

DESIGN & MANAGEMENT STRATEGIES
FOR MICRO-HOUSING UNITS IN TRANSITIONAL VILLAGES FOR THE HOMELESS:
AN EXPLORATION OF PROTOTYPES AT OPPORTUNITY VILLAGE EUGENE

by

Kristen Elizabeth Gabriele

September 1, 2014

A thesis submitted to the
Faculty of the Graduate School of
the University at Buffalo, State University of New York
in partial fulfillment of the requirements for the
degree of

Master of Architecture

Department of Architecture

UMI Number: 1566883

All rights reserved

INFORMATION TO ALL USERS

The quality of this reproduction is dependent upon the quality of the copy submitted.

In the unlikely event that the author did not send a complete manuscript and there are missing pages, these will be noted. Also, if material had to be removed, a note will indicate the deletion.



UMI 1566883

Published by ProQuest LLC (2014). Copyright in the Dissertation held by the Author.

Microform Edition © ProQuest LLC.

All rights reserved. This work is protected against unauthorized copying under Title 17, United States Code



ProQuest LLC.
789 East Eisenhower Parkway
P.O. Box 1346
Ann Arbor, MI 48106 - 1346

ACKNOWLEDGEMENTS

To Korydon Smith and Sue Weidemann, whose patience, enthusiasm, encouragement and knowledge were invaluable to me, on both a personal and academic level, as I worked through this thesis. For all that you both taught me, I am deeply grateful.

To Professors Ken MacKay, Jordana Maisel, Beth Tauke, Martha Bohm, and Jennifer Oakley, who were always there to provide guidance and thoughtful criticism throughout the course of this project.

To my parents, sister, family, and friends, who have always supported me - especially EDS, my partner throughout the adventures to Oregon, Louisiana, and all of the other places this thesis took me.

And a very special thanks to the residents and organizers of Opportunity Village Eugene, who welcomed me into their community, and whose passion and avid participation made this study possible.





TABLE OF CONTENTS

ACKNOWLEDGEMENTS	iii
LIST OF FIGURES	vi
ABSTRACT	ix
CHAPTER 1	
INTRODUCTION	2
CHAPTER 2	
LITERATURE REVIEW	8
PART 01: BACKGROUND INFORMATION	10
HOMELESSNESS IN AMERICA	10
PRINCIPLE CAUSES OF HOMELESSNESS	12
LACK OF AFFORDABLE HOUSING	13
TRANSITIONAL HOUSING & THE SHELTER SYSTEM	13
TENT CITIES: A RESPONSE TO HOMELESSNESS	14
SHORTCOMINGS OF THE TENT CITY MODEL	16
PART 02: THE TRANSITIONAL VILLAGE MODEL	17
OPPORTUNITY VILLAGE EUGENE	18
ORIGINS	18
VILLAGE DEVELOPMENT	19
MICRO-HOUSING PROTOTYPE DESIGNS	19
SUMMARY	25
CHAPTER 3	
METHODOLOGY	26
OVERVIEW	28
METHODS OF DATA COLLECTION	29
STUDY SAMPLE	30
PROCEDURE	31
METHODS OF DATA ANALYSIS	32

CHAPTER 4

FINDINGS	34
EXISTING PROTOTYPE CONDITIONS	36
THE CONESTOGA HUT	36
DESIGN DEVELOPMENT	36
FEATURES	36
CONSTRUCTION	37
THE BUNGALOW	40
DESIGN DEVELOPMENT	40
FEATURES	42
CONSTRUCTION	42
DISCUSSION OF FINDINGS	46
THERMAL COMFORT	47
PERSONALIZATION	53
SPATIAL CHARACTERISTICS	58
STORAGE	61
CONTEXT	65
MISCELLANEOUS	68
SUMMARY	69

CHAPTER 5

CONCLUSION	70
REVIEW OF FINDINGS	72
IMPLICATIONS FOR FUTURE MICRO-HOUSING DESIGN	74
CHALLENGES + LIMITATIONS	78
TIME-FRAME	78
WEATHER + CLIMATE	79
ENGAGING PARTICIPANTS	80
MOVING FORWARD	81
APPLICATION OF FINDINGS	81
TRANSITIONAL MICRO-HOUSING VILLAGES: AN EMERGING TYPOLOGY	82

APPENDICES	84
------------	----

REFERENCES	124
------------	-----

LIST OF FIGURES

Figure 1	Rates of Homelessness in the United States per State per 10,000 People	11
Figure 2	Sheltered vs. Unsheltered Homeless	12
Figure 3	Statistics of the American Homeless Population	14
Figure 4	Stages of Shelter	17
Figure 5	The Transitional Village At Intersection of Unsheltered and Sheltered Dwelling Options	18
Figure 6	Micro-housing Prototypes at Oppotunity Village Eugene	19
Figure 7	O.V.E. Front Desk	21
Figure 8	O.V.E. Community Gathering Space	21
Figure 9	O.V.E. Outdoor Kitchen	21
Figure 10	O.V.E. Bathhouse	21
Figure 11	View Along Main Path through O.V.E.	21
Figure 12	Neighborhood of Micro-homes	21
Figure 13	Micro-housing Units at Opportunity Village Eugene	22
Figure 14	Opportunity Village Eugene Site Plan, Existing January 2014	24
Figure 15	Steps in Typological Analysis	32
Figure 16	Conestoga Huts at Opportunity Village Eugene	37
Figure 17	Conestoga Hut Layers of Construction	38
Figure 18	Conestoga Hut Front Elevation	39

Figure 19	Conestoga Hut Side Elevation	39
Figure 20	Bungalows at Opportunity Village Eugene	41
Figure 21	Bungalow Layers of Construction	43
Figure 22	“Chalet” Bungalow	44
Figure 23	“Pagoda” Bungalow	44
Figure 24	“Budget” Bungalow	45
Figure 25	“Lean-To” Bungalow	45
Figure 26	Bungalow Wall Panels	46
Figure 27	Notes from R5 Interview, Preferred Site Location	51
Figure 28	Environmental Exposure of Grouped vs. Stand-Alone Units	52
Figure 29	Bungalow Unit Revealing a Highly Personalized Interior and Exterior	54
Figure 30	Micro-housing Prototypes at OM Village and Quixote Village	57
Figure 31	Micro-housing Units at Dignity Village	57
Figure 32	Minimum Height Suggestions for Conestoga Hut	61
Figure 33	Desk and Loft Used for Storage in Conestoga Hut and Bungalow Units	63
Figure 34	Noise Privacy Sketch from Collective Interviews	66
Figure 35	Suggestion for Privacy-Conscious Site Layout	67
Figure 36	View of Bungalow Interior Structure	69

ABSTRACT

The transitional village is a unique form of transitional housing for the homeless because it offers residents an opportunity for ownership over private micro-housing units, an aspect that is a dignifying amenity for many otherwise house-less individuals. Selecting a transitional village project in Eugene, Oregon, this study highlighted two micro-housing prototypes from which to learn successes and shortcomings related to prototype design and application - a necessary evaluation as transitional villages become a more widely-accepted form of transitional housing. The study included a series of in-depth, qualitative interviews with prototype designers, village organizers, and village residents, followed by a qualitative typological analysis that yielded a collection of themes related to the prototype designs and their functionality within the village. From the themes, design and management suggestions were generated for the two prototypes studied, as well as for future micro-housing prototypes in transitional village settings. These suggestions were a reflection of micro-housing needs and preferences as chronicled by participants, revealing an emphasis on thermal comfort, personalization, dimensions for human comfort, storage as a necessity, and the importance of privacy.

(this page intentionally left blank)

CHAPTER 1

INTRODUCTION



“Decent housing saves lives. It’s a foundation where families become healthier, where kids leave for school in the morning and do their homework at night, where parents rest from one day to the next. In decent housing, walls are strong and roofs are secure, and the family inside focuses more on thriving than surviving.”

- *Habitat for Humanity*



Homelessness has become an increasing problem among low-income individuals and families all over the world. In 2012, over 630,000 people in the United States experienced some form of homelessness on any given night in January.¹ Homelessness, a heterogeneous condition, can stem from a variety of causes, including unemployment, mental illness, substance abuse, and a lack of affordable housing.² These circumstances, both structural and personal, can render individuals unable to maintain a stable living environment, forcing them to search for alternate means of shelter, where a trend is being seen through the development of homeless camps.

The phenomenon of the American “tent-city” arose in response to increased homelessness as a place off the street for homeless individuals and families, where they could live together and pool resources. Similar to the organic development of squatter settlements in developing countries, tent city encampments have sprouted in or near urban areas across the United States as temporary, yet often illegal, arrangements for families and individuals who are unable or unwilling to access their local shelter system. The tent-city, by nature, is often viewed as unsanitary, unsafe, and ill-equipped for human habitation; thought by many to exist as an unplanned result of emergencies or natural disasters. Many tent cities, however, are the product of a communal interest in establishing a home-like, supportive environment for homeless individuals and families. More often than not, these encampments display methodical organization that is supplemented by self-governing, participatory and community-building characteristics. These communities are thought to offer a renewed sense of security, autonomy and relationships, making them highly desirable to many homeless individuals and families.

Building on the concept of tent cities, transitional micro-housing villages have developed in a comparable fashion, though as more secure, organized, and legal communities that provide similar benefits to residents. A substantial difference, however, is the inclusion of private micro-housing units in transitional villages. These structures provide a rare opportunity for residents among traditional transitional housing options, which are often shared, unalterable, and standardized.

As transitional villages continue to develop across the country, the various micro-housing designs within these settings are going to play a critical role in accommodating and transitioning users

1 National Alliance to End Homelessness, “The State of Homelessness in America 2013,” Last modified April 8, 2013, http://b.3cdn.net/naeh/bb34a7e4cd84ee985c_3vm6r7cjh.pdf (accessed October 3, 2013).

2 Marta Elliott and Lauren J. Krivo, “Structural Determinants of Homelessness in the United States,” *Social Problems* (1991).

as they take steps to overcome homelessness. Therefore, the purpose of this thesis is to gain a deeper understanding of what features make these units successful, and how future designs can be influenced in ways to help them better achieve resident satisfaction.

One village was selected for investigation, Opportunity Village Eugene, located in Eugene, Oregon, and within it, two micro-housing prototypes: the Conestoga Hut and the Bungalow. Through an evaluation of these prototypes, this project addressed several overarching questions related to micro-housing design for the homeless:

- What are critical components of transitional village micro-housing unit designs, based on previous research?
- What are the successful and less successful features of the Conestoga Hut and the Bungalow, and what design or management alternatives can make these units more livable?
- What generalized strategies can help inform the design and application of future transitional micro-housing prototypes?

In order to answer the research questions, this thesis was organized as a qualitative study that, first, analyzed the conditions of homelessness in the United States, and subsequently, the rapid establishment of tent cities. This investigation of background information allowed for a broader understanding of the tent-city concept, how it has been applied in the context of different urban homeless environments, and how its principles have been carried through to transitional village models. The project then focused on Opportunity Village Eugene for a more in-depth and site-specific analysis of the lived experience in a transitional village community. From the analysis, heavily relying on qualitative interviews conducted within the village community, conclusions were drawn about options for micro-housing design. These conclusions specifically address design alternatives for the Opportunity Village Eugene micro-housing prototypes, the Conestoga Hut and Bungalow, as well as for prototypes of future transitional villages, based on the user needs and preferences discovered in Opportunity Village Eugene.

As the “tiny housing first” model becomes a concept of interest across the country, there is a greater need to study and understand the diverse and unique architectural needs of the homeless population. The qualitative research and design suggestions resulting from this thesis not only begin

to fill gaps in academic study related to transitional village housing, but also contribute insight into the establishment of more culturally-appropriate living environments for homeless residents. This study provides pertinent information about successful micro-housing strategies that is valuable to design professionals, homelessness organizations, housing activists, and others involved in the development transitional housing for the otherwise house-less.

(this page intentionally left blank)

CHAPTER 2

LITERATURE REVIEW



“[Transitional Villages]: It’s certainly something that we would encourage other communities to take a look at when it comes to creating solutions for housing the chronically homeless. It’s a very important step in terms of the kinds of services we should be providing to people that need assistance.”

- Lee Jones, *U.S. Department of Housing and Urban Development*



While homelessness is a topic across many disciplines, including history, law, sociology, urban planning, and architecture, the concepts of tent cities and transitional villages are only just beginning to be publicized by popular media and academic study. Because of this, there is a need to gather information to inform the dwelling designs within homeless communities: a task that this thesis focused on through qualitative research conducted at Opportunity Village Eugene.

The literature review is organized into two parts as a way to integrate background information and research on homelessness with recent, media-based findings on existing micro-housing precedents. First, the literature review presents an informative background on homelessness in the United States, and the tent city as a unique emergence that services the homeless population. This discussion provides a framework for the reader to understand tent cities in the larger context of homelessness, and how the concept can be viewed as an alternative to existing transitional housing. The sources to fuel this discussion were discovered in books and journals that review American homelessness, and in theses that have analyzed the evolving tent city concept.

Second, the literature review provides a description of the characteristics of tent city communities, and the adoption of these qualities that has led to the development of homeless transitional villages. Because tent cities and transitional villages are often overlooked in homelessness literature, the majority of these sources were found through the use of local online newspapers, blogs, and community organizations' websites, as these communities are primarily featured at the local level. Together, these two parts form a literature review that reveals the history and development of transitional villages in the United States, and provides the backdrop for this thesis.

PART 01: BACKGROUND INFORMATION

HOMELESSNESS IN AMERICA

The concept of homelessness in the United States, much like the concept of "home" itself, has acquired an assortment of different meanings throughout history, often reflective of the people experiencing it.³ As the country developed, along with the people in it, the homeless population both swelled and diminished as an echo of the evolving social environment. Despite its formal and informal perceptions throughout history, the presence of homelessness continues to be a defining characteristic that is deeply embedded within the American urban context.

3 Erin Black, "Private Dwelling in Public Space: Edmonton's Tent City," (MA Thesis, University of Alberta, 2010).

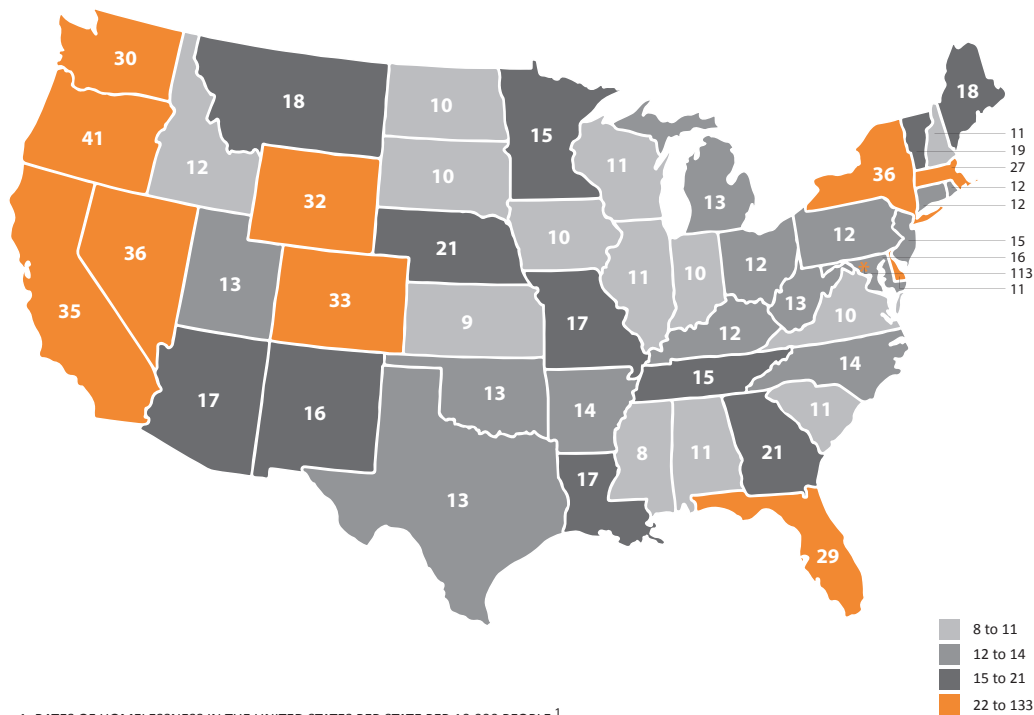


Figure 1: RATES OF HOMELESSNESS IN THE UNITED STATES PER STATE PER 10,000 PEOPLE¹

Homelessness can be defined, in reference to an individual or family, as those frequently moving from one temporary dwelling to another and with the inability to secure regular housing.⁴ In addition to a stable environment, homeless persons typically lack a safe, comfortable, sanitary, and legalized place in which to live. Taking up residence in local shelters, vacant land, beneath expressways, and on the streets, there are over 630,000 people experiencing some form of homelessness in the United States today.⁵

Sharon Chamard described how American homelessness today is categorized. To help better understand and assist the American homeless population, Chamard explains that the U.S. Department of Housing and Urban Development (HUD) classifies homelessness in two identifiable categories: Sheltered or Unsheltered, and Temporary or Chronic.⁶ Relating to architectural design, this thesis focused on the housing gap that defines both Sheltered and Unsheltered individuals and families in the United States. HUD defines “sheltered homelessness” as those who live in a type of temporary housing structure such as emergency shelters, transitional housing, “doubled-up”

4 Gerald R. Garrett and Russell K. Schut, *Responding to the Homeless: Policy and Practice* (New York: Plenum Press, 1992).

5 “The State of Homelessness in America 2013,” *National Alliance to End Homelessness*. Last modified April 8, 2013. http://b3cdn.net/naeh/bb34a7e4cd84ee985c_3vm6r7cjh.pdf.

6 Sharon Chamard, “Homeless Encampments,” *Washington D.C.: U.S. Department of Justice, Office of Community Oriented Policing Services* (2010).

housing or permanent supportive housing. Oppositely, the “unsheltered homeless” are referred to as those who live in “a place not meant for human habitation,” and, therefore, find shelter in cars, public parks, streets, and vacant land.⁷

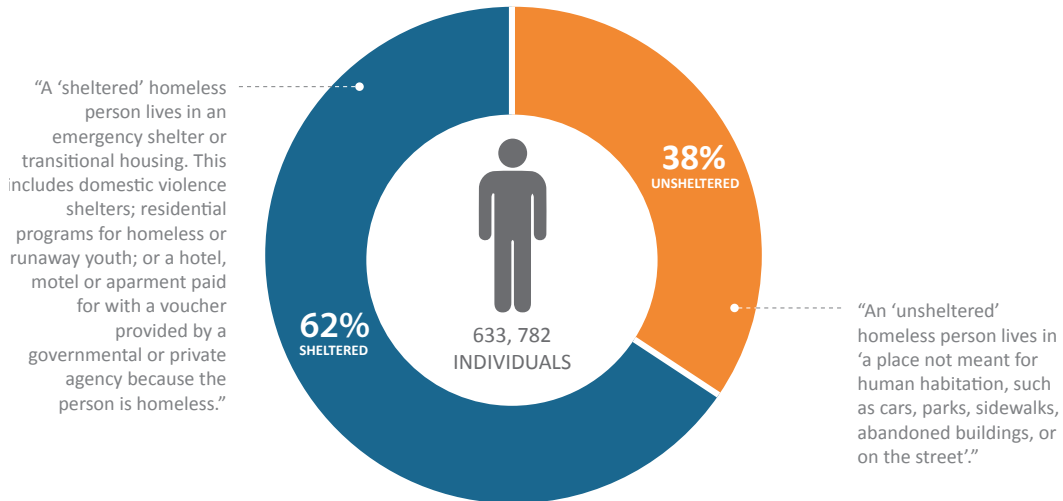


Figure 2: SHELTERED VS. UNSHELTERED HOMELESS²

PRINCIPLE CAUSES OF HOMELESSNESS

Understanding the causes of homelessness is critical to understanding the development of transitional villages, and the types of people who live within them. The homeless population of the United States is highly heterogeneous and complex, affecting people of all types regardless of age, health, and ethnicity. Homelessness derives its heterogeneous qualities from the result of a mixture of determinants that render individuals and families without access to adequate housing. According to Marta Elliott and Lauren Krivo, there are two general causes of homelessness that have been examined thoroughly in literature: one relating to personal problems and the other a result of structural obstacles.⁸ Personal problems are those commonly associated with stereotypical homelessness. These include issues of mental health, drug abuse, domestic violence, and prisoner re-entry: problems that are often viewed as self-inflicted, and that contribute to an inaccurate vision of homelessness as a whole. While these issues are partial causes of homelessness, a majority of causes are structural dilemmas that are the result of societal failures: poverty, unemployment, lack of public services, and lack of affordable housing.⁹ While all of these discrepancies in social and economic structure contribute to homelessness in America, this thesis focused on the lack of

7 Sharon Chamard, “Homeless Encampments,” *Washington D.C.: U.S. Department of Justice, Office of Community Oriented Policing Services* (2010).

8 Marta Elliott and Lauren J. Krivo, “Structural Determinants of Homelessness in the United States,” *Social Problems* (1991).

9 *Ibid.*

affordable housing as a path that leads to the development of transitional villages for the homeless.

LACK OF AFFORDABLE HOUSING

According to Elliott and Krivo, homelessness, though typically a hybrid of personal and structural conditions, can be a result most attributed to the lack of affordable housing for low-income individuals.¹⁰ This lack of housing is a combination of a decrease in both available and affordable housing, leaving many people without options for shelter. According to the National Low Income Housing Coalition, for every 100 rental households that are considered low-income, there are only 30 affordable apartments available.¹¹ As the fair market rent increases, while incomes remain the same, many individuals and families cannot maintain adequate income for food, clothing, and medical care in addition to housing. In many situations, rent consumes over half of low-income tenants' monthly earnings, leaving them with little flexibility to meet other demands.¹² This condition forces many renters out on the streets or into local shelters as they struggle to find housing that matches their income. This is important to note in the context of this thesis because, as this trend increases, these scenarios lead to overcrowded, substandard conditions for shelters. These shelters, in turn, attempt to accommodate people long-term while more public housing becomes available, a notion that is not typical of emergency shelter operation.¹³ While the shelters maximize their capacities, the remainder of homeless individuals and families continue to be without options for shelter, and are forced to seek alternative options. This information is important to the thesis work because it reveals the deficiencies within the existing shelter programs, and displays the need to explore and assess new strategies.

TRANSITIONAL HOUSING & THE SHELTER SYSTEM

Tent cities arise when local municipalities lack the will or means to provide adequate assistance to the homeless, and most commonly when local emergency shelters and transitional housing options exceed capacity.¹⁴ The National Coalition for the Homeless reported that not only do many homeless individuals and families seek alternate shelter by force, but many also prefer to

10 Marta Elliott and Lauren J. Krivo, "Structural Determinants of Homelessness in the United States," *Social Problems* (1991).

