ABSTRACT

DWELLING AND WORK PLACES IN THE POST-INDUSTRIAL ERA

by Philip S. Proefrock

Cohousing is a relatively new form of housing. Begun in Denmark in the 1960s and first introduced into the United States in the 1980s, it seeks to create intentional communities with smaller individual dwelling units plus added common facilities. While a desire for community is the stated goal for many cohousing groups, sometimes these developments can take the form of enclaves, rather than becoming truly integrated communities.

At the same time, the contemporary work environment is undergoing profound changes. New technologies are changing not only the way people work, but also the relationship of work to life.

Adapting some of the ideals and approaches of the cohousing movement to working life enables the creation of a workplace that suits the needs of contemporary workers and simultaneously provides a more fully integrated and community-forming community.

DWELLING AND WORK PLACES

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by

Philip Stephen Proefrock

Miami University

Oxford, Ohio

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A dvisor_____

Craig Hinrichs

R eader_____

John Reynolds

R eader_____

Gerardo Brown-Manrique

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DEDICATION

For my family, Stacia, Neil, and Theodore

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INTRODUCTION

The contemporary workplace is a rapidly changing environment. The nature of work and the types of work that are done are shifting. The era of giant industries employing thousands of workers engaged in the production of goods is fading, while businesses dealing in information are increasing in this country. The Industrial Era is coming to an end, and a new era is dawning.

The Information Age seems to bring new technologies on a daily basis. Developments such as the telephone, the fax, the photocopier, the personal computer, all expand the productivity of information workers.

The patterns of dwelling and work which presently exist, and which were developed for the most part to serve the needs of older forms of work and older relationships between work and dwelling space, are increasingly problematic.

For most of us today, the workplace is the place we travel to every morning. It may be within walking distance from where we live or, as likely, at the end of a long bus or subway ride, or a crowded, slow-moving commute by car. But there was a time, during our early years on this continent, when house and workplace were one and the same.¹

In the late 20th century the vast majority of workers live in dwelling places that are separated from their work places. One result of the growth of industrialization was the rise of city- and neighborhood-zoning. Different types of land use were segregated from one another, requiring the construction of only certain kinds of buildings for particular uses in designated areas. Some of this was for the good. For example, residential

¹ Spiro Kostof, <u>America By Design</u> (New York:Oxford University Press, 1987), p 72

buildings would be kept from directly abutting the noise and pollution of heavy industrial uses. However, in many ways, this segregation served to exacerbate other problems.

Over the past five decades, many American citizens and businesses have been moving to and among suburbs in search of affordable land and housing, good schools and public services, a convenient lifestyle, and peace and quiet, among other attributes. Those of us who have located in these areas have found some of these qualities, but too often we have also found a lot that we didn't bargain for, including mind-numbing traffic congestion, ugly strip development, isolated workplaces, rising tax rates, and a lack of character and interesting places among our homes, shops, and workplaces.²

Work-place and dwelling-place became two clearly different areas, and in many cases there was no connection between the two. The intervening roads and highways became little more than an obstacle to be overcome, rather than a place holding any meaning for those traveling through it.

This is the tragedy of single-use zoning, which has infected every quarter, every country mile, every cul-de-sac. The towns and cities across America were decanted of their middle-class residential populations, who were then scattered across the "cheap" land of the countryside, connected only by cars. The civic life lost in this process could not be reconstituted in the suburbs, because proximity was made illegal. Single-use zoning made everybody a commuter.³

Along with these conditions, an overall sense of alienation can develop. Commuters drive out of their garages to go to work in the morning, and pull into them again at night. They have more neighborly feelings towards the guy in the car in the next lane who is also trapped in the traffic jam of the morning commute than they do for the neighbor who actually lives next door. The latter is often someone they have never met.

For many people, with the time spent away from the home working (and commuting time included with that, as well), they are more connected to and aware of the world around their workplaces than they are around their homes.

² F. Kaid Benfield, Jutka Terris, and Nancy Vorsanger, <u>Solving Sprawl</u> (Washington DC: Island Press, 2003) 79

³ James Howard Kunstler, <u>Home from Nowhere</u> (New York: Touchstone, 1998) 94-5

Sensible land use would make many trips unnecessary by clustering within walking distance the main places where people want to be. Developers who do this are actually succeeding in the marketplace. Many U.S. jurisdictions, however, prohibit clustering by enforcing obsolete zoning rules enacted, as the key 1927 Supreme Court decision put it, to "keep the pigs out of the parlour." Current zoning typically mandates land-use patterns that maximize distance and dispersion, forbid proximity and density, segregate uses and income levels, and require universal car traffic on wide, highly engineered roads. Such zoning, once designed to increase amenity and protect from pollution, now makes every place polluted, costly, and unlivable.⁴

People are also looking for a place to live with a sense of community and neighborliness. But all too often, residential developments are more like isolated cells, and there are few opportunities for social contact.

The desire for a more appealing place to live has driven many people to the fringes of the metropolitan areas, believing that they will find what they are looking for in the newest developments being built. Of course, this only contributes further to the amount of commuting these people must do in order to get to all the places they need to go.

Sprawl creates automobile dependence and longer driving distances. Total vehicle use more than tripled between 1960 and 1995 to more than 2.4 trillion miles per year.⁵

The size of the average home in the United States has been climbing at a fantastic rate over the past few decades. In 1970, the average home size was 1500 square feet⁶. According to United States Census records⁷, in 1973 (the first year records of this data were collected) new homes under 1600 square feet amounted to 56% of construction. That figure had fallen to less than half that percentage by 1998, when only 27% of new home construction was under 1600 square feet. In that same period, homes greater than 2400 square feet have almost tripled, rising from 12% in 1973 to 32% in 1998.

⁴ Paul Hawken, Amory Lovins, and L. Hunter Lovins, <u>Natural Capitalism</u> (Little, Brown and Co.: Boston, 1999) 45

⁵ F. Kaid Benfield, Jutka Terris, and Nancy Vorsanger, <u>Solving Sprawl</u>, 3

⁶ Robert J. Samuelson, "Smaller Families, Bigger Homes" The Washington Post, July 13, 2005

⁷ http://www.census.gov/const/C25Ann/sftotalsqft.pdf

This trend for increasing house size has even entered into the data categorization the census uses. After 1987, rather than just counting new homes 2400 square feet and larger, the top end category was divided into homes from 2400 - 2999 square feet in size and homes 3000 square feet and up. By 1998, the category of 3000 square foot and larger homes had grown to equal the 2400-2999 category.⁸

Along with the increasing size of the average house, the amount of land being used for this construction is spreading equally rapidly, if not even more so.

Sprawl's rapid land consumption cannot be explained away by population growth only. Between 1960 and 1990, the amount of developed land in metro areas more than doubled, while the population grew by less than half.⁹

But not everyone wants to live in these remote, oversized houses. Other options for living are being explored, and there are investigations into new forms of housing. Even some residential developers are beginning to consider other options for development.

With much residential construction pushed to the outer fringes of the metropolitan area, home builders are increasingly looking for properties in the inner ring of more established suburbs where they can construct modern units that appeal to a variety of buyers who want new houses but are unwilling to travel far from their current neighborhood or village.¹⁰

Both dwelling and work places can benefit from a reexamination of how they are planned and built. The explosion in growth over the last 50 years has provided a lot of homes and created a lot of new communities. But something has been left behind in the mad dash to build. Many of these places do not have the character and desirability that many people would like them to have. Moreover, they do not reflect the needs of a workforce for

⁸ This trend continues still, and in 2004, 21% of new construction was homes under 1600 square feet, while 39% of new homes are over 2400 square feet. The 3000+ square foot category now makes up a larger percentage of new home construction (20%) than the 2400-2999 square feet category (19%).

⁹ F. Kaid Benfield, Jutka Terris, and Nancy Vorsanger, <u>Solving Sprawl</u>, 8

¹⁰ Steve Kerch, "Close-In Is In" Chicago Tribune, Section 16, June 20, 1999, 1,5

whom the old relationships between work and dwelling are being transformed to fit the new work of the Information Age.

WORK

Since housing and dwelling patterns changed in response to the change of work patterns at the beginning of the Industrial Era, it is not unreasonable to expect that housing patterns will change again to adopt new forms that are better suited to new forms of work.

THE AGRICULTURAL REVOLUTION

For thousands of years, most humans worked where they lived. Their homes, and the land immediately surrounding them, were where they worked. The earliest forms of work were completely dependent upon the land. When almost every individual was involved in agriculture, work and dwelling were both tightly interlocked, and the land was vital to survival. Farming required people to settle in a single place in order to sow and tend and harvest their crops, rather than being on the move in subsistence hunting and gathering.

Farmers lived on the land that they farmed. Work was a matter of attending to the tasks immediately at hand. Both the workplace and the home were the same place. This immediacy meant that work was able to be seen as an aspect of life, but was not all-consuming. Work was taken care of when it needed attention, but work was also not always necessary, and periods of inactivity were the norm. Because the land was always observable from the home, it was always possible to directly observe current conditions. If a situation arose that required attention, it could be dealt with promptly.

The agricultural revolution (the transformation from a society of migratory huntergatherers to a settled agricultural society) defined as the First Wave¹¹ of technological development, was not merely a new skill humans had developed, it was a wholesale transformation of human society and brought about an entirely new way of life. People went from living a migratory hand-to-mouth existence to a lifestyle where they took up permanent habitation of the land. Rather than following wild herds and living according to the cycles of game animals and of forage, humans began living in a way where they began to exert control over their environment. Clearing the land and turning it to farm and pasture use was a watershed in social development. Permanent buildings, structures for the storage of harvested crops, the protection of herds of animals, or for dwelling, followed as a consequence of this development.

Social development produced a variety of forms within the agricultural period. Societies as radically different from each other as the Roman Empire and the European feudal system rose and fell within this era. Different forms of social organization came to prominence and then receded, but all were variations of the basic structure of the agricultural economy.

However, beneath their differences lay fundamental similarities. In all of them, land was the basis of economy, life, culture, family structure, and politics. In all of them, life was organized around the village. In all of them, a simple division of labor prevailed and a few clearly defined castes and classes arose... And in all of them, the economy was decentralized, so that each community produced most of its own necessities.¹²

Even as towns and non-agricultural work increased, the form of work followed largely agricultural patterns. The early character of work life in the United States was largely the same as that of the Classical world two millennia earlier.

For its first two hundred years, America was a nation of farms -- the land the most common of American workplaces.

Like the farmer, the townsman also worked at home. The main unit of the

¹¹ Alvin Toffler, <u>The Third Wave</u> (New York: William Morrow and Co., 1980) 7

¹² Alvin Toffler, The Third Wave 16-17

economy was the one-man shop -- and that was lodged in the house. Artisans, merchants, shopkeepers were all individual entrepreneurs. They plied their trade in the large front room: the shoemaker made shoes and sold them here, the merchant prepared his orders and did his accounting. And there was an extraordinary freedom of employment. Unlike the strict occupational system of Europe with its craft guilds, the trades in American towns eschewed rigid control. You could practice what you wanted and move from one craft to another as you wished.

So in those days a man would get out of bed in the morning and walk down the stairs or across the farmyard to go to work. This coziness was possible in the world of small Colonial towns and family farms. Even so, some businesses required more organized effort, and specialized workspaces were set up for distilling, brick- and rope-making, lime-working, and tanning. One man by himself could not make rope, let alone a ship. People had to come together to make certain things, and in this simple sense America's first factories got their start quite early. But these were always small enterprises: the production unit did not exceed five or ten people.¹³

Even non-agricultural work in this era was farm-like. The manufacture of goods did not take place in large-scale operations. Almost everything was produced by individuals or small groups. The creation of any product was the result of the work of no more than a small number of craftsmen.

The nature of work in this era was not as intensive as is often thought. While life was hard during the pre-industrial, agricultural era, work was not a continuous task. There was a balance between work and recreation that was lost in a later period.

"Before the market system, the majority of people are thought to have toiled from sunup to sundown, three hundred and sixty-five days a year. Today we are blessed with a forty-hour week, annual vacations, and extended years of schooling and retirement. The reigning conventional wisdom is that capitalism has created the world's first truly leisured societies.

"Yet the claim that capitalism has delivered us from excessive toil can be sustained only if we take as our point of comparison eighteenth- and nineteenthcentury Europe and America, a period that witnessed what were probably the longest and most arduous work schedules in the history of humankind. If we set

¹³ Spiro Kostof, <u>America By Design</u> 72-76

our sights back a bit farther chronologically, the comparison underlying the conventional wisdom fails to hold up."¹⁴

INDUSTRIAL REVOLUTION — THE SECOND WAVE

The Industrial Revolution brought massive changes to the existing system. Agricultural efficiency had improved to the point where it was no longer necessary for nearly the entire population to be involved in agricultural production. More and more individuals were able to be involved in other types of work, which contributed to the rise of industrial production.

The entire system of industrial production was most efficient when it was able to concentrate large numbers of workers in a space together with large amounts of raw materials to be turned into finished goods. Factories arose where sources of energy, labor and materials were plentiful. Weaving and spinning industries were some of the earliest to adopt the new forms of mass production. They developed larger scale operations that drew on the power of water wheels, so factories were often established near rivers where water power was readily available.

At the same time, dwelling was shifting away from dispersed agrarian villages; rather it was concentrated into focused centers. Industrialized production required concentrations of materials and of workers in order to be successful. Consequently, increasing numbers of people moved to the cities where jobs could be found.

"Like the slow erosion of the family farm, in the city too, and more drastically, changes in the economy affected the early ties between the house and the workplace. The time of the one-man shop was running out. People now needed to come together in large numbers to make and distribute things. So for most townfolk the workplace was now quite distinct from the neighborhood of houses. Men now worked in offices, stores, and shops away from home, and the old front room they vacated was turned into a parlor. The old crafts began to break down into new specialties -- shoes would be made in one place now, but sold in others. And many more shoes were made than were needed for the townsfolk. Out there, beyond the bulging cities, a regional market sprang up, which by the time of the

¹⁴ Juliet B. Schor, <u>The Overworked American</u> (New York: Basic Books, 1992) 6.

Civil War was tied in to a full-fledged national market. ...

"To meet this tremendous new opportunity, the scale of manufacturing increased dramatically. Hours of work were longer, the pace faster, and a streamlining of tasks anticipated the modern assembly line. Specialized concentrations drew together the garment industry, furniture and leather-making, locomotive building. A new breed of entrepreneur came of age -- the wholesaler. He was the middleman who facilitated the flow of these plentiful goods from the manufacturer to the user, and so in a real sense supervised the distribution of trade.

"All of this activity was breeding a new kind of townscape. The look of the old towns was being transformed as this nation of farms started on the road to becoming a nation of factories. There were entire manufacturing districts now. There were warehouse districts like Laclede's Landing in St. Louis, where the goods were stored in large, roomy warehouses built in close proximity to the waterfront and the railroad lines."¹⁵

As the form of the city was transformed, work and dwelling came to be separated from one another even more. Warehouse districts occupied all of the property close to transportation hubs. Manufacturing concentrated into districts as well. Suppliers were more readily able to provide materials to numerous industries when they were all close to one another. Proximity was also beneficial when the products produced by one manufacturer were, in turn, the raw materials used by another manufacturer.

The division between work and home carried through to revise the relationships within families. While agricultural life engaged the entire extended family in work, and that work was intertwined in their daily life, the work of the industrial worker was carried out according to organized schedules.

"Initially, the growth of capitalism dramatically raised work effort. In the words of the anthropologist Marshall Sahlins, the market system handed down to human beings a sentence of 'life at hard labor.' (Marshall Sahlins, Stone Age Economics (New York: Aldine, 1972), 4."¹⁶

¹⁵ Spiro Kostof, America By Design, 84-5

¹⁶ Juliet B. Schor, <u>The Overworked American</u>, 7

Industrial work was also more often likely to be focused on something other than an immediately useful product. While agricultural products could be relied upon for the family's survival, and any surplus could be sold, the production of an industrial era was rarely something that could be used to directly benefit the family when times were bad.

