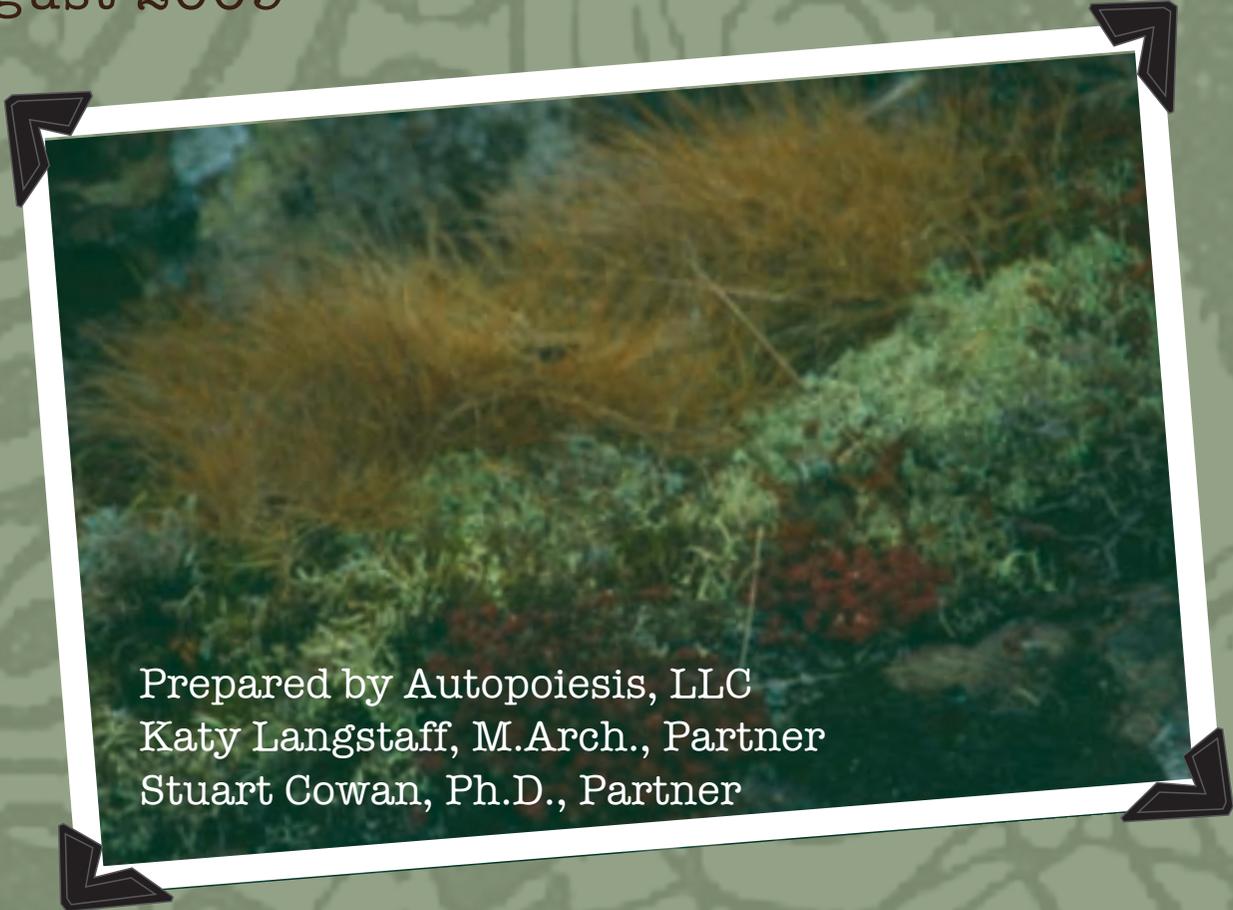


THE ECOTONE COMMUNITY BUSINESS PLAN

August 2009



Prepared by Autopoiesis, LLC
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introduction



Findhorn
Community Center
SCOTLAND

vision

Our **Ecotone Community** will be a place for people's spirits to soar, where natural buildings made with love cradle multiple generations, and where the more-than-human world of field, forest, and stream caresses all. This small community of approximately 10 dwellings will serve as a model for living within our fair global share of ecological footprint, and will operate without fossil fuel use. The clustered homes will form a village center alive with local enterprise and common gathering spaces. The Ecotone Community will also hold 20-80 acres of agricultural fields, forestland, and wildlands in a Community Land Trust, protecting at least 90% of its land in permanent conservation easements.

The Ecotone Community will utilize a model of development freed from speculative profit, enabling an adaptive design process completely devoted to creating wholeness and life. Our intention is to test and provide a new pattern of human development that supports slow abundance, deep community, equity, and reciprocity with living systems at all scales. There is also an opportunity to preserve buffer zone and wilderness corridors which are critical for ecologically functional landscapes. The goal of the **Ecotone Community** is to provide an example of how human development can be ecologically regenerative.

location

We are currently seeking a suitable 20-80 acre parcel of land in a semi-rural, rural, or wild area in Oregon, Washington, or California. We would consider other locations if an extraordinary opportunity presented itself. The **Ecotone Community** design will respond to the chosen location's particular soil, topography, ecosystem, vegetation, wildlife, annual rainfall, renewable energy potential, and many other subtle factors. It may be that this piece of land has been lovingly farmed for generations and is ready for a new story. Perhaps this parcel is under development pressure and is currently home to diverse wildlife.

