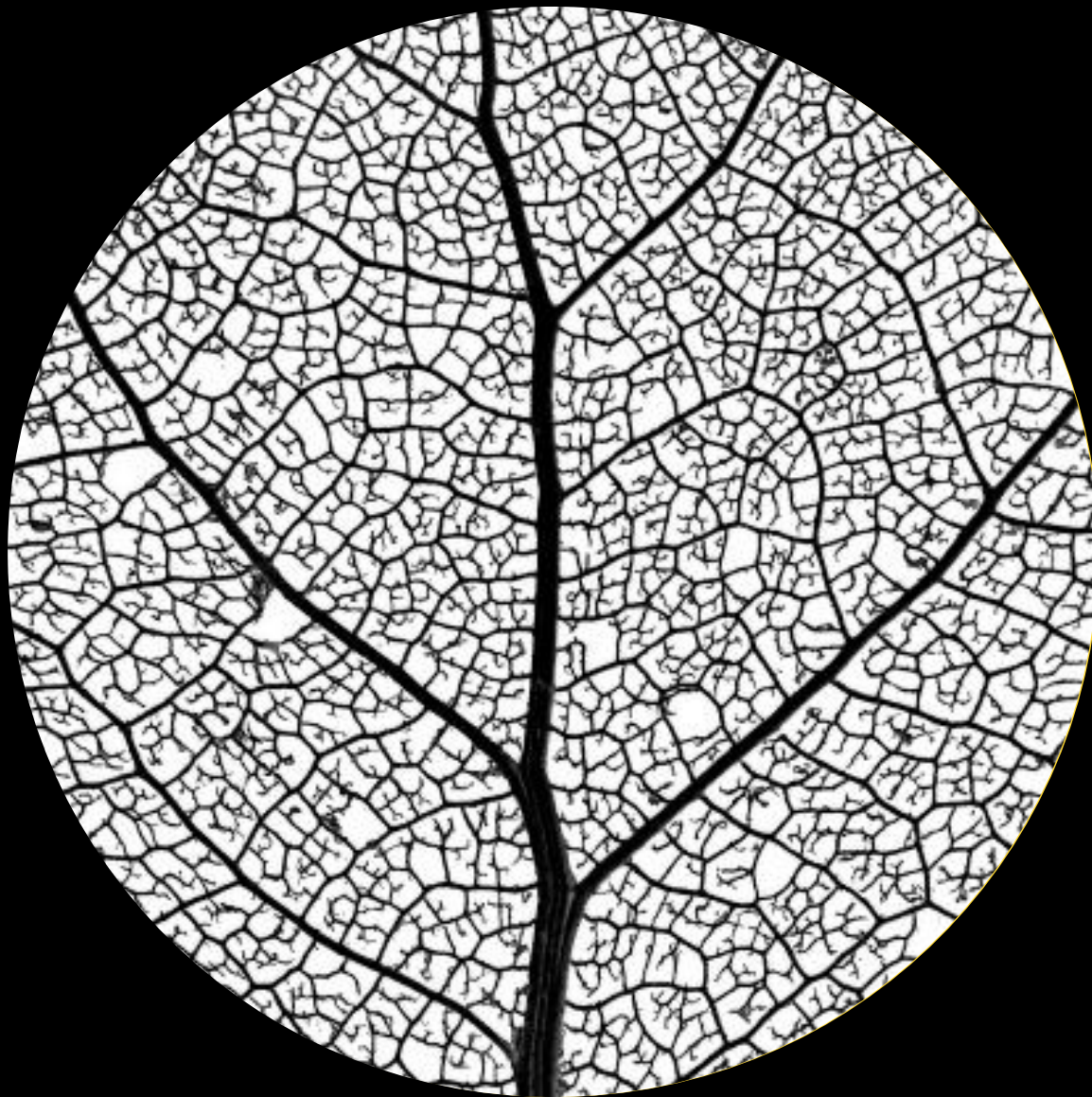


Vermont
Energy Investment
Corporation

Bringing
Deep Energy Efficiency
to the Manufactured
Home Market



Since 1986
reducing the
economic and
environmental
costs of
energy use

- Energy efficiency, renewable energy, transportation efficiency
- Program design & implementation
- Evaluation, measurement & verification
- Research & development

