

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

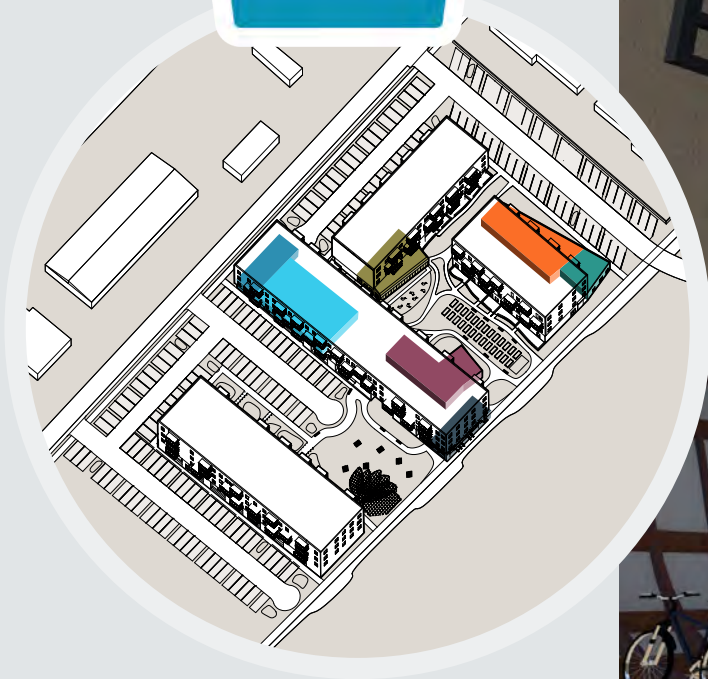
ADVISOR: LAN DENG

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



FULL-CIRCLE SYSTEM



MODERN LIBRARY



DAYCARE



GATEWAY

N



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

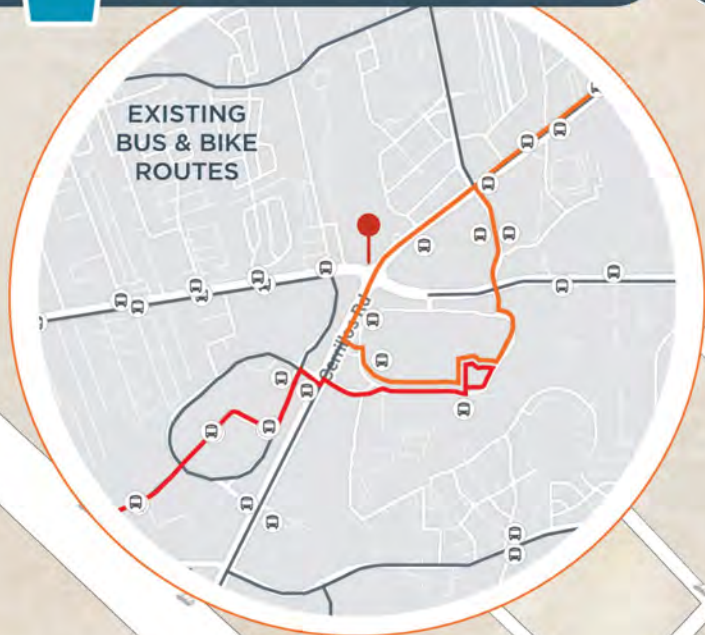
Competitive + Achievable
Innovative Phasing
Efficient Use of Subsidy
Responsibly Leveraged

LOCALLY INTEGRATED

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



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



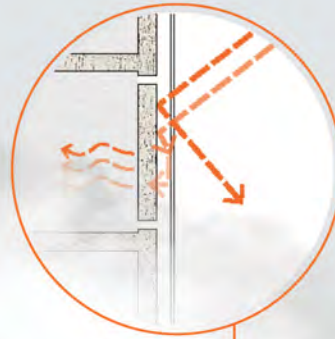
GREENHOUSE
BALCONY



COMMUNITY
FOOD GROWING
EDUCATION

COMMUNITY
GARDEN

ROOF
RAINWATER
COLLECTION



TROMBE
WALL

COMPOST

SEMI-
PERMEABLE
PAVEMENT

POCKET
GARDENS

PERSONAL
GARDENS

RAINWATER RETENTION
POND

NON-INVASIVE
AND NATURAL
VEGETATION

LOCAL +
RESPONSIBLE
BUILDING MATERIALS

HIGH ALBEDO
ROOF

ENERGY ANALYSIS

AHU DESIGN AIRFLOW
7,390 (CFM)