The ideal site will accommodate a strong sustainable agriculture and ecological forestry component while enabling the conservation of wildlands that will significantly contribute to regional wildlands connectivity and watershed health. Ideally, the landowner will be able to work flexibly with the proposed Community Land Trust and provide long-term seller financing. The site's zoning may need to be made more flexible by working cooperatively with local planning authorities.

size of project

Approximately 6-10 houses will be clustered on a maximum of 2 or 3 acres, providing a gross lot size of about 10,000 s.f.. Individual homes will be scaled according to the number of family members from about 600 s.f. to a maximum of 1,800 s.f. The Ecotone Community will also hold a total of 20-80 acres through a Community Land Trust.

families thriving

In recent years, families and many communities have become fragmented, excluding the vital influences of the larger supporting framework provided by extended family. When multiple generations coexist, children, adults, and elders alike assist in the tasks of a family: rearing youth, cooking meals, cleaning, caring for the older community members. The arrangement both encourages responsibility, support, and respect, and promotes an inclusive attitude toward all, regardless of age. The **Ecotone Community** will offer some very small units for sale or rent that will accommodate extended family members in an intergenerational community.

amenities

The **Ecotone Community** will have a shared building for community celebrations, possibly a “guest” room, a pond or place to swim, edible landscaping, community garden, and livestock. It will have a small shared fleet of pure electric vehicles and be within reasonable distance of a town and an airport. It will have zoning supporting light commercial activities including value-added food production or eco-manufacturing. The **Ecotone Community** will have extremely energy efficient homes that utilize natural building materials and offer tremendous comfort and health. Infrastructure will include district-scale geo-exchange (ground source heat pump), ecological stormwater and wastewater treatment, and renewable energy generation and storage systems. Roads will be minimized and use pervious materials.



enduring quality

Our intention is to create a place of enduring quality. Through an integrated design process this act of place-making will infuse the buildings, gardens, and common places with energy and love in a mutually beneficial way. “We are making it, and it is making us.” The goal of the **Ecotone Community** is to utilize an economic system and a design and building practice to allow the life of this place to unfold in harmony with living systems to create a timeless and ageless thriving community. We will use quality materials and skillful artisans to bring our community to life. Through careful planning the community infrastructure will be built first. Imagine a simple and elegant building, made of local materials, with a long table. We hope to begin this community around the table, eating, getting to know each other, sharing ideas and bringing dreams to reality.

help us realize this vision

We are sharing this document with you because we feel that you are a kindred spirit in realizing this extraordinary project. There are many ways that you or someone in your own networks can participate.

1. We are looking for future residents and farmers for the biodynamic agriculture component.
2. We are seeking donations and grants from individuals and organizations for the non-profit research, planning, and training components. We are actively seeking \$50,000 in seed funding for the current project phase to complete the conceptual design, undertake a detailed land search, and document this entire process for replication. Perhaps you know a non-profit whose mission is aligned with this vision.
3. We are seeking land partners for the Community Land Trust who share the vision of a restorative Ecotone Community and want to see their land transferred for the common benefit in perpetuity. If you have land that would fit our criteria, or can connect us with a landowner who shares these values, it would be tremendously helpful. Perhaps a community is interested in securing surrounding lands to protect its watershed and ensure that future use of these lands support clean water for all and healthy habitat.
4. We are seeking patient capital for the planning & permitting and infrastructure development stages. The project will require about \$600,000 in below-market short-term loans, to be paid within one to two years by lot sales proceeds. This capital will need to be aggregated in stages. Providers of these loans will get tremendous social and environmental returns knowing they have played a catalytic role on the project.



Lopez Community Land Trust,
LOPEZ ISLAND, WA

the development process

timeline*

* This timeline is representative and will evolve as the project specifics are determined.

The **Ecotone Community** project is currently in Phase 1: Conceptual Design and Identifying Suitable Land, which will run through February 2010. Phase 2: Secure Land, Planning & Permitting, and Capitalizing Development Entity will occur from December 2009 to May 2010. Phase 3: Construct Infrastructure will run from June 2010 to August 2010. Phase 4: Construct Individual Homes and Common House will start in July 2010, with initial residents moving in by Summer 2011. Some additional detail on costs and tasks during these phases is provided in Appendix 2: Financial Model for **Ecotone Community Development**.

