

WOMEN AND NATURAL BUILDING: COBS AS ART FORMS, POLITICAL
STATEMENTS, EXTENSIONS OF SELF

by

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Abstract

Purpose – The purpose of this study is to examine natural building as an art form, a political statement, and an extension of self. It is an attempt to understand how women connect to the land through the building of cob houses and how the building of natural homes supports an alternative worldview.

Design/methodology/approach – This qualitative study is a critical inquiry that draws upon two arts-based approaches: photo-interview as a method and poetic representation as a way to present data. The study asks women builders to describe what natural building means to them. It illuminates the ecological aspects of cob and links it to Ecofeminism, Deep Ecology, and Environmental Adult Education (EAE).

Presentation of data – The women interviewed identified cobs as art forms, political statements, and extensions of self. However, the reasons behind their choices were uniquely their own.

Research limitations/implications – The women in the study are committed to the environment and to each other. They believe their work can positively affect society. Natural building fosters a more respectful and caring alternative worldview; however, if humans are to protect the environment because they see it as an extension of themselves, and if systemic change is to ensue, we must promote the principles of Deep Ecology, Environmental Adult Education, and Ecofeminism. Moreover, education and research must continue to promote sustainable ways of being in the world.

Originality/value – The study fills a gap in the literature, as it is the first of its kind that examines women natural builders and their link to the land within the framework of Ecofeminism, Deep Ecology, and Environmental Adult Education.

Keywords – cob, natural building, Ecofeminism, Environmental Adult Education, photo-interview, Deep Ecology, poetic representation

Paper type – Research paper

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Dedication

I dedicate this report to Dawn, Kata, Rose, and all the courageous women who work to create and promote sustainable natural buildings. You connect people to the Earth, present an alternative way of living, and inspire others with your optimism for the future. In short, you exemplify the words of Mahatma Gandhi: we must be the change we wish to see in the world.

I also dedicate this report to my loving mother.

Definitions and Abbreviations

Adobe – handmade unfired bricks that are sun dried and made without packing the earth down between forms

Aerobic – bacteria that requires oxygen in order to live

Anaerobic – bacteria able to live and survive in the absence of oxygen or air

Chalk-mud – chalk added to the earth and water. A famous example of a chalk-mud house is Marsh Court in Hampshire, England.

Cob (clob, wychert, clom, mud, clat, clay and cluch) – a structural composite of earth, water, straw, clay, and sand, hand-sculpted into buildings while pliable. There are no additives or chemicals, and no need for machinery. Cob has been used in Japanese architecture, and until recently, it was an important building material in some regions of Great Britain, particularly in Devonshire and South Wales.

Life cycle – consecutive and interrelated stages of a product system, from the acquisition of the raw materials or the generation of natural resources until its final elimination

Life cycle assessment (LCA) – collection and assessment of the inputs and outputs of any potential environmental impacts caused by the product system throughout its life cycle

Life-cycle cost (LCC) – measurement of the total cost of using equipment over the entire time of service of the equipment; includes initial, operating, and maintenance costs

Light straw-clay – straw coated with clay slip or “leichlem” is placed into the forms and compacted

Loam – earth for building that is a mixture of clay, silt (very fine sand, sand, and sometimes larger aggregates such as gravel and stones)

R-value – (insulation), the efficiency of insulation of a house

Rammed earth – soil of sufficiently stiff consistency is placed in forms and pounded down. Rammed earth has been used for buildings and walls since ancient times and was employed in some of the most ancient fortifications in the Middle East.

Terre pisé or **pisé de terre** – the French term used in England to refer to rammed earth compacted within a frame work

Straw bale – a building method that uses bales of straw (commonly wheat, rice, rye and oats straw) as structural elements, building insulation, or both

Wattle and daub – walls use a woven lattice of wooden strips called *wattle*. The wattle is *daubed* with a sticky material usually made of some combination of wet soil, clay, sand, animal dung and straw.

Frontispiece

Choices

My fingers on this black piece of plastic,
click click, the electronic brain
makes my life simpler
but it distorts my voice -- who I am.
It allows me to hide and put forth a false front
something synthetic and fake
wired with surges of emotions,
brownouts and overheating.

Me, a non-living box of chips, circuits, and wires
encased in black plastic.
My life, a never-ending hum.

This research places me in a different world:
tepid pools, sun-kissed wings, sweet berries, and floating songs.
In this world of senses, I feel your breath on my neck;
the warm energy of your body connects with mine and with the environment and with the other species.
All hearts beat with the pulse of life from the Earth.
We are human beings in the natural world
unrestrained by social conventions, uninhibited by others, unfettered by past experiences.
We live in a moment of joy and unity
in silence, listening to ancient spirits – honouring the wisdom of the soul.

In the ugliness of reality – tar-sand greed, industrial noise, and political lies
we cannot exist. In this world we live in,
without change, there can be no joy, no unity, no oneness with each other or with any others.

So in this place where I am plastic and fake,
I live in a hum of isolation.
I live to escape into my work. Into a world
where the wind is your breath on my neck.



Figure 1: Me Applying Plaster to the Robinson's House

At Kata Polano's invitation, on May 24, 2011, I joined a work party to apply natural plaster to the Robinson's house in North Cowichan. Kata started me off on mixing before I graduated to plastering, which is a laborious task requiring skill that I lacked. The experience boosted my admiration for natural builders. Their commitment to building a better world with clay humbled me. I also experienced the holistic process and inclusive environment described in the natural building literature. For instance, the children mixed plaster and got their hands muddy; people dropped by to lend a hand; homemade healthy food was provided free of charge; and everyone was welcoming and friendly. It was an atmosphere of teaching and learning and sharing. The memory still makes me glow, and I am thankful that I was able to be a part of it.

Chapter 1: Preparing the Building Site

We are human only in contact, and conviviality, with what is not human.

- Abram, 1996

As humans we are born of the earth, nourished by the Earth, healed by the Earth. The natural world tells us: I will feed you, I will clothe you, I will shelter you, I will heal you.

- Berry, 2006

Natural building presents a way for humans to be agents of their own future and to live a sustainable lifestyle that is both caring and respectful. This study focuses on women who build natural homes. It examines their views about their work and the kinds of homes they build. I investigate how cobs are art forms, political statements, and extensions of self. To accomplish this, I incorporate two arts-based methods: photo-interview to gather research data, and poetic representation to present the data. The study also draws attention to the Earth, our connection to it, and our responsibilities.

Evidence confirms that human activity is destroying our Earth. Abram (1996) states “our civilization’s excesses” drive species to extinction at an alarming rate, and every hour, thousands of acres of non-regenerating forest disappear (p. 22). Although it may be too late to reverse much of the damage created by humankind, each of us can make choices to mitigate the effects. For instance, many people feel close ties to place and to their homes. You may have heard expressions such as “there is no place like home” and “change begins at home.” Although men traditionally build houses, women continue to spend a lot of time at home in what is considered the “private sphere.” Sandilands (1999) says, “The personal, for women, is political... [and]

action is still located in the private sphere” (p. xii). The women I interviewed have pushed their action beyond the interior walls of the private into the public sphere. They build natural homes. Snell and Callahan (2005) suggest that each act of building a home represents a choice. Women who choose to build natural buildings, such as cobs, present an alternative worldview and challenge dominant society.

Throughout history sustainable adobe, rammed earth, and cob (buildings made of dirt, straw, and water) have been popular natural building choices. Bee (1997) of Groundworks, a cob-building collective in Oregon, says, “Cob is in the early stages of being rediscovered in the modern world” (p. 1). According to natural builder Michael Smith, by the early 1990s, dozens of individuals and small organizations in the United States researched, adapted, and promoted natural building (Evans, Smith, & Smiley, 2002). Here on Vancouver Island, natural building, which attracts many women, continues to gain in popularity. Elke Cole of O.U.R Ecovillage became involved in natural building in 1994 (O.U.R. Ecovillage, 2011); the Mud Girls formed their collective in 2006 (Mud Girls, n.d.); and Ann Baird, together with her husband Gord, began to build Eco-Sense, North America’s first code-approved, seismically-engineered, load-bearing, insulated cob house in 2007 (Baird & Baird, 2009).

My interest in cob building stems from a class in ecological leadership where I visited the Baird’s home, Eco-Sense, in the Highlands of Victoria, British Columbia, Canada. I can still picture the cob buildings topped with living roofs of native grasses speckled with tiny yellow and violet flowers. I can still remember how my body felt when I entered the cobs. Bee (1997) expresses it perfectly when she says, “walking into a rounded cob home is like walking into a hug” (p. 5). That first experience with cobs left me with a desire to create one for myself, and as

a former apprentice carpenter and advocate of environmental and social justice, natural building fits both my background and my sense of ethics.

In reference to ethics and in terms of epistemology, I incorporate what Guba and Lincoln (2005) refer to as multiple perspectives. I look at knowledge from a critical theory lens and consider the historical and cultural context. However, humans construct knowledge as they journey through life, and I draw on knowledge learned at university and through experience. I also recognize that I have knowledge within me—knowledge that was with me at birth. Through visioning, tapping into my soul's desires, and reflective poetry, I draw on my embodied knowledge and way of being in the world. In terms of ontology, I believe truth is in flux and dependent on context but that everything on the Earth, and in universe at large, has a purpose and is interconnected. And while everything is changing, everything remains the same.

These beliefs inform my study. I have an undergraduate degree in history, and I place cobs in space and time to give readers a sense of the historical context. The light in which others view cobs depends on global and/or local events, and the construction of knowledge assures that historical contexts shift. For instance, I recognize that in a book that describes cobs as “unsophisticated,” it is unlikely that the author is the landless peasant who built the cob. Therefore, I ask myself *whose* truth is this. Truth is clearly dependent on perspective. In this study, I state my biases, yet I encourage you as readers to question always whose truth this is when you are reading.

I chose to research this topic because I love the Earth and am concerned about environmental degradation and its effects on all species. In this study, I tap into my embodied knowledge of my connection to the Earth and my soul's desire to live in a connected, supportive, sustainable environment. I believe cobs heal and bond humankind and Earth, and that this bond

is essential if we are to preserve life and save the planet. I also believe that research and education have a responsibility to inform on alternatives. Natural building is one alternative, and the act of building illustrates how responsible choice makes space for systemic change.

I view cob building through an Ecofeminist lens, which I outline in Chapter 2. To collect and display data, I use photo-interview and poetic representation. The study fills a gap in the literature because it links cobs, arts-based methods, and Ecofeminism. To me cobs are more than homes: they are art forms, political statements, and extensions of self. I am certain the women's stories and their photographs will capture your imagination. Moreover, I hope this study is of interest and value to both builders and non-builders alike. Perhaps it will spur you, as readers, to examine your own beliefs. Maybe it will even inspire you to build a cob house of your own.

Scope of the Study

Although I research women natural builders, I am not nor have I ever been a cob builder; although, I did work briefly on a natural plaster project (see Frontispiece). Also, the research looks at a small sample of participants because, in the Vancouver Island area, not many female cob builders were available to participate within the timeframe allotted to this study. Lastly, I have limited this study to women builders; yet, I recognize that natural building and Ecofeminism attract both men and women.

Document Outline

I organized this study as follows:

Chapter Two: Gathering the Materials provides a snapshot of the available literature on cobs and natural building. It begins with cobs' roots, then outlines building technicalities, and concludes with present-day cobs. Chapter 2 also provides an overview of the key concepts that frame this study: Environmental Adult Education, Deep Ecology, and Ecofeminism.

Chapter Three: The Planning Stage introduces the research method. It highlights the benefits of arts-based methods. It examines photo-interview and poetic representation. The chapter ends with an examination of the role and importance of reflexivity and validity in research.

Chapter Four: The Construction Process focuses on the research design and the process involved in the collection and organization of the interview data. The chapter discusses reading and categorizing. It also touches upon reflection and poetic representation of data.

Chapter Five: Touring the Building presents the poetically represented photographs used during the photo-interviews as well as the participants' views on cobs as art forms, political statements, and extensions of self.

Chapter Six: The Final Inspection shines light on the notion that cobs are art forms, political statements, and extensions of self. The chapter suggests ways forward and sums up natural building's significance in the big picture—life on Earth.

Chapter 2: Gathering the Materials

We seem to believe that we are no longer constrained by the limits of nature; and we no longer notice where the sun rises and sets every day, which way the trees sway in the wind, and what we can do with the earth beneath our feet.

- Weismann & Bryce, 2006

In this section, I review the literature on cob and natural building, Deep Ecology, Ecofeminism, and Environmental Adult Education. I seek out themes and link them to the idea that cobs are art forms, political statements, and extensions of self.

Much of the cob literature centres on the act of building and the properties of natural buildings; however, some literature states, or hints, that cobs are more than mere houses. Some literature implies that the process of building and the buildings themselves are transformative. With this in mind, I sought out areas of ecology that promote transformation. I first chose Environmental Adult Education (EAE) because during a course on ecological leadership, I read some of the EAE literature. While looking at EAE, somewhere the word “Ecofeminism” jumped off the page. I investigated further and realized that not only did I see myself, but I also saw natural builders and their buildings, too. Lastly, to explore interconnectedness and the idea of cobs as extensions of self, I turned to Deep Ecology, which I am familiar with from a course in ecological education. Together, these three essential bodies of literature frame my study.

Cobs and Natural Building

The first part of this two-part section contains a brief historical overview of cobs, which includes literature that outlines building techniques, properties, and advantages. The second part,

under the heading “Cob Reinvented,” introduces writings that shore up my claim that cobs are art forms, political statements, and extensions of self.

History and overview.

Up until the Industrial Revolution, cob houses enjoyed a long history of connecting humans to the land. In fact, “unbaked earth is one of the oldest building materials on the planet; it was used to construct the first permanent settlements around ten thousand years ago” (Evans et al., 2002, p. 25; Kennedy, Smith, & Wanek, 2002; Minke, 2000; Smith, 1998). William-Ellis (1920) writes, “cob-making was, like many other local trades, carried on in some families from generation to generation and developed by them into an art...” (p. 52). Kennedy et al. (2002) also speak of cob as traditional knowledge passed down through centuries. However, some early cobs in Devon were reportedly built by inexperienced leaseholders and had an appearance of “squalor and meanness,” which many decried “relics of bygone barbarism” (William-Ellis, 1920, p. 34). People, unconsciously caught in the claws of progress and modernity, looked to alternative non-sustainable building styles.

The railway system, forged in the Industrial Revolution, carried non-local materials to distant communities, and, in 1850, wood and timber rated sixteenth in a list of top imports into England (Temin, 1997, p. 77). This movement of non-indigenous building materials marked the demise of local building styles such as cob (Ford, Griffiths & Watson, 2005). House building became complicated. Builders required training and equipment. Mass construction, consumerism, and commodification became synonymous with modernity and progress. Few people continued to build their own homes (Kennedy et al., 2002).

Yet, today, one-third to one-half of the global population continues to live in earthen houses (Evans et al., 2002; Minke, 2000). Often these are poor marginalized people, and “prejudices against loam are still widespread,” a result of ignorance because “for many people [in developed nations] it is difficult to conceive that a natural building material such as earth need not be processed” (Minke, 2000, p. 17). Nevertheless, internet and library searches show that cob houses are experiencing a revival. There are cob workshops, cob builders for hire, and an increasing number of do-it-yourself books on cob and natural building (see Appendix A for a detailed list of cob resources).

Do-it-yourself books promote cobs as builder-friendly (Minke, 2000; Smith, 1998; William-Ellis, 1920). Smiley (2002) declares that sculpting a house with clay became so simple and natural that she needed neither carpentry nor building skills. Bee (1997) exalts cob as a “flexible and forgiving medium,” which requires “dedication more than physical strength and willingness to experiment more than skills” (p. 5). Similarly, William-Ellis (1920) describes cob as a “humble, amenable, and thoroughly accommodating substance” (p. 34). Snell and Callahan (2005) state that although you need to be “in sync with your exact site and your particular, unique, idiosyncratic human needs” the actual building know-how, skills, and self-awareness are “entirely within your—anyone’s—reach” (p. 8). Only Minke (2000) cautions that a book is not enough and says cob builders need practical building experience as well.

For those who want instruction, do-it-yourself books speak of the ease of construction and offer plans and step-by-step instructions. Corum (2005) includes drawings, photos, and diagrams. Snell and Callahan (2005) document the building process in both photographs and text, and they walk readers through the creation of a small, efficient, carefully thought out green building. William-Ellis (1920) presents diagrams, photographs, how-to instructions, and a recipe

for whitewash. Minke (2000) published all his experiments and research from 1978 to 2000.

Kennedy et al. (2002) offer diagrams, photographs, and resources; they cover a variety of natural construction styles. In addition, Weismann and Bryce (2006), who write about circles and cycles on a metaphoric level describe cob building on a practical level.

Those who physically build cobs report feeling satisfied. Cob uses simple tools, builds community, fosters empowerment, and provides a great sense of ownership (Weismann & Bryce, 2006). According to Baker-Laporte, Elliot, and Banta (2001), an owner who chooses to use an alternative natural building system is a “pioneer who may be well rewarded for his or her adventurous spirit” (p. 92). Oregon’s Cob Cottage Company builders, Evans et al. (2002), found that “cob construction seems to satisfy its builders in very profound ways,” and Cob Cottage Company’s files are filled with letters of “extravagant appreciation of how good it feels to build a house of mud pies” (p. xvi). Evans et al. (2002) claim people “don’t get excited about building with concrete blocks or drywall, but with cob there seems to be universal enthusiasm” (p. xvi). Indeed, Bee (1997) suggests building with “cob is an easy way to go on a big adventure!” (p. 5). The increased number of workshops over the years attests to cobs’ growing popularity, and in 2011, Cob Cottage Company turned people away. The company accepted “only a handful of the 60 odd inquiries/applications” for entry into their coveted apprenticeship program (Cob Cottage Company, n.d.).

Natural building’s newfound popularity in the global North can be attributed to cobs’ energy efficiency and eco-friendliness. Minke (2000) says that “in industrialised countries, the careless exploitation of the earth’s resources, and the centralised capital and energy intensive production systems are not only wasteful but also pollute the environment” (p. 9). In addition, natural buildings appear especially attractive in light of Marion King Hubbert’s theory of peak

oil¹ and the increasingly frequent oil/energy crises. Baker-Laporte et al. (2001) believe natural building materials create “heirloom quality buildings that are ecologically sound, promote health, and have outstanding energy efficiency” and in all the aforementioned aspects, natural buildings are “superior to the standard building systems prevalent in industrial countries” (p. 92).

Furthermore, every part of an eco-friendly natural home can be reused, and eventually, like all things in the natural environment, cob houses return to the earth from which they originated.

In contrast to cobs, the manufactured houses of today raise a number of issues. The products used are often toxic to factory workers, on-site builders, and the families who live in the houses (Kennedy et al. 2002). Materials travel long distances, and the manufacturing process creates a lot of waste (Kennedy et al. 2002; Minke, 2000) –not to mention pollution. In 2007 alone, largely due to concrete production, the construction industry spewed seven percent of the global carbon dioxide (CO₂) emissions into the atmosphere, and the global hunger for concrete shows no signs of abating (Mora, 2007, p. 1331). Mora (2007) claims the integrity of buildings is at risk because of atmospheric emissions, which adversely affect the durability of building materials. To minimize the environmental impact of building, people will start to demand products that are more durable (Mora, 2007). In a society based on consumption, it comes as no surprise that concrete lasts only 100 years (Mora, 2007), whereas “cob is not new and not untested. Its viability has been thoroughly proved, all over the world, for centuries and probably millennia” (Evans et al., 2002, p. xv). Cobs are a healthy, long-lasting choice for both the Earth and its species.

¹ For more information on Peak Oil see Hubbert, M. K. (1956). Nuclear Energy and the Fossil Fuels ‘Drilling and Production Practice.’ Spring Meeting of the Southern District. Division of Production. American Petroleum Institute. San Antonio, Texas: Shell Development Company, 22–27. Retrieved from <http://www.hubbertypeak.com/hubberty/1956/1956.pdf>

Earth-friendly cob minimizes the use of energy and resources. Cob has a low life-cycle cost (LCC) and a high technical performance (Collet, Serres, Miriel & Bart, 2006; Lawrence, Heath & Walker, 2009). Clay is plentiful and available locally; straw is renewable because it comes from a plant source; the cement quantity needed is insignificant; cob is recyclable; and the manufacturing and transport of local materials is low-energy consuming (Collet et al., 2006; Minke, 2000). Moreover, straw sequesters CO₂ through photosynthesis, which reduces the release of greenhouse gasses (Lawrence et al., 2009). The sun, the earth, the water, and the air—all of these are commons to be shared with all life forms. Natural building facilitates the responsible use of the commons.

Responsible energy use is possible because thick cob walls make excellent thermal and sound insulators (Lawrence et al., 2009). Collet et al. (2006) studied cob walls, stone walls, insulated dense concrete block walls, and modern insulated cob walls to verify the thermal properties of cob. They found cob to be both energy efficient and environmentally friendly. Baker-Laporte and Laporte (2005) say cobs are “exceptionally comfortable: warm in the winter, cool in the summer, and stable in temperature, changing only very slowly as weather conditions outside cycle through daily and seasonal extremes” (p. 11). Cob walls not only have high thermal mass and low thermal conductivity, but they also absorb solar radiation. For instance, with insulation, cob walls can face any direction and still comply with European standards. A south facing cob with five centimetres of insulation equals a concrete block with 15 centimetres of insulation (Collet et al., 2006). Passive solar cob walls eliminate the need for large amounts of toxic energy-consuming manufactured insulation.

