread our tax burdens	leverage our natural strengths as a destination for those who want to live in an intimate environment of arts and education	add new residents that help support nearby downtown businesses	provide financial support to the college	build a diverse community of life-long learners , and increase the interaction between the college and community

other (your ideas here!):



exercise 1: goals RESULTS

Of many potential goals to pursue, which are **MOST IMPORTANT TO YOU**:



other (your ideas here!):


affordable housing (7 tables)

financial sustainability (2 tables)

build community (2 tables)


diversity of age, income (3 tables)

tell us what you think

 Antioch College Village
CHARRETTE


"Antioch College Village" is a working name - what should we call the new sustainable housing at Antioch College?

Renaissance Village

 Antioch College Village
CHARRETTE

"Antioch College Village" is a working name - what should we call the new sustainable housing at Antioch College?

- Antioch Eco-Village
- yellow Springs Eco-Village
- yellow Springs Eco Village at Antioch College
- Antioch College Eco-Village

 Antioch College Village
CHARRETTE


"Antioch College Village" is a working name - what should we call the new sustainable housing at Antioch College?

Energy Village

 Antioch College Village
CHARRETTE


ONE IDEA that the planning team should explore this week:

shared workspace for work @ home/entrepreneurs

 Antioch College Village
CHARRETTE

ONE IDEA that the planning team should explore this week:

A dog park using sustainable ideas.

 Antioch College Village
CHARRETTE

What **PLACES** that you visited have an image, character, or sense of place that could be a model for future housing at Antioch College?

SAVANNAH, GA

tell us what you think



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Antioch College Village **CHARRETTE**

What **PLACES** that you visited have an image, character, or sense of place that could be a model for future housing at Antioch College?

Paris, France



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Antioch College Village **CHARRETTE**

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SAVANNAH, GA

workspace for
work @ home/
entrepreneurs

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ANTIOCH
COLLEGE

Antioch College Village

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Paris, France

workspace for
work @ home/
entrepreneurs



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Antioch College Village

CHARRETTE

What **PLACES** that you visited have an image, character, or sense of place that could be a model for future housing at Antioch College?

SHORT NORTH NEIGHBORHOOD,

COLUMBUS, OHIO

tell us what you think



ANTIOCH
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Antioch College Village

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Paris, France

workspace for
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Antioch College Village

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COLUMBUS, OHIO

tell us what you think



Antioch College Village **CHARRETTE**

ONE IDEA that the planning team should explore this week:

shared
workspace for
work @ home/
entrepreneurs



Antioch College Village **CHARRETTE**

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Energy Village

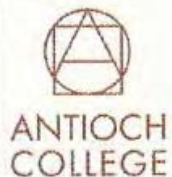


Antioch College Village **CHARRETTE**

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SAVANNAH, GA

tell us what you think

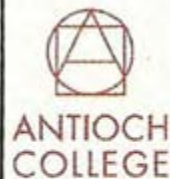


Antioch College Village **CHARRETTE**

ONE IDEA that the pl
should explore this w

shared
works pa
work @ ho
entre

entrepreneurs



Antioch College Village **CHARRETTE**

If I came back to Antioch College a few
years from now, I would hope to see:

Dog Park!

(what kinds of streets, buildings, public spaces?)



Antioch College Village **CHARRETTE**

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sustainable housing at Antioch College?

tell us what you think



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Antioch College Village **CHARRETTE**

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Renaissance Village

work @ home/
entrepreneurs



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Energy Village



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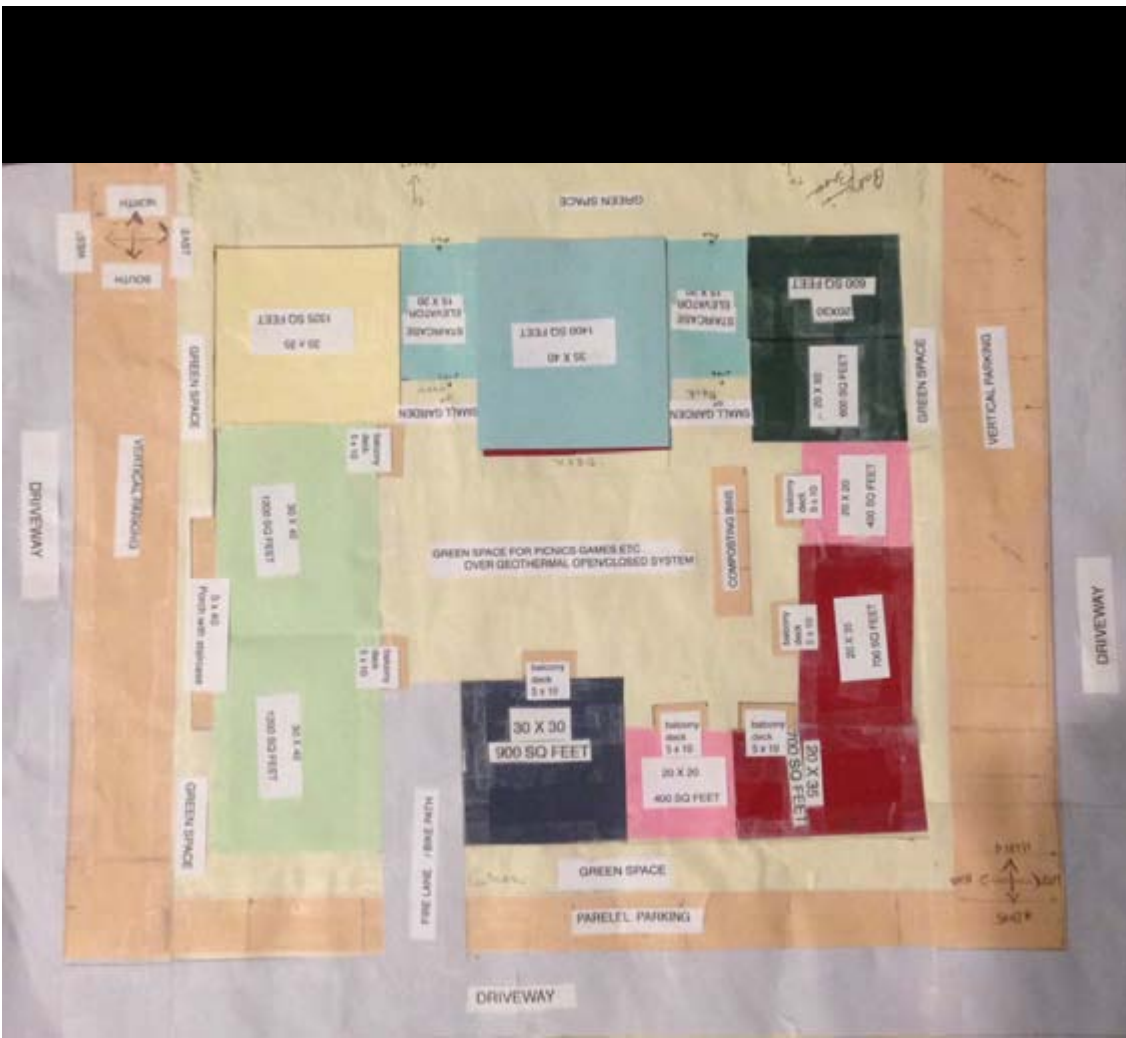
Antioch College Village **CHARRETTE**

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"A bab idea"



Design Studio



Co-housing



Design Studio: Open House

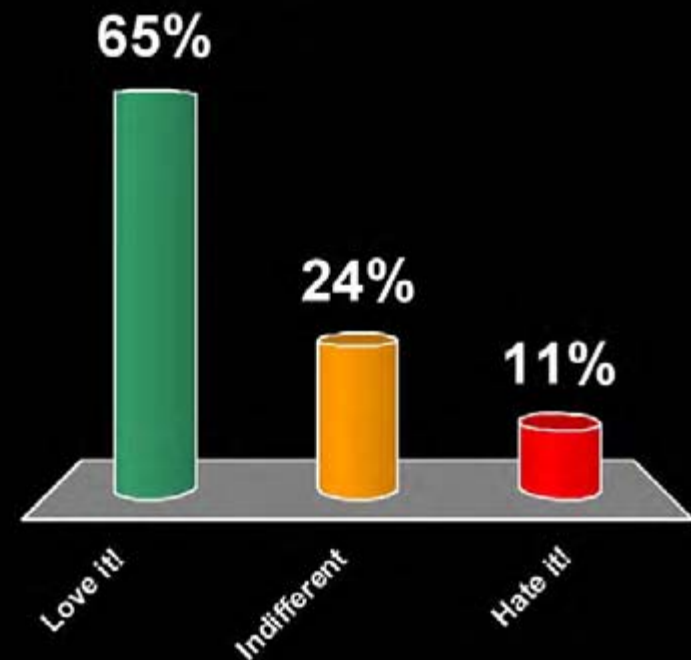


Design Studio: Open House

How would you rate this?



1. Love it!
2. Indifferent
3. Hate it!

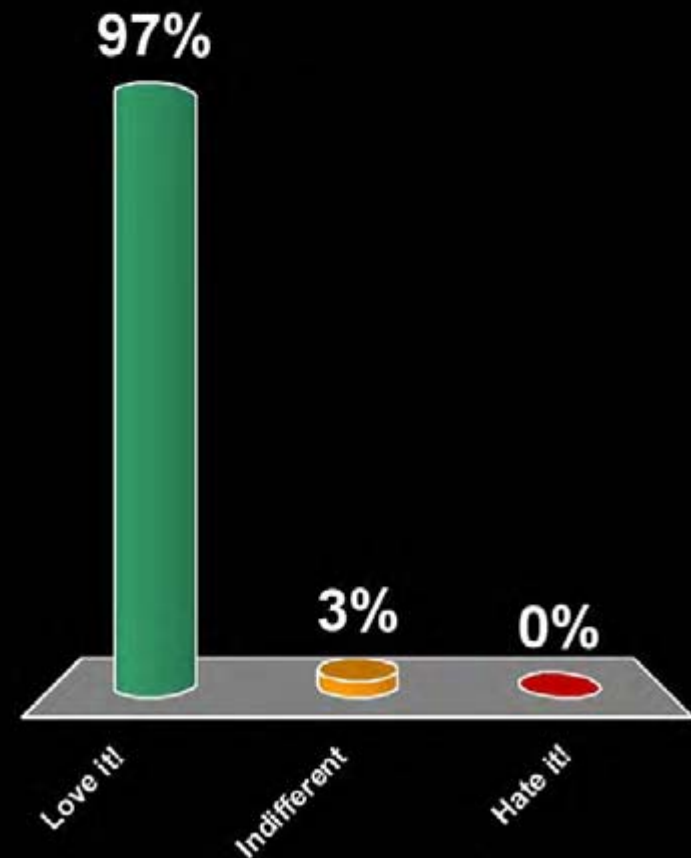


Keypad Polling at Open House

How would you rate this?



1. Love it!
2. Indifferent
3. Hate it!

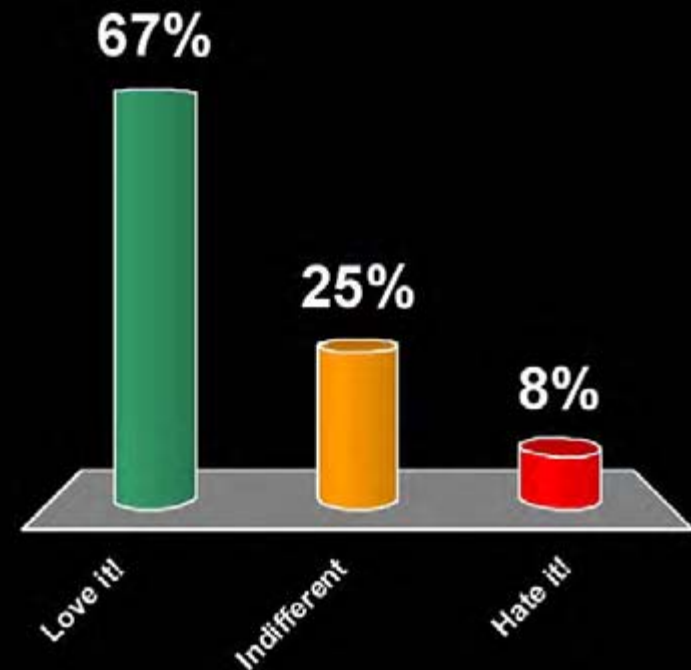


Keypad Polling at Open House

How would you rate this?



1. Love it!
2. Indifferent
3. Hate it!

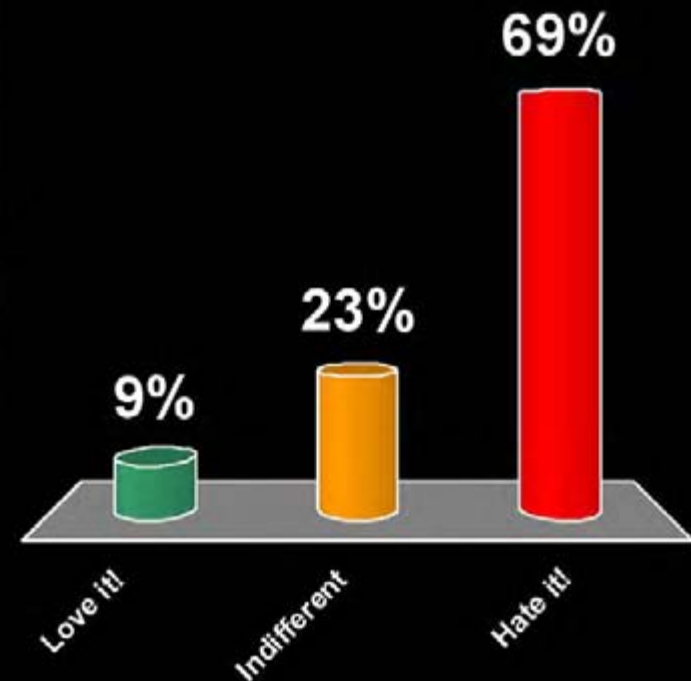


Keypad Polling at Open House

How would you rate this?



1. Love it!
2. Indifferent
3. Hate it!



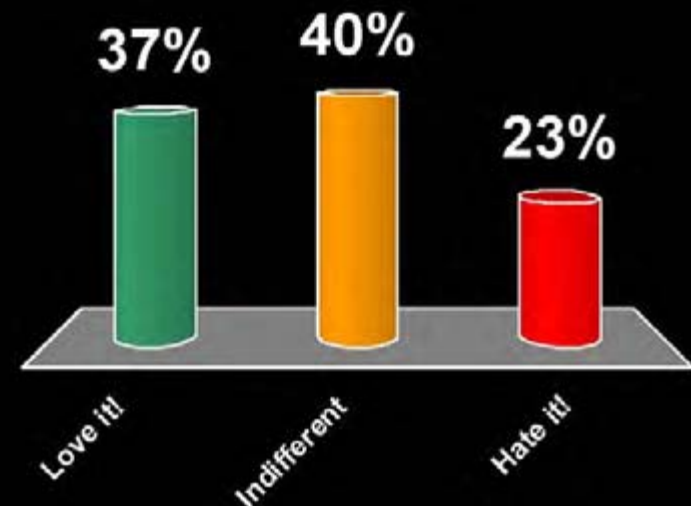
Keypad Polling at Open House

How would you rate this?

(THAT'S A SINGLE-FAMILY HOUSE)



1. Love it!
2. Indifferent
3. Hate it!



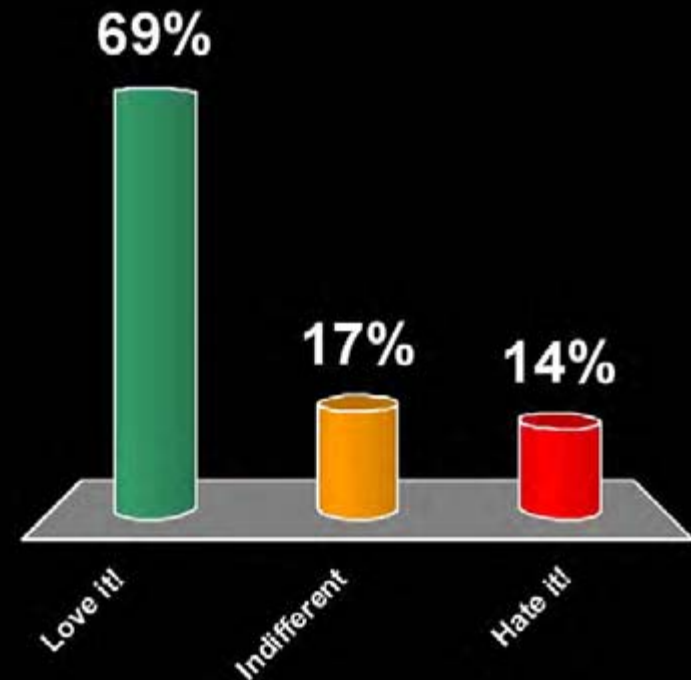
Keypad Polling at Open House

How would you rate this?

(THAT'S A SIX-UNIT APARTMENT HOUSE)



1. Love it!
2. Indifferent
3. Hate it!



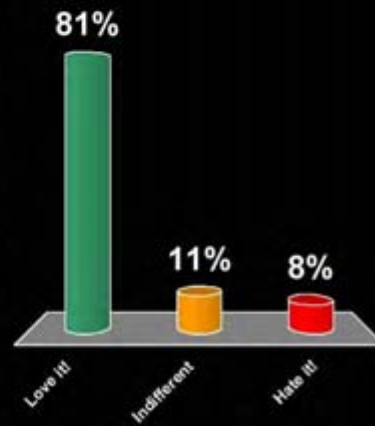
Keypad Polling at Open House

How would you rate this?

How would you rate this?



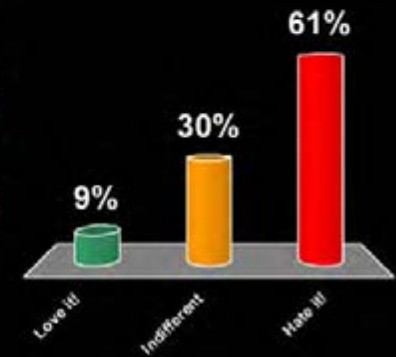
- 1. Love it!
- 2. Indifferent
- 3. Hate it!



Open House



- 1. Love it!
- 2. Indifferent
- 3. Hate it!



Student Meeting

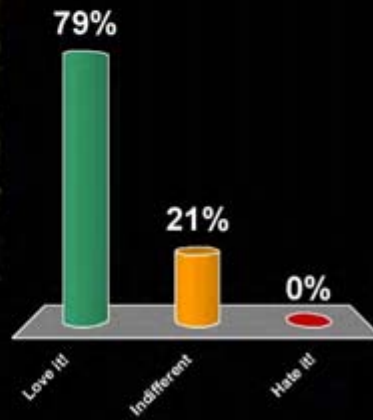
Keypad Polling results

How would you rate this?

How would you rate this?



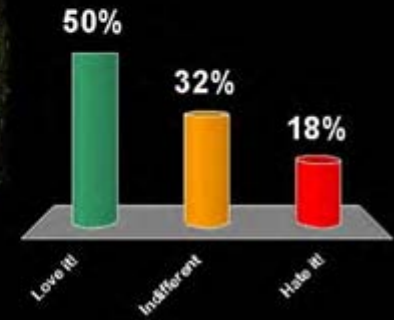
- 1. Love it!
- 2. Indifferent
- 3. Hate it!



Open House



- 1. Love it!
- 2. Indifferent
- 3. Hate it!



Student Meeting

Keypad Polling results

"Make no little plans; they have no magic to stir men's blood and probably themselves will not be realized. Make big plans; aim high in hope and work, remembering that a noble, logical diagram once recorded will never die, but long after we are gone will be a living thing, asserting itself with ever-growing insistency. Remember that our sons and grandsons are going to do things that would stagger us. Let your watchword be order and your beacon beauty."

Daniel Burnham

- EXISTING BUILDINGS
- NEW CAMPUS BUILDINGS
- NEW EDUCATIONAL BUILDINGS
- REPAIR/RENOVATION AREAS



*** ANTIPOCH MASTER PLAN**

The Board has approved the Antioch Master Plan for several years. For an in-depth overview of the plan, please visit the Antioch website at www.antioch.edu/masterplan. The plan is a long-term vision for the college and is a key component of the college's strategic plan. It provides a framework for the college's future development and growth.

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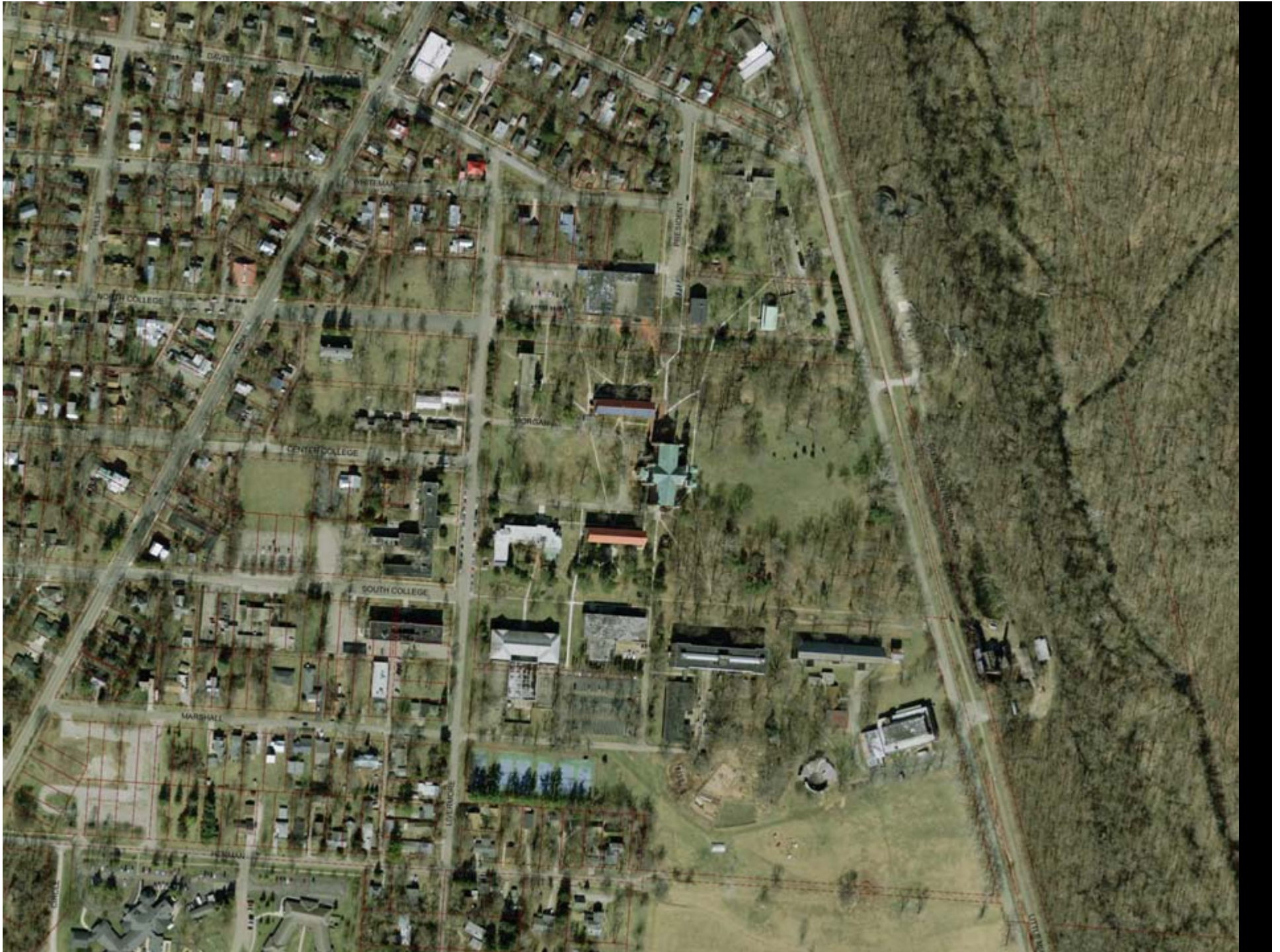
MASTER PLAN