a process for unfolding wholeness

The **Ecotone Community** will utilize the design and development expertise of the project team to create a generative code that guides the unfolding of buildings in a manner that brings health and wholeness to each element of development. These elements work together to enhance the quality of life for the residents and are designed to benefit the ecosystems in which they exist, thereby ensuring the perpetual ecological design of the community. In addition, a prescriptive code, also based on ecological design, will specify certain building elements, including exterior building finishes, a universal window manufacturer and roofing material, shared renewable energy system, rules for water reclamation and reuse, and other factors. It is the intention of this Ecotone Community to demonstrate a development model for adaptive design and construction that creates wholeness based on the methods described by Christopher Alexander in *A Pattern Language and The Nature of Order*. This adaptive process allows residents and their designers the opportunity to stake out their building on their lot to get a feel for their home in its actual place rather than simply drawing lines in a CAD program without testing the proposed design on site. It allows unfolding wholeness down to the scale of windows and building details that can be mocked up and tested on-site during the construction process.

ecological design guidelines and metrics for ecotone communities

The **Ecotone Community** will be a regenerative project, producing more energy than it consumes, rehydrating the groundwater, restoring surrounding ecosystems, and renewing biocultural diversity. The project will utilize the following design and planning guidelines that will unfold in response to the specific site that is chosen.

1.

Ecological Footprint – design the project in a way that allows residents to joyfully live within the globally available per capita ecological footprint; additional project certification and sustainability frameworks may include LEED-ND, LEED-NC Homes, Living Building Challenge, One Planet Living, and The Natural Step

2.

Whole Systems Design & Ecological Design – multi-scale, multi-disciplinary

3.

Non-Profit Process for Unfolding Wholeness – create a non-profit development process that utilizes Christopher Alexander's pioneering methods in *The Nature of Order*

4.

Community Stewardship Zoning – a synergistic mix of zones including a mixed-use village center with up to 10 homes, office, retail, and eco-manufacturing on approximately 2 acres; biodynamic food production and resident garden plots on 2-10 acres; FSC certified eco-forestry; and wildlands conservation zone with opportunities to restore forest, wetland, riparian, meadow, and other habitats while actively contributing to a regionally significant wildlands system through corridors and buffers; minimal site disturbance from roads and buildings; opportunities for carbon credit generation from carbon sequestration

5.

Zero Energy Development / Fossil Fuel Free – produce more energy on-site than consumed on an average annual basis (solar PV, solar thermal, wind, biomass, micro-hydro); zero fossil fuel use on-site or indirectly through purchased electricity; carbon neutral or carbon negative; district geo-exchange (ground source heat pump) infrastructure allows highly efficient heating and cooling; efficient appliances and lighting; super-insulation

6.

Rehydration – restorative potable water, stormwater, graywater, and wastewater systems and water features that collectively rehydrate local water table; ecological stormwater treatment (e.g. swales and rain gardens); ecological graywater and wastewater treatment (e.g. constructed wetlands, reed bed filtration)

7.

Natural, Non-Toxic, Local, and Recycled Materials – use natural building materials (leichtlembau – fiber and clay, strawbale, cob, etc.), low-embodied energy materials, FSC lumber, non-toxic reclaimed and recycled materials, design for disassembly and re-use, non-toxic paints and finishes, local sourcing and manufacturing

8.

Indoor Air Quality – non-toxic materials, breathable wall systems (vapor permeable with high levels of insulation based on current building science)

9.

Minimize Impacts with Small Homes – limit size of homes from a 600 s.f. small cottage for individuals to a 1,800 s.f. home for a family of 4-5

10.

Piecemeal Adaptation – allow owners to gradually adapt their homes and ancillary buildings based on changing family requirements (e.g. Granny Flat, teenage cottage, work studio)

11.

Sustainable Transportation – provide a shared fleet of pure-electric vehicles powered with on-site renewable energy

12.

Green Collar Jobs and Relocalization – use the entire project to provide training and skills in green collar jobs including sustainable construction methods while driving a procurement process that rebuilds the local economy



Scharfenberger Vineyard,
MENDOCINO, CA



Fleming Abrahamson,
Thatch demonstration
Natural Building
Colloquium, PHILO, CA



Farmer's Market,
LONDON, ENGLAND

a non-profit model grounded in unfolding wholeness rather than speculative profit

Wholeness and life cannot be generated unless they are the sole objective of those who dream into being, design, and build every detail of the **Ecotone Community**. We are proposing a model of development that removes the role of speculative profit, allowing considerable benefit to be passed on to community members and the surrounding ecosystem rather than concentrated and exported via a conventional development process.

The proposed development process is outlined in **Appendix 2: Financial Model for Ecotone Community Development**. This model provides a qualitative sense of the types, magnitudes, and timing of project investments and expenditures. More detailed projections will be made as land is identified and the precise development program is finalized.

The model includes all land being held in perpetuity, and for the common good, by a non-profit Community Land Trust (CLT). Land for the **Ecotone Community** is initially transferred to the CLT by one or more landowners that share our vision of slow abundance and ecological benefit. Land is either given outright, or sold at a below-market or market-rate price. Any reduction below appraised value can be used as a tax deduction for the landowner. The landowner carries a long-term, low interest note on the land which is secured by the property itself, removing the speculative pressure induced by the conventional land acquisition and development process.

