hello
Muncie’s New Hope in a Tiny House Village Project

Dr. Sarah Keogh
Department of Architecture
Ball State University
Muncie’s New Hope in a Tiny House Village Project

- Project Introduction
- Project Goals
- Design
  - Tiny Houses
  - Site
  - Community Building
- Project Retrospective
Project Introduction
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**Students:**
Evan Adkins  
Noah Ayers  
Kristian Irving  
Eric Lohse  
Isaac Magsam  
Elliott Shide  
Zeelyn Stutz  
Joshua Tully  
Ricardo Ayala  
Benjamin Bischoff  
Allison Bornkamp  
Brandon Bowman  
Jillian Burton  
Riley Decker  
Ben Fusco  
Lydia Hale  
Alyvia Hebner  
Matthew Holman  
Kristian Irving  
Adam Jarosik  
Nathan King  
Eric Lohse  
Kayleigh Timmons  
Ethan Wallen  
Gwyn Zimmer

**Student Assistants:**
Elliott Shide  
Assumpta Nyein

**Graduate Researcher:**
Trisha Martin

**Course Instructors:**
Sarah Keogh — Architecture  
Robert J. Koester — Architecture and CERES

**City of Muncie Partners:**
Gretchen Cheesman — Director of Community Development  
Steve Selvey — Building Commissioner  
Adam Leach — City Engineer and Street Superintendent  
Brad King — Historic Preservation Officer  
Mayor Dan Ridenour — Office of the Mayor

**Community Partners:**
Bob Scott — Vice President of Development, Muncie Mission  
Katie Bittermann — Emergency Shelter Program Director, Muncie YWCA  
Suzanne Clem — Vice President of Community Engagement, Open Door Health Services, Muncie

**College Partners:**
Bradley Johnston — Building Materials Librarian  
Jeremy Merrill — Assistant Professor of Landscape Architecture  
Donna Browne — Center for Energy Research, Education, and Service

**Immersive Learning Support:**
Stacey Alexander — Immersive Learning Project Manager  
Robbie Mehling — Immersive Learning Video Coordinator and Designer
Project Goals

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**Homelessness Transitional Housing Guidebook**
Design: Tiny Houses

Sustainability

Social Equity

Economic Viability

Environmental Protection
Design: Tiny Houses
Design: Tiny Houses

Material Counts Per Panel:

- 2x4 8' (2 at 24.6° cuts at ends)
- 2x4 10'
- 2x4 12'
- 7/16" OSB 4'x8'
- 7/16" OSB 4'x9'
- 7/16" OSB 4'x10'
- 7/16" OSB 4'x12'
- Fiberglass Insulation Kraft faced 23"w R13
- Framing Nails
- Seam Tape

Number of Panels: 4

NOTE FOR ALL EXTERIOR WALL PANELS:
Insulation attached with the vapor seal on the inward osb board
Side may vary depending on orientation of panel
Vapor barrier to be wrapped around to the inside face of the osb edges
(see details on page 20)
Design: Tiny Houses

Interior Materials

Fiber Reinforced Plastic Panels for Walls

Garage Tile for Living Room Flooring

Cement Board with Self Leveling Epoxy Resin for Bathroom

Fasade Glue-Up Ceiling Tiles
Connection is a 2x6 that sits under corner trim. 2x2 frame corners screw into connector plates. 1/2" gap between panels for flexibility.

Connection plates are 2x4s cut into 3 1/2" squares. Connection plate when over single 2x4 stud. Connection plate when over double 2x4 stud.