Energy usage is an ongoing issue, and rather than depleting forests, builders seek high insulating performance alternatives (rated by *R*-value). Researchers investigate agricultural

residues like straw. Ashour, Wieland, Georg, Bockisch, and Wu (2010) examined the thermal conductivity of natural plasters in cob construction. The team tested plaster reinforced with wheat straw, barley straw, and wood shavings. Results show that plaster reinforced with barley straw has the highest *R*-value (Ashour et al., 2010; Ashour & Derbala, 2010). The Canada Mortgage and Housing Corporation (CHMC) (1997; 2000a; 2000b; 2002; 2005; 2007; 2008) studied the characteristics of straw bale construction and measured the thermal resistance and moisture-related performance characteristics. CHMC (2005) assessed the viability of natural building for Canadian climates. They tested fire resistance, shrinkage and swelling, compression and bending, and density. The CHMC findings validate those of Minke's found in his *Earth Construction Handbook* published in 2000.

Energy-efficient cobs affect a homeowner's sense of what is important. Baker-Laporte and Laporte (2005) say, "Our homes, like our food, should support our well-being" (p. 52). We should aim "to build respectfully, in appreciation of the harmony and beauty of nature, and in a way that uses nature's resources so as to consume less energy, create less waste, nurture our health, enrich our senses, and improve the quality of our lives" (Baker-Laporte & Laporte, 2005, p. 9). For instance, Dyan, a cob owner, states that a healthy home is "a catalyst for individual growth" as it encourages a deeper understanding of oneself and others (Baker-Laporte & Laporte, 2005, p. 106). Dyan sees his family's home as a stepping-stone on their path to empowerment, physical health, and emotional well-being. He says the efficiency of their home prompts them to be more discriminating about what is 'necessary'" (Baker-Laporte & Laporte, 2005, p. 104). Natural homes create an Earth- and human-friendly synergy and prompt humans to be more respectful and caring.

However, of all the fascinating discoveries that I made about cobs, the work of Paušič, Škornik, Culiberg, and Kaligarič (2010) stands apart, for it shows cobs as preservers of history and of life. Paušič et al. (2010) examined cob buildings in Slovenia and discovered 7269 seeds: 7143 belong to 81 species of wild plant; 126 originate from six cultivated or escaped species; and one seed is unrecorded in Slovenia. Missing from the inventory were alien invasive species and some of today's common weeds and ruderals (plant species that are first to colonize disturbed lands). The plant material stored in cob represents the vegetation prior to the intensive tilling and cultivation practices of the mid-20th century—practices that dramatically changed the Central-European landscape (Paušič et al., 2010). The findings also offer a rough indication of past species abundance and stand as proof that modern agriculture threatens biodiversity (Paušič et al., 2010). Cobs link humans to the past and illustrate what that past might have looked like. Furthermore, cobs preserve life outside the walls in the larger environment, inside the walls in the homes of humans and domestic animals, and within the walls where seeds and small creatures hide.

Straw's organic nature can contain protein and carbohydrates, which makes it susceptible to infestation by small creatures, such as rodents and insects, and anaerobic/aerobic decay (Lawrence et al., 2009). Minke (2000) claims more mud and less straw keep insects and rodents from living in the walls. In fact, Minke (2000) says that if the earth has too much organic matter, such as lightweight straw with a density of less than 600kg/m^3 , small insects such as wood lice might inhabit the straw and attack it. Minke (2000) suggests using porous mineral aggregates as an alternative to straw. Therefore, despite cobs' numerous advantages, they are not without challenges. Of course, Minke is a fan of rammed earth—not cob—a debate beyond the scope of this particular study.

Another challenge is moisture, and because straw can rot, Minke (2000) suggests barley straw, which is generally softer with, ridged shoots that keep their shape and trap air inside. However, moisture issues are not solely due to materials. William-Ellis (1920) claims “plenty of cobs are both damp and insecure” because they were built by builders who lacked skills and care (p. 34). According to William-Ellis (1920), in order to have a dry cob someone from Devonshire might say, “Giv’un a gude hat and pair of butes an’ ‘er’l last for ever” (p. 34) —meaning that like a person wearing a hat and a pair of boots, a dry foundation and a good protecting roof keep a cob dry.

Cob reinvented.

We are at a crossroads. We can go one of two ways: either stumble blindly on into the future, and hope that something works itself out; or stop now, and start to make conscious changes on a personal level...One of the most fundamental decisions we can make is what sort of house we live in.

- Weismann & Bryce, 2006

The modern home, even more than the government and universities, has institutionalized the divisions and fragmentations of modern life. With its array of gadgets and machines, all powered by energies that are destructive of land or air or water, and connected to work, market, school, recreation, etc., by gasoline engines, the modern home is a veritable factory of waste and destruction. It is the mainstay of the economy of money. But within the economies of energy and nature, it is a catastrophe. It takes in the world’s goods and converts them into garbage, sewage, and noxious fumes—for none of which we have found a use.

- Berry, 1977

Snell and Callahan (2005) express that “for most of us, home is primarily an emotional concept....Home is a feeling” (p. 23). However, a home also has to be functional. It helps our bodies; it maintains a stable temperature, and it both separates and connects us to the world

around us (Snell & Callahan, 2005). Natural buildings perform all these functions, yet they are more. In this section, I examine literature that supports the idea that cobs are art forms, political statements, and extensions of self.

Cob as art.

William McDonough, a leader in sustainable architecture, asks, “Can something be really beautiful if it destroys the earth or is unfair?” (as cited in Zeiher, 1996, pp. 47, 94). Although not stated outright, the above-reviewed literature on the technicalities of building cob alludes to cob as an art form. Descriptions of cob houses are often detailed, which leaves space for readers to imagine their beauty. Cobs also link to art because they are sculpted from clay, an art medium.

Cob houses are described for their beauty, and as cob builder Bee (1997) boasts, “The organic shapes of cob walls are pleasing to the eye” (p. 5). Ford et al. (2005) used geographic information system (GIS) to discover and catalogue ancient cob buildings in Devon for conservation purposes. The buildings sound spectacular and their location well thought out. Ford et al. (2005) describe the 15th - 16th century cob farms as having circular pillars, granite fireplaces, and arched doorways. Ford et al. (2005) found that the buildings face south and follow the contours of the land, the water systems, and roads. To Williams-Ellis (1920), the “pearly gleam” of whitewashed cobs with their “heaving bulk of thatch and their trim black skirtings” are as “gracious and as pleasant to the eye as any in all the length and breadth of England” (p. 44). Smiley (2002) and her husband and partner in Cob Cottage Company, Ianto Evans, live in a heart-shaped cob in the Oregon rain forest. Picture this:

Our cob cottage and garden walls form a container holding the beauty and grace of natural shape, a curve sculpted of rich, golden-colored clay soil. Within this space is an abundant sweetness of fruit: peaches, grapes, oranges, lemons, apples, and figs, all thriving in the microclimate generated by the

cob's thermal mass. Mason bees, butterflies, and other wildlife congregate among the flowers, fruits, and herbs. (p. 279)

The long-debated idea of what constitutes beauty tends to be deeply personal; however, the above description coupled with the reality that a substantial portion of the global population lives in earthen buildings, leads me to imagine our Earth dotted with tiny sustainable cobs.

Because clay is an art medium, it follows that cobs encourage artist creativity. As Weismann and Bryce (2006) enthusiastically declare “there is no better medium than cob with which to shape and literally sculpt a unique, beautiful, personal piece of art, and enjoy yourself at the same time” (p. 7). Smiley (2002) writes, “The cob builder is an artist, sculpting a sacred space with earth as an expression of his or her individual journey towards wholeness and health. From the first thought of a cob house, through the completion of the building process, creating with cob is making a symbolic and personal work of art” (p. 279). Evans et al. (2002) agree that “nearly all natural buildings, regardless of the level of expertise of the builders, are remarkably beautiful” (p. 17), and they say “cob so naturally becomes three-dimensional art that it can be hard to contain your creativity” (p. 198). Certainly, Kata's favourite cob (see Figure 11) confirms that cobs can be beautiful functional sculptures.

Art reaches beyond beauty and can be a catalyst for change. Leavy (2009) says “visual art may serve as a vehicle for transmitting ideology while it can effectively be used to challenge, dislodge, and transform outdated beliefs and stereotypes” (p. 216). In fact, Leavy (2009) believes “visual art can propel people to look at something in a new way, which is critical to social change” (p. 220). Clover and Stalker (2007) state “the arts matter in our lives, in adult education and learning and in bringing about social justice and transformation” (p. 1). If one believes that

cobs are art forms and that art promotes change, then cobs can also be understood as political statements.

Cob as a political statement.

Cobs are political statements because in a world dominated by white, able-bodied, heterosexual men, cob building is relatively inclusive. In addition, the building materials are natural, local, and sustainable. Indeed, to build a cob, one does not need to participate in our present culture of consumption. Cobs prompt people to consider alternatives.

It is likely that anyone with an inclination to build can figure out how to build a cob house. Because of cobs' simplicity, Kennedy et al. (2002) see cobs as a way to challenge the "industrial building paradigm" (p. 2). Evans et al. (2002) agree that cob is the "simplest, most accessible, and most democratic earth-building technique" (p. xv). Cobs include women and children; animals are welcome; and nature is considered. Cob building does not discriminate based on sexual orientation. However, I can find no reference in the literature to ablebodiedness, and I suspect that for people in wheelchairs, the remoteness and ruggedness of building sites limits their ability to participate.

Cobs are also political statements because they promote anti-consumerism. Bee (1997) states that "building with cob is a powerful political action, greatly reducing the need for the mortgage systems, lumber and construction industries, and petrochemical companies" (p. 2). Natural building resists what hooks (2008) describes as today's world of "too much"—a "too muchness [that] creates a wilderness of spirit..." (p. 1). This resistance to consumerism and consumption makes a difference, for according to Bateson (2007), individuals "affect the global

story: small actions in the microcosm have consequences in the macrocosm” (p. 281). Natural builders often use local, donated, or found materials because they value sustainability.

Actions speak loudly, and natural building makes a political statement when used to house marginalized people or further movements. Red Feather, a non-governmental organization (NGO) in the United States, builds sustainable houses for Aboriginal people. NGO founder, Robert Young, read how three Aboriginal elders froze one winter in South Dakota because they lacked proper housing. Young and a group of friends built their first home for Oglala Lakota elder Katherine Red Feather (Goodall, 2005). Young’s action illustrates how natural building is more than just building cobs. It shows how cobs can serve to counter dominant society’s racist exclusion of First Nations people. In addition, Weismann and Bryce (2006) link cobs to other world movements:

Building with cob fosters a rejection of global homogenisation, monoculture, mass manufacturing, top-down solutions, and high-tech approaches...It can be connected to a larger movement that is going on in the world right now, that embraces home-grown and local production – whether it be indigenous music, local, organic and seasonal foods, or the resurgence of younger generations wanting to revive their local dialect and languages. (p. 7)

Natural building does not discriminate, and it has the ability to house all humankind while still respecting the Earth. Politically, cobs represent an alternative way of being in the world.

However, not all embrace natural building, especially those in power. Moquin (1996) says earthen construction faces several “bureaucratic and political obstacles which prevent its application from being as widespread as it should be throughout the U.S. and the world” (p. 12). For instance, institutional decision makers view cob as “primitive and unreliable” (Moquin, 1996, p. 12). The wood and cement industries lobby and influence the building codes. Natural

building lacks tight organization and powerful trade associations (Moquin, 1996). In addition, “the formal education system has not yet educated engineers and architects about the performance of earth-walled systems, for there is scepticism for alternatives that are not seen as mainstream, high tech, [and] modern” (Moquin, 1996, p. 12). Here on Vancouver Island, O.U.R. Ecovillage and homes such as Eco-sense offer tours to educate the public and proudly show that natural building is neither primitive nor unreliable.

Cob as an extension of self.

Cobs reflect interconnectedness, and just as species are alive, some people see cobs as living buildings. All life originates from the Earth and so do cobs. Evans et al. (2002) share their experience: “from Toronto to Tapachula, in Australia and Algeria, almost every individual we have met who lives in earth loves it. They say they feel healthier, more alive, more productive, yet relaxed and connected to Earth. They sometimes describe their houses as ‘growing out of the Earth’” (p. 17). Cob houses with living roofs visually reinforce the notion of cobs as living buildings.

Snell and Callahan (2005) feel that a good building is dynamic: the building “was born, will grow, change, and eventually die. In a sense, it is alive” (p. 75). Snell and Callahan (2005) believe modern buildings have no feeling, and they say “when you stop feeling, you die. A building without feeling is dead, and you can’t truly live inside something dead” (p. 75); “feeling is the essence of your building...” (Snell & Callahan, 2005, p. 74). The building is part of you, for just as native language roles off your tongue, or clothes reflect your sense of style and comfort, “there is a house—a beautiful, healthful, nurturing house—that corresponds to who you

are” (Snell & Callahan, 2005, p. 7). When you participate in building and cultivating your own cob house, in essence, the house becomes part of you.

Not only does a house, like a living entity, transform over time, but also Smiley (2002) describes how a cob is able to transform the people who live within its walls:

Once the cob seed is planted inside your being, it keeps on growing and you keep on transforming from the inside out. With every breath you take, a life-changing force brings you closer to the true spirit of home. Once you have opened this sacred door, you can enter in to an internal place where spiritual life thrives, a place where relationships with self, soul, spirit, place, Nature, family, your tribe, and the world at large can exist in harmony. A place where you can always return home. (p. 285)

Cobs are an extension of self because they nurture self/soul/spirit and link it to the Earth. Cobs exist in a global ecosystem where all living and non-living entities have an inherent right to live regardless of their utility to the human species, or so deep ecologists might believe.

The following three sections shift from literature on cob building to more of a bird’s eye view of the ecological theories that inform the building of cobs and the conception of cobs as art forms, political statements, and extensions of self. I begin with an overview of Deep Ecology, then move on to Ecofeminism and Environmental Adult Education.

Deep Ecology

How can you buy or sell the sky, the warmth of the land? The idea is strange to us. If we do not own the freshness of the air and the sparkle of the water, how can you buy them? Every part of this earth is sacred to my people. Every shining pine needle, every sandy shore, every mist in the dark woods, every clearing and humming insect is holy in the memory and experience of my people... We are part of the earth and it is part of us. The perfumed flowers are our sisters; the deer, the horse, the great eagle, these are our brothers. The rocky crests, the juices in the meadows, the body heat of the pony, and man—all belong to the same family.

- Chief Seattle, 1854

Deep Ecology, a term coined by Norwegian philosopher Arne Naess, examines the interconnectedness of all beings and all aspects of the universe. While the theoretical concept is relatively new, its ideals and ideas are rooted in the past. Weismann and Bryce (2006) state that to move forward today, we benefit from looking back in history because per-industrial societies had a sense of holism—a deep-ecology understanding that everything is linked—that actions impact all parts of a system. According to deep ecologists, we originate from the Earth, and we need to understand what nature is and our connection to it so that we do not harm it and ultimately harm ourselves (Fox, 1995; Norwegian Broadcasting Corporation [N.B.C.], 1993; Starr, Flahive, de Pencier, Iron & Baichwal, 2006). Just as cobs rise from the Earth and blend into the local ecosystem, humans need to see themselves as part of an interconnected environment or a universal ecosystem.

Bateson (2004) describes an interconnected environment, or a universal ecosystem, as “a vast collaboration, a dance of co-parenting by air and water and sun and moon; by bacteria and plants and other living creatures; by other people” (p. 118). Naess believes that “one of the great movements or self movements of today is to get people to identify with place and to identify with surroundings to identify with the landscape. Something in ourselves is murdered when we destroy the deep relation between ourselves and the immediate surroundings” (as cited in N.B.C., 1993). Bateson (2007) suggests that when we feel directly related and deeply connected to the systems of the universe, change will occur (p. 281). Because cobs are made of earth, they link humans and systems. Berry (1977) says, “While we live our bodies are moving particles of the earth, joined inextricably both to the soil and to the bodies of other living creatures” (p. 97). In sum, according to deep ecologists, we are one with natural buildings as natural buildings are one with us and with the environment.

Cobs often blend into the environment and lend themselves to roundness and sculpting. When looking at cobs as part of a system connecting humans to the Earth, the shape is significant. Deep Ecology advocate Abram (1996) suggests that the “superstraight lines and right angles” found in office architecture “make our animal senses wither” – so much so that any “wild, earth-borne nature of the materials—the woods, clays, metals and stones that went into the building—are readily forgotten behind the abstract and calculable form” (p. 64). Round or sculpted cobs mimic the shapes found in nature; therefore, they speak to humans in way that square conventional buildings never can.

Conventional building taxes the environment, and deep ecologists look beyond the “Band-Aid solutions” of traditional environmentalism to heal our wounded world (Zeihner, 1996, pp. 22-23). Deep Ecology asks questions such as “which society, which education, which form of religion is beneficial for all life on the planet as a whole” (Zeihner, 1996, pp. 22-23). Today, much of dominant society seems bored with environmental concerns, yet Naess (2008) is hopeful that with “sufficient comprehensive maturity” (meaning “being mature in all major relationships”), “we cannot help but identify ourselves with all living beings, beautiful or ugly, big or small, sentient or not” (p. 81). Certainly, Naess speaks of a paradigm shift.

The biology of love is a paradigm shift that allows us to see ourselves in the network of systemic coherences of the biosphere and cosmos of which we are part (Maturana & Verden-Zöller, 2008). Maturana and Verden-Zöller (2008) insist that if we throw off the shackles of western patriarchal culture and linear rational thought and live in the biology of love and intimacy as our ancestors did, we will attain physiological, relational, and spiritual harmony (pp. 129-134). Here, Deep Ecology begins to sound like Ecofeminism because ecofeminists examine

patriarchal culture and linear rational thought, which they view as the basis for both the oppression of women and the oppression of nature—ideas that I explore further.

Ecofeminism

Ecofeminist literature abounds. This is just a sampling, but I include it because I am examining cobs through an ecofeminist lens in that, for the purpose of this study, I primarily focus on women who build cobs. I believe that Ecofeminism offers a path forward. It is a way for our species to connect to the Earth and willingly take up our responsibilities. In this section, I provide an overview of ecofeminist beginnings and some basic western ecofeminist ideology. I acknowledge that the literature I cover here is overwhelmingly that of white, middle-class, educated, female, North American ecofeminists, and in a more comprehensive paper, Ecofeminism would have to be examined in a global context.

Historical overview.

Ecofeminists are sometimes unfairly caricatured as bourgeois and apolitical—wannabe goddesses who, running with wolves and hugging trees, fiddle while Rome burns.

- Carr, 2000

Warren (2000) states, “Historically, ecofeminism grew out of grassroots political actions initiated by women” (p. xiii). Two women who figure prominently in the history of Ecofeminism are Rachael Carson, who, in 1962, wrote *Silent Spring*, which many credit as having launched the environmental movement, and French feminist Françoise d’Eaubonne, who introduced the term *écoféminisme* in 1974. Ecofeminism, or Ecological Feminism, addresses a number of problems that the feminist and environmental movement share (Plumwood, 1993).

Warren (1994) describes Ecological Feminism as “an umbrella term which captures a variety of multicultural perspectives on the nature of the connections within social systems of domination between those humans in subdominant or subordinate positions, particularly women, and the domination of non-human nature” (p. 1). Warren (1994) says that the umbrella concept permits meaningful talk on a variety of feminisms and that all feminisms are committed to the elimination of sexism. Moreover, just as there is more than one kind of feminism, there is more than one Ecofeminism and more than one ecofeminist philosophy (Warren, 1993). For definitions from a number of prominent ecofeminists, please see Appendix C. For the interested reader, I also found that Chapter 2, “What Are Ecofeminists Saying? An Overview of Ecofeminist Positions,” in Warren’s (2000) book *Ecofeminist Philosophy* provided me with a useful snapshot of Ecofeminism. In addition, Appendix D contains the Ecofeminism themes of Deep Ecology, globalization and corporatization, Othering, dualisms, activism, and spirituality.

Ideology.

Ecofeminists believe that the oppression of women and the oppression of nature are linked to other systems of oppression and are rooted in patriarchy (Mellor, 1997; Spretnak, 1993). Warren (1994) describes patriarchy as follows:

the systemic, structural unjustified domination of women by men. Patriarchy consists of those institutions (including, in a Rawlseyan sense, those policies, practices, positions, offices, roles, and expectations) and behaviors which give privilege (higher status, value, prestige) and power (power-over power) to males or to what historically is male-gender identified, as well as a sexist conceptual framework needed to sustain and legitimize it. At the heart of patriarchy is the maintenance and justification of male-gender privilege and power (that is, power-over power). (p. 181)

Ecofeminism seeks systemic change. Deep Ecology examines systems and human beings' place in the cosmos, and Environmental Adult Education incorporates ideas from both Ecofeminism and Deep Ecology.

Environmental Adult Education

Overview.

Environmental Adult Education (EAE) promotes discussion and responds to immediate social concerns. Clover (2004) says that in light of our present environmental crisis, Adult Education needs to become “environmental and just in its essence, spirit and practice” (pp. viii, ix, x). Adult Education needs to recognize environmental issues² and examine their effects on people with regard to race, class, gender, religion, culture, and location (Clover, 2004, p. x). Through an environmental lens, EAE examines systems of domination or hegemony, the power exerted by a dominant group over others. However, the discussions are not confined to academic rhetoric because EAE recognizes that through lived experience individuals and communities construct knowledge in environmental, historical, cultural, or political contexts and shape counter-hegemonic discourse (Malone, 2004). In sum, just as coops address social issues and seek to transform society, so, too, does EAE.