The fee developer, Autopoiesis LLC, will charge an open-book and fair hourly rate for its work to oversee the unfolding process. It will not add any speculative profit, which is typically 15% to 20%. The development entity will be a special-purpose LLC that assembles funds (including debt, equity, grants, and donations) and expends them for design, planning, engineering, technical consultants, and site infrastructure. It may also be able to provide simplified access to construction loans on beneficial terms to ensure that the process of unfolding wholeness is not unnecessarily hindered by financial institution oversight. The development entity will receive loans and equity investments from future residents, community supporters, and socially responsible investors. A non-profit partner can receive tax-deductible donations and grants in support of fundamental research, planning, on-site training, and documentation in support of this project that has a significant public benefit component. Construction financing will be provided by individual owner equity possibly supplemented by a construction loan or other source. A well-defined and generous period of time will be allowed for construction to reach completion. Homes and improvements will be owned outright, but the land underneath them will be provided on a long-term ground lease from the CLT.

zoning and codes

The project will pioneer a “Community Land Stewardship Zoning” overlay like that utilized in British Columbia by employing a “Planned Unit Development” or other compatible local planning approach. The Community Land Stewardship Zoning will designate land in biodynamic agriculture; in FSC certified ecological forestry lands for long-term restoration harvesting and gathering non-timber forest products; and the remainder in wildlands conservation. Along with being enshrined in the formal planning submittals, these uses will be maintained through agriculture, forestry, and conservation easements placed on the CLT lands.

In the case of Oregon, an **Ecotone Community** outside the urban growth boundary would be difficult to create under current land use planning. The Community Land Stewardship Zoning would allow for the forest or farm zoning designation to be modified such that any new development of 6-10 units would not disturb the land in a more significant manner than is currently allowed. Under Oregon Land use planning, the F5 and F10 zoning

allow for forest/farm use with a dwelling. The dwelling is not limited in size, but the agricultural production of the land must reach minimum annual sales of \$20,000 to \$80,000. We aim to show how a clustered development on 20+ acres would have an equivalent or less ecological footprint while enhancing ecological vitality of the land, local food production, purifying water, creating meaningful human community and local jobs. Proposed ecological technologies and building systems will go through a detailed formal building code review process to set a precedent where necessary (e.g. for certain natural building materials or graywater treatment systems).

The proposed Community Land Stewardship Zoning would provide a comprehensive biocultural restoration zone allowing for a wide range of uses with form and character governed by a “generative code”. The generative code allows each dwelling, garden or pathway to unfold in relationship to the specific site or other entities, while adhering to specific ecological design guidelines and zoning codes. The Community Land Stewardship Zoning would allow each residence to have a home office, a workshop, or some other form of live/work arrangement. Some units would also have the ability to add a “Granny Flat”, and there might be limited opportunity for retail or office space. There will also be a common house serving as a community focal point. If demand warrants, there may also be an area set aside for green light manufacturing uses.

The **Ecotone Community** offers an opportunity to enhance large-scale watershed conservation, eco-forestry, and biodynamic agriculture. Our goal is to show how human development can support ecosystem health and regeneration while radically decreasing its carbon footprint.

education and training

The project will offer a wide variety of opportunities for on-site workshops and internships during construction as well as after completion. With grant support, the project will be fully documented so lessons can be transferred widely. The Project team has experience running building workshops, administering grants, and teaching. We hope to create a learning opportunity for green collar job training, and for students interested in sustainable development and ecological design. Tax-deductible donations and grants in support of these activities can be received through a supporting non-profit.



Fruehauf House and Hai Shan Clinic,
CORBETT, OR



Sharon and Heiner Fruehauf leichiehbau,
CORBETT, OR 2003

the project team

about Autopoiesis LLC

grape arbor Aldermarsh,
LANGLEY, WA



Autopoiesis is the scientific term for “self-organizing systems”. **Autopoiesis LLC** (www.apoiesis.com) is committed to realizing the unlimited potential of synergies between culture and nature.

Autopoiesis LLC will serve as the fee developer for the project, guiding the development process and assembling financing while charging an hourly rate and foregoing the conventional speculative development profit of 15% to 20%. Autopoiesis LLC partners Katy Langstaff, M.Arch. and Stuart Cowan, Ph.D. bring 15 years of collaborative effort to create a wide range of frameworks, metrics, design approaches, and tools that enable them to work at a range of scales, across disciplines, and in community.

design and construction firms

Individual homes will be designed by members of the **Building Process Alliance** (www.buildingprocessalliance.com), or by owner subject to design review and compliance with the development goals. The Building Process Alliance (BPA) was founded in 2005 by former colleagues and students of Christopher Alexander, who created the Building Process Area of Emphasis in the Department of Architecture at the University of California at Berkeley. The work of the Building Process Alliance builds upon this common foundation and theoretical framework of *A Pattern Language* and *The Nature of Order*, and also explores new processes and approaches to creating wholeness and living structures in the built world. Members of the BPA collaborated with Autopoiesis LLC on an ecological model for courtyard affordable housing in Portland Oregon. This project is an example of the innovative financial strategies of Autopoiesis LLC and the quality of the BPA architectural design and planning skills. “The Portland Courtyard Housing Competition: Creating Spaces for Families, Community and Sustainability in the City” was sponsored by the City of Portland Bureau of Planning and Sustainability.

