Chapter 6
Money Matters

In Mjölnartorpet, "living in harmony with nature does not cost exceptionally much…[it] is less than a comparable newly built home would have cost."[1] The cost per square meter for a home in Smeden is comparable to the price per square meter for a new home in Oklahoma City, Oklahoma, the least expensive housing market in the United States. The amenities of living in an ecovillage cannot be quantified in dollars.

Ecological building can be affordable. Resident participation in planning can be affordable. The overall cost of building and operating an ecovillage appears to be commensurate with "regular" housing. The planning and building costs have been higher in ecovillages than in other types of building, but the operation costs are lower. Planning and building costs are discussed separately from operation costs.

Factors affecting the costs associated with the ecovillages are discussed followed by an analysis of residents experience of these costs.

Planning and building costs

Ecological building cost significantly more than "regular" building in its early development, which is often the case any uncommon product or approach. As ecological building materials and techniques grow in popularity the costs continue to decline. The higher costs could be attributed to a variety of factors. First, acceptable environmentally friendly products were scarce, the number of products produced was limited, often prototypes were the only items available. Small to mid sized pellet furnaces did not exist in 1983 when Tuggelite was built. Residents had to construct a workable system. Residents would take turns shoveling pellets into the furnace and monitoring its temperature. Ten years later Mjölnartorpet was able to purchase an appropriately sized pellets furnace that monitors the temperature and automatically adds more pellets as needed. The market demand for small to mid-size pellets furnaces has grown considerably in the 1990's as the preference for bio-fuels has grown. Hundreds of other products targeted at the ecological building market have improved and come down in price in the last decade or so.

Second, technical knowledge was limited. Neither researchers, nor producers, nor builders had much experience or knowledge of ecological materials and how they would perform. The homes in Tuggelite and Solbyn were sites for research on passive solar heating. The producers of the composting toilets used in these sites had only used the systems on a very small scale where they performed well. Problems arose when the composting toilets were used in a broader variety of households than had been experimented with. The centrifuges in the toilets in Smeden were installed incorrectly because those installing it did not understand how crucial the angle of installation was to its proper function. Fixing these problems after the fact has proven costly.

Those interested in building ecologically have a much smaller market from which to contract the services of developers and builders. The contracting and loan system make it difficult to build ecologically and affordably, especially with the contracting system. A total contractor may usually be the least expensive but there are sacrifices to be made when handing over control to the building contractor, at least until an infrastructure of eco-building consultants, products and

suppliers is developed. As it is, the total contractor is relatively inexpensive because he can contract out the work and get the best deals, but not necessarily the most eco-friendly.

Third, city officials, developers, builders and others were hesitant to try new solutions. City officials insisted Tuggelite install sufficient plumbing that residents could install flush toilets at a later date if desired. Residents have not changed from the compost toilets, therefore those extra costs were unnecessary. The fear that Solbyn houses might not be able to be resold due to their "unusual" design have proven unfounded, Solbyn has had a waiting list since its inception. The Stockholm Water company has been reluctant to accept that Understenshöjden's on-site waste water treatment system is producing sufficiently clean water, therefore Understenshöjden is paying twice for their water treatment, once for their system and once to Stockholm Water.

Ecological building techniques are not yet universally accepted, as evidenced by Understenshöjden's water treatment costs, but great strides have been made. The more products that are available, the more knowledgeable and skilled companies and people are, the lower the costs of ecological building. Costs continue to decrease as techniques, products, and regulations continue to mature.

Banks are extremely reluctant to approve loans for non-traditional projects. They are afraid the houses may not sell, or resell, in which case the borrowers might default on their loan and the bank would loose money. Banks are far more hesitant to loan money to a group of residents than a developer. Because the loan is made to the developer and not the residents, the developer assumes control over the project even though the future residents are the ultimate owners of the property. It is difficult to convey this final sense of ownership to either developers or bankers who are not used to dealing directly with the final owners.