Woodhouse (2004) asks, “How do we construct or reconstruct communities so that ecological and cultural sustainability is the foundation of change? [And] what is the role of education and research in bringing about this change?” (p. 155). One thing is clear, “for adult

² Environmental issues shift in time. Some of the past and present challenges include climate change, consumerism, gender and race oppression, resource and biodiversity depletion, globalization and corporatization, extreme weather events, air and water pollution, poverty, intellectual property right and bio patenting, acid rain, urban sprawl, cultural homogenization and ecological imperialism, economic development, land rights, spirituality, as well as physical, emotional, and psychological illnesses linked to the environment (Clover, 2004, p. x).

educators committed to the transformative and political purpose of learning, environmental injustices and degradation simply can no longer be ignored” (Clover, de Oliveira Jayme, Follen & Hall, 2010, p. 21). Clover et al. (2010) imply that women need to take action.

Teaching and Learning.

One way to take action is through teaching and learning, and in terms of socio-environmental change, collective learning is more powerful than individual learning (Clover et al., 2010). For instance, in social change movements, teaching and learning happens through interaction where experienced people advise newcomers informally and through a continuous process (Branagan, 2005). This continuous process of learning and teaching is not restricted to formal institutions. In fact, while conducting her research, Clover (2004) found that “a majority of learning was done in the farms, homes, shops, workplaces, or elsewhere where work and daily life was going on” (p. 182). According to Woodhouse (2004), “people reconnect with the natural world and develop a deeper understanding of home and place by using nature and the community as teachers and sites for learning,[and] through a variety of place-based activities, people learn to take back control of their environment” (p. 160). They become agents of their own future.

Activism and Politics.

Human beings can become agents of their own future, and EAE is “an activist-based political pedagogy” (Clover, 2004, xvi). Environmental adult educators seek to provide opportunities “for people to draw on their experiences and knowledge, imagine, and work towards a more whole life-centred way of being on this planet” (Clover, 2004, p. xiii). Because “environmental problems are political” (Clover et al., 2010, p. 15) – solutions are also political.

To help reach solutions, Clover and Hill (2003) say that EAE respects and nurtures patterns of knowing that are rooted in the land; it provides opportunities to critique, reflect, and experience; and it encourages hope, imagination, creativity, and action (as cited in Clover et al. 2010). EAE facilitates human imaginings of other ways of being in the world.

Art.

Cultural practices, such as art and sculpture, challenge dominant forms of education and encourage imagination. Diamond and Mullen (1999) suggest that art “makes imaginative and aesthetic pathways of learning possible. Cultural forms of representation serve to filter, organize, and convert experience into meaning, transforming the contents of consciousness into a collective form that can be shared” (as cited in Clover, 2004, p. xv). Branagan (2005) points out that the arts, through a variety of creative media, “engage large sections of the populace” (p. 33). Branagan (2005) also adds that art can break down resistance to behaviour change and educate people in a variety of holistic ways – emotionally and physically as well as on several intellectual levels. Other than the more obvious teaching, speechmaking, or protesting, art provides a variety of avenues for self-expression and inclusion in environmentalism (Branagan, 2005). Through EAE, participants use cultural practices (such as art, sculpture, or natural building) to make a difference in ways that are meaningful for them.

Summary

This chapter reviews the literature on cob and natural building, Deep Ecology, Ecofeminism, and Environmental Adult Education. It links these themes to the notion that cobs are art forms, political statements, and extensions of self. With this theoretical frame in mind, the following chapter turns to my use of photo-interview and poetic representation as arts-based research methods.

Chapter 3: The Planning Stage

Research methods illuminate the research question and light a path to greater understanding. According to Eisner (1997), one of the reasons for selecting a particular tool over another is that it gets the job done more effectively. In this section, I justify my choice of arts-based research as a methodology, photo-interview as a method, and poetic representation as a data-presentation technique. I start with an overview of arts-based research and explain why I think it is the best fit to investigate women building cobs as seen through an ecofeminist lens. Next, I examine photo-interview and provide a snapshot of poetic representation. Lastly, I discuss the challenges and limitations as well as the validity and rigour of the study. Please note that I separate the theoretical aspect of my methodology and my research design. Therefore, Chapter 4 provides additional insight into research design.

Arts-Based Research as a methodology

My medium fits my message because today's environmental crisis begs new or reframed questions. hooks (1995) says that "as we critically imagine new ways to think and write about visual art, as we make spaces for dialogue across boundaries, we engage a process of cultural transformation..." (p. xvi). Transformation has never been as necessary as it is now. Bateson (2007) warns that "the climate change now under way represents a systemic disruption that is the greatest threat on the human horizon, requiring basic changes in habits of thought that link global change to individual and local behaviour" (p. 281). Eco-friendly cobs represent an alternative and transformative way of thinking—and, as I hope to reveal, so do my methods. To frame this

study, I use arts-based methods, a constructivist critical theory approach, and an ecofeminist lens. It is a powerful mixture for the following reasons:

Ecofeminism, which surfaced during third-wave feminism, is now “emerging globally as a major catalyst of ethical, political, social, and creative change” (Diamond & Orenstein, 1990, p. ix). Constructivism contends that knowledge is constructed or co-constructed. Critical theory examines prevailing structures of domination. And art-based research (ABR), which emerged with second-wave feminism during the 1960s - 1970s, demands new ways, both theoretical and methodological, to answer new or reframed questions (Leavy, 2009). Branagan (2005) says the “celebratory and creative” nature of the arts balance and lighten environmentalism’s “often confronting messages with creativity and humour” (p. 38). In writing classes, seasoned professionals emphasize, “Show—don’t tell.” By using arts-based methods to examine cobs, I am less dependent on telling and more able to show that cobs are art forms and catalysts for change, political statements, and expressions of self. By using arts-based methods, I also leave room for readers to imagine.

Arts-based research is an art form and more. Leavy (2009) says “both artistic practice [such as cob building] and the practice of qualitative research can be viewed as crafts (p. 10), yet according to Leavy (2009) “arts, at their best, are known for being emotionally and politically evocative, captivating, aesthetically powerful, and moving. Art can grab people’s attention in powerful ways” (p. 12). The arts require active involvement. They allow humankind to pursue a more equitable world. They also provide a space for us to examine both our beliefs and ourselves. The arts can stir our emotions and penetrate our souls.

To advocate for a more equitable world, the art images in this paper counter traditional images of power. According to Birkeland (1993), power, which works like an aphrodisiac, is obtained through the control and exploitation of social and natural resources. We need to “demystify the social conception of masculinity as power” (Birkeland, 1993, p. 53). One way to do this is through images:

We should work to disassociate masculinity from the images of heroism, conquest, and death defiance so familiar in militaristic fantasies; from the images of competitiveness, individualism, and aggression glorified in sports; from the images of objectivity, linearity, and reductionism exalted by science; and from the images of hierarchy, progress, and control entrenched in technocracy. (Birkeland, 1993, p. 53)

In this study, the participants’ photographs highlight children, animals, women, art, local materials, and nature, to name a few. They illustrate how social and natural resources need not be exploited and present an alternative to patriarchy. Although the photographs show women and are from women, advocating equality is not gender specific. Birkeland (1993) says “all sexes can work to affirm the values of caring, openness, nurturing, and non-defensiveness and the possibility of creating societies in harmony with all living beings” (p. 54). Each participant’s photo presented in Chapter 5 underscores her values. Natural building through arts-based research explores deeper questions about personal and political beliefs—what is important, and ways of being in the world.

Through the collective arts process, people connect their emotions and their beliefs. Leavy (2009) finds that arts-based practices “promote dialogue, which is critical to cultivating understanding....The arts ideally evoke emotional responses, and so the dialogue sparked by arts-based practices is highly engaged” (p. 14). This type of high-level engagement is especially

relevant in a collective setting such as cob building, which is a collective art-making process. Arts-based practices often focus on “communicating information about the experiences associated with differences, diversity, and prejudice” (Leavy, 2009, p. 13). The communal aspect of cob building provides a venue for such discussions to take place.

I am exploring cob as an extension of self, so I am interested in both the building process and the product. Leavy (2009) maintains, “arts-based practices are particularly useful for research projects that aim to describe, explore or discover, and furthermore, these methods are generally attentive to processes” (p. 12). For this study, I set out to explore and discover; therefore, photo-interview suits my needs perfectly.

Photo-interview as a Method

The research technique of using photographs plus the written word and/or interviews is referred to as photo-elicitation or photo-interview (Armstrong, 2005; Blinn & Harrist, 1991; Clark-Ibáñez, 2004; Dodman, 2003; Hurworth, 2003; Moore, Croxford, Adams, Refaee, Cox & Sharples, 2008). Images do not represent a transparent window onto the world, but they interpret the world and display it in a very particular way or create a perspective (Leavy, 2009; Rose, 2001). Qualitative researchers use images such as film, photographs, symbols, maps, graffiti, signs, and so on to enhance understanding of the human condition (Prosser, 1998). When I want to understand an issue better, I approach it from many angles. Richardson and St. Pierre (2005) state that “what we see depends on our angle of repose—not triangulation but rather crystallization” (p. 963). Therefore, different methods encourage different responses to the same

question, or sometimes they elicit new questions. I felt photo-interview provided a space for alternatives to emerge.

The photographs used during a photo-interview stimulate and guide the interview. Photos, from any time, taken by anyone, can be used (Moore et al., 2008). Clark-Ibáñez (2004) suggests that photographs act as a medium for communication between the researcher and the participant. Banks (2001) believes the use of photographs increases the degree of intimacy between researcher and subject. Certainly, photographs capture imaginations. They allow researchers to expand on questions and provide participants with “a unique way to communicate dimensions of their lives” (Clark-Ibáñez, 2004, p. 1512). In short, photo-interviews ease the interview process, and because my participants chose their own photographs, the photo-interview honoured them and their choices.

Photo-interviews can serve as catalysts for change because they promote equality and encourage the negotiation and co-construction of meaning. During an interview, the researcher often holds the power and shapes the interview; however, Moore et al. (2008) found that photography as a method changes the interview roles and allows participants to set the agenda. This “freedom” encourages “the diffusion of any existing power structures between the researched/researcher” (p. 56). Moore et al. (2008) also note that a semi-structured interview using photo-elicitation acts as an “agent for change” because it encourages participants to reflect on their existing perceptions and experiences. Leavy (2009) suggests that “visual art inherently opens up multiple meanings that are determined not only by the artist but also by the viewer and the context of the viewing” (p. 215). During my photo-interviews, as I explored women cob builders’ connection to building and to the land, my participants and I challenged dominant

ideologies, especially those that tout the “modern” conventional building techniques that support consumerism, globalization, and big industry.

Poetic Representation

In this arts-based study, the use of poetry expands on the underlying premise that the arts are more than simply art. I realize that researchers are normally expected to write in prose. Richardson (2001) states “a deep and totally unnoticed trope used by social researchers is the reporting of interview material in prose” (p. 878), yet, Etmanski (2007) suggests that arts-based researchers include poems or photos in much the same way that “non-arts-based researchers represent their findings using graphs, charts, tables, etc.,” (p. 123). Prose is “simply a literary technique, a convention, and not the sole legitimate carrier of knowledge,” and “for some kinds of knowledge, poetic representation may be preferable to representation in prose” (Richardson, 2001, p. 877). Richardson (2001) sees poetic representation as “a practical and powerful, indeed transforming, method of understanding the social, altering the self, and invigorating the research community that claims knowledge of our lives” (p. 888). Indeed, just as cobs are art forms, political statements, and extensions of self, the same could be said of poetry.

Poetic representation is “a viable method for seeing beyond social scientific conventions and discursive practices” (Richardson, 2001, p. 877). Certainly, poetry plays an essential role in this emotion-nurtured study that I wrote in the hopes of impacting readers, for “even if the prosodic mind resists, the body responds to poetry. It is *felt*. To paraphrase Robert Frost, poetry is the shortest emotional path between two individuals” (Richardson, 2001, p. 879). Cob is about feeling for and connecting to the Earth. Felstiner (2009) says “our animal bodies are ‘of the earth, earthy,’” yet we have do not really know nonhuman nature—“we sense but can’t really grasp stone or tree, let alone stream or bird” (p. 357). Poetry is a way for humans to *feel* their

connection to the environment, reflect on their lives and values, and maybe become more involved.

Poems promote awareness that can spur action for the good of the Earth. Felstiner (2009) says, “Response starts with individuals, it’s individual persons that poems are spoken by and spoken to. One by one, the will to act may rise within us. Because we are what the beauty and force of poems reach toward, we’ve a chance to recognize and lighten our footprint in a world where all of nature matters vitally” (p. xiii). Felstiner (2009) also poses this question: “if poems touch our full humanness, can they quicken awareness and bolster respect for this ravaged resilient earth we live on?” (p. xiii). This means new or reframed questions such as those that address the underlying causes of environmental problems just might be asked. Action may ensue. According to Felstiner (2009), “stirring the spirit, poetry could prompt new ventures, anything from a thrifty household, frugal vehicle, recycling drive, communal garden, or local businesses going green, to an active concern for global warming” (pp. xiii-xiv). Perhaps even the building of a cob house.

Because poems use connotation and literary devices such as metaphor, “poetic representations have a greater likelihood of engaging readers in reflexive analyses of their own interpretive labor, as well as the researcher’s interpretive labor in relation to the speaker’s interpretive labor. The construction of text is thus positioned as joint, prismatic, open, and partial” (Richardson, 2001, p. 879). Leavy (2009) agrees poetic representation “is not simply an alternative way of presenting the same information,” but, rather, it can “help the researcher evoke different meanings from the data, work through a different set of issues, and help the audience receive the data differently” (p. 64). For instance, just imagine if dominant society shifted metaphors. Instead of the Earth as *a resource to power the machine*, what if the Earth was

viewed through the eyes of Ecofeminists, Deep Ecologists, environmental adult educators, and women who build cobs—what if dominant society began to view the Earth as *part of a living interconnected system that nurtures all*? Just imagine what our world might look like.

Reflexivity and Validity

Reflexivity, accurate transcriptions, and rich descriptions increase a study's validity and rigor. Researcher reflexivity involves the self-disclosure of the researcher's assumptions, beliefs, and biases, all of which shape her inquiry. I approached this research from a critical paradigm and reflected on the social, cultural, and historical forces that shape my interpretations (Creswell & Miller, 2000). I also approached natural building from an ecofeminist lens. As a middle-aged white female, who lived in Asia for close to twenty years, I am well-traveled and open to varying opinions. I acknowledge my bias towards women, and I admire the women who build cob homes. Based on my review of cob building literature and my own soul searching, I started this research with the assumption that cobs are art forms, political statements, and extensions of self.

One of the aims of this study is to give voice to women who are doing ordinary and extraordinary things. To accomplish this, I believe readers have to be able to hear the women. Rudduck (1993) says, "Some statements carry a remarkably rich density of meaning in few words" (p. 19). I paid close attention to issues surrounding transcribing because Poland (2001) claims that many qualitative researchers "do not give transcription quality a second thought" (p. 630). For instance, people speak in run-on sentences; they quote or mimic others (Poland, 2001). Oral historian Dennis Tedlock (1983) says that interviewees' speech is "closer to poetry than it is to prose. Nobody talks in prose" (as cited in Richardson, 2001, p. 879). I discovered that poetic representation of my participants' interviews felt honest.

Richardson (2001) reminds us “writing is never innocent. Writing always inscribes” (p. 879), and to present transcribed interviews as prose, researchers cut, paste, edit, trim, smooth, and snip (Richardson, 2001). They treat data “just as if it were a literary text—which it is, albeit usually without explicit acknowledgement or recognition as such by the researcher...The use of standard writing conventions, including the use of prose, conceals the handprint of the researcher who produced the written text” (Richardson, 2001, p. 878). Yet, “constructing interview material as poems does not delude the researcher, listener, or readers into thinking that one and the only true story has been written” (Richardson, 2001, p. 879). Therefore, rather than concealing the handprint of the researcher, poetic representation highlights it, and this to me feels more honest.

Some may wonder how poems stand up to rigor and validity. Leavy (2009) says that poetic representation of data “cannot be judged by positivist standards, and at times cannot even be evaluated by traditional qualitative ‘interpretive’ standards” (p. 82). However, basic guidelines for trustworthiness in research poems exist. Poetry as a craft has literary rules and normative practices, and Leavy (2009) warns researchers not to “assume that they can write poems, or do so easily, simply because they want to ‘experiment’ with the form without paying attention to the craft in its own right” (p. 82). Writing poetry is hard work; therefore, “the use of poetry in research increases rigor in the interpretation and writing processes, it does not diminish it” (Leavy, 2009, p. 82). “Moreover, attention to the poetic form itself enhances the aesthetic qualities of the work, which in turn increases positive audience response; the audience response is itself a validity checkpoint in arts-based research” (Leavy, 2009, p. 82). Faulkner (2005) suggests that poems can also be judged “on their ability to evoke emotions, produce connections, create a scene that *feels* truthful, and inspire political or social conscious action” (as cited in

Leavy, 2009, p. 82). I created poems to honour my participants, engage readers, and inspire action. You as readers will judge whether I succeeded.

Summary

Arts-based research, like women building cob homes, encourages the reframing and rethinking of dominant society and is a catalyst for change. In this chapter, I spoke of the appropriateness of arts-based methods. I introduced you to photo-interviews and discussed how this method provided an opportunity for my participants and me to explore visions and notions of art, politics, and beliefs. I also touched upon the honesty of poetic representation. I suggested that the validity of this study is reinforced by reflexivity and that the validity of poems, in part, rests in their ability to engage and inspire. With an understanding of the theory behind the methods, I now provide a closer look at how I applied this theory and these methods.

Chapter 4: The Construction Process

In the previous chapter, I introduced my arts-based methods. In this chapter, I highlight thoughts on the process. I describe the actual collection and organization of my interview data. I continue with a discussion on reading and categorizing and close with how reflection led me to present some of the data using poetic representation.

Collection

My data collection proved straightforward and proceeded unhindered. I was fortunate to interview three women, all of whom are natural builders, activists, and/or artists on Vancouver Island, British Columbia. On March 31, 2011, I received my ethics approval from the University of Victoria's Human Research Ethics Board, and on April 1, 2011, I sent out recruitment emails to well-known natural builders around Victoria. Within a few hours to a few days, I received replies expressing interest in my study. My goal was to interview three to five cob builders, and from my group of initial contacts, I set up a phone interview with Mud Girl³ Rose Dickson. Two initial contacts recommended that I speak to natural building advocate Dawn Smith, so I met with Dawn. Dawn suggested that I talk to artist Kata Polana, and on the evening of April 9, I received an email from Kata. I immediately phoned her and scheduled an interview.

I conducted my participant interviews over two days, April 9 and April 11, 2011. The interviews and their locations were as unique as the participants. I interviewed Dawn at Solstice Café near Victoria's Chinatown. Rose, a founding Mud Girl, natural builder, and cob artist lives

³ The Mud Girls are a consensus-run, women-only natural building collective. 2011 is their fifth season in operation. The Mud Girls start off the year with a boot camp and end it with a fall meeting to recap the season and adapt or adopt policies.

in Nanaimo, so I talked to her over the phone. And on the sunny morning of April 11, I drove out to Mossy Banks Permaculture Farm in North Cowichan, B.C. to meet with natural builder and artist Kata.

I prepared for the interviews and so did my participants. I like putting a face to a name and thought they might, too. I listed my website and facebook page. I perused their websites and read Dawn's blog. Prior to the interviews, I asked my participants to read the documents that I had sent them: the recruitment email, ethics forms, and the Participant Consent Form. These forms contain information about the study, but more specifically, they introduced my notion of cobs as art forms, political statements, and extensions of self. I planned to elicit the participants' views on these three points and did not want my ideas to come as a surprise.

As mentioned earlier, I asked each participant to choose several photos related to cob building so that they could talk about the photos, their own relationship to the land, and what the experience of building meant to them. On April 4, 2011, Dawn emailed me five photographs (see Figures 2-6). I admit I was surprised. The photographs are not the typical hobbit-house photos of cobs that I had expected. In fact, for the most part, I was unsure of exactly how they related to cobs. Rose directed me to her facebook page for photographs (see Figures 7, 8 and 9), and Kata sorted through photographs prior to the interview and as we spoke (for Kata's photographs see Figures 10-15). The photographs, like the oral interviews, provided insight into the participants' values and passions. I introduce the photographs in the Chapter 5 and discuss them further in Chapter 6.

Given my desire to respond to emergent opportunities and to shape my study to the participants' experiences, during the actual interviews I moved away from my original questions. I had built my hypothesis into the questions, but none of my participants actually lives in a cob

house. Instead, I stated my views at the start of the interview. I wondered if my opinions might sway their responses, but David Karp believes there is no need “to hide or conceal hypotheses, ideas, and concepts” from participants (as cited in Hesse-Biber & Leavy, 2007, p. 146). In hindsight, I realize that on a passionate topic such as cobs, my participants are not easily swayed.

The range of participant enthusiasm for choosing and talking about photographs varied. However, I hope each participant felt that she directed and shaped her own interview. The interviews, which lasted 30 to 45 minutes, were audiotape recorded, and a day or two later, I finished transcribing the data. Although transcribing is a time-consuming and somewhat tedious task, in the end, I embraced the transcribing procedure and saw it as an opportunity to get closer to my data.

Next, based on what I know about myself, I made decisions about which data to include and which to exclude. I chose what I thought related best to my work. I also considered my audience. I hope this paper appeals to a broad audience, and I think the inclusion of all the photographs adds to its appeal. I know photographs (and poems) appeal to me, so I hope they appeal to you as readers. Krieger (1985) states that “we see others as we know ourselves,” therefore, if our self-understanding is limited, our understanding of others is limited as well (p. 320). Certainly during this study, I have embarked on a quest to know myself better, and I admit, I feel a strong connection to the ecofeminist literature.