"Before capitalism, most people did not work very long hours at all. The tempo of life was slow, even leisurely; the pace of work relaxed. Our ancestors may not have been rich, but they had an abundance of leisure. When capitalism raised their incomes, it also took away their time."¹⁷

The erosion of leisure time was tied to the growth of capitalist markets. Organized production is most efficient when regularized and when carried out for as long a period as can be had.

Like its products, the workers of the Industrial Era were all too often interchangeable and replaceable.

The Industrial Revolution also had a great impact on the family. The nuclear family had long been the unit of production. On the farm and in the artisan's workshop husband, wife, and children worked together. The factory, almost for the first time in history, took worker and work out of the home and moved them into the workplace, leaving family members behind — whether spouses of adult factory workers or, especially in the early stages, parents of child factory workers.¹⁸

As manufacturing businesses grew larger and larger, the needs for support personnel grew. Offices came along following the same models of the concentration of resources. Like their manufacturing counterparts, office buildings, too, came to be places that concentrated large numbers of workers. But rather than manipulating raw materials for the production of goods, these workers were involved in the manipulation of symbols, words and numbers that were needed to make the engines of business continue to move.

¹⁷ Juliet B. Schor, The Overworked American, 44

¹⁸ Peter F. Drucker, "Beyond the Information Revolution," Atlantic Monthly, October 1999, 48

Since the work activity was being clustered in a district, residential spaces were pushed to other parts of the town. As work became industrialized and regularized, it also came to be compartmentalized, and the urban fabric was separated into residential and business areas.

"For some businesses, commuting was not the answer. You had to go where the action was. In mining, for example, this meant remote and often harsh environments where makeshift towns would spring up in the shadow of the headframe that supported the hoisting sheaves. ..."¹⁹

Work was still connected to place, but rather than finding work in the place where you were, work converged on particular places chosen for their specific properties. Mines and mining developed where ores were found. Manufacturing operations were set up in places where power (often water power from a nearby river) was available, and other production was linked to the proximity to sources of raw materials.

The typical Industrial Era model of work took the form of a central workplace (factory, office, etc.) with large numbers of workers engaged in similar tasks and overseen by hierarchies of managers, supervisors, and other bosses in a very top-down ordered system. An office would have pools of secretaries, clerks and other low-level workers whose labors were watched over and directed by supervisors, who in turn reported to managers, and so forth. Likewise, a factory would have large numbers of workers who collectively (and interchangeably) were engaged in repetitious tasks to produce products that were engineered to be mass-produced.

These forms of work were successful due in part to their ability to concentrate large numbers of workers to perform similar tasks in a concentrated place. Labor- and energy-intensive work was far more efficient when it was centralized, rather than having many remote locations performing the same task. For example, it was far more efficient to have thousands of workers all gathered together in Detroit putting together automobiles than it was to have thousands of workers all over the place each putting together cars on their own.

¹⁹ Spiro Kostof, America By Design, 88-9

Piece-work gave way to central processing. Economies of scale were more efficient and the results were more controlled. The demands of business and the capital economy were instrumental in creating this concentrated system of work. And the economic demands of the work system that were created led, in turn, to patterns of dwelling that contributed to the same system.

This form of work demanded that the workers be concentrated at their workplaces in high numbers. Company towns arose where labor and workplace were interconnected. The need to have large numbers of workers in close proximity to the workplace led to the growth of cities.

The cities where industry was located grew ranks of new housing that was produced with the same eye to maximizing efficiency and minimizing cost that was driving industrial production. City officials and planners needed to direct the growth of their cities. The same systems of intensive centralization and concentration of resources that were brought to bear on industrial production were also applied to the workers for those factories.

The separation of work place from dwelling place also came into being during this period. Zoning regulations arose as a planning response to segregate the 'dirty' areas of production ('dirty' for the pollution they expelled into the air and water, the noise, and the wastes that piled up as unwanted and unused byproducts of the work that was being undertaken). To defend the values of land in particular areas (by excluding 'undesirable' neighbors — of whatever form of undesirability), zoning regulations were adopted to limit the use of land to particular uses.

Zoning, too, allows the concentration of permitted uses to particular areas, thus driving up the values of land in desirable areas. Without zoning regulations, uses would be more freely intermixed, and values would be less concentrated into particular areas.

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THE POST-INDUSTRIAL PERIOD

In recent years, the tide of work has begun to turn once again. A new economy is taking the place of the old one, and new patterns of work are a part of this new economy.

The transformation from an industrial society to a post-industrial one was identified by Toffler as the 'Third Wave.'²⁰ As our society moves beyond its industrial base, and new approaches to the production of goods as well as transformational shifts in the economy, with information replacing manufactured goods as the core of the economy, the 'Third Wave' stands to be as dramatically transformative as the 'Second Wave' Industrial Revolution was to the agricultural world.

In the 'First Wave,' goods were individually handcrafted. Industrialization and the 'Second Wave' brought in methods of mass production and standardization, which enabled goods to be produced quickly and inexpensively. With centralization of production, and top-down command of manufacturing, the economic focus has turned to other fields. The manufacturing of goods is no longer the core of our society and economy. The heavy industry which characterized the American economy in the middle of the 20th century has given way to other sectors of the economy.

"In the United States today (1980) only 9 percent of the total population — 20 million workers — manufacture goods for some 220 million people. The remaining 65 million workers provide services and manipulate symbols."²¹

Contemporary patterns of work are no longer following old forms and patterns. Instead of mass production, varieties of forms now proliferate. The idealized and centralized system for production has given way to systems that allow for unlimited variety. Individual customization is replacing repetitive and undifferentiated mass production.

As a result of these changes, work is becoming increasingly decentralized. The kinds of work that make up the new economy of the post-industrial world have been classified

²⁰ Alvin Toffler, <u>The Third Wave</u>, 4

²¹ Alvin Toffler, The Third Wave, 169

into three categories by the economist and former Secretary of Labor Robert B. Reich.²²

The first of these three groups are the "routine producers," whose work is concentrated and highly repetitive. Most of the earlier Industrial Era factory workers would be classified as "routine producers." And, as Reich notes, the numbers of these jobs in the American economy (and, it is probably not unreasonable to extend this same assumption to other Western economies as well) has been dropping. The second group are termed "in-person servers." These jobs cover much of the "service economy" — jobs such as waiters and hairstylists, but doctors can also be classified in this category. These are jobs that require direct personal action and attention. The third category is the fastest growing segment of the economy, which Reich terms "symbolic analysts." These are jobs involving data, information, and decisions; in short, these are "Information Age" jobs. And what is unique about these is that, with communication and information-processing technologies, most of their work can be performed independently of place.

These "symbolic analyst" jobs are the ones most likely to be performed by workers who use new job patterns such as telecommuting or job sharing, or are increasingly being performed by self-employed consultants, rather than by permanent full-time employees working for a single employer.

But the "symbolic analysts" are not the only workers whose jobs are being transformed in the new economic patterns of the post-industrial economy. Many "routine producer" jobs are also changing. For example, instead of the massive steel mills which produced untold millions of tons of steel in industrial quantities, contemporary domestic steel production is instead concentrating more on 'small-batch' production. Even routine production is becoming more flexible and specialized, and is taking place at a smaller scale.

A Post-Industrial Manufacturer

An example of a post-industrial manufacturing corporation is Walden Paddlers²³. Walden is particularly interesting because of the way it is configured and how it operates.

²² Robert B Reich, <u>The Work of Nations</u> (New York: Vintage Books, 1991)171-184

It is a company that manufactures kayaks, but it has no factories. It is a company that introduced a new and innovative design for recreational kayaks, but it has no designers or design facilities. Walden has zero employees. It has minimal offices. Rather than having an industrial presence, Walden is a virtual corporation.

Walden Paddlers was founded by Paul Farrow in 1992. Farrow had been a corporate executive with an environmental services company, until a corporate restructuring eliminated his position and left him out of a job. Rather than seeking another position working for someone else, he decided to start his own business. Farrow was inspired to pursue kayaks while on vacation with his family.

Instead of directly hiring people to work for him, as an industrial-style start-up business would have done, Farrow's approach with Walden was entirely about joint-venture relationships and cooperative networks, rather than top-down control and authority. The manufacturer of the kayaks is a specialty plastics molding company that entered into a business agreement as a joint venture, rather than their usual way of doing business, with extensive startup costs for the customer, which would be prohibitive for a startup business like Walden. The designer of the kayaks was also someone who contracted to work with Walden, rather than being hired as an employee of the company. As a startup company with only a single product, Walden didn't need to hire full-time design staff.

Walden Paddlers is a case study for the kind of business that is becoming increasingly common in the post-industrial economy. The entrepreneurial story of a downsized executive from an old-order, Second Wave-style business going on and founding a new, small, Third Wave-style business is one that is becoming increasingly common. The Walden Paddlers story is one that has been repeated in countless variants in recent years, and will most likely continue in the future.

A company such as Walden does not need a factory or an office building. Its production is a small enough amount that it can contract 'small batch' production to a manufacturing

²³ Edward O. Welles, "Virtual Realities," Inc. Magazine, August 1993, 50-

company that works with it, rather than owning expensive equipment and having to maintain a commensurate payroll. By contracting rather than directly employing other personnel, it also avoids the need to maintain offices for these people. And, if they owned assets like these, most of the time they would be sitting empty and unused. A virtual corporation has minimal space needs. Most of the time, it has no need for any facilities at all.

However, there may be times when it needs to bring people together for meetings. The development of a new product in their line might require collaborative workspace for a period of time. But the company does not need any of these facilities full time.

These transformations of the workplace are likely just the beginning of wholesale changes in the working environment.

VARIANTS IN POST-INDUSTRIAL WORK

While the focus of work shifts away from concentrating on the transformation of raw materials into finished goods, the ways in which work is performed can also be approached in new ways. The standard of the 9-to-5 job performed at a central office or factory is becoming less rigid.

The decline in the centralized workplace has made it possible for many more options to be available for workers. Flex-time, job sharing, and telecommuting are a few of the options that contemporary workers are pursuing as part of the transformation of the workplace and the nature of work.

Even the workday is becoming non-standardized in some cases. The concept of jobsharing allows two workers to fill one role within a company. What would normally be a position filled by a single person working a standard 40 hour week is instead carried out by two people working part time (perhaps each one working 25 hours a week, for example). Flex-time working allows workers to choose the hours when they will work. Depending on the particular situation, a worker may either be able to set their own

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regular schedule to correspond with other scheduling needs they have to attend to, or, for even greater flexibility, a worker may be able to constantly adapt their schedule as their personal needs warrant, as long as they maintain the required level of work.

Work is also less likely to be something done for a large corporation than it was in the Industrial Era. New businesses are being formed each year. Many of these are traditional enterprises, following existing modes that are well established, with fixed workplaces and schedules and employees and employers following Industrial Era working practices. But, many more are new variants. Individuals working alone, without need for all the requirements of a formalized workplace, seek to begin new businesses as entrepreneurs or consultants or technical specialists or the like. These workers do not need machinery or employees or even offices, for the most part. The most important element of these business is the entrepreneur themselves, and the skills and the business ideas that they have.

Because of this, increasing numbers of workers are working in a place where they have no colleagues or co-workers. These self-employed workers may have home offices – a spare bedroom fitted out with a desk and file cabinet – a telephone and a personal computer, and the other materials needed for their work. Some consultants may work primarily as itinerant or as temporary workers at the workplaces of their clients, rather than needing to have personal office spaces of their own. Some individuals may use libraries as quiet places to work. Office centers can provide rental computers and copying and other business services. But still, some individual workers may still prefer to have a real office space and will rent a place in order to have a separate business address and place of business.

HOME OFFICE

The patterns of the new economy are much less tied in to concepts of centralized production. Thus, work is less tied to the clock and correspondingly less connected to any one particular place. The transformation of raw materials into finished goods required the presence of large numbers of workers to operate the machinery that

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production entailed. But increasing numbers of jobs entail working with symbols in one fashion or another, and those jobs do not require workers to be at a particular place for a certain period of time in order for their work to be accomplished.

Symbolic analysts have the potential (ideally) to work wherever they want (since their work is not place specific) and whenever they want. More and more workers have the potential to set the hours they will work, adjusting their schedules to other factors in their lives, and at the same time are less and less beholden to a single place where they must go in order to perform their work. Why then, these workers are asking themselves and their employers, should they travel to remote offices to do their work?

Hidden inside our advance to a new production system is a potential for social change so breathtaking in scope that few among us have been willing to face its meaning. For we are about to revolutionize our homes as well.

Apart from encouraging smaller work units, apart from permitting a decentralization and de-urbanization of production, apart from altering the actual character of work, the new production system could shift literally millions of jobs out of the factories and offices into which the Second Wave swept them and right back where they came from originally: the home. If this were to happen, every institution we know, from the family to the school and the corporation, would be transformed.

Watching masses of peasants scything a field three hundred years ago, only a madman would have dreamed that the time would soon come when the fields would be depopulated, when people would crowd into urban factories to earn their daily bread. And only a madman would have been right. Today it takes an act of courage to suggest that our biggest factories and office towers may, within our lifetimes, stand half empty, reduced to use as ghostly warehouses or converted into living space. Yet this is precisely what the new mode of production makes possible: a return to cottage industry on a new, higher, electronic basis, and with it a new emphasis on the home as the center of society.

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Even old Karl Marx would have frowned. Working at home, he believed, was a reactionary form of production because "the agglomeration in one workshop" was "a necessary condition for the division of labor in society." In short, there were, and are, many reasons (and pseudoreasons) for regarding the whole idea as silly.²⁴

²⁴ Alvin Toffler, <u>The Third Wave</u>, 181-2

Working from a home office has some advantages, but there are several drawbacks as well. A home office conflicts home-life with work-life, and there can be difficulties in keeping the two separated. Many consultants and entrepreneurs find themselves living a life where they are always "on," and there are few moments when they are not working, or thinking about work (which, in a business mode where thinking is the activity of work, is the same thing as working).

Along with the new post-industrial economy, there is an increasing blurring of the line here, but practicality requires that one maintain some separation between the two parts of one's life.

TELECOMMUTING

Telecommuting is another non-traditional approach to work and workplace. While the standard for an industrial-era worker was to regularly go to the assigned workplace (typically a factory or an office) at a specified time and work for a standardized number of hours before returning home again, the nature of work in the post industrial era is no longer such a standardized, repetitive task, nor subject to the same levels of oversight. Without the need to perform tasks within a bureaucratic hierarchy, work has become more flexible, and it has become increasingly possible for workers to spend some, if not all, of their working time away from a central office. Telecommuting allows a worker with access to the technological tools needed for it to work from home. With increasing numbers of jobs where the worker does not need to be physically present in a particular place in order to do their work, telecommuting is becoming more of an option.

Telecommuting is a rising trend which is expected to continue growing in the coming years. With telephones, personal computers, and fax machines, communication between the worker and their office (the exchange of symbolic information, which is the raw material of the post-industrial working world) can be carried out almost as easily as if the worker was present in the office.

Neither routine producer jobs nor in-person server jobs are well suited to telecommuting. Routine producers work in a centralized setting, a place and a role that requires their presence to carry out their jobs. Likewise, service jobs carried out by in-person servers, such as a waitress or a physician, require the individual to be present to interact with the customer or patient. But symbolic analysts, the fastest growing of the three categories of workers, are often engaged in work that is performed by a single individual. Although they have connections and communications with colleagues and clients, a significant portion of the work of these individuals is engaged in the manipulation of symbols. This means that, as a category, many symbolic analysts are ideally suited to work from a place other than a centralized business office. Because their work is much less location dependent, it is much easier for these workers to work from home, or from someplace other than what is ordinarily thought of as the traditional business office.