<http://www.courtyardhousing.org/inner/I-078A.pdf> and <http://www.courtyardhousing.org/inner/I-078B.pdf>

The process of unfolding wholeness employed in the **Ecotone Community** requires an unusual level of continuity between design and construction. Autopoiesis LLC will coordinate with local or regional construction firms that have experience in the design-build process we are utilizing to ensure that quality and integrity is maintained from design through finished construction.



Katy Langstaff, Penny Livingston,
Jess Sierra, Sharon Hoyer
PORCUPINE, SD



Katy Langstaff, Stonehenge,
WILTSHIRE, ENGLAND

Kathryn L. Langstaff, M.Arch.,

is a General Partner of **Autopoiesis LLC** (www.apoiesis.com), and an Associate AIA Member. She received a Masters of Arts in Architecture from the University of California at Berkeley, where she studied with Christopher Alexander and Sim Van der Ryn. She was awarded the John K. Branner Traveling Fellowship in 1993-1994 to study ecological design and community development. She has pioneered sustainable education and ecoliteracy at U.C. Berkeley and the San Francisco Institute of Architecture, teaching courses on “Designing Sustainable Systems” and “The Nature of Order”, and design studios on “Autonomous Urban Villages” and “Ecological Design”. While working with the Farallones Institute, she laid the groundwork for a pre K-12th grade ecoliteracy program at San Domenico School, in San Anselmo, CA, which continues to win awards and is carbon neutral as of January 2009. She has assisted many organizations in creating sustainable pathways for their projects.

Currently, Autopoiesis LLC is proud to be a partner of a USDA Forest Service grant with the Karuk Tribe of California and the Klamath Siskiyou Art Center. She has facilitated a town planning and economic development workshop for the Town of Happy Camp in association with this grant and is currently designing a new art center. She completed a Master Plan for the Portland Waldorf School in 2006. The Fruehauf House and Hai Shan Clinic was recently on the cover of *Portland Spaces*, January 2009. Katy was the sustainable project manager and designed the leichlembau walls, natural building materials, and incorporated feng shui, biodynamic timber harvest, horse-logging, ecoforestry and many other harmonious qualities into the project. In 1994 and 1999 Katy worked on Pine Ridge Reservation teaching workshops using local natural building material to design homes in harmony with Oglala Lakota spiritual practices.

With development experience beginning in the late 1980s in San Francisco, she worked as the Assistant Construction Manager for Mitsui Fudosan, USA and completed the base building contracts and managed the tenant improvements for 505 Montgomery, a \$125 million Class A office building. She researched international loft projects and helped Mitsui Fudosan, USA to invest in the Clock Tower, the first loft conversion South of Market in San Francisco, CA. In 1990 she worked on Phase I of the Shops at Fourth Street in Berkeley, CA with Abrams/Millikan & Associates. Most recently, she assisted Alora Development in the schematic design and programming for the Leftbank Project and the Green Room both in Portland, Oregon. Katy serves on the Board of the Sustasis Foundation.



Stuart Cowan

Stuart Cowan, Ph.D,

is a General Partner of Autopoiesis LLC (www.apoiesis.com), which offers design, planning, development, and finance services internationally for large-scale sustainability projects, with a particular emphasis on green real estate development, renewable energy, and biocultural restoration. The firm specializes in matching market-rate debt and equity with social and environmental investors providing below-market debt and equity, grants, tax credits, and other sources. The firm has worked with a wide range of financial institutions, municipalities, state and federal agencies, non-profits, utilities, companies, and religious orders. Current projects include large-scale wind power development, a \$50 million biomass generation facility, a community building demonstrating the commercialization of natural building materials and restoration thinning products, and several large-scale mixed-use projects seeking the coveted World Wildlife Fund One Planet Living endorsement.

He served as a Transaction Manager with Portland Family of Funds, an innovative community bank, and played a key role its successful effort to obtain multiple allocations of federal New Markets Tax Credits for the Portland Development Commission and external clients. These allocations have provided critical financial support for the development of numerous landmark projects in Portland, including The Nines Hotel/Macy's Renovation (\$130 million, Silver LEED); The Civic (\$100 million, Silver and Gold LEED); The White Stag (\$30 million, Gold LEED); 12th & Washington (\$140 million, Platinum LEED); The Oregon Clinic (\$30 million, Gold LEED); and Vanport (\$10 million, Gold LEED). He also served on the development team for a variety of projects, including the Gerding Theater (\$36 million, Platinum LEED), which is the first Platinum historic renovation and the first Platinum arts building. He played a key role in promoting a triple bottom line investment strategy for Portland Family of Funds and its national affiliate, United Fund Advisors.

He served as Conservation Economy Research Director at Ecotrust (www.ecotrust.org), an innovative sustainability non-profit in Portland. He led the development of a comprehensive framework for bioregional sustainability available at www.conservationeconomy.net. This framework provides a fractal integration of patterns of natural, social, and economic capital, and has been used internationally for strategic planning purposes.

