Chapter 1
ECOVILLAGES: the Ideal and the Real

The appeal of 1960's style cooperative living has faded. The self-absorbed zeal of the 1980's "me" generation has proven vacuous. The self-sacrifice demanded by the environmental movement became difficult to justify when its apocalyptic predictions did not materialize. The ecovillage movement offers more. It offers community, individual identity and a purpose. These elements are mutually reinforcing.

Ecovillage is an abbreviation for ecological village. Ecological stands for the residents shared commitment to the environment provides them with a higher sense of purpose; the preservation of a clean and healthy environment for themselves, their children, and many generations to come. Village stands for the residents commitment to the promotion of a positive sense of community. The process of group participation in planning and perpetuating the ecovillage creates a history of commitment. New and long-term residents can share in this history in a manner similar to school spirit or patriotism.

The definitions of ecovillages posed in this text and other literature describe optimal conditions. Present ecovillages strive towards these idealized conditions but none have achieved them. Ecovillages are dynamic entities that experience successes and failures. These experiences create building blocks that existing and future ecovillages may use to move closer to their ideals.

The following three definitions contain guidelines for adaptation to the particular needs and resources of each project. They are presented in order of increasing detail. The first was developed for international use. The others were developed in Sweden and are often referred to within Sweden. Their composite strengths compensate for their individual weaknesses. The actual manifestation of these definitions is first described here in brief, and the true measure of ecovillages, their progress and their role in greater society, is revealed throughout this study by example and analysis.

"*Build ecological but forget 'ecovillages' - a ludicrous name.*" [Resident of Understenshöjden]

THEORY

The first definition, drafted by American authors, Diane and Robert Gilman and for Gaia Trust, is the most theoretical definition. It outlines the basic principles incorporated in the utopian vision of an entity striving to achieve harmony, internally and externally, between man, nature and technology. The Gaia definition is applied in an international forum and is the core of ecovillage theory. The second definition has a more empirical base. The Swedish author, Fölke Günther, identified a problem with ecosystem management in western nations and proposes a solution; the ecovillage. Full implementation of Günther's proposals would require major systemic change. His treatise has been warmly received by many Swedes and various aspects of his proposals implemented. Günther's definition, like the Gilman's, also serves as a theoretical measuring stick for progress towards the greater goal of sustainability. The third definition, developed by Boverket (the Swedish Board of Housing, Building and Planning), is rooted in practicality. It is very specific and outlines measures which could be obtained in the short term. However, it is still theoretical, because no village in Sweden has yet to meet all of the guidelines.

In contrast to the other definitions, which present long term theoretical goals, the Boverket definition outlines short term goals. Together these three definitions illustrate shared principles of Swedish ecovillages.

Gaia Trust

Gaia Trust, founded in 1987 by Ross Jackson, Ph.D. and Hildur Jackson, B.L.L., "is a Danish charitable cooperative having the objective of promoting a global consciousness that experiences the whole planet as a living organism and Mankind as an integral part of that whole. "[1] Gaia Trust sees ecovillages as one means of furthering this objective. In 1994, it founded the Global Eco-village Network (GEN), with the objective to facilitate an information exchange between, and the development of, sustainable human settlements.

" 'In 1990, the Trust asked itself how it best could use its resources to further the movement towards sustainability' Ross Jackson says. 'We concluded that, more than anything else, the world needed good examples of what it means to live in harmony with nature in a sustainable and spiritually-satisfying way in a technologically-advanced society. Disgruntled mainstreamers needed physical places where they could go to change their lives. Architects and developers needed to see model settlements that could inspire replication.' " The Gaia Trust commissioned authors Diane and Robert Gilman of the Context Institute in Seattle Washington," to identify the closest approaches to model settlements around the world. Gilman's report, which appeared in 1991, showed that although many exciting and different communities existed, none was the ideal model for a sustainable society in the 21st century."[2] GEN's short definition of an ecovillage is: "eco-villages are attempts to create complete, working communities in which people can live sustainably, in harmony with each other and nature." The Gilman's more detailed definition of an ecovillage as presented in their report is:

> "a human scale, full-featured settlement, in which human activities are harmlessly integrated into the natural world, in a way that is supportive of healthy human development and can be successfully continued into the indefinite future"[3]