draft

vision

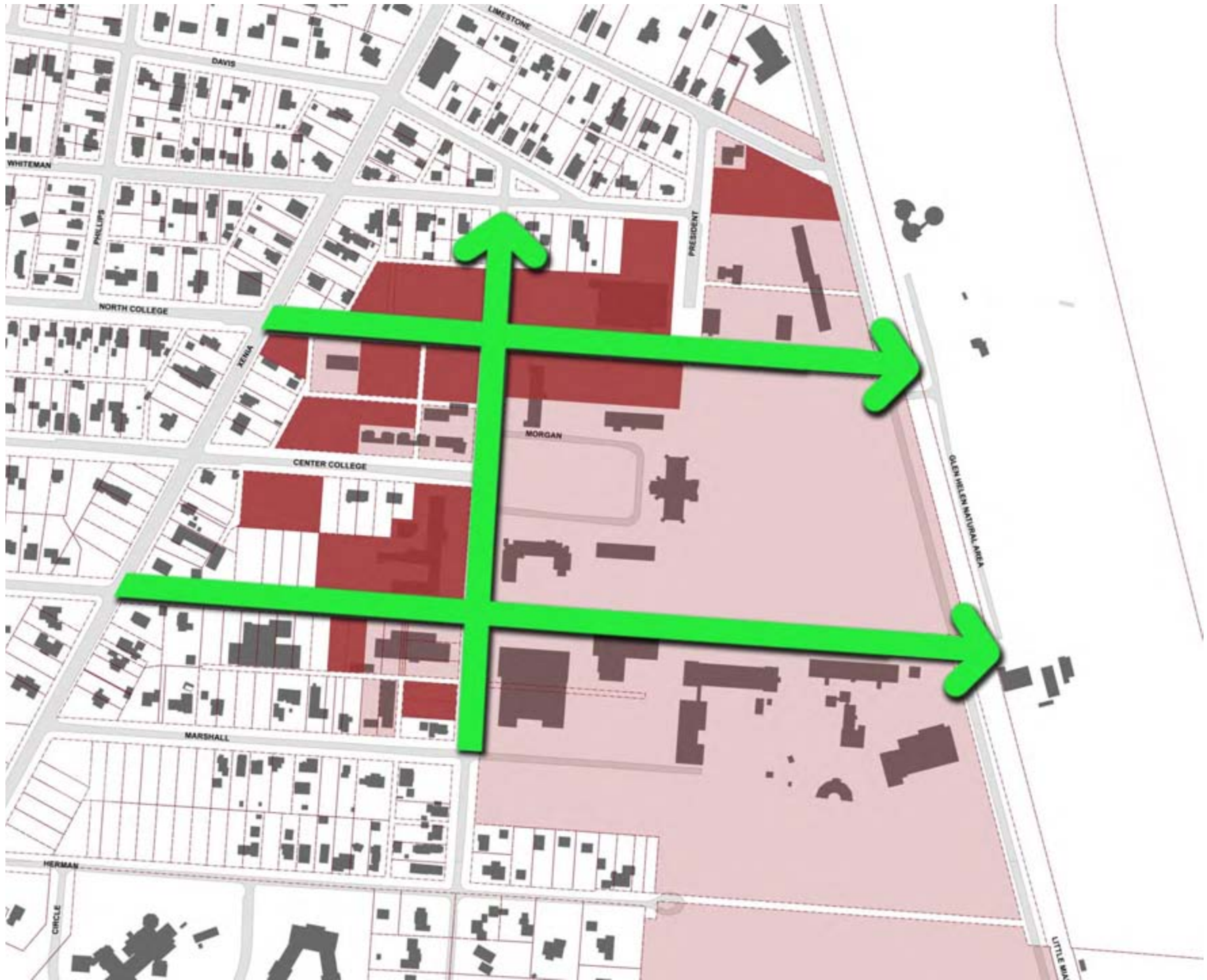


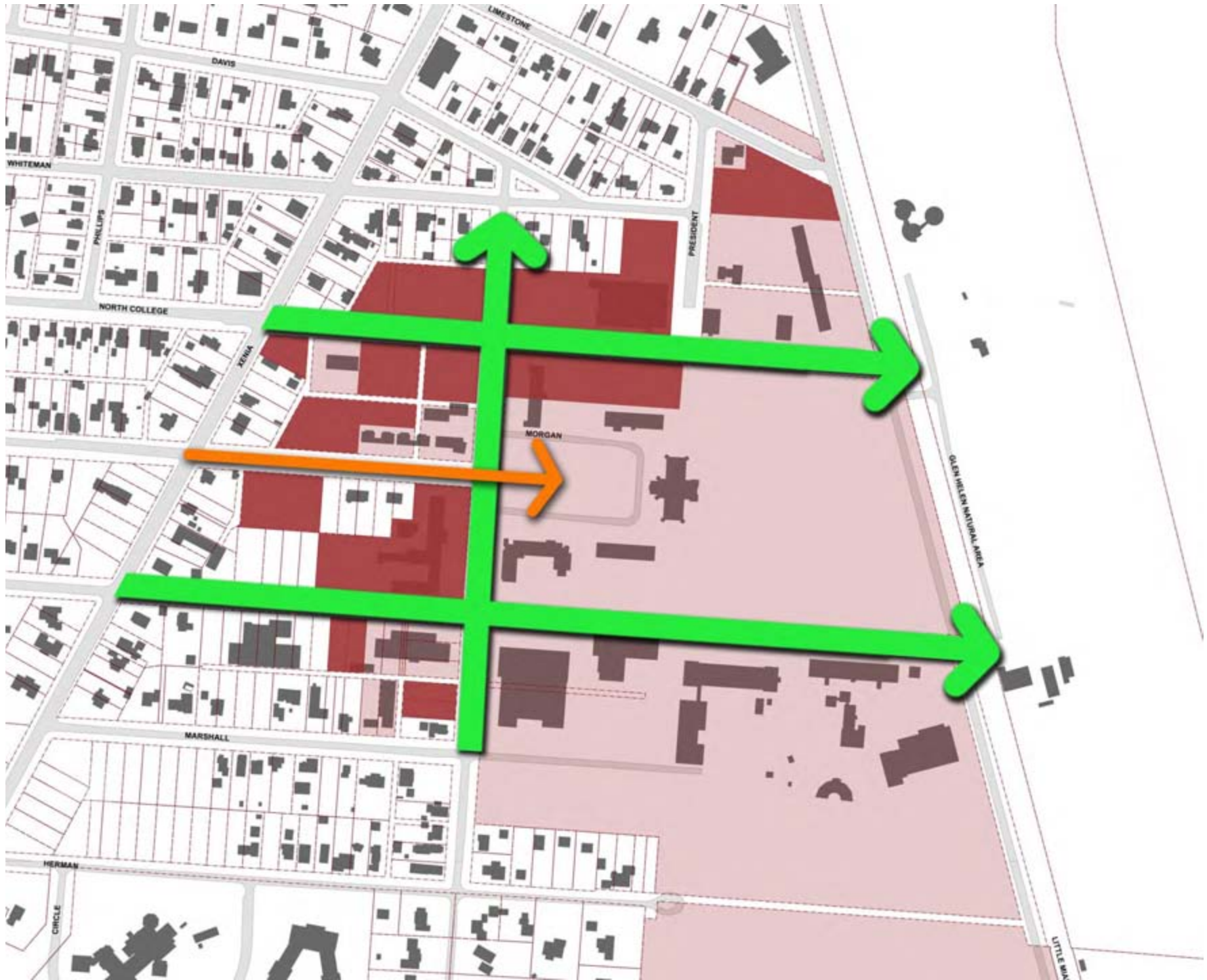












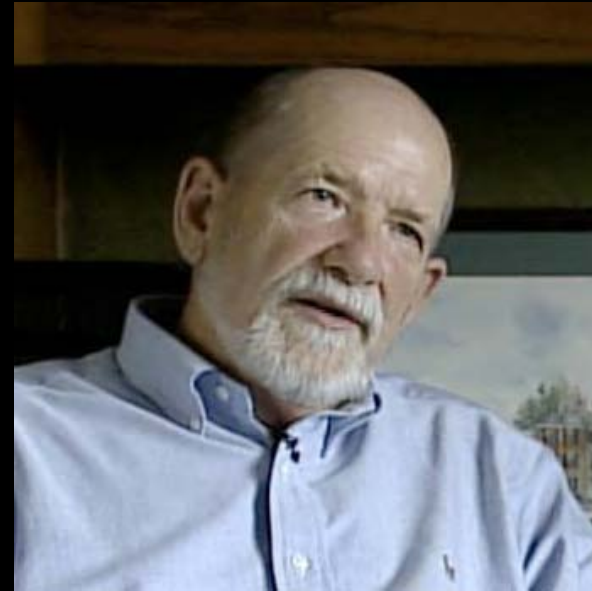
COHOUSING CONCEPT



Illustrative Vision



precedents



Cotton District, Starkville MS

precedents



Cotton District, Starkville MS

precedents



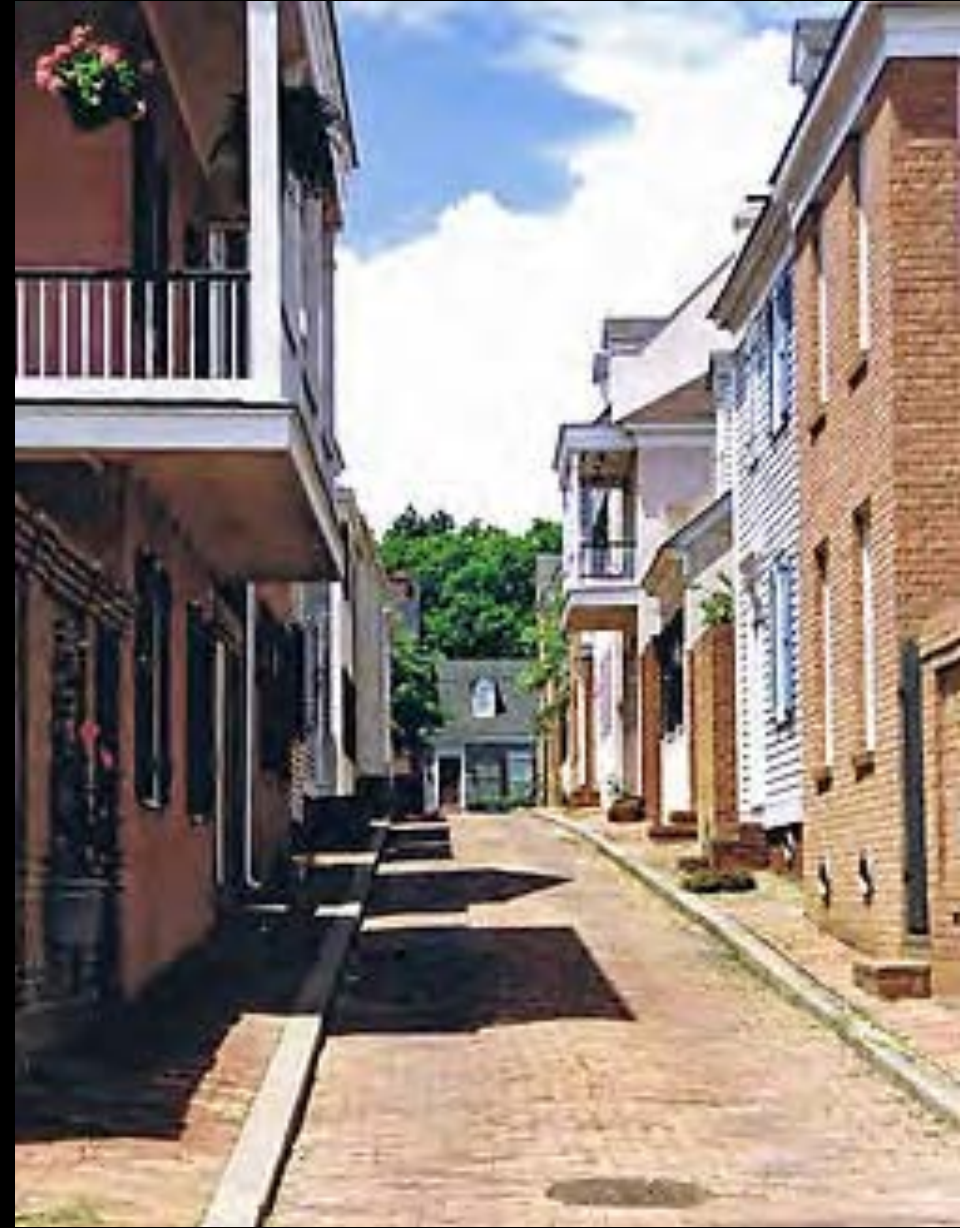
Cotton District, Starkville MS

precedents



Cotton District, Starkville MS

precedents



Cotton District, Starkville MS

precedents



Cotton District, Starkville MS

precedents



Cotton District, Starkville MS

precedents



Cotton District, Starkville MS



North Campus



North College

Livermore





North College

Livermore











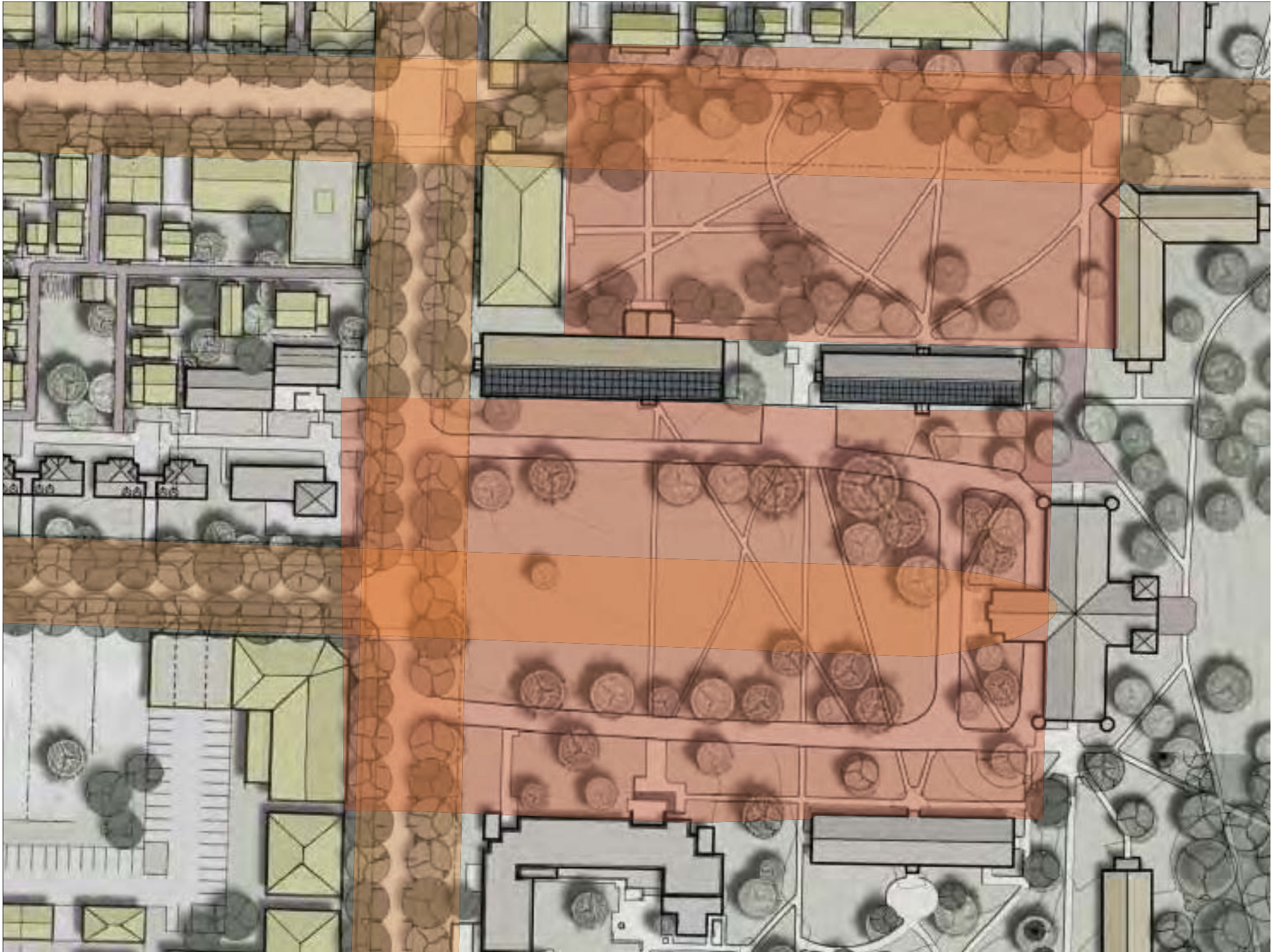
North College

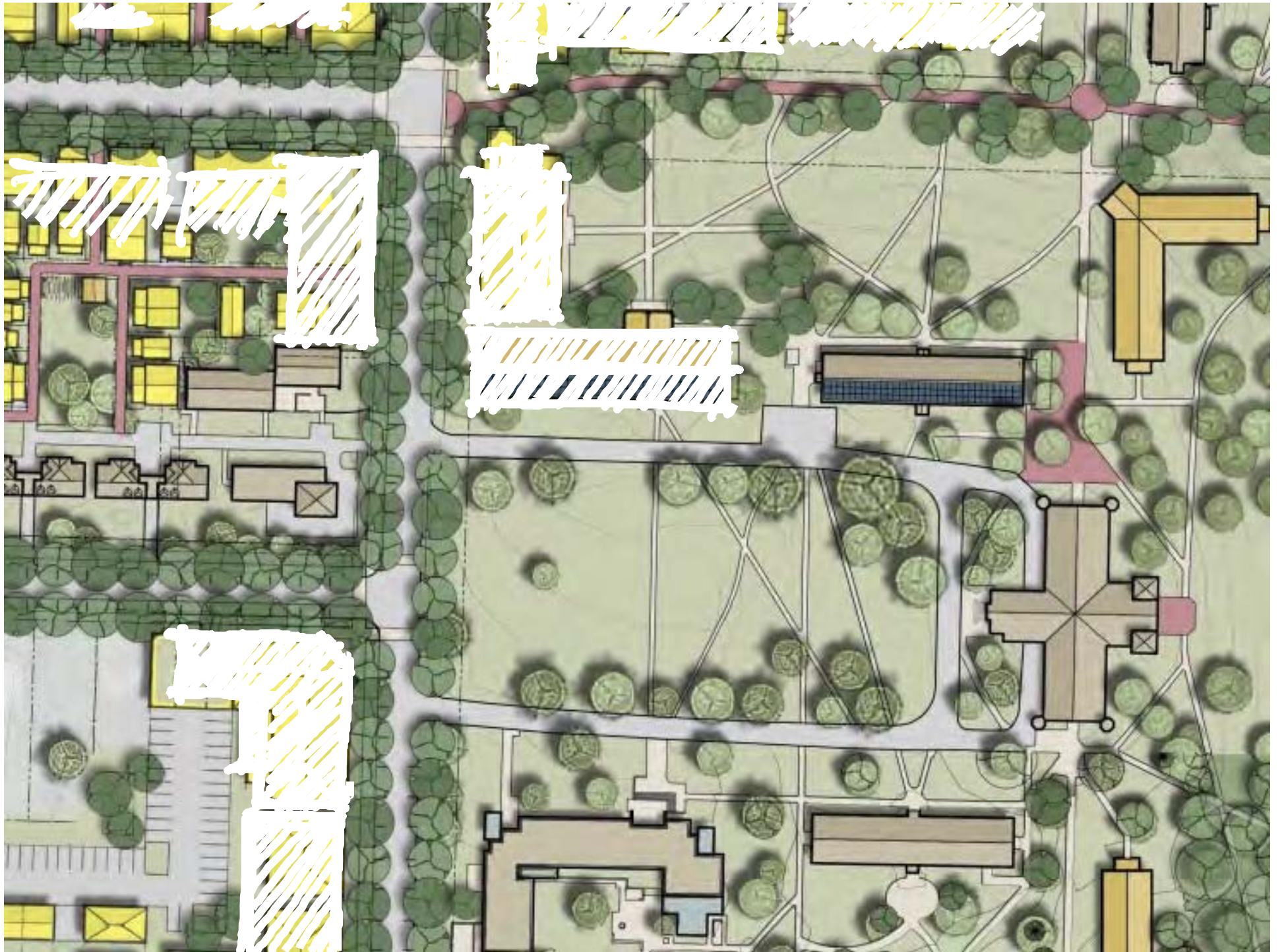
Livermore















North College

Livermore

Center College

precedents



precedents



precedents



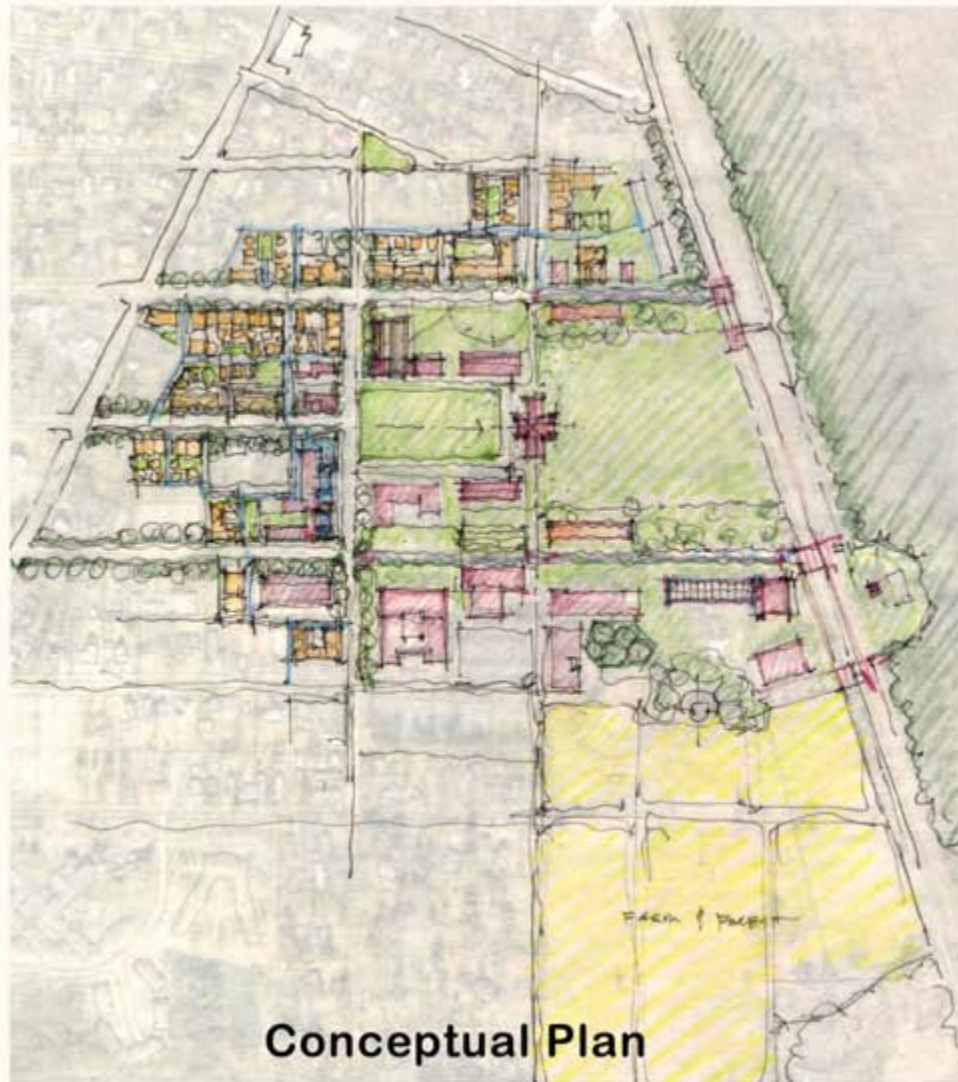
precedents







architecture



Conceptual Plan

Housing Diversity | Eco-System of Building Types

BUILDING TYPES



Tiny Home



Cottage Court



Large-Home
Apartment



Town House
/Live Work



Courtyard
Apartment



Lofts /
Micro-Apartments



Adaptive Re-Use

TENNANCIES

Single Family



Apartments
/Lofts

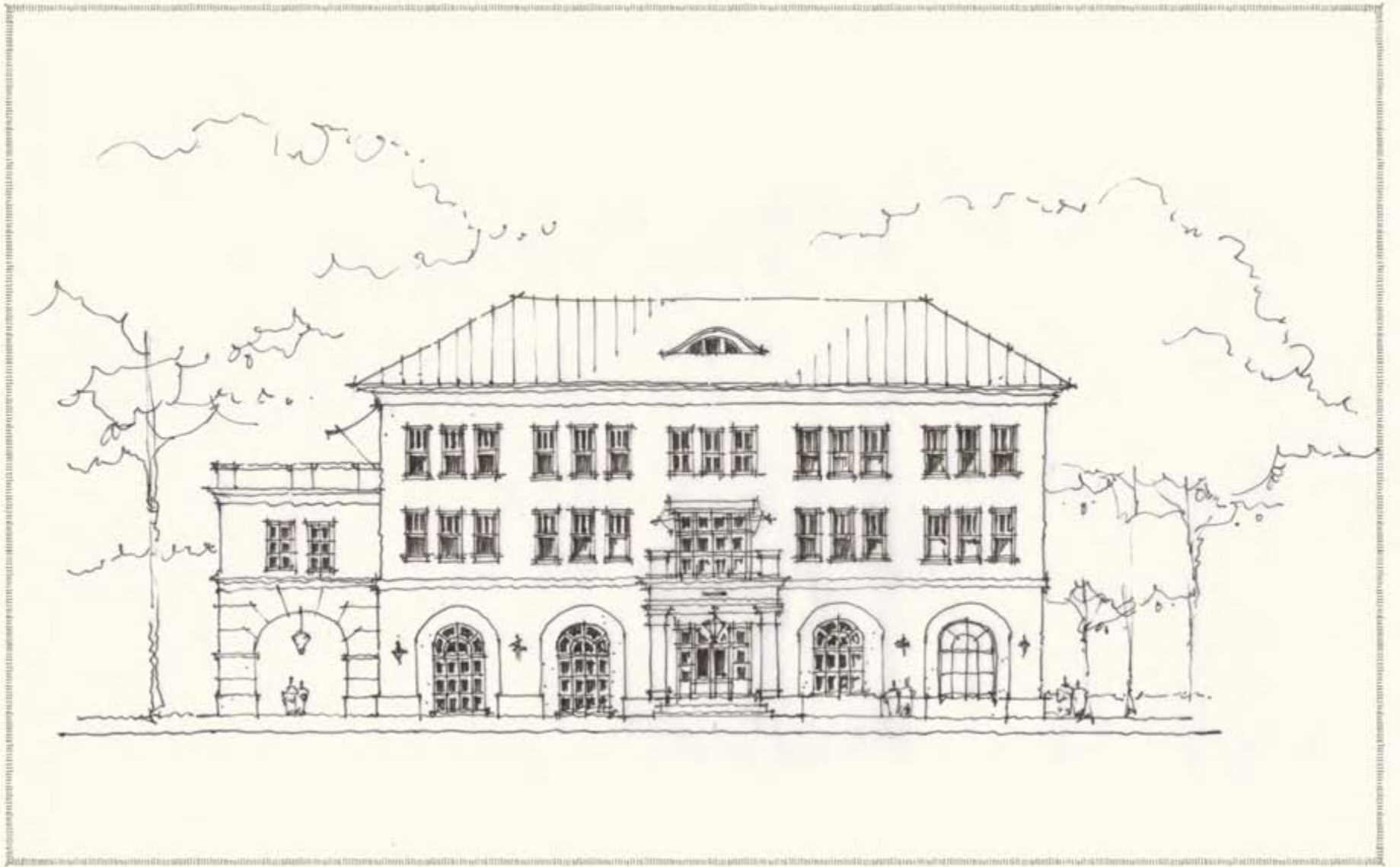


Condominium



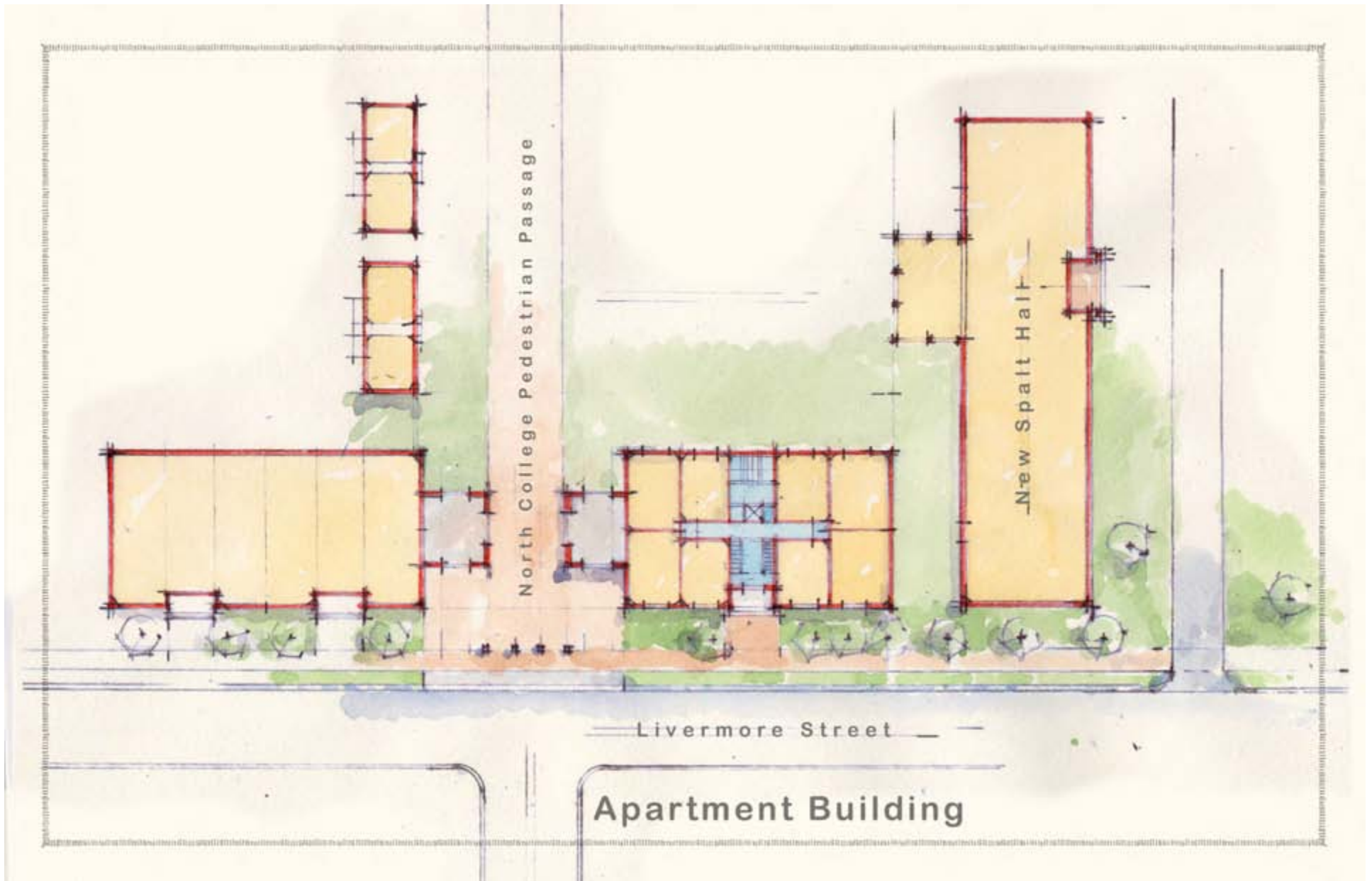
Co-Housing



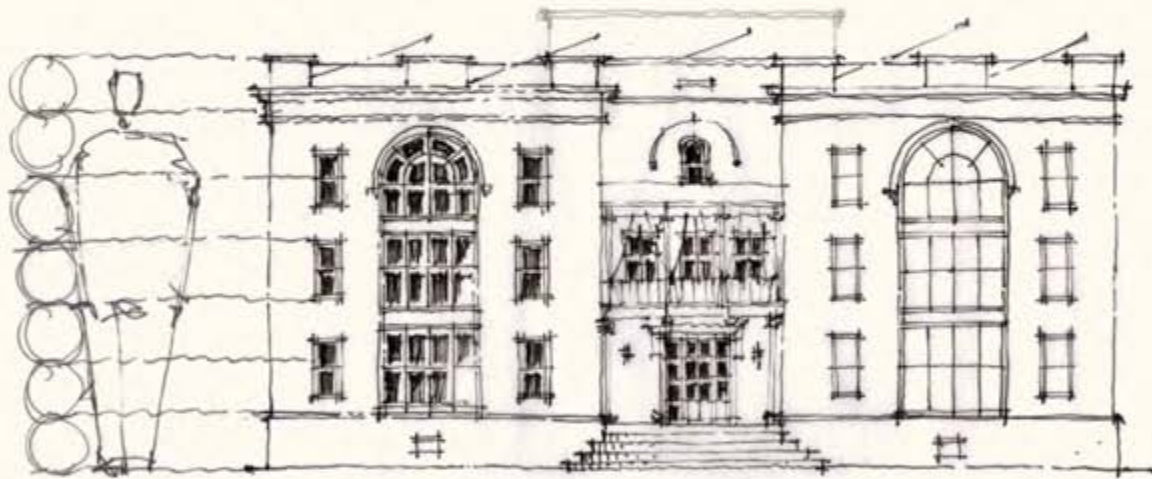


Apartment Building





Apartment Building



THE LIVING BUILDING ~ ~ .