11 Erika Lundahl, "Tiny Houses for the Homeless: An Affordable Solution Catches On," *Yes Magazine*, February 20, 2014, <http://www.yesmagazine.org/new-economy/tiny-house-villages-for-the-homeless-an-affordable-solution-catches-on>, (accessed February 27, 2014).

12 Elliott and Krivo, "Structural Determinants of Homelessness in the United States," (1991).

13 *Ibid.*

14 Ben Ehrenreich, "Tales of Tent City," last modified July 3 2009, <http://www.thenation.com/article/tales-tent-city>, (accessed October 8, 2013).

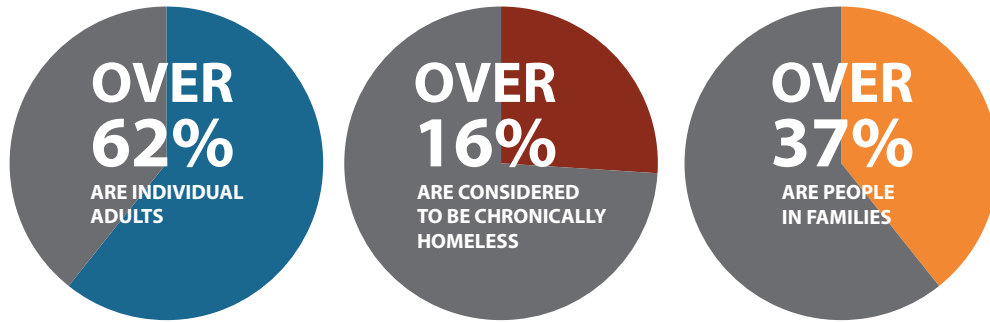


Figure 3: STATISTICS OF THE AMERICAN HOMELESS POPULATION ³

live in homeless encampments over emergency shelters or transitional housing. According to the National Coalition for the Homeless, shelters, with strict rules and regulations, can become an unfriendly option for families and couples.¹⁵ Many shelters that separate men from women, or pets from owners, quickly create broken-down families that cannot overcome homelessness without a centralized support system. Strict shelter rules similarly force users to follow a “jail-like” schedule of meal, entry, and closing times, a schedule that often does not accommodate citizens working or seeking to work business hours.¹⁶ In addition to meticulous scheduling, the surveys and questionnaire results further revealed that shelters are typically high-stress, non-private, overcrowded environments that are not conducive to creating an uplifting atmosphere for people trying to recuperate and rebuild their lives.¹⁷ By gathering this information, the National Coalition for the Homeless provides a fresh perspective on the development of tent cities, and reveals that these communities may be more beneficial than the typical shelter system.

TENT CITIES: A RESPONSE TO HOMELESSNESS

Elliott and Krivo, as well as the National Coalition for the Homeless, contributed background information on reasons for the development of tent cities. Whether residents accumulate in these homeless camps by force or by choice, they are becoming an ever-present image in the American urban environment.

Over the past few decades, tent cities have continued to sprout in and around major cities across the United States.¹⁸ A concept that is not new to the American urban environment, tent cities

15 “Tent Cities in America: A Pacific Coast Report,” *National Coalition for the Homeless*, March 2010, <http://www.nationalhomeless.org/publications/Tent%20Cities%20Report%20FINAL%203-10-10.pdf>, (accessed October 12, 2013).

16 *Ibid.*

17 *Ibid.*

18 Ben Ehrenreich, “Tales of Tent City,” last modified July 3 2009, <http://www.thenation.com/article/tales-tent-city>, (accessed October 8, 2013).

are eerily reminiscent of Hoovervilles: shantytowns constructed by the homeless after the Great Depression.¹⁹ According to urban planner and tent city advocate, Andrew Heben, a tent-city can be defined as a “well-rooted homeless encampment, often with a larger number of inhabitants and some level of organizational structure.”²⁰ Heben explained in his thesis, “Tent City Urbanism,” that there are no proper criteria in which a homeless encampment can be declared a “tent-city,” but the concept is simply a commonly adopted term for those communities expressing ambition, desire and the organizational ability to provide shelter for citizens in need.²¹

Zoe Loftus-Farren similarly described the tent-city as an “interim solution to homelessness,” and a suitable alternative to the use of homeless shelters or transitional housing.²² The tent-city model, though often not equipped with government supportive services, provides a different level of desirability that cannot be found in shelters or transitional housing, according to Loftus-Farren.²³ Tent cities typically offer a community-oriented, self-governing environment that allows residents to experience a sense of kinship and belonging.²⁴ Through these communities, residents have the opportunity to gain not only neighbors, but also friends or companions. The sense of community further brings a sense of comfort, stability, and security as residents work together as a community. Loftus-Farren explained that although many homeless encampments are highly mobile, the community-oriented aspects derived from their nature allow residents to feel a sense of permanence as a community and re-discover the notion of “home.”

Loftus-Farren wrote that many tent cities operate as a “classic democracy,” where the community is organized through self-governing, participatory methods.²⁵ Rules and regulations are established for the community, by the community, with several tent cities allowing for a variety of welcomed residents: couples, guardians with children, and families or individuals with pets. Community rules similarly have the ability to eliminate those who do not comply and create an unwanted disturbance to camp regulations.²⁶ This environment allows individuals to have a voice in their

19 Jesse McKinley, “Cities Deal with a Surge in Shantytowns,” *The New York Times*, last modified March 25 2009, http://www.nytimes.com/2009/03/26/us/26tents.html?pagewanted=all&_r=0, (accessed October 10, 2013).

20 Andrew Heben, “What is a Tent City?” last modified 2013, <http://www.tentcityurbanism.com/p/about.html> (accessed October 8, 2013).

21 *Ibid.*

22 Zoe Loftus-Farren, “Tent Cities: An Interim Solution to Homelessness and Affordable Housing Shortages in the United States,” *California Law Review*. 99, no. 4: 1037-1082.

23 *Ibid.*

24 *Ibid.*

25 *Ibid.*

26 *Ibid.*

community and establish autonomy, and to develop responsibility and dependability. The positive qualities of tent cities are important to realize as a part of this thesis because they distinguish the tent city as a unique, up-and-coming strategy for housing the homeless.

SHORTCOMINGS OF THE TENT-CITY MODEL

Although the tent-city concept provides relief for many homeless individuals and families, informal homeless communities continue to present safety, sanitation, and habitability issues for both the residents and surrounding areas.²⁷ While Loftus-Farren showed support for tent cities as an interim solution, she also outlined the shortcomings of these communities, addressing the need for improvements in order for tent cities to provide a proper and successful model for transitional housing. These constraints include access to proper infrastructure, community opposition, and local zoning requirements.

Focusing on dwelling structures, this thesis highlighted the lack of proper infrastructure as a key issue in tent-city communities. According to Loftus-Farren, the lack of traditional infrastructure to accommodate basic human needs is the largest sanitation concern for tent-city residents. Homeless communities, particularly those that are unrecognized by local governments and exist on unsanctioned land, are often without proper sewage treatment, clean water access, or waste disposal services.²⁸ These conditions severely diminish the quality of life for residents, and can lead to unsafe living environments. Additionally, these impoverished conditions are often the cause for the dismantling of communities by local law enforcement because they are in violation with city health and safety codes. Dwelling structures present a similar complication in tent cities, as they are typically “unstable and unsafe” constructions, often formed out of camping tents, tarps, and wooden pallets. These structures are unable to properly protect residents from the elements, as well as other threats of the urban environment (theft, vandalism, etc.).²⁹

Loftus-Farren’s theories are critical in evaluating and understanding both the benefits and constraints of American tent cities. Although the tent-city offers a level of desirability for residents, its inadequate safety, security, and sanitation prevent it from becoming a well-supported and fully recognized establishment. Loftus-Farren sets the stage for the development, and need, for more

27 Zoe Loftus-Farren, “Tent Cities: An Interim Solution to Homelessness and Affordable Housing Shortages in the United States,” *California Law Review*. 99, no. 4: 1037-1082.

28 *Ibid.*

29 *Ibid.*

formalized types of tent cities: a solution that can come in the form of transitional villages.

PART 02: THE TRANSITIONAL VILLAGE MODEL



Figure 4: STAGES OF SHELTER

As a means to build on the successful aspects of the tent city model, while also attempting to remedy its flaws, the transitional micro-housing village concept was conceived. In “Tent City Urbanism,” an online blog, Heben described a transitional village as “an alternative take on transitional housing based on observing and interacting with existing self-organized tent cities.”³⁰ It can be understood, then, that transitional villages are often the result of an ambitious, coherent, and well-organized tent-city (or simply, a homeless community) that has the support and resources to transform into a permanent, village-like setting. Transitional villages fall at the intersection of unsheltered and sheltered dwelling options for the homeless, and is the context in which this thesis occurred (see Figure 5).

Through the acquisition of sanctioned land, according to Heben, transitional villages develop, offering residents a more stabilized environment where they can live in simple micro-homes with a foundation of community-based support.³¹ Heben described the transitional village model as a place where privacy is intermixed with public space: allowing residents to establish a sense of ownership, but to also maintain a large feeling of community and inter-dependence. “Tent City Urbanism” represents a core idea of this thesis: suggesting that with proper support and recognition, a transitional village can provide adequate and affordable housing for homeless individuals and families.

30 “What is a Tent City?” last modified 2013, <http://www.tentcityurbanism.com/p/about.html> (accessed October 8, 2013).

31 *Ibid.*

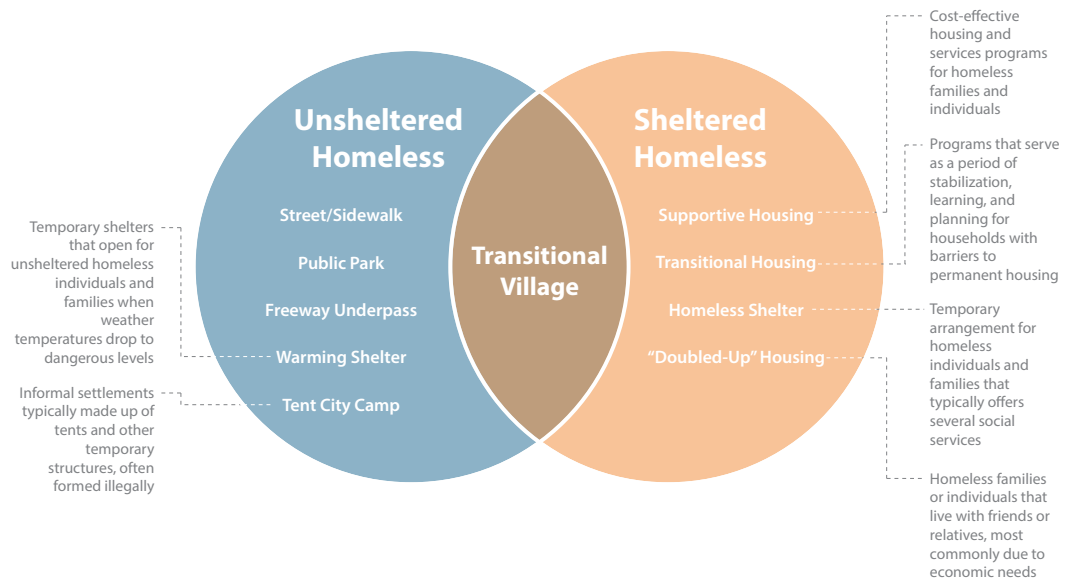


Figure 5: THE TRANSITIONAL VILLAGE AT INTERSECTION OF UNSHELTERED AND SHELTERED DWELLING OPTIONS

OPPORTUNITY VILLAGE EUGENE

A pilot project for homeless housing, Opportunity Village Eugene served as the focal point for this thesis. Located in Eugene, Oregon, Opportunity Village Eugene is a transitional micro-housing community that services both individuals and couples.³²

ORIGINS

As of 2012, over 2,000 individuals were homeless in the city of Eugene, while less than 600 beds existed in local shelters to accommodate the homeless.³³ It is a goal of Opportunity Village Eugene to aid in creating solutions for the 1,400 individuals left without housing solutions. The plan for Opportunity Village Eugene arose out of the Occupy Eugene movement through the effort's of Eugene Mayor Kitty Piercy's "Opportunity Eugene," a task force on homelessness. In December 2011, this assignment was challenged to simply determine a place "to be" for the homeless.³⁴ Opportunity Village Eugene later arose as a vision to become a more humane and sustainable Eugene through the implementation of the transitional eco-village model for homeless community members. The goal of Opportunity Village Eugene became a way to provide an environment where those without housing can transition off the streets and into safe and stable temporary homes.

32 "Opportunity Village Eugene," last modified 2013, <http://www.opportunityvillageeugene.org>, (accessed October 4, 2013).

33 "AIA Southwest Oregon April Chapter Meeting – Homes for Homeless," YouTube, AIA Southwest Oregon, April 17, 2013, <http://www.youtube.com/watch?v=C23zof8Lf0s>.

34 "Opportunity Village Eugene," <http://members.efn.org/~finnp/hfc/op%20village%20vision.html>, (accessed November 13, 2013).

The organizers of Opportunity Village Eugene turned to their northern neighbors at Dignity Village, in Portland, for assistance in developing a self-governing homeless community of their own. With suggestions from residents and organizers at Dignity Village, Opportunity Village Eugene requested land from the city for their future site that had three critical characteristics: at least one acre, close proximity to public transportation, and clearly defined borders. The city granted the village a site located at 111 North Garfield Street, in an industrial area of Eugene, just north of downtown, under a one year lease, with an extension pending the community’s positive influence, and ability to transition homeless individuals to permanent housing.

VILLAGE DEVELOPMENT

Opportunity Village Eugene developed over the course of one year, from conception to construction, breaking ground in August 2013, and costing approximately \$80,000, mostly in community-based, private funding. The village was authorized by the city to accommodate up to 45 homeless individuals in 30 micro-housing structures, with supplementary supportive structures including a community building, bathhouse, laundry unit, outdoor kitchen, and front desk. The first architectural thoughts for the village building designs were limited to tents, mixed with larger community structures. This was a result of the city’s requirement that the housing prototypes be semi-permanent: easily fixed, or taken apart and removed. With this in mind, Opportunity Village Eugene organizers still knew that what they envisioned was a village setting, with “any form of small housing that would get people out of tents.”

MICRO-HOUSING PROTOTYPE DESIGNS

“On the day of the opening, people, they were walking around, just smiling. Because it looks like a Caribbean beach village, and they were thinking it was going to be a bunch of tents.”

- Alex Daniell, *Bungalow Designer*

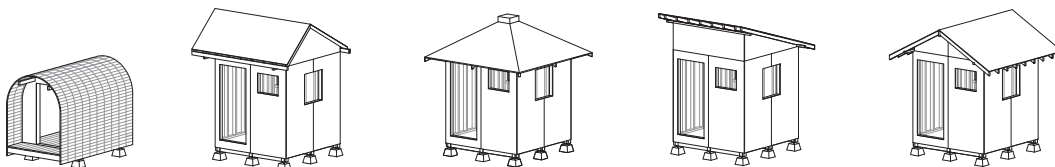


Figure 6: MICRO-HOUSING PROTOTYPES AT OPPORTUNITY VILLAGE EUGENE

After exploring several local options, two prototype designs were selected for the village, the

Conestoga Hut and the Bungalow, both made readily available to the community. These prototypes range between 60 and 80 square feet, and in response to the city's request, are not equipped with heat or electricity. The inability to have heat and electricity in the units also serves as a way to prevent users from "getting too comfortable," and losing sight of the transitional nature of the village. The micro-housing units operate in the village under conditional use permits from the city. The goal of these structures is to provide a "bare-bones" condition that residents can alter, manipulate, and finish themselves, allowing them to truly take ownership of their homes.

The Conestoga Huts work as an entry-level or "first settler" shelter in the village, the units which newcomers are assigned to. These are basic 6' x 10' structures that originated conceptually from greenhouse designs. The Conestoga Hut design came about through the efforts of Eugene-based organization, Community Supported Shelters, as a simple structure to protect a woman and child in the Occupy Eugene protest. They were later redesigned and incorporated into the Eugene Car Camping Program, where they were accepted as vehicular units that could be used to house the homeless on designated lots throughout the city. The Conestogas were applauded by the organizers of Opportunity Village Eugene, whose non-profit organization purchased several units to use both in the village and around the city. These units made up nine of the 24 shelters at Opportunity Village Eugene, as of January 2014, when this thesis research was conducted.

The Bungalows, in contrast, are seen as a "second settler" shelter in the village, with footprints between 64 to 80 square feet. These units, designed by Backyard Bungalows, LLC, originated in four different types: The Budget Bungalow, The Pagoda, The Chalet, and The Lean-To. These unit designs are based on the use of pre-fabricated 4' x 8' modular wall panels, with interchangeable roof systems. The modular wall system and variety of roof designs allows these structures to each be unique based on orientation within the village. As of January 2014, the Bungalows made up 15 of the 24 shelters at Opportunity Village Eugene. This thesis focused on both the Bungalows and the Conestoga Hut as a part of its research and analysis, using these structures as a way to gain a basis for understanding the needs and preferences of homeless users in a transitional village setting. These prototypes are further discussed in further detail in Chapter 4.



Figure 7: O.V.E. FRONT DESK



Figure 8: O.V.E. COMMUNITY GATHERING SPACE



Figure 9: O.V.E. OUTDOOR KITCHEN



Figure 10: O.V.E. BATHHOUSE



Figure 11: VIEW ALONG MAIN PATH THROUGH O.V.E.



Figure 12: NEIGHBORHOOD OF MICRO-HOMES



1 | CONESTOGA HUT



2 | CONESTOGA HUT



3 | CONESTOGA HUT



4 | CONESTOGA HUT



5 | "CHALET" BUNGALOW



6 | CONESTOGA HUT



7 | CONESTOGA HUT



8 | CONESTOGA HUT



9 | "PAGODA" BUNGALOW



10 | "PAGODA" BUNGALOW



11 | "CHALET" BUNGALOW



12 | "LEAN-TO" BUNGALOW

Figure 13: MICRO-HOUSING UNITS AT OPPORTUNITY VILLAGE EUGENE



13 | "BUDGET" BUNGALOW



14 | "LEAN-TO" BUNGALOW



15 | "BUDGET" BUNGALOW



16 | "CHALET" BUNGALOW



17 | "CHALET" BUNGALOW



18 | "BUDGET" BUNGALOW



19 | "LEAN-TO" BUNGALOW



20 | "CHALET" BUNGALOW



21 | "CHALET BUNGALOW



22 | "CHALET" BUNGALOW



23 | CONESTOGA HUT



24 | CONESTOGA HUT



Figure 14: OPPORTUNITY VILLAGE EUGENE SITE PLAN, EXISTING JANUARY 2014

SUMMARY

Although there is little existing literature on culturally-appropriate designs for homeless villages, this literature review provides a breadth of information across several relevant topics portraying fundamental concepts that are critical in this thesis' investigation. By understanding the history and development of homelessness in the United States and the shortcomings of government-funded housing options, it is apparent that alternative solutions for housing the homeless are desperately needed. In response to this need, the tent-city concept has provided the basis for envisioning an alternative, while the transitional village model builds on these ideas through the creation of a legalized community. As the transitional village model further develops as an alternative to existing forms of transitional housing, it is important to examine the success of this concept and its components if it continues to be implemented in cities across the country.

CHAPTER 3

METHODOLOGY



“We are trying to create a different concept of a model of how to do shelter that is inexpensive, and that also gives a person the dignity of self-determination. That’s a huge part of it. When you don’t have to share your personal space with someone else, that’s when you can start taking control of your own life.”

-Dan Bryant, *O.V.E. President, Board of Directors*



OVERVIEW

This study used a qualitative approach as a means to gain insight into the selected micro-housing prototypes of transitional housing villages. Qualitative research can be described as in-depth studies of small groups that, through interviews, group discussions, or on-site observations, reveal behavioral and perceptible information about the target population.³⁵ This research paradigm is commonly found in fields of social and behavioral sciences, including anthropology, sociology, and psychology, and often yields descriptive rather than predictive results.³⁶ A qualitative method was most appropriate for this study because it helped to “understand the world from the subjects’ points of view, and to uncover their lived world,” where, in this study, “lived world” refers to the subjects’ lived experience in Opportunity Village Eugene.³⁷ Similarly, because this thesis was an exploratory study with focus on only a small study sample, a qualitative approach was ideal for learning about relevant issues, and identifying opportunities for deeper analysis.

In order to discuss a personal topic such as housing, an intimate research strategy was required to establish a level of comfort between the participants and the researcher. To create this environment, semi-structured qualitative interviewing was selected for this study. By using this method, purposeful and thought-out conversations with the subjects were conducted.³⁸ Semi-structured interviews were chosen over other types of qualitative methods such as structured interviews, focus groups, or surveys because they allow for a comfortable, conversation-oriented setting, while also offering a sense of privacy that cannot typically be achieved through group environments.

Qualitative studies are beneficial as a research method because they provide the opportunity to actively engage the participants throughout the course of research.³⁹ This is important because it also allows the researcher to observe, record, and interpret all types of communications from the participants.⁴⁰ Furthermore, qualitative interviews provide the researcher with the opportunity to probe the participants throughout the interview process, inquiring deeper into responses for

35 “What is Qualitative Research?”, *Qualitative Research Consults Association*, last modified 2013, <http://www.qrca.org/?page=whatisqualresearch> (accessed November 15, 2013).

36 *Ibid.*

37 *Ibid.*

38 Stienner Kvale, (1996), *Interviews: An Introduction to Qualitative Research Interviewing*, California: Sage Publications, Inc.

39 “What is Qualitative Research?”, *Qualitative Research Consults Association*, last modified 2013, <http://www.qrca.org/?page=whatisqualresearch> (accessed November 15, 2013).

40 Stienner Kvale, (1996), *Interviews: An Introduction to Qualitative Research Interviewing*, California: Sage Publications, Inc.

possible explanations.⁴¹ These aspects were critical to this study because they allowed the researcher to enter an intimate environment with the subjects, and formulate an in-depth conversation that helped lead to descriptions and opinions of the micro-housing prototypes focused on in this study.

Because this study sought to evaluate a limited number of participants in a very specific environment, a qualitative method was both appropriate and beneficial. The limitations of this method, primarily that the knowledge produced is not highly generalizable and does not allow for quantifiable predictions, were less related to the success of this study because of the focus on developing specific design suggestions for communities similar to Opportunity Village Eugene. A limitation of this method, however, occurs when the data are to be used in a more universal manner, and applying results to transitional villages across many different cultures, climates, and geographies. The low external validity of these qualitative methods means that the strengths of this study will be in the design suggestions for communities similar to Opportunity Village Eugene, and for Opportunity Village Eugene itself, while the universal guidelines for all transitional village housing designs may be weaker due to the nature of the research methods.