Organization

Mason (1996) says that even the system of organization is an analysis, and just as cobs are built in an orderly fashion from foundation up, I similarly organized my data. I named, dated, and stored the audiotapes. I colour-coded, underlined, and made annotations on the hard copy transcripts, which I will later shred. I transferred the information onto my password-protected

laptop. I organized so the work is easily accessible because Kirby and McKenna (1989) remind researchers that “analysis is an ongoing process” (p. 130). I found that with each process, I reviewed the data and got closer to it.

Finally, I organized and placed the data in Chapter 5. The interviews and photographs are in the order, except for Kata’s favourite cob (see Figure 11) which I moved to fit the page. I introduce each participant separately to honour that person with her own space. This way, you get to know one person before moving on to the next. To give you an overview of each person, I inserted a personal photograph framed with key quotes. I then placed the interview photographs and poetic representations. Lastly, using the participants’ own words, I inserted their views on cobs as art forms, political statements, and extensions of self.

Reading and Categorizing

Mason (1996) states that the reading of data encompasses the following three levels:

- (1) literal, where I look at the “literal form, content, structure, style, layout and so on”;
- (2) interpretive, here I examine what the data means or represent, or what I can infer from it; and
- (3) reflexive, which is the point at which I locate myself and explore my role in “the process of generation and interpretation of data” (p. 109). I covered all of these but not in order. I oscillated between the three.

With the transcripts before me, coloured highlighters and a pencil in hand, I looked for overarching themes. Readers and researchers clump things together – they look for, find, and name meaning, create categories and codes (Richardson, 2001). I marked out sentences and phrases to create what Karp describes as a “data memo,” a “memo that integrates the theme with data and any available literature that fits” (as cited in Hesse-Biber, 2007, p. 145). The memos held more information than I needed, so I transferred the themes into a table (see Table 2,

Appendix E). The table makes for easy access, and I used it to link data and literature. Mason (1996) says, “The function of the categories is to focus and organize the *retrieval* of sections of text, or elements of data, for the purpose of some further form of further analysis or manipulation” (p. 111). Next, in a process to deepen my reflexivity, I wrote the poem “Choices” (see Frontispiece) in which I reflect on my life and my research.

On a literal level, I performed word counts because during the interviews, participants repeated and emphasized specific words. My memory clung to the vocabulary, and at the end of each interview, I summed up each person’s views and assigned the following key words:

- Dawn—values
- Rose—community
- Kata—functionality

I wanted to check to see if my initial reaction actually matched the word counts. If word counts are to be trusted as an indication of what a person feels is important, then the results in Table 1 (see Appendix E) indicate that I was both correct and incorrect. Upon reflection, I uncovered some dangers to this method of analysis. First, by classifying, labelling, and placing people in slots, I ignore the dynamic nature of human beings. In addition, I am failing to consider the context. The conversations were not the same because, for the most part, the participants shaped their own interviews.

After the keyword counts, I revisited my Table of Themes (see Appendix E), added a new theme, and thought about overlaps. I also marked out the sections of text that referred to each photograph. I cut and pasted the text next to the photograph. I snipped at sentences and tried to turn the transcribed words into smooth prose. I changed words so that passages would flow more smoothly. This bothered me because I was presenting the words as authentic when clearly they were not. In fact, Richardson (2001) describes the process and my dilemma perfectly (see

page 36 of this study). And it was at this exact point that I returned to the books in search of an alternative and found Richardson (2001).

Reflection and Poetic Representation

Bringing news to the world has been a task of poets.

- Felstiner, 2009

The reflection process.

The creation of knowledge incorporates not only written or observable facts but also experiences, stories, intuition, and emotions. Throughout this research project, I have incorporated the arts as a means to reflect on my data and to know myself better. And just like Glesne (1997), I, too, “was so immersed in poetry at the time, that the poetic impulse took over” (p. 205). I opted to mix prose and poetry. Poetry captures readers’ imaginations, draws attention to the photographs, and highlights key concepts. In contrast, I use prose to relay my participants’ thoughts on cobs as art, political statements, and extensions of self. According to Richardson (2001), rather than distract readers with a change of genre, prose presents material and stages arguments in a familiar way. Moreover, there is an underlying authority in following convention (Richardson, 2001). The participants’ views shore up this study because they confirm or disprove my hypotheses. Therefore, I use prose because it is perceived as being more credible. Readers can decide for themselves whether this is indeed true. I have come to believe that just as biodiversity is essential in nature, diversity in a paper makes for more interesting research and reading. This study informs, but I also hope it touch emotions and encourages imaginings.

Poetic representation provided a way for me to get close to my data because it “offers social researchers an opportunity to write about, or with, people in ways that honor their speech styles, words, rhythms, and syntax” (Richardson, 2001, p. 880). I wrote the representational poems using exact words and phrases from the transcripts. The line breaks are based on pauses on the actual audio recording, which I re-listened to during the writing. I also got closer to my data by increasing my knowledge of natural building. On May 24, 2011, I joined a work party to apply natural plaster on a cob house (see Frontispiece). The experience increased my practical knowledge of natural building, gave me new insights, and offered a new experience on which to reflect (see poem titled “On Sight/Site” in Appendix B).

Summary

With my ethics forms in hand, I set out to collect data. I interviewed and organized the data that I produced. Then I coded, filed, and created tables. I placed the photographs in Chapter 5, and I reflected. I re-read the transcripts and re-listen to the audiotapes. I investigated poetic representation as a data presentation method and used participant descriptions of the photographs to create poetry. The remainder of the data, I wrote as prose.

I have provided an overview of my data collection and my representation process. Now I introduce the participants’ photographs and their views on cobs as art forms, political statements, and extensions of self.

Chapter 5: Touring the Building

In this chapter, I introduce my participants and the data I produced. As described in the previous chapter, I use poetic representation to highlight what the participants said about their photographs during the photo-interviews, and in prose, I report the participants' views on cobs as art forms, political statements, and extensions of self.



Dawn Smith (Smith, n.d.)

I'm a builder, and right now what I'm building is invisible structures so that one day I can get back into the mud and build full scale.

I still yearn for the day when a builder could just be a builder and not a bureaucrat, but it's a little delusional for me to yearn for those days.

We cannot continue to build the way that we build today. We do not have the natural capital to facilitate that process.

An Awesome Little House

It's an awesome little house.
I like it. It's cute.
My great-grandfather built it
75 years ago in Calgary.
Grandmother was twenty.
Dad was raised there.

I come from a line of builders.
The heritage building in my family
inspires me in my work.

My great-grandfather,
an immigrant from Ireland,
was lucky to have the skills to build a house.

The house, made from material milled locally,
made using hand tools – no power tools,



Figure 2: The House my Great-Grandfather Built

moved by train or horse,
 window panes travelled on the CPR,
 It represents values –
 low-embodied energy
 low-embodied technology.

Today the house still stands,
 liveable without electricity,
 operable without electricity.
 Whereas conventional houses
 fill up with mould and rot.

And, in a light commercial building on Cook Street
 A friend installs a natural bench – a cob
 I say, isn't that cool and groovy,
 but compare it to this house.
 Consider its ecological impact.

Value of Durability

Built one hundred years ago
 of hand-hewn logs chinked with plaster,
 knowledge brought to the new country
 by Ukrainian settlers.

Horse manure, clay, some sort of straw.
 I pick apart the plaster samples
 I want to discover what's in them.

The cabin needs no plastics or metals.
 Corners interlock.
 Pins secure beautiful weathered wood beams.
 You can take this cabin apart.
 You can use it for something else.



Figure 3: Cabin in Alberta



Figure 4: Straw Bale, Edson, Alberta

Summer Solstice 2001

My first straw bale
At 21 or 22,
I somehow came into the job.

It was perfect.

An apex design,
octagonal straw bale system
south side mostly glass.

The lady wanted her house to look like
birch bark. It's hard to see.

But it's a beautiful plaster.
It took forever to do.
Loft on the third floor
and a skylight, too.
I loved working on this house.

House at O.U.R. Ecovillage

It's just beautiful – the colours
– the earth plasters, light slip clay.

There's a garden, a deer fence,
and the contrast of metal.
Framing things always brings them alive.

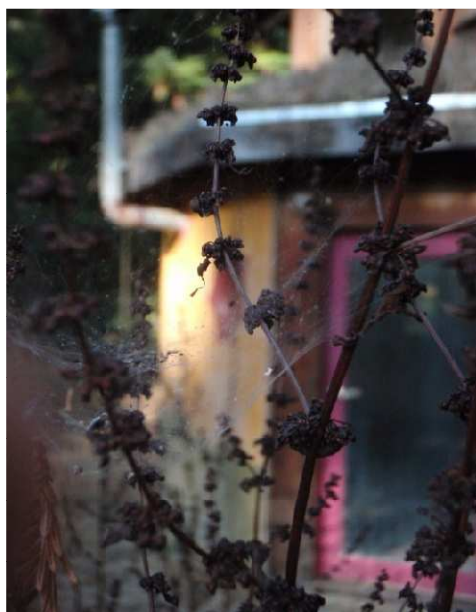
It's a beautiful tight little multi-use space.
Living quarters in the front,
double-high art space in the back.
Good for drafting or art making.
The top floor has a separate private entrance –
accommodations or teaching space or library
space – all sorts of things.
I love multi use.

And it's a good use of that piece of land,
on this tight little hill.

The design – just beautiful.
It's the most beautiful natural building.



Figure 5: Elke's House/Studio, O.U.R. Ecovillage



The Sanctuary

Off grid, living roof, self-contained, 200 square feet, classic cob cottage built by Michael Smith, a beautiful beautiful human being. It's the wonder of nature interconnected. The web of all beings.

Figure 6: Michael Smith's Fern Cabin, Emerald Earth, California

Dawn's views on cobs as art forms.

For sure cobs are art, but in my heart of hearts, I'm not an artist. I consider it art to the extent that it's a new world vision. And it's a bit revolutionary. It has the potential to be aesthetically very, very beautiful. Natural building is a way for me to express my values and my world vision. If I were an artist, I'm sure I would say my artistry. I don't identify as an artist. I identify as a change maker who's trying to be a part of the big shift to get us out of the jam we're in and to make a really awesome world. I'm so excited about it. And natural building is a use for that. An awesome world with natural building. I'm trying as hard as I can. It's really important for me in my work to stay in a place of positivity.

There is a danger when we talk about art and natural building of reinforcing it as a niche market item of people who are just going to make these beautiful little houses on Saltspring. I don't want to stand in the way of people doing that, or of people who want to work on these

highly detailed beautiful art houses. That's great. Look at the values. Look where that's going—that's not enough. We need to open it up and make it wide scale. Scale it up so that the values that drive the art are also the values that drive the political action. But there's a danger when we talk about it [natural building] as an art form of cornering it into some sort of select elite thing for only the people who are independently wealthy and who own land – and what kind of integrity of art is that? Art is not ecology; it's opening up spaces and getting world visions out there, so there are some complexities. It's not just as simple as beautiful buildings that look pretty. We have to look at the values that drive natural building and we may have to make buildings that aren't highly stylized and that don't have beautiful earth plaster—buildings that are really simple or generic or that look square so that people in the suburbs can handle it.

Dawn on cobs as political statements.

What drives my passion in it [natural building] is what the world can be – what it can look like. It could be really awesome to live your life in 2050. It's about creating social and ecological change for the better and using building as a medium to achieve that. I consider building – it's just an excuse to get groups of people together and work together on something, and hopefully start to relate to each other in a healthier way and start to relate to the world in a healthier way. As a by-product, create superior buildings.

We cannot continue to build the way that we are building today. We do not have the natural capital to facilitate that process. We don't have the carbon emissions that we would require. We simply do not have that lenience, and so we, I mean it [natural building], came out of this kooky hippy back world. That's awesome – I honour that tradition. And the role of my generation of builders is to figure out how to take those wonderful origins and the values that

come with them and shift it into the 21st century. Let's talk about scale. Let's talk about scaling this up.

Dawn on cobs as an extension of self.

Q: Do you see these buildings connecting human beings to the earth?

Hugely, hugely. I've been lucky enough to live in a lot of natural buildings. I've lived in a couple different of straw bales and a cob. Firstly, they tend to be designed with a much more sane relationship to the rest of the world, so there's a better chance of them being engaging and interesting. They're often in rural locations, so that helps. The material itself has a calming effect. I don't know how to describe it. Natural building is all about the gut feeling—a lot of people don't have the words to describe the experience they have in them and how connecting and calming and reassuring it is. There's something really primeval and beautiful about that, plus they tend to be in great colours and great textures and lived in by people who are quite loving. Some of it has to do with the depth of the walls. I don't know why thick walls have that effect, but they do for me at least. One thing that's happening is our reaction to the high clay content. I think it does something to the humidity in the air that humans really appreciate. Minke wrote a lot about this.



Rose Dickson (Mud Girls Building Collective, n.d.)

Whether it's nature or culture, both genders tend to be a little different around each other. When a member of the opposite sex is around, we might just have a slightly different behaviour pattern—especially in learning. Building is typically a man's job. There are lots of women in conventional building, and there are lots of women that work with men. We [the Mud Girls] worked with and learned from men. We just felt that we wanted to see what it was like, and what we found is that we all thrive in a women-only environment. Quite a few of us tend to pull back a little bit when a man is around or maybe defer to his opinion, and we didn't even want to have that be a part of it. We wanted to develop our own skills. As a women-only collective we have a safe space to do that in because we – whether men are judging women or not – women might perceive they're being judged. I know these are generalizations, but I know a lot of people of both genders can relate to maybe not feeling a 100 percent comfortable, being their full selves, and making mistakes, and feeling like they can make mistakes and keep going, when they're around certain types of people. Members of the opposite sex can be people who trigger that. ... So we hire men; we've been hired by men, but as our core meeting collective and as our core working collective, we have all thrived and grown and learned so much as women.



Figure 7: Rose's Bench Project



Figure 8: Finished Bench, Nanaimo Community Gardens

Creating a Bench

Volunteers worked weeks ahead of time picking out good usable rocks.
Rocks, more rounded than normal,
but we made them work.

A couple layers of foundation dictated the base of our bench.
A spot, on the middle right, got quite skinny.
It's the nature of the rocks.

We couldn't do much more.
It's natural organics.

When building the back of the bench,
we wanted to play with it.
We put bottles in and a planter.
Bottles stuck out. We plastered.
We created a mosaic.



Figure 9: Mud Girls, Rose's Children, Rose (middle)

A Mud Girl Memory

We sit together; we have meetings; we dig holes.
That's me in the middle; those are my two kids.
It's a bit of a different structure.
We sort of went with the client's idea. We embedded a post.
We've been digging these holes all day.
It's our working environment; it's physical – obviously.
It was a hilarious afternoon. It was a good memory.

The holes filled up with water.
We're scooping it out.

Someday I want to build my own house,
and I enjoy teaching.
But the main thing is the Mud Girls.

It's the community I'm committed to.
And it's them.
I would miss them like crazy if I stopped participating.
I just love being with them
belonging, sharing, learning, and teaching.

Rose's views on cobs as art forms.

It's definitely an art form. Much more as well. Unlike any other building material, it can really make rounded forms and can be sculpted – spontaneously sculpted as it's built. It can be very creative. You can have a house where the wall has a pattern built right into it with bottles or mosaics on the walls. You can do little curly queues at the edges of things.

Rose on cobs as political statements.

I definitely think our group is political in the sense of testing the boundaries of society and trying to open people's minds to different ways of doing things. Our main way of working is no cement foundations, and we incorporate local materials as much as possible. Rather than restrict ourselves to convention, we explore what's possible outside the bounds of it....It's very political. It's kind of like radical ecofeminism/localism.

Rose on cobs as an extension of self.

One of the Mud Girls had a structure being built on her parents' land – this small little gathering place. Right now it's in its finished state. We used clay from a pond there. And I remember this one workshop where she just kind of had this profound feeling of taking earth

from one part of the property and reassembling it in another—of creating this structure and uniting all these people working on it. Everyone was really excited, and the structure was beautiful. It was like – wow – kind of like alchemy. So that [cobs as an extension of self] definitely resonated with her.



Kata Polano (Earthen Built, 2011)

I wanted to find a place where I could bring environmentalism and art together...and that's why I got into cob and natural building – for the combination of art and expression and functionality.

The Cob Bench

The old bench came to the post.
 No oven. No table.
 Over the years,
 part of the bench had fallen off.
 It needed to be repaired, so
 we just kind of patched it up
 really quick, so it wasn't jagged.
 Then, I took on the project to expand it.
 I worked with the community at Emerald Earth.
 I worked with the community on the design
 I asked them:
 What do you want it to serve?
 what purposes?

That's where the table came in
 for people working at the oven.
 That's where the alcove came in



Figure 10: Kata's Bench Project

they wanted to have meetings out here.

You'd never know the bench ended here.
That's how nice and easy it is.
I didn't have to do anything.
Just take the old plaster off.
I put clay on it. Stuck more cob. Put more rock down.
But they can change it.
Later they can come in here
decide that they want another bench coming out here.
They can stick it on.

It's so forgiving.
It's a safe way to build.
It welcomes a lot of people into it.
And it's so smooth.
You don't have to sand.
You don't have to varnish
It's the plaster. It's so smooth.

And the colours,
around here especially,
people are into earthy colours.
I lived in Mexico for a while;
it's all bright – bright colours
the clothing is bright.
But here the people wear earthy colours.
Having the earth on these structures is kind of
part of the culture – almost.
The colours of the earth are comfortable.
The surroundings are comfortable.

City Farmer's Shed

Just like pottery
this sweet unfired cob shed
is functional art.

Glass shards for windows surrounded,
sculpted with cob
beauty in reuse.



Figure 11: Kata's Favourite cob (City Farmer, 2010)



Figure 12: Plaster over Drywall, Duncan, BC

Waves

Over brick
 Over stucco
 Over anything
 Doesn't have to be a cob home
 to have an earthen finish, which is awesome.

You can sculpt
 a shape – just a relief
 just a different level – relieved out
 looks really nice, and just like that – it opens up,
 allows people to feel creative when they're working with clay.

A friend, a natural builder,
 he called me in to help plaster.
 He had only one day available; I had more.
 He came in, worked, and left me the project.
 The woman who owns the space, the two of us got talking.
 All of sudden it went from flat plaster on the walls to we can do this.
 We can do that. She was so excited. All of a sudden she could do things on her walls.
 Possibilities just open up to people. It becomes a flat wall – to yay, there's clay plaster on it
 - to almost an interactive wall. It's interactive – definitely – when you're doing it. She got involved.
 One of her daughters came in and got involved a bit. It's really easy to let someone try it out. It's easy,
 because, as I said, you can fix it – if you don't get it right – you can fix it – when you're working with clay.



Figure 13: Clay Wattle over Metal Railing

Transformation

You can make ugly things beautiful.
 Not quite cob, but kind of a cobish material, was over the house.
 A shell over the house.
 This railing
 It's not quite rebar. It's metal railing.
 This chair that the railing made.
 This chair that was two pieces of wood.
 Just these random boards—one for the seat—one for the back.

We're going to have to do something about that chair, I told the client.
 Because just nobody sits in it. It's so ugly. It's so uncomfortable.
 I'm going to encase that chair in earthen materials.
 He said OK. He was really excited.

It's not actually cob. It's clay wattle.
 You take straw. Make it all in one direction. Take a chunk of straw. Roll it in clay.
 Make it like a bobcat poop. Then you weave it. You alternate — obviously.
 It's like weaving a basket.
 You can plaster.
 You can fill in the divots, or you can keep the divots.

This picture shows this wall.
 Shows what it was.
 Shows the transformation.



Figure 14: Domed Clay Plaster Ceiling

Creating Art

Paint on a drywall material.
 It was awful; it was ugly.
 Now, each bay is domed.
 Done easily with clay and straw.

We took something that was flat.
 Probably would have stayed flat.
 Created all this shape and movement
 with white clay. Got a white ceiling.
 Another guy did the metal work.
 Behind the stove there's a cob wall
 because it's a wood stove.
 So, there are some cool things.

And this is my point – every building is so unique and so creative and so playful.



Figure 15: SunRay's House (SunRay Kelley, n.d.)

SunRay's House

His big thing is the wood.
He's an artist first.
His house,
sculpture and rock.
It inspires me.

He's an artist first.
Obvious in his work,
sculptural and intricate.

I love the entry way. It's just cozy.

And his signature stuff –
he leaves ends of trees on;
he brings them out; they go all over.
He does a lot with shingles.
Yes, really neat artistic stuff.

Kata's views on cobs as art forms.

Cob as an art is primarily why I'm in it as an artist. I wanted to find a place where I could bring environmentalism and art together...I got into cob and natural building for the combination of art and expression and functionality. It's an art that has to serve a function. It's not just random art. I'm not just going to sit and paint a random picture.

Kata on cobs as political statements.

The system supports globalization, so we're fighting the system at this level. It [natural building] is political because it's taking back. We want real democracy where we actually have

the freedom to do what we need to do—not a system where we don't have a choice—not a system that says this is what we have to do because it's our only choice.

Kata on cobs as an extension of self.

Q: Do you see cobs as an extension of self?

Had you asked me that question three years ago, I would have gone all goo goo on you. It's an access point to empowerment and accomplishment that has been kind of taken away from the human experience, so to me, it makes me feel more human. You know when you're a kid and come home from school, and you've made something for your parents. You're so proud of it. So proud that you did that with your own two hands. It's that kind of feeling but bigger – I built that house! I built my own house! Or just sitting in this house; it's not a natural built house, but it has a lot of aspects – that wood – I fell in love.

The original owner built this place himself. All the wood comes from this land and all the stone. When I first came here, it had that same kind of feeling. There was care put into it. Thought. The design of the land – all these trees – he mapped out where everything was, including wind. These trees are the perfect windbreak. We don't get wind in front of this house. We get our sun, and, well, we get what we need. He did such a good job of design, of just working with the elements. He cut trees only where they needed to be cut and left the trees where they needed to be left.