Job sharing is a practice that can greatly benefit when combined with telecommuting. The inefficiency of having two separate people both commuting in order to fulfill their part of a job sharing arrangement can sometimes be offset when some of the work can be carried out by the workers at home. One case where job sharing is frequently used is by parents (especially new mothers) as a means of continuing to work at their jobs while at the same time spending more time with a young child. By bridging their return to full time work with a job sharing arrangement, they can nevertheless continue to contribute to their business and remain current with the activities and developments in their workplace.

As the technology needed for workers to be productive becomes more readily available, it becomes correspondingly easier for workers to do most, if not all, of their jobs without a daily commute and a traditional office space. Electronic communications equipment — telephones, personal computers, and faxes — make it possible for a worker to have a high degree of contact with co-workers, supervisors, and colleagues, as well as with clients and customers.

"We see a transformation of our energy system and our energy base into a new *techno-sphere*. This is occurring at the same time as we are de-massifying the mass media and building an intelligent environment, thus revolutionizing the *info-sphere* as well. In turn, these two giant currents flow together to change the deep structure of our production system, altering the nature of work in factory and office and, ultimately, carrying us toward the transfer of work back to the home."²⁵

The greatest obstacles to further adoption of telecommuting are regulatory and institutional, rather than technical. The cost of a personal computer, a telephone, or other technologies needed to enable telecommuting are minor. But managers and supervisors need to develop new skills and new attitudes about how they interact with the people working for them in order to successfully transition to a working environment that is more supportive and accepting of telecommuting. Business and tax laws and workplace regulations also present some obstacles to the broader acceptance of telecommuting. As the practice becomes more common and accepted, and regulations adapt to reflect the increasing us of this option, these difficulties will gradually be reduced.

CAREERS IN THE POST-INDUSTRIAL WORLD

The workplace in the late 20th Century is a very different place from prior Industrial Age models. Although large industry still exists, increasing numbers of workers are no longer employed in factory settings. Instead, increasing numbers of workers are now employed in jobs where knowledge and intelligence, rather than strength and dexterity, are the key attributes of their workday. And even those workers who are still employed in traditional heavy industries are engaged in more complex work, where their intellect and their creativity are important to the work that they do. Increasingly, the workers are more involved and engaged in the entire process of the work. The number of jobs where the individual worker is acting as just a cog in the machinery are rapidly dwindling.

The idea of working with a single company for one's entire career, amassing a pension and receiving a gold watch upon retirement, is no longer the model for a typical working lifetime. People more often have multiple jobs over the course of their working life.

²⁵ Alvin Toffler, <u>The Third Wave</u>, 193

"The leap to a new production system in both manufacturing and the white-collar sector, and the possible breakthrough to the electronic cottage, promise to change all the existing terms of debate, making obsolete most of the issues over which men and women today argue, struggle, and sometimes die.

"We cannot today know if, in fact, the electronic cottage will become the norm of the future. Nevertheless, it is worth recognizing that if as few as 10 to 20 percent of the work force as presently defined were to make this historic transfer over the next 20 to 30 years, our entire economy, our cities, our ecology, our family structure, our values, and even our politics would be altered almost beyond our recognition."²⁶

Like the changing ideas about 'community,' the normative expectations about work and about where work takes place have changed over time. As Juliet Schor notes: "Steady employment, for fifty-two weeks a year is a modern invention. Before the nineteenthand, in many cases, the twentieth-century, labor patterns were seasonal, intermittent, and irregular."²⁷ Work may take on forms more like those of the pre-industrial world.

The shape of an individual's post-industrial career is likely to be varied. Periods of employment may be more punctuated, rather than workers having a continuous and unbroken career of jobs. Sabbaticals may become more commonplace, rather than being a privilege primarily of academics and researchers. Periods of employment and work may be voluntarily interrupted by people choosing to travel or do volunteer work or study. Parenting choices may result in people taking long periods of time to spend focusing on raising their children rather than on their working careers. Choosing to pursue personal development can also be an option that is more readily available. Careers will be less of a lifetime spent working in one field. There will be more and more serial careers where people work in one field for a number of years and then switch into an entirely different field, perhaps even several times over the course of their working lifetime.

²⁶ Alvin Toffler, <u>The Third Wave</u>, 192-3

²⁷ Juliet B. Schor, The Overworked American,

Following as new patterns of working develop and the number of workers in postindustrial jobs increases, new approaches to dwelling and new relationships between dwelling and work spaces will evolve.

One foreseeable trend will be people making choices about where to live based on more on personal preference or values and the appeal of the location, rather than as is required for work. As work becomes less dependent upon specific location, more workers will be able to make choices about where they want to live that are principally based on the characteristics and amenities of that place, rather than its proximity to where they work.

"People today expect more from the places they live. In the past, many were content to work in one place and vacation somewhere else, while frequently getting away for weekends to ski, enjoy a day in the country or sample nightlife and culture in another city. The idea seemed to be that some places are for making money and others are for fun. This is no longer sufficient."²⁸

The benefits offered by a city or by a community will come to be more important than proximity to transportation and to work places.

Choosing a place to live based on the characteristics of that place, rather than needing to migrate to a work location. Currently, for many people, these choices are made based on availability and location of work. Another potential trend will be people having a higher level of engagement with the place where they live. Working closer to home allows the workers to be more connected to the place where they already spend a portion of their time. Ownership and stewardship are connected. Homeowners are more committed to the places where they live.

The exurban tract development represents a transition point at the end of industrial-era housing. Like the suburban form, it sets single-family houses on large lots with manicured lawns between them. But the suburb was established as a satellite to an urban core. The separated relationship between work place and dwelling was extremely delineated. The jobs were primarily located at the urban nucleus, and dwelling zones

²⁸ Richard Florida, <u>The Rise of the Creative Class</u>, (New York: Basic Books, 2002) 224

were arranged around those centers. The exurb follows the suburban form, but without the community aspects that the suburbs of earlier decades contained. Exurban housing surrounds workplaces in edge cities in a weak imitation of suburbs, but in most cases without the structures, both physical and social, that enabled suburbs to have an aspect of community.

Work is no longer concentrated into industrial-era cores. More and more jobs have migrated to outlying edge cities, and centers of work are more dispersed. Exurban development may be the current trend, but it is unlikely to be the predominant form for post-industrial settlement.

DWELLING

Patterns of dwelling have changed over time in response to cultural, technological, and other factors. The fundamental need for housing remains a constant throughout history. But the particular forms that housing takes reflect the economy and the technology (among other things) of the society in which it is situated.

Each time the nature of work underwent a transformational shift (at the beginnings of the Agricultural and Industrial revolutions, respectively) the relationship between dwelling and work also had to adapt to follow those new patterns. The shift from hunter-gatherer society to an agricultural world was accompanied by the first establishment of permanent settlements. Work stopped being nomadic and became rooted to a particular place, and shelter was accordingly able to become something similarly permanent. When work moved away from the farms and into the factories, similarly concentrated forms of housing close to the workplaces came along in response to the changing conditions.

As we move forward in the post-industrial era, the relationship between work and dwelling space is still being determined. Much of the contemporary landscape still bears enormous traces of Industrial Era planning and thinking. As the old relationships break down further and as patterns of work continue to adapt to the needs of an Information Age economy, the need for new forms of dwelling space will become more and more apparent.

Along with the transformations taking place in the structure of work over the course of social development in history, the nature of dwelling space has also adapted to the changes that have accompanied these developments. In the Agricultural Era, the home was the work base and the center of almost all activity. The Industrial Era created the

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separation of work place and dwelling place. Even when broadly proximate to one another, as in factory towns or mining settlements or the like, the nature of most work was such that it could not be performed in the house. Work was an activity performed in a specialized location, rather than in the immediate vicinity of the home.

Farmers may have socialized while working together, and neighbors were able to stop by and converse and socialize. Factories, however, prevented any such interactions. By being separated and segregated away, it was inconvenient and impractical for workers to do anything other than the job at hand. This was to the benefit of the factory operators, since it increased the efficiency of production to have the workers performing their tasks without interruption.

As the transformations of the post-industrial 'Third Wave' proceed, the configuration of our cities and communities will undergo similar changes to adapt to the new patterns of work and life and community in this new era.

IDEAL COMMUNITY

Community is a broad concept that means different things to different people. It is open to many individual definitions and interpretations. While some general points can be made about what makes a successful community, it is highly unlikely that a single definition would suit everyone's perceptions of what constitutes a community.

For all the satisfactions of conspicuous consumption, though, I wonder whether the folks who live in these houses ever realize what they're missing in not belonging to a real neighborhood. As they drive their SUVs to the commuter rail every morning, maybe they notice how our older, smaller houses fit differentially into tree-lined roads like words into sentences.

The place where I live is much more than the sum of its parts. When friends come to visit us, their first reaction is not, "What a gorgeous house," but, "What a lovely neighborhood."

If belonging to a community is like engaging in a conversation, then the onus of these big new houses strike me as Humpty-Dumptys. Humpty-Dumpty in Lewis Carroll's "Alice Through the Looking-Glass" announced scornfully to Alice that, "When I use a word, it means just what I choose it to mean, nothing more nor less." Likewise, too many of us these days seem to have decided that our houses, and even our lives, will have whatever private meaning we want them to have, not the collectively arrived at meanings that enable community.

Trophy houses aren't part of the vocabulary of neighborly human settlement. They're emblems, they're badges of wealth. In the intimate conversation of built forms that is my New England town, they're nothing more than non-sequiturs; conversation stoppers, really.

When we go it alone like this, when we deny our interconnectedness, and miss the opportunity to mean something important to each other, we throw away the chance for real satisfaction and real beauty in our neighborhoods and in our life as a society."²⁹

Separation, and the distance and lack of community are what drive the search for connection for many people.

UTOPIA

Throughout the history of the United States, there are numerous examples of groups of people creating new settlements for themselves. Many immigrants came to this country seeking a place where they could pursue their own vision of a better place to live. Some of these, such as the Amish and Mennonite communities of Pennsylvania, Ohio, and Indiana, have lasted for generations. Many others have not lasted beyond their founders' lifetimes, or have failed or disbanded even sooner than that.

The founding and development of the nation and the subsequent drive for westward expansion were strongly driven by groups who sought to create a better place for themselves to live. Often these groups were combined, at least in part, with a religious ideology. Some of these groups sought seclusion (or separation) from outsiders who did not share their attitudes and beliefs. Other groups thought their attempts to create community would be accepted by all. In many cases, these communities were not merely new settlements for the residents, but were meant to create ideal communities that matched the vision of their founders and their membership.

The impulse to create an ideal community has been an important element throughout American history. The quest for a utopian community has taken many different forms.

²⁹ Tom Sheibley commentary, "Morning Edition" radio program, National Public Radio, May 10, 1999

Some approaches have concentrated on the social aspects of their communities, while others have concentrated on the built form.

Exercises in community building are not limited to the early history of the country. New experiments continue to be proposed and attempted. In the late 1940s, York Center Community Co-op was founded in the suburbs outside of Chicago, near Lombard, Illinois. It was a deliberately integrated community, which was unusual for its time, and attempted to create "country living in the city." Paolo Soleri began the construction of Arcosanti in the early 1970s. The New Urbanist resort community of Seaside, Florida was founded in the 1980s.

For that matter, even the typical American suburb is, itself, a product of idealized visions for neighborhood and community. Levittown, New York was an example that came to stand for the new suburban construction boom that took place throughout the country in the years following World War II. Although in many respects, there are other, unintended consequences to the design, the intent was to create a better place for dwelling than had been previously available.

In this context, cohousing can be seen as another approach to creating new forms of community that is intended to provide people with better places to live.

COHOUSING

Cohousing is a particular form of housing designed to create and support intentional community. Cohousing approaches community building from both a social and a built-environment perspective.

The term "cohousing" was coined by architects Kathryn McCamant and Charles Durrett in a book of the same name.³⁰ They use the term to refer to a type of housing/community which they had studied in northern Europe, and which they sought to introduce in North

³⁰ Kathryn McCamant and Charles Durrett. <u>Cohousing: A contemporary approach to housing ourselves</u>, (Berkeley, CA: Habitat Press, 1988).

America. Their book served as the first introduction about the specific ideas of cohousing to the United States. Although other kinds of intentional communities have long been present in this country in various forms, cohousing has a number of specific characteristics inherent to the way it functions. Cohousing refers to a form of intentional community where a number of families come together and share certain resources while seeking to improve their lifestyle through increased interaction with their neighbors.

McCamant and Durrett had traveled in Europe, particularly in Denmark, and had encountered a number of communities called "bofaellesskaber" (a Danish word meaning "living communities"; they felt it was too difficult to pronounce and use in English, and therefore a new term was needed). These were communities comprised of 25-30 households on average. Some were configured as clusters of individual free-standing houses. Others were built like apartments, with connected dwelling units. Each family had their own private space, but there were also common facilities that were owned equally by all of the households together.

The origins of cohousing, however, go back to the 1960s, to the work of Jan Gudmand-Høyer, a Danish architect. Gudmand-Høyer and his wife wanted to find a place where they could comfortably raise a family, and were discouraged by the prospects of living in the city. They also did not find the suburbs an acceptable alternative. In discussions with a group of their friends, they found kindred interests and similar responses. "They sought the qualities of a country village, but a location near the city with its professional and cultural opportunities."³¹

In 1964, Gudmand-Høyer and his friends went to work on a project for themselves in the village of Hareskov on the outskirts of Copenhagen. They even bought land for the project, and the village officials were supportive, but the neighbors who were concerned, supposedly about the noise from children, worked to block the project. (According to Gudmand-Høyer, "...even though we had not used the word 'collective' in our

³¹ Kathryn McCamant and Charles Durrett, <u>Cohousing</u>, 134

description...they (the neighbors) simply saw 'red.'"³²) This led to the eventual collapse of the project and the dissolution of the group.

However, Gudmand-Høyer did not give up on the idea entirely. Two articles published in the late 1960s, "The Missing Link Between Utopia and the Dated One-Family House" by Gudmand-Høyer and "Children Should Have One Hundred Parents" by Bodil Graae helped to rekindle interest in an intentional community. The publication of each of these articles brought numerous responses from others who were interested in the prospect of group living, and these served as the starting point for a new group which eventually developed not one, but two projects, the first cohousing communities. Sättedammen, in Hillerød, Denmark, was the first project completed in 1972, and Skraplanet, in Jonstrup, Denmark, (both projects are near Copenhagen) was occupied a year later.

CHARACTERISTICS

Because of the variety of communities being gathered under this term, and because it is still an unfamiliar concept to most, it can be difficult to precisely define what is meant by "cohousing." Varieties of cohousing range from communities as small as 5 or 6 households to large multi-story buildings with over 100 families. Cohousing can also exist in new construction, where the buildings are purpose-built for a cohousing community, as well as in retrofit, where existing homes or apartment buildings are converted and used as a cohousing community. However, some common characteristics are clear. Cohousing communities are formed by groups of people seeking to gather together in a form of community closer than that found in a traditional suburb or apartment building. Shared facilities, such as a "common house" which contains community cooking and dining spaces are one common feature. Many cohousing communities have other facilities as well, such as laundry rooms, play rooms for young children, teen rooms, libraries or reading rooms, workshops, etc. However, the strongest defining feature of a cohousing community is not the spaces it contains. Rather, it is the arrangement of those spaces and the relationship of the dwellings to each other. Circulation spaces and the relationship of the individual units to the circulation, as well as

³² Kathryn McCamant and Charles Durrett, <u>Cohousing</u>, 134
to one another, is set up to encourage interaction, rather than to separate each unit as an isolated space. Interactions between units are encouraged and facilitated by the proximity of units and the presence of the circulation axis as a space which is common to all.