Courtyard Building





Courtyard Building



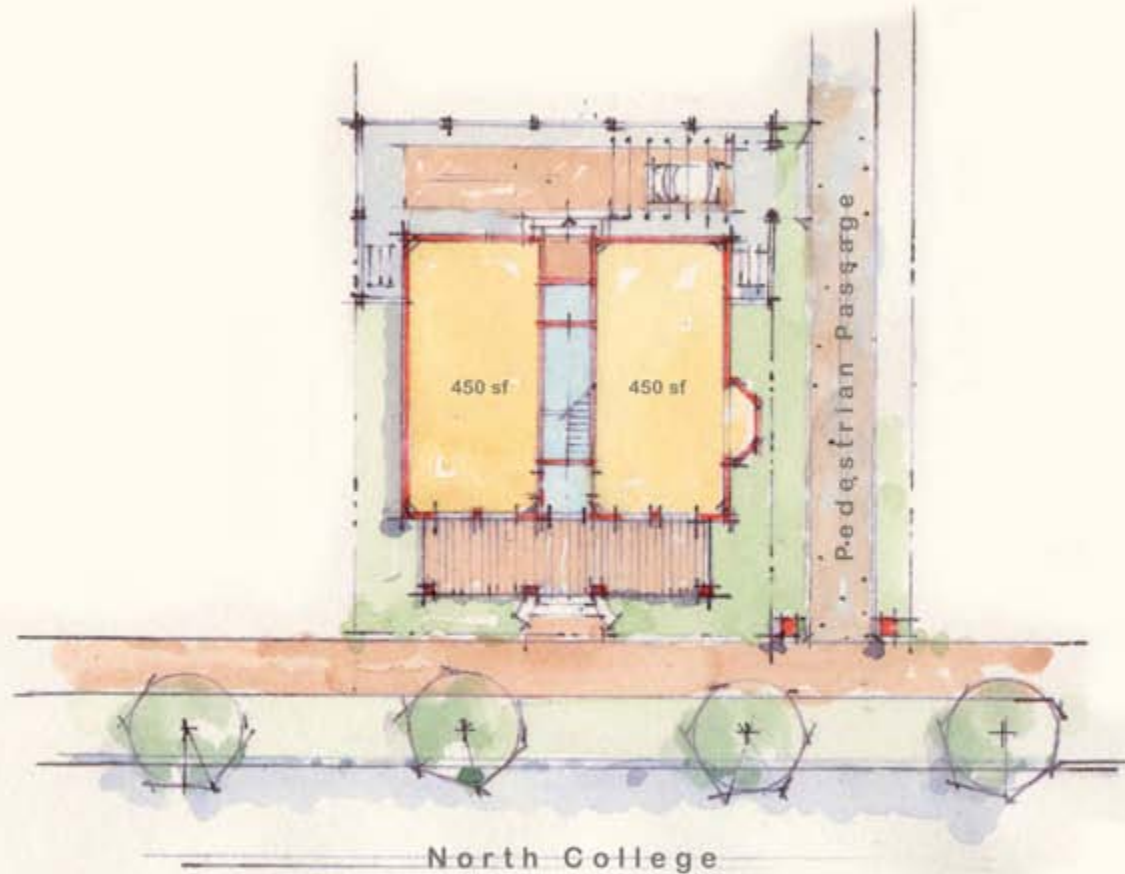
North College

Livermore

Center College



Large Home Apartment Building



Large-Home Apartments

5 UNITS
@ 400 Ⓢ

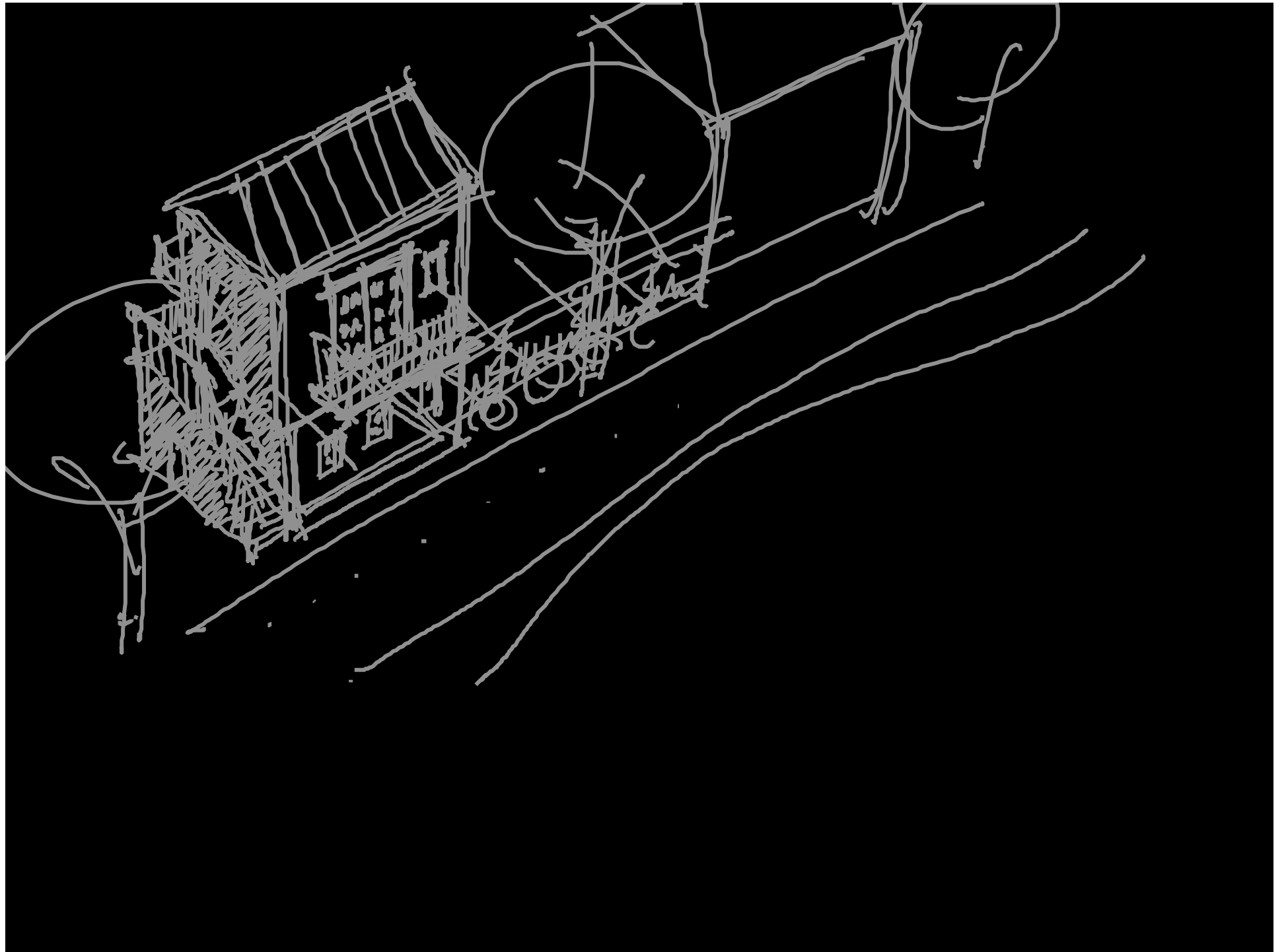
Large Home Apartment Building

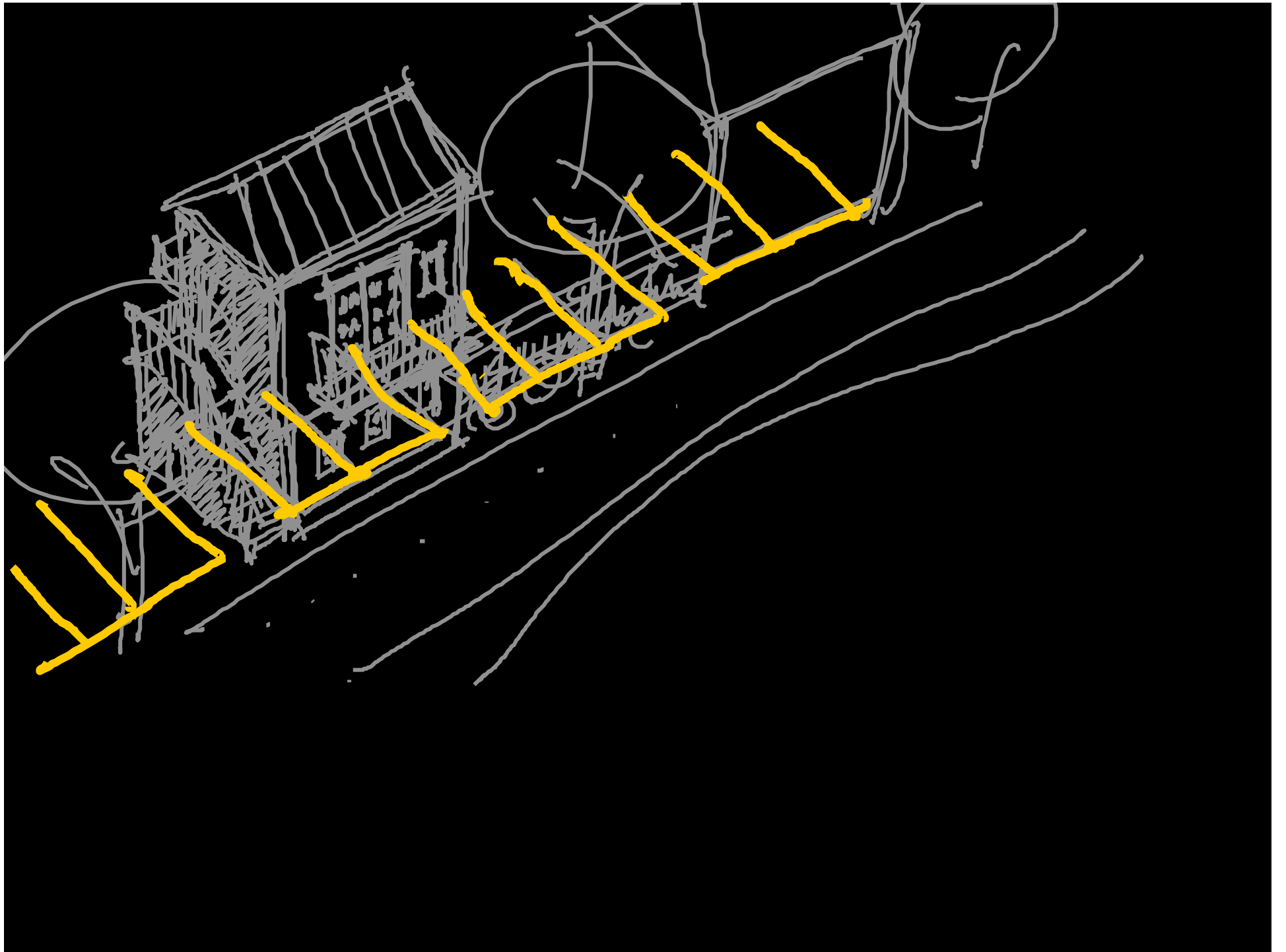


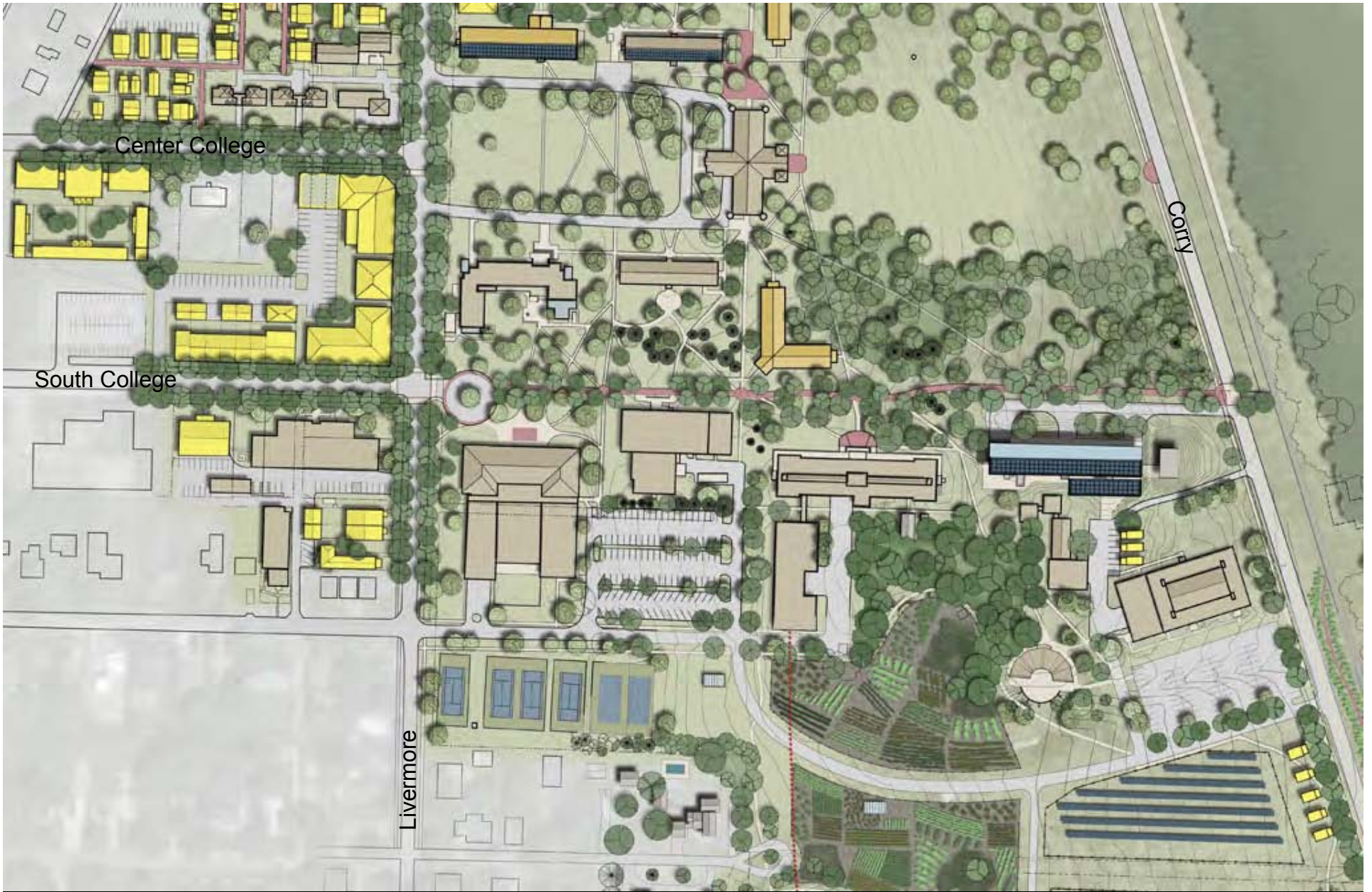
North College

Livermore

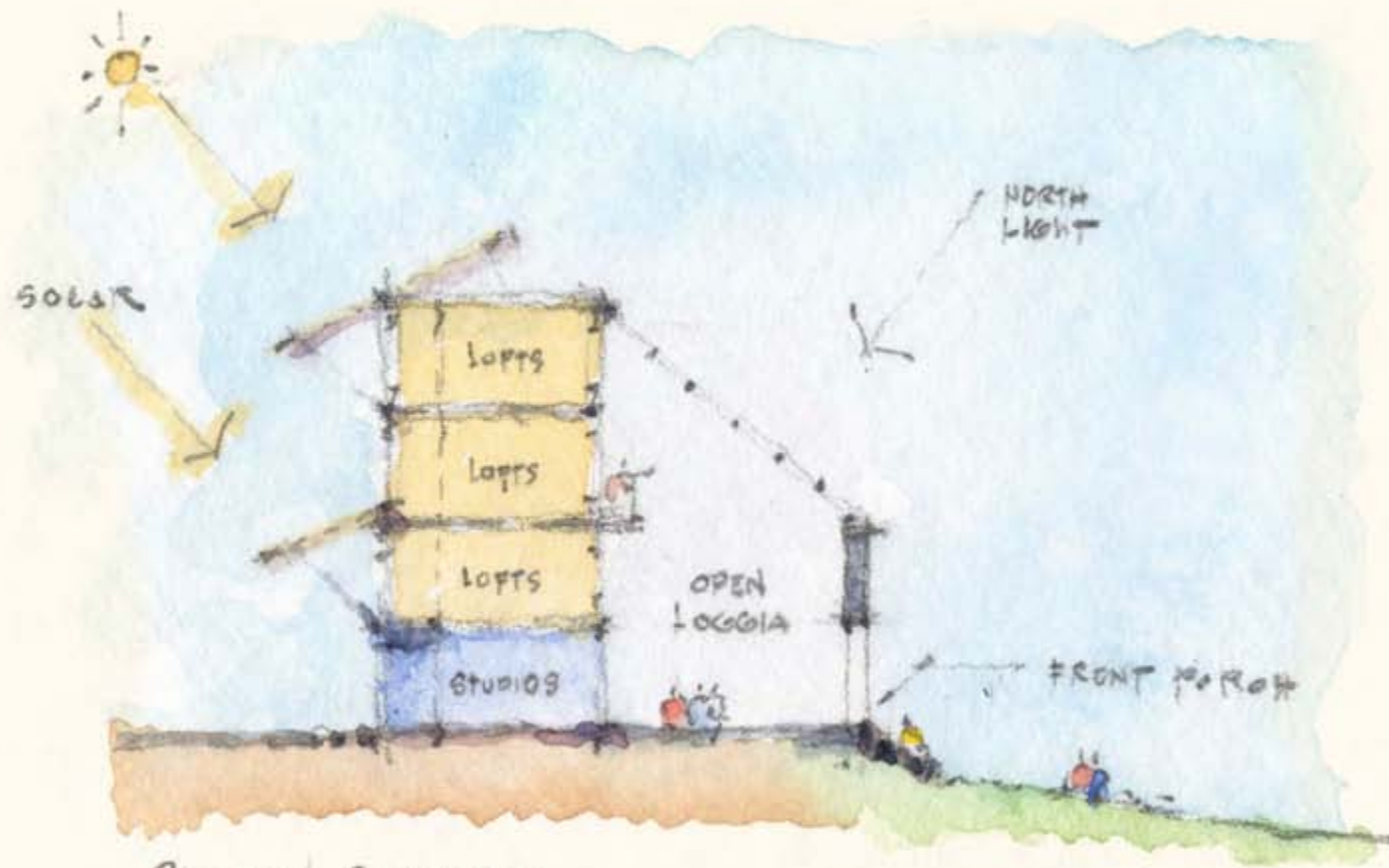
Center College







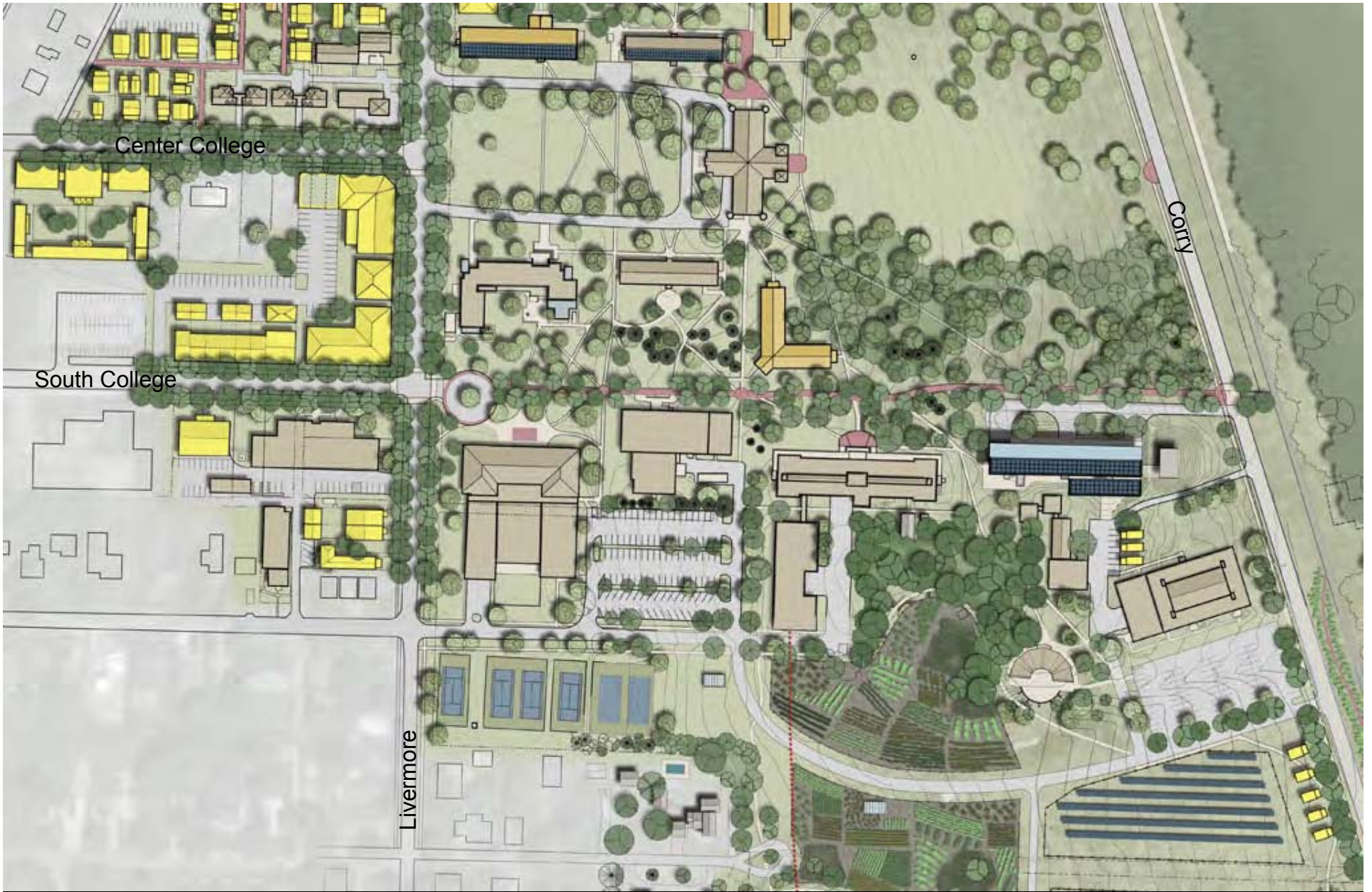
South Campus



SECTION CONCEPT.



