

UNIVERSITY OF MICHIGAN

KEYSTONE AT



THE CROSSROADS

JOSHUA CHILDS MPP/MURP '20

BRYAN HICKS M.ARCH '20

AMELIA LINDE M.ARCH/MUD '21

SAM KOLLAR MURP '20

JESSICA YELK LEED GREEN ASSOC. M.ARCH/MURP '21

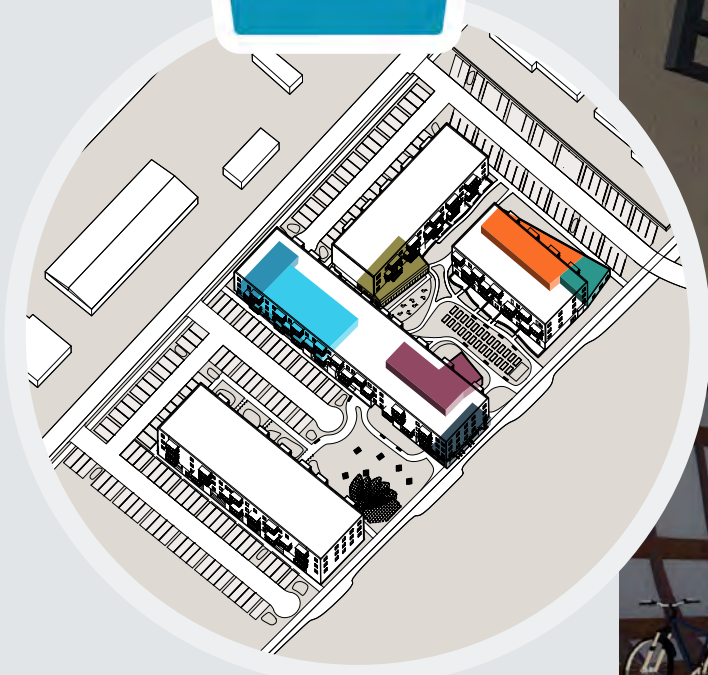
ADVISOR: LAN DENG

TAUBMAN COLLEGE OF ARCHITECTURE AND URBAN PLANNING

SPECIAL THANKS:

MARC NORMAN + CLAUDIA WIGGER

TAUBMAN COLLEGE OF ARCHITECTURE AND URBAN PLANNING



- BIKE CAFE | 500 SQ-FT
- DAYCARE | 2,950 SQ-FT
- COMMUNITY LEARNING LAB | 3,693 SQ-FT
- TRANSITIONAL HOUSING | 3,459
- RENTAL OFFICES | 950 SQ-FT
- FEDERALLY QUALIFIED HEALTH CENTER | 5,372 SQ-FT
- CHAIN PHARMACY | 1,200 SQ-FT

<https://youtu.be/pimzx7exwpY>



COMMUNITY ECOLOGY

COMMUNITY ECOLOGY FRAMEWORK:



ENVIRONMENTALLY SUSTAINABLE
 Net Zero + LEED Platinum
 Life Cycle Interactive Network
 Passive Design
 Sustainable Water Management + Landscaping

SOCIALLY INCLUSIVE
 Economically Diverse
 Socialization on a Variety of Scales
 Equitable
 Multigenerational Programming

FINANCIALLY SOUND
 Competitive + Achievable
 Innovative Phasing
 Efficient Use of Subsidy
 Responsibly Leveraged

LOCALLY INTEGRATED
 Networked Transportation Options
 Relationship to Natural Landscape
 Community + Neighborhood Driven
 Responsible + Local Building Material



- CHAIN PHARMACY
- FEDERALLY QUALIFIED HEALTH CENTER
- INDOOR BIKE PARKING
- MODERN LIBRARY
- PERSONAL GARDEN/PATIOS
- COMMUNITY GARDEN
- COMPOST
- PLAYGROUND
- DAYCARE
- BIKE CAFE
- GATEWAY
- RENTAL OFFICES
- SRO UNITS
- HUMMINGBIRD PAVILION
- RETENTION PONDS
- BIKE PARKING
- BIKE + PEDESTRIAN TRAIL
- BIOSWALE
- POUROUS PAVING STONES
- SEMI-PERMEABLE PAVING