He is the co-author with Sim Van der Ryn of *Ecological Design* (Island Press, 1996 and 2007), a visionary overview of the integration of ecology and architecture, land-use planning, and product design that was recently reissued in a special tenth anniversary issue. This book has become a standard reference on sustainable design and is published in three languages.

He received his doctorate in complex living systems from U.C. Berkeley, with a particular emphasis in ecological economics. He has taught ecological design, sustainability, and complex systems at a wide range of universities and institutes, including the Portland State University, the sustainable MBA program at Bainbridge Graduate Institute, U.C. Berkeley, New College of California, and Naropa Institute. He serves on the Board of the Sustasis Foundation and the Regenerative Design Institute.

APPENDIX 1: Sample Pattern Language for the Ecotone Community

Prepared by the Cass Family on 4/14/2008.

The family includes William and Samantha Cass and their two daughters.

Great model in sustainable living

Documentary of building process

Support from Universe

Flow and timing seamless

Creating reality in our community-keeping magic alive and well

Beautifully crafted and harmonious homes

Possible sharing of office space/hub for families

Carbon neutral- no CO2 omissions, no fossil fuels

Transportation biodiesel? ongoing improvements for transportation

Active restoration work on land

Sheep, goats, chickens, maybe place for horse/s in future

Sense of proportions for small/cozy homes- MCMANSION FREE!

Shared food garden

Sun- morning and afternoon

CELEBRATE LIFE!

Living in harmony with Mother Earth

Common house share some meals, gatherings for movies, yoga

Open to home schooling children teacher/s living on land or neighbor socialization

30-40+ acre piece of property # of acres depends on # of families/farming capabilities

Perfect for sustainable living

Rolling hills

Great view

Partial woods

Older trees red cedar, elder berry grove, wild dogwood, maple, oak, curly willow, cherry, hawthorn,

lilacs, roses, ginko, figs, plums

Magical land full of faeries, sprites and loving spirits

Possible farm land

Stream running through land

Lake on property or nearby w/ rope swing!

Prefer paved road some dirt/gravel ok

Great night sky- dark and away from city lights and /or neighbor/ street lights

Abundant wild life deer, hawks, eagles, owls, coyotes

Existing barn

Structurally sound, functional, size is perfect to fit airstream trailer, store our furniture,

building supplies/ equipment, and have room for kids to play in

Our land protected by conservation land next door

Property is protected from logging or development nearby

Kind, like minded neighbors

Water on site- clean abundant well water

Horses nearby -believe in natural horsemanship

Fertile soil for growing food

Quiet!!! Free of noise pollution



APPENDIX 1: Sample Pattern Language for the Ecotone Community

Orchards- apple, pear, plum, hazel nut, persimmon on property
Free of any pollution in air, water or soil on land itself and neighboring homes and/or businesses
Even better school for kids if Cedarwood Waldorf School is ruled out
Clear cell phone service! -towers and powerlines far away
Easy financing , purchase of land
Enthused, committed, wealthy, generous investor/s

Other families/people involved, committed, we get along with and truly like.
They are healthy, balanced, joyful, and love the earth
Spiritual, accepting many traditions, some more pagans!
Financially sound and responsible
Seniors, families w/ kids, one-person families
Easily fill the rest of lots.

possible skills of potential neighbors in community:

sheep/ wool crafts person

engineer/inventor/welder can fix or make anything

Gardeners, healthy cooks-canning knowledge

Musicians-old world instruments

Massage therapist bee keeper

Writer/artists

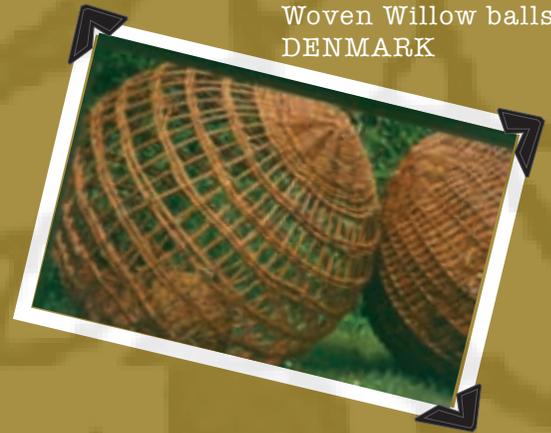
Smooth, swift approval from state, county and town/city limits for housing project and land use

Excitement, joy around project

Plenty of people/trade/business helping, donating goods and services to be a part of, spread word,
write ups in mags/on web

Extremely successful model in sustainable living

Woven Willow balls,
DENMARK



Villa Farnese,
Caprarola, ITALY



Sheep,
Wiltshire, ENGLAND



APPENDIX 2: Financial Model for Ecotone Community Development

Phase 1. Conceptual Design and Identifying Suitable Land

August 2009 – February 2010 (six months)

Refine design guidelines, conceptual design, infrastructure options analysis, feasibility analysis of candidate land parcels including site plans, preparation of detailed financial model for next phases, marketing materials, interest list for future residents, zoning, etc.