Rather than getting really, really spiritual about it, which I do hold spirituality important, I see it [natural building] as this is what I'm made to do. I'm made to actually do things. I'm here to work with raw materials and natural materials and not just go to the store and buy all this crap.

So it puts empowerment back into your own hands – the ability, the capability, and the freedom – and I think that’s what a lot of people in this society miss – they’re not acknowledged or recognized or encouraged or given the freedom to do things on their own and to use their imagination and their creativity.

A lot of people who get turned on to cob and natural building get turned on to whatever it’s called these days – new age spirituality. New age hippies and these people are into that. They’re into the Goddess. It’s an important figure in their lives, and they’re into the feminist in general. It’s part of that culture. Cob is accessed a lot by that particular group of people who are into the feminine Goddess and that level of spirituality: back-to-earth spirituality, Native American spirituality, and Lakota. I think that’s why you see a lot of those rounded female sculptures, which are out there a lot because those are the people that are getting involved in cob building.

Summary

This chapter featured my participants. It presented the participants’ poetically represented photographs as well as their views on cobs as art forms, political statements, and extensions of self. In the next and final chapter, Chapter 6, I link the data to the literature. The chapter also touches on some of my reflections and concludes with a wrap-up of the study.

Chapter 6: The Final Inspection

Cobs represent the regeneration of something ancient as well as the start of something new and exciting. Natural building showcases humankind's ability to create and promote a more sustainable world. This study examines the ways in which women connect to the land through natural building, and what building means to them. However, this study is also about the Earth, our connection to it, and our responsibilities. In this final chapter, I focus on how my data relate to the considerations that I started with on this journey: cobs as art forms; cobs as political statements; and cobs as extensions of self. I suggest ways forward and conclude with a brief summary.

Linking Cobs to the Literature

This section backs my claim that cobs are art forms, political statements, and extensions of self. Just as Mason (1996) identifies three levels of reading data (literal, interpretive, reflexive), I have devised the following three levels, which I use loosely to examine cobs: physical (body), transformative (mind), and spiritual (soul). Of course, these categories are limiting and overlaps occur. Furthermore, although I list body first and soul last, this does not represent a hierarchy.

Cobs as art forms.

Physical.

It is easy to view cobs as art forms because, for the most part, they are physically beautiful and lend themselves to roundness and sculpting. Builders and experts alike admit that

cobs are pleasing to the eye (Bee, 1997; William-Ellis, 1920). And even though art is personal, the physical descriptions of cobs enable most readers to imagine them as beautiful. For instance, an ancient cob in Devon is whitewashed, sports a black skirting, and is topped with a “heaving bulk of thatch” (William-Ellis, 1920). Set in the rolling hills of Britain, the fourteenth-century farmhouses with arched doorways, granite fireplaces, and circular pillars dot the landscape (Ford et al.). Today, some cobs are heart-shaped (Smiley, 2002), octagonal (see Figure 4) or sculpted (see Figure 11). In fact, clay, as an art medium, encourages artistic creativity, and cob is easy to sculpt (Evans et al., 2002; Smiley, 2002; Weismann and Bryce, 2006). According to Kata, with cob, “you can make ugly things beautiful” (see Figures 13 & 14). Kata creates relieved interactive and playful walls with natural plasters (see Figure 12). And like Bee (1997), Smiley (2002), Smith (1998), Snell and Callahan (2005), and William-Ellis (1920), Kata assures me that cob is flexible and forgiving. Rose forms mosaics and sculpts cob into swirls and shapes (see Figure 8). Kata and Dawn both mention the colours of cobs. When talking about Elke’s studio/house (see Figure 5) and the straw bale in Edson (see Figure 4), Dawn comments on the beauty of the plaster. Kata also mentions the colours. She notes that Vancouver Island residents lean towards earthy colours whereas the people of Mexico prefer vivid houses and clothes (see Figure 10). However, for all their beauty, Dawn warns that there is a danger in seeing cobs as art because it reinforces the notion of a cob house as “niche market item” for those “who are independently wealthy and who own land.” So, although Dawn, Kata, and Rose agree that cobs are arts forms, they also agree that cobs much more than just art.

Transformative.

Cobs as art forms go beyond physical beauty and are accessible, transformative, and functional. The arts provide access to a wide audience (Branagan, 2005). Kata says, “I found that

as an artist there are a very limited number of people who are going to buy a painting or a piece of jewellery or things like that, whereas if you're sculpting your house, anybody can get involved in it and it opens it up to a different audience." Rose's cob bench, for instance, is accessible to all visitors of the Nanaimo Community Gardens.

As an art, cobs are transformative. Arts allow us to see things in a different way (Leavy, 2009), and natural building encourages imagination. Kata told me "cobs are not just random art for the sake of art." Cob artists transform ordinary items and spaces into unique forms: ovens and tables can be built directly into benches (see Figure 10); flat ceilings can be domed (see Figure 14), and flat walls can have wave reliefs (see Figure 12). Rose says, "Cob is natural and organic," it allows for alternatives. Bottles are no longer be used as bottles. Instead, they become coloured pieces in a mosaic (see Figures 7 & 8). Glass shards embedded and sculpted into cob are transformed into whole windows (see Figure 11). To Kata, natural building is a canvass limited only by one's imagination.

The arts also transmit ideology that matters in our lives (Clover and Stalker, 2007). Cob, as art, empowers. Kata speaks of how, as children, we used to bring home artwork, a handmade card for Mother's Day, and pinch pot made in pottery class. We were proud because we had made art with our own hands. For Kata, natural building is the same, except it is huge—it is a whole house. Cobs rekindle our child-like spirits. They create a space that supports participation—a space that allows people walk away proud of themselves and their accomplishments. Art, such as cob building, also provides a variety of avenues for self-expression and inclusion in environmentalism (Branagan, 2005). For Dawn, cobs are set in history, and they are art because they represent the past and the building skills that have been passed down through the generations. Dawn feels the sense of building heritage that her great-

grandfather passed down to her (see Figure 2). Just as Kata views cob as functional art, from an environmental angle, Dawn appreciates how every part can be reused – how natural building is both functional and sustainable (see Figure 3). Dawn also sees natural building as a catalyst for change; however, she warns that making unique beautiful buildings is not her vision. She wants to see natural building go mainstream and admits that mass-produced cobs may be generic, square, or simple; however, she is adamant that cobs not be limited by beauty but rather treasured for the foundation of their creation: values of sustainability, love, caring, and respect.

Spiritual.

The arts are emotional and aesthetically beautiful (Leavy, 2009). Therefore, they arouse feelings and penetrate our souls. But let's revisit McDonough, the architect who asks, "Can something be really beautiful if it destroys the earth or is unfair?" (as cited in Zeiher, 1996, pp. 47, 94). For me, the answer is "no." When people create artwork that is healthy for humans and for the environment, they are performing an act of love, and hooks (2008) says that such work gives our lives meaning. In addition, cobs as art forms, touch the very essence of who we are. The beauty of cobs is their ability to hug humans (Bee, 1997) and make us feel special and alive. Cobs' beauty is also in their ability to touch the senses. They smell earthy, feel smooth, look textured and natural, and feel cool on a hot summer's day. Dawn describes cobs as "primeval and beautiful." I believe when humans care about themselves and see themselves as beautiful, they will see the Earth and other species as beautiful and worthy of protecting. They will want to create beauty, and this beauty will act as a synergy. Cob builders love the beauty that they create, and I love what they are doing. Dawn, Kata, and Rose are building a more beautiful world.

Cobs as political statements.

Physical.

Cobs are political because, as Evans et al. (2002) say, cobs are physically accessible to many, which mean they promote a more equitable world. Natural building is more inclusive than conventional building. Women build cobs, and when the Mud Girls build, children and animals are welcome (see Figure 9). The question of who builds is significant because ecofeminists inform us that we live in a society dominated by white, heterosexual, able-bodied males (Griffin, 1989; Harding, 1991; Salleh, 1997). Dominant society abuses and marginalizes women and all “Others –races, children, animals, plants, rocks, water, and air” (Salleh, 1997, p. 14). Red Feather, a natural building NGO, provides healthy homes for marginalized Aboriginal people (Goodall, 2005). The Mud Girls also house marginalized people. Moreover, the Mud Girls remain a women-only building cooperative. As a woman in this society, I was taught that if I acted too intelligent, I would make men feel inadequate and would scare them away. Rose might have learned something similar because she says, “A few of us [women] tend to pull back when a man is around, or maybe defer to his opinion.” Rose adds, “It’s a rewarding experience to learn to trust and love and be myself around women ...and that women-only space gives me that...Something I’d never experienced before.” Because Rose’s children see their mother in an empowering environment, they will demand that for themselves. Rose’s act of cob building helps erode the patriarchal power structure and clears a pathway to a more equitable world.

Transformative.

Women who work to make the world a better place use cobs to challenge our present world of “too muchness” (hooks, 2008, p. 1). Rather than buying a ready-made house, natural

building encourages people to get involved in building their own homes (Baker-Laporte et al., 2001; Bee, 1997; Corum, 2009; Evans et al., 2002; Kennedy et al., 2002; Minke, 2000; Smiley, 2002; Smith, 1998; Snell & Callahan, 2005; Weismann & Bryce, 2006; William-Ellis, 1920). Inadvertently, this involves the politics of codes and rules around procedures and materials. Dawn says she is changing the code; working with code officials; working with engineers; working with zoning officials and financiers; and “pulling the pieces together so that natural builders are not stuck doing custom homes on small remote Gulf Islands.” Rose, on the other hand, builds homes on the remote Gulf Islands. Moquin (1996) notes that the wood and cement industries lobby and influence the building codes, so Rose and the Mud Girls occasionally “circumvent convention and work with owner/builders on whatever project they want.” Natural building has no powerful trade associations (Moquin, 1996), but Dawn and others are working to change that. In addition, cob builders shun too-muchness. Kata tells me “I’m here [on the Earth and involved in natural building] to work with raw materials and natural materials and not just go to the store and buy all this crap.” Cobs are political because they discourage consumption, globalization, and corporatization, yet they encourage activism.

I think it is fair to say that many, if not all, ecofeminists are activists. King (1989) lists examples of Ecofeminism activism, and I pulled the following two: 1) learning ecological technologies, and 2) considering the consequences of our lifestyles. In reference to learning, natural builders challenge our dominant formal education system, which overlooks earth-walled systems (Moquin, 1996). Builders have their own educational centres where they pass on traditional knowledge through workshops and colloquiums (Baird & Baird, 2009; Earthen Built, 2011; Mud Girls Building Collective, n.d.; O.U.R. Ecovillage, 2011). Kata, Dawn, and Rose hone their skills by participating, both as learners and as facilitators, in building technology

mentorships, internships, and apprenticeships. For instance, Kata taught me to make natural plaster, and as you may recall, I shared the recipe with you (see Appendix B, On Sight/Site). Like Paušič et al. (2010) in Slovenia, Dawn examines century-old plaster to see what it is made from (see Figure 3). In addition, Dawn considers not only lifestyle choices but also building choices. She examines the embodied impact of a cob bench going into a light commercial building and compares it to the low-embodied technology of the past (see Figure 2). Clearly, Kata, Dawn, and Rose participate in aspects of ecofeminist activism.

Action through cob teaching and learning is also significant in terms of socio-environmental change because collective learning is powerful (Clover et al., 2010). Collective cob learning and building eliminates the power-over top-down approaches often seen in institutional settings. The natural building process includes the stakeholders and the owners of the building spaces. Kata invited the owner and her daughter work on the wave wall (see Figure 12), and she discussed the bench with the stakeholders at Emerald Earth so they could collectively decide how it might best meet their needs (see Figure 10). Cob building happens in an atmosphere where people work towards a vision of building for humanity while at the same respecting the environment. This is political as it goes against much of what is wrong with mainstream western society, namely the inequality within social systems of domination between those in power and those in subordinate positions—including nature.

Spiritual.

Natural building is rather wild—like an untamed spirit on the loose. Wildness is nature. It is political because it is non-conformity. Weismann and Bryce (2006) write, “Building with cob fosters a rejection of global homogenization, mono-culture, and mass manufacturing” (p. 7).

SunRay Kelley's house (see Figure 15) exemplifies this rejection. It has an organic unruliness about it—a wildness. Beams reach up into the sky and out to the neighbouring forest. It is political because in this conservative neo-liberal world, SunRay's house embraces nature and snubs convention. Kata says, "We want real democracy where we actually have the freedom to do what we need to do, and not a system where we don't have a choice." SunRay's house represents freedom. The beams are unrestrained. In addition, the house tickles the imagination. It leads to imagining another way of building and another way of living. Kata's interactive wave wall also leads to imaginings (see Figure 13). Bateson (2007) reminds us that "small actions have consequences in the macrocosm" (p. 281). If a house can be wild, then people living in it can be wild, and since nature is wild, humans and their houses will join to counter the organisation and structure of politics. Humans and their houses will connect in the realm of the spiritual and live as one with nature in what Maturana and Verden-Zoller (2008) refer to as the "biology of love."

Cobs as extensions of self.

Physical.

Griffin (1978) says, "*We know ourselves to be made of this earth. We know this earth is made from our bodies. For we see ourselves. And we are nature. We are nature seeing nature*" (p. 226). Dawn recognizes that there is something primeval and beautiful about cobs. She says that clay has a calming effect on humans, and in a cob, humans experience unexplainable sensations—gut feelings that they cannot find words to describe. The rational/emotional dualism that ecofeminists speak of devalues the sensations of the body and emotions and favours those of the mind. This dualism places humans at a loss for words and a failure to understand the

physical, spiritual, and emotional connection. Cobs and the arts discredit dualism and see rational and emotional as two sides of one coin.

Transformative.

Cobs are an extension of self because we are one. All things originate from the Earth. Because cobs emerge from the Earth, they bring the human identity inside nature by connecting humans to place, surroundings, and the landscape. Rose tells the story of the Mud Girl who built on her parents' property and felt a profound sensation—like alchemy. Naess asserts that a deep relation between our immediate surroundings and ourselves is essential and that something in ourselves dies when we destroy this relationship (N.B.C., 1993). It is as if part of our spirit withers. Deep Ecology says the Earth is sacred, and we are one with a living and non-living entities. To Arne Naess the natural environment is an extension of self. Cobs are extensions of self because, if you believe as Naess believes, it is possible to identify oneself with the mud and straw of cob. Dawn's photograph of Fern Cabin (Figure 6) illustrates the web of interconnection. Dawn describes the photo as being about values and the order of priorities. She says "it is the wonder of nature interconnected with this web of all beings completed by an output of beautiful little buildings."

Spiritual.

Dawn describes members of the cob community as "exemplary human beings, compassionate group leaders tuned in to group dynamics, caring in their work...They are the kind of people you want to spend your time with." Ecofeminist spirituality offers an alternative worldview that is holistic, interrelated, transformative, caring, and respectful, much like Dawn's description of the cob community. King (1989) identifies a key component of Ecofeminist

activism as “living in communities that explore old and new forms of spirituality which celebrate all life as diverse expression of nature” (p. 25). Kata told me “women who believe in the Goddess are attracted to natural building or natural building attracts women who practice this kind of spirituality.” Eisler (1990) reminds us that ancient societies who worshiped the Goddess “were structured very much like the more peaceful and just society we are now trying to construct” (p. 23). hooks (2008) says, “To look upon the wonders of nature is to gaze at divine spirit” (p. 26). Spretnak (1993) suggests that the divine “lies not above us but in the infinite complexity of the sacred whole that continues to unfold” (p. 187). Cobs are of the land from the land, and the act of building them connects builders to the land and fosters a deep respect for all living and non-living entities. This is a sacred connection—greater than us.

Considerations: A Way Forward

And so now I crouch in the midst of this eternity, my naked toes hugging the soil and my eyes drinking the distances, trying to discern where, in this living landscape, the past and the future might reside.

- Abram, 1996

Dawn, Kata, and Rose encourage me to view the future with optimism. They are beginning to see a greater acceptance for natural building. Dawn informs me that she got “geeky” news. ATAC in Portland, the national building regulatory advisory to the city of Portland, just got light straw clay recommendations. Dawn pours over those recommendations, excited about this breakthrough. Kata posted the following on Facebook: “The Robinson's have done it folks...they have received a thumbs up for a mortgage!!!! Big deal right? Well, it is in the

world of Natural Building. That's right, this is a load-bearing cob and light-clay infill house that has been approved for a mortgage!!!!" As for me, I am excited about a two developments. First, the Baird's house Eco-Sense, which, as you may recall, spurred this study, was featured in a two-page article in the 2 July 2011 *Times Colonist* (Arrais, 2011). Second, I am keen on some of the changes in education and research. Guba and Lincoln (2005) suggest that we may be "entering an age of greater spirituality within research efforts. The emphasis on inquiry that reflects ecological values, on inquiry that respects communal forms of living that are not Western, on inquiry involving intense reflexivity regarding how our inquiries are shaped by own historical and gendered locations, and on inquiry into 'human flourishing,'" (pp. 211-212). This sounds transformative and hopeful.

It is easy to be optimistic about a sustainable, interconnected, respectful world with cobs. What a wonderful way for humans to show their respect for the Earth. If I look back at Woodhouse's (2004) two questions, "how do we construct or reconstruct communities so that ecological and cultural sustainability is the foundation of change? [And] what is the role of education and research in bringing about this change?" (p. 155), I find that cob communities are foundations for change and sites of teaching and learning. To me the role of both formal education and research is clear. Initially, I learnt about cobs, Environmental Adult Education, and Deep Ecology through attending university classes. I view cob as its own arts-based research method, and a further examination of cobs' benefits might be accomplished by encouraging more people to physically connect to Earth by building a cob as well as listening to and feeling their bodies.

In reference to listening to and feeling the body, I would like to share a personal story. My mother lives in Ontario. She and I fervently discussed the last federal election over the

phone, and like me, she is keen on the environment and follows news like the oil spill in the Gulf of Mexico. She has enthusiastically supported me, especially these past few years and during this research. Recently she has been forgetting words, but I had attributed it to old age. On the phone the other night, she wanted to read me an article on climate change. I waited. She found the article and put on her glasses. And I waited. My mother stumbled over a few words and stopped. I realized that she was unable to read. Although my mother has not told me outright, she has hinted that she has dementia. In a couple of weeks, I leave to live with and care for my mother. I wondered how I would manage. I thought of this research. I will not be building a cob for a while, but it occurred to me that I could still use knowledge gained from this study and apply it to this latest development in my life. Society values the mind and devalues the body, feelings, and emotions, yet cobs and arts-based research honour our body's connection to Earth, emotions, and the arousal of the senses. Although I am no expert, as far as I know, people with dementia lose their reason, but they do not lose their senses or emotions. This research explores other ways of being in the world—alternatives that connect humans to the Earth, other species, and each other. I sense, therefore I am. Through the senses, part of me can connect with part of my mother.

Summary

We do not live on Earth in the sense of living as members of Earth's Community. Both in our activities, as well as in our own understanding of ourselves and Earth, we are simply not members of Earth's life. We live in this split condition, thinking we are members of Earth, unaware that we are the destroyers of Earth... So where do we live? In a physical sense, we live in industrial artefacts designed to keep us inside and the universe outside.

Cobs represent change. They link humankind to the universe. Cobs are art forms, political statements, and extensions of self. Wheatley (2009) asks, “Who do I choose to be for this world?” Mahatma Gandhi answers, “You must be the change you want to see in the world.” Perhaps we can ask ourselves if we are willing to look at reality and work with what is available. Maybe we need to rethink our relationship with the Earth. This study is about women building natural homes, but it is also about our responsibility as humans, and it is about creating a new future—a future of sustainability where we are thankful for what we have and make choices that support all life. The literature and my participants indicate that humans working with natural buildings stand strong, look at the large picture, and open their arms to embrace all. Natural builders consider the impact their decisions have on future generations. By using sustainable products such as earth, wood, and recycled glass, they challenge the disposable culture of western dominant society that exults the glories of consumerism and globalization. A glance back in history shows that cobs were once an art and the pride of builders. This study illustrates that today cobs are that and more—they are a way forward—a vision of what the world can be.

We are the earth, through the plants and animals that nourish us.
 We are the rains and the oceans that flow through our veins.
 We are the breath of the forest of the land, and the plants of the sea.
 We are human animals, related to all other life as descendants of the firstborn cell.
 We share with these kin a common history, written in our genes.
 We share a common present filled with uncertainty.

...

At this point in our relationship with Earth,
 we work for an evolution: from dominance to partnership;
 from fragmentation to connection; from insecurity to interdependence.

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Appendix A: Cob and Natural Building Resources

Natural Building Books, Booklets & Articles (last updated 24 April 2011)

Natural building includes many types of methods and materials: adobe, strawbale, cob (clay/sand/straw), papercrete, bamboo, rammed earth, and others. Natural building is defined by the use of plentiful local and marginally processed natural materials to build a structure and its systems (water, energy, waste, recovery) with the most neutral ecological footprint. Natural building also includes the footprint of the building over its entire life span. Natural building costs are usually far less than conventional building, but labor costs (often including the owner-builder's own labor) are higher.

Green building also often includes engineered structural materials such as ICFs, SIPs, green roofs, FSC-certified lumber, etc., as well as eco-friendly finishing materials such as cellulose insulation, low-VOC paints, recycled-glass countertops, and bamboo flooring. Green building focuses heavily upon using less energy after construction is complete, reducing energy use for the lifetime of the building. Green building costs are often perceived to be higher, but when planned well, may be less than conventional building.