The Main Characteristics of Cohousing
1 Participatory Process
2 Neighborhood Design
3 Common Facilities
4 Resident Management
5 Non-hierarchical Structure and Decision-Making
6 No Shared Community Economy³³

These characteristics support the formation of a strong sense of community within the cohousing development. Cohousing is a housing form that appeals to a community of neighbors who want to know each other rather than living in detached uninvolved anonymity. The characteristics of cohousing have developed to promote a community where this is possible.

The participatory process engages the members in creating a community for themselves instead of forcing them to be consumers with only limited options available. Features that they want to include, particularly if those features are not the least expensive option available can be incorporated when they are agreed upon by the community members.

For example, many cohousing communities seek to incorporate some values of minimizing ecological impact. These can be best implemented when they are undertaken cooperatively and are often far easier for a cohousing community to accomplish than it would be for a similar number of individual households. Reducing the amount of impervious surface area in a neighborhood is not something that individual families can typically impact. But the creation of a cohousing community allows a number of families to collectively have impacts in the development of their neighborhood that typically only a developer would be able to have.

³³ http://www.cohousing.org/resources/whatis.html

The participatory process also allows the community members to have a sense of empowerment and strengthens their sense of ownership in the community. Additionally, the community members have a deeper understanding of the features of their community, having been involved in selecting them and evaluating the alternatives. The community is something that they have helped to create, instead of just something that they have bought.

A neighborhood with built-in community is one of the principal goals of neighborhood design. Cohousing communities are also designed to promote neighborliness and interaction between the residents of the community. Most cohousing communities are oriented with the fronts of the individual dwelling units towards a pedestrian path that connects all of the homes in the community, and parking is typically at the edge of the community. This serves to create a more dynamic space in which people can interact with one another. People arriving home walk through the community path and encounter their neighbors. Rather than a quick wave as they drive by, this configuration affords them the opportunity to stop and talk to one another.

Neighborhood design addresses not only the configuration of the community but also its scale. Experience has shown that a size of 24-35 households is small enough to maintain a sense of familiarity in the community. A neighborhood of this size is small enough that it is possible to know everyone living in the community.

There are some Norwegian cohousing communities that were built as high-rise towers, with large numbers of households in the community. These units have developed some problems arising from the vertical configuration of the building and the lack of interface between neighbors. However, in many cases where larger development has become an issue, the communities have maintained the smaller scale, instead of allowing the neighborhood to grow beyond a comfortable size. For example, the Eco-Village at Ithaca, New York was planned from the outset as a cluster of 3-4 cohousing communities (and, to date, two of the planned neighborhoods have been built). Another example is the

cohousing communities in Ann Arbor, Michigan. There was enough interest that a second development, Great Oaks, was built directly adjacent to Sunward, the first community. Building on this pattern of success, a third neighborhood, Touchstone, has now been added next to the first two. In both cases, each neighborhood operates autonomously, although there is an additional benefit of having other neighbors who are familiar with cohousing and whose neighborhoods are similar to their own.

Common facilities are one of the most distinguishing features of cohousing communities. While a condominium may have some common facilities, those are typically peripheral features and casual amenities, rather than elements that are a regular part of daily life within the community.

A cohousing community typically has a common house in which most or all members of the community regularly gather together. It is not the presence of shared facilities in and of itself, but the regular use of those facilities by a majority of the community members that differentiates the common facilities of a cohousing community from those of a condominium or a neighborhood association.

Resident management ensures an actively engaged community; a community where knowing and interacting with your neighbors is desired and planned for. The decisions about the operation of the community are made by its members, rather than by an appointed management committee of outsiders (typical of many condominiums and neighborhood associations). Cohousing does not arise when a developer builds the infrastructure and then tries to sell the units to prospective residents.

Collective living allows for a sharing of responsibilities and burdens among a larger number of people. The shared community meals are typically prepared by one or two households at a time. If a community of twenty-four households has three community meals a week, each household is only responsible for a meal once every four weeks (assuming two households share in the task). Other community chores can be shared among the member households, rather than having to be hired out and done by outside

contractors.

Along with the principle of resident management, the operation of the community works by a non-hierarchical system. Condominiums and other neighborhood groupings are usually more streamlined in their operation, but community tasks cannot be delegated among members of the community in such a configuration. While maintenance tasks may be somewhat more efficiently completed when they are regularly contracted to a management service, the direct involvement in the maintenance of the property can provide benefits to the community by investing the residents with the value of their homes and community and by keeping the residents aware and engaged in what is happening in and around their community.

The absence of a shared community economy distinguishes cohousing from other forms such as communes or kibbutz. Each household maintains its autonomy. In the typical operation of a commune, all assets of the community are owned by the entire community. Many kibbutzim are set up with the community operating a business and most of the members of the community are also employees of the business. However, the company's income is the community's income, rather than each employee being paid individually. It may be more likely that neighbors would help one another out economically in a cohousing community, but there is no linkage between a household's economy and that of the community.

While common meals are typical in most cohousing communities, these are done to facilitate community interaction as much as they are for the time and economic benefits of having shared meals together on a regular basis. The shared dinners are an opportunity for neighbors to socialize and spend time together.

Cohousing seeks to reestablish a sense of community which many of its residents feel is lost in other living situations. By providing opportunities to encourage interaction between neighbors, the community promotes this neighborliness.

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Designing for openness rather than for privacy is an important feature. (Jan Gudmand-Høyer stated, "I can design for as much privacy as you want...") Closed curtains are far better than not having any opportunity to open them at all. However, the best case is when a design allows a space to have openness at the same time as it allows for a sense of privacy for the individual unit. This is the intent behind the design of a cohousing community.

Especially in the United States, environmental concerns are an important factor in many people's decisions to live in cohousing. The ability to "live more lightly upon the land" through the sharing of resources in a cohousing community is an important point for many people, both present and potential cohousing residents.

Cohousing has continued to grow both in the United States and abroad. According to a 1987 Danish government report, there were 33 projects in place in the country containing 790 units.³⁴ In the United States, there were 25 cohousing communities which had been completed. By 2004 this number has now risen to 76 completed, and nearly 100 others in formation or developmental stages.

LEGAL ORGANIZATION

Since cohousing is a relatively new and unconventional form of housing, the legal issues of organization and operation can present additional hurdles in the process of creating a cohousing community. Banks and other lending institutions are not entirely sure yet how to deal with these projects, because they do not fit into the 'normal' forms that most housing occupies. Also, community zoning must often be fought and special variances received in order to construct these projects. Sometimes these difficulties can cause setbacks and delays in the development process. But newer communities have been able to draw on the experiences of earlier cohousing groups and are able to present those communities as examples of the successful operation of these projects when faced with skepticism from officials.

³⁴ Dorit Fromm, <u>Collaborative Communities</u> (New York: Van Nostrand Reinhold, 1991) 22-3

Cohousing communities are most commonly organized as condominium developments in the United States because of the basic similarity in legal organization and division of ownership between the two, though there are also a number of communities organized as co-ops. Different states and jurisdictions sometimes have laws that effectively mandate how a community can be formed. It has proven to be easier to obtain mortgages when the community is organized as a condominium, since the banking and real estate industries and the community officials who have to deal with these communities are familiar with that form of ownership. Insurance concerns can be another problem area, though this is now often less of an issue when a condominium model is used.

In many instances, it is the early stages of planning and development that can be one of the biggest obstacles to creating cohousing communities. Because cohousing communities are self-organizing groups, rather than projects assembled, marketed, and sold by developers, it is often at this stage of the formation of the community where organizational difficulties arise. While a traditional real estate developer may exist in some corporate form, a newly forming cohousing community has to first create a group in order to develop the community. Because different prospective members have different levels of commitment and different levels of resources they are able to commit to the group, this stage of organization can be particularly difficult in the process of negotiating the creation of a new community.

There are also concerns from the lenders about the sale of a unit when one member moves out. Likewise, because of the level of involvement from its members in the community that cohousing requires, most groups try to attract new members who will be active participants in the community when there is member turnover in dwelling units.

OTHER FORMS

There are other forms of community which are similar to cohousing, but which do not share all of the features that typically characterize a cohousing community. Some of these are identified as "intentional communities" or "collaborative communities." Another contemporary movement in this country is the "eco-village," and while some

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cohousing communities are also eco-villages, the two terms are not, strictly speaking, interchangable. For example, Eco-Village at Ithaca (NY) is also a cohousing community, but there are other eco-villages which are not also cohousing communities. "An eco-village is a human scale, full-featured settlement which integrates human activities harmlessly into the natural environment, supports healthy human development, and can be continued into the indefinite future."³⁵ The eco-village movement seeks to "live more lightly on the land," a concept which includes sharing resources and minimizing the environmental impact of one's lifestyle. While these are often issues which cohousing communities embrace, they do not address the community nature of cohousing.

Some inspirations for the cohousing movement can be seen in other forms of collective living. There are similarities between cohousing and the kibbutz which is found primarily in Israel. Likewise, communes and co-ops share some similarities with cohousing, but none of these are, strictly speaking, cohousing. The co-op form of community organization has been used only very rarely for cohousing. However, this creates far more legal entanglements than most communities have wanted to deal with. The most popular form of organization for cohousing communities has been the form of a condominium.

Cohousing is not a commune. A cohousing community differs from a commune in several important ways. In a commune, there is little, if any, definition of private space or private property. Everything is shared and the distinctions between public and private are broken down as much as possible. This is different from communes in that each individual owns his or her own unit, rather than all facilities belonging to all, with no private ownership (or private space) at all. The emphasis is on cooperation, rather than on sharing. The difference is small, but important.

Communes also tend to be more ideologically fixed, with a central organizing principle to which all members adhere. In contrast, cohousing maintains the individual integrity of each family. Each unit in a cohousing community is a separate family dwelling. Also,

³⁵ http://www.gaia.org/evis/whatisecovillage.html copyright (c) 1995 Gaia Trust, Denmark

while a commune would typically replace individual facilities with group facilities (group kitchen and dining facilities, group toilets, etc.) a cohousing community retains them. Thus each individual home in a cohousing community has kitchen, dining and bath facilities, although there are also common dining facilities as well. In a commune there is a much higher degree of group activity. For example, almost all activities such as meals are communal affairs, whereas in cohousing, only some of the meals are shared by the entire community, and other meals are taken in one's own home.

At the other end of the spectrum, a typical condominium has none of the community intentionality that cohousing does. Condominiums are often used as the legal model for organizing cohousing ownership, and there are some similarities between the two. While many condominiums may have some community features similar to cohousing communities, such as laundry rooms, game rooms, common lounges, and the like, features such as the common house are not usually found in condominiums. No special design importance is given to any features that accentuate or support neighborliness in the condominium.

The principal differences between the two, however, are that a condominium is generally a for-profit project built by a developer on speculation whereas a cohousing project is instigated by the individuals who intend to live there. A condominium association often retains outside management of some of its functions, while cohousing is internally directed. While both may have some community amenities and facilities (parlors, recreation rooms, and the like), a major feature of a cohousing project is the common house. This is a communal space with kitchen and dining facilities where common meals are shared. It is also used as a community meeting space for both meetings of the residents (management meetings) as well as for social gatherings (clubs, etc.).

COHOUSING LIVING

Cohousing is participant driven community. It is a neighborhood that is managed and operated by its residents. The development, management, and day-to-day operation of the community are all internally controlled. Unlike a condominium, which is often built

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speculatively by a developer, cohousing is a process which begins well before the construction of the buildings.

The development of a cohousing project is a collaborative process. Much of the impetus to create cohousing communities includes the desire to shape the built form of the community. The process of developing the project is highlighted as one of the important elements that brings together the community. By having a shared experience in the development of their community, the members of the community have a close bond that they have developed during the course of the project. Because they have worked through the issues that were faced during this process, they have (or believe that they have) a better group dynamic that allows them to work through the process of managing their community.

The nature of the participatory process in cohousing is not without its drawbacks. Members who join the community at the earliest stages have an opportunity to influence much more of the process (land selection, early design issues, even such things as membership criteria or the size of the community, etc.) while those who join later do not have a chance to participate in the decisions about those issues. These can be a source of friction between members. Furthermore, members who join an existing community do not have the ability to participate in the community-building process.

Cohousing is an intentional community. Therefore, the residents (at least the initial group) know each other and have worked together in order to develop and build their new homes. The forces that bring these groups together can also prove to be divisive. Higher levels of social interaction can be problematic as well as beneficial.

Self-management is one of the most important distinguishing features of a cohousing community. Like a co-op, the membership is all encompassing (though some cohousing communities divide representation by family or by dwelling unit, while others give each household member (usually of a minimum age) individual voting rights in the community

process. This best exemplifies the credo of Jan Gudmand-Høyer that "a housing program should not be carried out for people, but by people."³⁶

It is the self-organization of cohousing communities that makes this form so connected to the post-industrial period.

"The study of how order arises -- not as the result of a top-down mandate by hierarchical authority, whether political or religious, but as the result of self-organization on the part of decentralized individuals -- is one of the most interesting and important intellectual developments of our time.

"The idea that social order has to come from a centralized, rational, bureaucratic hierarchy was very much associated with the industrial age. The sociologist Max Weber, observing nineteenth-century industrial society, argued that rational bureaucracy was, in fact, the very essence of modern life. We know now, however, that in an information society neither governments nor corporations will rely exclusively on formal bureaucratic rules to organize people. Instead they will decentralize and devolve power, and rely on the people over whom they have nominal authority to be self-organizing. The precondition for such self-organization is internalized rules and norms of behavior, a fact that suggests that the world of the twenty-first century will depend heavily on such informal norms. Thus although the transition into an information society has disrupted social norms, a modern, high-tech society cannot get along without them and will face considerable incentives to produce them."³⁷

Cohousing is also seen as providing economical benefits because so many facilities are shared, rather than each household having to own more than it ordinarily needs. Because the individual dwelling units are usually smaller than the corresponding residential houses from which their members come, families who move into cohousing communities are able to downsize their furniture and possessions. Community facilities often allow a family to forego having rarely used space in their own home, because it is available in the community. Common meals are served in most communities at least a few nights a week. In addition to the budget advantage that this provides, there are also economies of time, when many more of a family's meals are prepared by others, freeing up time for the

³⁶ Kathryn McCamant and Charles Durrett, <u>Cohousing</u>, 134

³⁷ Francis Fukuyama, "The Great Disruption, Human Nature and the Reconstitution of Social Order," Atlantic Monthly, May 1999, 56

rest of the members of the community.

CHILDCARE

Both Jan Gudmand-Høyer and McCammant and Durrett raised their concern for a good place to raise their children as one of the driving factors which led them to consider cohousing. The care and raising of children was one of the first issues which led to the formulation of the cohousing model. One of the key items that helped trigger the original Danish projects was an article by Bodil Graae entitled "Children should be raised by 100 parents." This article outlined the idea of a broader community as a superior place for children to grow up. Having a larger number of peers and adults with whom they learn to interact gives children raised in wider communities better social skills than their contemporaries who live in more traditional and isolated settings. Children raised in cohousing have more early social experiences and learn to interact both with other children and with adults at an early age.

Most people involved in cohousing agree that a diversity of ages and family types is important for a cohousing community. Many cohousing communities also seek to promote diversity in the age of their members as well as in their racial makeup. This, too, is seen as a benefit to the children raised in these communities. Where many other contemporary neighborhoods are tending towards greater homogeneity, the diversity afforded in cohousing is another strong benefit this form of housing has to offer.