ANNUAL NET CO₂E
PER AREA
3 LB CO₂E/FT²

EUI
15 K BTU/FT²/YR

ANNUAL NET
ENERGY USE
828,687 KWH/YR

SITE PLAN



GRAYWATER REUSE



BENEFITS OF ON-SITE SOLAR



ACRES OF
TREES PLANTED
3,473



AVG SIZED VEHICLES
REMOVED FROM ROAD
2,442



POUNDS OF COAL
NOT BURNED
11,670,614



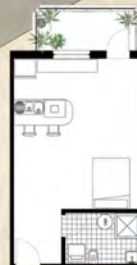
GALLONS OF WATER SAVED
FROM STEAM TURBINES
11,203,789



SOCIALLY INCLUSIVE



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%



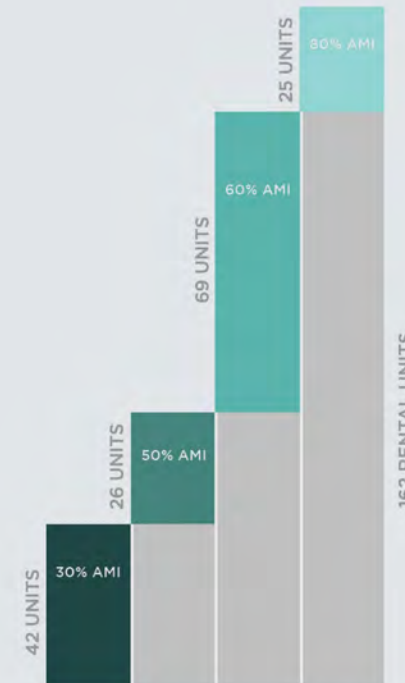
3 BEDROOM | 1141 SQ-FT

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



SRO TRANSITIONAL HOUSING | 3459 SQ-FT | 8 BEDROOMS

8
UNITS



"LADDER" OF AFFORDABILITY



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



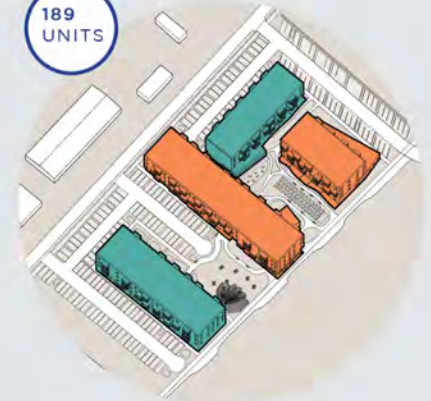
PHASE 1

82
RENTALS
8
SRO'S



PHASE 2

189
UNITS



TOTAL

INNOVATIVE

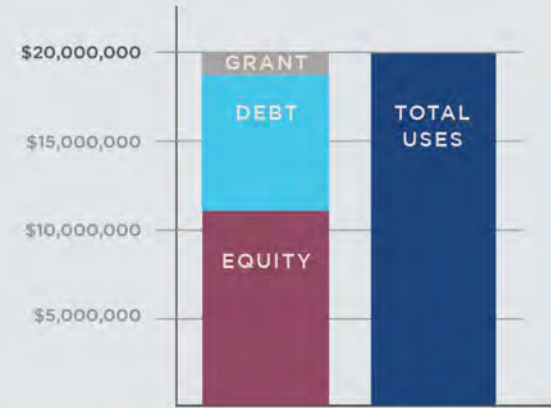
- LIHTC Twinning
- Community Service Facility Basis Boost
- Leveraged Equity from Condo Sale