This list has been compiled by and for **Sustainable Green Country**, a non-profit volunteer organization based in NE Oklahoma. For more information, visit us on the web at: <http://www.SustainableGreenCountry.org>⁴

ADOBE

Adobe and Rammed Earth Buildings: Design and Construction. *By Paul Graham McHenry, University of Arizona Press, 1989.* Includes soil selection, adobe brick manufacturing, adobe brick wall & rammed earth wall construction, window & door detailing, earth wall finishes, foundations, floor & roof structures, insulation & mechanical considerations.

Adobe...Build It Yourself. *By P.G. McHenry, University of Arizona Press, 1985.* America's best-known adobe builder shares his knowledge.

Adobe Construction Methods: Manual 19 (booklet). *University of California Agricultural Sciences Department, 1964.* A very thorough primer for adobe! Explains how to make and build with adobe bricks.

Adobe Houses for Today: Flexible Plans for Your Adobe Home. *By Laura and Alex Sanchez, Sunstone Press, 2001.* A practical book that takes you from the design through the building process. Features detailed floor plans for twelve compact homes.

⁴ Permission to include this amazing resource was granted by Amanda Forman, Vice President of Sustainable Green Country (Sustainable Green Country, n.d.).

Spectacular Vernacular: The Adobe Tradition. By *Jean-Louis Bourgeois, Aperture Foundation Inc., 1996.* Documents the stunning variety and beauty of the world's oldest building method, compiled from the author's travels across Africa, Asia and the American southwest. Out of print; remaining copies available from www.strawbalecentral.com

ALTERNATIVE CONSTRUCTION (GENERAL)

Alternative Construction: Contemporary Natural Building Methods. Edited by *Lynne Elizabeth and Cassandra Adams, Wiley Publishers, 2000.* This large, scholarly work contains technical information on a wide variety of natural building systems.

Alternative Building Sourcebook: Traditional, Natural and Sustainable Building Products and Services. Edited by *Steve K. Chappell and James J. Marks, 2003 update.* A resource and overview of traditional building practices, alternative heating systems, and natural building materials, with sources and contacts listed by state. www.foxmaple.com

Alternative Housebuilding. By *Mike McClintock, Sterling Publishing Company, 1989.* Information on numerous construction techniques. Out of print but available used.

Appropriate Building Materials: A Catalogue of Potential Solutions. By *Roland Stulz and Kiran Mukerji, Intermediate Technology Publications, 1993.* An excellent overview of a wide range of natural building techniques, organized logically.

Appropriate Technology Sourcebook. By *Ken Darrow and Mike Saxenian, Volunteers In Asia Press, 1993.* PO Box 20266, Stanford CA 94309; 650.723.3228 info@viaprograms.org

Bucky Works: Buckminster Fuller's Ideas for Today. By *J. Baldwin, John Wiley & Sons Inc., 1996.* Bucky Fuller's futuristic inventions, including the geodesic dome and corrugated cottages, are described and illustrated.

Building Green: A Complete How To Guide to Alternative Building Methods. By *Clarke Snell and Tim Callahan, Sterling Publishing Co., 2005.* A well-illustrated, comprehensive manual showing steps of alternative construction: earth plaster, strawbale, cordwood, cob, living roofs.

Building with Vision: Optimizing and Finding Alternatives to Wood. By *David Easton, Chelsea Green Publishing Company, 2002.* Volume two of The Wood Reduction Trilogy offers the basics of resource efficient building and looks briefly at natural building methods and materials, recycled materials and other options.

Dwellings: The Vernacular House Worldwide, By *Paul Oliver, Phaidon Press.* Well-illustrated and detailed book on vernacular architecture reflecting culture and home.

Encyclopedia of Vernacular Architecture of the World. By *Paul Oliver,* A heavily illustrated and comprehensive compilation of the writing and photography of experts around the world.

The Good House Book: A Common-Sense Guide to Alternative Homebuilding (Solar, Straw Bale, Cob, Adobe, Earth Plaster and more). *From Lark Books and Natural Home Magazine.* An intelligent look at how a home is supposed to function and a variety of different building approaches and solutions including choosing a site, selecting materials, building with strawbale, cob, adobe, rammed earth, home power systems.

The Good House; Contrast as a Design Tool. *By Max Jacobson, Murray Silverstein and Barbara Winslow, Taunton Press, 1990.* A walk through architectural design theory and practice, exploring the design of the house as something to be lived in and enjoyed.

Home Work: Handbuilt Shelter. *Edited by Lloyd Kahn, Shelter Publications, 2004.* A sequel to the famous *Shelter*. Showcases contemporary human ingenuity in creating eco-centric buildings and lifestyles, illustrating new and even more imaginative ways to put a roof over your head.

A Hut of One's Own: Life Outside the Circle of Architecture. *By Ann Cline, MIT Press, 1997.* If you don't mind the occasional foray into dense academic theory, you'll enjoy the contrasts & insights of this complex little book.

Living Homes. *By Thomas Elpel, HOPS Press.* Covers stone walls, papercrete, slipform building and alternative methods. Available from Taylor Publishing-DirtCheap Books.

Living Homes: Sustainable Architecture and Design. *By Suzi Moore McGregor and Nora Burba Trulsson. Chronicle Books, 2001.* Illustrations that an earth-friendly structure can be well designed, functional and appropriate to the site while incorporating alternative building methods and materials, energy strategies and other environmental considerations.

Off the Grid. *By Lori Ryker, Gibbs Smith, 2005.* Illustrates hybrid home design using energy alternatives and alternative building materials and methods.

Shelter. *By Lloyd Kahn, Shelter Publications, 1973.* A cult classic from the heyday of teach-ins and VWs, this large-format book may have inspired more owner-builders to build crazy structures than any other.

Shelter Sketchbook: Timeless Building Solutions. *By John S. Taylor, Chelsea Green Publishing Company, 1983.* Pictorial history of building that will widen your understanding of the relationship between form and function in building and open your eyes to some intriguing design solutions to a home's comfort, efficiency, convenience, and aesthetics.

Sustainable Architecture: Low Tech Houses. *By Arian Mostaedi, Carles Broto and Josep Minguet, 2003.* Examples of a wide variety of alternative materials used in construction: adobe, sandbags, cardboard, straw bales, rammed earth and cob.

The Whole House Book: Ecological Building Design and Materials. *By Pat Borer and Cindy Harris, Centre for Alternative Technology, 2001.*

Wonderful Houses Around the World. *By Yoshio Komatsu, Shelter Publications.* Photos accompanied by descriptive detailed drawings make this a wonderful book for children...and adults.

BAMBOO

Bamboo Building and Culture (Applications in America) (booklet in CD, print, and pdf format). *By Darrell DeBoer.* 1835 Pacific Ave., Alameda CA 94501
www.deboerarchitects.com/BambooBuildingAndCulture.html

The Book of Bamboo: A Comprehensive Guide to this Remarkable Plant, Its Uses, and Its History. *By David Farrelly, Sierra Club Books, 1995.* Encyclopedic information about “the most useful plant on earth.”

Building with Bamboo. *By Jules Janssen, Intermediate Technology Publications, 1995.* A practical handbook for construction uses of bamboo, its limits, seasoning, harvesting for floors, walls, roofs, ceilings, roof trusses and bridges.

The Gardener’s Guide to Growing Temperate Bamboos. *By Michael Bell, Timber Press, 2000.* Help for choosing species of bamboo for non-tropical climates, plus growing tips and an extensive resource guide.

Grow Your Own House. *By Simon Velez and Bamboo Architecture, 2000.* A collaborative effort by VITRA. Velez’s amazing bamboo architecture has to be seen to be believed.

How to Build with Bamboo. *By Joseph Scheer, Gibbs Smith, 2005.* Step-by-step illustrations on small projects (not buildings) with bamboo; section on history, philosophy, environmental advantages of bamboo and tips on finding bamboo that is locally grown and on growing your own.

BUILDING SMALL

Blueprint Small: Creative Ways to Live with Less. *By Michelle Kodis, Gibbs Smith, 2003.* Examines small spaces (each 1,500 square feet or less) from the wide spectrum of locations, budgets, and individual styles, each chosen to illustrate that scaling back in size doesn’t have to mean scaling back in comfort, spaciousness, or beauty.

The Not-So-Big House: A Blueprint for the Way We Really Live. *By Sarah Susanka, 2001.* This book, and the others in this series by Susanka offer a new way to look at human dwellings—designed on a human scale with human needs & instincts as a guide. No more McMansions!

Small Strawbale: Natural Homes, Projects & Designs. *By Bill Steen, Athena Swentzell Steen, Wayne J. Bingham. Gibbs-Smith Publisher, 2005.* A collection of small houses, tiny studios, meditation spaces, outbuildings, and landscape walls built simply using natural materials such as straw, earth, stone, and timber.

BUILDING WITH NATURE

Biomimicry: Innovation Inspired by Nature. *By Janine M. Benyus, Perennial Paperbacks (HarperCollinsPublishers), 1997.* A new way of viewing and valuing nature based not on what we can extract from the natural world but what we can learn from it.

Design With Nature. *Ian L. McHarg, John Wiley & Sons, 1995.* A seminal text written in the 60s, now republished.

CLAY/ STRAW

Econest: Creating Sustainable Sanctuaries of Clay, Straw, and Timber. *By Paula Baker-Laporte and Robert Laporte, Gibbs Smith Publisher, 2005.* A beautifully illustrated, well-written exploration of light clay/straw construction and the Econest system.

COB

The Cob Builders Handbook. *By Becky Bee, Chelsea Green Publishing Company, 1996.* This handbook teaches all the basics with chapters on design, site selection, materials, foundations, floors, windows, doors, finishes and creative cob building techniques.

The Cobber's Companion: How to Build Your Own Earthen Home. *By Michael Smith, Cob Cottage, 2001.* Gives you the tools and inspiration to build your own low-cost cob home.

The Hand-Sculpted House: A Practical & Philosophical Guide to Building a Cob Cottage. *By Ianto Evans, Michael G. Smith and Linda Smiley, Chelsea Green Publishing Company, 2002.* This inspiring book includes design strategies, down-to-earth how-to info, and empowering advice for the "mortgage-free" owner-builder.

You Can Make the Best Hot Tub Ever. *By Becky Bee, Groundworks Publishing, 2001.* Booklet describing how to build cheap and practical wood-fired cob hot tub.

CONCRETE

Guidelines to Using Fly Ash for Higher Quality, Eco-Friendly Structures. *By Bruce King, PE, Green Building Press.* A practical guide written for engineers and contractors on recent developments in high performance fly ash concrete.

Insulating Concrete Forms Construction: Demand, Evaluation, & Technical Practice. *By Ivan S. Panushev and Pieter A. VanderWerf, 2004.* Detailed answers on whether or not insulating concrete forms are right for your business or project, what it's like to work them, how they perform, installation or post-installation trades work.

Making Better Concrete: Guidelines to Using Fly Ash for Higher Quality, Eco-friendly Structures. *By Bruce King, P.E., Green Building Press, 2005.* Concrete is a widely used building material worldwide and its use for high quality, eco-friendly structures is explored.

Understanding Ferrocement Construction: Technical Paper #64. By J.P. Hartog, 1988. Free online: <http://sleekfreak.ath.cx:81/3wdev/vitahtml/sublev/en1/ferrcmnt.htm>

CONSTRUCTION, COSTS & ESTIMATING

Builder's Guide to Foundations and Floor Framing. By Dan Ramsey, McGraw-Hill, 1995. A basic handbook for any builder.

Builders Guide for Mixed-Humid Climates.. By Joseph Lstiburek, 2005. [Note: Oklahoma is considered a "Mixed-Humid Climate"; other editions also available.] Climate-specific construction details, building science principles, and building materials.

Building an Affordable House: Trade Secrets to High-Value, Low-Cost Construction, by Fernando Pages Ruiz, Taunton Press, 2005. Great ideas to not just build cheaper, but how to build better.

Building Construction Illustrated. by Francis D.K. Ching, 1975. Classic book illustrating building details.

Design Guide for Frost Protected Shallow Foundations. FPSFs provide protection against frost damage without the need for excavating below the frost time. Insulation is placed strategically around the outside of the foundation to direct heat loss from the building toward the foundation and to use the earth's natural geothermal energy. www.toolbase.org/fpsf

Estimating Home Building Costs. By W. P. Jackson, Craftsman Book Company, 2001. More than a book about cost estimating, it's a practical handbook of each phase of residential construction from site acquisition, permits and services, through foundations, structure, roofing and all the rest, with helpful illustrations, table and charts, and a glossary of terms.

The Fundamentals of Building Construction: Materials and Methods. By Edward Allen, John Wiley & Sons, 1990.

A Guide to Useful Woods of the World. Forest Products Society, 2001. A cooperative effort between the Forest Products Society and the International Wood Collectors Society, this book is an invaluable reference for woodworkers, wood collectors, and others interested in wood.

Habitat Congress Building America: Mixed-Humid Case Study. By U.S Department of Energy, Building America, & Building Science Corporation: *Research Toward Zero-Energy Homes*, 2006. Free 74-page booklet at http://www.buildingscience.com/bsc/designsthatwork/mixedhumid/DTW_MixedHumid.pdf

The House That Jill Built: A Woman's Guide to Home Building. By Judy Ostrow, Gibbs Smith, 2005. The process of creating a personal dream house--from design and finance to construction and management through the experiences of women who have been there, and done that, with inspiring results.

The Insider's Guide to Marketing Green Buildings. By Jerry Yudelson, 2004. Strategies, data, tools and techniques to help you market green buildings, products, and sustainable design and construction services by the 2004 Chair of the Green Building Conference of the US Green Building Council, LEED National Faculty member, former USGBC board member.

Low-Cost Pole Building Construction. By Ralph Wolfe, Storey Books, 1980. Pole buildings have widely proven to be the least expensive method of conventional construction.

NAHB Green Home Building Guidelines. By National Association of Home Builders, 2005. Free download on NAHB website www.nahb.org – approximately 200 pages. NAHB's voluntary Model Green Home Building Guidelines are designed to be a tool kit for the individual builder looking to engage in green building practices

Roofing: Construction & Estimating. By Daniel Atcheson, Craftsman Book Company, 1995. A handy manual for all builders.

Roofing: Design Criteria, Options, Selection. By R.D. Herbert III, R.S. Means Company, Inc., 1989. A technical guide to the design, construction and materials for roofing.

Roofing Handbook. By Robert Scharff, McGraw-Hill Inc., 1996. From basic to technical information, this book is a valuable resource.

Textbook of Wood Technology, 1964, Vol. I - Structure, Identification, Uses, and properties of Commercial Woods of the U.S. By A. J. Panshin, Carl DeZeeuw, H.P. Brown, McGraw-Hill Book Company.

Understanding Wood. By R. Bruce Hoadley, Taunton Press, 1980.

Walker's Pocket Estimator. Frank R. Walker Company, Lisle IL. A practical guide and reference for developing material quantities and labor hours for estimating the cost of all disciplines of building construction. Available from the Shelter Institute.

CORDWOOD

Complete Book of Cordwood Masonry Housebuilding: The Earthwood Method. By Rob Roy, Sterling Publishing Company, 1992. The most complete guide to the technique, along with useful information on many other topics of interest to the owner-builder, including masonry stoves and solar.

DESIGN PHILOSOPHY

Buddha House: Reflections on Building and Being. SunRay Kelley Series Volume 1. By Chris McClellan, Bigger Pictures Technology, 2004. Photos and inspiring sayings come together for insight into a philosophy of living and building, and the facts and history of a house and its builder.

Cradle to Cradle: Remaking the Way We Make Things. By *William McDonough et al.*, North Point Press, 2001. A clear view of the big picture by the originator of green building.

Design for Life. By *Sim Van der Ryn, Gibbs-Smith*, 2005. Seeing shifting patterns in nature and how these patterns profoundly affect how people live and work in the structures we build, Van der Ryn explores how architecture has created physical and mental barriers separating people from the natural world, and how to recover the soul of architecture and reconnect with our natural surroundings.

Design Like You Give a Damn: Architectural Responses to Humanitarian Crises. By *Architecture for Humanity*, 2006. A compendium of innovative projects from around the world that demonstrate the power of design to improve lives.

Design Outlaws on the Ecological Frontier. By *Chris Zelov and Phil Cousineau*, 1997. Interviews with some of the most recognizable names in the environmental movement, who defy conventional thinking to look at shelter, energy systems, transportation, industry, and their relationship to nature and the future of humanity.

Designing Your Natural Home. By *David Pearson*, HarperCollins, 2005. Complete guide for creating an eco-home through each step of the process - the scope of the project through choosing materials to decorating. Learn how to draw up plans, make the most of small spaces, find a builder, and more.

Ecological Design. By *Sym Van der Ryn and Stuart Cowan*, Island Press, 1995. A good intro to the “why” of ecological design that gives its information in a non-technical way and explains the reasons we should approach design this way. I recommend it for all those involved with land and building design and development.

A Home for the Soul: A Guide for Dwelling with Spirit and Imagination. By *Anthony Lawlor*, Clarkson Potter Publishers, 1997.

Homing Instinct: Using Your Lifestyle to Design and Build Your Home. *John Connell*, McGraw-Hill, 1999. A very useful overview of basic design and construction issues by the founder of the YesterMorrow School.

How Buildings Learn: What Happens After They're Built. By *Stewart Brand*, Penguin USA, 1995. An eye-opening discussion of the evolution of buildings through time.

A Pattern Language. By *Christopher Alexander*, 1977. A landmark book exploring human nature and the built environment as referenced in three scales: towns, buildings, and rooms within a building (construction). Essential!

Patterns of Home: The Ten Essentials of Enduring Design. By *Max Jacobson*, 2002. Based upon Alexander's book (above) this new addendum boils down home design into its purest elements, lending clarity to the creative process.

The Philosophy of Sustainable Design. *By Jason McLennan.* A terrific overview of greenbuilding; the book to read that gives you the foundation upon which all of your other decisions will be based.

The Place of Houses. *By Charles Moore, Gerald Allen, Donlyn Lyndon. University of California Press, 1974.* Architects, design/builders, homeowners and others find this book a helpful guide in planning and designing a home. A 20-page checklist outlining choices is a valuable part of this book.

DO-IT-YOURSELF

Independent Builder: Designing & Building a House Your Own Way. *By Sam Clark, Chelsea Green Publishing Company, 1996.* A comprehensive manual of design, planning and building written to be useful to people who have never built their own homes.

Mortgage-Free! Radical Strategies for Home Ownership. *By Rob Roy, Real Goods, 1998.* Nothing “magic” here, but good nonetheless.

The Owner Built Home. *By Ken Kern, 1975.* A classic!

EARTH

Building with Earth. *By John Norton, Intermediate Technology Publications, 1997.* A brief but pithy take on the subject.

Built By Hand: Vernacular Buildings around the World. *By Bill Steen, Athena Steen and Eiko Komatsu, Gibbs Smith, 2003.* The most extensive documentation ever published of traditional (“vernacular”) buildings throughout the world. Handcrafted, simply built, beautifully composed structures, the work of people who, as builders and homesteaders, have integrated artistic beauty and practical form into their shelter needs.

Ceramic Houses & Earth Architecture, How to Build Your Own. *By Nader Khalili, Burning Gate Press, 1986.* An excellent and poetic introduction to earth architecture.

Earth Construction: A Comprehensive Guide. *By Hugo Houben and Hubert Guillard, Intermediate Technology Publications, 1994.* Highly technical, but as the title says, comprehensive.

The Earth House. *By Jeanne Duprau, New Chapter Press, 1992.* Thoughts on home, nature, and necessity. A great book for someone building a house for the first time.

Living on Earth. *By Yoshio Komatsu, Fukuinkan-Shoten Publishers, Tokyo, 1999.* Unparalleled in its full-color celebration of the kaleidoscopic range of human creativity, this may be the definitive photographic record of the world’s vernacular building traditions.

EARTHBAGS

Building with Earthbags. Available from Dirt Cheap Builder/Taylor Publishing.

Building with Earth: A Guide to Flexible-Form Earthbag Construction. *By Paulina Wojciechowska, Chelsea Green Publishing Company, 2001.* The first book out on earthbag construction. Includes discussion of other natural building techniques as well.

Earthbag Building: The Tools, Tricks and Techniques. *By Kaki Hunter and Donald Kiffmeyer, New Society Publishers, 2004.* A comprehensive, step-by-step guide to building with earthbags.

EARTH OVENS

Build Your Own Earth Oven: A Low-Cost, Wood-Fired Mud Oven; Simple Sourdough Bread; Perfect Loaves. *By Kiko Denzer, Hand Print Press, 2000.* A charming and practical book.

GREEN BUILDING

Conscious Style Home: Eco-friendly Living for the 21st Century. *By Danny Seo, St. Martin's Press, 2001.*

Good Green Homes: Creating Better Homes for a Healthier Planet. *By Jennifer Roberts, 2003.* Beautiful illustrations of greenbuilding applications, including meaty dialogue about all the concepts of sustainable homes.

Green by Design: Creating a Home for Sustainable Living. *By Angela Dean, Gibbs Smith, 2003.* What does it mean to build green, and what should be considered when designing a sustainable home? Photos, line drawings of floor plans and text answer these questions. Includes straw-bale home.

The Green House: New Directions in Sustainable Architecture. *By Alanna Stang and Christopher Hawthorne, Princeton Architectural Press, 2005.* The exhibition of the National Building Museum in Washington, D.C., and this book were developed to present exemplary projects in which environmental responsibility is an integral aspect of their design.

Living Spaces: Ecological Building and Design. *Published by Konemann, April 2000.* Comprehensive overview of many greenbuilding options; originally published in Europe, so many creative European examples are included.

The New Ecological Home: A Complete Guide to Green Building Options. *By Dan Chiras, Chelsea Green Publishing Company, 2004.* Information on ways to build new homes or remodel existing ones that minimize environmental damage and use resources prudently while creating shelter that is affordable, comfortable, and attractive.