McCammant and Durrett note that Trudeslund is an ideal place for children to live. At the time that their book was written, there were 50 children living at Trudeslund.³⁸ There are certainly advantages in having a large "extended family" of a cohousing community to take care of children when no parent is able to watch over the children. Cohousing communities may set up regular childcare programs that are available for all families in the community. Or, in some circumstances, when the matters are less regularly scheduled, it is easier to find spontaneous care for children among community neighbors. Arrangements like these may be set up on a reciprocal basis. Whether or not this

³⁸ Kathryn McCamant and Charles Durrett, <u>Cohousing</u>, 25

becomes a situation where some members of the community take advantage of other members (two working parents expecting the non-working adults to serve as childcare workers to oversee their children) could be a problem in a community where this relationship was not clearly laid out in advance.

COHOUSING CASE STUDIES — Site & Structure

Five case studies are examined here, three in Denmark and two in the United States. Skraplanet was one of the first cohousing projects built. Trudeslund and Jystrup Savvaerket are also Danish examples. Muir Commons was the first cohousing project in the United States, and Winslow Cohousing is another community in the US. All five are roughly similar in size (ranging from 21 to 33 units).

The form of these projects does not conform to any single, definitive pattern. Rather, they range from the freestanding, single-family houses, as at Skraplanet, to the plan of Justrup Savvaerket, where all of the units are incorporated into one building. While the covered street at Jystrup Savvaerket makes a great deal of sense for a Danish site, with its harsh winters, it is a form that is less likely to be adopted for more temperate locations such as California or even Seattle.

Within these variants, however, a number of common features have emerged. The common spaces between the units are reserved for pedestrians, and automobiles are constrained to the periphery of the project. Moreover, the pedestrian space is designed to serve as both circulation and informal social gathering space. The pedestrian spaces are not only for circulation, but are meant to serve as well as places for neighbors to gather and children to play. It is part of the image of a small village which is generally very important to people who join cohousing communities.

A common house is another feature common to cohousing projects. This building incorporates a kitchen and dining facility where common meals are conducted. This space is also used for social gatherings (both formal and informal) as well as for community meetings at which decisions about the operation, maintenance, etc. of the

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community are made.

Generally, these projects are somewhat isolated from the larger communities to which they belong. Some, like Jystrup Savvaerket are strongly isolated. But, Skraplanet, Muir and Winslow all seem to follow a pattern not unlike the suburban communites they are located in, enabling them to fit in to their surrounding context.

These projects also differ in the ways that they relate to the larger community. Skraplanet makes no special effort to give any emphasis to its common house; in fact, it is very much hidden in the middle of the dwelling units. Winslow has a pedestrian entry at one corner which leads along a meandering path up to the common house, and on the other side, a formal arrival circle for vehicles is directly adjacent to the central crossing of the axes of the project which is the central space for the community and the space directly in front of the common house. Muir Commons goes even further and uses its common house as the public face for the community.

All of these projects have isolated parking for cars away from the center of the community. The central circulation throughout the project is pedestrians-only. Jystrup Savvaerket, Trudeslund and Muir Commons all have a similar circulation pattern, in which there is only a single "pedestrian street" with the common house in the middle. At Jystrup Savvaerket and Trudeslund this street is bent at a 90-degree angle at the common house, while Muir has just a single straight street. Winslow has just a slightly more complex plan, with two perpendicular streets which cross in front of the common house, plus another arm which goes off at an angle to the first two. Only Skraplanet has a multiple path circulation through the project.

Trudeslund, Muir Commons and Winslow all incorporate gardens for food growing (and both Muir and Winslow have orchards as well).

Not all cohousing communities are purpose-built. There are examples, both in Denmark and in the United States, of communities that were developed using existing buildings.

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The N Street Community in Davis, CA began when neighbors banded together and began by tearing down the fences which separated their back yards. The houses are still individual freestanding units, indistinguishable from the non-cohousing context (although N Street is gradually growing by buying adjacent houses as they go on the market, as well as by getting its neighbors to join in with them.) Similarly, in Aarhus, Denmark, the Jerngarden community was the result of rehabbing eight urban houses and a junkyard behind them. And, at Marsh Commons in Arcata, CA, a former industrial site was converted into a cohousing community with over a dozen residential units.

THE POST-INDUSTRIAL COMMUNITY

The largest factor in determining the desirability of a post-industrial community will be the characteristics of the town or city in which that community is located. The larger context of any community contributes significantly to the overall character of that community. Civic identity is based on the town or city. While individual neighborhoods and smaller groupings have their own identity and characteristics, the identity of the city contributes much to the identity its of smaller constituent parts. Communities with strong identities are defined, in part, by their contextual setting.

The greatest challenge facing community developers in a post-industrial setting is the fracturing and division taking place in society. As mass-market systems give way to increasingly specialized and diverse interests, the differences between groups of people becomes heightened.

The more uniform we are, the less we need to know about each other in order to predict one another's behavior. As the people around us grow more individualized or de-massified, we need more information — signals and cues — to predict, even roughly, how they are going to behave toward us. And unless we can make such forecasts we cannot work or even live together.³⁹

³⁹ Alvin Toffler, <u>The Third Wave</u>, 155

People with different interests take more time and effort to understand, because the common base for understanding is smaller. Fewer assumptions can be made about how another may think or feel, and it requires further effort in order to understand them.

Just beyond the horizon of current events lie two possible political futures -- both bleak, neither democratic. The first is a retribalization of large swaths of humankind by war and bloodshed: a threatened Lebanonization of national states in which culture is pitted against culture, people against people, tribe against tribe -- a Jihad in the name of a hundred narrowly conceived faiths against every kind of interdependence, every kind of artificial social cooperation and civic mutuality. The second is being borne in on us by the onrush of economic and ecological forces that demand integration and uniformity and that mesmerize the world with fast music, fast computers, and fast food -- with MTV, Macintosh, and McDonald's, pressing nations into one commercially homogenous global network: one McWorld tied together by technology, ecology, communications, and commerce. The planet is falling precipitantly apart AND coming reluctantly together at the very same moment.⁴⁰

There can be two divergent responses to this impulse. One is to seek out an increasingly homogenous and familiar (and therefore predictable) set of neighbors with shared and familiar ideas and values, so that one is not confronted with anything (or anyone) who might be unfamiliar. This is certainly the primary driving impulse behind many gated communities and residential developments. In these type of projects, the developers burden the residents with extensive sets of covenants, conditions & restrictions (CC&Rs) that set all manner of limits on the development in order to promote a controlled and non-threatening environment to better market and sell the houses they are producing.

Where marketing and sales concerns are the primary reasons for the CC&Rs created by the developers of externally developed residential communities, the rules and regulations that a cohousing community adopts are internally chosen rules, rather than imposed by an external party with separate (and possibly competing) interests from the residents'. Even if they are given the same legal form and standing as those of a developer project's CC&Rs, where the legal hurdles that must be overcome to make any amendments are set

⁴⁰ Benjamin R. Barber "Jihad vs. McWorld" Atlantic Monthly, March 1992

extremely high, the rules governing a cohousing community are open to discussion and modification.

To some extent, as well, it might be argued that the cohousing impulse is a variant of that same, homogeneity-seeking drive. While one approach would say that people wanting to live in cohousing are also trying to minimize the information flow needed to understand their neighbors by seeking out other people who want to live in intentional communities. But cohousing communities tend to also self-select for supporting diversity, and having a range of ages, races, and other factors present in their community.

Thus, the other approach to deal with the need for an increased information flow is to create conditions and environments that enhance the information flow and availability. Rather than trying find neighbors who are as similar to themselves as they can find, they are actively seeking to put themselves in a situation where there is more interaction. This means that the signal level is higher and more information is available, so that they are better able to understand and work with a wide variety of people.

Cohousing also supports a richer model of information exchange. A community that creates opportunities for interpersonal interaction provides the information rich environment that will enable diverse people to cooperate and interact in a successful community. Where cohousing communities look to create diverse communities of acceptance, many other residential developments become enclaves of uniformity and suppression.

No community can be completely self-sufficient and self-contained. Any community that identifies itself primarily by its rejection of the wider setting in which it is situated or by its exclusion from the common features of its neighbors decreases the vibrancy and livability it provides.

It often seems that many Americans view community as a commodity; it is something that they want to be able to buy. Article after article in magazines and newspapers talks

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about the desire for community, building stronger communities. It is a recurring theme in countless political speeches. Community is held out as an ideal, yet many people live in "communities" that are remarkably anti-community in their configuration and operation.

The Disney Corporation built a neighborhood (Celebration, FL) adjacent to its themepark complex and marketed it to potential residents as a return to community. But rather than turning over the operation of the community to the residents, the Disney Corporation kept a strong hand in the affairs of the town, with extensive restrictions on the physical character of the neighborhood.

"The small town life that Americans long for when they are depressed by their city apartments or their suburban bunkers is really a conceptual substitute for the idea of community. But community is not something you have like a pizza. Nor is it something you can buy, as visitors to Disneyland and Williamsburg discover. It is a living organism based on a web of interdependencies — which is to say, a local economy. It expresses itself physically as connectedness, as buildings actively relate to one another, and to whatever public space exists, be it the street, or the courthouse square, or the village green. "Most important," Wendell Berry writes, "it must be generally loved and competently cared for by its people, who, individually, identify their own interest with the interest of their neighbors...." That notion of community began to vanish in America after World War II. We have paid a lot of lip service to the idea, and indulged in a lot of easy nostalgia about it, but our small towns have never been worse off than they are now."⁴¹

The restrictions in Celebration, like those found in countless other developer driven residential communities, served as elements that caused friction between residents, as well as conflict between the residents and the Disney Company⁴². With a restrictive and prescriptive set of rules in place, the residents were constrained from making the changes or introducing new elements to their community that they would have chosen for themselves. The direction of the community became a source of conflict between the residents and the developer, and led to disputes over the schools, the further development of the property, and other issues.

⁴¹ James Howard Kunstler, <u>Geography of Nowhere</u>, 185-6

⁴² Michael Pollan "Town-Building Is No Mickey Mouse Operation" New York Times Magazine, Dec. 14, 1997, 56-63

At the same time, there is a long history of exclusionary living. Racial covenants were used by both developers and groups of neighborhood residents to restrict ownership.⁴³ While racial restrictions have been severely constrained by the courts, there is a trend for economic restriction and clustering. The governing regulations for many communities are arranged to protect the value of the neighborhood by restricting the character and allowed uses of property within the development.

The form taken by contemporary suburban and ex-urban sprawl may be housing that is more characteristically post-industrial. Perhaps more fittingly than others, the individuated, isolated exurban tract home is the prototypical Third Wave dwelling. As post-industrial work is not connected to place, so too are these houses detached from centers of work. While industrial-era suburbs were still organized around the industrial centers of cities where the jobs were found, newer developments no longer are connected to work in the same way. Edge cities are collar communities surrounding an industrial era urban core⁴⁴. Post-industrial work has move away from urban centers, and is increasingly found in the outlying edge cities. And new development has likewise spread to the outlying suburbs and communities that encircle the urban centers.

But all too often, the present governing structures in place to guide development steer projects toward sprawl rather than toward the creation of new communities. One of the biggest obstacles to community is the contemporary zoning ordinance.

As sprawl spilled over the countryside, alarmed town officials passed laws designed to mitigate it, which had the unforeseen consequence of making it worse. One common response was to increase the minimum lot size in the mistaken belief that spreading houses farther apart would preserve the open character of the landscape. In fact, it had the opposite effect: it ruined rural landscape in larger chunks. A two-to five-acre-minimum lot requirement meant houses were being plopped down in the middle of every cow pasture. The scraps of land left between the houses weren't used for anything. They were "too big to mow, and too small to plow," in the words of Robert Yaro, Randall Arendt's

⁴³ Evan McKenzie, Privatopia (New Haven: Yale University Press, 1994), 70-72

⁴⁴ Joel Garreau, <u>Edge Cities</u>, (New York, Doubleday, 1991).

former boss, now an officer with the regional Plan Association in New York City.

The deeper truth, as Randall Arendt realized, was that typical zoning laws not only failed to protect the landscape, they virtually mandated sprawl. To reproduce anything resembling a traditional New England village had become illegal, a violation of all codes, acreage requirements, setbacks, street widths, and laws insisting on the separation of uses. So towns end up splattered all over the countryside while the countryside completely lost its rural character. All you could build in present day New England was Los Angeles.⁴⁵

Common-interest developments and planned-unit developments are often this kind of non-community, where people live in proximity to one another, but where the vitality of a community never develops. Proximity and community are not the same thing.

Neighborliness is a feature that has diminished over recent years. Community is a sense of belonging. When we feel a connection with other people in a place, we have a sense that we are a part of that community. Community bonds are formed when common interest is recognized.

I believe that we are entering an era when small towns will be valued again, and that out of necessity we will reinvent truly local economies using local assets and resources. An old town like Schuylerville [NY] has one particular hidden asset placing it at an advantage over the present power places in America: It isn't a suburb. When the suburban economic equation fails in America, the physical arrangement of life will fail with it, and many Americans will be stuck in places that no longer function. Schuylerville does not have to be retrofitted to function as a coherent town in the future; it already is one, neglected and tattered as it may be.⁴⁶

The amenities and resources that are available will be at least as important as the internal characteristics of the local community. Neighbors aren't enough to create a desirable neighborhood. Other features and amenities such as a local cafe and quick access to shops or businesses are also important and necessary to an overall sense of "whole neighborhood." A neighborhood may have congenial neighbors, but without other features it will remain undistinguished, though perhaps pleasant.

⁴⁵ James Howard Kunstler, <u>Home from Nowhere</u>, 264

⁴⁶ James Howard Kunstler, Home from Nowhere, 186

Cohousing has the capability to create and support a complex community. Other forms of development are locked into fixed forms in which community is unlikely to develop to anything near the same extent. When top-down control is exerted, the potential for the development of other features is difficult.

COMPLEXITY

Researches in a wide range of scientific fields are broadly grouped under the heading of complexity. While a clear and all-encompassing definition for the term "complexity" may remain elusive, in general, it is applied to systems whose behavior is understood by the interactions of elements, rather than as static systems. Complexity encompasses fields as diverse as mathematics, physics, economics, biology, engineering, and computer science. Many of the researchers working in complexity have been able to study particular behaviors through the use of computer models. Instead of examining phenomena as undifferentiated systems, in many cases, the researchers have taken the approach that the actions and interactions of the many numerous discrete components of a particular system give rise to the higher ordered effects that are attributed to complex behaviors.

Complexity theory provides a number of insights into approaching questions about systems not as reductivist problems that can be definitively solved, but rather looking at them as dynamic systems. Systems evolve and change over time, and may respond differently to the same stimulus depending on other factors, both those internal to the system and those outside it. As the philosopher Heraclitus noted, "You cannot step twice into the same rivers; for fresh waters are ever flowing in upon you."⁴⁷ Although at one level, the starting conditions may appear to be the same, different results will be obtained as the internal workings and interrelationships that develop that system respond differently.

⁴⁷ Heraclitus, quoted in Roger von Oech, <u>Expect the unexpected</u>, (New York: Free Press, 2001)

One characteristic of most complex systems is that their behavior is only partially deterministic. One can sometimes predict the broad outlines that a particular system may follow, but the particular course is almost impossible to predict. Such behavior was once thought to be indicative of systems too chaotic to be understood rationally. While the parameters and variables needed to calculate the direction in which a wisp of smoke will curl as it rises from a chimney may be too difficult to collect in order to reliably make that prediction, an understanding of the variables and dynamics that govern how a wisp of smoke curves and dissipates as it rises can be had. In many cases, complexity does not provide exact specific answers to particular questions, but rather provides an understanding of how a system is likely to behave depending on the forces acting on that system.

Complexity also refers to cases where a particularly complicated effect arises from relatively simple and basic elements. Applying a small number of simple effects repeatedly on a wide scale can lead to very rich effects. The figure known as the Koch Snowflake is one example that helps to illustrate this kind of complexity.