Long Walls Rainscreen Panels

Nominal 2x4 Frame
1" 8 1/2"
3' 11 1/2"

Nominal 2x4 Frame
1" 8 1/2"
1' 11 1/2"

Nominal 2x4 Frame
8 1/2"
1' 11 1/2"

Nominal 2x4 Frame
7"
1' 11 1/2"

Example frame fill materials
Design: Tiny Houses
Design: Tiny Houses
Design: Tiny Houses

Rough Floor Plan
## Material Estimate

### Roofing
- **R21 unfaced 23” wide batt**
- **Metal roof**
- **R13 house wrap (9’h) (100’)**
- **Kraft faced 23”w (32’)**
- **4” framing nails (1500)**
- **Roof fasteners (~85)**
- **roof membrane (10’x20’)**
- **Cap staples (5000)**

### Siding
- **2” R10 Rigid (4x8)**
- **siding (8” x 12’6”)**
- **7/16” osb  4’x12’**
- **7/16” osb  4’x10’**
- **fascia 8inch (12’)**
- **1” R5 Rigid (4x8)**
- **berglass insulation**
- **plate connector**
- **fascia 8inch (8’)**
- **seam tape (80’)**

### Insulation
- **Insulation (93”)**
- **3/4” osb  4’x8’**
- **drip edge (12’)**
- **adhesive (10’)**
- **rafter ties**
- **4x4  10’**
- **2x6  10’**
- **2x4  10’**
- **2x8 16’**
- **2x4 12’**
- **2x2 8’**

### Flooring
- **4x4  8’**
- **2x6  8’**
- **2x6  6’**
- **2x4  8’**
- **2x2 8’**

### circuit breakers
- **4x4  10’**

### Electrical Panel
- **2x6  10’**

### Windows
- **clerestory window (awning)**
- **casement or single hung window (hinged)**
- **5/32” x 60 mil poly vapor barrier**
- **interior wall panels (4x10)**
- **interior wall panels (4x8)**
- **1/2 inch conduit 50ft**
- **ceiling panels (5x 2x4)**

### Plumbing
- **30 gallon electric water heater**
- **utility sink**
- **toilet**

### HVAC
- **Mitsubishi ductless mini split 2 zone**
- **Mitsubishi ductless mini split 3 zone**

### Miscellaneous
- **embossed metal shower head**
- **1/2 inch conduit 50ft**
- **Mitsubishi ductless mini split 4 zone**

### Interior Finishes
- **Paint (320 sq.)**
- **trim (500 lin ft)**
- **interior trim and molding**
- **tile floor**

### Project Details
- **Tiny House Village Project:**
- **Single Unit**

### Included:
- electrical switches / outlets / conduit / increased lights
- shower head / toilet / sinks
- 1/2 cost of a water heater
- 1/2 cost of a mini split
- base interior finish

### Not Included:
- **parking preparation**
- found / donated rain screen frame
- porch / exterior shading
- foundation materials or pour
- basic interior finish
- recessed lights
- electric switches / boxes / outlets / conduit / increased lights

### Estimated Cost

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**Total Estimated Cost:** $13,757.62

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Design: Tiny Houses

10x16 Linear

10x14 Linear

10x14 L-Shape

10x14 Offset
Design: Tiny Houses

Unit A: 10’ x 14’ L-Pairing

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Design: Site

Sustainability

Social Equity

Economic Viability

Environmental Protection
Design: Site
Design: Site
Design: Site

Communal Outdoor Space
Designed With Relaxation + Social Interaction in Mind

- Under story trees provide shade during summer to cool communal
- Large benches allow for multiple types of relaxation and built in planters attract various forms of wildlife
- Benches constructed from recycled concrete pads and cedar boards
- Communal fire pit encourages interactions between residences
- Constructed from recycled concrete pads
Design: Site

Communal Outdoor Space

- Native plantings & intermediary space between units
- Small benches adjacent to circulation for momentary needs to stop
- Constructed from recycled concrete pavers
- Open area with tables and seating designed for communal outdoor eating
- Large open space to allow for various outdoor recreation activities
Design: Site

Community Center Outdoor Space
Designed With Food Production + Consumption in Mind

Indoor dining spaces and community kitchen spill out onto hard-packed gravel courtyard

Open public tables for outdoor dining

Large raised planters for growing food
Design: Site
Design: Community Building

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EXT.1 FOUNDATION TO PARAPET SECTION
Design: Community Building
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Design: Tiny House Village
Project Retrospective
Project Retrospective
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Project Retrospective
thank you