The definition is then broken down into more distinct terms paraphrased as follows:

> "Human scale," implies that the community is limited to a size in which "people are able to know and be known by others in the community"(Gilman 7) and each person feels he or she has the opportunity to influence decisions in the community. Opinions on how many people "human scale" might include range from 100 - 500 individuals. Günther sites 200 people as the upper limit, preferably closer to 100 (Günther 17).[4] Human scale in the Gilman's definition refers to social interaction. Human scale can also entail design decisions, for example: streets which are landscaped to encourage pedestrian use or basic services such as food stores located within walking distance of residences. Design considerations involving the human scale is discussed in chapter 7.

> "Full-featured," indicates that elements of daily life - "residence, work, leisure, social life, and commerce - are present in balanced proportions " (Gilman 7) The ecovillage should not merely be a place to come home, eat, sleep, and leave. A variety of services including jobs and commerce should be available within the site. "This does not mean, however, that we expect ecovillages to be fully

self-sufficient or isolated from the surrounding community" (Gilman 7) Communities often have special services different from each other such as universities or hospitals. An exchange of services between the smaller units is expected.

"Human activities are harmlessly integrated into the natural world," emphasizes the ideal of "equality between humans and other forms of life." (Gilman 8) This involves the cyclical use of resources such as solar energy, instead of a linear consumption, involving for instance, the use of fossil fuels. This also prompts the consideration of the idea of our "ecological footprint."' Ecological footprint means how much impact we, along with the production and use of the goods and services we own and consume, have on local and global ecosystems.

In this book, the circulation of resources is referred to as **ecocyles**. **Ecocycle** is a translation of the Swedish term - *kretslopp*. The term ecocycle is an elaboration of the term nutrient cycles. Nutrient cycles describe the natural circulation of carbon, nitrogen, phosphorus, and other nutrients essential to organic life. Ecocycle is a broader term. It implies attention to the ecological impact in the human use and disposal of all resources as well the cycles of nutrients, energy, and water. Building and living according to ecocycles indicates the consideration of the source of the goods we use and consume and what happens to those goods after we are done with them. In the case of our food, ecocycle practices would require the user to ensure that the nutrients from our food which are released in our feces and urine are returned to the soil instead of closing our eyes and flushing it down the toilet. It would also entail producing food in a manner which minimized the leaching of nutrients. The word *kretslopp*, or ecocycle, has become popularized in Sweden. *Kretslopp* and variations on the word fill, in some ways, the same role the American catch phrase, "reduce, reuse, and recycle." *Kretslopp* practices are cited by companies as a marketing tool to sell their product. In this paper I use of the term ecocycle to refer to the respect of the connectedness of all matter on the earth and in the earth's atmosphere. I will not use ecocyle to refer to a marketing scheme. Ecocycle is a qualitative term, quanititative measures of ecological design are discussed in chapter 7.

"Supportive of healthy human development," refers to the mental, physical, emotional and spiritual health of the individual within the community as a whole. This principle is only indirectly included in the profiled Swedish ecovillages. Mental/spiritual well-being is supported by the Swedish ecovillages in as much as a positive community atmosphere where people help people and trust one another is supported. The end goal of mental/spiritual health in and of itself is not the point.

"Continued into the indefinite future," combines all of the above principles under the umbrella of "sustainability." Sustainability is a broad term which can include all aspects of existence, but, in short, means that we should not shoot ourselves in the foot by making short term decisions which will inhibit future generations of residents and communities from having similar access to the quality of life enjoyed by current ecovillage residents. Sustainability principles extend beyond the ecovillage because it does not exist in a bubble. Sustainability principles are global in nature because our lifestyles and the products we consume effect resources and ecosystems around the world.

The Gilman's definition outlines general principles,

but does not give specific guidelines. It was drafted for international application. Great variations in cultures, available resources, and the creativity of individuals, precludes a more specific definition for such broad application. Their definition is important for understanding the theoretical principles behind ecovillages. Further explanation is necessary to create a clearer picture.