Efficiency
Vermont



DC
SUSTAINABLE ENERGY
UTILITY



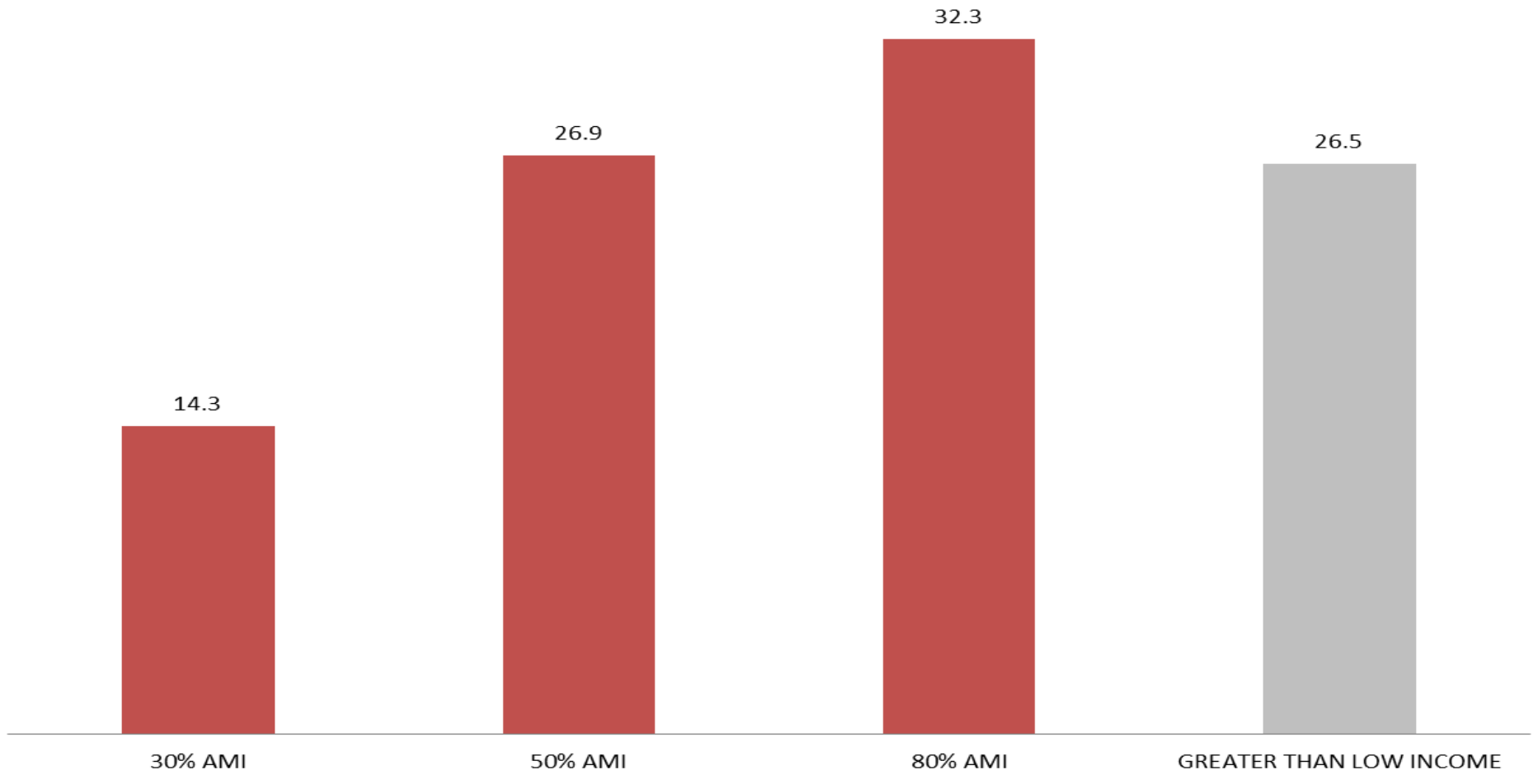
 EFFICIENCY\$MART

20 million Americans - 4.4 million at or below poverty line
Nearly 2x energy costs per square foot
50% more LIHEAP assistance per square foot
About 50% denied weatherization services
Even “efficient” manufactured homes don’t meet current energy code – HERS rating in the upper 70-80 range
The materials used in manufactured homes are toxic – warning label

Why Modular Homes?