FULL-CIRCLE SYSTEM



MODERN LIBRARY



DAYCARE

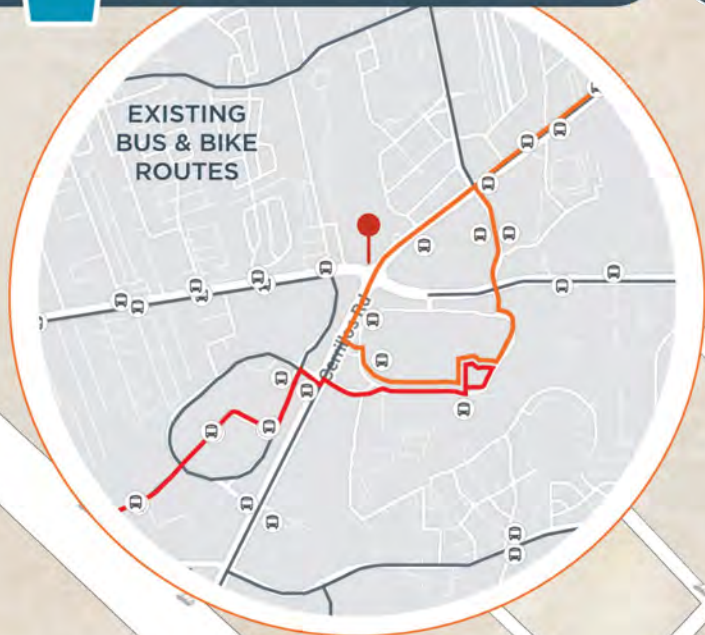


GATEWAY





LOCALLY INTERGATED



- ROUTE 1 & EXTENSION
- ROUTE 2 & EXTENSION
- BIKE ROUTES
- NEW ROADS
- NEW SIDEWALKS
- FUTURE DEVELOPMENT



- CONNECTED
- PEOPLE-ORIENTED
- PEDESTRIAN FRIENDLY
- ACTIVE
- INCLUSIVE
- ACCESSIBLE
- SAFE
- CLEAR SIGNAGE
- WELL-LIT



ENVIRONMENTALLY SUSTAINABLE

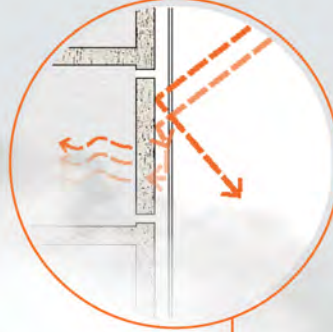


GREENHOUSE BALCONY



COMMUNITY FOOD GROWING EDUCATION

COMMUNITY GARDEN



TROMBE WALL

ENERGY ANALYSIS

AHU DESIGN AIRFLOW
7,390 (CFM)

ANNUAL NET CO2E
PER AREA
3 LB CO2E/FT^2

EUI
15 K BTU/FT^2/YR

ANNUAL NET
ENERGY USE
828,687 KWH/YR

SITE PLAN



GRAYWATER REUSE

LOCAL + RESPONSIBLE BUILDING MATERIALS

PERSONAL GARDENS

HIGH ALBEDO ROOF

SEMI-PERMEABLE PAVEMENT

POCKET GARDENS

RAINWATER RETENTION POND

NON-INVASIVE AND NATURAL VEGETATION

SOLAR PANELS

COMPOST

ROOF RAINWATER COLLECTION

SEMI-PERMEABLE PAVEMENT

POCKET GARDENS

RAINWATER RETENTION POND

NON-INVASIVE AND NATURAL VEGETATION

PERSONAL GARDENS

HIGH ALBEDO ROOF



BENEFITS OF ON-SITE SOLAR



ACRES OF TREES PLANTED
3,473



AVG SIZED VEHICALS REMOVED FROM ROAD
2,442



POUNDS OF COAL NOT BURNED
11,670,614



GALLONS OF WATER SAVED FROM STEAM TURBINES
11,203,789





SOCIALLY INCLUSIVE



- Personal Greenhouse Balcony
- In unit washer/dryer
- Full bathtubs
- Efficient LED lighting
- Safety call button
- Child friendly