Information gained in this thesis was a result of several phases, each reflecting a different portion of the research process. These phases included describing the existing conditions of micro-housing prototypes through literature research, interviews, and on-site observations; analyzing the data collected; and using the results of the analysis to produce suggestions for micro-housing designs that are reflective of the discovered research. In this chapter, methods for data collection and analysis are discussed.

METHODS OF DATA COLLECTION

Interviews served as the primary source of data collection for this study, and were organized in a manner similar to a study found in “Private Dwelling in Public Space: Edmonton’s Tent City,” a thesis by Erin Black.⁴² Black’s study parallels this study because it aimed to gain a better understanding of an under-researched phenomenon in homeless housing. By interviewing critical participant groups, a well-rounded pool of information was able to serve as a basis in which to identify common concepts and themes. This strategy helped to formulate new perspectives and ideas on

41 “What is Qualitative Research?”, Qualitative Research Consults Association, last modified 2013, <http://www.qrca.org/?page=whatisqualresearch> (accessed November 15, 2013).

42 Erin Black, “Private Dwelling in Public Space: Edmonton’s Tent City,” (MA Thesis, University of Alberta, 2010).

tent cities, a previously under-researched topic that related to the needs of the homeless dwelling in public encampments.

STUDY SAMPLE

Participants came from three groups of people, including dwelling designers, organizers, and residents. An interview guide was developed for each participant group, with questions considering the roles that each participant group played in relation to the micro-housing prototypes of Opportunity Village Eugene (see Appendices F-H). The interview guide focused on a pre-determined set of criteria that was intended to evaluate the micro-housing prototypes. These criteria included size, durability, adaptability, security, aesthetics, insulation/ventilation, and orientation, all aspects that were critical in understanding the prototypes architecturally.

Twelve participants were interviewed as a part of this study, including two dwelling designers (one Conestoga Hut designer, one Bungalow designer), four village organizers, and six residents (three Conestoga Hut owners, three Bungalow owners). Originally, the interview participants sought for the study were solely residents of the micro-housing prototypes because they represented the best group to provide feedback on the lived experience of these structures. However, the participant pool was expanded to include organizers and designers as well. The latter represented more accessible populations that could also provide valuable insight on the micro-housing prototypes related to their design conceptions, construction process, and overall feasibility and success.

Recruitment procedures for this study included two routes: email invitations provided contact to both Opportunity Village Eugene dwelling designers and organizers, and snowball sampling methods recruited village residents. Designers and organizers were contacted through email because they were easily identifiable participants that were discovered throughout the course of the literature review and through online research. Snowball sampling guided the recruitment of village residents, who were not as immediately identifiable. These participants resulted from suggestions made by designers and organizers, as well as other residents. Snowball sampling is a “recruitment technique in which research participants are asked to assist researchers in identifying other potential subjects.”⁴³ Therefore, the resident participant group was unknown prior to the researcher’s on-site visit.

43 “Snowball Sampling,” Oregon State University Institutional Review Board, last modified September 14, 2010, <http://oregonstate.edu/research/irb/snowball-sampling> (accessed November 24, 2013).

PROCEDURE

Primarily conducted in-person at Opportunity Village Eugene, as well as other mutually agreed upon locations in Eugene, Oregon, interviews occurred across a five-day period in January 2014. In order to establish a level of interest and commitment to the village, the researcher first spent several days touring the village as a visitor, and then attended a Village Council Meeting before beginning the interview process. The Village Council Meeting allowed the researcher, as well as the project intent, to be introduced to the residents. The majority of interviews occurred inside of the central community building in Opportunity Village Eugene, or the “yurt,” at a time that was convenient for each participant. Several other on-site interviews occurred while on a walking tour of the village, or at outdoor picnic tables. This provided a semi-private space for the interviews to be held. The remainder of interviews, with designers and organizers only, occurred at various interviewee-designated locations in and around Eugene.

The interviews ranged between 20 to 60 minutes with designers and organizers, and 10 to 20 minutes with residents. Each participant, prior to beginning the interview, was presented with an IRB-approved consent form, outlining the terms of the interview process and informing the participant of the right to refuse to answer any questions and withdraw at any time without penalty (see Appendices C-E). Audio-recordings documented all interviews, with the exception of one, with consent of the participants. Interviews were organized in a semi-structured manner, where a basic outline of questions was used to guide the conversation accordingly (see Appendix I). This allowed the interview conversation to occur more naturally while all points were addressed, and the subject was not simply interrogated with pre-determined questions. At the end of the interview, each participant was asked to contribute any additional thoughts or comments, and residents were asked if they were willing to give a brief tour of their home for photographic documentation, and to specifically discuss items mentioned throughout the interview. Three of the six residents consented to interior viewing and photographs.

The data collection yielded an in-depth description of the two selected micro-housing prototypes at Opportunity Village Eugene. This description gave a background of existing conditions information in which to better understand interviewee comments and corresponding design suggestions, and can be found in Chapter 4.

METHODS OF DATA ANALYSIS

The next phase of this study involved an analysis of the information gathered from the descriptions and the interviews and observations. The analysis served to help understand and identify common themes related to the micro-housing prototypes and user satisfaction.

In order to review qualitative data such as this, Hatch suggested several strategies for analysis, including typological, inductive, interpretive, political, and polyvocal methods.⁴⁴ According to Hatch, data analysis “means organizing and interrogating data in ways that allow researchers to see patterns, identify themes, discover relationships, develop interpretations, mount critiques, or generate theories.”⁴⁵ This study sought to discover many of these conditions, and, therefore, selected to do so through a qualitative typological analysis.

STEPS IN TYPOLOGICAL ANALYSIS

- 1 | Identify typologies to be analyzed
- 2 | Read the data, marking entries related to your typologies
- 3 | Read the entries by typology, recording the main ideas in entries on a summary sheet
- 4 | Look for patterns, relationships, and themes within typologies
- 5 | Read data, coding entries according to patterns identified and keeping a record of what entries go with which elements of your patterns
- 6 | Decide if your patterns are supported by the data, and search the data for nonexamples of your patterns
- 7 | Look for relationships among the patterns identified
- 8 | Write your patterns as one-sentence generalizations
- 9 | Select data excerpts that support your generalizations

Figure 15: STEPS IN TYPOLOGICAL ANALYSIS ⁴

Typological analyses are designed to dissect qualitative interview research because the researcher typically has a narrow set of research questions, a structured organization system for addressing these questions, and a goal of capturing the perspectives of specified individuals. This method was appropriate because it allowed the evaluation criteria determined by the interview guides (size, durability, adaptability, security, aesthetics, insulation/ventilation, and context), to feed directly into the starting typologies for analysis.

44 J. Amos Hatch, (2002), *Doing Qualitative Research in Educational Settings*, New York: State University of New York Press.

45 *Ibid.*

With the typologies identified, the next step in the analysis was to read and observe the data collected, and organize it into the appropriate typologies. The use of several organizational systems helped to dissect and reorganize the information. First, arranged according to prototype, the data revealed large lists of comments and observations for both the Conestoga Hut and the Bungalow (see Appendix J). From here, the lists were broken down into the list of original typologies (see Appendix K). Because the interview guides focused on a list of criteria (size, durability, adaptability, security, aesthetics, insulation/ventilation, and context), a majority of the data fit well into these pre-determined categories. In addition to the pre-determined typologies, other typologies formed when the interviews and on-site observations presented strong evidence of common themes. Similarly, after reviewing the data, an elimination of several pre-determined categories occurred when the research did not reflect critical commentary in these categories.

After several rounds of dissecting and reorganizing the data, a final list of typologies, or common themes, formed that helped to easily portray the information found in this study and to tell the story of the Conestoga Hut and Bungalow. This called for comments and observations from both prototypes to be organized into five key concepts: Thermal Comfort, Personalization, Spatial Relationships, Storage, and Context. These themes provided a basis for the micro-housing unit design and management suggestions discussed in Chapters 4 and 5.

CHAPTER 4

FINDINGS



“I love my Conestoga. I love my hut, and I think that’s the best thing. I’ve been homeless since I was 17, and I have been in various kinds of places. This is one of the best that I can think of at providing a nice home.”

- Conestoga Hut Resident



EXISTING PROTOTYPE CONDITIONS

THE CONESTOGA HUT

“You’re able to stand up inside. It’s amazing what standing up inside a structure can do for you mentally. I love my Conestoga. I love my hut, and I think that’s the best thing. I’ve been homeless since I was 17, and I’ve been in various kinds of places. This is one of the best that I can think of as providing a nice home.”

- Conestoga Hut Resident

The Conestoga Huts make up nine of the thirty total living units that will exist at Opportunity Village Eugene. These structures are designed and by Community Supported Shelters (CSS), an organization located in Eugene, Oregon that is “dedicated to developing affordable micro-housing solutions for people in life transitions, in economic hardship, or seeking a simpler way of life”.⁴⁶

DESIGN DEVELOPMENT

The Conestoga Hut, a series of several generations of designs, was first constructed by CSS for a woman and child who were suffering through the cold, wet weather in Oregon during the Occupy Eugene movement. The concept for the structures, a basic arc sitting atop a rectangular platform, was derived from community garden greenhouse designs where cattle panels were used as the arched roof structure. Building off this concept, the Conestoga Hut design slowly evolved, through a series of three iterations, into a more detailed habitable unit. The Conestoga Hut grew in popularity as a way to house the homeless when it was accepted into the Eugene Car Camping program. Put on a trailer and brought to sit in front of City Hall, the Conestoga Hut was approved by Eugene City Council, defined by city code as a “vehicle,” and allowed to house homeless individuals in small groups on designated lots throughout the city. When the plans for Opportunity Village Eugene came to include the Conestoga Hut, a request was made for a slightly larger iteration of the design, one that would fit users more comfortably. This resulted in an adjustment in the design dimensions, creating the fourth edition of the Conestoga Hut.

FEATURES

The Conestoga Hut came to Opportunity Village Eugene as a “first settler” shelter, housing incoming residents before they have the option to transition to a Bungalow, or are able to fully transition out of the village.

46 “Community Supported Shelters,” <http://communitysupportedshelters.org> (accessed February 25, 2013).



Figure 16: CONESTOGA HUTS AT OPPORTUNITY VILLAGE EUGENE

As first-settler shelters, the Conestoga Huts located at Opportunity Village Eugene are simple structures, measuring 10' x 6' x 6', and composed of approximately 10 pieces. The huts are laid out very simply, composed of one arced roof, a wooden floor, and front and back wall panels. As with all standard shelters, the unit has two forms of egress, a door located on the front wall panel, and a window located on the back wall. The huts' roof structure and floor extend slightly beyond the front wall panel, creating a small front porch.

CONSTRUCTION

The Conestoga Huts are constructed partially on-site and partially in the CSS shop. Aside from wall and floor panels, all pieces of the unit can be assembled directly on-site. The modular wall panels, made of 2" x 4" wood studs and plywood cladding, and the wood plank floor module, framed with wood studs, are pre-fabricated, and required to be constructed by skilled laborers. After fabrication of the select parts, CSS compiles a "kit" of materials and components for the Conestoga Huts and sends it off to the site, where trained volunteers are ready to assist with the construction.

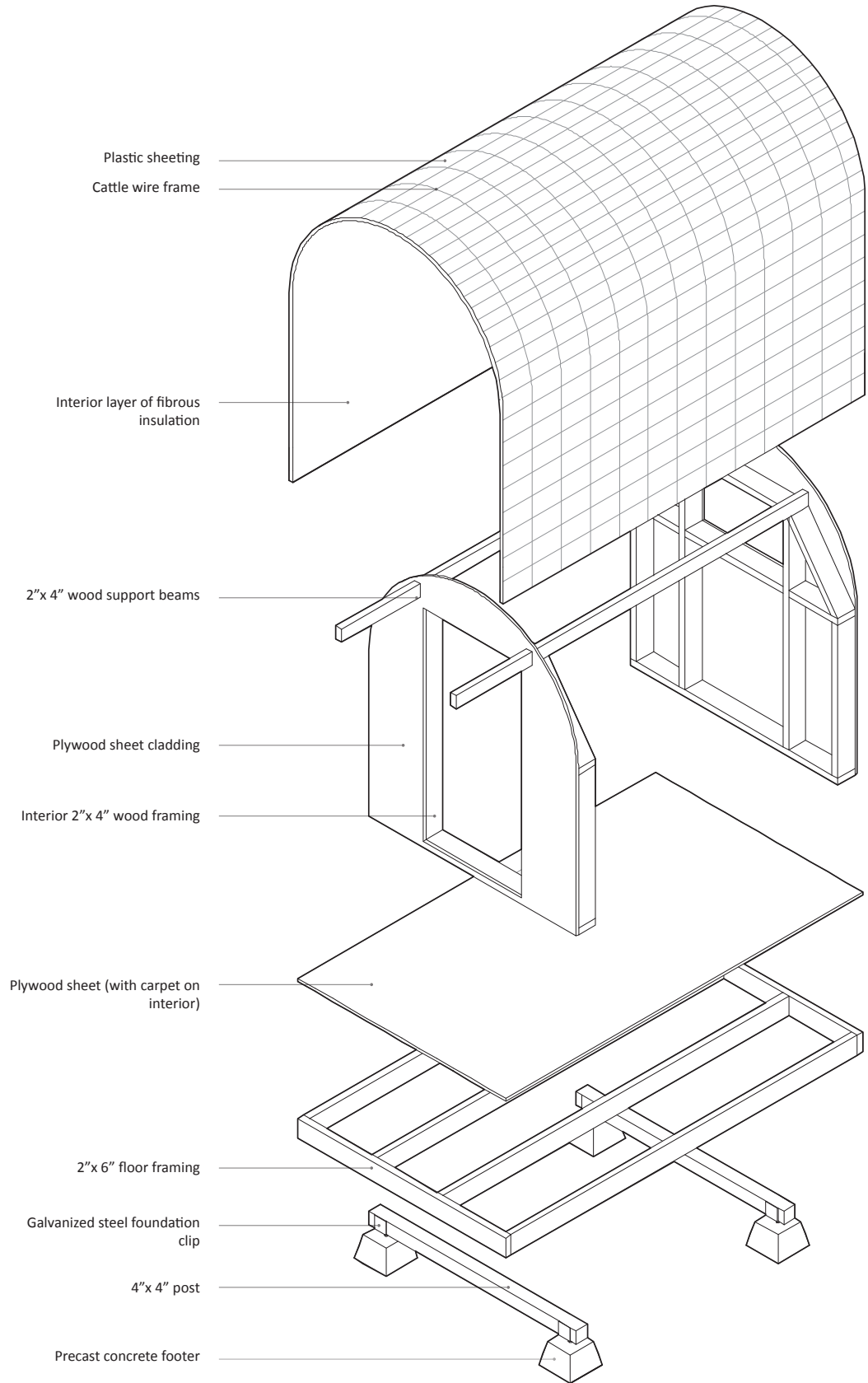


Figure 17: CONESTOGA HUT LAYERS OF CONSTRUCTION

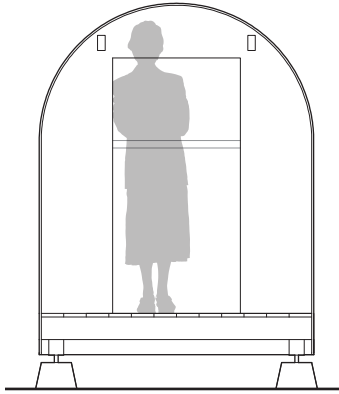


Figure 18: CONESTOGA HUT FRONT ELEVATION

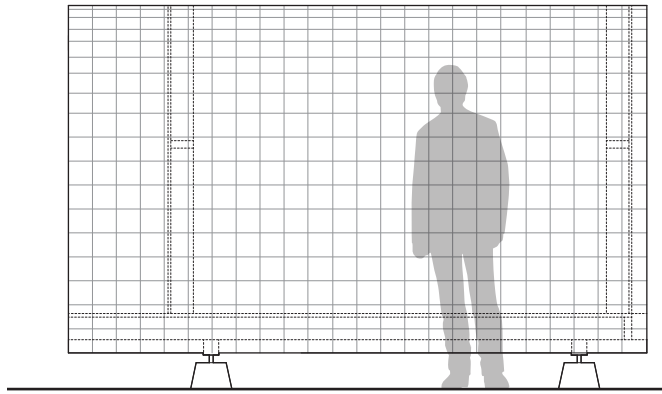


Figure 19: CONESTOGA HUT SIDE ELEVATION

The Conestoga Huts, like all structures at Opportunity Village Eugene, are raised above grade on four precast concrete foundation piers connected by 4"x 4" wood posts. The modular floor panel is then laid on top and fastened. The modular wall panels are erected on either end of the unit, and are secured by two 2"x 4" framing joists. Lastly, the flexible roof structure, composed of a cattle wire outer shell and covered in a plastic insulation layer, is wrapped around the exterior and fastened along both edges of the floor framing. An interior layer of insulated is added to the unit, as well as carpeted floor cover. Within each unit also exists a fire alarm and carbon monoxide detector. On-site construction of the Conestoga Hut takes between 2-4 hours to complete with the assistance of CSS-trained volunteers and approximately four non-skilled workers. The cost per unit of these structures is estimated at \$600 in materials, and up to \$1,200 total, when overhead and paid labor costs are included.

THE BUNGALOW

“This one is interchangeable with this one, and that one with that one, the fronts and the backs so you can orient them, the entrance and exits, the windows and doors. The idea is to get an organic variety of shapes and forms.”

- Alex Daniell, *Bungalow Designer*

The remaining 30 units planned for Opportunity Village Eugene (22 of which were fully constructed at the point of this study) are miniature houses, named “Bungalows.” The Bungalow dwellings include four primary design concepts, the “Chalet,” the “Pagoda,” the “Budget Bungalow,” and the “Lean-To.” These units were designed by Backyard Bungalows, a small business formed by Alex Daniell and Andrew Heben, individuals who were both interviewed as a part of this study.

DESIGN DEVELOPMENT

Unlike the Conestoga Huts, the Bungalows were not originally designed to house the homeless population. According to Bungalow designer, Alex Daniell, the structures first served as a basic form of affordable housing that could be incorporated into a village-like model suited for those with limited means. With a plethora of abandoned land and unused industrial areas on the outskirts of urban growth along the West coast, Daniell envisioned micro-housing villages of Bungalows serving as inexpensive infill solutions.

“There was this line of tolerance around the community, around homeless people. [The bungalows] couldn’t be too nice, because then people would be like, “Wow, that’s such a handout,” but [the bungalows] couldn’t be too ugly, like if they were all the same, or people would be like, “Wow, there’s a refugee camp.”

- Alex Daniell, *Bungalow Designer*

Intentionally designed to be less than 100 square feet, the Bungalows fall under the category of “auxiliary storage unit” in most cities throughout the United States. Built on foundation piers, the structures can easily be constructed and deconstructed on various sites without the need for extensive, or any, excavation or site preparation. This makes the units ideal for temporary or mobile usage, whether they are in sites such as Opportunity Village Eugene or elsewhere.



Figure 20: BUNGALOWS AT OPPORTUNITY VILLAGE EUGENE

The units are designed around the use of 4' x 8' prefabricated wall panels that can be used interchangeably in all unit types. These panels, fabricated by the Backyard Bungalows team, include door, window, and solid arrangements, allow for customized design based on the units' site location. In addition to interchangeable wall panels, the Bungalows also have interchangeable roof elements, whose appearance led to the creation of four sub-prototypes: the Chalet, the Pagoda, the Budget Bungalow, and the Lean-To (see Figures 22-25).

FEATURES

Constructed out of the 4' x 8' modular wall panels, the Bungalows vary between 8' x 8' and 8' x 10' constructions, with some units utilizing a half-panel. All units include one entry door and at least one wall panel that includes a window. The interior of the Bungalows are left uncovered and not insulated, leaving finishing decisions for the users. Several of the Bungalow units at Opportunity Village Eugene also incorporate a small loft, made available for storage purposes. Because of the interchangeable features and varying orientations on site, no two Bungalows at Opportunity Village Eugene are the same.

“[The residents] get to decide what they want to do inside of it, where they want to put their loft or what color they want to paint it. They get to insulate the inside. They work on it, they roof it, they have to finish it themselves. They are doing work on the structure, and it becomes theirs.

- Alex Daniell, Bungalow Designer

CONSTRUCTION

Similar to the Conestoga Hut construction process, the Bungalows are constructed both on site and in the Backyard Bungalows shop. The 4' x 8' modular wall panels, constructed of plywood sheets and 2"x 4" joists, and the four roof types are assembled by Backyard Bungalows skilled laborers, and brought on-site in a kit for final assembly. Once all materials are on site, a crew of non-skilled laborers can construct the Bungalows. Put together in a method similar to that of the Conestoga Huts, the Bungalow units are first raised off of the ground on nine pre-cast concrete foundation piers connected by 4"x 4" wood posts. A 2"x 6" framed wood floor covered in plywood sheeting is then fastened to the posts. Once the floor is secured, the modular wall panels are hoisted around the perimeter. The prefabricated roof assembly is then placed and fixed atop the wall panels.