The costs associated with **resident participation** in planning have not notably decreased as is the case with materials and labor associated with ecological building. Resident participation is still a difficult concept for most companies to accommodate. The building industry, which includes developers, architects, and builders, still operate as they have for many years. Change in attitude and means of operation has proven more difficult to adjust to than simply responding to market demand. Resident participation costs more because more people are involved in making decisions. Keeping everyone abreast of developments and taking the time to process that many more contributions is more expensive than including just a handful of people in the process. Additionally dealing with so many people, especially those not familiar with the building industry, requires excellent communication skills. Effective communication is an art form unto itself. Those who may have been good at dealing with builder-developer-architect communication may be unable to deal with the addition of residents to the equation. To maximize its investment of time and resources companies may need to hire people skilled at communication if they are sincere about advancing resident participation, which is an additional cost. Making the investment to promote residential planning is most easily justified for rental properties. Companies which rent out property want to ensure its rental units are fully rented with as little turnover as possible. In this case it is especially important to include residents in building or renovation because an increased commitment on the part of the residents to stay and take care of their space the lower the long term cost to the owner. (see Where Next chapter)

Resident participation makes it possible for residents to participate in the creation of their budget, to decide where they will and will not cut corners. After all, economy is not just the cheapest price, it is the best price for the most appropriate (best) merchandise. The cheapest solution is not always the best solution especially when it needs to be replaced soon there after, which makes its true cost greater.

A final cost consideration in building and planning is the donation of time. Residents, and others involved overlook the cost of the time they donate to the project. The project can keep costs down via the donation of time. Individuals involved in all facets of planning donate countless hours of their time to the project. Those donating their time do gain experience and knowledge from participating in the project. The residents involved in planning are making an investment in their community and their future. Lastly, residents can keep construction costs down by doing some of the finishing work, painting, finishing woodwork, installing tiles, etc. Again, residents are investing their time instead of money, but receiving more in return for their time investment (experience, pride, community) than they would in exchange for paying for the same services to be completed by the building contractor.

Survey

The results of the survey of residents implies that residents experience the monthly costs of living in their ecovillage "normal" (46%) to "high" (42%). These results are somewhat misleading in comparison to the assertion at the beginning of this chapter that the housing costs are comparable to "regular" housing. Several factors influence the assertion of this apparent contradiction.

First, as background, all the ecovillage, except Bålarna, administer shared costs through a home owners association. The home owners association is responsible for repayment of the loan for the entire project. Residents make an initial down payment upon moving in (or during planning) and pay a monthly fee thereafter. The monthly fee, or rent, is applied towards the entire loan and towards operating costs for administration and maintenance the ecovillage. The rent is proportional to the size of the homes, not the number of people living in a home.

The survey questions about costs specifically asked the residents to make a value judgment about their costs, "how do you experience your own operation costs?," and "how do you experience the cost of rent and the home owner association dues?"[2] The questions were asked in this manner to asses not the actual cost of living there, but the perceived cost of living. Clearly many residents perceive the costs to them as high. The question did not ask them to make an objective comparison to other housing markets. It was implied that the residents would compare the costs to their income and their to previous housing costs. Bearing this in mind the predominant perception of the costs as high is more likely a reflection of the individuals' circumstances rather than a reflection of the true comparative costs of living in an ecovillage vs. living elsewhere. This is why. .. First, rent/housing costs are one of the largest monthly household costs, regardless of the cost, it appears large in comparison to all other costs. Second, a new home does cost more per square meter than a comparable older home. A quick comparison of the per square meter costs of other types of new building in Sweden and ecovillages shows ecovillages to cost the same if not less to build. However, those moving into the ecovillages were most likely not living in new housing prior to moving to the ecovillage,

therefore their experience with other rents was that they were lower. Additionally, many of the households were young families who chose to move from either an apartment or small house to a home with enough room to raise a family. Consequently their housing costs would have increased significantly. Third, because few of the common houses actually feel like an extension of the home it may be difficult for residents to recall that the square meters they are paying for each month include the cost of the common house, as well as a portion of the costs all the site's property and the capital costs of other shared services such as the waste-water treatment system.

The residents experience of operating costs fell decidedly in the middle. It was expected that residents would find the operating costs low, however, as mentioned in the discussion of operating costs, the residents get a lot more for their money than people in other type of neighborhoods. (Tuggelite and Mjölnartorpet ??) Same analysis as above applies.

The question regarding initial costs before moving in was primarily directed towards those who participated in planning but could also be interpreted as the cost of down payment[3] to those who moved in later. Numerous projects face a crisis in the planning stage when those members involved are asked to make a financial commitment, especially if it requires payment in full for the property and no plans yet exist for the houses let alone the site. Apparently residents did not consider either these costs or the down payment on their home particularly high.