Planting Green Roofs and Living Walls. *By Nigel Dunnett and Noel Kingsbury, Timber Press, 2004.* Green roofs and walls reduce pollution and runoff, and help insulate and reduce maintenance needs of buildings. This book discusses the practical techniques required to make planting roofs and walls a reality.

HEALTHY HOMES

Healthy and Affordable Housing: Practical Recommendations for Building, Renovating, and Maintaining Housing. READ THIS Before You Design, Build or Renovate. By US Dept. of Housing and Urban Development, 2005, US Dept. of Energy, and Building Sciences Corporation. Free download + several other free publications for homeowners on this site: <http://www.buildingscienceconsulting.com/resources/homeowner.htm>

Homes that Heal (and Those that Don't). *By Athena Thompson, 2004.* Addresses health problems linked to poor indoor air quality, the health effects of mold, and the overall quality of the buildings we inhabit.

The New Natural House Book: Creating a Healthy, Harmonious and Ecologically Sound Home. *By David Pearson, Fireside, 1998.* A classic, revised.

The Natural House: A Complete Guide to Healthy, Energy-Efficient, Environmental Homes. *By Daniel D. Chiras, Chelsea Green Publishing Company, 2000.* An award-winning primer on natural building from adobe to rammed earth; papercrete to cast earth, SB and cob. Greywater systems and construction methods covered in detail.

The Natural House Catalogue: Everything You Need to Create an Environmentally Friendly Home. *By David Pearson, Simon and Schuster, 1996.*

Prescriptions for a Healthy House. *By Paula Baker-Laporte, Erica Elliott and John Banta, New Society Publishers. Revised and expanded 2001.*

MASONRY STOVES

The Book of Masonry Stoves: Rediscovering an Old Way of Warming. *By David Lyle, Chelsea Green Publishing, 1998.*

Living with a Masonry Stove. *By Kate Mink. Home Power, Issue #103, pp. 54-57, Oct/Nov 2004.* Benefits, thermal comparisons with other types of stoves, maintenance schedule and more.

NATURAL BUILDING

Architecture Without Architects. *By Bernard Rudofsky, University of New Mexico Press, 1964.* One of the books that inspired the natural building renaissance.

The Art of Natural Building: Design, Construction, Resources. Edited by Joseph Kennedy, Michael Smith and Catherine Wanek, 2002. The most up-to-date overview of natural building and ecological design from very knowledgeable authors.

Builders Without Borders Strawbale Construction Guide. By Katia LeMone and Dr. Owen Geiger. 2006 www.builderswithoutborders

Building a Low Impact Roundhouse. By Tony Wrench, Permanent Publications, 2001. The story of building a very “pure” natural building in Wales.

Building Without Borders: Sustainable Construction for the Global Village. Edited by Joseph F. Kennedy, New Society, 2004. Learn how other cultures have built houses for centuries, their designs and methods including thatched roof, strawbale, mud, bamboo, and, micro concrete, earth, clay blocks. Budgets and financing, refugee and post-disaster housing, worldwide examples.

Earth to Spirit: In Search of Natural Architecture. By David Pearson and William McDonough, Chronicle Books, 1995. A beautiful and heartfelt book about natural buildings around the world. Out of print, but available used.

Japanese Homes and Their Surroundings. By Edward S. Morse, Charles E. Tuttle Company, 1992. First published in 1885, this book is filled with ideas about partitions, storage and decoration useful to any natural builder.

The Lemonade Stand: Exploring the Unfamiliar by Building Large Scale Models. By Maurice Mitchell, New Society Publishers, 1998. The title is somewhat deceptive, but this is one of the most interesting and useful natural building books out there.

Natural Remodeling for the Not-So-Green House: Bringing Your Home into Harmony with Nature. By Carol Venolia and Kelly Lerner. 2006. To have a home that’s more in touch with the earth, you don’t have to start from the ground up! It’s possible—and more environmentally friendly—to go green by renovating an existing home.

The Wabi-Sabi House: The Japanese Art of Imperfect Beauty. By Robyn Griggs Lawrence. Clarkson Potter, 2004. A book of “life” and “style” in the design and decorating of living spaces that teaches the art of beauty in salvaged materials and artisan wares as well as the humble (wabi) beauty in the progression of time (sabi) of a weathered handmade table and cobblestones.

OUTSIDE THE GREEN HOME

The Basics of Permaculture Design. By Ross Mars, Chelsea Green Publishing, 2005. The home as part of an ecosystem.

The Complete Book of Edible Landscaping. By Rosalind Creasy, Sierra Club Books, 1982. Local food production is part of sustainable design...you can’t get much closer than your backyard!

Designing and Maintaining Your Edible Landscape Naturally. By Robert Kourik, *Chelsea Green Publishing, 2005*. Transform your home with a beautiful, bountiful landscape using natural systems.

Outside the Not So Big House: Creating the Landscape of Home. By Julie Moir Messervy and Sarah Susanka, *Taunton Press, 2006*. Extending living space through the use of welcoming outdoor spaces.

Sustainable Landscape Construction: A Guide To Green Building Outdoors. By J. William Thompson & Kim Sorvig, 2000. Spectacular resource guide for all aspects of land management & beautification.

PAINTS & FINISHES

Classic Paints & Faux Finishes. By Annie Sloan, *Readers Digest, 1996*. Extensive information on lime plaster use, casein paints, and photos and step-by-step techniques. Available from Taylor Publishing-DirtCheap Books.

The Natural Paint Book. By Julie Lawless and Lynn Edwards, 2003. Detailed book explaining the constituents and properties and natural and eco-paints—highly recommended!

PASSIVE SOLAR & COOLING STRATEGIES

Climatic Building Design: Energy-Efficient Building Principles and Practices by Donald Watson & Kenneth Labs, *McGraw-Hill*. Great information about using various passive principles to increase comfort and decrease energy-use over the life of the building. Passive solar, passive cooling, and ventilation strategies allow you to reduce or eliminate fossil fuel use in your home.

Passive Solar House: The Complete Guide to Heating & Cooling Your Home. By James Kachadorian, 2006. Passive solar orientation is the single most important thing you can do to decrease a building's energy consumption!

The Solar House: Passive Heating and Cooling. By Daniel D. Chiras, 2002. Chiras shares the history and cumulative knowledge about passive solar buildings.

PLASTERS

All About Lime: A Basic Information Guide for Natural Building (52-page booklet). *Taylor Publishing-DirtCheap Books*. Lime is an amazing, versatile building material useful on the grounds, foundation, walls and for plasters, mortars, cements, and more. Recipes and current recommendations on application and use, history of how lime has been used for building; resources, bibliography and photographs along with technical articles explaining the differences between the earthtypes of lime, when to use which type of lime, how to make natural cement, dry up mud on the work site, stabilize soil for earthen bricks...and more. Explains slaking quicklime, soaking hydrated lime, and more.

Appropriate Plasters for Cob and Stone Walls. By Devon Earth Building Association. This pamphlet covers use of lime plasters and washes for protection and repair of cob and stone walls.

Building with Lime. By Stafford Holmes and Michael Wingate, *Intermediate Technology Publications*, 1997. An extensive handbook for construction uses of lime for floors, washes, wattle-and-daub, plasters, moldings, mortars and more.

Lime in Building. By Jane Scofield. *Black Dog Press, Devon, U.K.*

The Natural Plaster Book: Earth, Lime and Gypsum Plasters for Natural Homes. By Cedar Rose Guelberth and Dan Chiras, *New Society Publishers*, 2003. Step-by-step guide to choosing, mixing and applying natural plasters.

PRODUCTS & MATERIALS

Building Materials for the Environmentally Hypersensitive. By Canadian Mortgage and Housing Corporation, 1995.

Building with Free Materials. Available from Dirt Cheap Builder/Taylor Publishing.

Building the Future Today. By John C. Clem, *Trio Publications*, 2001. A guide to building products and methods for the new millennium.

Green Building Resource Guide. By John Hermannsson, *Taunton Press*, 1997.

Green Building Handbook Vols. 1 and 2. By Tom Woolley et al., *Routledge*, 1999 and 2000. The handbooks are an excellent, though Eurocentric, review of building materials and their impact on the environment.

Green Building Materials: A Guide to Product Selection and Specification. By Ross Spiegel and Tulsa's own Dru Meadows, 2006.

GreenSpec Directory: Product Directory with Guideline Specifications. *Environmental Building News*, 2001. American-based directory of "green" products for all aspects of construction.

RAMMED EARTH

The Rammed Earth House. By David Easton, *Real Goods*, 1995. A well-illustrated guide by the leading practitioner in the U.S.

RECLAIMED MATERIALS/ SALVAGE

Building with Junk and Other Good Stuff: A Guide to Home Building and Remodeling Using Recycled Materials. By Jim Broadstreet, *Loompanics Unlimited*, 1990. Ideas for finding good, salvageable building materials.

Green Remodeling : Changing the World One Room at a Time. By David R. Johnston & Kim Master, 2004. Remodeling an existing home is almost always a “greener” choice than building new.

Natural Remodeling for the Not-So-Green House: Bringing Your Home into Harmony with Nature. By Carol Venolia and Kelly Lerner. 2006.

New Old House: Designing with Reclaimed Materials. By Ed Knapp, Gibbs Smith Publishers, 2002. A blueprint for blending the past and present in home and business design, emphasizing the use of vintage materials.

Redux: Designs That Reuse, Recycle, and Reveal. By Jennifer Roberts, Gibbs Smith, 2005. Includes several straw-bale projects, design and construction information in the New Construction chapter.

SLATE

The Slate Roof Bible: Understanding, Installing and Restoring the World’s Finest Roof, 2nd edition. By Joseph Jenkins, Jenkins Publishing, 2005. Everything you want to know about slate roofs can be found in this award-winning *book*.

STONE

The Art and Craft of Stonework: Dry-Stacking, Mortaring, Paving, Carving, Gardenscaping. By David Reed, Lark Books, 2002. A beautiful, well-illustrated and useful book filled with instructions, recipes and projects for both dry-stack and mortar techniques.

Building with Stone. By Charles McRaven, Storey Books, 1989. An introduction by a master stonebuilder.

The Stone Builder's Primer: A Step-by-Step Guide for Owner-Builders. By Charles K. Long, Firefly Books, 1998.

STRAWBALE

The New Strawbale Home. By Catherine Wanek, Gibbs Smith, 2003. A practical guide to strawbale design, complete with floor plans, construction tips, and photos of forty homes from cities, mountain towns, deserts and rural settings throughout North America. A beautiful book!

Building Official’s Guide to Straw Bale Construction Version 2.1. Edited by Kelly Lerner and Pamela Wadsworth Goode, CASBA, 2000. As a compilation of most of the testing and code work done to date on bale walls, this publication is a must-have. www.strawbuilding.org/casba

Serious Straw Bale: A Home Construction Guide for All Climates. *By Paul Lacinski and Michel Bergeron, Chelsea Green Publishing Company, 2000.* An excellent addition to the literature on strawbale, especially appropriate for those in wet, cold climates.

Buildings of Earth and Straw. *By Bruce King, Ecological Design Press, 1997.* A structural engineer provides important technical information on designing earthen and straw buildings.

The Straw Bale House. *Athena & Bill Steen, David Bainbridge with David Eisenberg, Chelsea Green Publishing Company, 1994.* The “bible” of strawbale. An excellent starting point, but don’t stop there.

THATCH

Thatch: A Complete Guide to the Ancient Craft of Thatching. *By Robert West, The Main Street Press, 1988.*

Thatching: A Handbook. *By Nicholas Hall, Intermediate Technology Publications, 1988.* A good descriptive “how to” with excellent drawings.

TIMBER FRAMING

Building the Timber Frame House. *By Tedd Benson with James Gruber, Charles Scribner’s Sons, 1980.*

Natural Timberframe. *By Jerod Pfeffer and Wayne J. Bingham.* To be published in 2007. Includes straw-bale, timber-framed buildings.

Timber Building in Britain. *R. W. Brunskill, Victor Gollancz Ltd., 14 Henrietta St., London WC2E8QJ, 1985.*

Timber Framing for the Rest of Us: A Guide to Contemporary Post and Beam Construction. *By Rob Roy, New Society Publishers, 2004.* A practical manual that illustrates simpler techniques for timber framing. Includes design, structural, foundation and roofing considerations plus a detailed case study.

A Timber Framer’s Workshop: Joinery, Design & Construction of Traditional Timber Frames. *By Steve Chappell, Fox Maple Press, 1998.* If you want to understand traditional timber framing, read this book. Chappell portrays the craft, with all its nuances, the way it was meant to be.

UNDERGROUND HOMES & EARTH SHELTERS

The \$50 and Up Underground House Book. *By Matt Oehler, 1982.* If you can get past the groovy 70’s lingo and blatant sexism, there are a few good nuggets here.

Earth-Sheltered House: How to Build an Affordable Underground Home. By Rob Roy, *New Society Publishers, 2006.* A charming and practical book.

The Earth-Sheltered House: An Architect's Sketchbook. By Malcolm Wells, *Real Goods, 1998.* A wonderfully illustrated book by one of the leading proponents of the technique.

WATER HARVESTING & STORAGE, WASTE MANAGEMENT

Builder's Greywater Guide: The Guide to Professional Installation. By Art Ludwig, *Oasis Design, revised and expanded July 2003.* Installation of greywater systems in new construction and remodeling.

The Composting Toilet System Book. By David Del Porto & Carol Steinfeld, *Center for Ecological Pollution Prevention, 2000.* Comprehensive overview of homemade & commercial composting toilet systems & their use.

The New Create an Oasis with Grey Water. By Art Ludwig, *Oasis Design, Revised and Expanded Fourth Edition, 2006.* A complete guide to choosing, building, and using grey water systems.

The Humanure Handbook: A Guide to Composting Human Manure, 3rd edition. By Joseph Jenkins, *Chelsea Green Publishing, 2005.* The definitive book on the subject in its 3rd edition.

Water Storage: Tanks, Cisterns, Aquifers and Ponds. By Art Ludwig, *Oasis Design, 2005.* This do-it-yourself guide will help anyone design, build and maintain a water system for domestic use, fire protection and disaster preparedness. How to store water for homes, farms and small communities at low cost and ecologically. Also shows how to build a ferrocement tank.

Rainwater Harvesting for Drylands (Vol. 1): Guiding Principles to Welcome Rain into Your Life and Landscape. by Brad Lancaster, *Chelsea Green Publishing Company.* The first in a 3-volume set. Volume 1 is the core of the complete three-volume guide on how to conceptualize, design, and implement sustainable water-harvesting systems for your home, landscape, and community. <http://www.harvestingrainwater.com/>

Rainwater Harvesting for Drylands (Vol. 2): Water-harvesting Earthworks by Brad Lancaster, *Chelsea Green Publishing Company.* The second in a 3-volume set about making full use of the rain that falls on your property. Covers swales, terracing, rain gardens, mulching, curb-cuts, and appropriate use of vegetation.

Rainwater Harvesting for Drylands (Vol. 3): Roof Catchment & Cistern Systems (to be published 2009). By Brad Lancaster.

Natural Building Videos

At Home with Mother Earth. A great overview of earth building featuring the work of Nader Khalili, David Easton, and CRATerre. Available from Cal-Earth. (See Resource Centers.)

Building Sustainability into the Codes: The Emerging Path toward Sustainable Construction. *By Development Center for Appropriate Technology.* DCAT is in the final stages of production of this video. Downloadable for those with high-speed Internet access, and available for purchase at a reasonable price. Other materials will be offered in the future, or made available as they are developed. For order information, call 520.624.6628 or www.dcat.net

Building with Awareness: The Construction of a Hybrid Home. *By Synchronos.* Covers a wide variety of materials, methods, heating/cooling, foundations, floors, earth plaster, and more. www.BuildingwithAwareness.com

Building with Earthbags. Ninety minutes of construction detail covering all aspects of a twin earth bag dome, PV/off-grid, papercrete plaster and much more. www.hartworks.com

Building with Papercrete & Paper Adobe. Two-hour video. Available from Taylor Publishing-DirtCheap Books.

Building with the Earth: Oregon's Cob Cottage Company. *By Inner Growth Videos, Cob Cottage Company.* Inspirational & philosophical video that introduces the Cob Cottage Company & their work. Not a "how-to."

Cob--Building with Earth. Available from Dirt Cheap Builders/Taylor Publishing.

Cordwood Building: The State of the Art. *By Rob Roy, New Society Publishers, 2003.* Rewrites of the best and most useful papers presented at the CoCoCo conferences, along with a bit of cordwood's history, changes in building techniques, and examples of cordwood building around the world.

Cordwood Homes with Rob Roy. *By Rob Roy, Earthwood Building School.* Home tours, interviews, and ideas on home design and the owner-builder experience, providing a close-up look at several styles of cordwood homes. www.cordwoodmasonry.com/books

Cordwood Masonry Techniques with Rob & Jaki Roy. *By Rob and Jaki Roy, Earthwood Building School.* The how-to of building with cordwood from the Earthwood Building School. www.cordwoodmasonry.com/books

Earthbag Methods and Philosophy with Nader Khalili. *By Chinle Films.* Sixty-minute interview and documentary on using bags for construction. Though it shows some how-to, it is primarily a "why to."

Garbage Warrior. Feature-length documentary telling the epic story of maverick architect Michael Reynolds, inventor of the "Earthship." A snapshot of contemporary geo-politics and an inspirational tale of triumph over bureaucracy, Garbage Warrior is above all an intimate portrait of an extraordinary individual and his dream of changing the world.

Introduction to Fibercrete with Mike McCain. 90 minutes. How to make and mix papercrete, barrel mixer construction details, simple wood forms for blocks and bricks, pouring and pumping slurry, plus structures built, tips, and a burn test. Available from Taylor Publishing-DirtCheap Books.

Permaculture Video Series. *By Crystal Lake Video.* Three videos from Sepp and Veronika Holzers' 100 acre high-altitude farm in Austria, chosen as an example of sustainable agriculture for Expo 2000.

Rammed Earth Basics. *By EarthWright Institute.* 101 S Coombs Ste N, Napa CA 94559.

The Rammed Earth Renaissance. *By Lyceum Productions.* Overview of David Easton's pioneering work with rammed earth in the U.S.

A Sampler of Alternative Homes. *By Hart Works Productions.* Covers papercrete, strawbale, earthships, corkwood, adobe block, rammed earth, earthbags and more. www.hartworks.com.

Urban Permaculture. *By Black Range Films.* 30 minutes. Bill Roley, founder of the Permaculture Institute of Southern California, shows how Permaculture can be applied in an urban setting.

Email Lists

Greenbuilding -- A lot of professionals. Discussion can be quite technical, but it's always VERY informative & they're nice, polite, and helpful. You'll find less natural-materials conversation here, though there is some.
http://listserv.repp.org/mailman/listinfo/greenbuilding_listserv.repp.org

Organic Architecture -- a greater mix of participants. Conversation ranges further than Greenbuilding. A busier list than Greenbuilding with more discussion. There will be more natural building conversation here than on Greenbuilding, and a few more do-it-yourselfers.
http://groups.yahoo.com/group/organic_architecture

LittleHouses -- Busier even still than the previous two lists. Definitely Do-It-Yourselfers. Though its main topic is little houses, there are good all-around construction details discussed here, with knowledgeable and experienced list members. It is also very persuasive on building small (for example, many things you have don't need to be stored in your "conditioned" space).
<http://groups.yahoo.com/group/LittleHouses>

SGCdiscuss – Discussion list for Sustainable Green Country. Resource for greenbuilding information specific to northeastern Oklahoma. Discussion of all facets of sustainable living.
<http://groups.yahoo.com/group/SGCdiscuss>.

Ok-sus – Email discussion list for the Oklahoma Sustainability Network (OSN). Covers all aspects of sustainable living in Oklahoma. <http://lists.oksustainability.org/mailman/listinfo/ok-sus>

Magazines & Periodicals

Ecological Home

<http://www.ecologicalhomeideas.com>

Eco-Structure -- Improving environmental performances of buildings & their surroundings

<http://www.eco-structure.com>

Environmental Design + Construction -- Integrated high-performance building

<http://www.edcmag.com/>

Green Builder Magazine -- NAHB publication for home builders

<http://www.greenbuildermagazine.com/>

Green Building Product Dealer -- New product reviews for professionals

<http://www.gbproductnews.com/>

Green Roof -- Trade publication for commercial green roof industry

<http://www.greenroofs.org>

GreenSource -- The Magazine of Sustainable Design

<http://www.greensourcemag.com/>

Home Energy -- Residential energy conservation

<http://www.homeenergy.org/>

Home Power Magazine -- The hands-on journal of home-made power & renewable energy

<http://www.homepower.com>

The Last Straw -- Strawbale building

<http://www.strawhomes.com/>

Mother Earth News -- Natural building, natural living and homesteading

<http://www.motherearthnews.com>

Natural Home -- Living in a natural home

<http://www.naturalhomemagazine.com/>

The Owner-Builder -- Australian magazine of alternative & sustainable construction

<http://www.theownerbuilder.com.au>

Permaculture Activist -- Principles and patterns for designing an abundant future today

<http://www.permacultureactivist.net/>

Permaculture Magazine -- Solutions for sustainable living

<http://www.permaculture.co.uk>

Smart HomeOwner -- Innovative solutions for creating efficient, healthy, eco-friendly homes

<http://www.smarthomeownermag.com>

Solar Today Magazine -- Published by the American Solar Energy Society

<http://www.solartoday.org/>

Ultimate Home Design -- Optimum performance design & build resource for environmentally enhanced lifespan living

<http://www.ultimatehomedesign.com/>

Appendix B: Reflexive Poetry

A Day Like Any Other

When morning breaks all gold, violet, pink, and blue – I think of you.
For friends, like the forests and the creatures in them
urge me on, embrace me, and nurture my inner body so that I may love and care for the cosmos.