VT Mobile Home Park Resident Demographics

■ 30% AMI ■ 50% AMI ■ 80% AMI ■ GREATER THAN LOW INCOME



Current Deficiencies

Traditional Units

- Lower quality, short life
- High energy bills
- Energy cost uncertainty

Location

- Tenuous private ownership
- Short-term land leases
- Often outdated infrastructure

Financing

- Financed as personal property
- Short terms and high rates
- Depreciates in value

Present Opportunities

Zero Net Energy Units

- Healthy and durable
- Energy efficient
- Renewable energy

Location

- Stable community ownership
- Long-term security
- Modern infrastructure

Financing

- Financed as real estate
- Long term, low rates
- Maintains value

Pre-1976 Mobile Homes



- On metal chassis with wheels
- No construction code compliance
- Usually not real property
- Owned land, co-ops, private parks
- Personal loan or cash purchase

Post-1976 Manufactured Homes



- On metal chassis fitted with wheels
- HUD construction code compliant
- Some ENERGY STAR® and DOE Zero Energy Ready
- Typically not considered real property
- Owned land, co-ops, manufactured home communities
- Typically personal loan or cash purchase



Zero Net Energy Modular Home

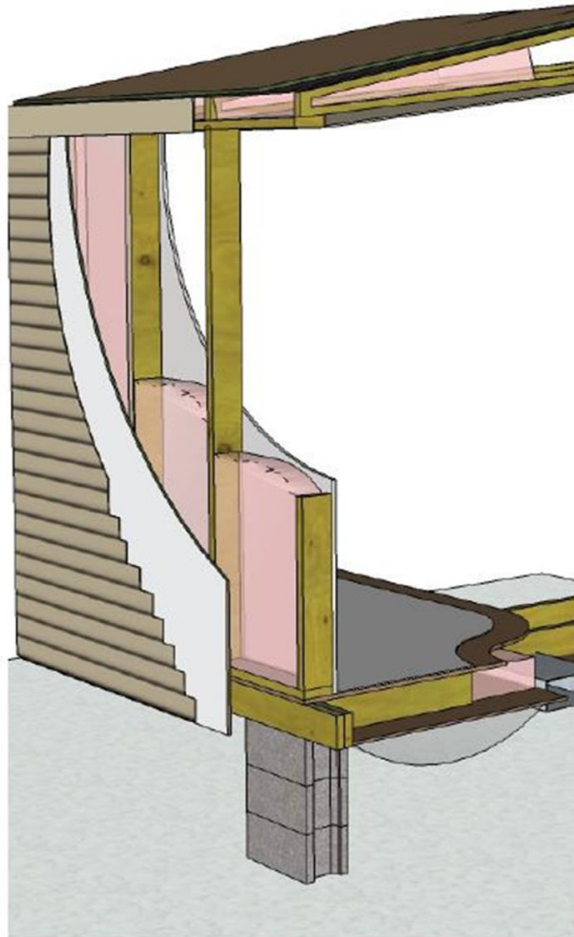


- Produces as much energy as it uses
- Local construction codes
- Real property
- Owned land or nonprofit/co-op park
- Long-term fixed rate mortgage



Zero Net Energy: how do we get there?