Mjölnartorpet article says inexpensive. Åkesta costs high because too fast, rather than too slow. Slowness was developers complaint about resident participation but Åkesta shows developers can raise costs all on their own. Others I spoke to familiar with comparable costs do not see it as much more expensive but named unexpected costs such as double systems or replacement of systems which make it more expensive. More information is needed . This information will help planning groups sell their idea to cities and developers. Because, even with the groups who have face lots of problems the costs were not much more than regular building. If these initial costs can be reduced then the overall cost of living in an ecovillage will be much lower.

[Table: V - costs]

Costs for Mjölnartorpet. Cost lower than it a comparable newly built home would cost.

Thörnqvist, Christer. "Ekobyn klar på Mjölnartorpet", *Bulletin för Kronolyflet(??)*. December 1995.

Operating costs

Many of the savings from ecological building materialize in the operation of the ecovillages. The opportunity for savings are abundant. Savings can be had through lower utility costs, shared space and other items, and through individual lifestyle changes. The opportunity for savings through shared efforts and individual lifestyle change distinguishes the costs of living in ecological housing from the costs of living in an ecovillage. The opportunity for savings in an ecovillage is greater than in ecological housing because there are more opportunities for sharing costs, especially systems costs.

Operating costs include items such as: electricity, heating, water, sewage, trash and recycling, snow removal, repairs, and yard maintenance. The ecovillages are in a good position to reduce operation costs. The houses and systems are designed to be resource efficient. The residents are responsible for maintenance.

Lars Nilsson, project leader for Tuggelite estimates residents save about 800 SEK (@100 USD) per month through reduced energy and water costs,[4] which adds up to a fair sum over a year. Individual households can save even more by taking steps to decrease their resource consumption even further, thereby decreasing costs.

Residents share the costs for maintenance, the common house, trash and recycling collection, the total land costs (lots are not owned individually) and other shared items. Some sites have central heating and therefore share these costs. Water costs are also divided among residents. The means of dividing the heating and water costs vary, some groups divide the costs evenly per person, others divide the heating costs by the square meters of the house. Some groups have discussed installing a meter on each house, especially for water. A prominently displayed water meter in each house could provide a means for residents to monitor their own habits and hopefully reduce their consumption as a result. Individual meters are also a means of avoiding disputes over an equitable division of costs.[5]

Residents can additionally save money by participating in a car pool or collective purchasing of food and other supplies.

Those projects which were able to install independent water and sewage systems have to pay for the maintenance of these systems but they avoid the large initial cost of connecting to a city system and annual fees to the city thereafter. Usage of the waste-water treatment system is not easily measured per household therefore these maintenance costs are usually included in the association dues. Those systems which have composting toilets use less water and put less strain on the water treatment system therefore their sewage treatment costs are lower. A cost comparison between on-site waste water treatment systems and city systems shows the capital costs for the on-site systems to be greater, but the operation costs to be lower[6] (see Design section for description of systems).

If the common house and its services are truly an extension of individuals' homes the costs for individuals can be reduced. The extra investment in making the common house a place which is truly user friendly means individual living spaces can be smaller and would require smaller, more energy efficient appliances. (See Design chapter for a discussion of common house services). Shared tools and other equipment can also be a means of reducing costs to the individual. Many households have kitchen items, tools, cleaning equipment and the like which are exceptionally useful but only used occasionally. A 48 cup coffee maker is great to have for the occasional dinner party but it is pointless for all 25+ households to own their own; likewise for a lawn mower, a soil-tiller, a chain saw, china service for 50, a drill press, office equipment - a copy machine and fax machine, a sewing machine, a mangle and many other things.

Use of shared tools? - talked about extensively in eco-social

%%	ALL	TG	SOL	AK	MY	SM	MJ	UN
very often	7	0	4	0	0	0	23	7
often	35	79	13	0	50	17	23	21
seldom	50	21	33	73	50	83	46	62
never	6	0	4	18	0	0	8	7

If "time is money," then the residents do invest a lot in the ecovillage by maintaining the property themselves. However, there are benefits to this which cannot be quantified in monetary terms. Taking responsibility for the physical welfare of their community fosters pride and respect for personal and shared space and items. The execution of the maintenance in work

groups or on work days strengthens the social system. The value of these intangible benefits should not be underestimated. (see Social Organization in Social chapter)

Individuals can further reduce their costs through choices about their own lifestyle. An individual can change their habits, turning off lights, keeping the heat turned down, gardening and eating in season vegetables, participating in collective purchasing, taking shorter showers, using shared tools instead of buying their own, participating in car pool, and many other ways. The individual is at an advantage in the ecovillage, verses living in another type of neighborhood. She even has an advantage over living in ecological housing. The infrastructure of the ecovillage can promotes resource efficient behavior. The shared goal of protecting the environment directly is a constant reminder for the individual to make resource efficient choices which often translate to monetary savings.