The process for the creation of the Koch Snowflake (or the Koch Curve) is very simple ,and starts with a single line segment. For each line segment, the middle third is used to create an equilateral triangle:

One can imagine that it was created by starting with a line segment, then recursively altering each line segment as follows: 1. divide the line segment into three segments of equal length. 2. draw an equilateral triangle that has the middle segment from step one as its

base.

3. remove the line segment that is the base of the triangle from step 2^{48}

This creates a figure with a very convoluted, although regular, appearance (illustration on following page). Since this process can be repeated infinitely, the length of the line is infinite, although the area bounded by this line is obviously finite. The area of a Koch snowflake (a figure formed by starting with an equilateral triangle and then generating a

⁴⁸ http://en.wikipedia.org/wiki/Koch snowflake

Koch curve on each leg of the triangle) is 8/5 of the area of the initial triangle.



Koch curves: iteration 1 (upper) and iteration 5 (lower)

Simple systems can generate complex results. Processes akin to this are used in computer graphics rendering systems to create realistically varied textures and surfaces. As in the Koch snowflake, repeated iterations of a basic rule set are used to create a more naturalistic range of variation.

Another famous thought problem that examines this question, "What is the length of the coast of England?" turns out to be considerably more complex than it might first seem. What would seem to be a fairly straightforward question actually proves to be a difficult, and to some extent, even unsolvable, problem.

As one looks closer and closer at the coastline, more and more detail, more and more variation, becomes apparent. If one measures the coast with a mile-long measure, one resulting length is found. However, if the scale of measurement is changed to an eighth of a mile, more detail can be incorporated, and the measured length of the coast actually increases. Small inlets and variations in the coastline that were not big enough to measure at the one mile scale become apparent when the scale is reduced. Reduce the measure to one yard, and the resultant length becomes vastly larger still.

Such complex figures were studied by the mathematician Benoit Mandelbrot, who coined the term "fractals" to describe complex forms that can best be described when considered as having fractional dimension. A line has one dimension, namely length. A coastline has more than one dimension, but not two.

"To introduce a first category of fractals, namely curves whose fractal dimension is greater than 1, consider a stretch of coastline. It is evident that its length is at least equal to the distance measured along a straight line between its beginning and its end. However, the typical coastline is irregular and winding, and there is no question that it is much longer than the straight line between its end points.

"There are various ways of evaluating its length more accurately.... The result is most peculiar: coastline length turns out to be an elusive notion that slips between the fingers of one who wants to grasp it. All measurement methods ultimately lead to the conclusion that the typical coastline's length is very large and so ill determined that it is best considered infinite. Hence, if one wishes to compare different coastlines from the viewpoint of their "extent," length is an inadequate concept.

"...[T]he main finding is always the same. As (E) is made smaller and smaller, every approximate length tends to increase steadily without bound."⁴⁹

Trying to map increasingly fine levels of detail leads to exponentially more length. The more closely the problem is examined, the larger (exponentially) it becomes.

Emergence is another property of many complex systems. Emergence refers to a case where the behavior exhibited by the system is more than the sum of its elements.

⁴⁹ Benoit B. Mandelbrot, <u>The Fractal Geometry of Nature</u>, (New York: W. H. Freeman and Company, 1983) 25-7

"[P]sychology is more than applied biology, and biology is more than applied chemistry."⁵⁰ Even the properties of water are not something that one might predict, when considering that its constituent elements, hydrogen and oxygen, are two of the most reactive elements known.

FLOCKING

The flocking of birds appears to be a very difficult, complex, and high-order behavior. How they learn to act in concert and coordinate their activity to act in such a fashion has been a subject of scientific study. Flocking is also an excellent example of an emergent property.

A flock of birds, to an outside observer, is a complex community. In a flock, a large number of birds are able, through some mechanism, to coordinate their movement and to behave in this large scale manner. Flocking behavior does not come from a leader ordering the rest of the flock how to behave.

The research of Chris Langton demonstrated a simple model of this kind of behavior.⁵¹ Instead of prescribing a set of rules for the behavior of the whole, or for the group as a whole, a few rules are specified for each "agent" (each individual) in the group. The behavior of each of these agents, as they follow these rules, contributes to emergent properties for the group. Langton created a three dimensional computer model space and populated with a number of agents called "boids" as well as various obstacles in the simulated environment. Rather than being directed by a set of external guidelines, each boid acted individually within the model.

Each boid followed three simple rules of behavior:

1. It tried to maintain a minimum distance from other objects in the environment, including other boids.

2. It tried to match velocities with boids in its neighborhood.

⁵⁰ M. Mitchell Waldrop, Complexity (New York: Simon & Schuster, 1992) 241 ⁵¹ ibid, 241

3. It tried to move toward the perceived center of mass of boids in its neighborhood.

What was striking about these rules was that none of them said, 'Form a flock.'52

Within the computer model, the boids would be scattered throughout the space, and then the model would be started. What Langton discovered that the boids would quickly come together and form into a flock. As the boids moved about within the computer model, they stayed clustered together, moving together as a group. In short, they acted much the same as a flock of real birds.

This example shows how a few individual rules can cause a global behavior which is not directly created by any specific rule. The concept of "flock" is something outside the set of rules governing the behavior of the boids. It is not a rule which says, "Make a flock," but rather the multiple iterations (interpreted by each boid agent individually as it interacts with its neighbors, its environment, and the whole community) of the few individual rules which each boid follows which combine to create complex behavior.⁵³

Each agent operates according to its own local response to the rules. But larger effects are seen in the group as a whole, beyond those suggested by the rules governing the agents. One might examine the rules which govern the actions of each boid and make some assumptions about how a boid in action might operate. But complex behavior of the group is not easily associated with the rules which establish the behavior of the agents, and the emergent property of a group of boids forming a flock could be missed, until one actually saw the boids acting.

When a group of agents begin to act in relationship to one another, patterns of a higher order of complexity than what may be suggested by the operating rules can emerge. In the same way, the idea of community can be seen as an emergent property. When considering a group of dwellings, for example, interrelationships between the inhabitants can develop complexities of mutual support, defense, communication, etc. Individually,

⁵² M. Mitchell Waldrop, <u>Complexity</u>.

⁵³ ibid, 279.

each dwelling relates (or does not relate, as the case may be) to its neighbors based on local criteria. However, the activity of the larger group may exhibit features more complex than the individual relationships.

The difference is that the interactions that take place between the agents may or may not be sufficient for an emergent community to develop. The rules which govern the interactions between the agents must be such that they contribute to emergent properties of community. The relationship between agents may be limited or almost completely cut off, or it may be well developed, depending on the arrangement of those units in the environment. The rules for interaction will be determined by the organization and construction of each unit.

Proximity alone is not sufficient to form a flock, or a community. The rules which structure the behavior of the agents are what establish the interrelationships which form the community. In the built environment, the construction of the individual units can contribute heavily to the character of those rules.

Complexity theory holds that many seemingly complex patterns or systems are really made up of multiple iterations of simple rules. Emergent behavior, where the whole is greater than the sum of its parts, occurs particularly in cases where complex systems are allowed to develop. Emergent behavior is frequently unexpected from the standpoint of an observer who is only looking at the ruleset followed by a single element of the set.

At the same time, each operator in a complex system must have sufficient freedom to be able to interface and interact with one another. A group of birds may form a flock, but a group of birds in cages is not a flock. The cages represent — act as — a hierarchical control system. Flocking is limited by an external control system. Agents must have an amount of autonomy in order to develop and manifest complex behavior. With a system that relies on external or hierarchical control, opportunities for emergent behavior are excluded or severely limited.

INCREASING RETURNS

Another principle of complexity is that of increasing returns. Much of the research into this principle, which seemingly contradicts many well-established principles of classical economics, was first undertaken by the economist W. Brian Arthur.

As understood by classical economics, supply and demand operated together, and the system tended toward equilibrium. "[I]n a system of goods and demand for those goods, prices will always tend toward a level at which supply equals demand."⁵⁴ But economists who approached their study from another perspective found that sometimes systems behaved differently.

A key example of increasing returns is found in the case study of consumer video recorder (VCR) technology. When these devices were first introduced to the market in the 1970s there was competition between two separate formats for videocassettes. Both VHS and Beta started from a relatively equal position and competed head-to-head for a share of the growing market. Both technologies were introduced to the market at roughly the same time. However, the two systems were not compatible with each other. A movie recorded in one format could not be played on a player that used the other format. Therefore, each consumer making a purchase needed to decide and make a selection between the two systems. (Very few consumers chose to purchase two separate machines in order to have compatibility with both systems.)

Over time, the competition between the two systems began to tilt the field in one direction (in favor of VHS). Because more consumers appeared to be adopting that format, merchants began to stock more material. But what caused the consumer preference to tilt in this direction? How did VHS format come to be preferred over Beta format, despite a general view that Beta was the technically superior format? What forces were at work in driving one format into extinction and making the other the defacto standard for many years?

⁵⁴ John Casti, <u>Complexification</u>,(New York: Harper Collins, 1994) 41

"Each format is subject to increasing returns with increasing market share: large numbers of VHS recorders encourage video outlets to stock more prerecorded tapes in VHS format, thus increasing the value of owning a VHS recorder and leading more people to buy one. (The same would, of course, be true for Betaformat players.) As the two systems compete a small lead in market share may enhance the competitive position of one of the systems and help it further increase its lead.

"Such a market is initially unstable. Both systems were introduced about the same time and thus started with roughly equal market shares, but those shares fluctuated early on due to external circumstance, "luck" and other actions by companies maneuvering for position. Increasing returns on early gains eventually tilted the competition toward VHS: it accumulated enough of an advantage to take essentially the entire VCR market. However, it would have been impossible at the outset of the competition to say in advance which system would win. Furthermore, if the claim the Beta was technically superior is true, then the market's choice does not represent the best economic outcome."⁵⁵

Although both systems started from roughly equal positions, each one developed certain advantages over the other. In some cases, new movies were available exclusively in one format or another. New features and improvements to the development of new models on one side or the other would add their influence to the decisions of consumers looking to by a system. People with video cameras would exert influence, either directly or indirectly, on the decisions of friends and family with whom they wanted to be able to share their home movies. Buyers would also take into account what local sources for content were available. Local video rental stores would in some cases have a more extensive collection in one format or the other. Altogether, these numerous, diverse influences together combined to swing the pendulum towards the VHS format. Once the trend started to move in that direction, more and more consumers followed the trend and selected the VHS format, because it seemed to be gaining in popularity, adding their own choice to the momentum in that direction and making it, in some ways, a self-fulfilling prophecy.

This is what makes it the "law of increasing returns." A sale of one unit in such a market has a value of greater than one. Because each sale represents an increasing share of the total market, and an increase in the likelihood that other buyers will favor the product, as

⁵⁵ W. Brian Arthur "Positive Feedbacks in the Economy" <u>Scientific American</u>, February 1990: 92-99

well. As one particular choice in a competitive market gains sales, it has a tendency to increase its share of the market.

These principles apply not only to consumer goods, but can be found at all levels of the economy. In business, as well, the same effect can be noted when multiple businesses cluster together in an area. If classical economics was the only factor, one would expect to find competing businesses evenly distributed across the country. But, instead, there are centers of technological development, with numerous competitive and interconnected businesses all in the same industry all located close to one another, such as the computer and computer-related businesses throughout Silicon Valley.

"Entrepreneurship/seedbed/creativity theorists ask: Why have some locations (such as Austin [Texas], Route 128 [Boston, Massachussets], and Silicon Valley) been economically more dynamic than others, and what role can public policy play in creating and fostering these conditions?(13) Andersson provides a general answer: "Creativity as a social phenomenon," he says is "primarily developed in regions characterized by high levels of competence, many fields of academic and cultural activity, excellent possibilities for internal and external communications, widely shared perceptions of unsatisfied needs," and synergies among local actors. He and others suggest that these conditions can be influenced by public policy, including the creation of research parks. These conditions are also related to city size, since larger cities typically provide a wider variety of services and greater agglomeration economies than smaller cities do.(14)"⁵⁶

In cases such as these, a number of factors serve to provide increasing returns as more and more companies in the industry located in the same region. Elements such as the proximity of several esteemed universities with strong research programs in the fields of computers and electronics helped to "prime the pump" for businesses to follow. But even they are, to some extent, responding to the forces acting in their vicinity. Just as businesses increase the desirability of the region for people working their particular field as more businesses come to the area, more and more academics will be drawn to the region as well because of the proximity to the cutting-edge businesses (which in turn

⁵⁶ Michael I. Luger and Harvey A. Goldstein, <u>Technology in the Garden</u> (Chapel Hill, NC: University of North Carolina Press, 1991) 18-19

draws still more businesses to the area while at the same time generating new spin-off businesses from new discoveries arising from academic research...)

"Suppose that firms enter an industry one by one and choose their locations so as to maximize profit. Also suppose that firms' profits increase if they are near other firms (their suppliers or customers). The geographical preferences of each firm (the intrinsic benefits it gains from being in a particular region) vary; unknown chance events determine the preferences of the next firm to enter the market.

"The first firm to enter the industry picks a location based purely on geographical preference. The second firm decides based on preference modified by the benefits from locating near the first firm. The third firm is influenced by the positions of the first two firms, and on. If some location by good fortune attracts more firms than the others in the early stages of this evolution, the probability that it will attract more firms increases. Industrial concentration becomes self-reinforcing. The random historical sequence of firms entering the industry determines which pattern of regional settlement results. But the theory shows that not all patterns are possible. If the attractiveness exerted by the presence of other firms continues to rise without levelling off as more firms are added, the only possible solutions are where one region dominates and shuts out all others. If the attractiveness levels off, other solutions become possible where regions share the industry. Our new tools tell us which types of solutions can occur under which economic conditions.

"Do some regions in fact amass a large proportion of an industry because of historical chance rather than geographical superiority? Santa Clara County in California (Silicon Valley) is a likely example. In the 1940's and early 1950's certain key people in the US electronics industry—William Hewlett and David Packard, the Varian brothers, William Shockley—set up shop near Stanford University; the local availability of engineers, supplies and components that these early firms helped create made location in Santa Clara extremely advantageous for the 900 or so firms that followed. If these early entrepreneurs had preferred other places the densest concentration of electronics in the country might well have been somewhere else. Not every location might have been suitable, but certainly many other university towns might have been candidates."⁵⁷

In the same way, the law of increasing returns can also contribute to an explanation of why some places are more desirable to live in than others are. The maxim used by real estate agents holds that "the three most important things about selling a property are 'Location, location, and location.'" This adage reflects a version of the law of increasing returns as applied to residential real estate sales and neighborhood desirability. As an

⁵⁷ W. Brian Arthur "Positive Feedbacks in the Economy" <u>Scientific American</u>, Feb 1990: 92-96

area becomes desirable to live in, more people want to live there, which, in turn, increases the desirability of the place even more.

The gentrification of neighborhoods works in the same way and is another specific example of residential increasing returns. While the initial forays into a particular area may be driven primarily by individuals seeking inexpensive real estate, they also blaze a trail for subsequent groups and individuals to follow them into that neighborhood. Over time, the desirability of the neighborhood increases with more people moving into the area and furthering the sense of desirability about the place. The positive feedback cycle works to extend the reach of the transformation brought about by gentrification.

Most often, there are other amenities, beyond the simple availability of housing, that contribute to this pattern. The proximity to workplaces, or to schools and shopping, or to restaurants and cultural institutions, or a vibrant night-life, are all factors that contribute to the desirability of a neighborhood.

At the same time, as the neighborhood develops, and more potential customers are located in the area, new businesses will become aware of the new opportunities and will locate their businesses in proximity to the neighborhood (providing still more increasing returns and further adding to the attractiveness of the neighborhood).