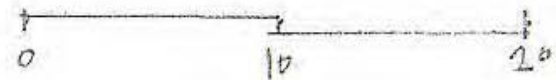
Perspective view



South Campus



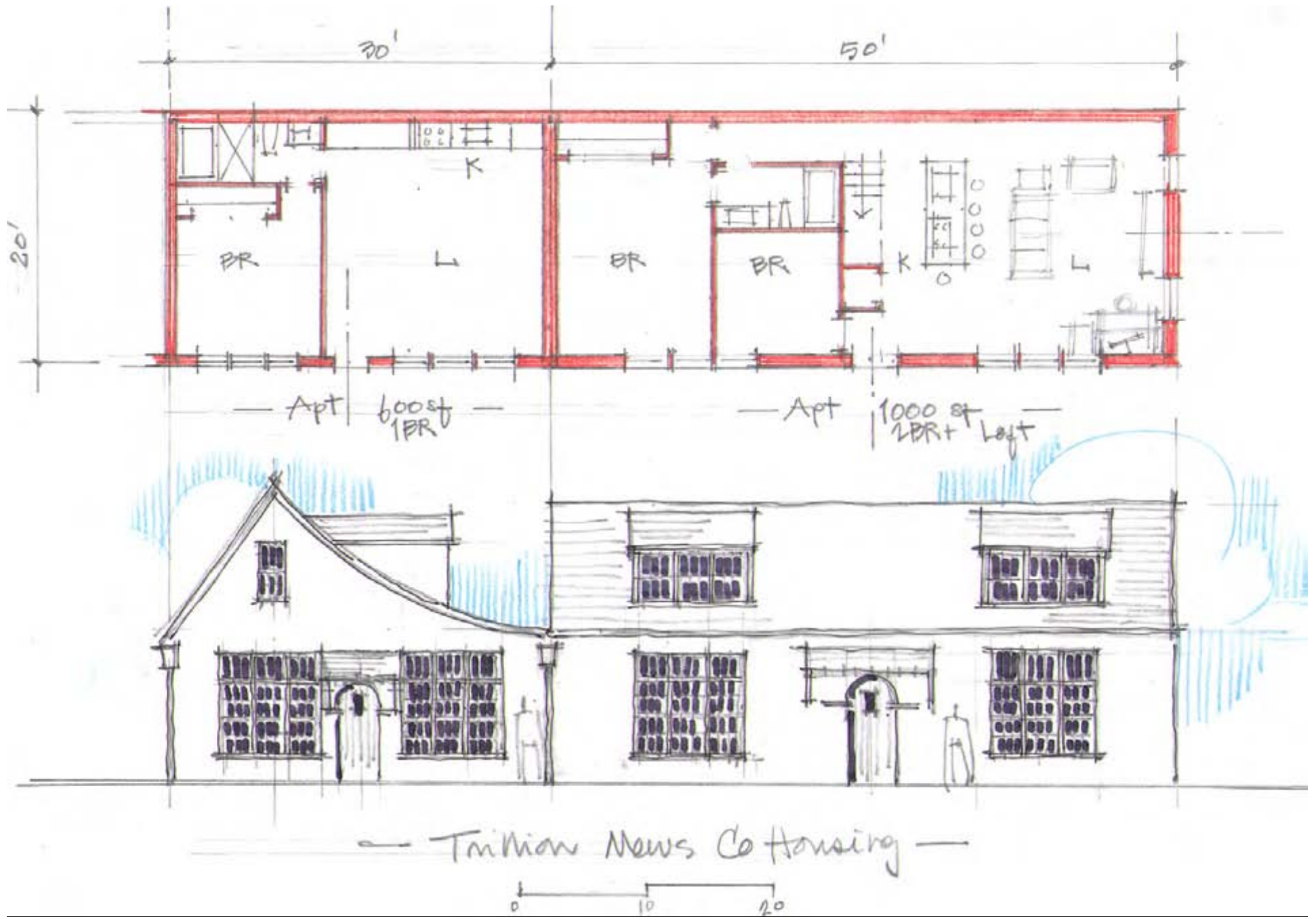
Rowhouses



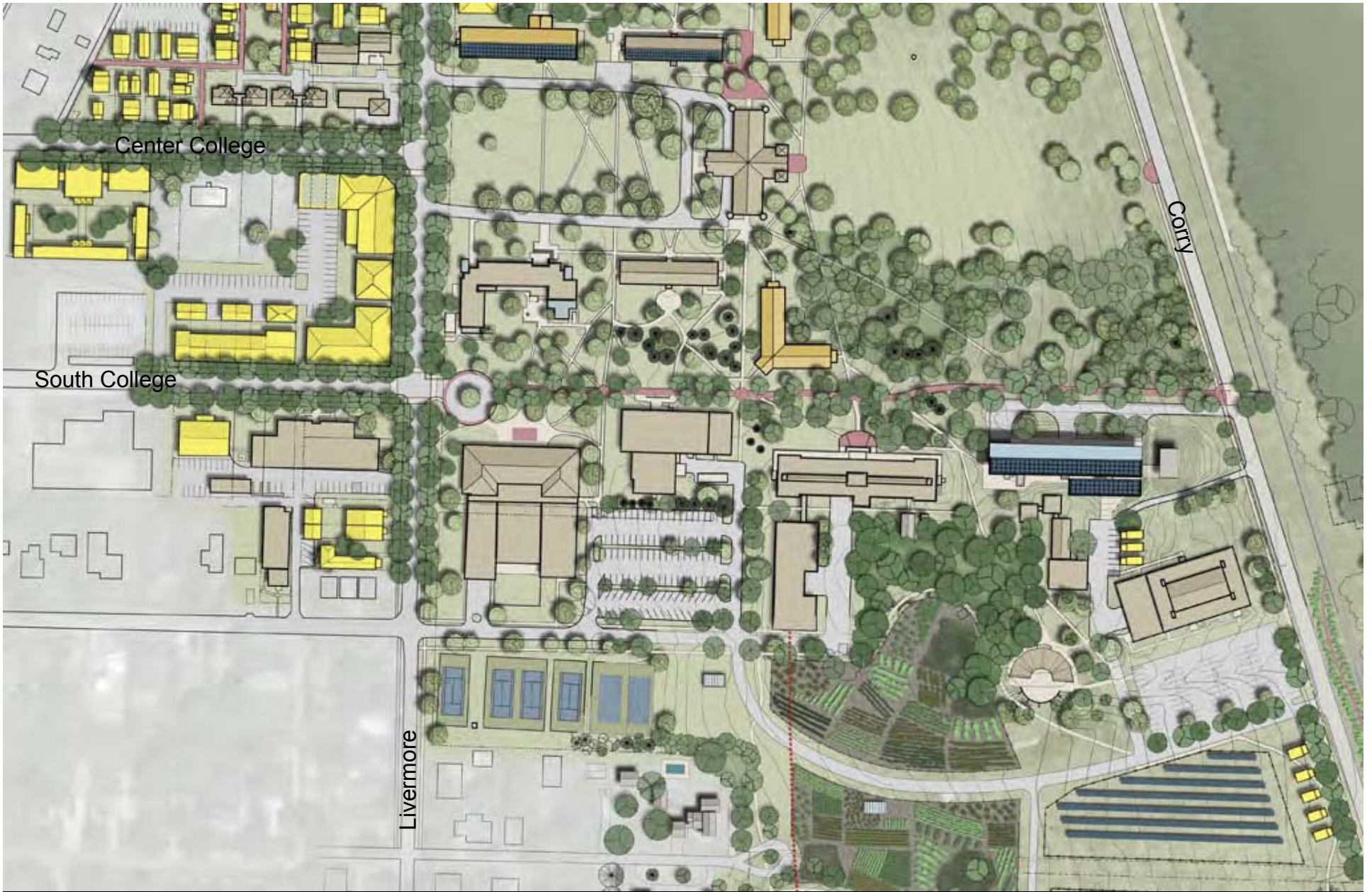
Rowhouses / Townhouses



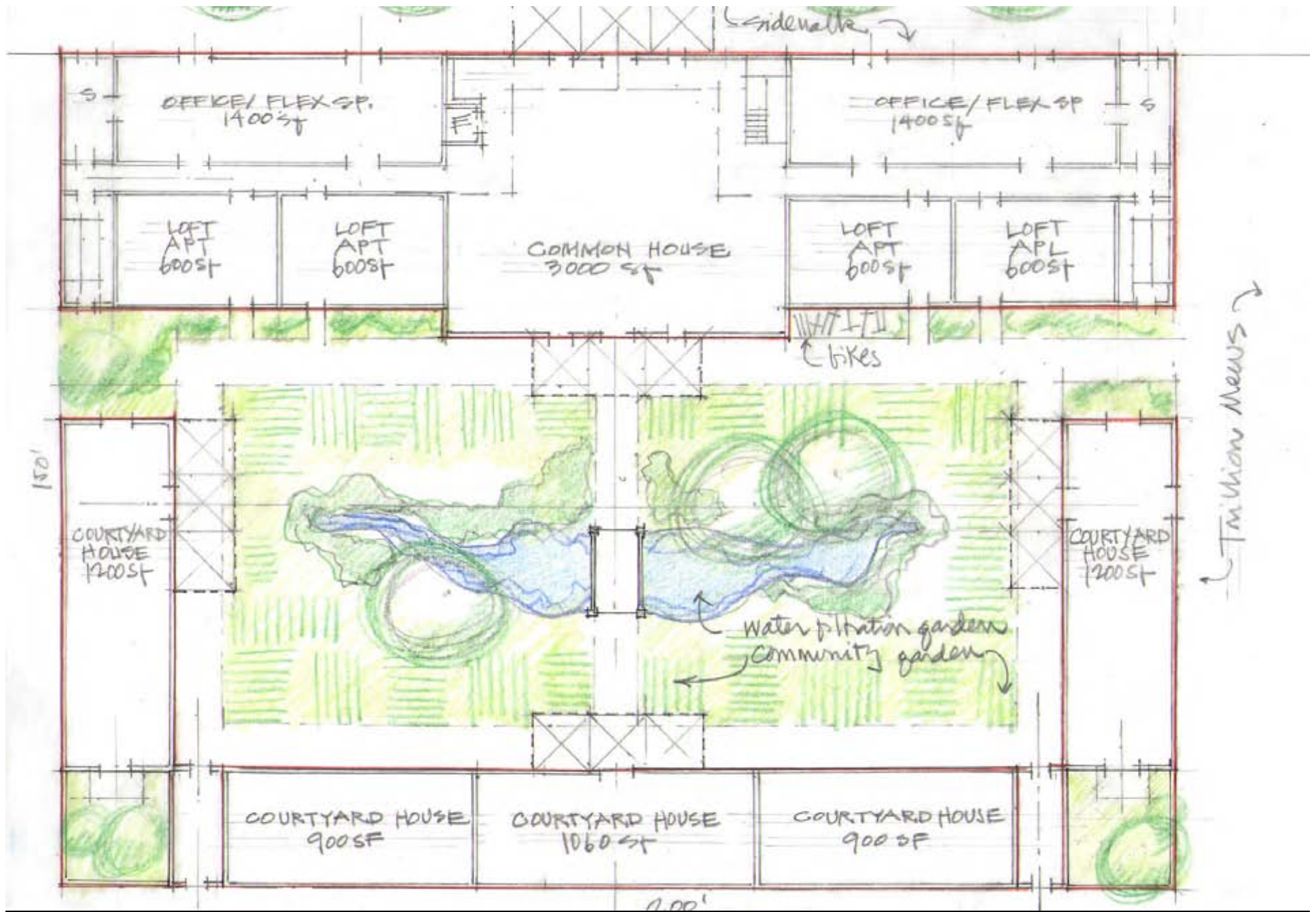
Cohousing



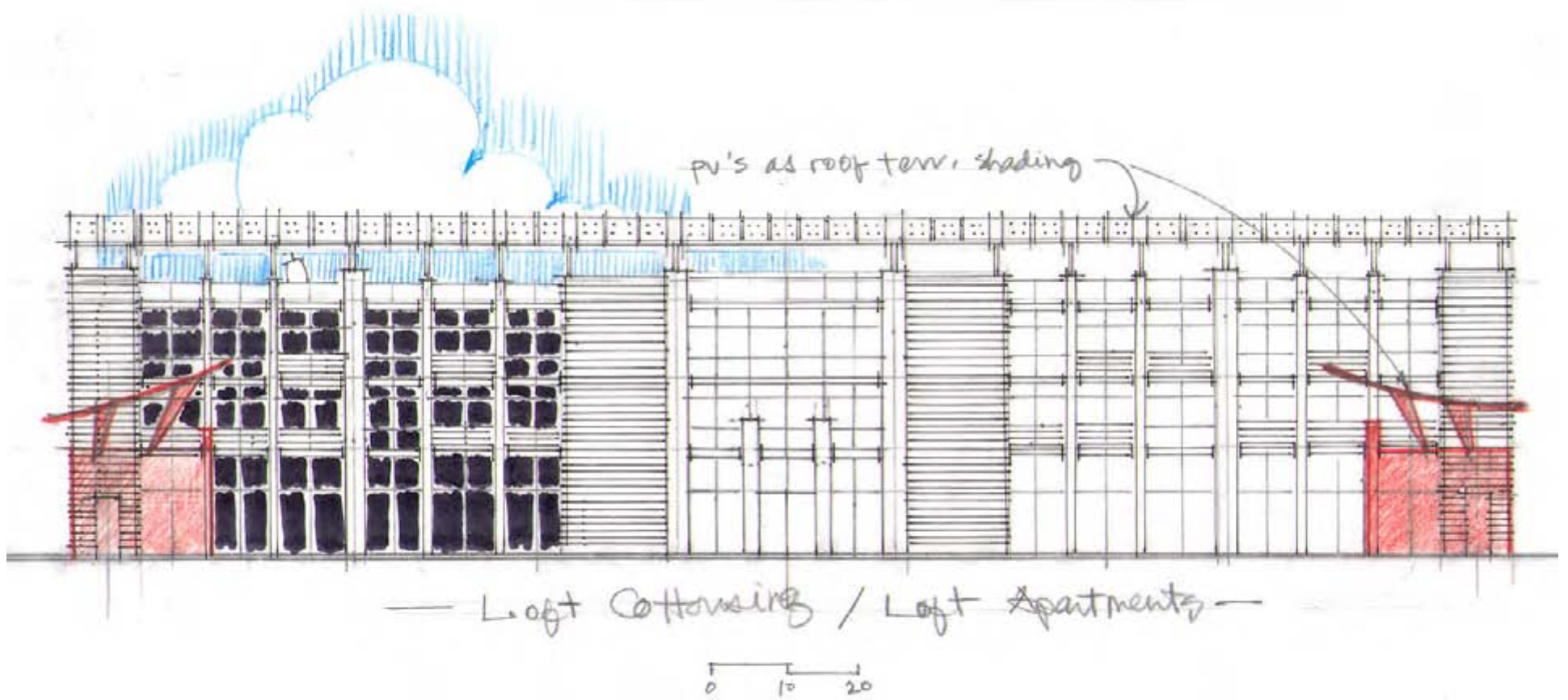
Cohousing units



South Campus



Cohousing



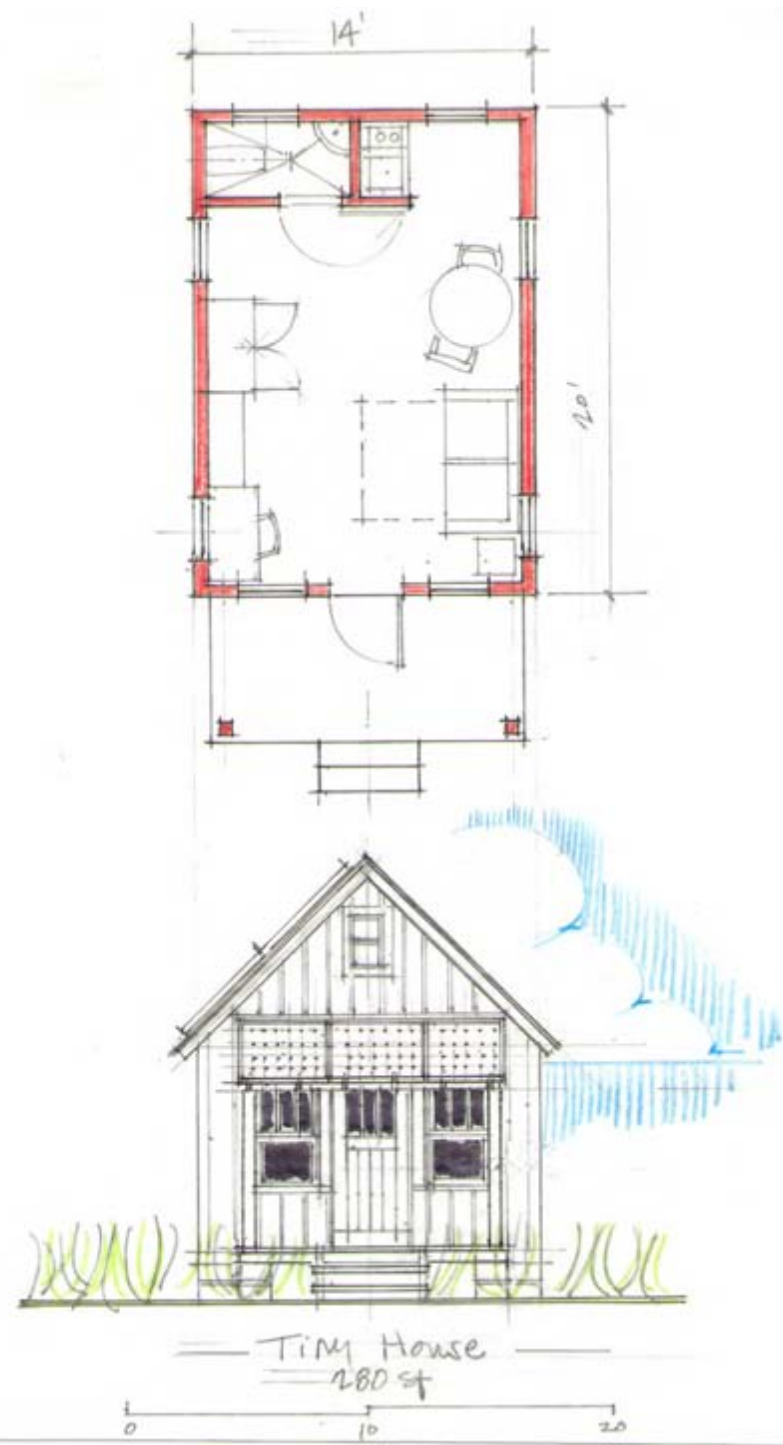
Cohousing

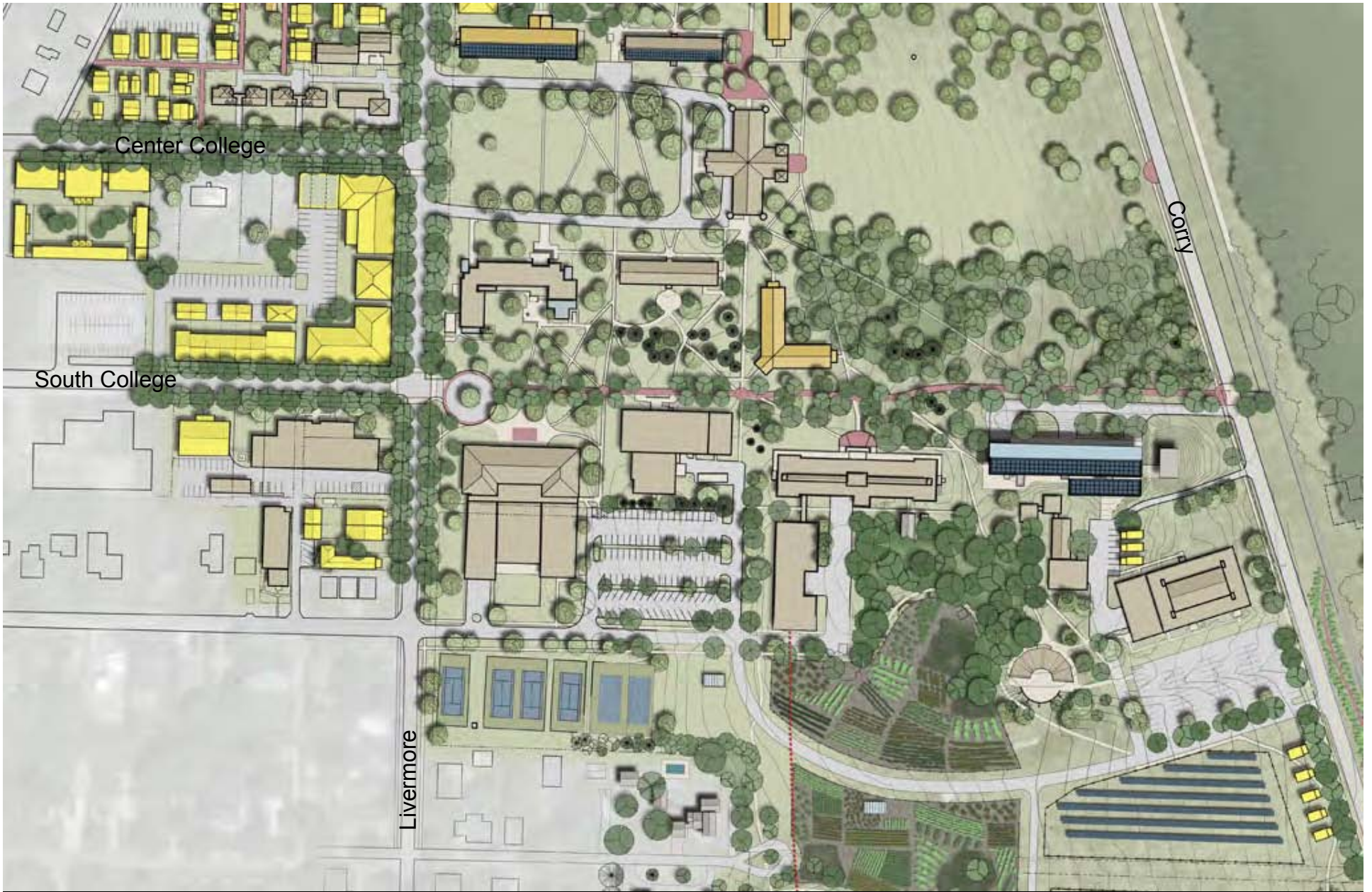


North College

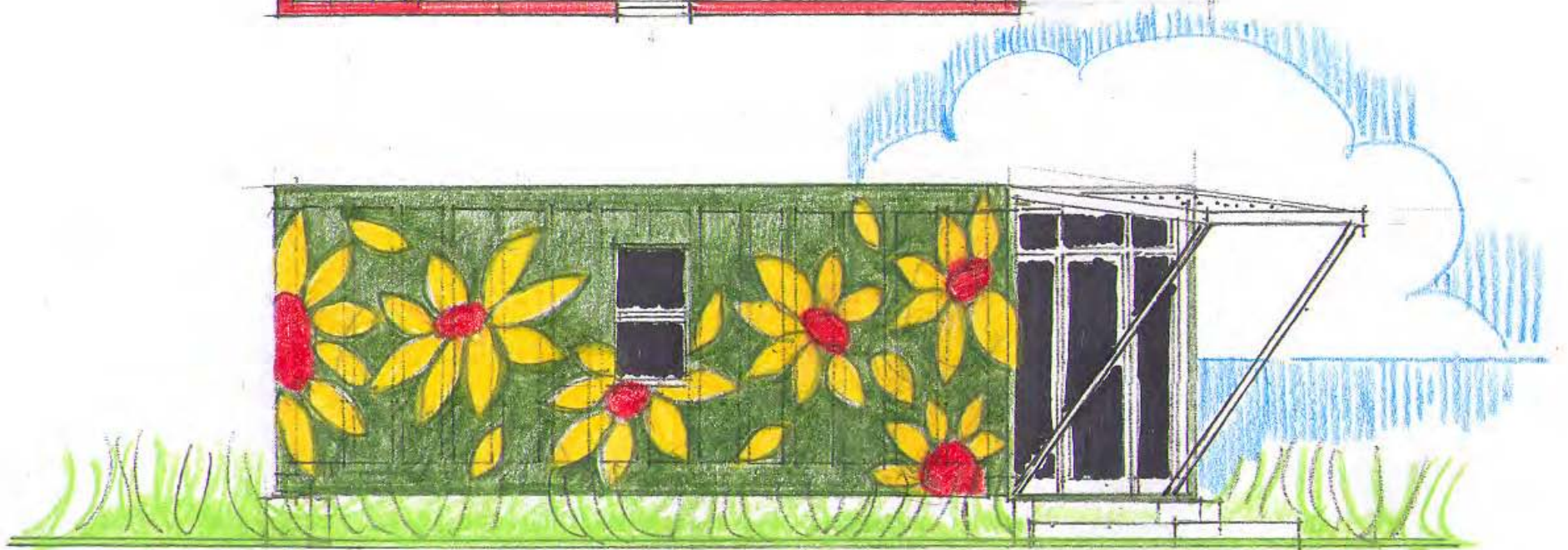
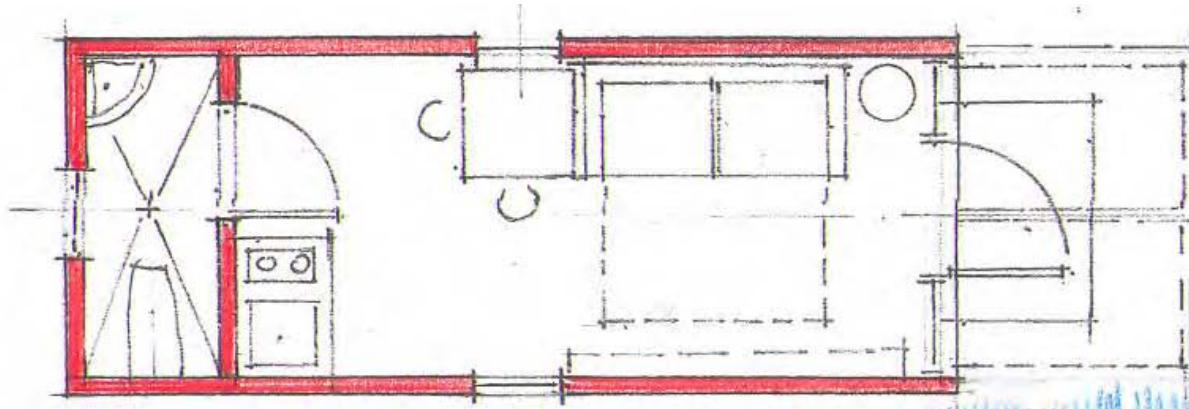
Livermore

Tiny House





South Campus



Container House

160 sq



Container House

how much,
when,
where's the parking?

the numbers –
units & parking



Potential housing opportunities in Antioch College Village (+/- 290-340 units)



Parking: off street (+/- 260 spaces)



Parking: off- and on-street (+/-356 spaces)



Parking: off street campus lots

water & ecology
living infrastructure



phasing concepts



Project phasing can realize opportunities to convert turf to meadow and produce gardens scattered throughout the Village. These would be replaced by housing units over time.

phasing concepts



Turf conversion to

- Pollinator landscapes
- Edible landscapes
- Beekeeping
- Herb gardens
- Meadow
- Food forest

phasing concepts



phasing concepts



phasing concepts



Long-term buildout

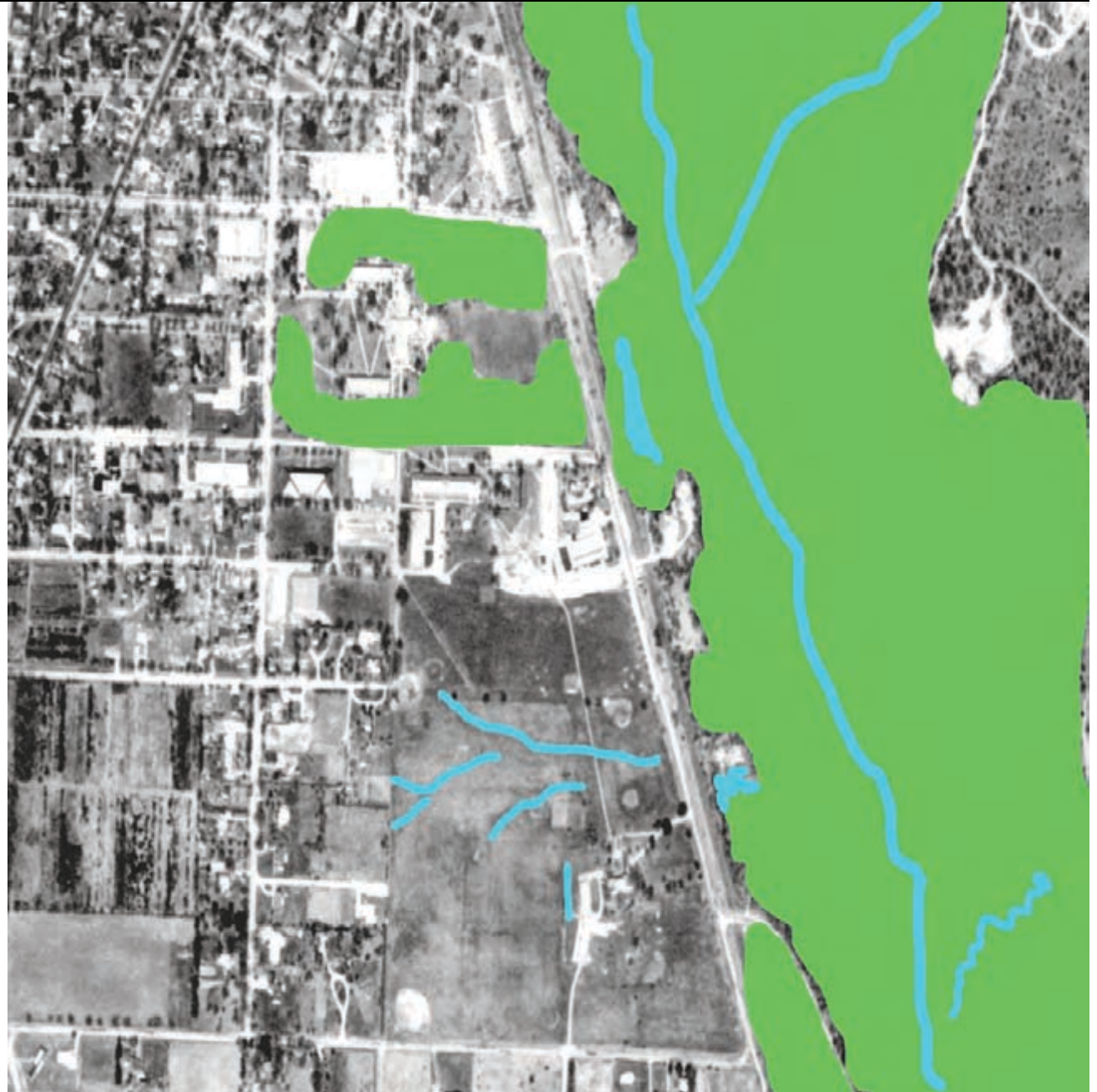
Ecological Resources

Existing Campus

Ecological Features:

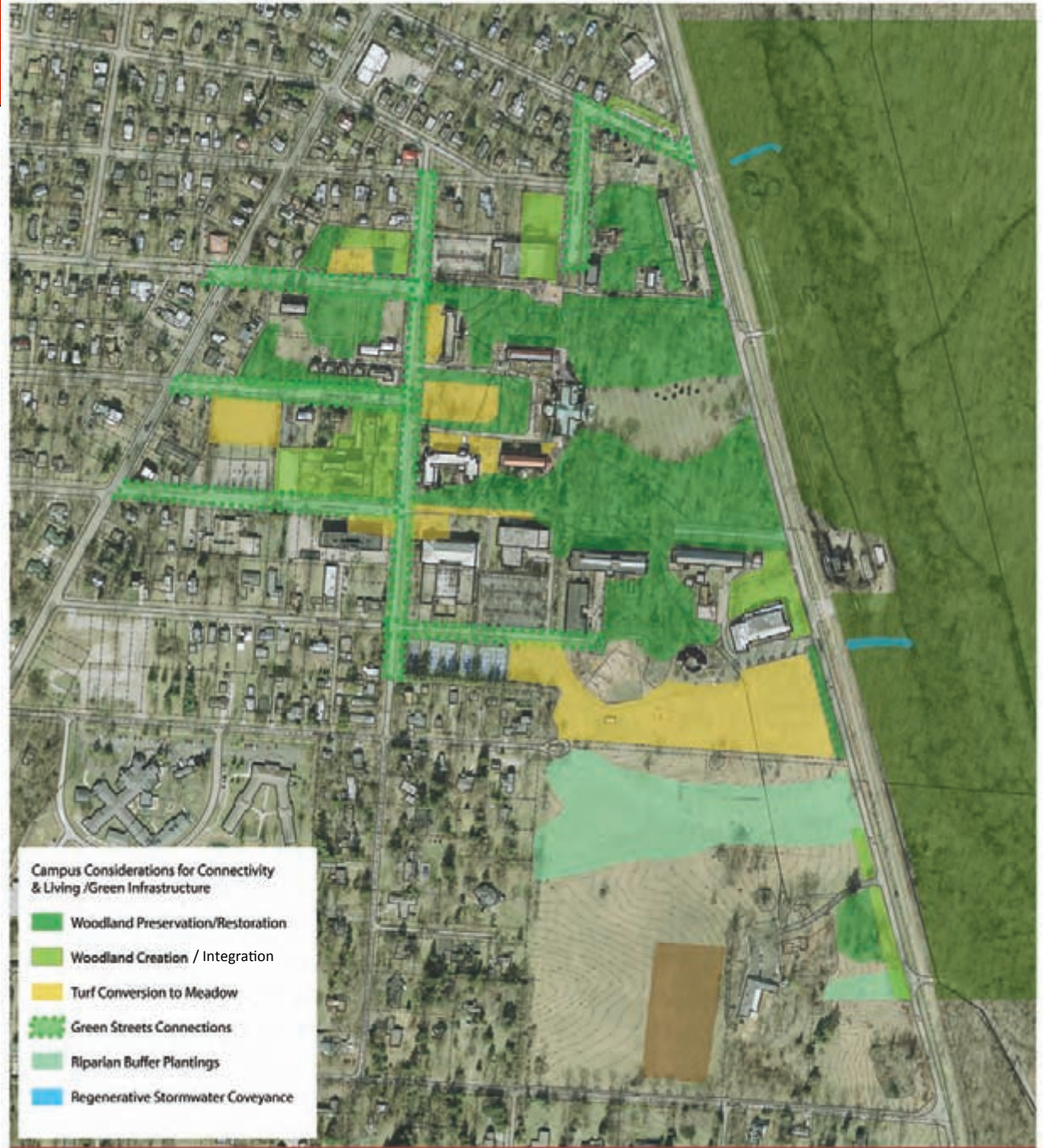
Major Ecological Assets

- Mature Tree Canopy
- Relationship with Glen Helen Preserve
- Hydrologic Relationship to
- Yellow Springs Creek and Little Miami River



Ecological Resources

Ecological Considerations



Green Infrastructure Opportunities by Practice



Regenerative Stormwater Conveyance



Stormwater Wetlands



Bioretention/Walkways



Bioretention/Parking



Bioswales



Permeable Pavers



Green roof



Native Woodland/Meadow Enhancement



Productive Landscapes (farming and permaculture)

Integrated Water Strategies



Onsite Wastewater Treatment



Interpretive Signage



Open Space Integration



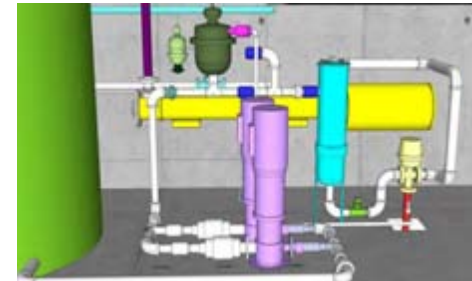
Real-Time Monitoring



Nutrient Recycling



Indoor Science-on-Display



Compact Mechanical Spaces

All Photos copyright Biohabitats

Existing Mature Tree Canopy



Existing Mature Tree Canopy



Landscape Management: Planting Zones

(based on campus landscape committee recommendations)

Zone 1 – Main Hall

- Formal/manicured landscape aesthetic

Zone 2 – Campus Proper

- Lower Maintenance- low mow turf
- Native herbaceous/meadow patches
- Rain gardens
- Restored biodiverse vertical structure

Zone 3 – Nature Transition

- Lower intensity/Less Formal
- No-mow
- Ecological learning
- restored biodiverse vertical structure

Zone 4 - The Farm

- Productive and grazing landscapes
- Meadow and pollinator plantings around garden plots
- Riparian plantings along sensitive drainage areas

Zone 5

- Main Lawn
- Turf – conventional mow regime



Landscape Management: Plant Palette

Native Plant Palette

- Native Trees, Shrubs, Herbaceous plants (shown) – prioritized across campus
- Strengthening ecological and pedagogical connection to Glen Helen Preserve
- Campus as living laboratory
- Limited nonnative ornamental plants in select formal landscape areas

Native prairie/meadow	
big bluestem	<i>Andropogon gerardii</i>
little bluestem	<i>Schizachyrium scoparium</i>
switchgrass	<i>Panicum virgatum</i>
indiangrass	<i>Sorghastrum nutans</i>
broomsedge	<i>Andropogon virginicus</i>
asters	<i>Aster sp.</i>
purple coneflower	<i>Echinacea pupurea</i>
grey-headed coneflower	<i>Ratibida pinata</i>
black eyed susan	<i>Rudbeckia hirta</i>
ox-eye sunflower	<i>Heliopsis helianthoides</i>
wild bergamot	<i>Monarda fistulosa</i>
whorled rosinweed	<i>Silphium trifoliatum</i>
Prairie dock	<i>Silphium terebinthinaceum</i>
Royal catchfly	<i>Silene regia</i>
Frenchgrass	<i>Orbexilum onobrychis</i>
Sullivant's milkweed	<i>Aesclepias sullivantii</i>
Savanna blazing star	<i>Liatris scariosa</i>
Culver's root	<i>Veronicastrum virginicum</i>
Virginia bunchflower	<i>Melanthium virginicum</i>
Prairie ironweed	<i>Vernonia fasciculata</i>
Prairie cordgrass	<i>Spartina pectinata</i>
Prairie dropseed	<i>Sporobolus heterolepis</i>
Prairie false indigo	<i>Baptisia lactea</i>
Ragged fringed orchid	<i>Platanthera lacera</i>

Landscape Management: Canopy Trees

Canopy Trees

White oak	<i>Quercus alba</i>
Red oak	<i>Quercus rubra</i>
Shagbark hickory	<i>Carya ovata</i>
Pignut hickory	<i>Carya glabra</i>
Bur oak	<i>Quercus macrocarpa</i>
Black oak	<i>Quercus nigra</i>
Blue ash *	<i>Fraxinus quadrangulata</i>
Tulip tree	<i>Liriodendron tulipifera</i>
Red elm (Slippery elm)	<i>Ulmus rubra</i>
Shingle oak	<i>Quercus imbricaria</i>
Sycamore	<i>Platanus accidentalis</i>
Basswood	<i>Tilia americana</i>
Black walnut	<i>Juglans nigra</i>
Kentucky coffee tree	<i>Gynnocladus dioicus</i>
Ohio buckeye	<i>Aesculus glabra</i>
Hackberry	<i>Celtis occidentalis</i>
Sugar maple	<i>Acer saccharum</i>
Chinkapin oak	<i>Quercus muehlenbergii</i>

*Emerald ash borer may be an issue with this species

Understory trees

Sassafras	<i>Sassafras albidum</i>
Pawpaw	<i>Asimina triloba</i>
Hornbeam	<i>Carpinus caroliniana</i>
Hop hornbeam	<i>Ostrya virginiana</i>
Persimmon	<i>Diospyros virginiana</i>

Shrub layer

Black haw	<i>Viburnum prunifolium</i>
Spicebush	<i>Lindera benzoin</i>
Bladdernut	<i>Staphylea trifolia</i>

Integrated Stormwater Features: Initial Concepts



Integrated Stormwater Features: Concept Verification



Ecological Perspectives

Integrated stormwater treatment in curb bump-outs along streetscapes



Ecological Perspectives

Preserved sugar maple grove with includes native gardens, permaculture opportunity and vegetated stormwater filter along alley



↑
VEGETATED
OPEN SPACE
MEANS /
PERMACULTURE

↑
STORMWATER
FILTER

↑
ALLEY

Ecological Perspectives

North College extension into campus incorporates meandering path through enhanced native and productive landscapes, & rain gardens
– Antioch campus as living laboratory





LIVING COMMUNITY CHALLENGE

Urban Agriculture – Imperative 02

- Floor to Area Ratio 0.5-0.74 requires a 25% of the community area for food production

Antioch Campus:

~55 acres (100%)

Agriculture productive areas:

~17 acres (30%)

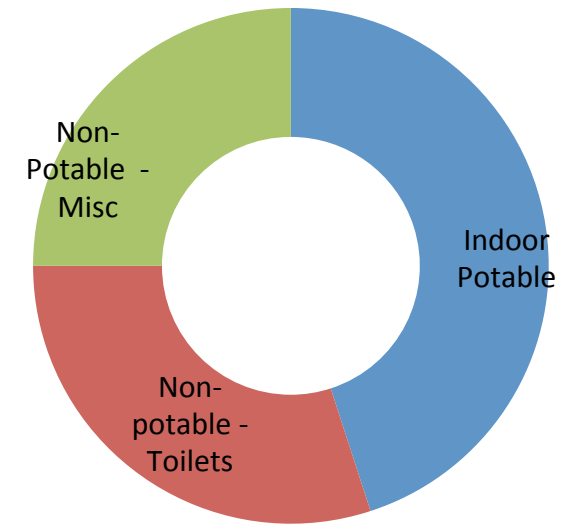
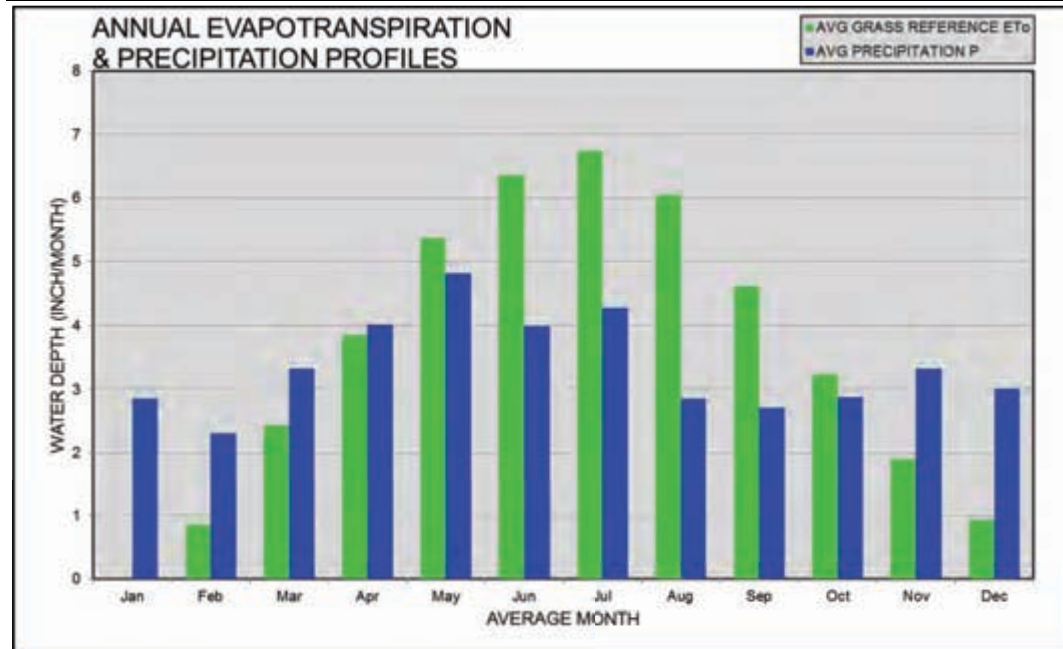
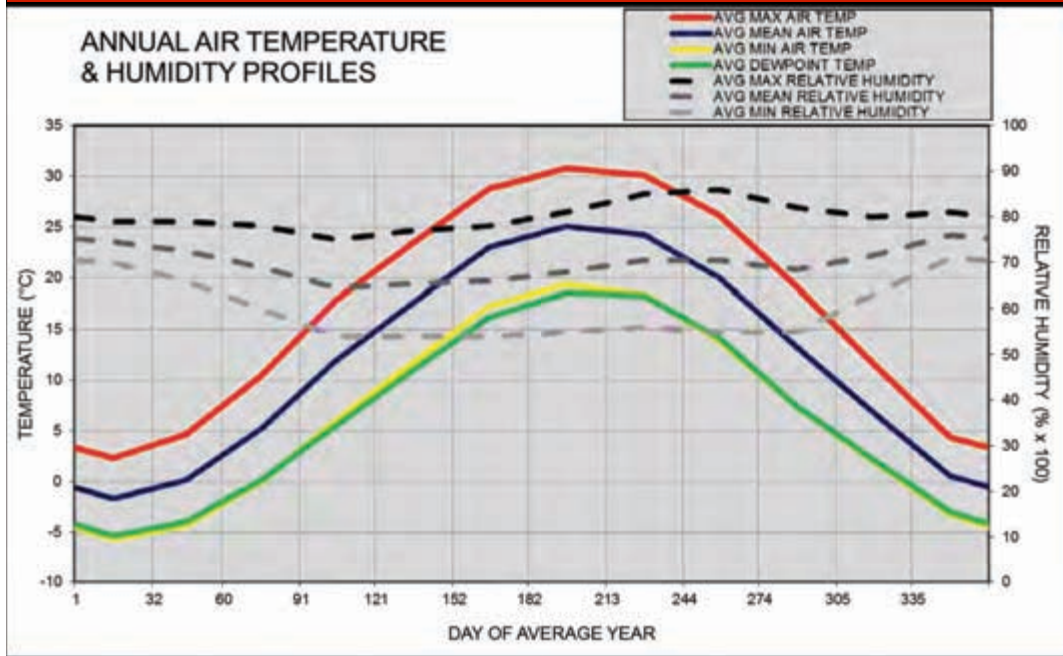


Encouraging the Yellow Springs community to:

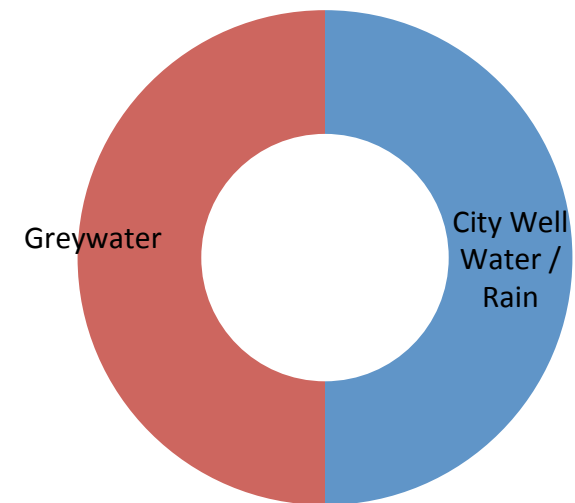
- Improve Sanitary Collection (reduce infiltration & exfiltration)
- Add Tertiary Treatment
- Reduce Baseflow by Water Recycling



Project Specific Climate Conditions and Water Supply and Demand Estimates

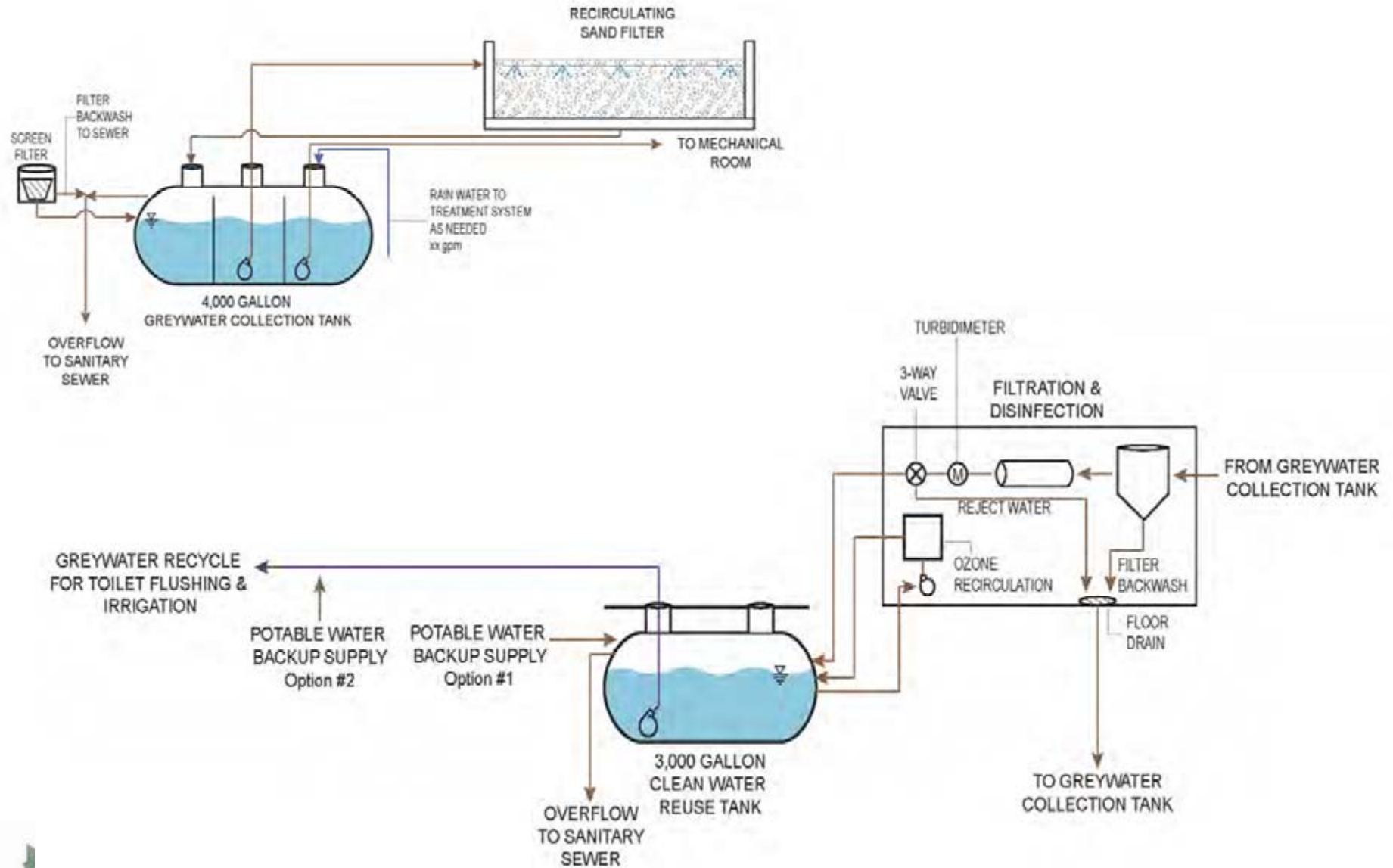


Water Demand



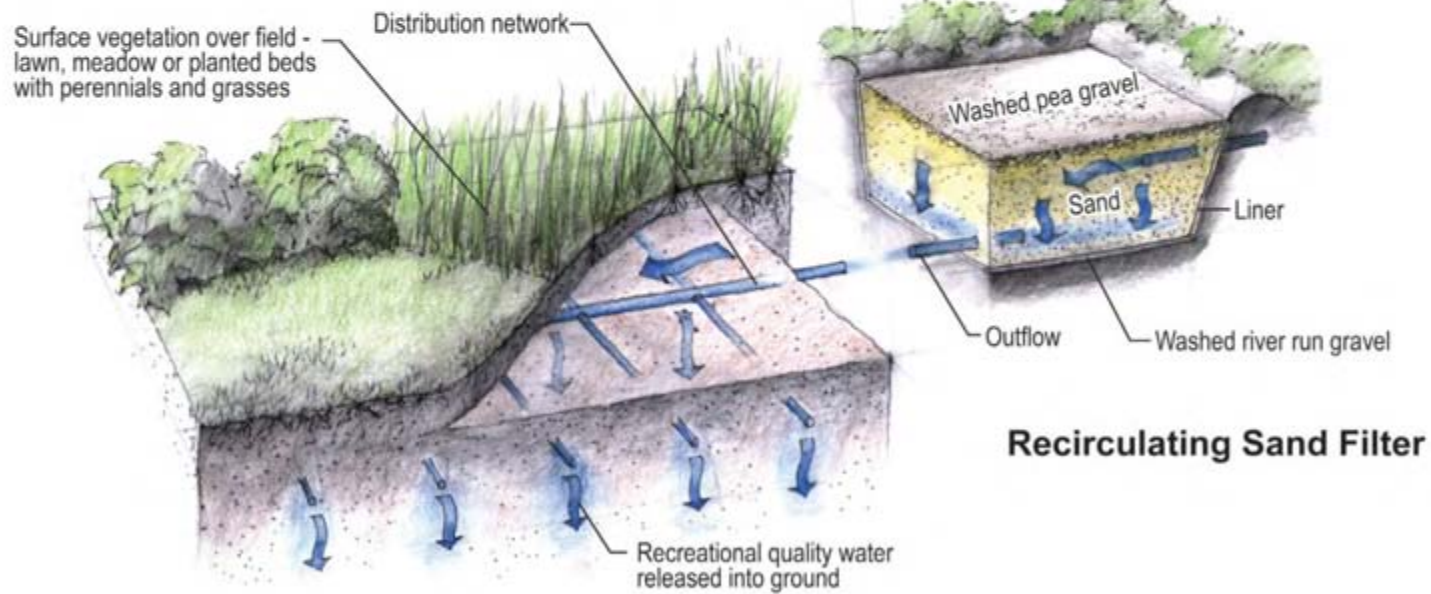
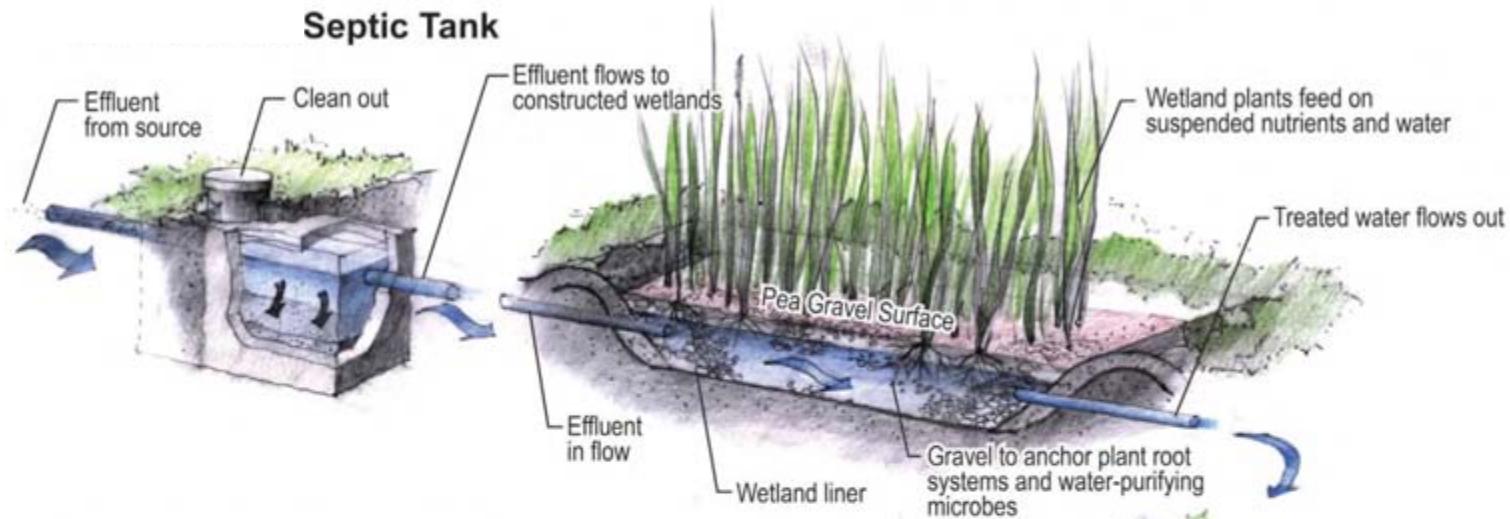
Water Supply