Folke Günther

In 1989 Folke Günther published a 120 page booklet entitled *Ekobyar (Ecovillages)*. The booklet is well known among ecovillage enthusiasts in Sweden. The book was released at an opportune time. Two ecovillages stood complete, two others were breaking ground, and nearly 100 ecovillage projects or groups were underway. People were eager to seek inspiration and gather further information. The book outlines Günther's assessment of systemic problems with resource allocation and people's vulnerability to failures of these systems. He proposed the ecovillage as a solution to these problems. The book also included descriptions of then current projects, costs, technologies and the ecological implications of different types of resource allocation.

Günther is a systems ecologist by trade and a visionary at heart. He finds fault with the system of production in which urban dwellers are dependent on external sources for all of their goods and services. To remedy this problem Günther proposes the development of communities, ecovillages of not more than 200 people, which are:

- ecologically adapted; where production of basic produce occurs, and essential nutrients are retained;

- not dependent on external sources of energy, where local, renewable energy sources are utilized;

- technologically independent, where knowledge and spare parts are locally available;

- and socially stable, where there is the opportunity for people to locate the majority of their life activities and identity.

His concern for two issues in ecological planning stand out. First, the loss of nutrients in a linear production cycle. Nutrients, he says, travel in a linear path from fertilizer factory to our dinner table without a way back to the fields and forests where they are needed to further plant and animal growth. . Due to agricultural runoff and inefficient municipal sewage treatment, many of these nutrients, especially phosphorous, are washed irretrievably into lakes, streams, and oceans. Production of food on site could create a circular system for nutrients while simultaneously reducing transportation costs. The second issue of his concern is for the vulnerable state of our current system. We depend on others for our electricity, water, heat, food, and more. If a service fails, we have no way of providing it for ourselves, a vulnerable state, indeed!

Günther's study points out a conflict which arises in the planning of any community of people. This conflict consists of our dependency on the larger society verses our desire to be independent. Minimizing our dependence does not, inherently change the ecological impact. A neighborhood which decides to heat their own homes with wood and burns green or wet wood will be polluting more, not less, than if they relied on electricity produced from hydropower. A reduction in dependence does not mean a return to pre-industrial life without electricity or running water either. The effort to protect the

environment must be active, conscious, and intelligent. Günther's vision of a string of self-supporting ecovillages extending outwards from a former urban core like a necklace of green pearls may not be attainable in our lifetime, or ever, but his vision is a valuable contribution to the fire that fuels people's dream of a community in sync with nature and human society.

The Well Balanced Village

Figure 1: This study was a precursor to the first ecovillage in Sweden which was sponsored by the department of interdisciplinary studies at Göteborg Universitet. The sketch of the well balanced village illustrates how the energy and resources can be circulated within a local system. The model was designed for circa 800 people and included considerations of employment, education, food production and other businesses, and basic services including health care. This study was the basis for a follow-up study, Välsviken, described in the next section on Context.
[Olsson, Kåre. "Den Välbalanserade BYN: En studie av mänsklig energi and materialförsörning," *Forskning och Framsteg*, number 3/1972, Sweden, 1972.]

Boverket

Boverket is the Swedish Board of Housing, Building in Planning, a national government agency in the field of housing and the environment. Its main responsibilities are the built environment and the management of natural resources, physical planning, building and housing.

In 1990 Boverket organized a seminar to address the increasing number of inquires on funding for, and the nature of, ecovillages. A clear and tangible definition was necessary to enable the possibility for state loans and assistance to be dispensed for the purpose of building an ecovillage. Experts on ecovillage design were invited to participate in drafting a definition of,and guidelines for, the formation of an ecovillage.

The six page brochure resulting from the seminar, provides concise and measurable parameters - most of which are attainable in Sweden today - for an ecovillage. The brochure addresses neither theoretical principles, nor the moral nor spiritual motivations for an ecovillage. The guidelines provide an enhanced description of what already exists; more complete ecocycles (citing on-site waste water treatment and renewable sources of energy), better material choices, better insulation, etc. It does not address the village part of the ecovillage. It does not endorse "full-featured" ideas such as jobs, business (buying and selling), or recreation. It does not push the urban boundaries of ecology or challenge our current structure for transportation and production of goods and services. It is not intended to be revolutionary.