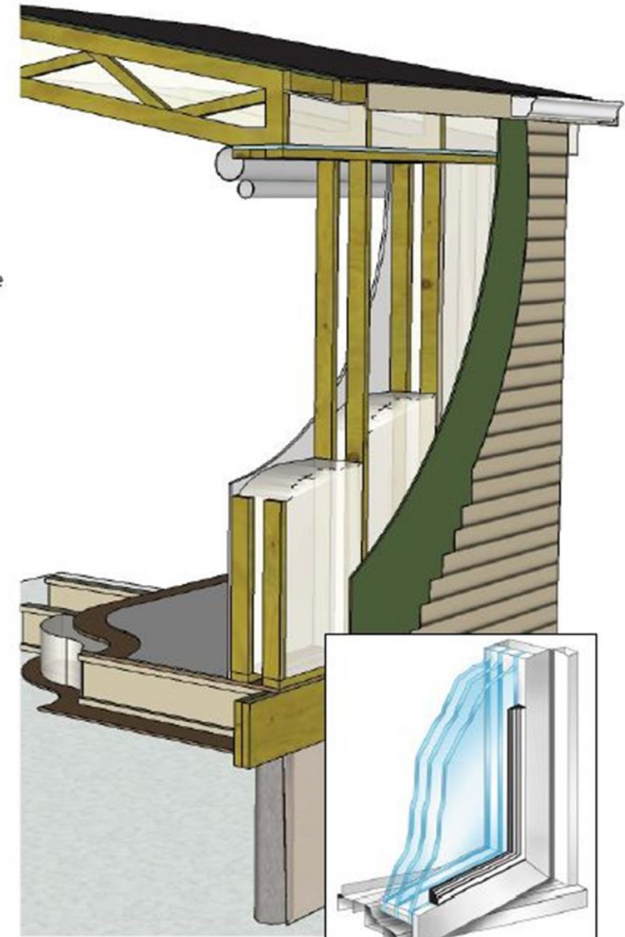
Typical Manufactured Home



FLOOR	R-18
WALLS	R-19
ROOF	R-25

- Vinyl wall board and ceiling board
- Roof truss (fiberglass, R-22)
- 2x6 wall, 5.5" cavity (fiberglass, R-19)
- Particle board sheathing
- Leaky ducts in floor assembly
- 2x6 floor, 5.5" cavity (fiberglass, R-19)
- Fabric underbelly
- Cinder block piers

High Performance Modular Home



FLOOR	R-40
WALLS	R-43
ROOF	R-60

- 14" roof truss (fiberglass, R-60)
- Airtight ducts inside house
- 1 foot overhang
- 5/8" sheetrock & low emitting paints
- Double stud walls, 10" cavity (fiberglass, R-43)
- Plywood decking and sheathing without added formaldehyde
- 9.5" floor system (fiberglass, R-40)
- Frost protected foundation/piere



- Each household saving 80-100 MMBtu/year
- All buyers below 80% HUD AMI (about \$60K)
- Average HERS without PV: 31, with PV: 4-6
- Average normalized total energy bill w/out PV : \$90
- Average with PV: \$0 with most holding electric credits



- Only 2 resales appraised and sold for the original price
- 34 homes sited in 2 yrs.
- 35 ordered for 2016