Greywater Recycling Concept for Village Building / Block Cluster



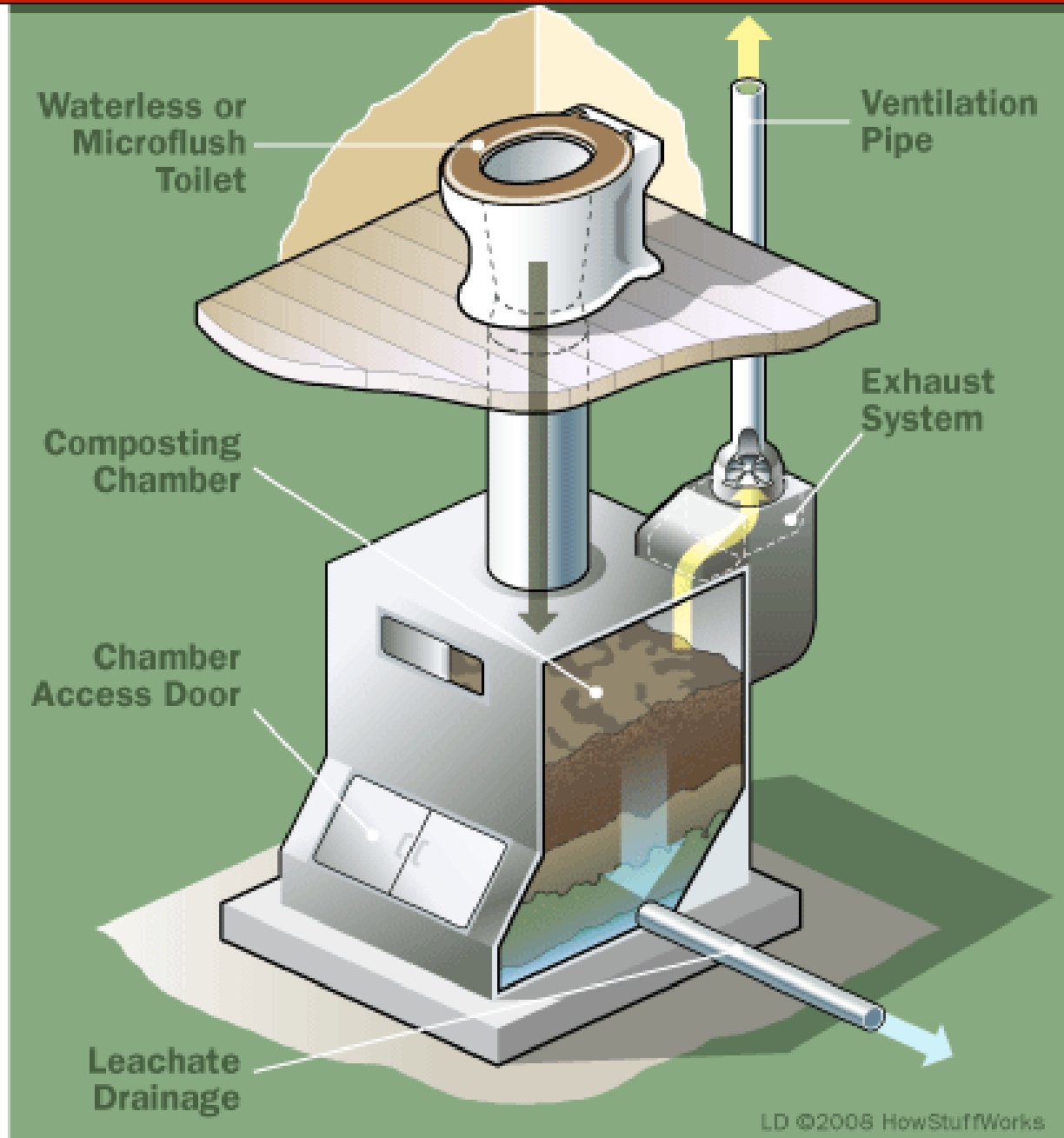
Natural Wastewater Treatment Concept for Village Building / Block Cluster

Self-Contained Constructed Wetland



Recirculating Sand Filter

Nutrient Recycling Concept for Village Building: Composting Toilets



Nutrient Recycling Concept for Village Building / Block Cluster



Source Separation: Urine Diversion



Struvite Reactor



Finished Product Fertilizer

Best Management Practices (BMPs) – Precedent Images

Best Management Practices - Precedents



**RAIN GARDEN/BIORETENTION
WITH SIGNAGE**

Best Management Practices (BMPs) – Precedent Images



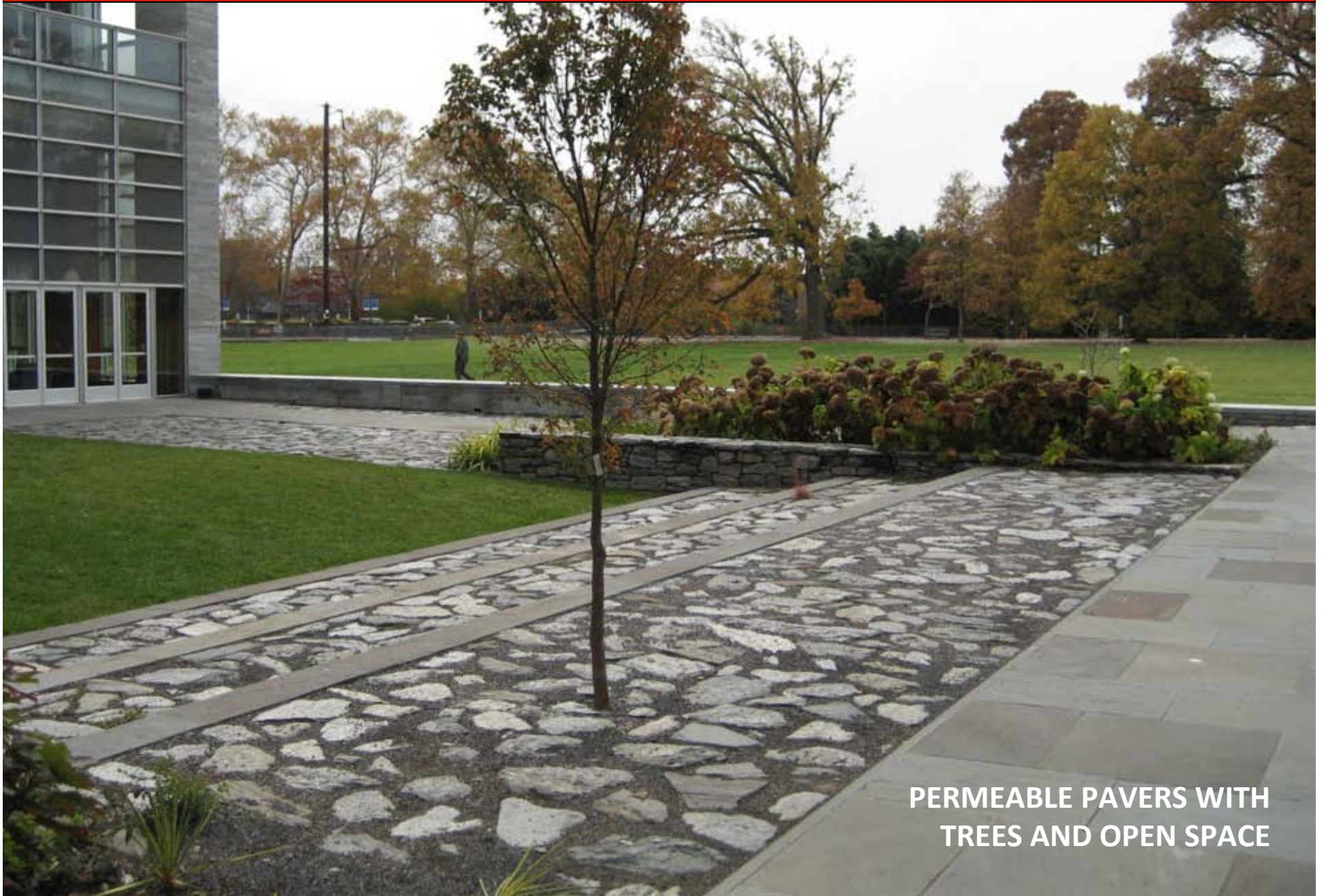
**NATIVE MEADOW
WITH MOWN EDGE ALONG
BRICK PATH**

Best Management Practices (BMPs) – Precedent Images



PERMEABLE PAVERS

Best Management Practices (BMPs) – Precedent Images



**PERMEABLE PAVERS WITH
TREES AND OPEN SPACE**

Best Management Practices (BMPs) – Precedent Images



**BIORETENTION
WITHIN CURB EXTENSION**

Best Management Practices (BMPs) – Precedent Images



**CISTERNS
AND NATIVE PLANTINGS**

Best Management Practices (BMPs) – Precedent Images



RAIN GARDENS

Best Management Practices (BMPs) – Precedent Images



NATIVE MEADOW

Best Management Practices (BMPs) – Precedent Images



NATIVE PLANTINGS

Wastewater & Stormwater Systems - Sidwell Friends Middle School: Wash DC

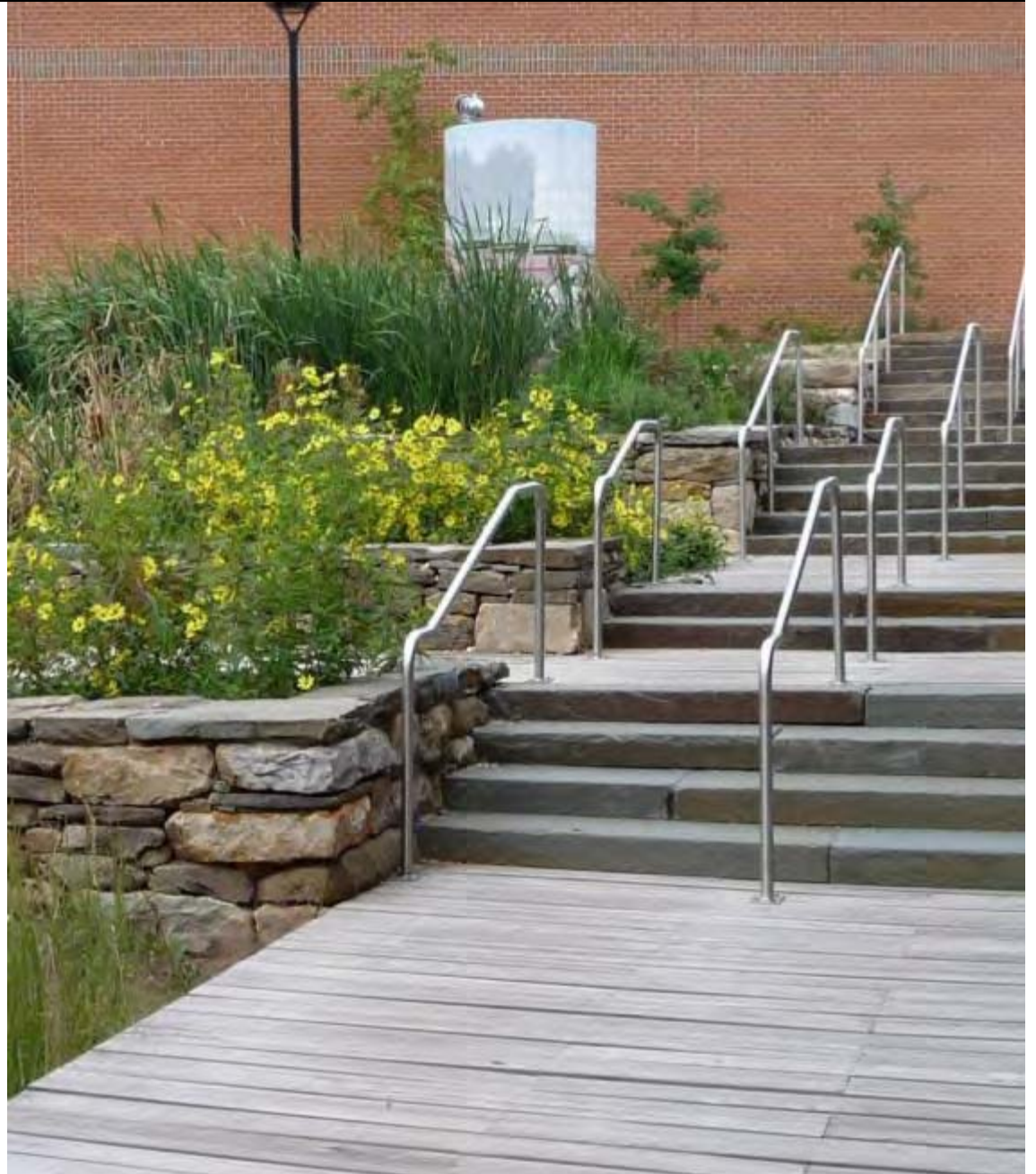


LEED Platinum Certified
& COTE Award

Wastewater & Stormwater Systems - Sidwell Friends Middle School: Wash DC



Wastewater & Stormwater Systems - Sidwell Friends Middle School: Wash DC



energy systems

INTEGRAL GROUP

Revolutionary Engineering

elementa

Member of Integral Group



MINI STUDIES COMPLETED

1. Meeting the Living Community Challenge
2. Siting Solar PV for the Village
3. Development of Energy User per Building
4. Development of Energy Systems by Building Type
5. Vision for the Art Studio into Artist Lofts
6. Alignment of Solar Energy with Yellow Springs Village



LIVING COMMUNITY CHALLENGE



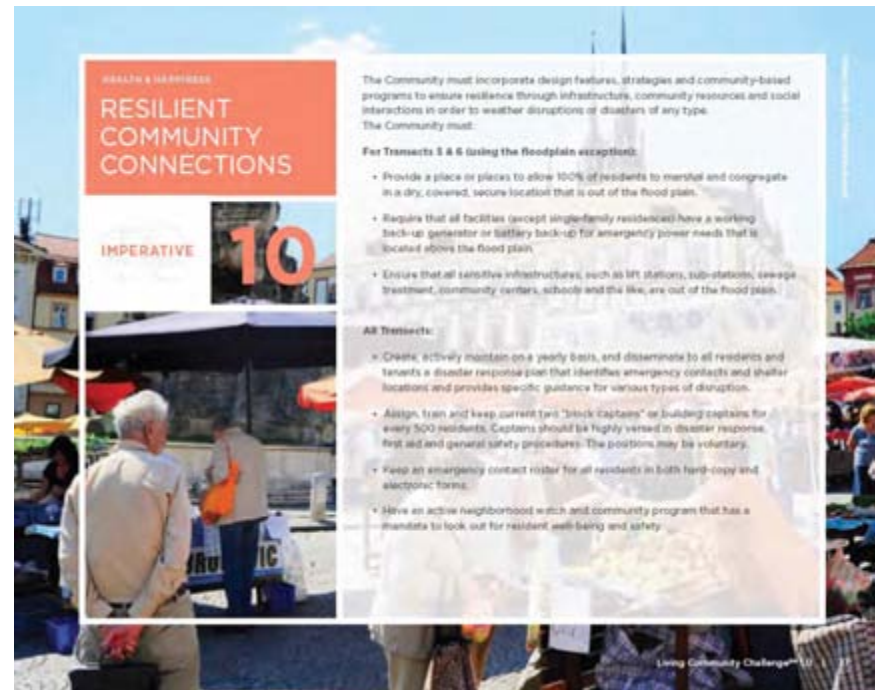
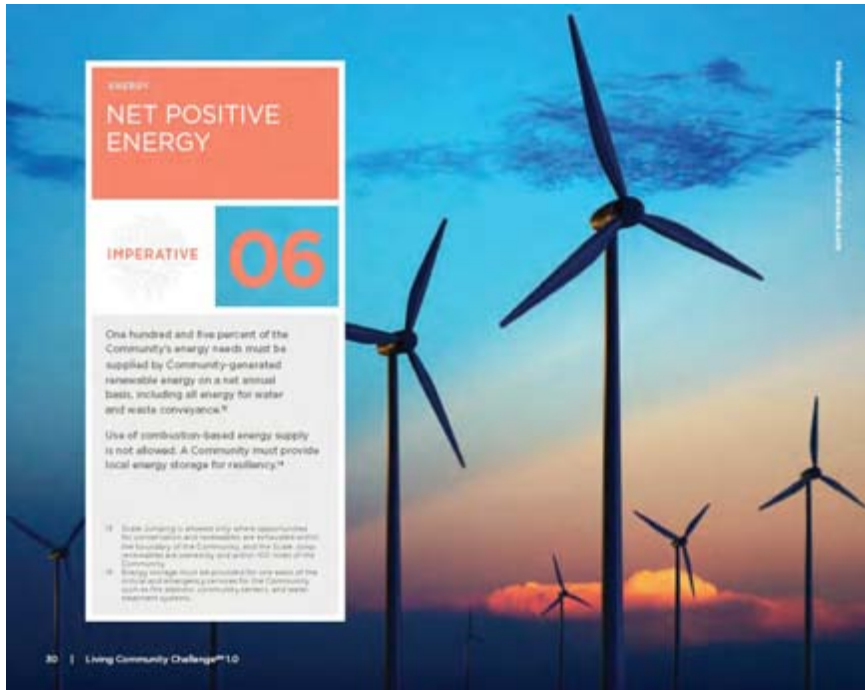
Living Community
Challenge Master Plan

Net Zero Water is
achievable

Net Positive Energy
possibly achievable



LIVING COMMUNITY CHALLENGE



Net Positive Energy

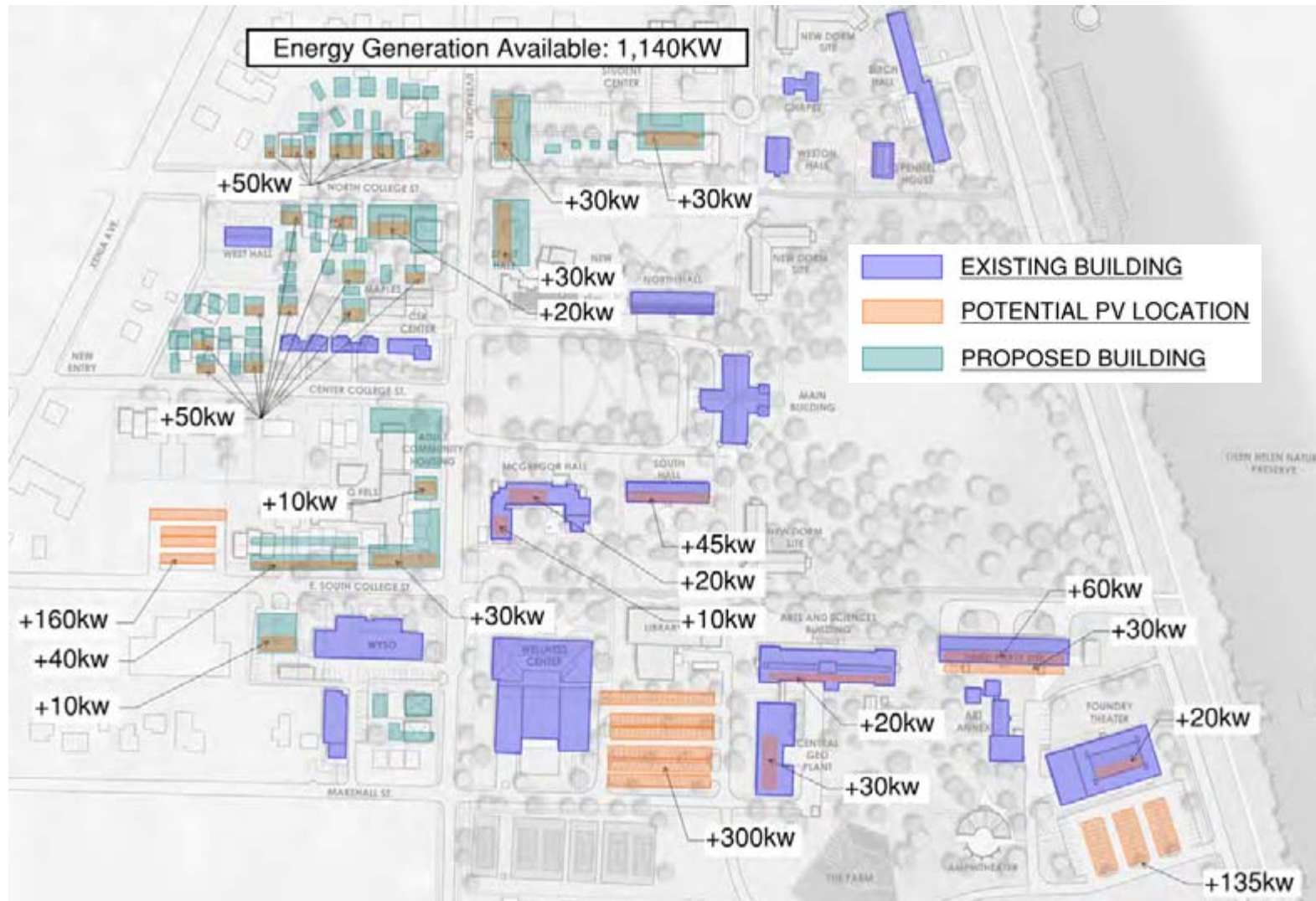
- housing
- still analyzing for non-housing
- have identified 930 kW PV on roofs and site locations



Resiliency for 7 days critical and emergency loads to be met with storage

ANTIOCH COLLEGE ENERGY GENERATION CAPACITY

Potential sites for future Photovoltaic (PV) systems



ANTIOCH VILLAGE ENERGY GENERATION REQUIRED

Energy required to offset new Antioch Village energy usage

470 kW
1,363 panels



Skylight



Rooftop



Overhangs



Carport



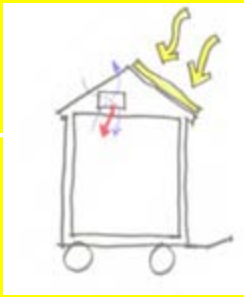
ENERGY BY BUILDING TYPES

Energy Use By Building Type

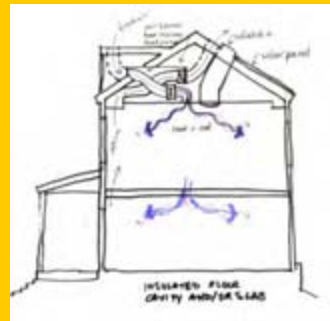
			Tiny House	Cottage	Town House	Multi-Use & Apartments	Co-Housing	Micro-Apts	Student Housing
	Footprint	gsf	300	800	3200	8000	14000	14000	21000
	Number of Units / Building	#	1	1	2	8	23	70	50
	Apartment Footprint + Shared	gsf	300	800	1600	1000	609	200	420
	Energy Cost	\$/kWh	0.12	0.12	0.12	0.12	0.12	0.12	0.12
	Solar Panel Power	Watts	345	345	345	345	345	345	345
Standard	Energy Use / Area	kBtu/sf	60	60	60	50	50	50	43
	Energy Use per Area	kWh/sf	18	18	18	15	15	15	13
	Energy Generation	kW/sf	0.014	0.014	0.011	0.012	0.012	0.013	0.008
	Solar Array	kW	4	11	34	93	162	175	160
	Solar Panels	# Panels	13	33	99	269	470	509	463
Energy Cost per Unit	\$/unit	\$630 / yr	\$1,690 / yr	\$3,380 / yr	\$1,760 / yr	\$1,070 / yr	\$350 / yr	\$640 / yr	
Good <small>(Enterprise Community Standard)</small>	Energy Use / Area	kBtu/sf	44	44	34	26	24	24	34
	Energy Use per Area	kWh/sf	13	13	10	8	7	8	10
	Energy Generation	kW/sf	0.010	0.010	0.006	0.006	0.006	0.006	0.006
	Solar Array	kW	3	8	19	48	78	84	126
	Solar Panels	# Panels	9	24	56	140	226	245	367
Energy Cost per Unit	\$/unit	\$470 / yr	\$1,250 / yr	\$1,920 / yr	\$910 / yr	\$510 / yr	\$180 / yr	\$500 / yr	
Better	Energy Use / Area	kBtu/sf	39	39	30	23	21	21	24
	Energy Use per Area	kWh/sf	12	12	9	7	6	6	7
	Energy Generation	kW/sf	0.009	0.009	0.005	0.005	0.005	0.006	0.006
	Solar Array	kW	3	7	17	43	68	84	126
	Solar Panels	# Panels	8	22	50	124	198	245	367
Energy Cost per Unit	\$/unit	\$410 / yr	\$1,100 / yr	\$1,690 / yr	\$810 / yr	\$450 / yr	\$150 / yr	\$350 / yr	
Best	Energy Use / Area	kBtu/sf	27	27	23	17	16	16	20
	Energy Use per Area	kWh/sf	8	8	7	5	5	5	6
	Energy Generation	kW/sf	0.006	0.006	0.004	0.004	0.004	0.004	0.004
	Solar Array	kW	2	5	13	31	52	52	78
	Solar Panels	# Panels	6	15	37	92	151	151	226
Energy Cost per Unit	\$/unit	\$290 / yr	\$770 / yr	\$1,310 / yr	\$600 / yr	\$340 / yr	\$110 / yr	\$300 / yr	



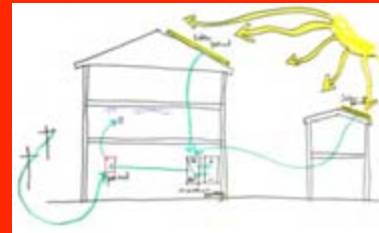
ENERGY SYSTEMS BY BUILDING TYPE



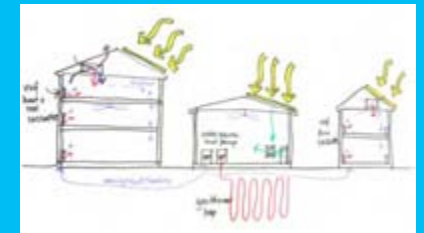
Tiny House



Cottage &
Town Housing



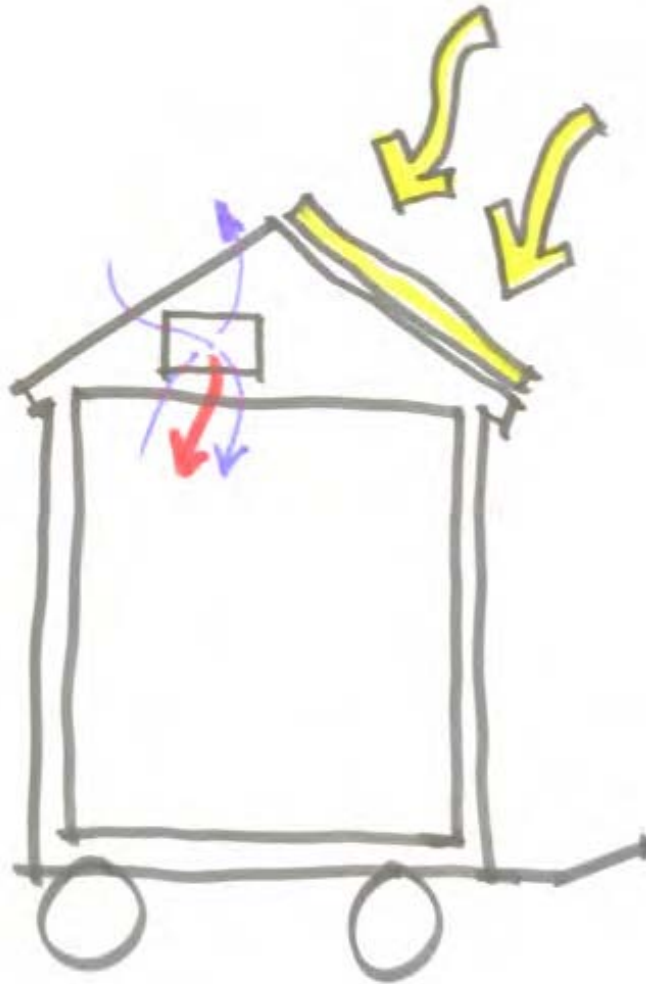
Apartments &
Mixed Use



Co Housing



TINY HOUSE ENERGY USE



1 Unit per Structure
Unit Size: 100 - 300 sf
2 - 6 solar electric panels

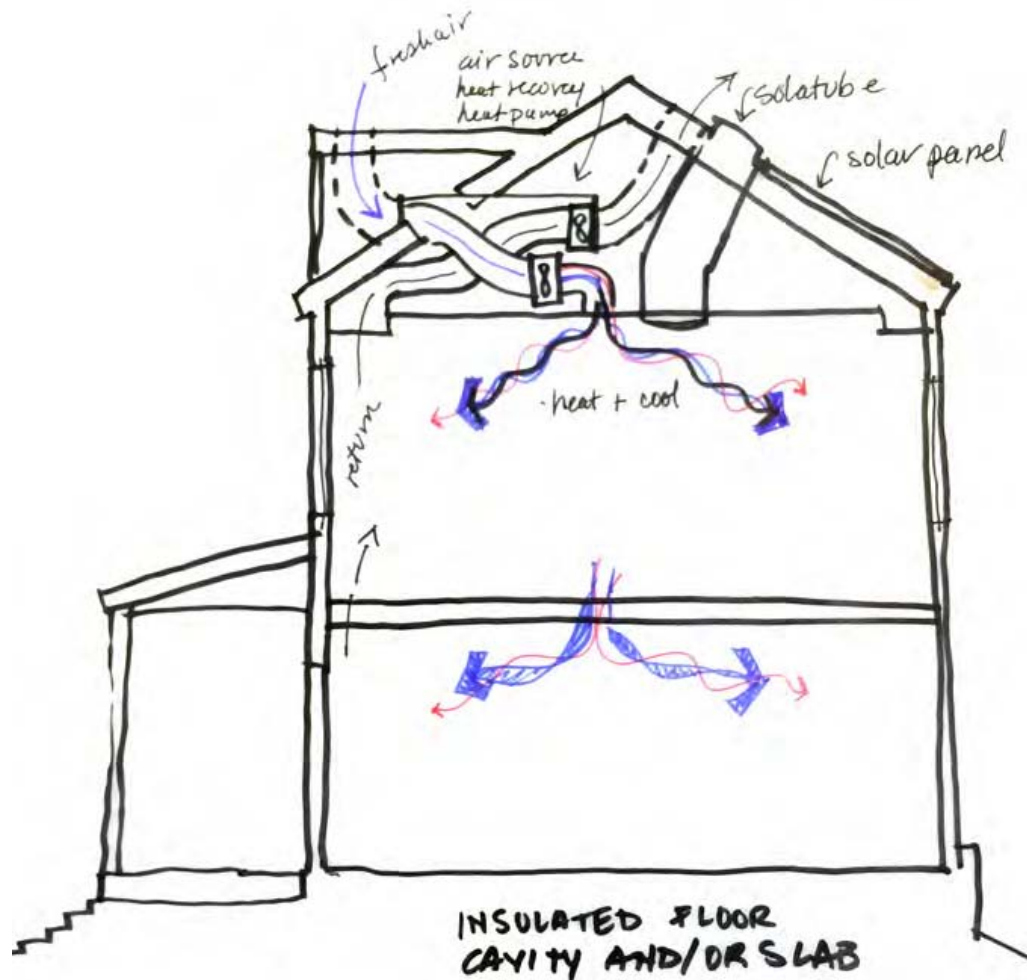
- Fresh air heating and cooling small heat pump system
- Daylighting
- Highly Insulated Envelope
- 20% Window Glazing