Money is not the only way to measure savings. The value of sitting on the porch on a warm summer evening, catching up with neighbors, has no price tag. The song of a bird has no price tag, but the benefits are as real, if not more so, than any financial savings. Residents experience the unquantifiable benefits of a better quality of life. Through the experience of a better quality of life the need for "things" decreases, people can live more with less. If the ecovillage is a beautiful place residents may hate to leave it and be less inclined to travel for long distances or long periods of times. Careful location of the ecovillage can reduce individual commuting costs, including all trips, not just the commute to work. All these choices benefit the environment as well as reducing an individual's budget. The Eco section in the Social chapter discusses these and other benefits which benefit the environment, the wallet, and the spirit.

Earning money: The ecovillage community does not need to satisfied with always paying others. As is discussed in the Social, Design chapters and the Conclusion, the common house provide money earning opportunities. Payments from parents and the state for daycare was sufficient to pay for the cost of the common house in all the ecovillages with a daycare. Other businesses can provide revenue to the community which can be reinvested in improvements or pay for the common house. The wide range of options are discussed in the aforementioned chapters.

Social costs: The cost of living in an ecovillage may be somewhat less than living in comparable housing, however, this does not make it inexpensive. The ecovillage residents are predominantly middle to upper middle class professionals. Part of the reason for this is socio-political as discussed in the Social chapter, but it is also economic. The ecovillages can not qualify as affordable housing for mid to low income households. Newly built homes are inherently expensive which already excludes lower income brackets from purchasing. The cost of ecological building materials can decrease somewhat more to be comparable to "regular" materials, but not enough to significantly lower the cost. There is room for reduced operation costs if residents are vigilant. The size of the homes could be reduced and more extras, such as solid wood floors made optional, however this, in of itself is still not sufficient. The final area which may allow the greatest opportunity for savings is in the promotion of resident participation in planning. Although currently developers, architects, builders tend to see resident participation as a liability they could learn to see it as an asset. Future residents have proven willing to do an amazing amount of volunteer

work. Companies could incorporate these efforts into their overall procedures thereby reducing their costs.

Economic segregation is a legitimate concern. The current composition of ecovillage residents does reflect a privileged class. If the true value of the ecovillage concept is to be promoted as a means of improving quality of life within society the economic barriers must be diminished. "Where Next" describes an mid to income apartment renovation project which cost significantly less than the owners had budgeted for. The reason for these savings was not the brilliance of the planners but the incorporation of the residents in the planning process. The social and ecological evolution of society must progress further before it will be able to accommodate these concepts on a larger scale, and across a wider income bracket. The ecovillages can serve as a role model for this evolution as long as those promoting the ideals acknowledge the reality distinctions of class and culture. The essence of the ecovillage concept should not be muddled with the superficial details of existing projects. The ecovillages as they are today cannot be made into cookie cutter designs and foisted onto others as a good and workable idea. Many great ideas have been lost this way. Each project must be tailored to different needs and seek to accommodate distinctions of class and culture rather than attempting to force an round peg into a square hole.

Look at Natural Capital. Look at Environmental Costs vs. monetary costs.

[1] Thörnqvist, Christer. "Ekobyn klar på Mjölnartorpet," *Bulletin för Kronolyflet,* 12/1995.

[2] In most of the ecovillages the monthly "rent" includes dues to the organization, rent, and the cost of the mortgage. Some residents did not mark an answer about the mortgage costs because their mortgage costs are included in the monthly fee, which explains the total of only 83% for the question regarding mortgage costs.

[3] The down payment is called the "*grundinstats,*" which includes a deposit to the home owners association upon moving in.

[4] Author?? Date?? "I Tuggelite bor man resurssnålt och bekvämt," *Rena Skiten*.

[5] The same theory can also be applied to the shared laundry. Systems now exist where users use a card or code to activate the washer and dryer and the users are billed accordingly. This would discourage people from washing incomplete loads which wastes water and energy.

[6] Haglund, J-E and Olofsson, B. *Utvärdering av VA-lösningar i ekobyar*. Svenska Vatten och Avloppsverksföreningen, Rapport 1997.1.