High indoor air quality control with CERV



High Performance Home on Purchased Land

Median Lot Cost

\$ 55,000

Site Work and Foundation

\$ 47,775

VerMod Home Cost

\$ 107,000

Total Price

\$ 209,775

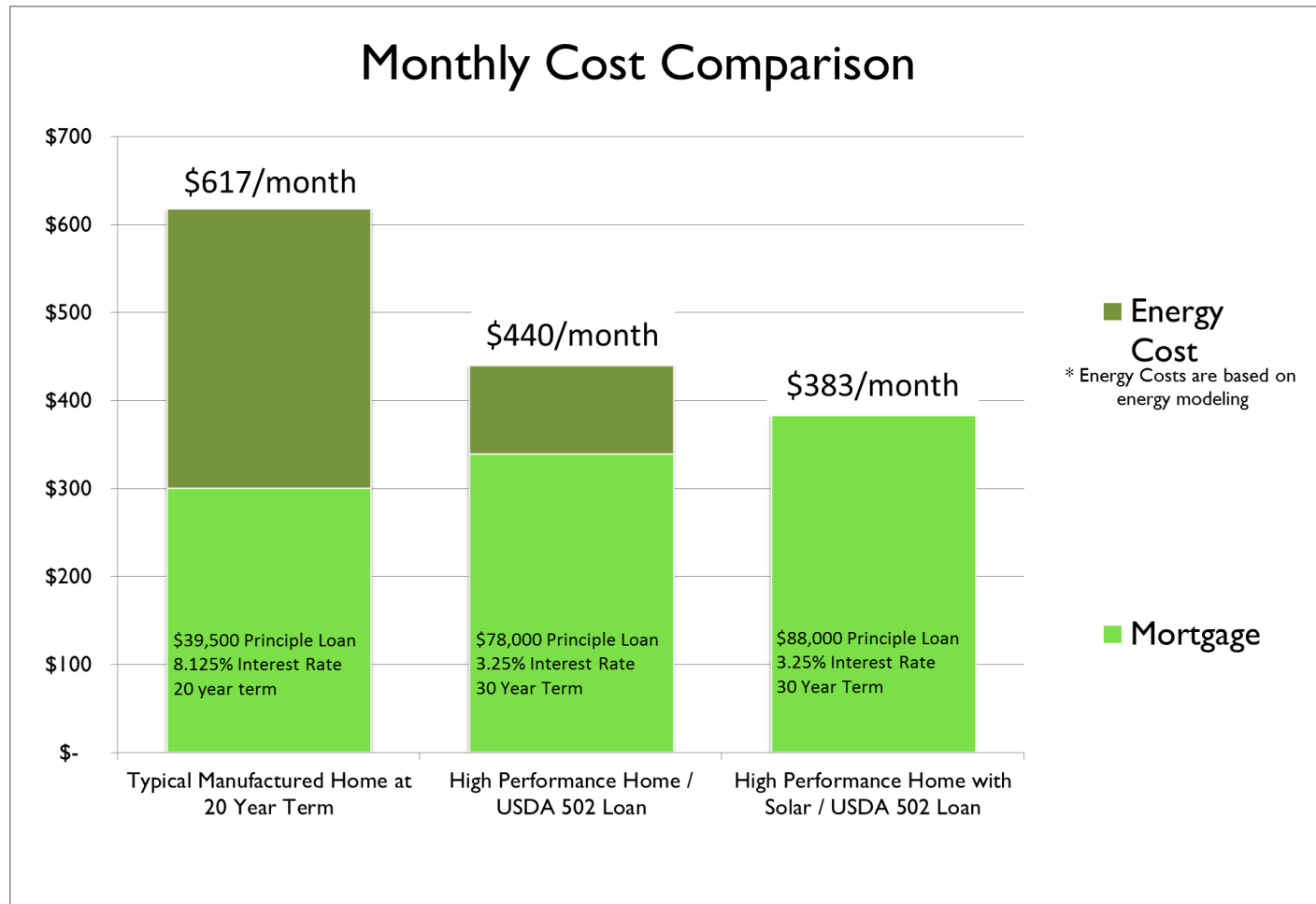
Income Req'd to Afford Home*

\$ 62,641

High Performance Home in Mobile Home Park

Average Monthly Lot Rent	\$ 310
Site Work and Foundation	\$ 24,275
VerMod Home Cost	\$ 107,000
Total Price	\$ 131,585
Income Req'd to Afford Home*	\$ 39,476

Total monthly housing cost comparison



Leased Land Mortgage Financing Features

- Conventional fixed rate
- Fully amortizing
- Portfolio product
- 50-75 basis points above saleable product
- No points, no origination fee
- No minimum FICO
- 43% Max DTI – underwrite energy savings
- 15-30 year term
- Loan-To-Value ratio: 95% (80% VSECU)
- Upstream incentive: \$8,500 from the EEU
- Down-payment assistance loan (\$35k) via VT Housing Tax Credit
- Credit enhancement: philanthropy supplied LLR funds
- Park approval by lender required

Questions/more information

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