Recommendations:

Net Zero Energy Ready
Passive House Equivalent



COTTAGE & TOWN HOUSING



1 Unit per Structure
Unit Size: 600-1600 sf
15 - 30 solar electric panels

- Fresh air heating and cooling small heat pump system
- Daylighting
- Highly Insulated Envelope
- 20% Window Glazing

Recommendations:

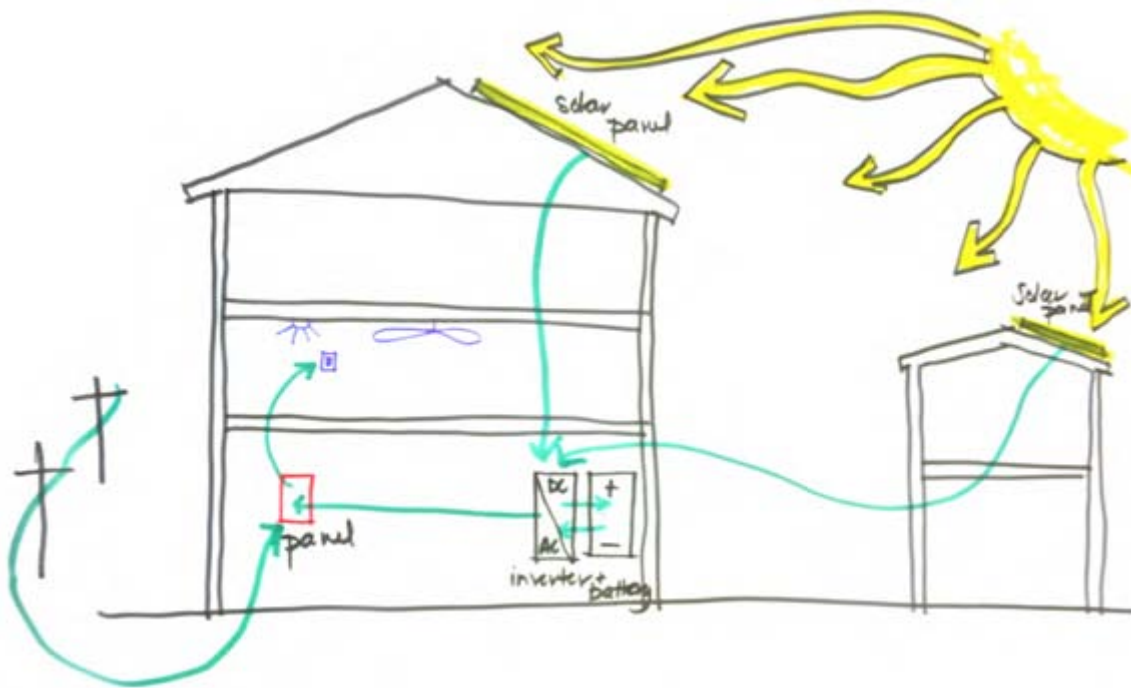
Net Zero Energy Ready
Passive House Equivalent



APARTMENTS AND MIXED USE

8 Unit per Structure
Unit Size: 750-1000 sf
52 - 70 solar electric panels

- Fresh air heating and cooling small heat pump system
- Daylighting
- Solar Roof Top
- Highly Insulated Envelope
- 20-30% Window Glazing



Recommendations:

Net Zero Energy Ready



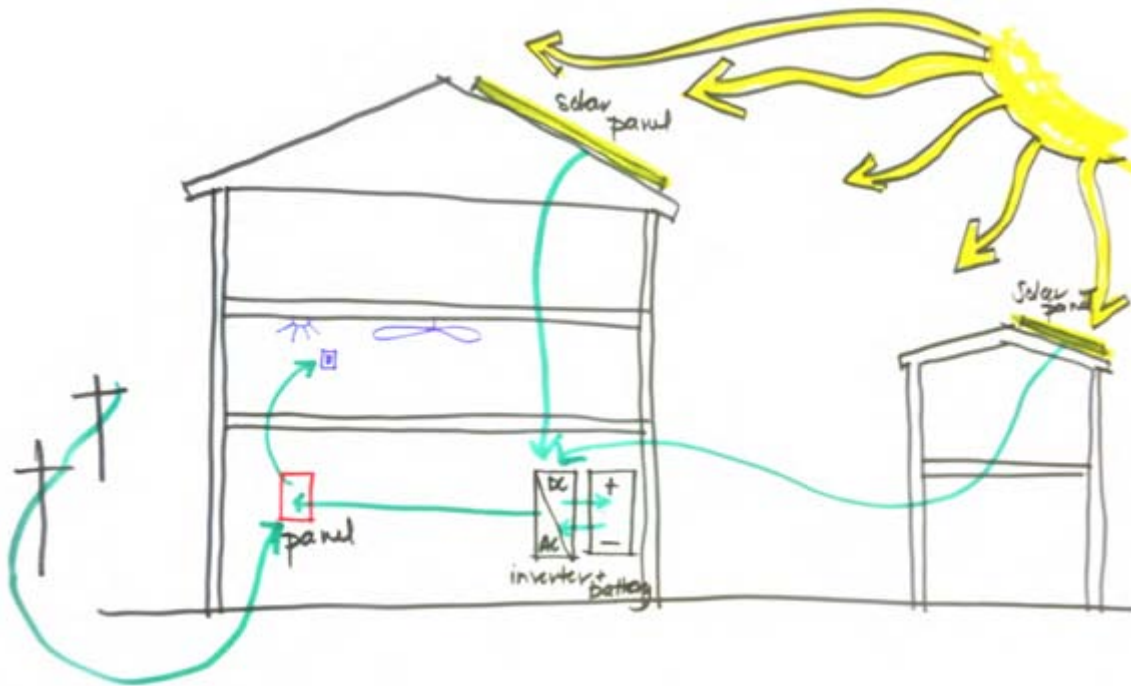
APARTMENTS AND MIXED USE

Affordable Housing

All options meet or exceed the goals for affordable housing energy savings.

High Efficiency Heat Pumps
Highly Insulated Envelope

15% better than the IECC code
meets Enterprise Communities.

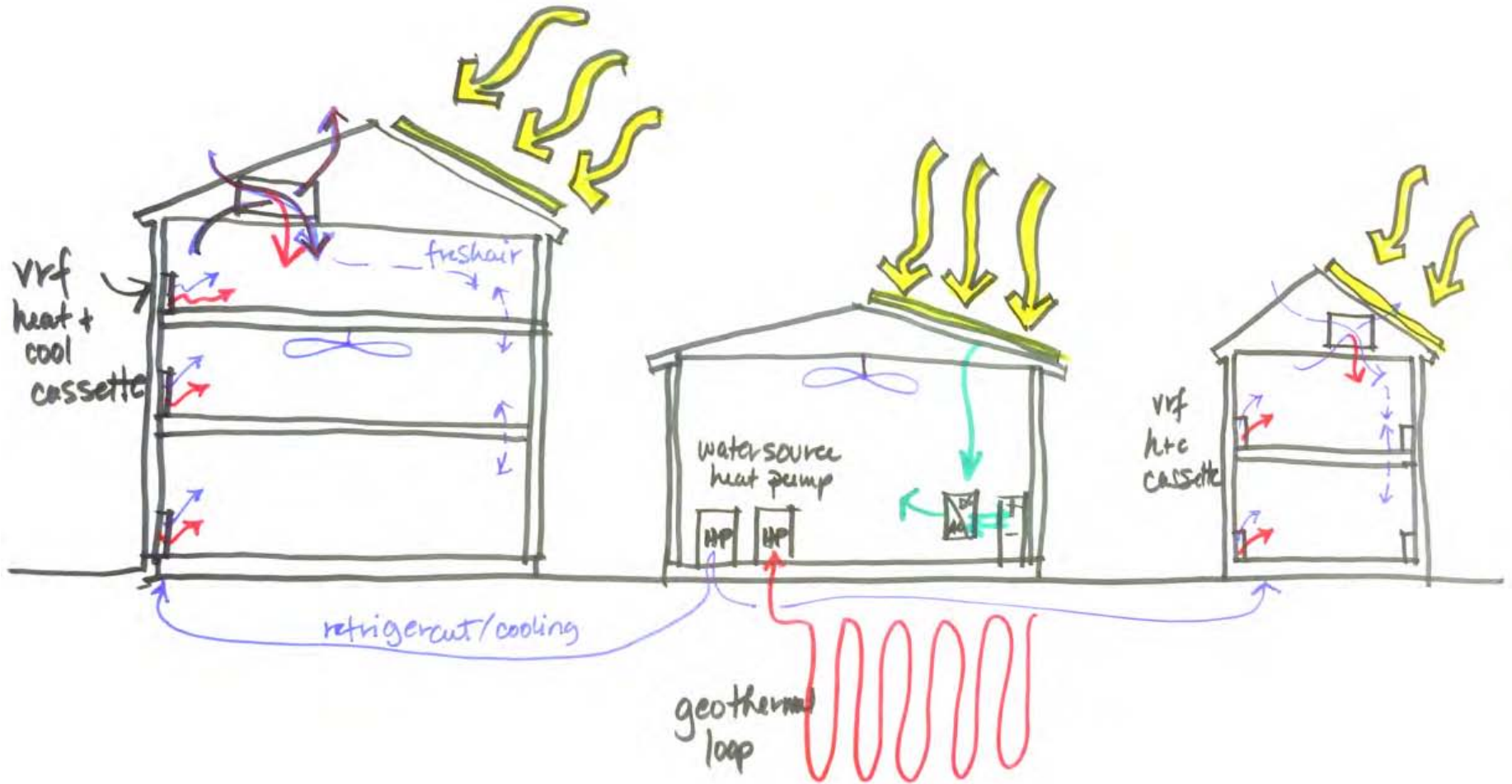


Recommendations:

Net Zero Energy Ready



CO-HOUSING

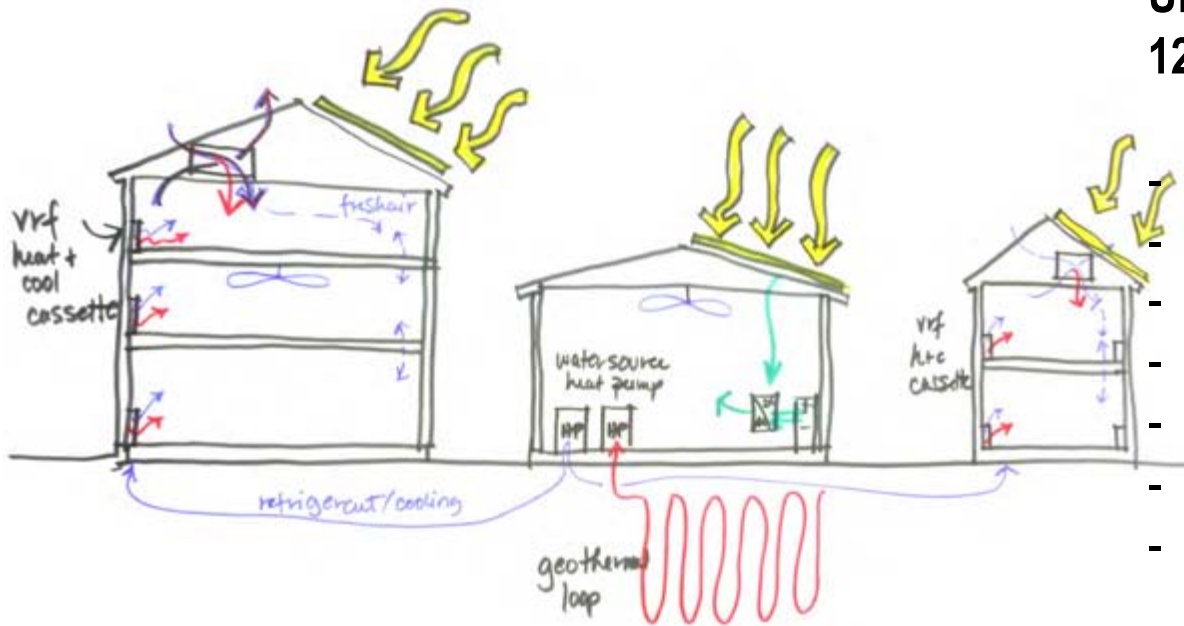


CO-HOUSING

23 Units

Unit Size: 500 - 600 sf

120 - 140 solar electric panels



- Fresh air heating and cooling
- Geo thermal loop
- Water Source Heat Pumps
- Daylighting
- Solar Roof Top
- Highly Insulated Envelope
- 20-30% Window Glazing

Recommendations:

Net Zero Energy Ready



NEW ARTS + TECH BUILDING →



LIVING BUILDING CHALLENGE

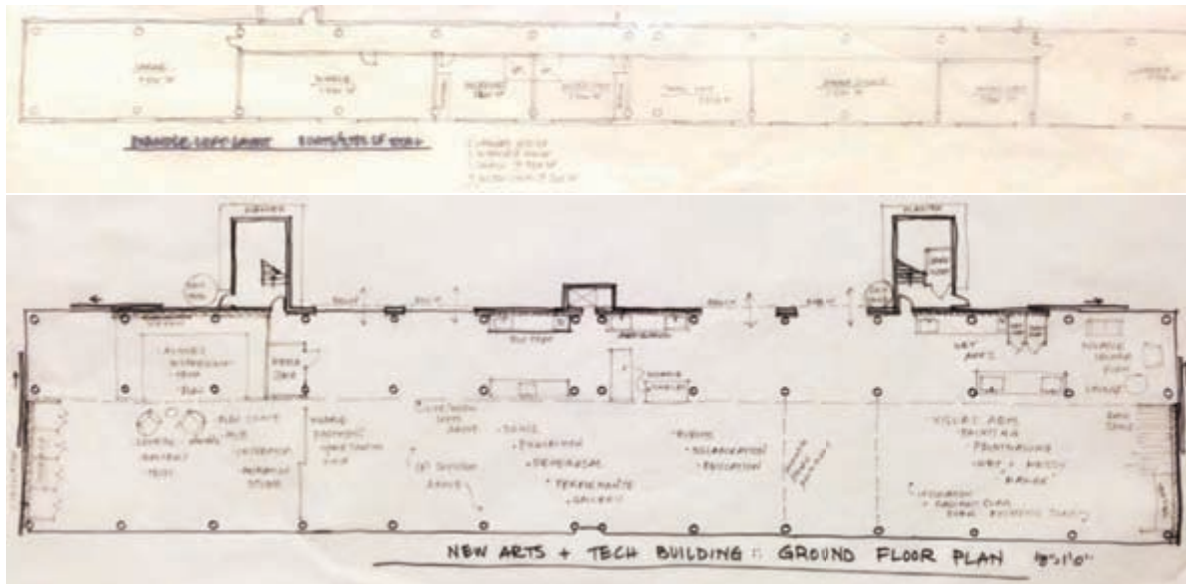


- Net Positive Energy
- 90kW solar electric
 - Energy efficiency

- Net Zero Water
- Integrated water strategies
 - Greywater recycling
 - Rainwater catchment

+/- 20 Artist live/work units

Ground floor art, tech, exhibition/performance space



NEW ARTS + TECH BUILDING →



LIVING
BUILDING
CHALLENGE



Arts + Sciences

- Add PV

New Arts + Tech

- Add PV on roof, shading devices and canopy on south for outdoor maker space

Central Geo Plant

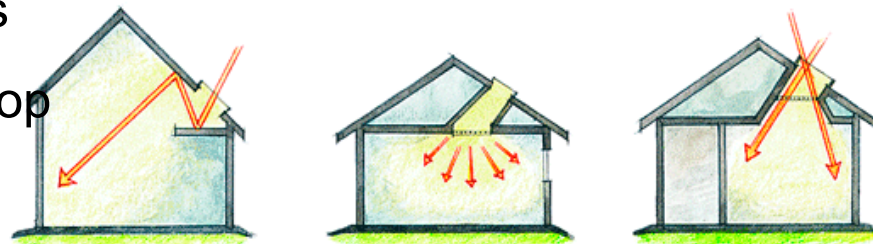
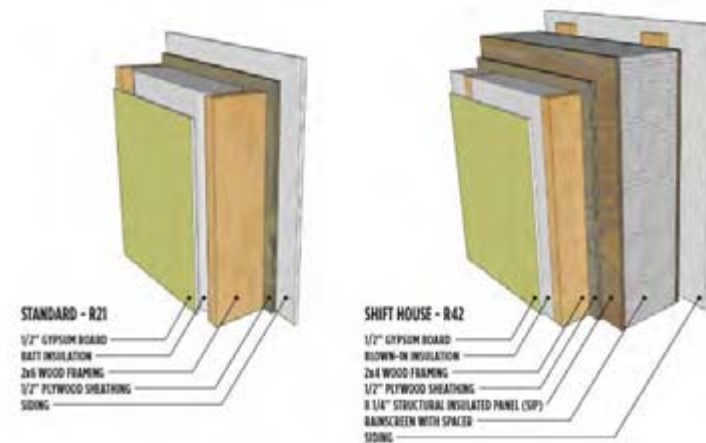
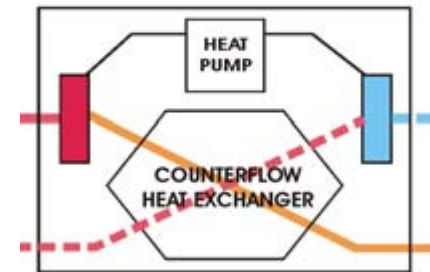
- Add PV



NEW HOUSING STRATEGIES

- Daylighting
- Highly Insulated Envelope
- High efficiency LED lighting
- Automatic lighting & plug controls
- Energy monitoring
- High efficiency PV panels
- Battery backup for essential systems
- High Efficiency Heat Pumps
- Ground Source Thermal Loop
- VRF Heat Pumps

HEAT RECOVERY UNIT



PASSIVE HOUSE TYPE OPPORTUNITY

EXAMPLES WHEN BUILT



ANTIOCH COLLEGE ON-SITE RENEWABLE ENERGY CHALLENGE

Antioch College Aspirations:

- Living Community Challenge
 - Net-positive energy
 - Grid resiliency
 - Community shelter



Current Challenges:

- Village of Yellow Springs energy contract obligations
- Current village tariff structure \square financial viability
- Allowance for local PV for Yellow Springs **is maxed out**



ANTIOCH COLLEGE ENERGY GENERATION SOLUTIONS

Possible Solutions

- Alter tariff for separate electrical transmission and generation charges
(Yellow Springs action required)
- Increase village allowance for PV in parallel with increased energy demand
(Yellow Springs and Antioch action required)
- Research with ILFI to determine if some of the utility's renewable energy mix can be used to satisfy requirements
(Antioch and ILFI action required)



questions
remain

tell us what you think



Antioch College Village CHARRETTE Participant Feedback

Of the many ideas you heard or seen so far, which ones seem the most exciting to you?

Do you have any technical questions for the design team to consider?

What additional questions/suggestions do you have? (continue on the back if necessary)

share your ideas

Help Plan the Antioch Col x

antiochcollege.mindmixer.com

Home Topics Activity About

Sign Up Log In

Welcome to Help Plan the Antioch College Village!

Antioch College is considering developing multigenerational housing on its campus, called the Antioch College Village. This is an interactive forum where ideas can be shared and discussed.

Connect with Facebook or Sign Up with Email

Topics

Join the discussion and add to current topics. [View All Topics](#)

YOUR BIG IDEA

Posted Feb 3 15 Interactions 32 Days Remaining



What's your big idea for the future of Antioch College Village?

Description

The upcoming charrette offers us an opportunity to envision the future for the new Antioch College Village. Submit your "Big Ideas" for this important addition to campus, support the ideas of others and use the comment feature to share your thoughts.

antiochcollege.mindmixer.com

quick poll

Antioch College Village
CHARRETTE

thank you!

**watch for updates,
stay involved:**

antiochcollege.org

antiochcollege.mindmixer.com



**ANTIOCH
COLLEGE**





"Make no little plans; they have no magic to stir men's blood and probably themselves will not be realized. Make big plans; aim high in hope and work, remembering that a noble, logical diagram once recorded will never die, but long after we are gone will be a living thing, asserting itself with ever-growing insistency. Remember that our sons and grandsons are going to do things that would stagger us. Let your watchword be order and your beacon beauty."

Daniel Burnham



*** ANTIPOCH MASTER PLAN**

The Board has been working on the Antioch Master Plan for several years. For an in-depth review of the plan, please contact the Board of Trustees. The Board of Trustees is a key component of the plan and will be responsible for the implementation of the plan.

The plan is a long-term vision for the college and will be updated as needed. The plan is a living document and will evolve over time. The plan is a guide for the college and will be used to inform all decisions related to the college's future.

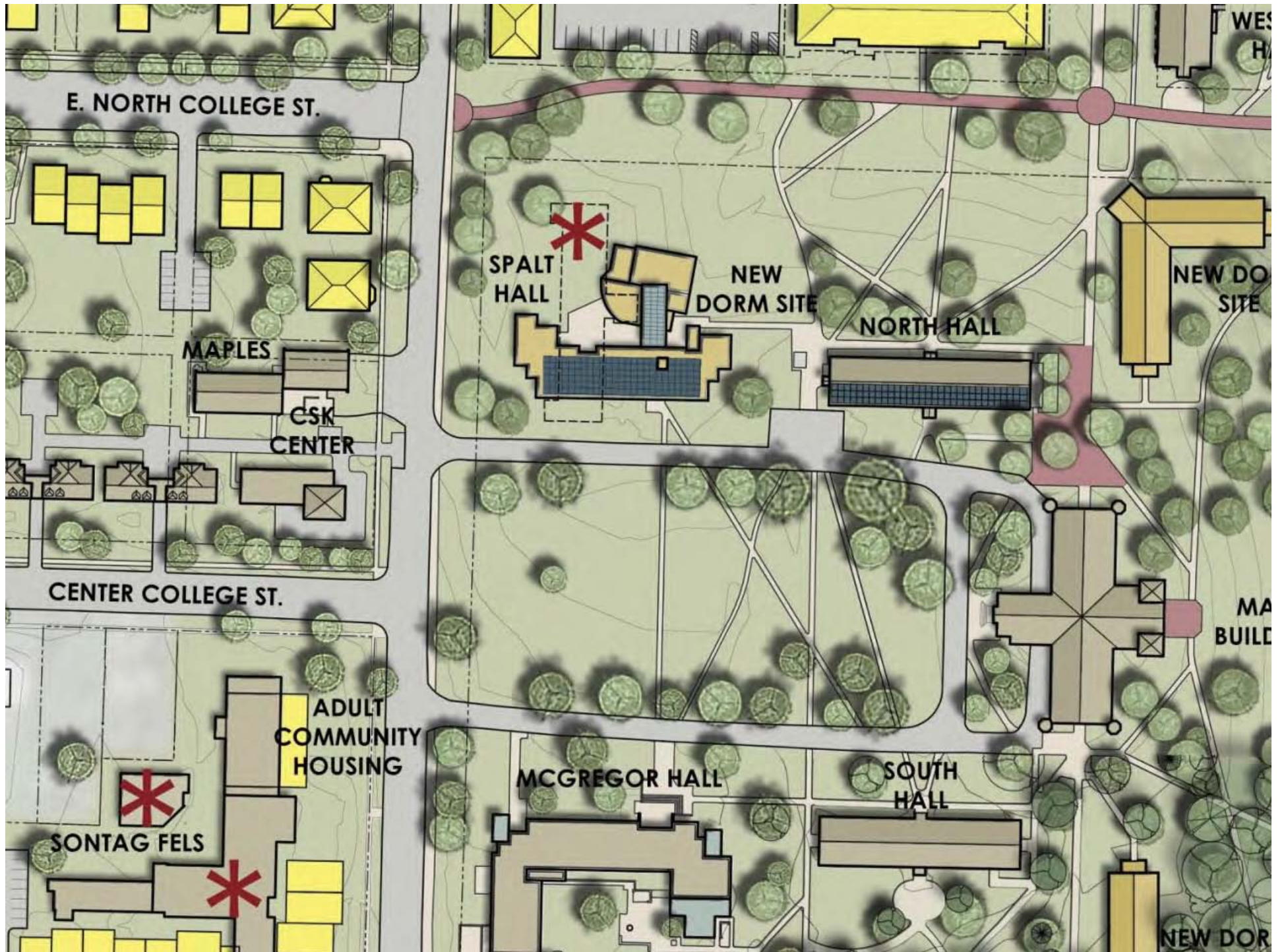
The plan is a key component of the college's strategic plan and will be used to inform all decisions related to the college's future. The plan is a living document and will evolve over time. The plan is a guide for the college and will be used to inform all decisions related to the college's future.