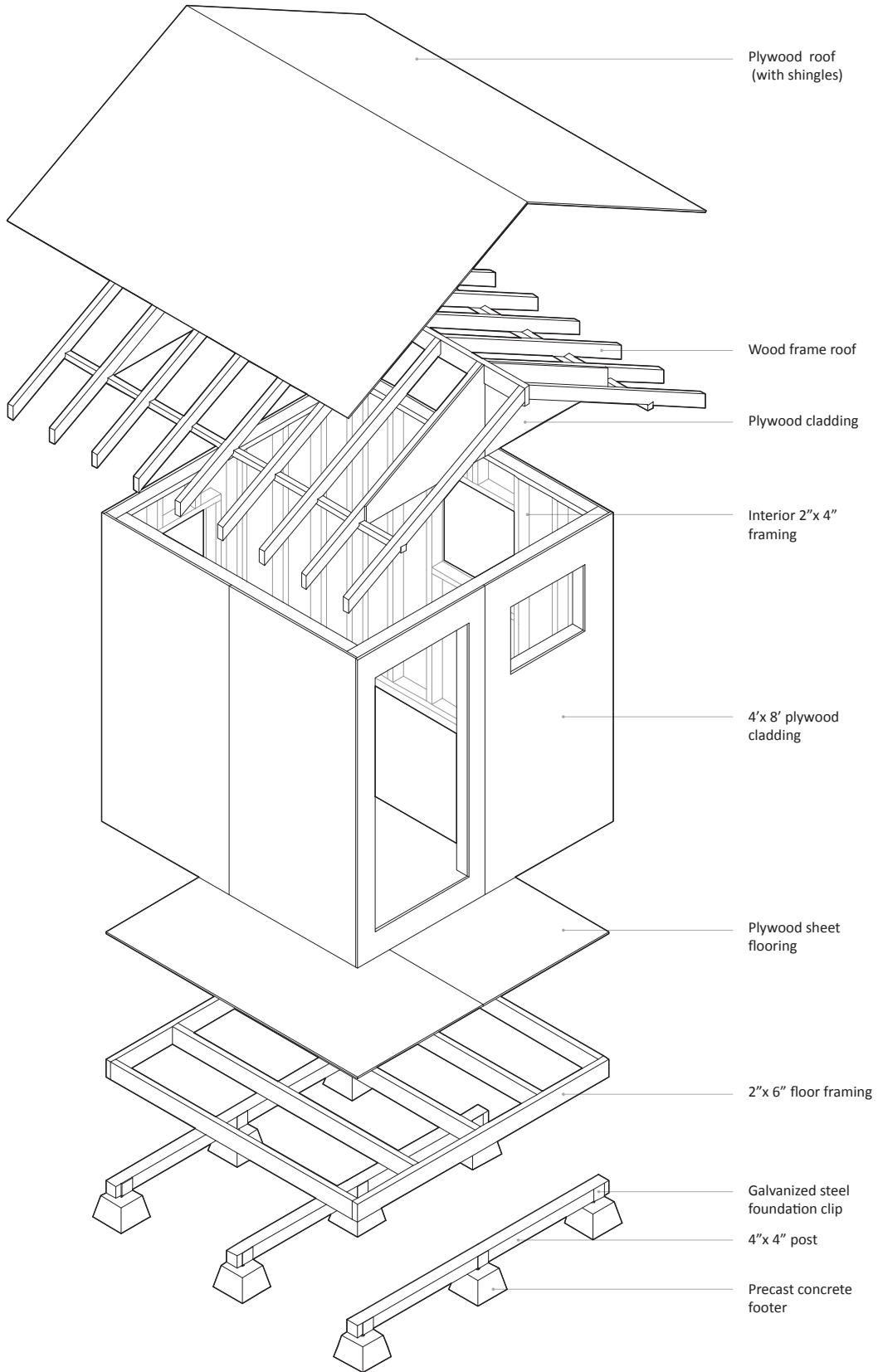
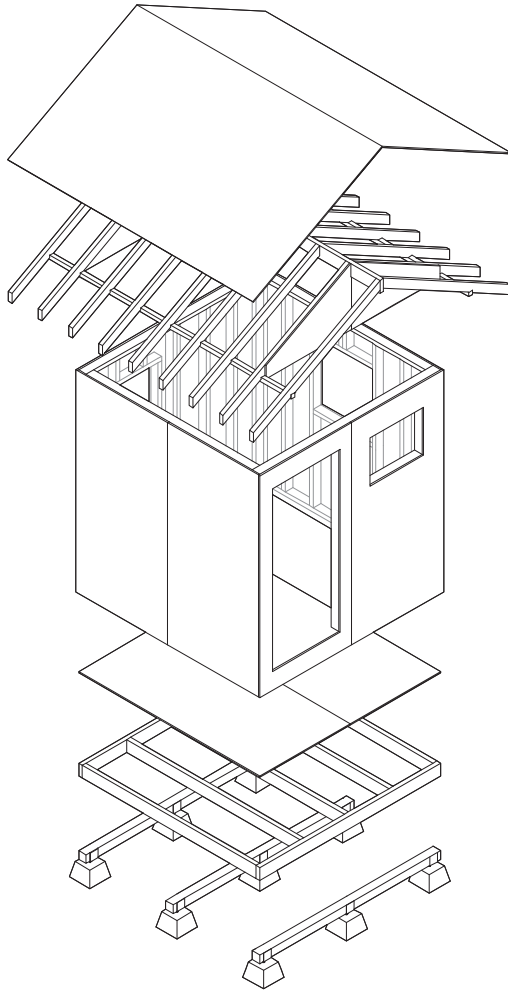
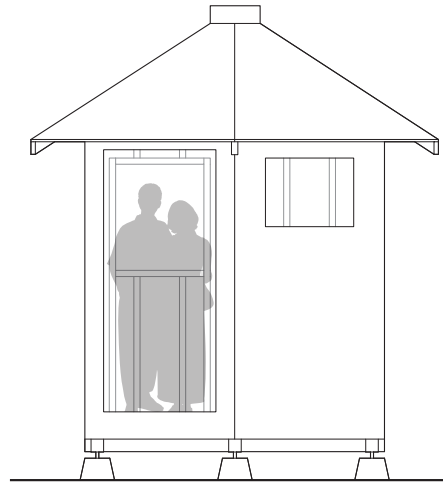
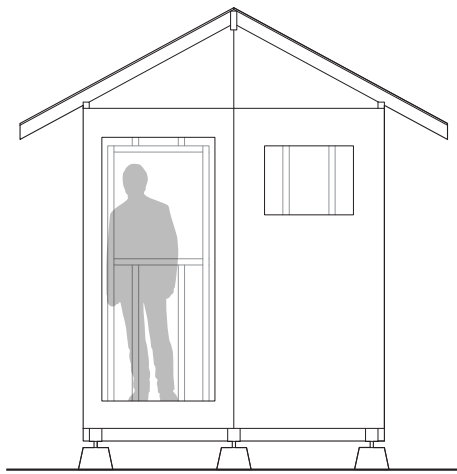
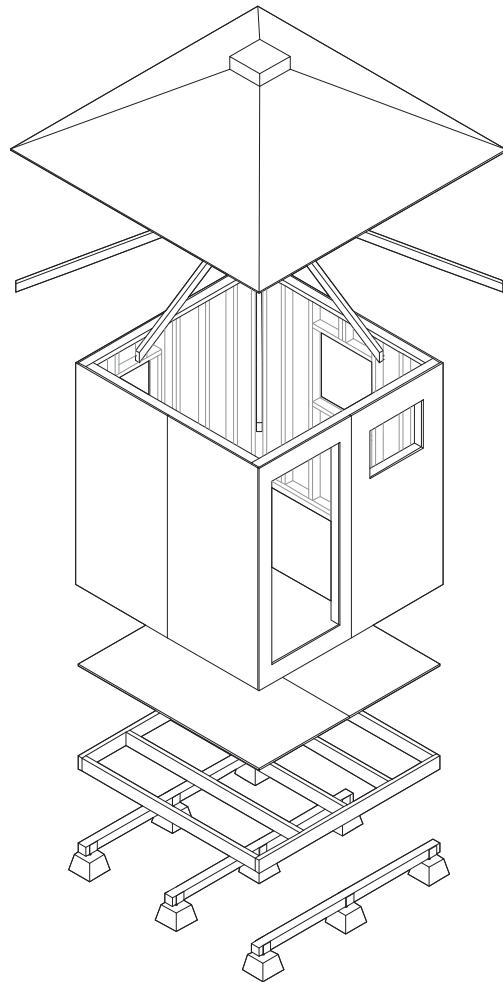


Figure 21: BUNGALOW LAYERS OF CONSTRUCTION



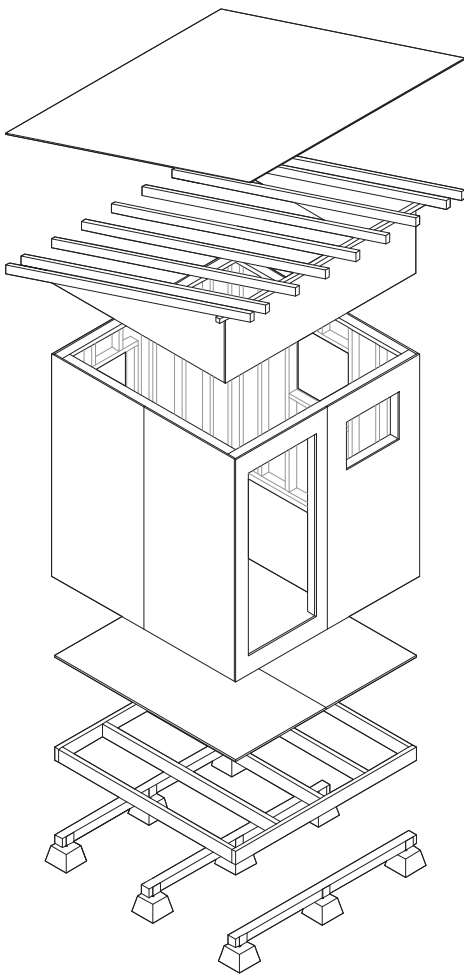
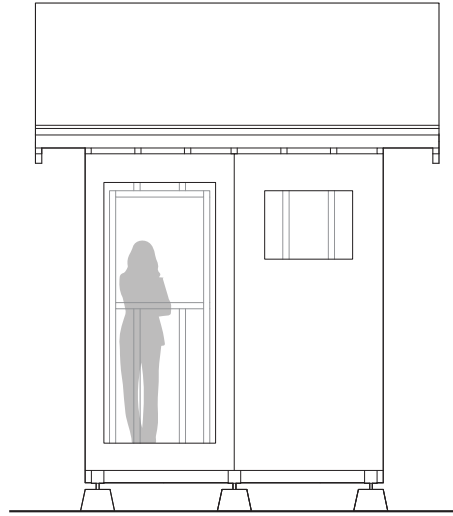
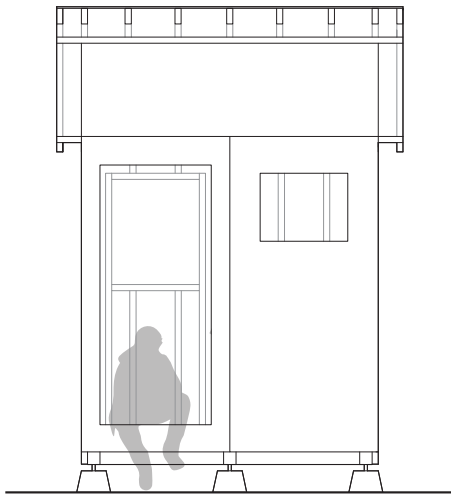
"Chalet" Bungalow

Figure 22



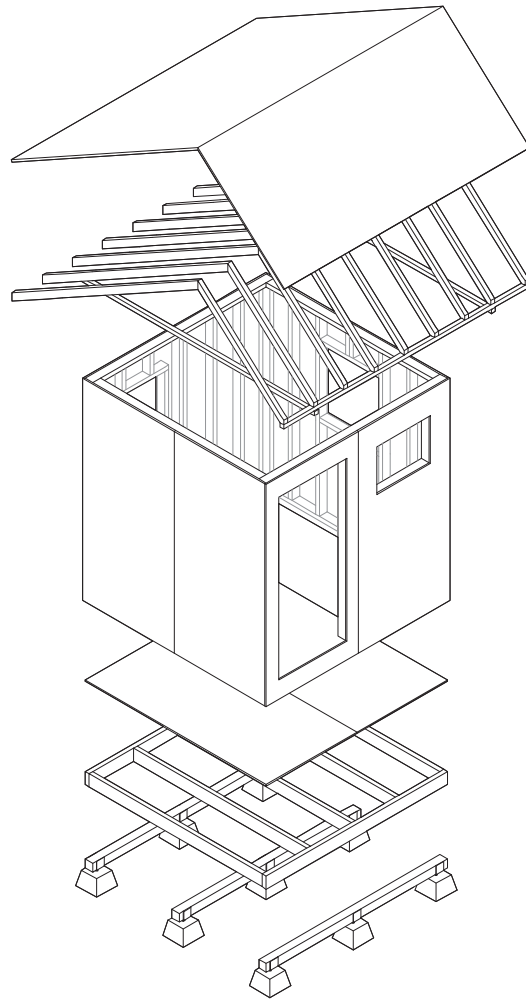
"Pagoda" Bungalow

Figure 23



"Budget" Bungalow

Figure 24



"Lean-To" Bungalow

Figure 25

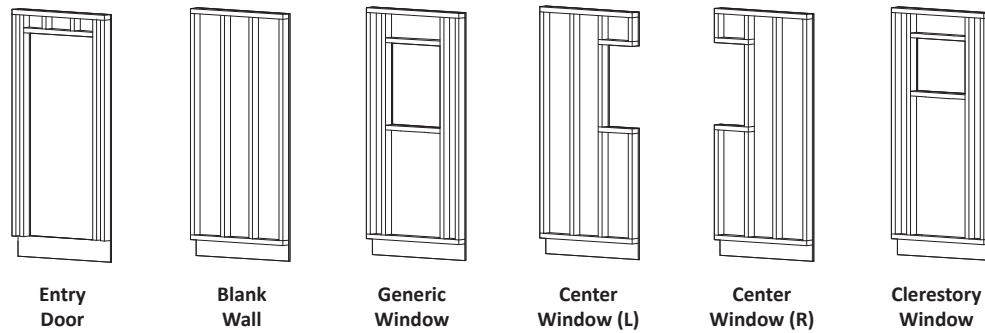


Figure 26: BUNGALOW WALL PANELS

On-site construction of the Bungalows takes approximately 4 hours to complete with a team of three to four volunteers. Slightly more expensive than the Conestoga Huts, the Bungalows generally cost \$850 per unit for materials, and close to \$1,700 including labor.

DISCUSSION OF FINDINGS

The findings gathered in this study provided information related to the micro-housing prototypes of Opportunity Village Eugene. To reiterate, data were collected through interviews with micro-housing prototype designers, village organizers, and village residents, as well as from on-site observations and outside literature research. There were two approaches considered for the organization of the qualitative data: to review information by pre-determined typologies, or to allow typologies to emerge as the material was reviewed. This study employed a hybrid of these methods, summarizing the material according to the seven pre-determined categories as outlined by the interview guide (size, durability, adaptability, security, aesthetics, insulation/ventilation, and orientation), as well as including several additional categories that had emerged unexpectedly from the interviews. In this chapter, these categories, or themes, are discussed, and their relationship to proposed design alterations is explored. The themes that developed through interviews and on-site observations included:

- Thermal comfort
- Ability to personalize and customize
- Spatial characteristics
- Adequate and appropriate storage; and
- Comfortable site context

In addition to these five primary themes, a supplementary category is discussed in this chapter that addresses several miscellaneous topics that arose, but were not as commonly noted by interviewees. Together, these topics provide the basis for a set of suggested design alternatives that can be applied to modifications of the current Opportunity Village Eugene micro-housing prototypes as a way to improve upon resident satisfaction.

THERMAL COMFORT

Concern for thermal comfort in the Conestoga Huts and Bungalows was the most commonly discussed topic across the twelve interviews conducted. It is important to speculate that this may have been the result of several time-related factors, such as the study occurring during a winter month, when adequate temperature is critical, as well as the duration of Opportunity Village Eugene's operation, having only been open during the Fall and Winter months of 2014. Similarly, it is important to note that on average, residents who were interviewed had lived at the village only for several weeks, indicating that the majority of interviewees had only experienced the prototypes during cold weather.

Overall, there was a consensus among those interviewed that both the Conestoga Hut and the Bungalow were subpar in terms of their cold weather thermal capabilities. An overwhelming amount of responses cited that both unit types were cold, thus creating an uncomfortable living environment.

When speaking about the temperature inside of his Conestoga Hut, one resident explained, "When you wake up in the morning, you're going to be putting on cold clothes. Your clothes are just as if you had them sitting outside." Other residents mentioned that the "temperature outside is about the same as the temperature inside." In agreement that, while the units are successful structures for battling the elements and providing a secure place for belongings, residents stated that they are insufficient in providing adequate thermal comfort.

Also concerned with both comfort and safety in their homes, residents at Opportunity Village Eugene adopted a handful of practices and strategies to help remedy the cold interior environments of the Conestoga Huts and Bungalows. Due to the city of Eugene's prohibition of the use of electricity, open flame, and propane heaters in the micro-housing units, many residents were forced to creatively

improvise to provide the warmth that they needed. One organizer explained that the simplest way residents had been keeping warm was to heat up bags of rice in the kitchen area, and place them under their beds at night. Similarly, a Conestoga Hut resident pointed out that in a neighboring hut, a “woman with two dogs stays decently warm; it gets a few degrees warmer [in there].” This parallels several other interviewee comments that claimed that body heat, surprisingly, plays a critical role as a warming system for the homes, in the absence of more elaborate forms of heating. However, a Bungalow resident stated that in order for this to be a truly viable method, one “would have to be doing something really strenuous to heat up that amount of space with [one’s] body.”

Building on the need for heat, several residents went as far as developing their own interior architectural solutions to the problem. For example, one Conestoga Hut resident “put an additional layer [of carpet] to get some warmth [to protect against] the cold rising up underneath [the unit],” and another Conestoga Hut resident described how he played around with the location of his bed, surrounding it with curtains in an attempt to trap the heat in a small, centralized location.

To assist with thermal comfort, the Bungalow units, designed as “bare-bones” structures, are equipped for the addition of insulation. This is a task that is to be taken on by each resident individually after move-in, on their own budgets. Given the argument that the prototypes are ill-fit for brisk, Oregon nights, however, many interviewees claimed that even Bungalows with insulation in the walls are still quite cold. As one organizer recounted, “from what I hear, [the Conestoga Huts] are actually warmer, even though the Bungalows have more insulation.” However, a Bungalow and former Conestoga Hut resident again rebutted that “neither of [the prototypes] keep very warm.”

SUGGESTED DESIGN + MANAGEMENT STRATEGIES

Appropriate design for thermal conditions is critical to achieving satisfaction and comfort in any type of built form, especially housing. In low-income housing, many designed on a limited budget, there often is little regard for thermal comfort in design schemes. According to Ghisi et al., there are four generally accepted conditions of thermal comfort that should be considered in architectural design: air temperature, air speed, relative humidity, and mean radiant temperature.⁴⁷ Ghisi et al. organized a study on low-income housing that focused solely on thermal comfort and described

47 E Ghisi, et al, “An Evaluation of Thermal Comfort in Typical Modern Low-Income Housing in Malaysia,” (presentation, Thermal Performance of Exterior Envelopes of Whole Buildings XII International Conference, Clearwater Beach, Florida, December 1-5, 2013).

the importance of incorporating this aspect into the design of Malaysia's building programs for families transitioning from rural to urban areas.⁴⁸ This research revealed that the housing programs in the study were producing units that "often overheat during the day and can be too cool during the night for comfort," and that in conclusion, future designs should incorporate better ventilation strategies to achieve more thermal comfort and to create a more equal standard of living.⁴⁹

Similar to the study on thermal comfort by Ghisi et al., the findings from this thesis reveal that the micro-housing prototypes of Opportunity Village Eugene could also benefit from alternative design strategies that can increase thermal comfort. Erik de Buhr, Conestoga Hut designer at Community Supported Shelters in Eugene, Oregon, is currently working on several design alterations that focus on creating a more thermally efficient Conestoga Hut. "They've come up with a 'cozy' for the front porch area, and they've noticed that it is about 10 to 15 degrees [warmer] in temperature," one Conestoga Hut resident stated about de Buhr and his team at CSS.

Additionally, knowing that the Conestoga Huts are exceptional at absorbing solar heat, de Buhr foresees future design alterations to prepare for warmer weather, stating, "This summer, we are also planning to add a secondary roof, a vegetated roof that goes over the [existing roof] structure to see how well it shades it. [This way], you're absorbing the UV rays with the vegetative matter, and aren't heating your roof directly." De Buhr explained that ideas for re-evaluating and re-designing the Conestoga Hut change with the seasons: "We flow with whatever the need is. It's winter now, so that's what we're thinking a lot about. In the winter it's heat, and in the summer it's shade," he explained.

While the prototype designers continue to work to modify the existing structures, the results of this study provide additional suggestions for design options based on the real life experiences from interviewed residents as well as other interviewed participants. Several architectural suggestions for augmenting thermal comfort in the prototypes include orienting units on site, placing units on site, re-locating units throughout the year, creating shared-wall multi-units, enclosing units at the bottom, and finishing the units' interior and exterior.

48 E Ghisi, et al, "An Evaluation of Thermal Comfort in Typical Modern Low-Income Housing in Malaysia," (presentation, Thermal Performance of Exterior Envelopes of Whole Buildings XII International Conference, Clearwater Beach, Florida, December 1-5, 2013).

49 *Ibid.*

1. **Orienting units on site.** Unit orientation is critical to controlling thermal comfort. The Bungalows, given their flexible nature of assembly (a “mix-and-match” approach with 4’x 8’ wall panels), can easily achieve additional heat intake by facing south, with window and door wall panels on the southern façade. This can help to increase the amount of direct sunlight that enters the unit. Orientation, therefore, can directly increase thermal comfort and user satisfaction. For example, one Bungalow resident stated about her unit, “I’m really happy I’ve got southern exposure. That’s where my two main windows and my front door are oriented.” This is a simple consideration while planning the site layout and assembling the Bungalow units that can assist in providing solar heat in the winter. Additionally, with the Bungalow assembly, installing window panels on opposite sides of the unit will allow air to travel through easily, increasing thru-ventilation in summer months, and offering a cooler interior.

2. **Placing units on site.** As well as considering unit orientation, it is important to carefully locate the units throughout the site, particularly taking note of shaded versus non-shaded areas when focused on thermal performance. In this study, a large amount of residents commented on the negative thermal effects of their unit being in a shaded area of the site. At the southeast corner of the site (see Figure 27), several Conestoga Huts and Bungalows are located in a highly undesirable region where they sit in the shade of an adjacent building throughout the day during winter months. Residing in a unit outside of this region, a Conestoga Hut resident stated, “I don’t want to be over there where I’m all shaded. Definitely I want the sun...because [the Conestoga Huts] absorb heat really well.” One designer further explained the condition of these units at Opportunity Village Eugene, stating that “It’s not very good for a shelter to always be in a cold area with no form of heat. In the wintertime, because of the position of the sun, [the units] are in this massive shadow of the warehouse.”

Learning from this scenario, it can be determined that the careful consideration of site layout can help to avoid issues of living units in heavily shaded areas. For example, in Opportunity Village Eugene, it may have been advantageous to locate non-dwelling structures in the shaded southeast corner, offering the southwest area to be occupied by micro-housing units. This could be a more successful arrangement because since the kitchen and bathhouse areas are used for a shorter duration of time than the micro-housing units, they would not be as impacted by the heavy shading.