This definition shifts the discussion from revolutionary to pragmatic. Pragmatism is required to execute the project on a professional level. It is inspirational because it finally provides goals that can be achieved. It provides interested ecovillage groups with distinct points which can be understood and followed by builders, developers, and municipalities who may not

be familiar with the principles of ecological building. However, future ecovillage residents didn't get involved in the planning of an ecovillage to be pragmatic. They had dreams. They did not get involved for the sole purpose of obtaining comprehensive recycling or energy efficient appliances. Their dreams and inspiration carried them through the discouraging points of the planning process in a way that a guarantee of 50 cm of cellulose insulation never could. Despite its precision, the Boverket definition can not stand alone any more than the other two definitions can stand complete and viable unto themselves.

The general Boverket definition is followed by 20 guidelines. The following is a summation of the general definition. The twenty guidelines follow thereafter.

- Social life in an ecovillage is important. The community life is supported by an administrative form such as a renter's or home owner's association, or other administrative form which binds the residents together.

- The property, houses, and technical systems are designed to be as cyclical as possible. Energy consumption is as low as possible, with necessary energy produced from renewable energy sources.

- Ecocycle design[5] is basis the for the village systems. Food, materials, and produce used in the village are limited to as small circle of resources as possible.[6]

- The residents have a preexisting interest in living in a way which minimizes their impact on the environment. This also helps to keep long term operation costs low.

- The houses are constructed of building materials which have shown not to be harmful to human health or the environment. This applies during construction, use, and demolition/disposal. The houses are healthy and non-allergenic.

The following points outline characteristics which should be, as determined by the seminar at Boverket, included in a newly constructed development if it is to be called an ecovillage.

Boverket: 20 Guidelines for Ecovillages

Planning

1) Planning should be localized, utilizing existing infrastructure and public transport.

2) The natural and cultural attributes of the site should be retained to the greatest extent possible. The site should be planned as an ecological whole.

3) It should be a maximum of 50 households, if larger, divided into smaller units. Housing should be designed with a long term perspective in order to accommodate residents of all ages, at all stages of life.

4) Future residents should participate in the design and planning of the project.

5) Contracts and other documents should ensure the interests of the business partners and future residents, with further guarantee that the essential specifications of the ecovillage are fulfilled.

6) Discretion should be used in choosing the building techniques to minimize physical impact of the land.

7) Type of ownership and administration should encourage encourage residents to participate in maintenance and take personal responsibility for common spaces and property.

8) Social contact and a sense of community should be a top priority both in the planning process and in the resulting ecovillage.

Physical Qualities

9) Cultivation. Every household should have access to a gardening space for household needs. The site plan should include land for cultivation.

10) Cool storage such as a pantry or root cellar should be provided for produce and other foodstuffs. The cool storage should be independent of purchased energy sources.

11) Groundwater if safe and available within the site should be used for drinking water.

12) Sewage is treated on site to the greatest extent possible. Nutrients from the waste water should be returned to the land and used for cultivation or grazing.

13) Solid waste should be reused or recycled. Organic household and garden wastes should be composted on site

14) Rain water runoff should be designed to infiltrate the soil.

15) Buildings and landscaping should be adapted to the microclimate, including considerations of access to sunlight, shelter from the wind, and water drainage.

16) Heating should require as little energy as possible (<50 kWt/m^2/year) using renewable resources.

17) Electric wiring and appliances should be energy efficient. Wiring should minimize the effects of the electromagnetic field.

18) Interior climate and ventilation should be natural, or if mechanized, can be regulated according to the needs of the resident. All rooms should have windows that can be opened.

19) Building materials shall not induce allergies or other negative health effects. Materials should have been proven reliable and/or are certified. The buildings should be designed to avoid potential moisture or mildew problems.

20) A common locality is accessible to all households. There should be possibilities for organized activities. The locality can be used for childcare, recreation, socializing, and even for professional work space which doesn't infringe on common usage.