Seedbed technology centers, gentrification, Silicon Valley, are all examples of increasing returns processes in land use. Rather than running out the value, like a natural resource that has finite limits, and settling to an equilibrium, these are places where value increases. Neighborhoods that are perceived as being "livable" and "neighborly" have these same traits. Silicon Valley is an "increasing returns" case, because early adopters (technology companies such as Intel and Fairchild and Hewlett-Packard) were there, it was a fertile location for further companies to move into. Both new competitors and new suppliers were drawn to the area because the presence of other businesses made it a rich environment in which they could work and interact with one another.

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These effects do not arise out of a hierarchical system ordering their actions. Instead, it is the net effect of numerous individual decisions, each taken without consultation with the decisions of others (except perhaps in a very limited sense of seeing what others are doing at the same time) that gives rise to these complicated behaviors. Once researchers began to look at large systems not as events created and organized in a top-down managed fashion, but rather came about through the numerous small contributions of large numbers of similarly-acting elements.

Complex systems can often be better understood as a web of interactions among numerous elements which make up the system. Often the interactions of many small elements combine into unexpected patterns when viewed at a larger scale. The weather does not occur out of some external organizing principle which ordains the systems we recognize as catastrophic weather events (tornadoes, hurricanes, storms, and the like). Instead, it is the interactions of countless minor weather effects which, when the proper conditions arise, develop into feedback cycles which give rise to such high-order systems.

In order to create a community, an approach other than a "top-down" creation model is called for. A method suggested by the theories presented in Complexity would be one of creating housing with a few simple rules for them to follow, and then allow them to work within those guidelines, rather than trying to create a master system. Rather than prescribing a set of rules for the behavior of the whole, a few rules are created for each agent in the group. In this way, "local rules cause global effects."⁵⁸

RESILIENCY

One further characteristic of complex systems is that they are inherently resilient. While simple systems are subject to complete failure if one portion or one element fails, complex systems are less susceptible to total failure based on the collapse of one element. Cities and regions that were dependent upon a single resource or industry to support them are often faced with sudden collapse when the resource is tapped out, or is no longer economically obtainable. The classic example of the western mining town that died

⁵⁸ M. Mitchell Waldrop, <u>Complexity</u>, 241

when the price for gold or silver or whichever mineral was being mined shows the kind of susceptibility that simple systems face. In more recent years, small towns across the country have faced sudden economic upheaval and collapse when a large factory is suddenly relocated from the community. Communities with a greater diversity of businesses are more likely to be able to sustain themselves in the face of a plant shutdown.

"Self-designing processes are more robust if they are seeded with a wide diversity of elements."⁵⁹

The important factor for a system to be resilient is the opportunity for choice. In order to adapt, there must be alternatives available, otherwise the only options are to succeed in the assigned niche or fail. A town with a single factory has no other options for the displaced workers when the factory closes. But where there are several industries in a town, the closing of any one does not ruin the entire town, and the displaced workers have several other options available to them.

Local management of a project is better than an externally imposed system, because it is more attuned to local needs and is able to respond more quickly and appropriately. A resident-operated community has these benefits, while a similar grouping that relies on external management is less flexible, less adaptable and less able to respond to needs and changes that come along. Not only does self interest produce better results for the individuals involved, rather than subjecting them to the decisions of external control, but they are also more likely to be aware of the best options available in the vicinity, as well as having a sense of the possible negative repercussions that may be caused by some choices (which they will then strive to avoid).

There are limits to knowledge and therefore limits to management. David W. Orr puts it this way: 'The ecological knowledge and level of attention necessary to good farming limits the size of farms. Beyond that limit, the "eyes to acres" ratio is insufficient for land husbandry. At some larger scale it becomes harder to detect subtle differences in soil types, changes in plant communities and wildlife habitat, and variations in topography and microclimate. The memory of past

⁵⁹ Sim Van Der Ryn and Stewart Cowan, <u>Ecological Design</u>, (Washington DC: Island Press, 1996) 126

events like floods and droughts fades. As scale increases, the farmer becomes a manager who must simplify complexity and homogenize differences in order to control." (David W. Orr, Ecological Literacy: Education and the Transition to a Post-Modern World (Albany: State University of New York Press, 1992), 35-6.) Stewardship is quite different from management: it requires wisdom, restraint, and, above all, a commitment to and understanding of a particular place. Without enough "eyes to acres," the stewardship is impossible. Careful attention to detail is lost in the rush to control ever larger and more unwieldy systems.⁶⁰

Having local control provides both more directly involved control of the system as well as immediate and less filtered feedback. The operators of the system will make far better decisions if the results of their decisions are observed firsthand, rather than being reported (and distorted) through levels of messages to an external control.

Complex systems also require constant guidance and adjustment because they are not in a steady state. The ebbs and flows of the system keep it in a state of constant change. As obstacles are encountered, they must be dealt with in order to maintain the system. A flock that encounters an obstacle in its path must negotiate its way past it while maintaining its overall integrity. Rather than needing a high level of control to operate the system, this maintenance can come from the individual elements, and provides a much more efficient level of control than what could be achieved by the dictates of an external decision system.

In our design practices, we have dealt very effectively with the entropic side of thermodynamics. We have designed engines and machines of every description and worked out their theoretical performance limits. But at the same time, we have largely ignored the *negentropic* side, in which systems maintain themselves far from equilibrium by using whatever flows of energy and materials are available. Once created, "the self-organized structure stays 'alive' by drawing nourishment from the surrounding flux and disorder. This is what happens when tornadoes and other cyclonic winds form out of turbulence. To keep themselves going, they feed off the thunderstorms, moisture, steep temperature and pressure gradients, and turbulence that gave them birth." (John Briggs, The Patterns of Chaos: Discovering a New Aesthetic of Art, Science, and Nature (New York: Simon & Schuster, 1992) 112.) Jupiter's red spot is believed to function in this way. Indeed, all organisms flourish in a nonequilibrium state, feeding off freely available sunlight.

⁶⁰ Sim Van Der Ryn and Stewart Cowan, Ecological Design, 66

Self-designing systems like these present a rich possibility. If they are seeded with sufficient diversity, they can design their own solutions to the problems they are presented with. At first, this seems rather disconcerting. We are used to working out all the details. In highly complex situations, however, our limited knowledge may render such a level of control impossible. Letting go, trusting the capacities of a self-designing system, may be a better way of working constructively with complexity than attempting to oversimplify it.⁶¹

The creation of a complex system works best when a diverse range of elements are incorporated into the system. Complex systems work by self-regulation rather than by external control. Industrial Era systems emphasized hierarchical control and designs for systems that would operate in equilibrium. But post-industrial businesses operate in a more self-organizing fashion. While Ford Motor Company provides an ideal example of an Industrial Era company, Walden Paddlers may be the ideal model for a post-industrial company.

⁶¹ Sim Van Der Ryn and Stewart Cowan, Ecological Design, 122-3
CONCLUSION

The forms of work spaces and dwelling spaces, and the interrelationships between the two, have changed dramatically in response to the Agricultural Revolution and the Industrial Revolution. It is entirely probable that there will be changes in the forms and relationships of those spaces in reaction to the changes brought about by the Information Revolution.

None of those changes, however, will chart a completely new course. While we speak of these transformations in revolutionary terms, they are, in fact, slow moving processes that take a long period of time to become part of the social fabric. It will take years before they are integrated into daily life to the same extent that highways and automobiles (to chose one industrializing example) are integrated into daily life today.

New homes and new workplaces will slowly transform as the requirements that they serve are changed. The changing relationship between dwelling and work will also have a direct effect on these structures, as well.

The need for zoning to create separations between work places and dwelling places will be reduced as increasing numbers of jobs are involved with the manipulation of symbols and the processing of information, rather than the transformation of materials and noxious industrial processes.

The trend in is also moving in the direction of jobs being performed by small numbers of workers, or even single individuals, rather than large organizations. Increasing numbers of workers are self-employed or working in small offices. For many of these individuals,

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working at home can be a difficulty, with keeping household matters separated from the office space (and vice versa). But on the other hand, renting an entire office is more than what the business needs, and in many cases as well, particularly for start-up entrepreneurs, more than the business can readily afford.

New developments throughout the country are being built with mixed-use buildings that seek to combine dwelling places and retail and office space together in order to create a more dynamic mix. As much as all of these projects seek to address current needs for the people they house and serve, they are also experiments in creating new configurations in the built environment.

One of the most important features of today's urban renaissance is the rebuilding of city neighborhoods with a mixture of housing, offices, green spaces, entertainment, and civic uses, combining together to make forgotten communities once again convenient and vibrant.⁶²

Complexity studies have shown the valuable benefits that complex systems have over simple systems. Features such as resiliency, robustness, and adaptability are characteristic of complex systems.

Like a prairie, a community is a complex system. While the success of one or another particular species within a prairie ecosystem may vary widely, the system as a whole succeeds because of the wide range of species that contribute to the system. A prairie is not defined by one specific formula of elements that spells out its particular composition. Instead, it is defined by its behavior and the interrelationships between the elements that contribute to its makeup. Likewise, a community requires a diverse range of elements in order to create a dynamic and self-sustaining system.

Meshing cohousing and co-working communities deepens the complexity of the neighborhood makeup in order to increase information flow and to prevent the community from devolving into a specialized form of a gated community. Enclaves that

⁶² F. Kaid Benfield, Jutka Terris, and Nancy Vorsanger, <u>Solving Sprawl</u>, 8

are solely residential in character run the risk, like any other form of monoculture, of needing large amounts of resources in order to sustain themselves. Using the cohousing model to create a development allows a responsive and dynamic system which can sustain an emergent community.

Cohousing communities are self-organizing. The creation of communities has, to large extent, been taken over by developers and commercial interests. Today, most communities are being created by developers employing industrial-era style, top-down organizational systems. While this may be a successful system for the creation of "housing products," it rarely leads to the creation of a community of anything beyond the most rudimentary kind. Cohousing offers an alternative by forming communities of self-organizing and self-managing groups. As a self-managing system, the cohousing community has a direct presence and sufficient "eyes to acres" that allows it to develop an understanding of its surrounding neighborhood and to provide responsive direction, instead of being directed by systematic constraints and disconnected management of an externally controlled system.

Most forms of private development create external constraints on the community in order to protect the interests of the developers. A Common Interest Development (CID) or a Planned Unit Development (PUD) is most often planned by a developer with no direct input from any of the prospective residents. Once a certain threshold of occupancy is reached, the governance of the development is put in control of a Homeowners Association (HOA). However, in most cases, the organization of these is such that decisions are carried out by a board of trustees, and the homeowners are encouraged not to be concerned with the operation of the development. The organization of the HOA and the procedures by which it is governed also make it extremely difficult to change the rules. This further serves to disenfranchise the residents.

While a CID development may be compared to a group of caged birds, a cohousing community resembles a flock of birds, acting freely together and moving as they choose, rather than existing under a set of externally imposed constraints. A cohousing

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community is self-organizing and therefore does not have a conflict of interest between the needs of the residents and the needs of the developers, since they are one in the same. The organizational structure of cohousing communities is also such that participation in the oversight and operation of the community is encouraged, rather than discouraged.

Further complexity is added to the mix when both business and residential uses are part of the mix. A kibbutz which incorporates a business may be similar in some ways, but there the business is typically a single operation in which the whole community is involved. Far too many developments and neighborhoods seek to limit their connectivity to the surrounding community, and this serves to act as a filter, preventing interactions from taking place.

A dynamic streetscape is appealing because of its vitality. Opportunities for interaction arise because of the presence of other people. One of the key features of almost all cohousing communities is a separation between the automobile parking and the individual homes in the community. Rather than parking in garages directly attached to their homes, residents walk through the community when returning home from work, and in doing so, they have the opportunity to encounter and interact with their neighbors.

CREATING A CO-WORKING BUSINESS CENTER

Within a changing world, with the divide between home and work dissolving, cohousing offers an opportunity to create a community which supports the lifestyle of the artificial extended family and at the same time becomes more than a specialized form of enclave, and allowing for a community which interacts with its broader surroundings on a richer and more varied level.

The principles that drive cohousing — shared resources, inter-dependency and mutual support — are appealing because of the changes in the nature of contemporary living. These same principles can be applied (in general terms) to the work environment. A co-working center would provide offices and work spaces for individuals or small businesses with only a small number of employees. In addition to their own office spaces, there

would also be some common facilities, including meeting rooms, and support spaces with common equipment, such as a copy room with a photocopier and other equipment which would be available to all members of the business center.

While the patterns of everyday living are changing in the contemporary world, so too are the patterns of working. Adapting some cohousing principles to the workplace can be a useful strategy, undertaken for reasons similar to those impelling the development of cohousing in the first place.

The co-working business center extends the presence of the community into the surrounding neighborhood. By itself, a cohousing community loses its members. Over time, people may die or move away. Without a base upon which to draw, a cohousing community will be undifferentiated from any other housing available, because the early members who founded it and who had the vision for it are no longer present. If neighborliness is a goal of cohousing, then it should not limit itself to neighborliness only among the members of the community. A cohousing community that is isolated from all other neighbors is functionally no different in its wider context than a similar non-cohousing suburban development.

Adding complexity to the community configuration creates more opportunities for interaction and for relationships with the larger community in which it is located. Just as every campus, every army base, every specialized community must interface with its surrounding neighbors and the greater community which surrounds it, so too must a cohousing community become more than a collection of houses.

By developing contacts and relationships with its surroundings, it will be more resilient and better able to adapt itself over time. Otherwise, a cohousing community runs the risk of becoming an isolated enclave, that is structurally not significantly different from a more traditional developer-driven condominium. Access to broader community features, such as a walkable business district, mass-transit, or other town amenities, can help prevent a community from succumbing to becoming little more than an enclave itself.

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Connecting a cohousing community to a business center helps to make it more of a dynamic center of activity, where community connections are made across the borders of the community as well as within it.

Combining the cohousing community and the co-work community leads to a synthesis which has extra features beyond those that each element would possess alone. The business center is there for the added complexity it contributes to the system. But most importantly, it is there to help the project escape from the monoculture of zoned space. Many American examples of cohousing fall into typical remote, isolated, suburban style forms. This further leads to dependency on automobiles, and, by requiring a car in order to be able to get anywhere outside of the community, a continuation of the isolation that cohousing seeks to overcome.

Combining working spaces and residential spaces is not a new idea. The earliest craftspeople engaged in their work in their dwelling places. However, the historic patterns of work and dwelling have evolved to make the separation of the two very much the norm. Separation of work and dwelling places is a characteristic brought about in large part by the creation of zoning regulations in the industrial era.

"By the way, it is a common misconception that apartments over shops are inhabited by shopowners. More often than not, the owner of a business like a drug store or a dry cleaner has enough income to live in a regular house elsewhere in town. Apartments over stores are necessary, however, for many other categories of decent people who don't happen to need a whole house, especially single working young adults without children. This is a group of people with a very high need for social interaction in public places. They seek out the public life of the streets and the cafes, and their presence enriches the life of the town tremendously.⁶³

The businesses that would occupy the business center will be horizontal, not vertical. Unlike a kibbutz business, there is no intent to have multiple members of the community working together in the same enterprise. Walden Paddlers wouldn't try to pull all of its associated workers together in a single location — the nexus is too ephemeral for full

⁶³ James Howard Kunstler, <u>Home from Nowhere</u>, 94

time connections. The point of the virtual corporation is that they don't need to be located together physically or organizationally in order to work together. If that was required, the virtual corporation would not be able to operate. But by combining marginal (less than full time dedicated) activities for a number of players, a new enterprise can be synthesized, and can take advantage of the abilities of larger entities (manufacturing contractors, designers, etc.) without having to have them as permanent members of the corporation.