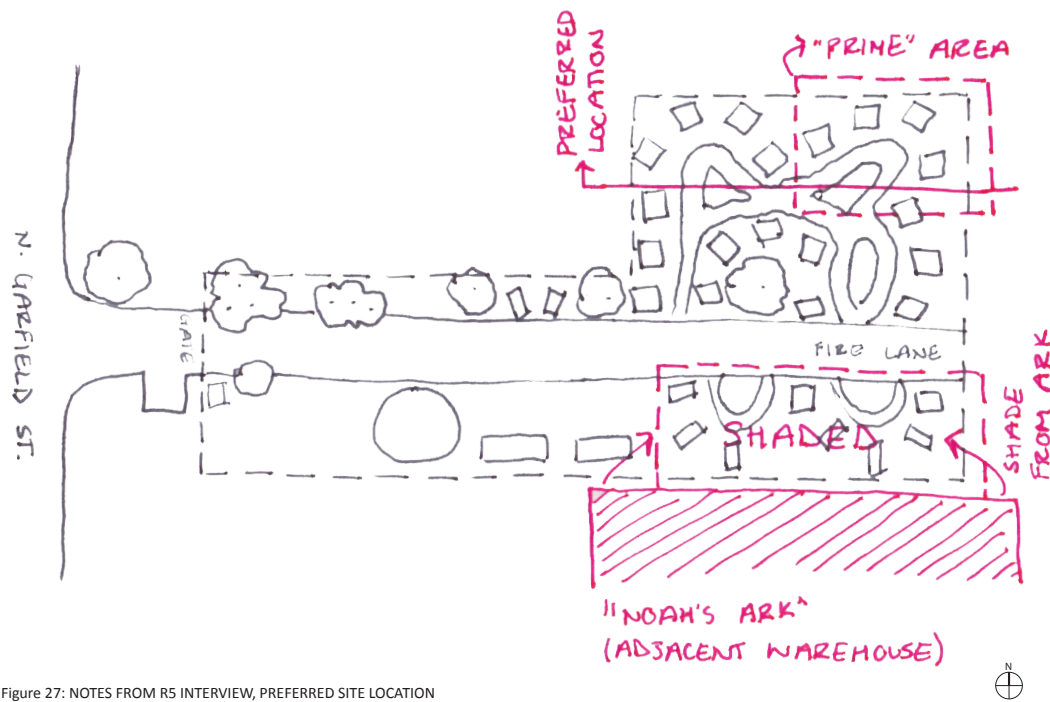


Figure 27: NOTES FROM R5 INTERVIEW, PREFERRED SITE LOCATION

3. **Re-locating units throughout the year.** The micro-housing prototypes at Opportunity Village Eugene are designed to be put on to trailers and easily moved. As one organizer explained, “There will always be some expectation that [the units] here ha[ve] to be able to be moved, even though they may never move. Just that whole idea of removability. It happens with relief camps too, where [the units] end up staying there twenty years, but still have to build it like they could be gone tomorrow. I think that will always stay in a project like this.” An alternate perspective on this condition offers the opportunity to provide for the movement of units within the village as a way to achieve better thermal comfort. To elaborate, this implies that during different seasons, units can easily be relocated to areas of shade or sun or reoriented, thus altering the amount of direct sunlight that each unit takes in.

4. **Creating shared-wall multi-units.** The Conestoga Hut and Bungalow provide an excellent source of ownership over private space for users because they are stand-alone units. However, with four facades exposed to the outside environment, the units are subject to significant direct heat gain and loss, which can influence overall thermal comfort. A solution to this could be to create shared-wall units, in the form of pods that are composed of two to four individual units (see Figure 28). By sharing walls, the units can maintain warmth easier during the winter months, and will less exposure to direct sunlight during the summer months. Although this may compromise

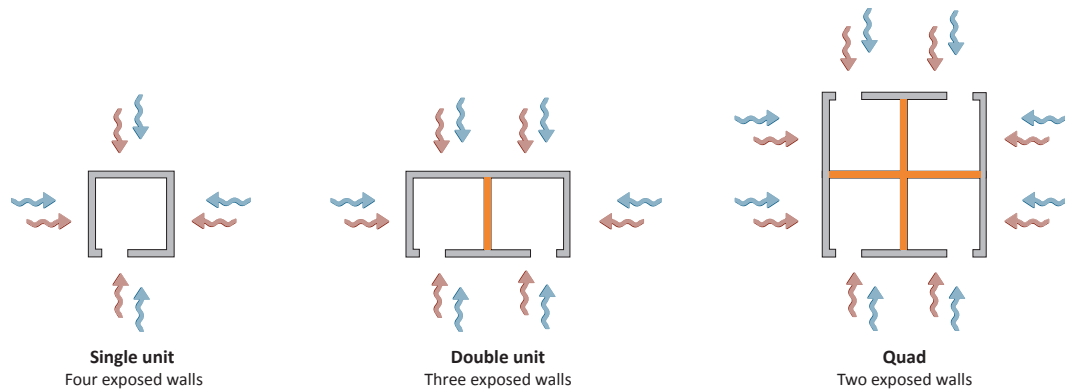


Figure 28: ENVIRONMENTAL EXPOSURE OF GROUPED VS STAND-ALONE UNITS

values of home ownership and privacy, the results of this study reveal that thermal comfort is a primary concern for residents.

5. **Enclosing units at the bottom.** The Conestoga Hut and Bungalow are designed to be raised above ground level. The units sit on pre-cast concrete piers, on top of which are wood posts supporting the floor. This was a design decision made to deter rodents from settling underneath the homes, a problem that was discovered with the homes at Opportunity Village Eugene’s northern neighbor, Dignity Village. One organizer explained, “At [Opportunity Village Eugene], everything is open underneath, so there isn’t a place for rodents really to nest. Even though that’s energy-wise not the best thing.” As another organizer added, this design aspect creates issues that affect thermal stability inside of the unit, by allowing air to travel beneath the unit. By exposing the floor to the exterior, both the Conestoga Hut and the Bungalow continue to lose additional heat. A hybrid of an enclosed and open-bottomed structure would help to alleviate this heat loss, while also remaining open to prevent rodents from settling underneath the unit. The addition of a front porch, a feature that several of the units at Opportunity Village Eugene have, similarly provides a strategy that begins to enclose the bottom of the unit. Removable panels for the remaining sides would be one suggestion for enclosing the structure, while providing a means of access should rodent activity start to occur.

6. **Finishing the units’ interior and exterior.** Finishing the units is currently a decision that is left to individual residents, and not included as a part of the original construction, most likely due to time and cost burdens. However, specifically in the Bungalows, finishing techniques such as insulating the interior, installing interior finish walls, and sealing wall panel joints can significantly

contribute to the thermal success of the units. Therefore, it is suggested that these strategies either be carried out by village regulations, or that they be strongly encouraged and promoted to residents, with suggested methods provided to assist residents in doing the work on their own.

Of course, a consequence of these actions, specifically the sealing of joints, is that additional airflow through the unit that contributes to ventilation will be blocked, if operable ventilation controls are not added. This could lead not only to uncomfortable temperatures in warmer months, but also mold build up if other proper ventilation strategies are not employed. To avoid this, another simple addition to both the Conestoga Hut and the Bungalow that can similarly improve their interior environments without worsening thermal comfort in the summer, could be to hang drapes or other fabric along interior walls. This will help to better insulate the units in the winter, without the cost of overheating in the summer. However, this approach will not be as effective as providing fully finished and insulated walls.

PERSONALIZATION

After thermal comfort, personalization was the second most-discussed theme resulting from interviews. Unlike many forms of transitional or low-income housing, the dwellings at Opportunity Village Eugene exemplify unique character and individuality as they become inhabited. At the village, one designer explained, specifically about the Bungalows, “whoever gets [the unit], they get to decide what they want to do inside of it, where they want to put their loft, or what color they want to paint it. They get to insulate the inside, they roof it, they work on it, they finish it themselves. They are doing work on the structure, and it becomes theirs.” This concept of personalization was a key theme that arose throughout the interview process in this study.

Originally intended to be discussed in interviews as “customization,” focusing on large scale aspects, this topic became “personalization,” and focused on highlighting smaller, cosmetic additions to the units. These additions, as one organizer explains, are made possible at Opportunity Village Eugene because the basic philosophy of unit design is “building a bare-bones structure that the [residents] can alter and finish.” With the ability to make post-construction alterations, both the interior and exterior of micro-housing units at Opportunity Village Eugene have transformed as a way to express residents’ personal tastes and satisfy their individual needs.



Figure 29: BUNGALOW UNIT REVEALING A HIGHLY PERSONALIZED INTERIOR AND EXTERIOR

The personalization efforts found at Opportunity Village Eugene come in a wide variety of forms. As one Conestoga Hut resident explained, “everybody wants to have a small personal touch” to their unit to make it feel like home. On the exterior, most units were painted a variety of colors. Similarly, in one case, a resident described his neighbor’s efforts to put vinyl siding along the outside walls of his Bungalow. Another Bungalow resident applied numerous decorative elements the front façade of her unit, giving the structure a vibrant sense of life and activity (see Figure 29).

On the interior of the units, most of which were unable to be viewed in this study, residents employed different strategies to display character within their homes. For example, one Conestoga resident described how she painted the interior of her unit, as well as tiled the floor area just inside of the front door, giving herself a “nice little tile foyer.” Several other Conestoga residents illustrated how they draped decorative curtains from tension wire and interior support beams within their units. Similarly, a Bungalow resident hung curtains from her interior walls, as a way to enliven the unit, as well as hide the mundane plywood walls.

During interviews, residents also chronicled their aspirations for further personalizing their space in the future. One resident described a plan to install lattice inside of her Bungalow, as a means to divide the interior space and to have additional shelving area. In addition, the same resident also looked forward to creating a personal meditation garden along the northern side of her unit. Another Bungalow resident outlined her vision for similar exterior additions, including the installation of window planter boxes and a side awning for shaded seating.

The promotion of self-expression through unit personalization at the village came as a surprise to many in the Eugene community. One designer explained that on “the day of the [village] opening, people, they were walking around just smiling because [the village] looks like a Caribbean beach village, and they were thinking it was going to be a bunch of tents.” The units of Opportunity Village Eugene represent an alternative take on standardized housing, by incorporating an emphasis on the personalization at each unit. As a result, the influence of personalization can far exceed aesthetic value at Opportunity Village Eugene, and can start to contribute positive psychological effects related to pride and investment in one’s own home. To elaborate on this, one organizer explained that the organization is, “trying to create a totally different type concept of a model of how to do shelter that is inexpensive, and really also gives a person the dignity of self determination. That’s a huge part of it. When you don’t have to share your personal space with someone else, that’s the start of taking control of your own life.”

SUGGESTED DESIGN + MANAGEMENT STRATEGIES

Utilizing personalization as a source of self-confidence and dignity is an aspect that is not often found in low-income housing projects, particularly those that employ low budgets and mass-production. Tamés, in a study on Mexican informal housing projects, described the need to focus on flexible and nurturing environments in mass housing production: environments that can support and improve lifestyles of those in sensitive, transitional stages.⁵⁰ In referencing informal communities, Tamés stated, “flexibility is the key characteristic of the informal settlement’s built environment.”⁵¹ It is the main reason why this form of production can accommodate variable demands and adapt and transform over time as needed.⁵² Personalization in low-income housing and informal communities, Tamés claimed, is one way to achieve the necessary flexibility that helps to make

50 Elena Tamés, “Use, Appropriation and Personalization of Space in Mexican Housing Projects and Informal Settlements,” *Transitional Dwellings and Settlements Review* 15, no. 2 (2004) : 33-48.

51 *Ibid.*

52 *Ibid.*

this form of housing successful. Self-expression, Tamés argued, is critical to fulfilling basic needs of privacy, security, and identity, and surpasses solely aesthetic purposes.⁵³ By providing the ability to personalize low-income housing units, residents are given the opportunity to take ownership over and pride in their homes, abilities that can contribute to increased comfort and confidence in what can be a difficult transitional setting.

Because the ability to incorporate personalization is an essential aspect of the home environment and personal comfort, it is suggested that the following be considered at the design and management stages of micro-housing prototype development: considering personalization abilities during prototype design, incorporating personalization regulations into village policy, and providing communal access to tools for unit personalization.

1. **Considering personalization abilities during prototype design.** One of the primary reasons that the units at Opportunity Village Eugene, particularly the Bungalows, are successful in accommodating users' personal touches is because of the "bare-bones" approach to design. By leaving the units nearly, or entirely, unfinished, users are given significant opportunities to outfit their transitional home, just as they would a more permanent residence. This not only encourages resident comfort, but could instill a sense of pride in and claim over the units: aspects of true home ownership that may have been lacking in residents' former housing situations. Therefore, in order to encourage identity and to reinstate home ownership abilities, it is suggested that throughout the unit design process, methods for post-construction personalization are considered. This will prevent units from being distributed as a finished product, like prototypes of OM Village or Quixote Village (see Figure 30), where there is little opportunity for personalization and aesthetic investment in the units.

Units at Dignity Village in Portland, Oregon, provide an example of units with a high level of personalization, as the structures are designed and constructed by residents themselves (see Figure 31). However, while this represents a successful attempt at providing full resident control over unit personalization, a minimum design standard should be employed to ensure that units are effective at providing safety and security to users. The micro-housing prototypes at Opportunity Village Eugene do offer a hybrid of professional design and user personalization, however, the

53 Elena Tamés, "Use, Appropriation and Personalization of Space in Mexican Housing Projects and Informal Settlements," *Transitional Dwellings and Settlements Review* 15, no. 2 (2004) : 33-48.



Figure 30: MICRO-HOUSING PROTOTYPES AT OM VILLAGE ⁵ AND QUIXOTE VILLAGE ⁶



Figure 31: MICRO-HOUSING UNITS AT DIGNITY VILLAGE ⁷

unfinished units compromise potential thermal performance.

2. **Incorporating personalization regulations into village policy.** Related to village policy rather than unit design, it is suggested that rules and regulations for unit personalization be clearly outlined in the village code. This can help to effectively encourage and enforce personalization efforts happening within the village. First and foremost, these regulations should be reflective of resident health and safety, and secondly, they should consider the primary goals of the village (i.e. if the village aims to transition residents very quickly, to what extent can units be manipulated if

they intend to be very temporary). By providing a clear outline of what can and cannot be done with the units, villages will be able to best accommodate residents' needs and interests related to customizing or decorating their temporary space.

3. **Providing communal access to tools for unit personalization.** As a means to encourage the personalization of units at Opportunity Village Eugene, a community resource area for tools, hardware, paint, or other home improvement equipment could be effective. Because storage of personal items is already an issue with the units, providing an area for communal storage of shared tools would be advised, as well as cost-effective for residents. This could help to boost interest and ability to make personalization efforts at the village.

SPATIAL CHARACTERISTICS

The micro-housing units of Opportunity Village Eugene provided for substantial conversation on spatial relationships throughout the interviews conducted in this study. Often highlighting the shortcomings of the Conestoga Hut and Bungalow in terms of adequate interior space, many interviewees held strong opinions regarding the need for more space in such units.

The Conestoga Hut was the unit from which interviewees derived most of their dissatisfaction. There were two prominent aspects from which this prototype failed to accommodate its users: height and overall building form. In its newest model, the Conestoga Hut measures just over six feet in height, with an entry that is shorter than a typical 36"x 84" door. These conditions were problematic for several residents. As one interviewee stated about the entry to her unit, "the door comes up to about my nose level. [To enter,] I've had to develop what we've come to call the 'Conestoga Crouch'." The movement described by this resident references her need to crouch below the doorframe in order to enter the unit, an uncomfortable and abnormal movement in which to enter a home. As one resident similarly stated, "the height [of the Conestoga Hut] could have been addressed a little bit more because I smack my head so many times coming in and out of it." Another resident stated that in his own experience, once inside of the Conestoga Hut, the unit "is only six feet tall, so, I bang my head on the rafters all of the time." The same resident added to this, describing that after bed platforms were constructed inside of the Conestoga Huts, users had to be very careful "hopping up" on their beds because the ceiling of the unit was so low. Despite the many dissatisfied comments about the height of the Conestoga Hut, one resident, with

decades of exposure to homeless housing strategies, stated his contentment with the unit because “you’re able to stand up inside. And it’s amazing what standing up inside a structure can actually do for you mentally.”

In addition to the Conestoga Hut’s height, its overall building form was a topic of discussion for several of the interviewees. Given its arched roof, many users were unhappy with the inconsistent ceiling height within the unit. One resident explained, “I’m not a tall guy, I’m 5’-9”. The majority of the center portion I can stand up in, but I would make [the unit] a little taller.” Another resident referred to the central portion of the Conestoga Hut as the only “usable” space within the unit for this same reason. She mentioned that a user can only move comfortably from front to back by staying along the unit’s central axis. “The curved walls,” she stated, make it difficult to maneuver around the interior without bending one’s body.

Lastly, related to the spatial characteristics, unit volume was discussed heavily in the interviews. Per building code regulations, the Bungalows were designed to be under 100 square feet, considered a basic auxiliary storage unit by the state of Oregon, and most states across the country. This design decision helped to keep building permits at a reasonable cost and achievable permit level for the village. Under similar restrictions, the Conestoga Hut was designed to be easily lifted on to a trailer and relocated as needed. Considered a vehicle by the city of Eugene, the Conestoga Hut was similarly limited as to its overall size. Although these factors provide a reasonable explanation for the small size of the units, the overall volume proved to be inadequate for users. For example, one resident stated that the Conestoga Hut “can be kind of claustrophobic,” though another resident claimed that both prototypes are “all right for single people.” When questions related to double occupancy arose, all interviewees revealed that the units do not suffice. One resident joked that two people could be housed in a Conestoga Hut, however, “they had better be small people.” Another resident stated that the Conestoga Huts do not offer much living space at all when occupied by a couple because the bed nearly fills the entire unit. The Bungalows, on the other hand, received slightly more positive commentary regarding their overall size, with one interviewee stating that they offer “a little more head room,” and another that “they are better for couples.”

SUGGESTED DESIGN STRATEGIES

Spatial comfort in the micro-housing units is another critical aspect to consider when looking to

improve resident satisfaction. Without this, the units can be difficult to fully use and appreciate as a true home. Since a micro-housing approach to transitional homeless housing is a new exploration, little research has been done to support the appropriate spatial design of these units. The feedback provided from this study, however, leads to several suggestions for design options when re-evaluating the Conestoga Hut and Bungalow designs as well as creating future prototype designs, including creating a seven foot minimum height in the Conestoga Hut, using bed size(s) when determining unit width, and utilizing non-curved forms in prototype design.

1. **Creating a seven foot minimum height in the Conestoga Hut.** As many interviewees stated in this study, the Conestoga Huts failed to create a comfortable living environment because of the low threshold entry and low interior ceiling height. To better accommodate users in this particular prototype, it is suggested that the units have a minimum ceiling height of seven feet at the center, thereby accommodating a high majority of users, similar to the universal use of a seven foot standard door. Additionally, if possible, raising the interior support beams to a height of seven feet (and consequently raising the roof shell as well) would alleviate many accidental injuries from bumping into the support beams, an issue that was brought up by several interviewees. Lastly, entry doors to the units could be regulated as 36" x 84" in dimension, allowing all users to easily maneuver through the threshold. These suggestions for increasing unit height, despite their ability to provide a more comfortable living environment, may lead to a necessary compromise in the unit's structure, thus requiring a re-evaluation of the arched roof that may lose its structural integrity once raised higher.

2. **Using bed size(s) when determining unit width.** Several of the comments from interviewees described the units' lack of living space as a consequence of an overwhelming amount sleeping space defined by their beds. With beds taking up a majority of the floor space in each unit, there is little space left for other activities or simply maneuvering space within the unit. Moving forward with prototype designs, it is important to consider bed size when determining the width of a unit, as a way to ensure that adequate space is available after the bed is placed. In the Conestoga Huts, this became a problem primarily for couples occupying the units, whose bed size monopolized the entire floor area. As one resident stated, the Conestoga Huts "could have been a little bit wider. They are only six foot, and probably should be maybe eight feet wide." To remedy this, an option could be to design a larger-scale Conestoga Hut specifically to accommodate

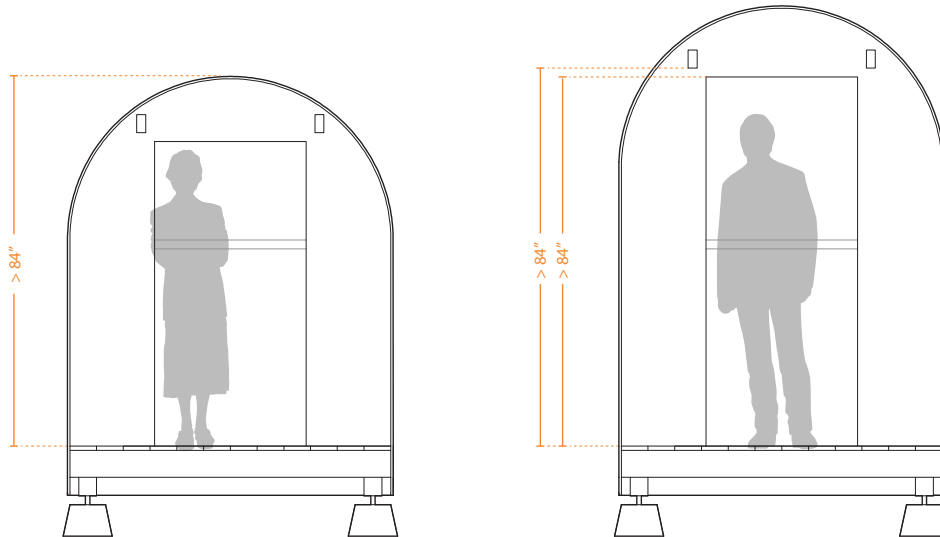


Figure 32: MINIMUM HEIGHT SUGGESTIONS FOR CONESTOGA HUT

couples. For immediate conflict resolution, couples could also be placed exclusively in Bungalows, which, as one interviewee stated, “are better for couples.”

3. **Utilizing non-curved forms in prototype design.** In addition to a lack of adequate ceiling height, the ceiling shape of the Conestoga Hut hindered the satisfaction of residents because of its curved nature. The arched roof, although efficient in structural strength, created a limited area for comfortable occupancy within the unit, solely along the central axis, where residents are able to fully stand up. By eliminating the arched roof and developing a consistent ceiling height, all areas within the small space will be comfortably usable. This design decision will also be beneficial for shelving purposes, as discussed in the following section of this paper.

STORAGE

A desire for storage space within the Conestoga Hut and Bungalow units was the only unexpected major theme that arose during the interviews. The need for storage space is an aspect that can often be overlooked when designing for homeless users, because of the assumption that this population has little to no belongings. However, several interviews with Opportunity Village Eugene residents proved contrary to this belief. For example, one resident pointed out her desperate need for more storage space in the Conestoga Hut because at the time that she moved into the village, she “was going from spending days in the storage unit and then spending only the night on the street.” To this, she added, “[The Conestoga Hut] wasn’t large enough for me to [store] all of my stuff.”

Therefore, utilization of the micro-housing units for storage was a critical issue for some residents who did not come to the village off of the streets or from shelters, and were able to keep with them a large amount of personal items.