REALITY

How ecovillages fall short but should be called ecovillages anyway

150 Ekologiska Byggnader i Sverige (150 Ecological Buildings in Sweden) lists twenty projects in its section on ecovillages. Few, if any, can claim to meet all of the criteria set out in the definitions above. Some fall short on ecological aspects, others on social or technical aspects. The ecovillages in Sweden are primarily bedroom communities without many job opportunities or commerce. Therefore there exists a greater transportation need than would be ideal. Most of the projects tried but only a few succeeded, in incorporating a jobs, offices to rent, or the sale of food staples on site. However, at least four now have or have had a daycare on site. Some people conduct business by tele-commuting. Other methods of home production include gardening, carpentry, weaving, and at one site a computer software company. At least four purchase bulk food staples which are then distributed among neighbors who had requested specific quantities in advance. None of these activities are significant enough to meet the standards of "full-featured" or to

be able to continue into the indefinite future. You can judge for yourself from the case studies the other ways in which the ecovillages could become more ecological and more like a village. Distribution of this information about the villages, is a way for future projects to come a step closer to fulfilling the theoretical definition of an ecovillage. There are still too many obstacles in the real world to create the ideal ecovillage without the risk of residents being ostracized or cut off from the greater community. However, the transfer and preservation of knowledge from the pioneering villages makes the next village that much closer to the ideal.

Swedish ecovillages, in theory or reality, should not be confused with co-housing, a type of housing development which has grown very popular in the United States and Denmark. Co-housing projects can appear very similar to ecovillages. More and more co-housing projects are including ecological systems and environmental considerations. The key difference between ecovillages and co-housing is cooperative living. Key difference is the commitment to a higehr purpose and the intent of evolving into a full-featured community.. Co-housing entails many shared responsibilities and activities, most notably, cooperative meals and foodstuffs. The basis of cooperative living in co-housing is to promote community and unity. The cooperative aspects of Swedish ecovillages are based upon the principle of resource conservation. Community in an ecovillage is a means to enhance the shared goal of resource conservation. The "essential nature" of community as it relates to the success of the ecovillages, is discussed in Part II of the Social section.

I do not think the current ecovillages in Sweden should be touted as blueprints for the future, but the experience gained can serve as a foundation for future projects. Should their shortcomings preclude the naming of these projects as ecovillages? Or, should we use the definitions outlined above as a measuring sticks to gauge how far Swedish ecovillage projects have come, and what improvements must be made to advance to the next level? Ecovillage residents are among the most outspoken against the description of their project as an ecovillage. A resident of the first completed village in Sweden, Tuggelite, addressed the problem: "It is wrong to call this an ecovillage. One must be careful with the word. We do not have local ecocyles, nor is it a village." (Tidäng 7) However, residents have, collectively, invested thousands of planning hours in the dream of life in an ecovillage. Should they be refused the title of ecovillage just because the results do not match the ideal?

I believe the distinguishing characteristic between a resource efficient housing community and an ecovillage is personal commitment. The residents have sustained their dream through many rough spots and disappointments. They understood the ideal, but encountered too many obstacles to achieve those goals. The villages are not static. The residents' commitments to their dreams has led to continual improvements. After 14 years, the residents in Tuggelite still look for social and ecological ways to improve their community. Had the residents of Tuggelite thrown up their hands and said, "Forget it. We didn't get what we want, I'm tired, forget the environment, forget community, I am just going to live my life," then I could not justify, in my mind, calling Tuggelite an ecovillage. The commitment to continue the journey toward a more sustainable community, despite technical failures and life's daily demands, can make the difference. The 100-odd other groups involved in the planning of their dream ecovillage may not wind up with a textbook version either, but how often does the cake you bake look like the picture in the recipe book?

1 Home page for Gaia Trust - http://work.gaia.org/international/affiliates/gaiatrust/trust.html
2 Web site - GEN History - http://work.gaia.org/history.html
3 Gilman, Robert and Diane. *Eco-villages and Sustainable Communities: A Report of Gaia Trust*. Context Institute, Washington, 1991, pp 7-8.
4 Günther's primary sources are: Hubendick, B. *Människoekologi*. Gidlunds, Malmö, 1985. And Leide, G. "Samverkan i stora organisationer - några matematiska funderingar," Bartha, S. ed., *Ecological Design*. Malmö, 1984.
5 Ecocycle design is translated from the word kretslopptänkande
6 translated and altered