Budget: \$50,000

Autopoiesis LLC: \$40,000

Additional Consultants: \$10,000

Sources:

Donations: \$30,000

Grants: \$20,000

Phase 2. Secure Land, Planning & Permitting, and Capitalize Development Entity

December 2009 – May 2010 (seven months)

CLT secures land through a 15 to 30 year note from willing seller, with a target maximum purchase price of \$1,000,000 and below-market interest rate. CLT will charge annual ground lease fees sufficient to cover interest and principal payments on note from seller plus any agreed up annual assessment for shared maintenance of infrastructure and planned improvements. For a 1/10th portion of total CLT loan cost assuming a 30-year loan at 5% interest on a \$1,000,000 loan, the monthly ground lease would be \$542.

(These numbers are illustrative only)

Market Value of Land: \$1,750,000

Reduction in Sales Price: (\$500,000)

Note: The reduction in sales price gives seller a corresponding \$500,000 tax donation.

Total Land Cost: \$1,250,000

Sources:

Sale of Conservation Easement: \$250,000

Long-Term, Low-Interest Loan from Seller: \$1,000,000

Development Entity LLC is formed to handle flows of money during development process. This entity contracts with Autopoiesis LLC to undertake day-to-day development activities including site planning, lot platting, geotechnical engineering, infrastructure design, etc. Development Entity LLC receives initial loans during this phase at 1% to 6% annual interest rates. Lenders include future residents, extended community members, and socially responsible investors.

Phase 2 Development Entity LLC Budget: \$230,000

Legal Fees Associated with Land Acquisition and CLT: \$25,000

Autopoiesis LLC: \$80,000



Geotechnical Engineer: \$5,000
Permaculture Designer: \$5,000
MEP Engineer: \$5,000
Additional Technical Consultants: \$20,000
Legal & Accounting: \$15,000
Permitting Fees: \$40,000
Contingency: \$10,000
Interest on Loans: \$25,000

Sources:

Loans from Future Residents: \$100,000
Loans from Extended Community Members: \$65,000
Socially Responsible Investors: \$65,000

Phase 3. Construct Infrastructure

June 2010 – August 2010 (three months)

Autopoiesis LLC oversees the construction of site infrastructure, including roads, district energy system, district water/wastewater treatment systems, utilities, and telecommunications.

Phase 3. Development Entity LLC Budget: \$370,000

Autopoiesis LLC: \$30,000
Roads: TBD
Utilities: TBD
District Energy: TBD
District Water/Wastewater: TBD
System Development Charges: TBD
Infrastructure Total: \$320,000
Interest on Loans: \$20,000

Sources:

Loans from Future Residents: \$175,000
Loans from Extended Community Members: \$110,000
Socially Responsible Investors: \$85,000

Phase 4. Construct Individual Homes and Common House
July 2011 – June 2014 (thirty-six months)

Lot price includes right to a 99-year ground lease for specified plat with the CLT and use of all common elements, including roads and infrastructure, common house, gardens, orchards, etc. This price is calculated in an open, transparent manner as the amount required to pay off proportional amount of soft and hard development costs incurred on the project.

Total amount required: \$825,000

Sales Price per lot (assuming 1/10th share): \$82,500 (purchaser still responsible for ground lease assessment over first 30 years, or \$542/month in this scenario)

Phase 2: \$230,000 in loans plus interest to be covered by lot sales

Phase 3: \$370,000 in loans plus interest to be covered by lot sales

Phase 4: \$225,000 for common house (assume 1,500 s.f. @ \$150/s.f. construction cost)

Once sufficient lot sales have occurred to allow common house to be fully financed, construction will go forward. Additional lot sales will then be used to retire the loans payable to future residents, extended community members, and socially responsible investors. At completion of lot sales, the only debt outstanding will be the \$1,000,000 note payable by the CLT to the original landowner. Residents will finance the design and construction of their own homes.

Images from the autonomous urban village

Images from a graduate studio I taught with Chris Alexander at UCB about “Autonomous Villages”...testing a model for developing wholeness and beauty over time, would allow owners to start small, building only what they can pay for and adding over time as family needs change and money permits. This model would keep the \$ out of the banks and allows more community infrastructure to unfold.