We are interconnected – not just you and I in a web of history,
but through all living and non-living entities with whom we share this planet.

The rocks hold spirits that whisper your name
and the soil itself, from which we were both born,
carries the essence of those who came before.

You are part of me and I am part of you:
we breathe the same air, gaze upon the same moon, and feel the same softness of the moss
under our feet. We smell the same forests and taste the same water's sweetness.

As I welcome this new day, the unfolding leaves on the red maple,
like wee baby fists, wave in the breeze and punch at the air.

Life – I am alive on this magical Earth, and I think of you –
how we are connected as members of the human species
to live interconnected in love with our species and all of nature.

So, on this day like any other,
may the wind kiss your face, the trees embrace your body, and the soil nurture your soul.

Matter & What Matters

Western religion tells you the sensual cannot be trusted.
 Earth is a corrupt place.
 Your true home is in heaven.

Science tells you that your senses cannot be trusted.
 Matter is deceptive.
 You are alien to your surroundings.

Both science and religion
 deceive and alienate you from your own capacity
 to see, to taste and touch,
 to know and describe your experiences.

Scientific Evidence

“Colour” or chromatics is
 light reflected, scattered, or absorbed.
 Colour does not exist.

Alternative Vision

What if ...
 the experience of colour is a union
 You & Matter
 together create colour.

What if ...
 Colour Is Evidence
 a verification of the profound, sensual, and emotional connection
 between You & the Earth.

What if ...
 colour is part of a universal balancing act
 Your Sensual Joy Vs. Your Life’s Disappointments.

What Matters

May you experience intense joy as your senses interact with matter,
 &
 I believe
 you will feel a special connection to this Earth,
 &
 I trust
 you will acknowledge that because of your civilization

many of the waters you once swam in are poisoned;
the forests you loved as a child are disappearing;
much of the fruit you eat no longer tastes as sweet;
and every year there are fewer song birds, frogs, and butterflies,
&
I hope
you will tap into a secret knowledge,
come to know your own existence,
and take action to heal the Earth.

On Sight/Site

At nine, I arrive in North Cowichan.
I'm to help in the application of natural plaster
to a cob, a living house that breathes.

A cob tree stretches, on an inside wall,
and a family grows, in a space
where no doors separate adults from children.

In the garden, Tibetan prayer flags flutter on the gate post.
Ocean picks a piece of dew-topped lettuce,
pops it in my mouth.
We visit raspberry canes and blueberry bushes,
wish them well, tell them to grow tall and strong.
I can almost taste their purple stain on my tongue.

On the land, four goats, a horse, and two rabbits
teach stewardship and responsibility.
A few quick pats and I'm back to the task at hand-
to carry the bucket of steaming manure
from the paddock, to the site, for the plaster.

Natural Plaster

2 ½ buckets of slip
1 bucket medium-course sand
1 bucket fine sand
1 bucket fresh horse manure (mix well with hand blender before adding)
Add water if needed
With a trowel, scoop clay dough onto hawk
Pat down, square, and divide

The children and I mix and get muddy.
On the fence posts,
ravens caw and chuckle at us.
Tricksters, gods, ill omens

The children tell me the story of Gimpy,
the lame rooster who met his death.
Wire now keeps the birds from snatching a hen.

We move from mixing to searching
in the sand. We're looking for gold.
Pudgy hands passed me two wee pebbles
- it's white gold, Cedar sings.
In a children's world, everything is gold.

I'm told that fairies live close by
in cob fairy houses that the girls made.

I join the crew, I'm ready
to apply my plaster to a cob wall.
Much of my plaster lands on the ground.
Up on the scaffold, I stop.
I breathe in the sun.

The children continue to search the sand.
Mom has the baby tied to her back,
held in place by a scarf
woven from a rainbow.

Down on the ground, a tiny hand grabs mine
and pushes something wet into it -
a bouquet of blue bells
I look down at a smiling face.
I'm certain I hear the hum of fairy wings.

Gratitude

My heart, a tree heavy with apples to abate your hunger and quench your thirst

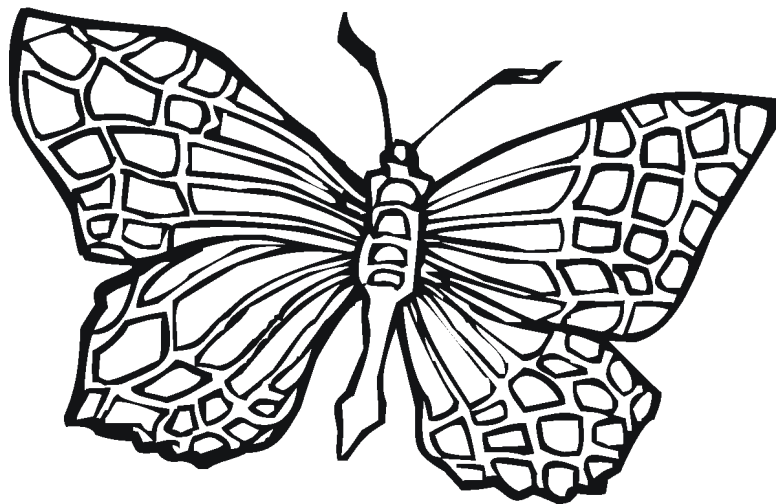
My desires, ribbons of moonbeams that shimmer and dance in the indigo shadows of your skin

I am a pussy willow, velvet to touch, or the wind that sings your song and carries the scent of the rain.

Still and silent, I absorb the knowledge of the universe, for which no words exist.

I am the scholar and the ignorant man. I carry my head high so that I may lower it in honour and humility. What my rational intellect perceives as truth, my embodied soul weighs with caution.

Yet, because of you, I am transformed ~ beautiful and able to rise up on sun-dusted wings.



Appendix C: Ecofeminist Definitions

“‘Ecofeminism’ refers to a plurality of positions. That is because there is not one ecofeminism, any more than there is one feminism” (Warren, 1994, p. 2).

Diamond and Orenstein (1990) say “ecofeminism is a term that some use to describe both the diverse range of women’s efforts to save the Earth and the transformations of feminism in the West that have resulted from the new view of women and nature” (p. ix).

“Feminism and ecology are brought together in the ecofeminist assertion that women’s subordination and ecological degradation are linked” (Mellor, 1997, vii).

“Ecofeminism identifies the twin dominations of women and the rest of nature. To the issues of sexism, racism, classism, and heterosexism that concerns feminists, ecofeminists add naturism – the oppression of the rest of nature. Ecofeminism argues that the connections between the oppression of women and the rest of nature must be recognized to understand adequately both oppressions” (Adams, 1993, p. 1).

“Ecofeminism is a theory that has evolved from various fields of feminist inquiry and activism: peace movements, labor movements, women’s health care, and the anti-nuclear, environmental, and animal liberation movements. Drawing on the insights of ecology, feminism, and socialism, ecofeminism’s basic premise is that the ideology which authorizes oppressions such as those based on race, class, gender, sexuality, physical abilities, and species is the same ideology which sanctions the oppression of nature” (Gaard, 1993, p. 1).

“Ecofeminism calls for an end to all oppressions...its theoretical base is a sense of self most commonly expressed by women and various other nondominant groups—a self that is interconnected with all life...Ecofeminism describes the framework that authorizes forms of oppression as patriarchy, an ideology whose fundamental self/other distinction is based on a sense of self that is separate, atomistic” (Gaard, 1993, pp. 1-2).

“Ecofeminism is a movement that sees a connection between the exploitation and degradation of the natural world and the subordination and oppression of women. It emerged with second-wave feminism and the green movement (1970s) green concern and impact of human activities on non-human world –feminism gendered ways that subordinate, exploit and oppress” (Mellor, 1997, p. 1).

“Ecofeminist pedagogy – a perspective which challenges the domination and hierarchical systems of oppression that underlie the patriarchal structures and philosophies of the dominant culture, and a methodology which attempts to untangle and disarm patriarchal indoctrination as it relates to various aspects of our life-styles, beliefs, ideas, and behaviors” (Weil, 1993, p. 311).

“Ecofeminism offers an extensive critique of Western culture in which the overall goal is to create an alternative theory and praxis to that of patriarchy” (Willoughby, 1993, p. 133)

“Ecofeminist movement is emerging globally as a major catalyst of ethical, political, social, and creative change” (Diamond & Orenstein, 1990, p. ix).

Ecofeminism is opposed to the “isms of domination” (Warren, 2000, p. 68).

“While feminists may be content with nothing more than equality alongside men in the existing system, ecofeminists are concerned about global sustainability as much as gender justice; in fact, they see the two as intrinsically linked” (economic growth in masculine economy adds new burdens to women’s lives—money that might go towards women breadwinners gets spent on armaments) (Salleh, 1997, p. 91).

Ecofeminism “defies liberal and postmodern claims that there as many political actors to bring about change as there are sites of resistance in society. The ecofeminist idea of women’s unique agency in an era of ecological crisis may antagonize readers schooled in these established habits of thought” (Salleh, 1997, p. 3).

“Ecofeminism is an epistemological critique of Eurocentric culture and it exposes the undemocratic masculinity in the grassroots Green movement” (Salleh, 1997, p. 11).

“Women are not ‘closer to nature’ than men in any ontological sense. Both women and men are ‘in/with/of nature,’ but attaining the prize of masculine identity depends on men distancing themselves from that fact. Ecofeminist explore the political consequences of this culturally elaborated gender difference” (Salleh, 1997, p. 13).

“An ecofeminist response to ecological breakdown means finding ways of meeting human needs that do not further the domination of instrumental rationality” (Salleh, 1997, p. 53). Instrumental rational being dominate thought that focuses on the most efficient or cost-effective means to achieve a specific end, without reflecting on the value of that end.

Ecofeminism, formed from third wave feminism, is a contested concept held together by the belief that there is a link between the domination of nature and exploitation of women and between militarism, sexism, classism, racism, and environmental destruction (Lorentzen & Eaton, 2002; MacSwain, 2009).

Appendix D: Ecofeminism Revisited

Ecofeminist Themes

Ecofeminism and Deep Ecology.

Deep ecologists write that the well-being and flourishing of human and nonhuman life on Earth has value in itself and that humans have no right to reduce the richness and diversity of life forms except to satisfy vital human needs. Ecofeminists agree but wonder how much one's concept of 'vital needs' is shaped by the values of patriarchal culture.

- Spretnak, 1990

Ruether (1993) defines ecofeminism as “the union of the radical ecology movement, or what has been called ‘deep ecology,’ and feminism” (p. 13). Diamond and Orenstein (1990) write that ecofeminism celebrates “the embeddedness of all the Earth's peoples in the multiple webs and cycles of life” (p. xi). Many see ecofeminism as being deeper than deep ecology, but certainly, the work of Griffin (1978) illustrates how aspects of deep ecology are the very foundation of ecofeminism:

We know ourselves to be made from this earth. We know this earth is made from our bodies. For we see ourselves. And we are nature. We are nature seeing nature. We are nature with a concept of nature. Nature weeping. Nature speaking of nature to nature. The red-winged blackbird flies in us, in our inner sight. We see the arc of her flight. We measure the ellipse. We predict its climax. We are amazed. We are moved. We fly....I know I am made from this earth, as my mother's hands were made from this earth, as her dreams came from this earth and all that I know, I know in this earth, the body of the bird, this pen, this paper, these hands, this tongue speaking, all that I know speaks to me through this earth and I long to tell you, you who are earth too, and listen as we speak to each other of what we know: the light is in us. (pp. 226-227)

Despite shared visions, the bond between deep ecologists, many of whom are male, and ecofeminists remains tenuous. Poet, Sharon Doubiago, observes deep ecology to be “shockingly

sexist” – men with backpacks and hiking boots, who live off the land with lightweight high-tech equipment (Mellor, 1997, p. 139). Mellor (1997) says we need a “structural understanding as humans as embodied and embedded if the ecological crisis and women’s subordination is to be addressed” (p. 13). Plumwood (1993) agrees that while deep ecology places emphasis on personal transformation, it ignores social structure. Ruether (1993) recognizes that even “a revolution in female roles into the male work world, without a corresponding revolution of male roles, leaves the basic pattern of patriarchal exploitation of women untouched” (p. 22). She adds, “There must be a conversion of men to the work of women, along with the conversion of male consciousness to the earth” (Ruether, 1993, p. 22). And for the survival of the planet, change needs to be systemic. The shift Ruether speaks of is far from a global reality, and today structures of domination are shored up by globalization and corporatization, which increasingly marginalize women. Cob building, on the other hand, is anti-globalization, anti-corporatization because builders use earth and local products. Cob building also opposes structures of domination and includes women builders such as the Mud Girls.

Globalization, corporatization, and commodification.

The international economy is now governed by bourses, banks and supercartels. This ruling class of men annuls democracies worldwide with lavish funds to both sides of politics. Real government is no longer accountable to constitutions, but hidden away inside a transnational order of some five hundred firms controlling global trade.

- Salleh, 1997

Corporate rule through globalization continues to build upon the foundation that colonialism created and continues to leave behind it a trail of devastation and destruction.

- Shiva, 2005

Shiva (2005) says globalization is “the ultimate enclosure—of our minds, our hearts, and our resources” (p. 30), and “‘global’ in the global order means simply the global domination of local and particular interests, by means of subsuming the multiple diversity of economies, cultures and of nature under the control of a few multinational corporations (MNCs), and the superpowers that assist them” (Mies & Shiva, 1993, p. 9). Harding (1991) notes that “the prestige of the intellectuals in science and technology is rising in higher education and the government,” and Harding asks “how can women manage their lives in the context of sciences and technologies designed and directed by powerful institutions that appear to have few interests in creating social relations beneficial to anyone but those in dominant groups?” (pp. 4-6). Globalization presents a challenge for the marginalized because it reinforces hegemony.

The hegemonic system allows men to make, break, and bend the rules and place the Earth at risk, and within the globalization-marginalization union, we have the neo-liberal world of capitalism and commodification, where most goods, services, and natural resources are available on the market for a price. Shiva (2005), when speaking about the commodification of the commons, water in particular, states that the “protection of nature and people’s rights are defined as protectionism, as trade barriers, and as barriers to investment” (p. 31). Plumwood (1993) states that not only do we “die of the product (the destruction of nature)” but also of “the process (technological brutality alias technological rationality serving the end of commodification)” (p. 13). According to Plumwood (1993), “as the free water we drink from common streams, and the free air we breathe in common, become increasingly unfit to sustain life, the biospheric means for a healthy life will increasingly be privatised and become the privilege of those who can afford to pay for them” (p. 13). The global structure, which views the Earth as an Other, “a reality below and separate from ‘man,’ rather than one nexus in which humanity itself is

inseparably embedded” (Ruether, 1993, pp. 13-14), legitimizes Earths’ destruction and justifies its commodification. Cobs honour the Earth because they are sustainable and can be returned to Earth from which they came.

Othering and dualisms.

This ‘man’s world’ is on the very edge of collapse...This is so because there is no respect for the ‘other’ in patriarchal society. The other, the object of patriarchal rationality, is considered only insofar as it can befit the subject. So self-centered is this view that it is blind to the fact that its own life depends on the integrity and well-being of the whole. This is the subject matter of ecofeminism, a key strand in the planetary shift away from the simple-minded selfishness of patriarchy

- Plant, 1989

Othering, the construction of the dualistic “other,” is outlined in Edward Said’s classic book *Orientalism* in which Said (1979) writes about the construction of identity and says, “a construction in my opinion—involves the construction of opposites and ‘others’ whose actuality is always subject to the continuous interpretation and re-interpretation of their differences from ‘us’” (p. 332). Griffin (1989) identifies “us” as those at the top of the global hierarchy—“those of the human species who belong to what is thought of as the white race, and those who are part of the masculine gender” (p. 8). Harding (1991) notes that “Western science and models of knowledge are embedded in and have advanced the development of Western society and culture but have also led to the simultaneous de-development and continual re-creation of ‘others’—Third world peoples, women, the poor, nature” (p. ix). In fact, to Salleh (1997), “feminine suffering is universal because wrong done to women and its ongoing denial fuels the psychosexual abuse of all Others – races, children, animals, plants, rocks, water, and air” (p. 14).

This othering of nature, or the human/nature dualism, underlies our present environmental crisis, especially the western construction of human identity as “outside” nature (Plumwood, 1993, p. 2). As breathing living buildings, cobs counter the human/nature dualism because, rather than marginalizing nature, cobs are one with nature: they conform to the lay of the land; their foundations are made from on-site rocks; and their walls rise from earth.

Activism.

Ecofeminist activism takes place in a variety of venues and covers a variety of issues such as “antimilitarism, ecosystem preservation, the greening of urban and suburban spaces, agriculture, health care, occupational safety, environmental justice, anticonsumerism, animals rights, ethical vegetarianism, and spirituality” (Carr, 2000, p. 15). Reed (2005) sees “women’s perspectives and choices for activism as nested within local social and spatial contexts” (p. 23). Whether at home in the private sphere or out in the public sphere, Kaza (1993) notes that “feminists have encouraged women to reclaim the stories of their lives and speak what they know from direct experience” because “the personal is recognized as the political, for it is a genuine place of truth telling” (p. 54). Ecofeminism values women’s knowledge, which has traditionally been devalued, and encourages involvement.

For those interested in getting involved, King (1989) lists the following paths to direct action:

- learning holistic health and alternative ecological technologies
- living in communities that explore old and new forms of spirituality which celebrate all life as diverse expressions of nature
- considering the ecological consequences of our lifestyles and personal habits, and

- participating in creative public forms of resistance, including nonviolent civil disobedience (p. 25).

The ecofeminist goal is always to effect systemic change, and some less radical ecofeminists effect change through spirituality.

Spirituality.

“I will lift up mine eyes unto the hills from whence cometh my help.” The psalmist wanted us to know that we can gain spiritual strength by simply beholding the natural world, that indeed to look upon the wonders of nature is to gaze at divine spirit.... If we do not see earth as a guide to divine spirit, then we cannot see that the human spirit is violated, diminished when humans violate and destroy the natural environment.

- hooks, 2008

Spretnak (1993) asserts that along with philosophical and political aspects, ecofeminism contains a spiritual dimension that offers “an alternative to the Western patriarchal worldview of fragmentation, alienation, agnostic dualisms, and exploitive dynamics is a radical reconceptualization” (p. 187). Ecofeminist spirituality “honors holistic integration: interrelatedness, transformation, embodiment, caring, and love,” for “the divine, lies not above us but in the infinite complexity of the sacred whole that continues to unfold” (Spretnak, 1993, p. 187). Starhawk (1990) claims “feminist spirituality is rooted in the process where women began asking themselves questions about their own spiritual experiences and found that there were things that they tended to have in common” (p. 36). Although “many ecofeminists look to earth-based spiritualities as alternatives to dominant theologies” (Adams, 1993, p. 3), “just as there are many ecofeminists, there are wide varieties of ecofeminist spiritualities” (Adams, 1993, p. 4) and much disagreement over spirituality’s role.

“Ecofeminists disagree about the nature and place of spirituality in ecofeminist politics and practice” (Warren, 1993, p. 119). Some see earth-based spiritualities as linked to theory and practice, which makes it imperative to feminism, environmental philosophy, and ecofeminism. Others argue that “spirituality-oriented approaches to ecofeminism reinforce harmful gender stereotypes about women and undermine the philosophical, political, and feminist significance of ecofeminism” (Warren, 1993, p. 119). A third group suggests, “Although ecofeminist spiritualities are neither necessary nor sufficient for ecofeminist theory and practice, nonetheless they occupy an important place in ecofeminism” (Warren, 1993, p. 119).⁵ Ecofeminist views on the role of spirituality mirror many western views on the role of religion in society.

However, Eisler (1990) reminds us “prehistoric societies worshipped the Goddess of nature and spirituality, our great Mother, the giver of life and creator of all... [and that] these ancient societies were structured very much like the more peaceful and just society we are now trying to construct” (p. 23). Eisler (1990) states that if the answer to mounting environmental crisis is the return to nature, then this implies that the ecological crisis occurred because of a shift from a religious to a secular /science and technology worldview. However, Eisler (1990) continues and refutes her claim. She says, “It is not science and technology, but the numbing of our innate human sensibilities that makes it possible for men to dominate, oppress, exploit, and kill” (p. 33) – the result of the disconnection between our human body and emotions.

⁵ For convincing arguments on why earth-based or ecofeminist spiritualities deserve serious attention, Karen Warren (1993) outlines her claims under headings: politically, ethically, epistemologically, methodologically, conceptually, theoretically (pp. 120-121).

Appendix E: Data Tables

Table 1: Keyword Counts

Name		Keywords and counts	
Dawn	build/built/builder/natural building (82)	values/beliefs/respect/world vision /honour/love/priorities/integrity (21)	traditional/legacy/origins/tradition (7)
Rose	community/collective/ each other/ together /sisterhood/belonging (16)	learning/facilitated/ experimenting/ teaching/doing/building skills (14)	organic/ sculptable/ sculpted/creative (10)
Kata	art/artist (28)	empowerment/ taking back/ empowered/ empowering (8)	functionality/functional/ serves a purpose (8)

Table 2: List of Themes

Themes	Kata	Dawn	Rose
teaching	✓		✓
functional	✓	✓	✓
political	✓	✓	✓
art	✓	✓	✓
easier/more forgiving /welcoming	✓		
collaborative	✓		✓
sustainability/ecological impact/suited to location	✓	✓	✓
transformational	✓	✓	✓
empowering	✓		✓
democracy and freedom	✓		
longevity/durable		✓	
connection to past	✓	✓	✓
interconnectedness with nature	✓	✓	✓