20 UNITS
11%



STUDIO | 416 SQ-FT

51 UNITS
28%



1 BEDROOM | 676 SQ-FT

88 UNITS
49%



2 BEDROOM | 858 SQ-FT

22 UNITS
12%

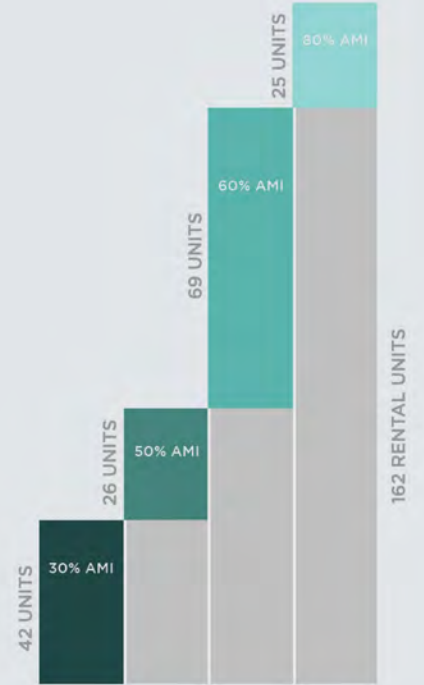


3 BEDROOM | 1141 SQ-FT

8 UNITS



SRO TRANSITIONAL HOUSING | 3459 SQ-FT | 8 BEDROOMS



Dwelling unit count and bedroom count	189 units 321 beds
FAR	0.64
Dwelling units/acre	28.64
Number of Walk up + ADA accessible units	56