year 15

Financial Model for Autopoiesis Ecotone Community Development

| | Phase 1 | Land Purchase | Phase 2 | Phase 3 | Phase 4 | Project Total |
|--------------------------------|---------------|------------------|----------------|----------------|----------------|------------------|
| BUDGET | | | | | | |
| Autopoiesis LLC | 40,000 | | 80,000 | 30,000 | | 150,000 |
| Additional Consultants | 10,000 | | 20,000 | | | 30,000 |
| Land Cost | | 1,250,000 | | | | 1,250,000 |
| Geotechnical | | | 5,000 | | | 5,000 |
| Permaculture Designer | | | 5,000 | | | 5,000 |
| MEP Engineer | | | 5,000 | | | 5,000 |
| Legal & Accounting | | | 40,000 | | | 40,000 |
| Permitting Fees | | | 40,000 | | | 40,000 |
| Contingency | | | 10,000 | | | 10,000 |
| Interest on Loans | | | 25,000 | 20,000 | | 45,000 |
| Infrastructure | | | | 320,000 | | 320,000 |
| Common House | | | | | 225,000 | 225,000 |
| TOTAL | 50,000 | 1,250,000 | 230,000 | 370,000 | 225,000 | 2,125,000 |
| | | | | | | |
| SOURCES | | | | | | |
| Donations | 30,000 | | | | | 30,000 |
| Grants | 20,000 | | | | | 20,000 |
| Sale of Conservation Easement | | 250,000 | | | | 250,000 |
| Loan from Seller | | 1,000,000 | | | | 1,000,000 |
| Resident Loans | | | 100,000 | 175,000 | (275,000) | 0 |
| Community Loans | | | 65,000 | 110,000 | (175,000) | 0 |
| Socially Responsible Investors | | | 65,000 | 85,000 | (150,000) | 0 |
| Lot Sales | | | | | 825,000 | 825,000 |
| TOTAL | 50,000 | 1,250,000 | 230,000 | 370,000 | 225,000 | 2,125,000 |

APPENDIX 3: COMPARABLES IN OREGON*

Columbia Ecovillage
<http://www.columbiaecovillage.com>

Cascadia Commons
www.cascadiacommons.com

Trillium Hollow (SW Portland)
www.trillium-hollow.org

Peninsula Park Commons (N. Portland)
www.penparkcommons.org

Daybreak Cohousing
www.daybreakcohousing.org

Bluberry Lane Portland, OR
<http://www.blueberrypdx.com/>

Salish Pond Cottages, Fairview, OR
<http://www.rosschapin.com/Projects/PocketNeighborhoods/SalishPonds/salish.html>

Maitreya EcoVillage Eugene, OR
<http://www.maitreyaecovillage.org>

Pringle Creek, Salem, OR
www.pringlecreek.com



Keyline, Yeomans swale, Marvin and Pearl Hegge
Roseburg, OR

* Special thanks to Jane Morris, our intern, whose research and wisdom grace this vision. She assisted with Appendix 3 and the narrative for the pattern Families Thriving.

MY JOURNEY FOR HARMONY AND ECOLOGICAL VIBRANCY IN RURAL AND WILD AREAS

My mother was raised in Galena, Kansas, one of the largest superfund sites in America, caused by the Eagle Pitcher Mines that were once the largest lead smelters in the world.

My father was raised in Paducah, Kentucky, “The Atomic City”, home of one of the first nuclear reactors. By the time I was nine, both towns had seen their better days, industry come and gone. My husband was raised in Campbell River, British Columbia, once a vibrant logging, fishing and mining town. This town has also been a product of boom and bust economic cycles and raw material extraction. Unfortunately, our family history is not uncommon.

For several decades, I have been asking myself the question: How can human settlements be beneficial to the cycles of life, like all other species on our planet? How can humans fit into the landscape harmoniously? In 1993-1994, prior to the internet, my library word search for “ecological communities” gave me a reference for a Japanese biologist researching microbial communities. I was thrown off at first, then realized that as an architect I wanted to design human ecological communities. I realized that community development was integral to my notion of sustainability and that I was searching for ecologically sound forms of community development.

Since traveling in Asia, Europe, and North America, and learning from indigenous and vernacular architecture, I have been able to integrate modern technology that is symbiotic with human settlements. I have designed living building systems using leichtlembau (fiber + clay) where the walls function like skin and regulate moisture and temperature. I have used the earth and geo-exchange loops to heat buildings. I have designed rainwater harvesting bioswales that support plant life, beneficial insects and birds. With others, I have created sustainable land use codes and strategic frameworks for planning suggesting that net zero energy and climate neutral communities are feasible. Ultimately, my role as an architectural designer and my role in shaping land are about unfolding human potential and ecosystem health.



dining area, Fruehauf House,
CORBET, OR 2003



northern prayer alter, Fruehauf House,
CORBETT, OR 2003



Niski Acupuncture Clinic,
Portland, OR 2004



Niski Acupuncture Clinic,
Portland, OR 2004

The Ecotone Community is an opportunity to re-examine the family farm and forestry operations of the 20th century. Rural lands, wildlands, and leftover environments were fragmented and zoned for individual use. I am exploring a complexity-use zoning pattern for enduring human communities and restorative habitats where the 20th century individual family farm is replaced by a small community that can steward the land and exist in social harmony while producing a wide range of goods and ecosystem services. Commercial logging has also left wildlands untended while historically indigenous peoples stewarded the land. Is it possible in the 21st century to both restore human communities in forest lands while also producing sustainable forest and not-timber forest products? I believe it is possible to produce restorative human communities that will benefit the leftover, under-utilized, and over-extracted environments of our times. I believe it is possible for humankind to be an integral component of the ecological harmony of living systems. My work in rural areas will be in support of restorative food, energy, materials, watershed, and even biocultural systems. Please join me in restoring rural economic, environmental and social health.

Katy

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