ACHIEVABLE

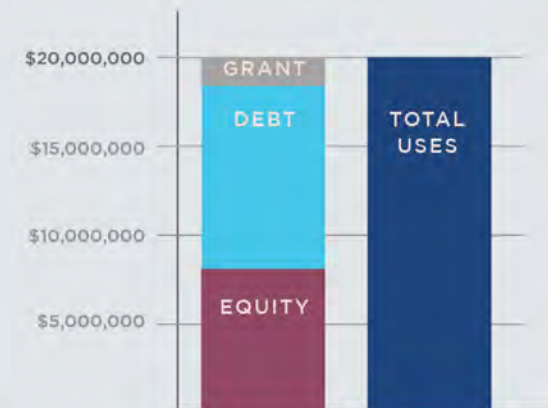
- Highly Competitive Applications for Equity and Grant Sources
 - 9% and 4% LIHTC
 - New Mexico Affordable Housing Tax Credit
 - Continuum of Care
 - FHLB AHP

SUSTAINABLE

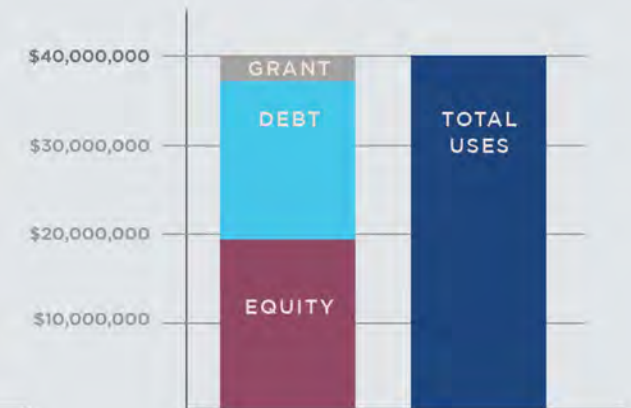
- 5 FTE Staff Included in Annual Operating Expenses
- Large Resident Service Budget for Long Term Support of High Quality Programming
- Green Design & Infrastructure Reduces Operating Expenses
- Quality Building Materials for Long Term Durability



PHASE 1

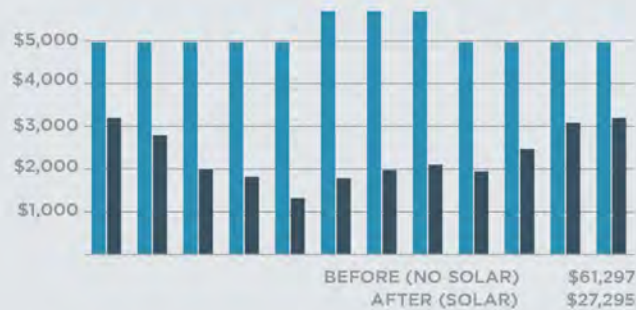


PHASE 2



TOTAL

UTILITY BILL BEFORE & AFTER SOLAR



PHASE 1

	YEAR 1	YEAR 2
TOTAL INCOME	\$727,005	\$741,545
TOTAL EXPENSES	\$455,369	\$469,031
NET OPERATING INCOME	\$271,636	\$272,515
TOTAL DEBT SERVICE	(\$225,491)	(\$225,491)
DSCR	1.20	1.21
CASH FLOW AFTER DEBT SERVICE	\$46,145	\$47,024

PHASE 1 + 2 COMPLETE AND OPERATING

	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10
TOTAL INCOME	\$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	\$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	\$889,542	\$897,769	\$905,874	\$913,874	\$921,672	\$929,341	\$936,841	\$944,158
TOTAL DEBT SERVICE	(\$756,979)	(\$756,979)	(\$756,979)	(\$756,979)	(\$756,979)	(\$756,979)	(\$756,979)	(\$756,979)
DSCR	1.18	1.19	1.20	1.21	1.22	1.23	1.24	1.25
CASH FLOW AFTER DEBT SERVICE	\$132,563	\$140,790	\$148,790	\$156,866	\$164,693	\$172,362	\$179,862	\$187,179

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