FINANCIALLY SOUND

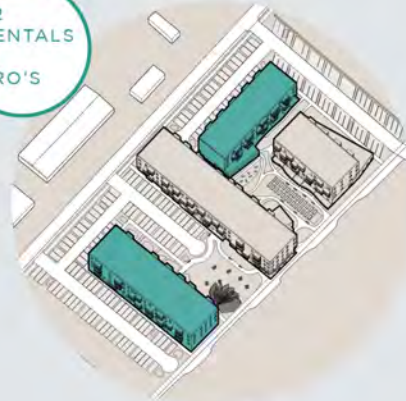


80
RENTALS
19
CONDOS



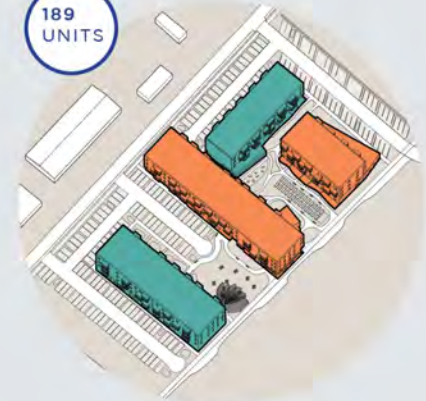
PHASE 1

82
RENTALS
8
SRO'S



PHASE 2

189
UNITS



TOTAL

INNOVATIVE

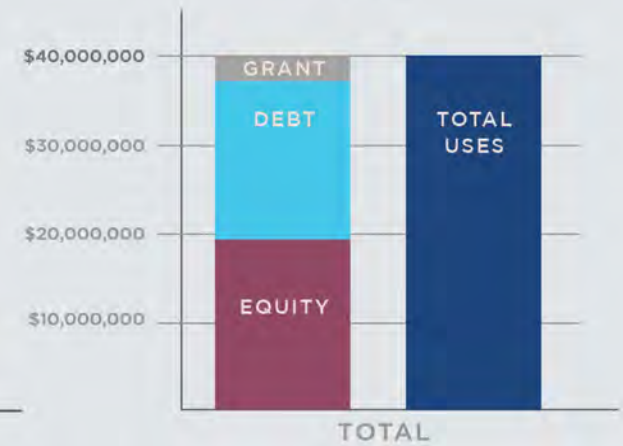
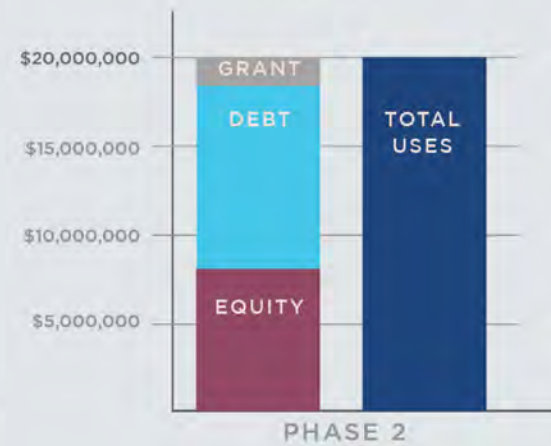
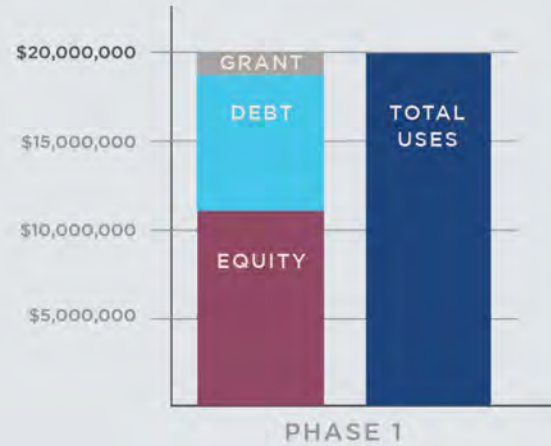
- LIHTC Twinning
- Community Service Facility Basis Boost
- Leveraged Equity from Condo Sale

ACHIEVABLE

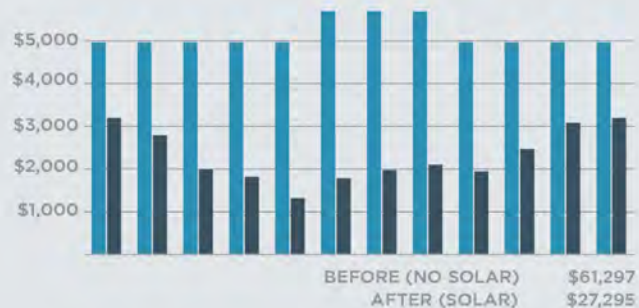
- Highly Competitive Applications for Equity and Grant Sources
 - 9% and 4% LIHTC
 - New Mexico Affordable Housing Tax Credit
 - Continuum of Care
 - FHLB AHP

SUSTAINABLE

- 5 FTE Staff Included in Annual Operating Expenses
- Large Resident Service Budget for Long Term Support of High Quality Programming
- Green Design & Infrastructure Reduces Operating Expenses
- Quality Building Materials for Long Term Durability



UTILITY BILL BEFORE & AFTER SOLAR



PHASE 1

PHASE 1 + 2 COMPLETE AND OPERATING

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10
TOTAL INCOME	\$727,005	\$741,545	\$1,845,917	\$1,882,835	\$1,920,492	\$1,958,902	\$1,998,080	\$2,038,041	\$2,078,802	\$2,120,378
TOTAL EXPENSES	\$455,369	\$469,031	\$956,375	\$985,066	\$1,014,618	\$1,045,057	\$1,076,408	\$1,108,701	\$1,141,962	\$1,176,220
NET OPERATING INCOME	\$271,636	\$272,515	\$889,542	\$897,769	\$905,874	\$913,874	\$921,672	\$929,341	\$936,841	\$944,158
TOTAL DEBT SERVICE	(\$225,491)	(\$225,491)	(\$756,979)	(\$756,979)	(\$756,979)	(\$756,979)	(\$756,979)	(\$756,979)	(\$756,979)	(\$756,979)
DSCR	1.20	1.21	1.18	1.19	1.20	1.21	1.22	1.23	1.24	1.25
CASH FLOW AFTER DEBT SERVICE	\$46,145	\$47,024	\$132,563	\$140,790	\$148,790	\$156,866	\$164,693	\$172,362	\$179,862	\$187,179

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