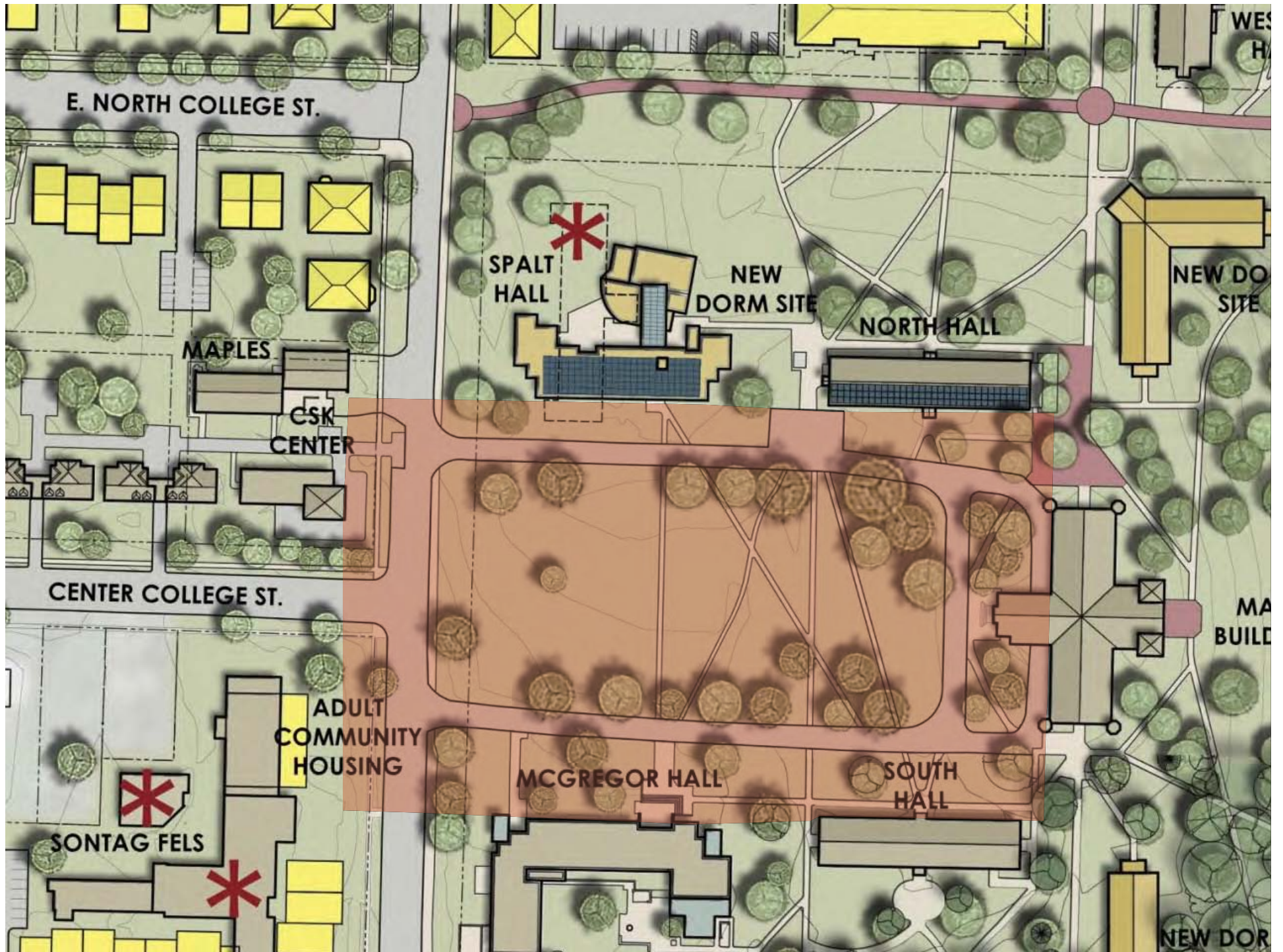
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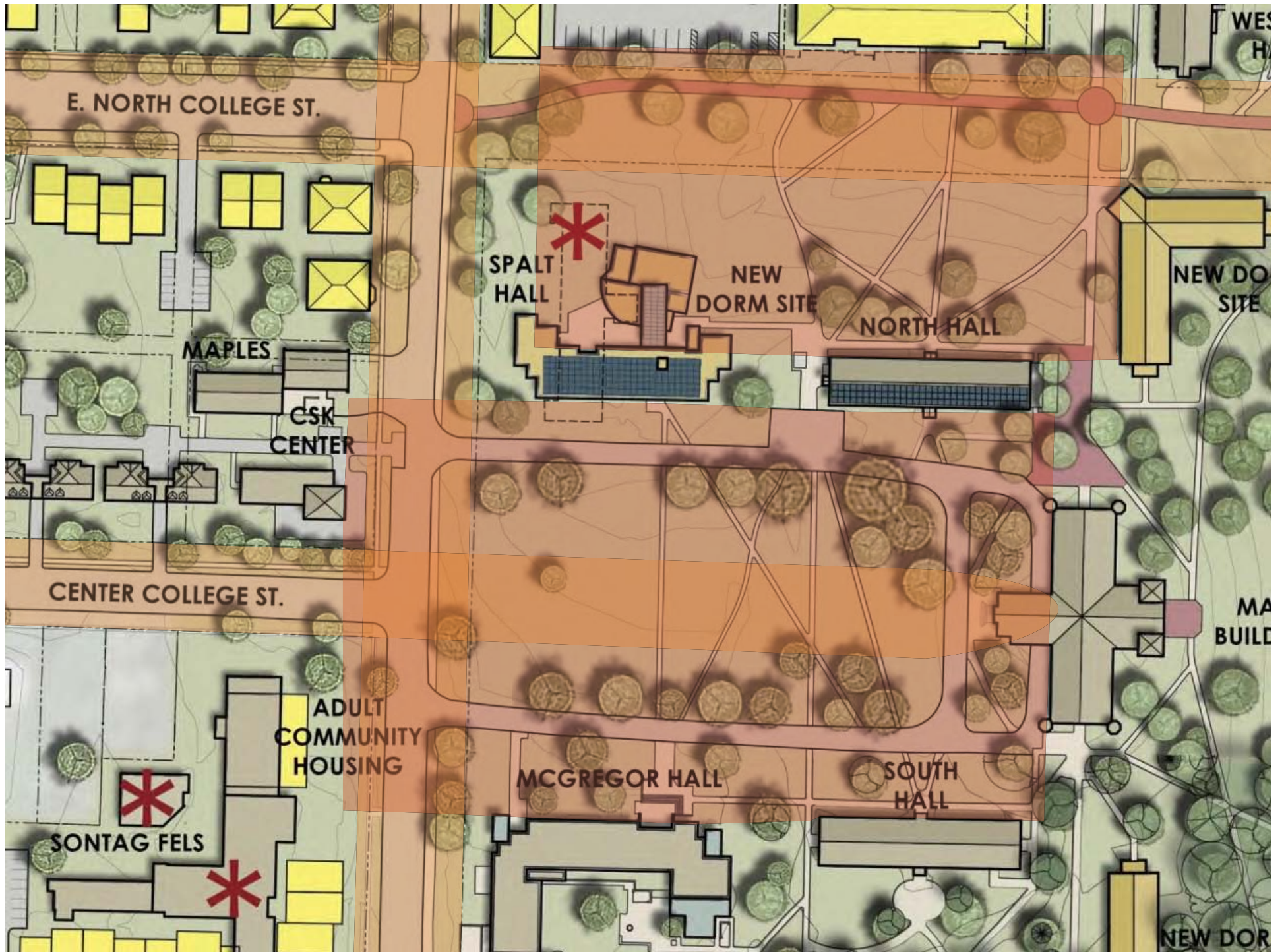


MASTER PLAN









E. NORTH COLLEGE ST.

SPALT HALL

NEW DORM SITE

NORTH HALL

NEW DO
SITE

MAPLES

CSK
CENTER

CENTER COLLEGE ST.

MA
BUILD

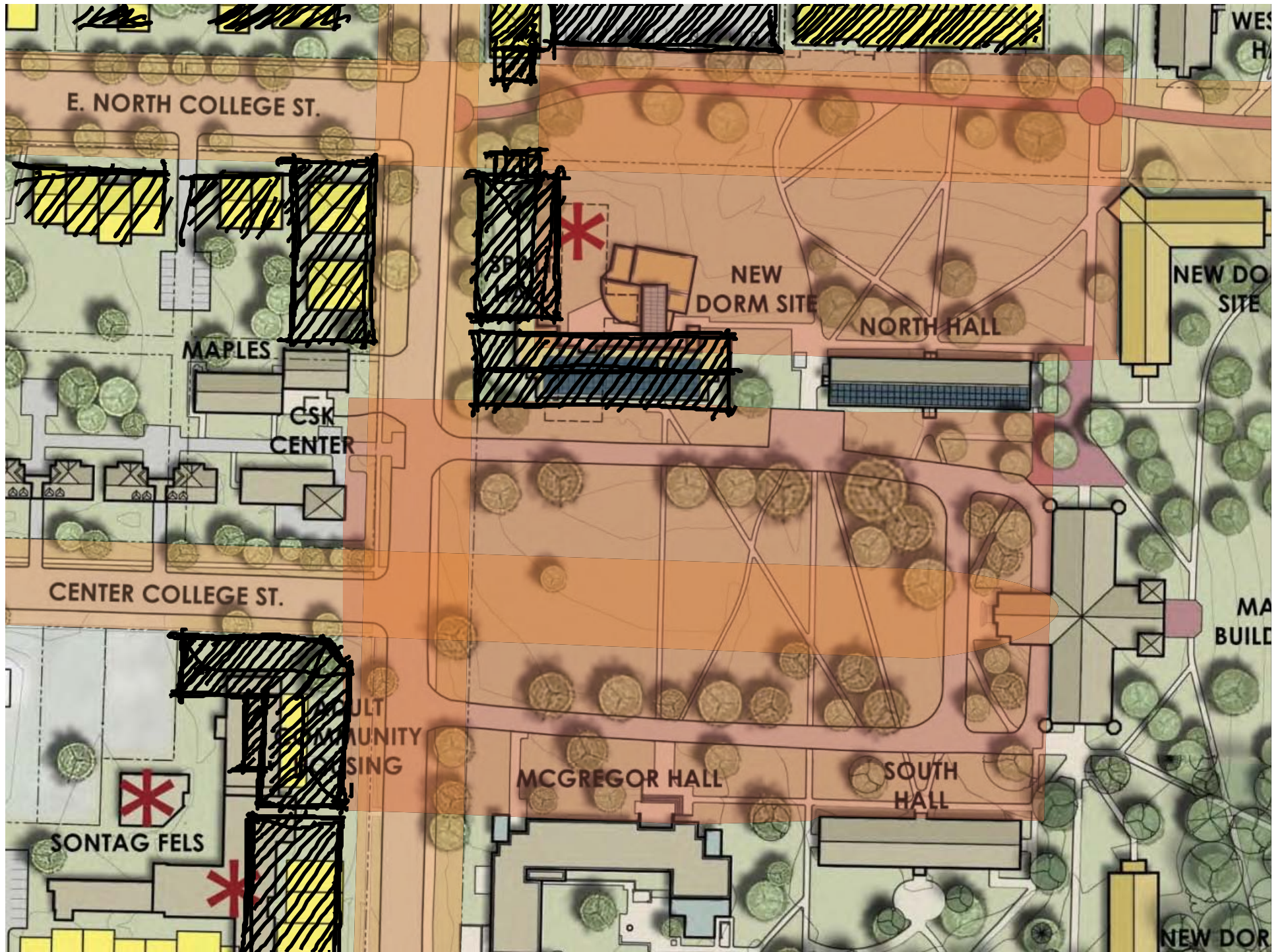
ADULT
COMMUNITY
HOUSING

MCGREGGOR HALL

SOUTH
HALL

SONTAG FELS

NEW DOR



E. NORTH COLLEGE ST.

MAPLES

CSK
CENTER

CENTER COLLEGE ST.

ULT
COMMUNITY
HOUSING

SONTAG FELS

MCGREGOR HALL

SOUTH
HALL

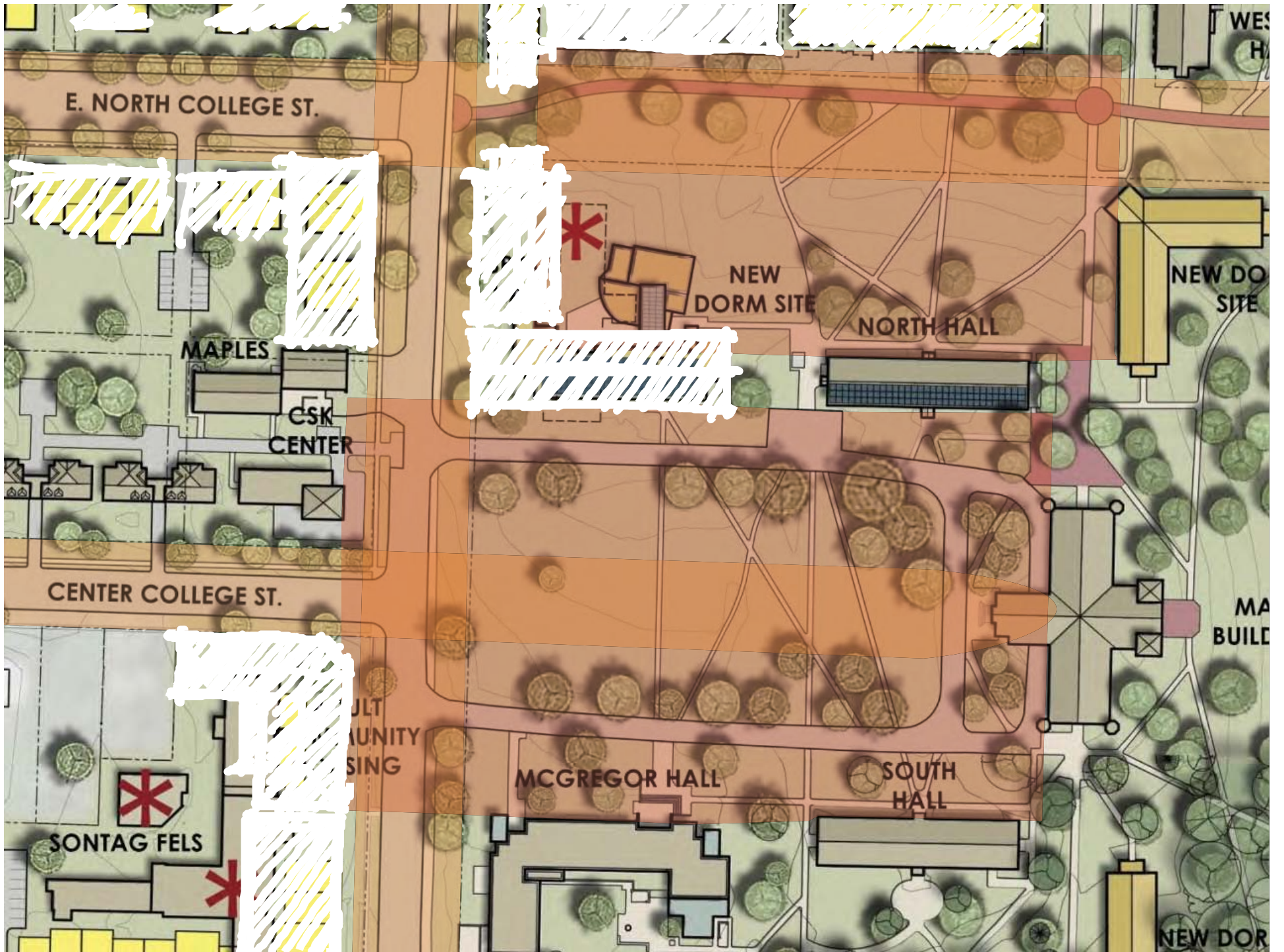
NEW
DORM SITE

NORTH HALL

NEW DO
SITE

MA
BUILD

NEW DOR



E. NORTH COLLEGE ST.

MAPLES

CSK CENTER

CENTER COLLEGE ST.

COMMUNITY SING

SONTAG FELS

MCGREGOR HALL

SOUTH HALL

NEW DORM SITE

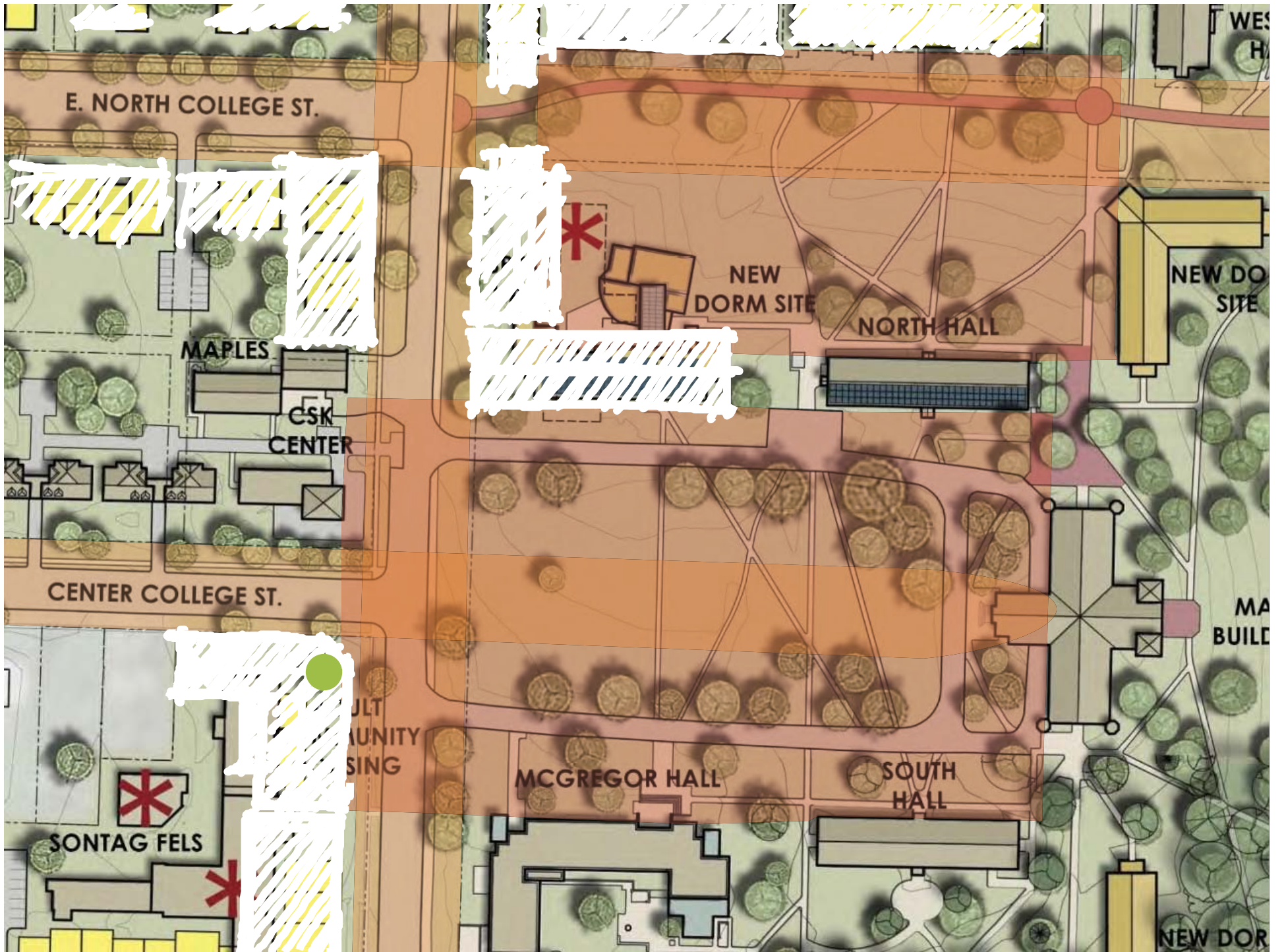
NORTH HALL

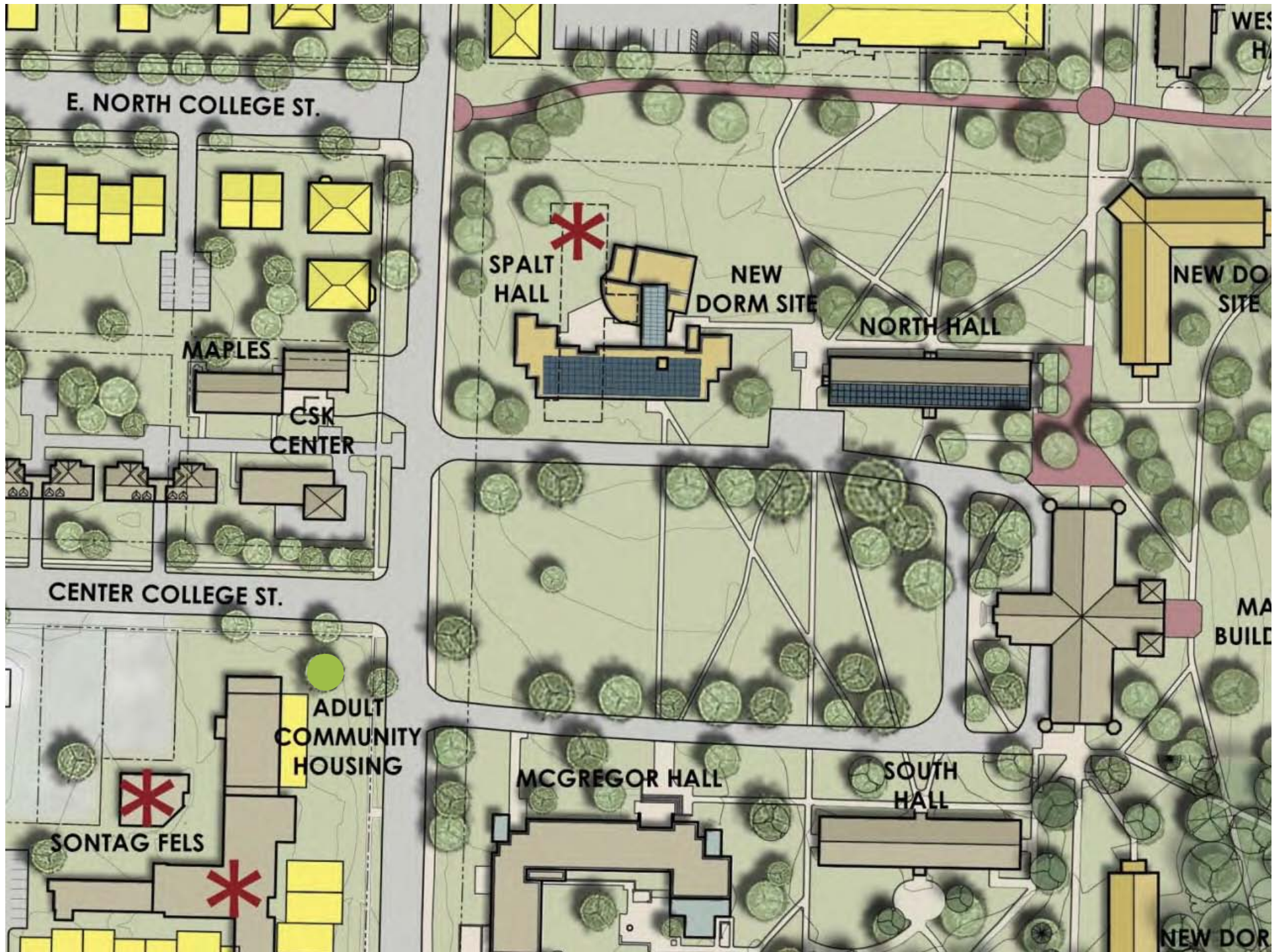
NEW DORM SITE

MA BUILD

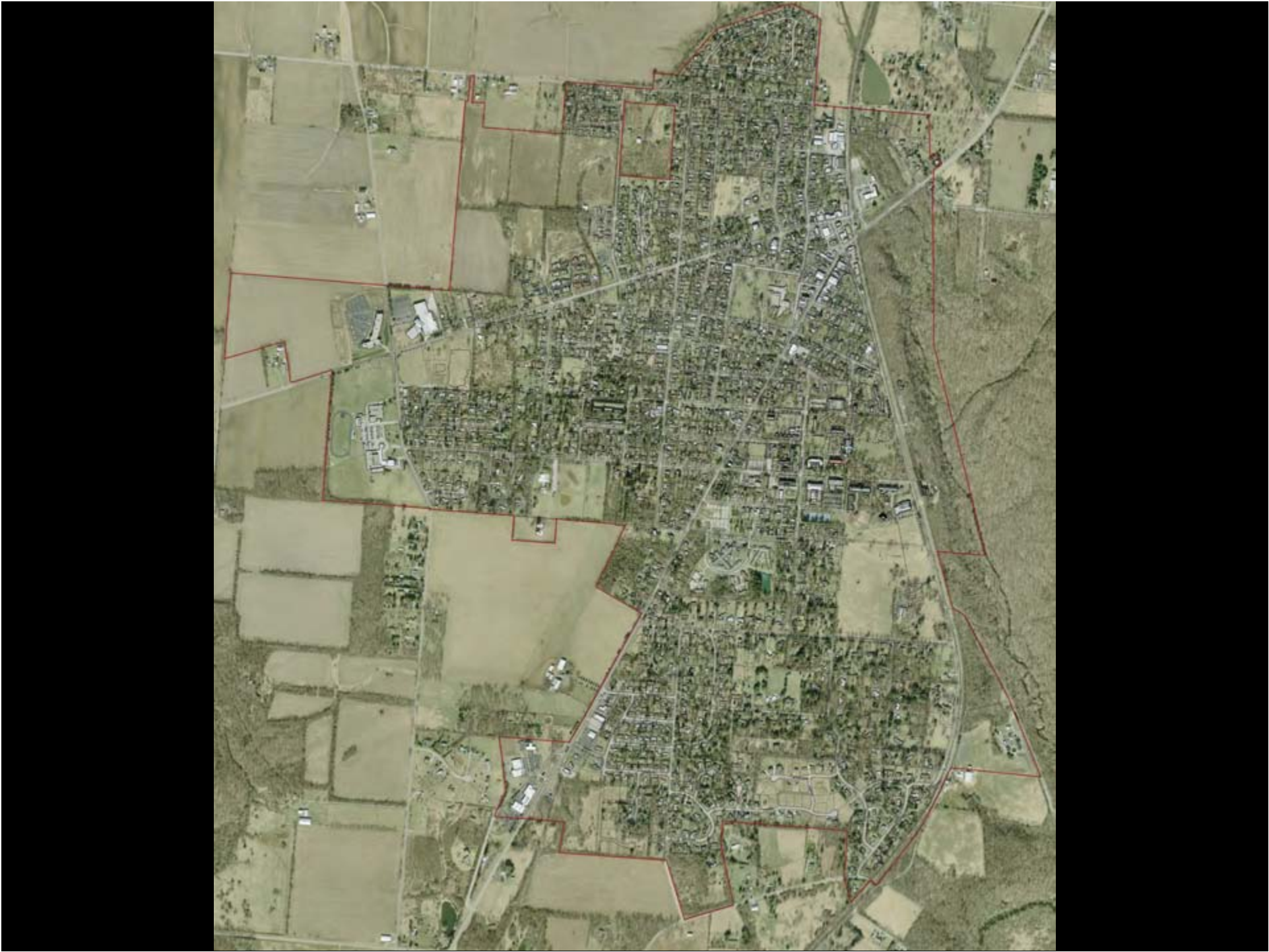
NEW DOR

WEST HALL









"Make no little plans; they have no magic to stir men's blood and probably themselves will not be realized. Make big plans; aim high in hope and work, remembering that a noble, logical diagram once recorded will never die, but long after we are gone will be a living thing, asserting itself with ever-growing insistency. Remember that our sons and grandsons are going to do things that would stagger us. Let your watchword be order and your beacon beauty."

Daniel Burnham

- EXISTING BUILDING
- NEW CAMPUS BUILDING
- NEW RESIDENTIAL BUILDING
- FARMING/GROWING AREAS