Almost every interviewee that discussed storage in the micro-housing units described shelving as an installation that would help to accommodate their storage needs. One resident described how he had built a shelving unit for his Conestoga Hut, while another resident stated that she purchased a rack for the wall in her Bungalow. One organizer similarly mentioned that several residents had installed closet racks inside of the Conestoga Huts and Bungalows to hang clothing and belongings. However, because the village was only in operation for several months at the time of the study, many residents had aspirations for including more storage areas in their homes, but had not yet acted on these plans. For example, one Bungalow resident described her vision to install a half-wall of lattice “just inside the door, on the right, [in order to] put shelves up.” Two other residents stated that they are interested in putting shelving up as well, in both of their Bungalows as a next step in getting settled into their units. Additionally, one of the residents described her own recommendation for a design improvement related to shelving in the Bungalow units. Highly impressed by the flexibility of grocery store racks with movable brackets, she suggested a similar system be installed in the units at Opportunity Village Eugene. “You can take the shelf and just move it up and lock it in. If those were incorporated within the design, it would add so much more versatility with people moving out and moving in [to the unit],” she stated.

In addition to shelves, several residents had furnished their units with wall hutches, plastic storage bins, and small dressers. To best make use of the space, however, the installation of lofts in the Bungalow units was extremely appealing to many residents. One interviewee stated, “originally my [Bungalow] model didn’t come with a loft. I said, ‘This needs a loft. I need more storage.’ So, I got a loft together really quick.” For that resident, the loft is a place where she can easily store her solar generator, baskets, and other items that she does not use often and does not want consuming the little floor area available in her Bungalow. One designer stated that the Bungalow lofts were originally intended for sleeping purposes, and a means to create both a living space and a sleeping space in the units. However, the city of Eugene prohibits residents from using lofts to sleep in because of increased safety hazards. Despite this, many Bungalow residents were eager to have lofts placed in their units to use solely as storage space.



Figure 33: DESK AND LOFT USED FOR STORAGE IN CONESTOGA HUT AND BUNGALOW UNITS

The construction of bed platforms was another aspect that interviewees discussed as a method to create more storage space. One Conestoga Hut resident explained, “Newer Conestogas are coming with a bedframe which is raised so that you can use that storage underneath. That is one of the great modifications they have come up with.” Several residents in Bungalows had followed this lead and constructed their own bed platforms, some high enough to place plastic storage bins below, as a space-saving technique.

Overall, residents applauded the amount of storage space allotted by the Bungalows. One resident, occupying a Conestoga Hut during the time of the study but with intentions to move into a Bungalow, claimed that the units could provide more storage options for users. “I have a micro-business that I am getting started, and the additional space for storage would be nice,” he explained. The Conestoga Huts, however, were found to be in need of improvements to acquire additional storage space. As one resident described, “[the Conestoga Hut] would be a big if improvement if what I was normally doing was living on the street packing everything that I own with me.” Likewise, another resident stated, “It depends on how much baggage you are bringing with you...if it’s just couple of backpacks or whether it’s a carload.”

SUGGESTED DESIGN STRATEGIES

It is evident from this research that storage of personal items is a priority for village residents. However, as previously mentioned, the amount of belongings that homeless individuals maintain through their transitioning phases is often underestimated. According to Ozdeger, “the need for storage is dire among the homeless population, but in most places, if shelters offer storage at all, the units are too small to do much good.”⁵⁴ Assuring that residents have adequate space for their belongings is important to the success of the units in Opportunity Village Eugene. Arlington Street People’s Assistance Network’s Kathy Sibert explains, “It really helps them to move more freely and it gives them a sense of permanence.”⁵⁵ In order to achieve maximum storage in the Conestoga Huts and Bungalows, the following design alternatives and additions are suggested: keeping walls perpendicular to accommodate shelving, utilizing interior roof space for “attic” storage, and including adaptable storage systems.

1. **Keeping walls perpendicular to accommodate shelving.** As mentioned in the previous section on Spatial Characteristics, designs with perpendicular walls appear to be the most efficient method for accommodating fully usable space, and in this case, storage. As one resident commented on the Bungalows as compared to the Conestoga Hut, the perfectly vertical walls instead of “curved walls” allow for easy installation of shelving. Another resident similarly noted that there is more potential to build storage units, or hang shelves properly, on the walls of the Bungalows rather than those of the Conestoga Huts for the same reason. Therefore, it is suggested that in future prototype designs, walls remain perpendicular instead of curved, in order to help residents apply shelving easily, safely, and in as many ways possible. Transforming the overall shape of the Conestoga Hut to achieve these storage goals, however, will require the elimination of the arched roof, as well as the structural properties that the form brings to the unit.

2. **Utilizing interior roof space for “attic” storage.** Installing lofts is a first-step approach to fully utilizing the potential that resides in space provided by the Bungalow roof structure. Since the units at Opportunity Village Eugene are not approved for two-story inhabitation (i.e. sleeping in the loft), a suggestion would be to outfit the upper area of the Bungalow units with a loft level to serve as an “attic” for storage. By manipulating the unused space below the roof of the Bungalows,

54 Marisa Kendall, “More Cities Offer Homeless Free Storage to Ease Mobility,” *USA Today*, last modified November 18, 2010, http://usatoday30.usatoday.com/news/nation/2010-11-18-homelessstorage18_ST_N.html, (accessed July 13, 2014).

55 *Ibid.*

residents will have an additional storage area, without compromising living space on the main floor. Additionally, creating an attic space will also help to heat the Bungalows, because the unit will be composed of a smaller volume of space requiring heat. In contrast, however, the attic space may prohibit additional ventilation that seeps through spaces in the current roof design.

3. **Including adaptable storage systems.** As one resident mentioned, the inclusion of a versatile shelving system in each micro-housing unit would be useful in accommodating a majority of users' storage needs. She referenced supermarket shelf designs as a precedent for such a feature, admiring their adaptability, holding a variety of different sized items. Including an adaptable shelving unit would not only bring storage space for users, it would also bring options for flexibility when different generations of users occupy the unit. For example, the same resident explained this process in relation to the shelf she had built, stating "Maybe two people would move in [to my unit] after me. [But} what I'm doing [with my shelf] is not going to work for two people because I'm making it for me, for one person." She continued to explain that as is, each unit must succumb to various shelving attempts that transition out of the units along with the users, making the units susceptible to additional wear and tear. A simple, yet adaptable, shelving unit would alleviate unnecessary wear and tear, while also providing customized storage options.

PRIVACY

The last theme that arose as a result of this study was privacy. In this category, comments from interviewees described different levels of privacy that were or were not experienced at the village. The discussions of privacy can be broken into two subtopics: noise privacy and personal space. Site context played a key role in creating a lack of noise privacy in the village. Several residents described discomfort with their units' locations because of a proximity to village hot-spots, where noise quickly and easily traveled. For example, one resident explained about her unit placement, "It sucked. I was right next to the community gathering area, and people would like to stop right in front of my Conestoga to hold conversations." She continued to state that the "slamming of the [bath house] door" was an issue that two of her nearby neighbors often complained about. Similarly, a former Conestoga Hut resident described that where her unit was located, "there was a lot of traffic, because it was over by the heart of the village." However, since that resident's move to a Bungalow at the northeast corner of the site, she found comfort in her "fortress of solitude," referencing her new unit location farthest from the village center. Another resident noted that

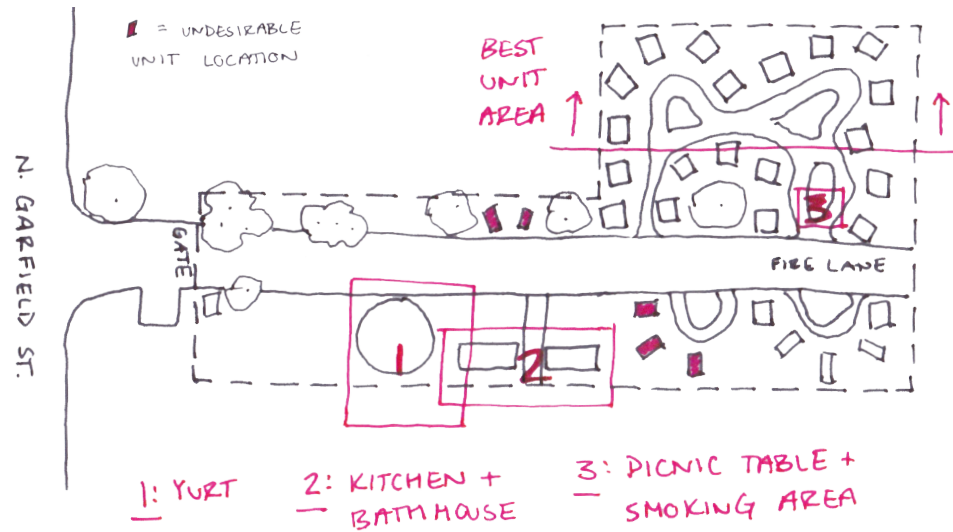


Figure 34: NOISE PRIVACY SKETCH FROM COLLECTIVE INTERVIEWS

the surrounding industrial area also contributes to excessive noise levels in the village. “There is a building behind us,” he explained, “and there’s a lot of work 24 hours a day. It can be very noisy.”

Despite the noise-related privacy issues found in or around village hot-spots and on neighboring parcels, several interviewees did agree that the spacing between dwelling units themselves did not create any privacy issues, noise-related or otherwise. One organizer explained that the village was required to have a minimum of ten feet between each unit, and in order to maximize the number of units at Opportunity Village Eugene, that minimum distance was employed. In response, one resident stated that the space between the units is “perfect,” and that there is “plenty of room” for outdoor manipulation around the unit.

SUGGESTED DESIGN + MANAGEMENT STRATEGIES

Levels of privacy is an important component to consider when designing and locating micro-housing units, and when allocating a site to serve as a transitional village. Privacy within a setting such as this is critical to providing a true feeling of home ownership, and giving residents back their dignity and personal space (key features that many homeless shelters are typically unable to provide). Based on the results of this study, the following are suggested for consideration as methods to augment privacy in Opportunity Village Eugene as well as future transitional villages: placing public and private spaces in designated areas on site, maximizing space between units, and introducing sound-absorbing and sound-deadening strategies.

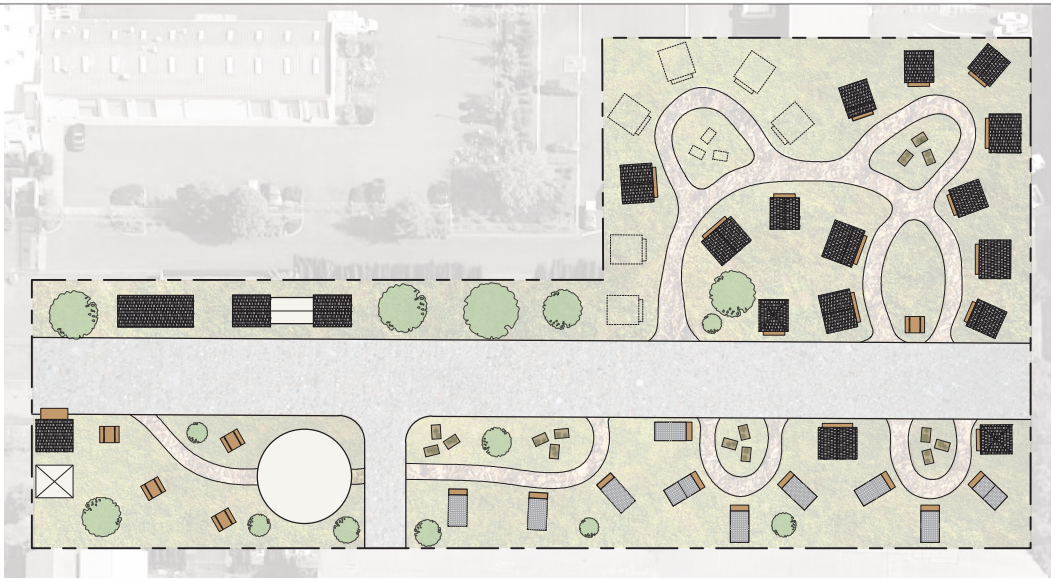


Figure 35: SUGGESTION FOR PRIVACY-CONSCIOUS SITE LAYOUT



1. **Placing public and private spaces in designated areas on site.** The programmatic organization of Opportunity Village Eugene plays a role in the amount of privacy received by its residents. Particularly in response to residents' discussions of village hot-spots as areas of privacy disruption, it is suggested that a larger "buffer zone" be created between the public areas of the village and the private dwelling areas. For example, this could have been achieved at Opportunity Village Eugene, prior to installing plumbing, by making use of dead space between the yurt and the front desk. By shifting these programs forward, specifically the bathhouse and kitchen that can be sources of noise at all hours, space could have been created to generate more privacy for the dwelling units. In place of a buffer zone, another suggestion would be to locate public and private pieces in certain areas of the site based on duration of use and time of use. For example, gathering spaces such as picnic tables or smoking areas should be located in more public-based areas of the site, such as near the main gate or outside of the yurt, where dwellings are not present, and less privacy is required (see Figure 35).

2. **Maximizing space between units.** By providing increased distance between individual units, residents will gain privacy of their own conversations and actions, as well as relief from the surrounding noises of their neighbors. Currently, with Opportunity Village Eugene micro-housing units only spaced ten feet apart, there is noise transfer from unit to unit. As one organizer pointed out, "We had one couple who were just extremely loud at night. So, there are those kinds of privacy issues. A little space [between units] can really help." Therefore, increasing the space between units is suggested as a way to alleviate this privacy issue. However, doing so may require that less

units occupy the site, thus accommodating fewer homeless individuals at the village.

3. **Introducing sound-absorbing and sound-deadening strategies.** Similar to suggestions made for improving thermal comfort, many of the same techniques can improve privacy by absorbing or deadening noise. For example, fully insulating and finishing the walls of the units, particularly the Bungalows, will help to absorb sound from within the units, preventing it from transferring between residences. In addition to this, adding drapes, fabrics, or any type of upholstery will further absorb sound within the units. Sealing the units around window and doors, as well as interior and exterior wall joints will create the same effect. Another suggestion, as mentioned in the discussion on storage, would be the construction of a loft or full ceiling in the Bungalows. This would provide a sound-deadening effect that, while it will still allow for sound transfer, will soften and diminish the full volume of any noise.

MISCELLANEOUS

In addition to the key themes mentioned above, several other minor topics emerged out of the interview discussions that are important to note in an overview of this study. First, the material composition of the Conestoga Hut and Bungalow units was referenced by a handful of interviewees, each commenting on a different aspect of the structures. For example, several of the participants discussed the durability of the units, one mentioning the Conestoga Hut's success at resisting wind and rain, and another describing the sturdiness of the Bungalows, due to its over-structured modular panels (see Figure 36). Despite their durability, several interviewees pointed out shortcomings of the material composition of the units. For example, one organizer stated that the Bungalows, "don't have any real exterior finish. [Therefore,] the plywood could easily rot." Additionally, several interviewees discussed mold problems that the Conestoga Huts are experiencing due to condensation build up in such tightly packed units. As one organizer explains, this is often the result of residents sealing off air vents as a way to keep the cold out of their units.

Aesthetics was a topic addressed several times throughout the interviews, from both positive and negative angles. One organizer spoke highly of the Bungalow design, describing that "It's clean, it's well organized, and it's the kind of thing you wouldn't mind having in your neighborhood. From just that aesthetic viewpoint, I think it looks very attractive." However, in contrast, one resident was not as impressed by the Bungalows' simple design, stating "it's a very boxy structure," and that she had



Figure 36: VIEW OF BUNGALOW INTERIOR STRUCTURE

planned to do many things to visually break up the “boxy” appearance.

Security was a topic that had originally been outlined in the interview guide (see Appendix X). This was a direct result of the literature review revealing its importance to the homeless population as a key feature in transitional housing options. However, in this study, interviewees, other than stating that the lockable doors on units were adequate, rarely discussed security on either a positive or negative note. Because interviewees responded with words such as “good” or “fine” when asked how well the security was at the village, it can be assumed that the village has provided a system that adequately meets residents’ safety needs.

SUMMARY

Interviews and on-site observations provided a breadth of information from which to generate specific suggestions for modifications and improvements to the Conestoga Hut and Bungalow. Formulated out of five key themes that arose, these suggestions reflected of the needs and preferences experienced by those organizing and occupying Opportunity Village Eugene micro-housing units. In addition to suggestions for Opportunity Village Eugene, the five themes discussed similarly provide implications for general micro-housing unit design for transitional villages, as discussed in Chapter 5.

CONCLUSION



“The gap between the classes in which it surges, unseen, unsuspected by the thoughtless, is widening day by day. No tardy enactment by the law, no political expedient, can close it. I know but of one bridge that will carry us over safe, a bridge founded upon justice and built of human hearts.”

- Jacob A. Riis, *How the Other Half Lives*



REVIEW OF FINDINGS

The findings from this study provide design alternatives that can lead to improved user satisfaction in micro-housing prototypes. To summarize, these suggestions for design modification – based on interview feedback, on-site observations and a review of existing literature and prototypes – included:

Thermal Comfort

- Orienting units on site according to solar conditions to increase thermal comfort
- Placing units on site in areas of sun or shade to achieve maximum thermal performance
- Re-locating units throughout the year within the site to areas of sun or shade to similarly achieve maximum thermal performance
- Creating shared-wall multi-units to minimize the number of exposed façades and help control interior temperatures
- Enclosing units at the bottom to similarly help control and maintain interior temperatures
- Finishing the units' interior and exterior to protect unit from exterior conditions and to maintain interior temperatures

Personalization

- Considering personalization abilities during prototype design to ensure future opportunities
- Incorporating personalization regulations into village policy as a means to encourage and enforce personalization efforts
- Providing communal access to tools for unit personalization as a way to inspire and encourage personal expression

Spatial Characteristics

- Creating a seven foot minimum height in the Conestoga Hut to allow for comfortable maneuvering space within the unit
 - Using bed size(s) when determining unit width to ensure adequate space for sleeping and circulating throughout the unit
 - Utilizing non-curvilinear forms in prototype design to maintain consistent ceiling heights and walls
-

Storage

- Keeping walls perpendicular to accommodate shelving in an easy and efficient manner
- Utilizing interior roof space for “attic” storage to maximize storage space within the unit, without impeding on living space
- Including adaptable storage systems to cater to multiple occupant needs

Privacy

- Placing public and private spaces in designated areas on site to control levels of privacy
- Maximizing space between units to increase privacy within each dwelling space
- Introducing sound-absorbing and sound-deadening strategies to augment noise privacy

Although the suggestions above may improve user satisfaction in several aspects, it is important to consider other hidden consequences. For example, as previously mentioned in the discussion on spatial characteristics, raising the Conestoga Hut roof to better accommodate head room will most likely create structural issues with the roof that will directly result in the need to re-configure the overall unit size. In addition to a change in unit size, other consequences may be increased cost and changes in thermal performance. These consequences, of course, will range in severity, and therefore, design decisions should be left to the discretion of village organizers and/or residents to determine which design alternatives will produce the best results and carry the least consequences.

It needs to be noted that, while the use of design alternatives provided in this study can help improve resident satisfaction in micro-housing units, the suggestions may not always be the best option for every village. It is not a goal of this study to provide a list of best practices on micro-housing design in homeless villages, but a list of suggested considerations that arose from the in-depth studies of this project. Similarly, the design options noted do not represent a comprehensive list of all possible alternatives for micro-housing design, but those that represent a direct portrayal of the themes derived from interviews and observations in this study. The results of this study, however, do hold several broader implications for future micro-housing prototypes in transitional village settings.

IMPLICATIONS FOR FUTURE MICRO-HOUSING DESIGN

Several overarching concepts are recommended for consideration when designing future micro-housing prototypes and transitional villages. The core ideas represent critical aspects of successful housing environments that were prevalent in the findings of this study. These key ideas include the importance of thermal comfort, personalization as an expression of ownership, dimensions for human comfort, necessity of storage, and the importance of privacy of personal space.

1. **Thermal Comfort.** The physical health of village residents is a priority when considering the design of living units, therefore, adequate attention to thermal conditions within the units is critical. By implementing successful thermal design strategies, dwellings can accommodate increased resident satisfaction and well-being, ultimately by providing an environment in which users can sleep comfortably, and are not at risk to direct exposure to exterior temperatures. Appropriate thermal conditions can also encourage full and proper body function, allowing users to operate at their best capacity while inhabiting their micro-home.

Challenges to achieving thermal comfort in micro-housing units in transitional villages primarily include cost and site location. Due to financial restrictions in a transitional village setting, where residents often pay little to no rent on the homes (residents of Opportunity Village Eugene pay \$30 per month for utilities, only), the micro-housing units must be designed and constructed in a budget-friendly manner. This means that luxuries of insulation, exterior cladding, air vents, etc., may not always be available, and thermal comfort may not be entirely solved by unit design and construction. Similarly, the location of the villages creates a challenge when striving to achieve thermal comfort in the units. This includes location related to surrounding context, as well as location related to climate. For example, surrounding site context created thermal challenges for Opportunity Village Eugene where adjacent buildings cast significant shadows onto several of the micro-housing units. With a small site, there were few opportunities to relocate these units to accommodate the need for sun during winter months. However, Opportunity Village Eugene is located in an area of relatively moderate climate, so the overall thermal comfort issues were less threatening, compared to villages that may form in harsher climates. Where villages develop in areas of extreme warm or cold temperatures, achieving thermal comfort can be an immense, but essential, challenge to overcome.

In lieu of these challenges, thermal comfort is best achieved by manipulating prototype design strategies and site placement. Minor design changes, such as grouping units together, or enclosing and sealing individual units, can lead to increased thermal comfort because of a stabilization of interior temperatures. Similarly, locating units on a site according to solar orientation, and in desired areas of sun or shade, can provide opportunities for achieving increased thermal comfort.

2. **Personalization as an Expression of Ownership.** Displays of self not only provide psychological comforts and reminders of home to residents, but they communicate a statement of claim over an item. By allowing for the personalization of space in village micro-housing units, individuals are given an opportunity to express their ownership over a personal space, even if it is only temporary. This is a simple aspect of home ownership that has most likely been lacking in lives of many homeless individuals, if they come to a village from living on the street or in local shelters.

The primary challenge to the personalization of micro-housing units is the residents' lack of physical and financial access to home modification tools. Because of the transient nature of homeless individuals, the amount of belongings they carry with them is limited, and often made up of sentimental or personal items. Therefore, it is unlikely that residents of a village will have access to or ownership over tools needed for personalization, such as a hammer, brushes, hardware, etc.

A second challenge to personalizing units within a transitional village is the creation of units that have the ability to be customized. While several prototypes of various transitional villages are constructing a fully packaged micro-home for each resident, such as at Quixote Village in Washington, or OM Village in Michigan, an ability to show ownership through self-expression is lost because units come with pre-determined finishes and interior installments. Although this may provide instant gratification for residents, it can eliminate identity throughout the village.

Personalization of micro-housing units can be achieved through many strategies, however, two important methods that were identified in this study include the monitoring and encouragement of personalization through village policies, and the establishment of a community tool area, where residents can borrow equipment and items necessary to make their home modifications.