Nor is the office center and cohousing community meant to be a community of business owners and their employees. That much interconnectedness between the workers and their community harks back to a medieval community, but is not really an appropriate model for the post-industrial era. Some small scale interactions between some of the members of the co-working community may occur, but those are serendipitous and marginal, rather than being the functional core of the co-working community. (One member of the co-working community might be a business consultant of some sort, for example, an accountant, and might have a few of the other co-working community businesses as clients. But these would be just a few of the accountant's clients, and not the core of it. The business center may have some interconnected working relationships, but its businesses must reach beyond the boundaries of the community. It cannot be thought of as some kind of business terrarium; it is not a microcosm, but rather a cooperating setting in which businesses can work.

One of the closest models for a shared business center is a business incubator. Examples of these are found allied with many universities, and there are also examples where governments have established centers to grow new businesses. The business center may be able to act in some ways like a research park business incubator, but a typical incubator model follows a seed-bed methodology which seeks to promote rapid growth to expand the business beyond the original (seed) size.

As with a research park, a viable enterprise does not require concentration of assets and resources. While some activities gain greatly in efficiency through concentration

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(assembly line manufacturing, for example) many activities of research, innovation, development, allied support (marketing, strategic planning, etc.) can all be relatively autonomous. These are also all roles that fall into the category of symbolic analysts.

"Innovations do not diffuse in a spatially systematic way; rather, intraorganizational linkages within multiplant firms account for many of the transactions of goods and information that are observed. These linkages are typically interregional. Similarly, Higgins has argued that growth pole/growth center and hierarchical diffusion theories are no longer relevant in today's information-age economy. "Today's communications make it perfectly possible," he says, "for an innovation made in Stuttgart to reach Detroit before it reaches Bonn."⁶⁴

With the communications and technological resources that are available, a small business center can have as much impact as a much larger firm would have had previously. But many of these resources are not needed at all times by small business enterprises.

Cohousing builds smaller units (to downsize) and puts the extra money into common facilities. In the same fashion, the office center can provide smaller offices for individuals who need only a small amount of space for themselves, and then provide support and ancillary facilities that are shared by all workers in the complex. Meeting rooms, high-quality computer printers, copiers, and other equipment and facilities can be shared by a number of unrelated businesses, rather than each having to have their own.

The intermeshing of business uses with the residential cohousing community provides several benefits. Firstly, it allows the possibility of integration into a denser existing neighborhood. By linking itself with the business uses, the community is able to be located in a neighborhood where exclusive residential use would be prohibitively expensive. Secondly, the added diversity and activity in the community at all hours of the day helps to bring a greater level of vitality to the community. The neighborhood is necessarily more dynamic both during the workday and in the evening because a greater number of people are present. In a more conventional cohousing community, where

⁶⁴ Michael I. Luger and Harvey A. Goldstein, <u>Technology in the Garden</u>, 15-16 and quoting Higgins, Benjamin, "From Growth Poles to Systems of Interaction in Space." Growth and Change (October 1983): 7.

there was not a nearby business district, more of the residents would be away from the community during the day at jobs where they had to commute.

Some aspects of Second Wave industrialization were beneficial. Giving workers an opportunity for lunchtime social interaction (much like the cohousing community's shared meals in the common house) can be a positive benefit for these workers. Having someone to call on for assistance (much like borrowing a cup of sugar from a neighbor) can be another useful benefit of a cooperatively minded business space.

Businesses are not going to merge together in a cooperative environment any more than families merge together in a cohousing environment. The intent in either case is not to form a larger conglomeration, but to provide a supportive and neighborly environment.

Interactions between workers in the business center would be higher than those found in a more typical office building. But in the same way that benefits for the cohousing community members arise from their interactions with one another, the opportunities for useful interactions between business people would also be encouraged. The opportunity for interaction with other people about topics that may not directly relate to the business at hand may be one of the largest factors missing from the workplace of the sole-practitioner. But it is often this kind of "water-cooler chat" that leads to new insights, new directions for exploration, and combinations of ideas that might not occur to a worker who is solely focused on attending to a particular task. Business research centers such as Xerox PARC and Bell Labs seek to create opportunities for their employees to share ideas with one another, even across different fields, in order to spur the possibilities of new innovations.

"Filters eliminate noise, but they also block serendipity."65

⁶⁵ David Shenk, <u>Data Smog: Surviving the Information Glut</u>, (San Francisco: HarperEdge, 1997) 125-6

By opening up the opportunity for more interactions between workers who would ordinarily have few non-business-related encounters with other people, the possibilities for serendipitous development are made available.

BUILDING THE CO-WORKING CENTER

Large-scale housing developers work along bulk processing methods. They standardize their production and limit the available options for consumers in order to minimize their costs and maximize their profits. Much like Ford's Model T color selections, "You can have any color you want, so long as it's black." This form of production falls into top-down, hierarchical forms, following the Industrial Age model. And along with that degree of control over the physical construction, that organizational impulse extends out to control more and more of the project and its environment. This is the pattern that leads to CID/PUD developments.

Let us look at the two cultures of competition. In bulk processing, a set of standard prices typically emerges. Production tends to be repetitive—much the same from day to day or even from year to year. Competing therefore means keeping product flowing, trying to improve quality, getting costs down. There is an art to this sort of management, one widely discussed in the literature. It favors an environment free of surprises or glitches—an environment characterized by control and planning. Such an environment requires not just people to carry out production but people to plan and control it. So it favors a hierarchy of bosses and workers. Because bulk processing is repetitive, it allows constant improvement, constant optimization. And so, Marshall's world tends to be one that favors hierarchy, planning, controls. Above all, it is a world of optimization.⁶⁶

This approach is very successful for producing large numbers of repetitively structured houses. But, since cohousing is a niche market, representing only a tiny fraction of housing construction in this country, it is always going to be more expensive than developer-built, mass-produced housing. Acting on its own, in straight economic competition, the cohousing model fails versus a standard-built developer model. Even as cohousing becomes more common, the opportunities for its development and the

⁶⁶ W. Brian Arthur, "Increasing Returns and the New World of Business" <u>Harvard Business Review</u> April 28, 1996: 147-170

opportunities for learning by all of the involved parties (architects, builders, planners, developers, the whole team) proceed at a much slower pace.

On the other hand, a cohousing community can act more like a knowledge-based industry, one that follows the increasing returns model.

In fact, in the increasing-returns environment I've just sketched, standard optimization makes little sense. You cannot optimize in the casino of increasing-returns games. You can be smart. You can be cunning. You can position. You can observe. But when the games themselves are not even fully defined, you cannot optimize. What you can do is adapt. Adaptation, in the proactive sense, means watching for the next wave that is coming, figuring out what shape it will take, and positioning the company to take advantage of it. Adaptation is what drives increasing-returns businesses, not optimization.⁶⁷

Organizationally, a cohousing community is far better suited to be resilient and adaptable. By combining other elements with the residential component of the community, the cohousing group sets up a new model that offers other benefits beyond the provision of residential space. This provides new opportunities and new possibilities by which cohousing can become a viable competitor in the marketplace.

But both the condo and the cohousing (at this level) are functionally enclaves separated from the outside world. The business center adds another level of interaction and complexity to the community.

Workers in a cooperative environment can be helpful to one another in the same way that neighborliness can be extended in a cohousing community. From simple task sharing to water-cooler companionship to common facilities that can be used by all, single-entrepreneurs, telecommuters, and other small businesses can find benefits from working in a co-working business center.

⁶⁷ W. Brian Arthur, "Increasing Returns and the New World of Business" <u>Harvard Business Review</u> April 28, 1996: 147-170

The individual residential dwelling units in a cohousing community are designed to be deliberately smaller than corresponding residential units in other forms of housing. Because a cohousing community includes shared spaces, the individual units can be made intentionally smaller. Cohousing is efficient in its use of resources. In this way a cohousing community makes better use of resources by sharing items that are used infrequently among a large group of people.

Home offices, on the other hand, are usually additions or extra space that may or may not be needed by other families who might buy the unit when the home office user moves.

Thus, the merger of a cohousing community with a co-working complex enables home workers and small office business needs to have extra space for an office, without compromising the essential approach to keep the size of the residential units smaller and in harmony with principles of cohousing. Having facilities and extra space for meetings available without each business needing to acquire those items individually is, in the same way, a more efficient use of resources.

The separated but adjacent office space also allows a home office business to have some capacity for expansion. With this configuration, it is also possible for a business to have a few employees, without disrupting household living patterns too drastically. If the business was situated in the house, employees would be coming into the home, and disrupting domesticity. The presence of a separate workplace allows a small business entrepreneur have a few employees

The close proximity of work space and dwelling space could be a benefit to new parents who are telecommuting to a traditional workplace. Having a babysitter watching the child at home nearby, but being able to work, while still being available in just a few moments could provide peace of mind and still allow them to work without distraction.

"In turn, the characteristic problems of industrial society — from unemployment to grinding monotony on the job, to overspecialization, to the callous treatment of the individual, to low wages — may, despite the best intentions and promises of

job enlargers, trade unions, benign employers, or revolutionary workers' parties, be wholly unresolvable within the framework of the Second Wave production system. If such problems have remained for 300 years, under both capitalist and socialist arrangements, there is cause to think they may be inherent in the mode of production.⁶⁸

While this project hardly claims to be poised to solve the problems associated with Industrial Era economics, it presents a model for working and dwelling that in some ways better serves the needs of the residents and neighbors of this community.

⁶⁸ Alvin Toffler, <u>The Third Wave</u>, 192-3

PROJECT

The site for the project is located on an underdeveloped set of properties in Chicago. Much of the site presently exists as a surface parking lot. A few small businesses exist on the corner. The surrounding neighborhood is made up primarily of single-family residences (some converted into multiple occupancy) and low-rise apartment buildings, with some neighborhood retail. The site is very close to nearby retail districts and is supported by local mass transportation with both bus routes and the elevated train nearby.

This project uses an urban site for a cohousing community rather than the more typical suburban (or exurban) locations that have been used for most cohousing in the United States. The business community will benefit from the greater density available from an urban setting. Businesses which use the center will have greater access to clients because of the location. And, equally importantly, as some businesses leave the center, either due to growth beyond the center's capacity to support them or due to the failure of the business, the demand for business space within the city will help to provide replacement tenants as openings become available. The residential aspect of the project will also benefit from the wide range of amenities that an urban setting provides. As with the business center, the residential community will benefit from its location in order to remain visible and attractive to potential new residents as openings become available.

Development will occur somewhere as long as the population is growing; instead of allowing growth to occur in a haphazard, inefficient fashion, we can encourage it to take place in or adjacent to existing communities. Cities, with their capacity for change, can accommodate well-planned growth without sacrificing livability. In doing so, they help save our countryside. Jane Jacobs was, once again, right: cities solve problems beyond their own boundaries.⁶⁹

⁶⁹ F. Kaid Benfield, Jutka Terris, and Nancy Vorsanger, <u>Solving Sprawl</u>, 11

The urban setting also provides a richer and more diverse range of amenities to attract residents. Both Chicago's Wrigley Field and DePaul University are within walking distance of the community.

The community's ready access to transportation helps make it possible for residents to live without needing to own a car, or for families to get by with only a single car, where they might otherwise have two. This proximity to transportation also helps raise the project's visibility within the wider neighborhood, which can help in making it part of the wider community in which it is located.



Project site plan.



Project model view from southwest.



Axonometric view of common house (left) and business center (right).

The business side of the project is along Sheffield Avenue, a more commercial street which has a mix of residential and commercial property on the nearby blocks. The business commons is the central part of this elevation.



Sheffield Avenue elevation.



Model view from east. El line and Sheffield Avenue in foreground.

The residential portion of the project faces Kenmore Avenue, which is a residential street. Four residential buildings, with four apartments apiece, make up the facades along this street.



Kenmore Avenue elevation.



Model view from west. Kenmore Avenue in foreground.

The cross street, Wellington, is also a stop on the Brown line of the Chicago "L" elevated train. This station is only a block from the corner of Wellington and Sheffield, giving the community excellent access to transportation resources in the city.



Wellington Avenue elevation. El station is shown in outline at the far right



Model view from south.

The business center serves the needs of three classes of workers:

1. Offices for the businesses of residents who live in the cohousing portion of the community.

2. Satellite offices for telecommuters who live in the surrounding neighborhood. It is also possible that workers who live near other stations on the "L" might choose to commute to the office center, rather than going in to the city center.

3. Transient office space for workers needing short-term office space. This category might include such uses as office and conference facilities for out-of-town workers on short-term assignment in the area. It might also serve the needs of businesses that have a need for extra space for a short period of time, or temporary space for businesses that are renovating their own space.



Business center (foreground) connected to common house with residential buildings in the background.

The predominant uses for the business center are 'symbolic analyst' jobs. Such jobs are increasingly what the post-industrial economy requires. In addition, there would likely be a small number of 'in-person servers' such as secretaries, receptionists, and janitorial personnel, but those are likely to be only a small percentage of the total jobs in the office center. There would, most likely, be no 'routine producer' jobs in the office center.



Floor plans for the first, third and fourth floors of the business center. (The second floor is substantially similar to the third floor in layout.)

Other business spaces in the project along Sheffield Avenue could be occupied by 'inperson service' businesses such as a small cafe or restaurant, a hairdresser's salon, or any kind of small retail sales shop. It would also be possible for there to be a 'routine producer' business if a boutique producer of some kind were to locate there. But a bakery or similar kind of business would be as much a retail ('in-person service') operation as it would be a production facility.

The residential portion includes four buildings along Kenmore Avenue each of which contains four housing units. These are 3 bedroom units below and four bedroom units above.



Residential four-plex unit plans and rear (community side) elevation. Stairway axonometric also shows connections between units in the building.



Overhead view of model. Kenmore Avenue is along the top, Sheffield Avenue is along the bottom, and Wellington Avenue is along the left side.

APPENDIX: The Main Characteristics of Cohousing⁷⁰

- 1. PARTICIPATORY PROCESS. Future residents participate in the design of the community so that it meets their needs. Some cohousing communities are initiated or driven by a developer, which may actually make it easier for more future residents to participate. However, a well-designed, pedestrian-oriented community without resident participation in the planning may be "cohousing-inspired," but it is not a cohousing community.
- 2. NEIGHBORHOOD DESIGN. The physical layout and orientation of the buildings (the site plan) encourages a sense of community. For example, the private residences are clustered on the site leaving more shared open space, the dwellings typically face each other across a pedestrian street or courtyard, and/or cars are parked on the periphery. The common house is often visible from the front door of every dwelling. But more important than any of these specifics is that the intent is to create a strong sense of community with design as one of the facilitators.
- 3. COMMON FACILITIES. Common facilities are designed for daily use, are an integral part of the community, and are always supplemental to the private residences. The common house typically includes a common kitchen, dining area, sitting area, children's playroom and laundry and may also have a workshop, library, exercise room, crafts room and/or one or two guest rooms. Except on very tight urban sites, cohousing communities often have playground equipment, lawns, and gardens as well. Since the buildings are clustered, larger sites may retain several or many acres of undeveloped shared open space.
- 4. RESIDENT MANAGEMENT. Cohousing communities are managed by their residents. Residents also do most of the work required to maintain the property, participate in the preparation of common meals and meet regularly to develop policies and do problem-solving for the community.
- 5. NON-HIERARCHICAL STRUCTURE AND DECISION-MAKING. In cohousing communities there are leadership roles, but no one person or persons

⁷⁰ http://www.cohousing.org/resources/whatis.html

who has authority over others. Most groups start with one or two "burning souls" but as people join the group, each person takes on one or more roles consistent with his or her skills, abilities or interests. Most cohousing groups make all of their decisions by consensus, and although many groups have a policy for voting if consensus cannot be reached after a number of attempts, it is very rarely or never necessary to resort to voting.

6. NO SHARED COMMUNITY ECONOMY. The community is not a source of income for its members. Occasionally, a cohousing community will pay one of its own members to do a specific (usually time limited) task, but more typically the task will simply be considered to be that member's contribution to the shared responsibilities.

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