3. **Dimensions for Human Comfort.** The ability to comfortably use and maneuver through a space is an important aspect in creating a successful living environment. Micro-housing units, though intended to be small in size, need to be large enough to accommodate an average individual standing, with adequate head room. In width, the units must be able to contain a sleeping area that leaves ample space for movement along at least one side. Without generous dimensions inside of micro-housing units, users are susceptible to unpleasantities such as frequent crouching or banging of the head, scenarios that could potentially lead to injury, not only discomfort.

Achieving an adequate size for micro-housing units in a transitional village can be challenging when materials are limited to donations and small budgets, however, another challenging aspect is to not be able to use the space in a comfortable manner. For example, in the Conestoga Huts, both the door heights and ceiling heights require a user to crouch and bend when moving about the space. Similarly, the curved walls add to this problem. The small footprint of the Conestoga Hut also presents a challenge in maneuvering through the space once a bed is introduced into the unit. Together, these size-related issues affect overall comfort with the units.

To achieve sufficient dimensions in micro-housing units, designers must employ non-curvilinear forms if they are close to areas of occupancy, as well as minimum height and width dimensions. At a minimum, door and ceiling heights should be seven feet, the average height of a doorway. This will accommodate a majority of adults in a standing position, however, more headroom can be beneficial. In width, bed sizes should be considered in the design, so that ample space is included alongside for maneuvering through the unit.

4. **Storage as Necessity, not Luxury.** While the inclusion of storage space may seem like a generous notion, it should not be an afterthought in transitional housing design. Homeless individuals often carry with them more belongings than the spaces in which they are temporarily housed can accommodate. This is often problematic in homeless shelters, where users may be allotted minimal storage space, but not the security of their items. As Ozdeger stated, “the need for storage space is dire among the homeless population, but in most places, if shelters offer storage at all, the units are too small to do much good.”⁵⁶ This can deeply affect homeless individuals that

56 Marisa Kendall, “More Cities Offer Homeless Free Storage to Ease Mobility,” *USA Today*, last modified November 18, 2010, http://usatoday30.usatoday.com/news/nation/2010-11-18-homelessstorage18_ST_N.html, (accessed July 13, 2014).

are trying to make progress in finding employment, or housing, when they often have to repeatedly start from scratch should their belongings go missing. By providing storage space, Fish stated, “the goal is to give people a place to keep belongings safe from theft and bad weather while they go to appointments or job interview.”⁵⁷ Similarly, efforts made to protect their personal items, and stress over finding a safe location for their belongings, can affect other critical efforts, such as job searching. Since the micro-housing units provide a rare opportunity in which residents have ownership over a private space, storage options must be included in design.

Storage in micro-housing units becomes a challenge when the interior form of the unit is not conducive to store-bought shelves, or when interior space is not used to its maximum potential. For example, the curvilinear shell of the Conestoga Hut was problematic for many users as they tried to hang shelving from walls that were not vertical. This resulted in an inability to mount shelving (doing so would create hazards of items falling), and a lack of storage space within the unit. Similarly, with the Bungalows, a large volume of unused space existed in the area below the roof remained empty while storage consumed circulation and living space. On several occasions, lofts were constructed in part of these spaces, and used for storage.

Storage within micro-housing units can be made possible through a variety of strategies. As was done with many Bungalows, loft installments made intelligent use of the area below the roof for storage. This design could similarly be expanded into a full “attic” space to create more storage area. Creating unit designs without curvilinear features would similarly allow for more storage space by accommodating shelving along the full length of walls. Additionally, the inclusion of an adaptable shelving unit that provides flexibility in use and can transition through users along with the micro-housing unit, would be beneficial.

5. **Privacy of Personal Space.** Like storage, access to privacy is infrequently found in homeless shelters. Micro-housing village design allows for significant improvement in privacy of personal space for homeless individuals, and is an important aspect to consider when designing living units as well as village layouts. Privacy can be a great restorer of human dignity, especially for homeless individuals, who have been fully exposed on the streets or in shelters with constantly-shared

57 Marisa Kendall, “More Cities Offer Homeless Free Storage to Ease Mobility,” *USA Today*, last modified November 18, 2010, http://usatoday30.usatoday.com/news/nation/2010-11-18-homelessstorage18_ST_N.html, (accessed July 13, 2014).

spaces. By utilizing a micro-housing scheme, privacy is automatically instilled in users' experiences because of ownership over individual units.

Privacy is a challenge for most transitional housing environments, because of the closeness of living quarters and unfamiliarity of users. With micro-housing, privacy becomes an issue when units are intermixed with public areas, spaced too closely to each other, and when material selections do not contribute to sound privacy.

Simple steps can be taken to augment privacy levels throughout the village and within units. From a management standpoint, privacy will increase with proper village layouts, ensuring the separation of public and private areas to create different zones of privacy. Additionally, maximizing the space between living units can similarly increase privacy within each unit. The utilization of acoustic-friendly materials, whether by village policy during unit construction or by individual residents after move-in, can also help to absorb or deaden sound within units, ultimately making them more private.

CHALLENGES + LIMITATIONS

It is important to note the challenges and limitations of this work when taking a comprehensive look at the results and recommendations, keeping in mind which factors may have influenced the data collected. The challenges and limitations are also critical to consider in the planning of a similar study, where an understanding of these obstacles can help to better execute future explorations. These challenges include the time-frame in which the study was conducted, climate of the study location, and engagement of participants.

TIME-FRAME

One of the first limitations of this study was the time-frame in which it was conducted, particularly related to the duration of the visit. The five-day span of research was limiting for several reasons. The five-day study was selected on a basis of affordability issues for the researcher, and allotted three weekdays and two weekend days for research. The different days created different social scenarios within the village, thus, different access to residents. During the weekend days, more residents were present at the village, and able to be approached for interviews. In contrast, during the weekdays, a majority of the residents were not on-site, and those that were had been

preoccupied with personal duties. The daily routine of residents was learned upon arrival at the village, therefore research was limited to the pre-arranged dates of the visit. This would have been less of a challenge if the selected site was not at such a distance from the researcher's location, and multiple site visits could have occurred. Additionally, the research was conducted solely between hours of 9am - 5pm, which was a highly inactive time at the village, as most residents were working, at the library, etc. Because of this, fewer residents were available to participate in the study. Also, because of the transient nature of the village residents, this was a population that was not easily accessible prior to the visit to Opportunity Village Eugene, therefore resident participation had to be found at the time of the visit.

WEATHER + CLIMATE

A second challenge of this study, that also served as a limitation, was the climate of Eugene, Oregon. In this study, climate was both an indicator of architectural strategies used in micro-housing construction, as well as a factor that affected the research process. Located on the western side of the state, the city of Eugene has an average yearly temperature of 54 degrees Fahrenheit.⁵⁸ During the winter months, Eugene's temperature drops into the low 30s, and hovers in the mid-70s to 80s in the summer.⁵⁹ Like its notorious neighboring city of Portland, Eugene sees a significant amount of rain between the months of October and May, combined with heavy fogs that settle low to the ground. The wet, but moderate, climate in Eugene influenced the content of interview conversations, as participants could only speak on behalf of the prototypes as they operated in Eugene's climate. For example, many interviewees reported a large amount of cold weather and moisture-related design needs. This aspect limits some of the applicability of the study's results to prototypes in other areas of the country, where different climates will dictate different thermal needs.

Similarly, conducted during the last week in January, the study fell during the middle of Eugene's cold season, where a majority of interviewees were highly focused on thermal comfort and other cold weather needs. To counter-balance this, a strategy would be to conduct the study again during warmer months to determine if the same issues are highlighted, or if other pertinent issues arise based on warm weather conditions.

58 "Eugene Weather and When to Go," Trip Advisor, <http://www.tripadvisor.com/Travel-g51862-s208/Eugene:Oregon:Weather.And.When.To.Go.html>

59 *Ibid.*

The weather experienced in Eugene during the time of the study also presented a challenge simply in terms of resident accessibility. Rain-filled days during the course of the study created difficulties in the scouting of participants at the village, as most residents remained either in their homes, or somewhere dry outside of the village. Perhaps because of this, fewer residents were able to be recruited for the study than were originally anticipated.

ENGAGING PARTICIPANTS

A final challenge encountered during this study was related to the engagement of participants. Specifically with village residents, it was difficult to push interviewees to think deeply about interview questions, particularly related to what changes they would like to see in the micro-housing units. This was first apparent when residents would respond to interview questions with answers such as “good,” “fine,” or “okay,” when it was anticipated that participants would expand into further explanation. For example, research from the literature review yielded information on the importance of security of belongings, an aspect of transitional housing that most homeless individuals are not familiar with. However, this topic was scarcely touched upon by interviewees, other than acknowledging that the units’ lockable doors were secure. Techniques for probing interviewees for more explanation would have been beneficial to collecting a deeper understanding of what made the units in this study successful, or what unsuccessful situations residents may have encountered in the past. Overall, greater resident feedback would have contributed to the pool of information gathered about micro-housing units, and the needs and preferences of individuals living in them.

In addition to the challenge of obtaining further explanation for responses, it was difficult to encourage residents to think in an ideal manner about their homes or simply beyond the “here and now” aspects they were dealing with at the time of the study. This may have been the result of several factors, including the interviewees level of interest, concern for present conditions as opposed to ideal conditions, or the researcher’s first experience interviewing such a population. Although the conversations provided significant feedback on the prototype designs, it could have been useful to gain information on what residents would like to see the units as in an ideal scenario. This could help lead to clues as to aspects of the home environment that are most important to homeless individuals in transitional housing. This may have been achieved with the use of various tools to help generate ideas for prototype design changes. For example, images of various other

micro-housing designs could have been used to gather resident opinions on what looked “good” or “not good,” from their perspectives as users. Similarly, exercises that encouraged residents to sketch or write about their ideal home, could have helped stimulate residents’ thoughts on their housing units.

MOVING FORWARD

Based on the experiences encountered throughout the course of this project, the following items are recommended as improvements or changes:

- Selecting a study location that is easily accessible to the researcher; ensuring that multiple visits can be made if needed
- Conducting the study at multiple points in time, providing feedback during different seasons
- Bringing innovative strategies to interviews that can probe residents for additional responses; i.e. photos of similar housing projects, sketch paper for residents to communicate ideal conditions
- Approaching potential resident participants in a more personal manner; i.e. “Do you have a moment to chat about your home?,” so as not to intimidate them with the study

APPLICATION OF FINDINGS

The information resulting from this study can be useful in a variety of ways. First, the feedback specific to the Conestoga Huts and Bungalows can be used to modify and improve the designs in ways that will increase user satisfaction and comfort at Opportunity Village Eugene. As the village potentially moves from a pilot project to a full-fledged community in the Fall of 2014, residents and/or village organizers can implement a majority of the design and management suggestions made in this report.

Secondly, the results provide useful information in which to assess micro-housing prototypes located in similar transitional villages. The feedback from interviewees, and subsequent design suggestions, may be valuable to other village locations experiencing related conditions. These villages can use the key themes developed in this study to compare, evaluate, and improve their own micro-housing prototypes.

Thirdly, with little research devoted to the evaluation of micro-housing units in transitional villages, this study opens a new avenue for inquiry and progress in this area of study. Ideally, the results of this study can contribute to the creation of knowledge on micro-housing units for homeless residents and the development of a comprehensive set of design guidelines for the transitional village living environment. Though a large number of additional studies are needed to conceive such a guide, this study, along with several others, sets the stage to begin this process. Hopefully, an added benefit of this study is its ability to evoke interest in such a form of transitional housing, thus resulting in future studies.

Lastly, at its broadest scale, the results of this study contribute valuable information to consider when designing any type of transitional housing environment, not solely micro-housing villages. The key themes that emerged throughout this study, such as thermal comfort, privacy, and storage, are critical aspects to include when accommodating homeless users in transitional villages, however, they are also concepts that can be applied to housing design in any transitional setting for the homeless. The themes discovered in this study are particularly effective in contributing information to transitional housing design because of the unique perspective from which they developed. By offering suggestions that are heavily based on resident feedback, the design proposals speak directly to the needs and preferences of the homeless users. This not only gives homeless residents a voice, but offers a valuable perspective from which to appropriately design homes.

TRANSITIONAL MICRO-HOUSING VILLAGES: AN EMERGING TYPOLOGY

The results of this study have a range of implications from which further investigation can commence. As the “tiny housing first” approach continues to develop as a strategy for transitional homeless housing, the findings here can provide a solid basis for understanding the criteria from which to evaluate micro-housing prototypes, and a realization of key design components from both a design and management perspective. Ultimately, a deeper understanding of how to design micro-housing units for people who are otherwise house-less can contribute to increased user satisfaction, comfort, and eventual transition into permanent housing.

However, when moving forward, an important factor must be considered before the application of this, and other research. Ultimately, the work completed in this thesis raises the question of success of micro-housing units in a transitional village setting. Factors that determine the success

of such units can be looked at from variety of perspectives, such as those from users, organizers, city officials, designers, etc. Therefore, "success" can range from the design and implementation of units that are highly durable and encourage users to stay longer, to those that are flexible to new users and accept change more readily. As a result of this range in perspectives, the design and management strategies used for the micro-housing units will similarly range as they cater to the different goals of the villages in which they exist. As the goals for micro-housing units in this setting become more defined, design and management strategies will contribute to the emerging typology of the transitional micro-housing village.

APPENDIX A





APPENDIX B



Unit 1 | Conestoga Hut



Unit 2 | Conestoga Hut



Unit 3 | Conestoga Hut



Unit 4 | Conestoga Hut



Unit 5 | "Chalet" Bungalow



Unit 6 | Conestoga Hut



Unit 7 | Conestoga Hut



Unit 8 | Conestoga Hut
*Home of interview resident, R1



Unit 9 | "Pagoda" Bungalow



Unit 10 | "Pagoda" Bungalow



Unit 11 | "Chalet" Bungalow



Unit 12 | "Lean-To" Bungalow



Unit 13 | "Budget" Bungalow



Unit 14 | "Lean-To" Bungalow



Unit 15 | "Budget" Bungalow



Unit 16 | "Chalet" Bungalow
*Home of interview resident, R3



Unit 17 | "Chalet" Bungalow



Unit 18 | "Budget" Bungalow
*Home of interview resident, R4



Unit 19 | "Lean-To" Bungalow



Unit 20 | "Chalet" Bungalow



Unit 21 | "Chalet" Bungalow
*Home of interview resident, R6



Unit 22 | "Chalet" Bungalow



Unit 23 | Conestoga Hut
*Home of interview resident, R2



Unit 24 | Conestoga Hut

APPENDIX C

UNIVERSITY AT BUFFALO, STATE UNIVERSITY OF NEW YORK
“Analyzing Transitional Dwellings of Opportunity Village Eugene”

Informed Consent Document – Group One: Opportunity Village Eugene Dwelling Designers

Version Date: 11/25/13

Research Project: Analyzing Transitional Dwellings of Opportunity Village Eugene
As a part of:
Master of Architecture Thesis
University at Buffalo, Department of Architecture

Primary Investigator: Kristen Gabriele

Research Advisor: Dr. Korydon Smith, Associate Professor of Architecture
University at Buffalo, Department of Architecture

This consent form explains the research study. Please read it carefully. Ask questions about anything you do not understand. If you do not have questions right now, you should ask them later if any come up.

PURPOSE:

You are invited to participate in a research project on Opportunity Village Eugene. The purpose of this project is to create new knowledge about a relatively new phenomenon across the United States, the Transitional Village, and to analyze the designs of living structures within these communities. The results of this study should assist in gaining a better understanding of the micro-housing structures in Opportunity Village Eugene: what works well, and what could be changed. These results will help to develop design suggestions and recommendations for micro-housing structures in existing or future communities similar to Opportunity Village Eugene.

PROCEDURE:

If you agree to be a part of this study, you would be interviewed either over the phone or at a mutually agreed upon location, and asked to provide your thoughts and knowledge related to the micro-housing prototype you designed that exists in Opportunity Village Eugene. (For example, Where did the design inspirations come from? Were Opportunity Village Eugene residents or homeless individuals included in your design process? What changes might you make to improve the prototypes?). You are free not to answer any questions you do not wish to answer. You may withdraw from the study at any time. Just let your interviewer know that you no longer wish to continue with the interview. Withdrawing would have no foreseeable negative effects.

This session will take about 30-45 minutes, and will be audiotaped in order to keep an accurate record of your comments. The interview data, including tapes and transcribed information from the interview, will be stored in a secure, locked cabinet that is accessible only to the researcher. Tapes and transcribed interview data will be destroyed by July 1, 2014 unless you request the audiotape containing your interview to be destroyed at an earlier date. The research findings from these interviews may be used in scholarly journals, book chapters, periodicals, other publications, and/or presented at conferences. The final project may also be shared with community organizations or researchers with similar interests in evaluating the Transitional Village model.

There are no known risks involved with participating in this study. Though your identity will be known to the researcher, no information will be published without your permission, or will be portrayed in a semi-identifiable way (such as “Designer A”). There are no anticipated benefits to you for participating in this study, but the study will assist in broadening existing research on transitional village micro-housing design. You will not be compensated for your participation in this study, and your participation in this study would be completely voluntary. Your refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled. You do not have to

answer every question and may refuse to answer any questions that you do not want to answer. You may withdraw from the study at any time by contacting the investigator and all data that can still be identifiably attributed to you will be withdrawn. You will be given a copy of this consent document.

In order to monitor this research study, representatives from federal agencies such as NIH (National Institutes of Health) and OHRP (Office of Human Research Protection) or representatives from the UB Human Research Protections Program may inspect the research records. This may reveal your identity.

FOR QUESTIONS ABOUT RESEARCH, CONTACT:

Any questions, concerns or complaints that you may have about this study can be answered by Kristen Gabriele (XXX) XXX-XXXX or XXX@buffalo.edu, or her faculty sponsor, Dr. Korydon Smith, who can be reached at (XXX) XXX-XXXX or XXX@buffalo.edu.

If you have any questions about your rights as a subject in a research project, or questions, concerns or complaints about the research and wish to speak with someone unaffiliated with the project, you can contact (anonymously, if you wish) the Social and Behavioral Sciences Institutional Review Board, at 515 Capen Hall, University at Buffalo, Buffalo, NY 14260, by phone at (XXX) XXX-XXXX or by email at XXX@research.buffalo.edu.

If you are willing to be a part of this research project, please sign and date the following agreement.

I have read the explanation provided to me. I have had all my questions answered to my satisfaction, and I voluntarily agree to participate in this study.

Name of Participant

Signature and Date (mm/dd/yy)

I give my consent to be audiotaped during this study.

Please initial: ___ Yes ___ No

I give my consent to allow photos to be taken of my workspace and prototype designs.

Please initial: ___ Yes ___ No

I certify that the nature and purpose, the potential benefits and possible risks associated with participation in this research study have been explained to the above individual and that any questions about this information have been answered. A copy of this consent will be given to the participant.

Name of Person Obtaining Consent

Signature and Date (mm/dd/yy)

APPENDIX D

UNIVERSITY AT BUFFALO, STATE UNIVERSITY OF NEW YORK
“Analyzing Transitional Dwellings of Opportunity Village Eugene”
Informed Consent Document – Group Two: Opportunity Village Eugene Organizers
Version Date: 11/25/13

Research Project: Analyzing Transitional Dwellings of Opportunity Village Eugene
As a part of:
Master of Architecture Thesis
University at Buffalo, Department of Architecture

Primary Investigator: Kristen Gabriele

Research Advisor: Dr. Korydon Smith, Associate Professor of Architecture
University at Buffalo, Department of Architecture

This consent form explains the research study. Please read it carefully. Ask questions about anything you do not understand. If you do not have questions right now, you should ask them later if any come up.

PURPOSE:

You are invited to participate in a research project on Opportunity Village Eugene. The purpose of this project is to create new knowledge about a relatively new phenomenon across the United States, the Transitional Village, and to analyze the designs of living structures within these communities. The results of this study should assist in gaining a better understanding of the micro-housing structures in Opportunity Village Eugene: what works well, and what could be changed. These results will help to develop design suggestions and recommendations for micro-housing structures in existing or future communities similar to Opportunity Village Eugene.

PROCEDURE:

If you agree to be a part of this study, you would be interviewed either over the phone or at a mutually agreed upon location, and asked to provide your thoughts and knowledge related to the micro-housing prototypes in Opportunity Village Eugene. (For example, How well do these prototypes accommodate resident needs? What changes might you make to improve the prototypes?). You are free not to answer any questions you do not wish to answer. You may withdraw from the study at any time. Just let your interviewer know that you no longer wish to continue with the interview. Withdrawing would have no foreseeable negative effects.

This session will take about 30-45 minutes, and will be audiotaped in order to keep an accurate record of your comments. The interview data, including tapes and transcribed information from the interview, will be stored in a secure, locked cabinet that is accessible only to the researcher. Tapes and transcribed interview data will be destroyed by July 1, 2014 unless you request the audiotape containing your interview to be destroyed at an earlier date. The research findings from these interviews may be used in scholarly journals, book chapters, periodicals, other publications, and/or presented at conferences. The final project may also be shared with community organizations or researchers with similar interests in evaluating the Transitional Village model.

There are no known risks involved with participating in this study. Though your identity will be known to the researcher, no information will be published without your permission, or will be portrayed in a semi-identifiable way (such as “Organizer A”). There are no anticipated benefits to you for participating in this study, but the study will assist in broadening existing research on transitional village micro-housing design. You will not be compensated for your participation in this study, and your participation in this study would be completely voluntary. Your refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled. You do not have to answer every question and may refuse to answer any questions that you do not want to answer. You may withdraw

from the study at any time by contacting the investigator and all data that can still be identifiably attributed to you will be withdrawn. You will be given a copy of this consent document.

In order to monitor this research study, representatives from federal agencies such as NIH (National Institutes of Health) and OHRP (Office of Human Research Protection) or representatives from the UB Human Research Protections Program may inspect the research records. This may reveal your identity.

FOR QUESTIONS ABOUT RESEARCH, CONTACT:

Any questions, concerns or complaints that you may have about this study can be answered by Kristen Gabriele (XXX) XXX-XXXX or XXX@buffalo.edu, or her faculty sponsor, Dr. Korydon Smith, who can be reached at (XXX) XXX-XXXX or XXX@buffalo.edu.

If you have any questions about your rights as a subject in a research project, or questions, concerns or complaints about the research and wish to speak with someone unaffiliated with the project, you can contact (anonymously, if you wish) the Social and Behavioral Sciences Institutional Review Board, at 515 Capen Hall, University at Buffalo, Buffalo, NY 14260, by phone at (XXX) XXX-XXXX or by email at XXX@research.buffalo.edu.

If you are willing to be a part of this research project, please sign and date the following agreement.

I have read the explanation provided to me. I have had all my questions answered to my satisfaction, and I voluntarily agree to participate in this study.

Name of Participant

Signature and Date (mm/dd/yy)

I give my consent to be audiotaped during this study.

Please initial: ___ Yes ___ No

I certify that the nature and purpose, the potential benefits and possible risks associated with participation in this research study have been explained to the above individual and that any questions about this information have been answered. A copy of this consent will be given to the participant.

Name of Person Obtaining Consent

Signature and Date (mm/dd/yy)

APPENDIX E

UNIVERSITY AT BUFFALO, STATE UNIVERSITY OF NEW YORK
“Analyzing Transitional Dwellings of Opportunity Village Eugene”
Informed Consent Document – Group Three: Opportunity Village Eugene Residents
Version Date: 11/25/13

Research Project: Analyzing Transitional Dwellings of Opportunity Village Eugene
As a part of:
Master of Architecture Thesis
University at Buffalo, Department of Architecture

Primary Investigator: Kristen Gabriele

Research Advisor: Dr. Korydon Smith, Associate Professor of Architecture
University at Buffalo, Department of Architecture

This consent form explains the research study. Please read it carefully. Ask questions about anything you do not understand. If you do not have questions right now, you should ask them later if any come up.

PURPOSE:

You are invited to participate in a research project on Opportunity Village Eugene. The purpose of this project is to create new knowledge about a relatively new phenomenon across the United States, the Transitional Village, and to analyze the designs of living structures within these communities. The results of this study should assist in gaining a better understanding of the micro-housing structures in Opportunity Village Eugene: what works well, and what could be changed. These results will help to develop design suggestions and recommendations for micro-housing structures in existing or future communities similar to Opportunity Village Eugene.

PROCEDURE:

If you agree to be a part of this study, you would be interviewed at Opportunity Village Eugene, and asked to provide your thoughts and experiences related to your home in Opportunity Village Eugene. (For example, How well does your home accommodate your needs? What changes might you make to improve it?). You are free not to answer any questions you do not wish to answer. You may withdraw from the study at any time. Just let your interviewer know that you no longer wish to continue with the interview. Withdrawing would have no foreseeable negative effects.

This session will take about 20-30 minutes, and will be audiotaped in order to keep an accurate record of your comments. There are no known risks involved with participating in this study, and your identity in no way will be related to this study. The interview data, including tapes and transcribed information from the interview, will be stored in a secure, locked cabinet that is accessible only to the researcher. Tapes and transcribed interview data will be destroyed by July 1, 2014 unless you request the audiotape containing your interview to be destroyed at an earlier date. The research findings from these interviews may be used in scholarly journals, book chapters, periodicals, other publications, and/or presented at conferences. The final project may also be shared with community organizations or researchers with similar interests in evaluating the Transitional Village model. There are no anticipated benefits to you for participating in this study, but the study will assist in broadening existing research on transitional village micro-housing design.

You will not be compensated for your participation in this study, and your participation in this study would be completely voluntary. Your refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled as a resident of Opportunity Village Eugene. You do not have to answer every question and may refuse to answer any questions that you do not want to answer. You may withdraw from the study at any time by

contacting the investigator and all data that can still be identifiably attributed to you will be withdrawn. You will be given a copy of this consent document in order to monitor this research study, representatives from federal agencies such as NIH (National Institutes of Health) and OHRP (Office of Human Research Protection) or representatives from the UB Human Research Protections Program may inspect the research records. This may reveal your identity.

FOR QUESTIONS ABOUT RESEARCH, CONTACT:

Any questions, concerns or complaints that you may have about this study can be answered by Kristen Gabriele (XXX) XXX-XXXX or XXX@buffalo.edu, or her faculty sponsor, Dr. Korydon Smith, who can be reached at (XXX) XXX-XXXX or XXX@buffalo.edu.

If you have any questions about your rights as a subject in a research project, or questions, concerns or complaints about the research and wish to speak with someone unaffiliated with the project, you can contact (anonymously, if you wish) the Social and Behavioral Sciences Institutional Review Board, at 515 Capen Hall, University at Buffalo, Buffalo, NY 14260, by phone at (XXX) XXX-XXXX or by email at XXX@research.buffalo.edu.

If you are willing to be a part of this research project, please sign and date the following agreement.

I have read the explanation provided to me. I have had all my questions answered to my satisfaction, and I voluntarily agree to participate in this study.

Name of Participant

Signature and Date (mm/dd/yy)

I give my consent to be audiotaped during this study.

Please initial: ___ Yes ___ No

I give my consent to allow photos to be taken of my home.

Please initial: ___ Yes ___ No

I certify that the nature and purpose, the potential benefits and possible risks associated with participation in this research study have been explained to the above individual and that any questions about this information have been answered. A copy of this consent will be given to the participant.

Name of Person Obtaining Consent

Signature and Date (mm/dd/yy)

APPENDIX F

INTERVIEW QUESTION GUIDE Group One: Opportunity Village Eugene Dwelling Designers

1. What first inspired you to design the micro-housing prototype?
2. Was Opportunity Village or the homeless population the intended users for the prototype?
 - A. If yes, were prospective residents involved in the design process?
 - i. If yes, what methods were used to involve them?
 - ii. If not, why, and how were their needs assessed and/or understood?
 - B. If not, who is the intended user for the prototype?
 - i. Have changes or modifications been made in order to accommodate Opportunity Village residents or the general homeless population as alternate users?
3. Can you describe the prototype according to:
 - A. Methods of construction
 - B. Materials required
 - C. Duration/length of construction
 - D. Cost of construction
 - E. Amount of laborers needed
 - F. Skill level of laborers
 - G. Tools necessary for construction
4. Can you describe the design decisions that were made in order to incorporate the following:
 - H. Size
 - I. Durability
 - J. Customization
 - K. Security
 - L. Aesthetics
 - M. Insulation/Ventilation
 - N. Orientation/Context
5. How many prototypes have been constructed to date?
6. Do you foresee the prototype being successful in areas outside of Eugene, Oregon? If so, how would it need to be modified?
7. What changes, if any, would you make to the existing prototype design?
8. Do you have anything else you would like to add?
9. How would you prefer to be identified in this report?

APPENDIX G

INTERVIEW QUESTION GUIDE Group Two: Opportunity Village Eugene Organizers

1. What was your original vision for micro-housing prototypes in Opportunity Village Eugene?
2. Why were Bungalows/Conestoga Huts chosen as dwellings?
3. Can you describe each prototype according to:
 - A. Methods of construction
 - B. Materials required
 - C. Duration/length of construction
 - D. Cost of construction
 - E. Amount of laborers needed
 - F. Skill levels of laborers
 - G. Access to necessary materials
 - H. Tools necessary for construction
4. Can you describe your thoughts/opinions on the appropriateness of the following for each prototype design:
 - A. Size
 - B. Durability
 - C. Customization
 - D. Security
 - E. Aesthetics
 - F. Insulation/Ventilation
 - G. Orientation/Context
5. Do you foresee these prototypes being used in future transitional village models in areas outside of Eugene, Oregon? If so, how would each prototype need to be modified?
6. What changes, if any, would you make to the existing prototype designs?
7. Do you have anything else you would like to add?
8. How would you prefer to be identified in this report?

APPENDIX H

INTERVIEW QUESTION GUIDE Group Three: Opportunity Village Eugene Residents

1. How long have you lived at Opportunity Village Eugene?
2. Has this been your home throughout your stay at Opportunity Village Eugene?
3. Overall, how well does your home accommodate your needs relative to the following:
 - A. Size
 - B. Durability
 - C. Customization
 - D. Security
 - E. Aesthetics
 - F. Insulation/Ventilation
 - G. Orientation/Context
4. What changes have you made to your home?
5. What changes, if any, would you make to the existing design of your home?
6. Do you have anything else you would like to add?

APPENDIX I




Interview Questions	Designers	Organizers	Residents
How did the Opportunity Village Eugene project get started?		✓	
What first inspired you to design the micro-housing prototype?	✓		
Was Opportunity Village or the homeless population the intended users for the prototype?	✓		
Can you describe the prototype(s) according to: Methods of construction, Materials required, Duration/length of construction, Cost of construction, Amount of laborers needed, Skill level of laborers, Tools necessary for construction?	✓	✓	
Can you describe your thoughts and comments on the micro-housing prototype according to the following: Size, Durability, Adaptability, Security, Aesthetics, Insulation/Ventilation, and Orientation?	✓	✓	✓
How many prototypes have been constructed to date?	✓		
Do you foresee the prototype being successful in areas outside of Eugene, Oregon? If so, how would it need to be modified?	✓	✓	
What changes, if any, would you make to the existing prototype design?	✓	✓	✓
What was your original vision for micro-housing prototypes in Opportunity Village Eugene?		✓	
Why were Bungalows/Conestoga Huts chosen as dwellings?		✓	
How long have you lived at Opportunity Village Eugene?			✓
Has this been your home throughout your stay at Opportunity Village Eugene?			✓
What changes have you made to your home?			✓
Do you have anything else you would like to add?	✓	✓	✓

APPENDIX J

SUGGESTED/ANTICIPATED CHANGES	CHANGES MADE
<p>(R1) Cannot use electric or propane - heat source would be useful</p> <p>(R1) Rainscreen to keep heat in (currently in the works)</p> <p>(D1) Paint, insulate, put in loft, finish roof</p> <p>(O1) Each person gets to decorate their own</p> <p>(R1) Hanging shelf for storage that attaches to interior beams</p> <p>(R2) Loft for sleeping on air mattress</p> <p>(R2) Bed that folds out from wall to save on space</p> <p>(R3) Vertical walls for ease of hanging shelves, etc.</p> <p>(R3) Garden space around outside of unit</p> <p>(R4) Build loft</p> <p>(R4) Install shelving</p> <p>(R4) An adaptable shelf that can be used by different residents</p> <p>(R4) Visually break up the “boxy” appearance of outside walls</p> <p>(R4) Install planter boxes under windows</p> <p>(R4) Side tarp extension adjacent to unit for outdoor seating</p> <p>(R4) Front awning/porch</p> <p>(R6) Less options for decoration/storage because of curved walls</p> <p>(R2) Could be wider</p> <p>(R2) Could be higher, easily hits head on door frame going in and out</p> <p>(R4) Would make this taller, can only stand up in the center now</p>	<p>(O2) Residents use heated bags of rice to warm their beds</p> <p>(R1) Body heat does the most work</p> <p>(R2) Body heat comes into play the most</p> <p>(R2) Woman with 2 dogs stays warmest</p> <p>(R2) Hung curtains from interior beams</p> <p>(R2) Put bed in center between curtains to trap heat</p> <p>(R5) Added additional layer of carpeting for insulation</p> <p>(R6) Hung blankets from walls for decor</p> <p>(O2) One resident has added solar panels to roof</p> <p>(O3) Residents have added lofts, closet racks</p> <p>(R2) Played around with bed location for heat purposes</p> <p>(R2) Hung curtains from interior beams</p> <p>(R3) Has included a built-in wall hutch, cedar chest</p> <p>(R3) Installed a loft for storage</p> <p>(R3) Installed solar panels to charge interior lights</p> <p>(R3) Painted the interior</p> <p>(R3) Placed tiles on floor inside of entry - “foyer”</p> <p>(R3) Added insulation</p> <p>(R4) Hung curtains from tension wire</p> <p>(R5) Built a bed</p> <p>(R5) Built a shelving unit</p> <p>(R6) Built an elevated bed (storage underneath)</p> <p>(R6) Uses interior framing for built-in shelving (unit not insulated)</p> <p>(D1) Extended porch size for safety</p>

= General unit comment
 = Bungalow comment
 = Conestoga Hut comment

POSITIVE FEEDBACK	NEGATIVE FEEDBACK
<p>(D2) Well-received because they were not “tents”</p> <p>(O4) Unique and appealing because they were not cookie cutter</p> <p>(R2) More potential than Conestogas</p> <p>(O4) Clean and organized appearance</p> <p>(R3) Both good because of lockable doors</p> <p>(O2) Open bottom prevents rodents from setting</p> <p>(O4) Open bottom so rodents cannot nest</p> <p>(R1) Cozy front porch</p> <p>(D2) Super rugged</p> <p>(O3) Overbuilt, can withstand elements</p> <p>(R2) Keeps out wind and rain</p> <p>(R2) Withstands 30-40 mph winds</p> <p>(D2) Open/lifted bottom is good to keep rodents out</p> <p>(R1) New Conestogas come with bedframe</p> <p>(O4) Individual units are important to taking control of your own life</p> <p>(R2) All units at OVE should have been Bungalows</p> <p>(R3) Easy to keep clean</p> <p>(O4) 10’ spacing between units helps with noise control</p> <p>(R3) 10’ spacing between units allows for things like gardening</p> <p>(R4) Back corner of site is best place to be (Northeast)</p> <p>(R5) Location preference is along North side of site</p> <p>(R5) Would prefer to be in Bungalow</p> <p>(D1) Easy to gain solar heat</p> <p>(D2) Designed to be easily heated</p> <p>(R1) Good ventilation even with door closed</p> <p>(R1) Windows provide a good breeze</p> <p>(R3) Conestogas are better insulated</p> <p>(R3) Conestogas are easy to keep warm</p> <p>(R4) South-facing Bungalows are best</p> <p>(D2) Interchangeable panels for identity</p> <p>(D2) Ability to paint, insulate, finish roof, put in loft</p> <p>(D2) No two units are the same</p> <p>(O1) Each person gets to decorate their own</p> <p>(O1) Each person can paint it any way they want</p> <p>(D1) Fits on a trailer for transportation</p> <p>(D2) Can be put on wheels, moved on trailers</p> <p>(O1) Can be easily expanded</p> <p>(O1) Easily houses couples and individuals with pets</p> <p>(O1) Can stand up inside</p> <p>(D2) Everyone likes the Deluxe Bungalow because of its size</p> <p>(O3) Good transition structures, but no one could live in them forever</p> <p>(O4) Extra storage space is key</p> <p>(O4) Good for couples</p> <p>(R1) Very comfortable</p> <p>(R2) Has more room than Conestoga</p> <p>(R2) Easily fits on trailer</p> <p>(R3) Cubic volume and vertical space make this prototype better</p> <p>(R4) More usable space because of straight walls</p> <p>(R5) More space for storage, microbusiness</p> <p>(R5) More headroom</p>	<p>(R4) Boxy-looking, boring</p> <p>(O3) No exterior finish, plywood can rot easily</p> <p>(R1) Would need to be better stabilized in colder, windier conditions</p> <p>(O3) Residents cover vents and interior becomes moldy, disgusting</p> <p>(D1) Conestogas in shade are not good - will always be cold</p> <p>(O3) Unfortunate site location for Conestogas - shade</p> <p>(R2) Happy to not have Conestoga in shaded area - problems</p> <p>(R4) Unhappy with unit location in path of travel/traffic</p> <p>(R4) Unhappy with unit location near “hot-spots” (restrooms)</p> <p>(R5) Very noisy next to warehouse next to site</p> <p>(R5) Would prefer to be in Bungalow</p> <p>(O3) Cannot use either prototype in a colder climate</p> <p>(O3) Colder than a non-insulated Bungalow</p> <p>(R2) Not any better in terms of warmth</p> <p>(R4) Neither prototype keeps very warm</p> <p>(R5) Bungalows are cold</p> <p>(R5) Put on cold clothing in the morning - same as outside temp.</p> <p>(R6) Less options for decoration/storage because of curved walls</p> <p>(O1) Can be claustrophobic</p> <p>(O3) Not as much cubic space</p> <p>(R2) Could be wider</p> <p>(R2) Could be higher, easily hits head on door frame going in and out</p> <p>(R2) Fitting two people in would be very cramped</p> <p>(R3) Low door, always hitting head when entering</p> <p>(R3) Banging head on rafters</p> <p>(R3) Not much interior room, especially with bed platforms</p> <p>(R3) Very tight space, designed for people who have nothing</p> <p>(R1) Comfort depends on how much stuff you have</p> <p>(R4) Not large enough to store all personal items</p>

 = General unit comment
 = Bungalow comment
 = Conestoga Hut comment

	CONESTOGA HUT		BUNGALOW	
	(+)	(-)	(+)	(-)
SIZE	Transportation	D1 R2		D2
	Storage		R4	O4 R3 R3
	Multi-person		R2	O1 O4
	Shape/Volume	R1	O1 O3 R3 R3 R1	O1 D2 R2 R3 R4
	Dimensions	O1	R2 R2 R3 R3	R3 R5
PERSONALIZATION	Storage		R6	
	Lofts			
	Interior	R1 O1 O1		D2 D2 D2 O1 O1
	Exterior	R3 O1 O1		R3 D2 D2 O1 O1
INSULATION	Thermal Comfort	R1 R3 R3	D1 O3 R2 O3 R4 R5	O3 R2 R4 R5 R5
	Heating Systems	D1		D2
	Ventilation	R1	O3	
CONTEXT	Location	O4 R3 R4 R5	O3 R2 R4 R4 R5	O4 R3 R4 R5 R4
	Privacy			
DURABILITY	Weather	R3 R3		O3
	Construction			D2 O3
BUILDING FORM	Open Bottom	O2 O4 D2		O2 O4 D2
	Porch	R1		
SECURITY	Lockable Doors	R3		R3 D2
AESTHETICS	Physical Appearance	O4 R3		D2 O4 O4 R4

- = Designer comment
- = Organizer comment
- = Resident comment

REFERENCES

Text References

- "AIA Southwest Oregon April Chapter Meeting – Homes for Homeless." YouTube, 01:21:40. AIA Southwest Oregon. April 17, 2013. <http://www.youtube.com/watch?v=C23zof8Lf0s>.
- Chamard, Sharon. "Homeless Encampments." Washington, DC: U.S. Dept. of Justice, Office of Community Oriented Policing Services, 2010.
- Black, Erin. "Private Dwelling in Public Space: Edmonton's Tent City." Masters Thesis, University of Alberta, 2010.
- Davis, Sam. *Designing for the Homeless: Architecture That Works*. Berkeley: University of California Press, 2004.
- Ehrenreich, Ben. "Tales of Tent City." *The Nation*. Last modified July 3, 2009. <http://www.thenation.com/article/tales-tent-city>.
- Elliott, Marta, and Lauren J. Krivo. 1991. "Structural Determinants of Homelessness in the United States". *Social Problems*. 38, no. 1: 113-131.
- "Eugene Weather and When to Go," Trip Advisor, <http://www.tripadvisor.com/Travel-g51862-s208/Eugene:Oregon:Weather.And.When.To.Go.html>
- Ghisi, E., et al. "An Evaluation of Thermal Comfort in Typical Modern Low-Income Housing in Malaysia." Presentation at the Thermal Performance of Exterior Envelopes of Whole Buildings XII International Conference, Clearwater Beach, FL, December 1-5, 2013.
- Hatch, J. Amos. *Doing Qualitative Research in Education Settings*. Albany: State University of New York Press, 2002.
- Heben, Andrew. 2013. *Tent City Urbanism*. San Bernardino, CA: A. Heben.
- Heben, Andrew. "What is a Tent City?" *Tent City Urbanism*. Last modified 2013. <http://www.tentcityurbanism.com/p/about.html>.
- Kendall, Marisa. "More Cities Offer Homeless Free Storage to Ease Mobility." *USA Today*. Last modified November 18, 2010. http://usatoday30.usatoday.com/news/nation/2010-11-18-homelessstorage18_ST_N.html.
- Kifer, Jordan. "Tiny Houses Open Big Doors for Wisconsin's Homeless." *IdealistBlog*. Last modified January 30, 2014. <http://blog.en.idealists.org/tiny-houses-open-big-doors-for-wisconsin-homeless/>.
- Kvale, Steinar. *Interviews: An Introduction to Qualitative Research Interviewing*. Thousand Oaks, Calif: Sage Publications, 1996.
- Loftus-Farren Z. 2011. "Tent Cities: An Interim Solution to Homelessness and Affordable Housing Shortages in the United States". *California Law Review*. 99, no. 4: 1037-1082.
- McKinley, Jesse. "Cities Deal with a Surge in Shantytowns." *The New York Times*. Last modified March 25 2009. http://www.nytimes.com/2009/03/26/us/26tents.html?pagewanted=all&_r=0.
- "Opportunity Village Eugene." *The House-Free Commons*. <http://members.efn.org/~finnpo/hfc/op%20village%20vision.html>.
- "Opportunity Village Eugene." *Opportunity Village Eugene*. Last modified 2013. <http://www.opportunityvillageeugene.org>.

“Safe Ground Sacramento.” *Safe Ground Sacramento*. Last modified 2013. <http://www.safegroundsac.org>.

Schutt, Russell K., and Gerald R. Garrett. *Responding to the Homeless: Policy and Practice*. New York: Plenum Press, 1992.

“Snowball Sampling.” *Oregon State University Institutional Review Board*. Last modified September 14, 2010. <http://oregonstate.edu/research/irb/snowball-sampling>.

Tamés, Elena. “Use, Appropriation and Personalization of Space in Mexican Housing Projects and Informal Settlements.” *Transitional Dwellings and Settlements Review*. Volume 15, no. 2 (2004) : 33-48.

“The State of Homelessness in America 2013.” *National Alliance to End Homelessness*. Last modified April 8, 2013. http://b.3cdn.net/naeh/bb34a7e4cd84ee985c_3vm6r7cjh.pdf.

“Tent Cities in America: A Pacific Coast Report.” *National Coalition for the Homeless*. March 2010. <http://www.nationalhomeless.org/publications/Tent%20Cities%20Report%20FINAL%203-10-10.pdf>.

“What is Qualitative Research?” *Qualitative Research Consults Association*. Last modified 2013. <http://www.qrca.org/?page=whatisqualresearch>.

Image References

[1] - “The State of Homelessness in America 2013.” *National Alliance to End Homelessness*. Last modified April 8, 2013. http://b.3cdn.net/naeh/bb34a7e4cd84ee985c_3vm6r7cjh.pdf.

[2] - Chamard, Sharon. “Homeless Encampments.” Washington, DC: U.S. Dept. of Justice, Office of Community Oriented Policing Services, 2010.

[3] - “The State of Homelessness in America 2013.” *National Alliance to End Homelessness*. Last modified April 8, 2013. http://b.3cdn.net/naeh/bb34a7e4cd84ee985c_3vm6r7cjh.pdf.

[4] - Hatch, J. Amos. *Doing Qualitative Research in Education Settings*. Albany: State University of New York Press, 2002.

[5] - Simmons, Dan. “First Tiny Home to Be Occupied Thanks to a Village Effort.” *Wisconsin State Journal*. Last modified December 24, 2013. http://host.madison.com/news/local/first-tiny-home-to-be-occupied-thanks-to-a-village/article_78a4cdde-1081-5df4-b4c4-e021b300d002.html.

[6] - Roloff, Stephanie. “Permanent Homeless Camp Opens Near Campus.” *The Sounds: An independent Student Newspaper Since 1962*. Last modified January 24, 2014. <http://www.thesoundsnews.com/news/permanent-homeless-camp-opens-near-campus/>

[7] - “Dignity Village.” *Portland Ground*. Last modified May 22, 2004. http://www.portlandground.com/archives/2004/05/dignity_village.php.

B/a+p