THE GRASS ROOTS HOUSING PROCESS

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PREFACE

A house is not just a shell for habitation; it is also an unfolding of our experience.

A house is not an act or a series of acts; it is not an object but an experience; it is not a commodity to be bought and sold but an activity essential to life.

Instead of being the unfolding of our existence and the expression of our freedom, our houses have become the imprisonment of our existence, the denial of our lives.

1. INTRODUCTION

In this proposal we are putting forward an entirely new concept in the field of housing, which covers financing, design, social structure, principles of ownership, and rate of growth. In place of houses that are completed before anyone knows who will live in them and are then sold as complete products, we propose a process in which the owner is intimately involved in the evolutionary design and construction of his own house. In place of high interest rates and ruinous mortgages, we propose a system that, with a very small initial investment, recycles the capital that it generates to begin more and more houses, without bank loans. We believe that this concept will help to solve the most fundamental problems in the housing shortage, in many countries.

The Center for Environmental Structure is a non--profit foundation based in California. We are writing this proposal in the hope that sponsors, in different parts of the world, will come forward and invest enough seed money to start a number of pilot projects. The Center, henceforward called the builder, will undertake responsibility for management, design and supervision of construction in these pilot projects -- and can be paid entirely by fees generated by the process itself. If successful, the pilot projects can than be repeated, on a larger scale, by local builders.

Any local government, state government, public authority, non--profit foundation, or group of citizens can sponsor this process, by making a small cash investment, and by putting land in trust, for housing, with the understanding that it will be held by non--profit housing corporations, managed by the people who live in the houses, and cannot be bought or sold for speculation.

In return for these contributions, the sponsor will reap the following benefits:

1. On each side, a cluster of twelve houses will be designed and built by their owners. Each house will be ready for occupancy within a few month -- and will then grow steadily for the next several years.

2. The process will allow people to own their own houses, without a down payment, merely in return for a monthly payment which is about the same as a typical medium--low income monthly rent or mortgage payment.

3. The project will generate enough money to seed new clusters within the community, as often as the sponsor is willing to supply one acre of land, on the delayed purchase arrangement. In these later clusters, the sponsor is not expected to contribute any further cash sums.

4. The new clusters will grow at an extraordinary rate: so great, that after thirty years, the initial cluster has seeded 70 new clusters; after fifty years, the initial cluster has seeded 1600 new clusters. In short, an initial investment of $30,000 will generate about 20,000 houses in fifty years.

Obviously, there is no form of public housing known today, which can generate such an astonishing supply of houses for such a trifling investment. But the houses are not only cheaper. They are also better, more beautiful and much more profoundly grounded in human needs.

IMPORTANT NOTE

Throughout this document, we are using United States 1973 dollars for the sake of concreteness. We wish to draw attention to the fact that in other economies, it is not appropriate to use these figures merely translated into local currency, but that the figures need to be scaled up or down, across the board, to reflect local wages, and local prices. We are confident that even though the detailed figures will change, the overall principles will stay the same.

Note also, that we have presented our results, and calculations, without including the rate of inflation. We have now begun to work on a more extensive document which outlines the connection between the flow of money, inflation, and the quality of buildings in a thorough and accurate way. From the point of view of our new work, we are now aware that this paper is full of imperfections, both in conception and in detail. However, we have received such widespread interest in this paper, as it stands -- and we consider the subject which it deals with so important, and so urgent -- not only as a way of improving buildings, but also as a way of fighting inflation -- that we have decided to publish it, as it stands, in the hope that the reader will turn a blind eye to its imperfections.

2. THE HOUSING PROBLEM

The world--wide housing problem has three central features.

(i) THE HOUSING SHORTAGE.

There is a drastic shortage of houses, all over the world. At the same time, the cost of houses is rising steadily. This rising cost makes it almost prohibitively expensive for people who have little money, to house themselves; and too expensive for public housing agencies -- who must both build the houses, and then subsidize their rents -- to provide houses for everyone; and thus well nigh impossible to build enough houses to overcome the housing shortage.

(ii) THE STERILITY OF MASS--PRODUCED HOUSING.

The mass housing built to solve the housing shortage is totally inadequate from a human point of view. The houses required to satisfy human needs are not mass--produced, identical tract homes and concrete box apartments, but houses so various that each house is different and unique, according to the special nature of people who live in it, designed by the people who live in them, and based on psychological principles deep enough to satisfy the full range of human experience and need.

(iii) THE HIGH PRICE OF HOUSING.

At the same time, the average family gets a raw deal, in purely monetary terms. A house which costs $30,000, will typically need monthly payments of about $200/month to pay for it. The person making these payments, whether he is technically an owner or a renter, will typically end up paying about $80,000 over 30 years -- almost three times the actual value of the house. This is why houses have become expensive. People are paying three times what their houses are worth. Our houses now consume three times as large a portion of our lifetime income as they rightfully should.

Faced with this three--sided housing problem, modern society has so far, invented essentially one answer to the problem: mass production: both on--site mass production of tract houses and factory mass products of package houses and apartments.

Industrialists, who control the machinery of mass production and their spokesmen, argue that more houses must be mass produced, in order to keep up with the demand created by the housing shortage. Designers and architects, in love with the idea of mass production, argue that designs of mass produced

houses will be better, because more money can be invested in research and perfection of design -- so that every family can have “the perfect bathroom”. And the industrialists again, using the analogy of mass--produced cheap goods, explain that the economy of the assembly line will make the houses cheaper.

But industrialized mass housing does not and cannot solve the housing problem.

The high rate of production, does little or nothing to solve the housing shortage, since, it is in fact the shortage of capital, not the speed of production, which is actually responsible for the housing shortage.

The standardization of large--scale components like walls, bathroom and kitchens, far from improving design, in fact, reduces the choices which people have, and contributes enormously to the monotonous and alienating sameness which leaves people feeling dead and helpless.

And the mass production does not, in the end, even reduce cost. First of all, very few means of housing production can actually reach the volume of sales needed to bring about the economies of scale. But, much more important, the industrialized houses, even when they are sold in great numbers, are more expensive than the houses they replace because of the fact of mass production itself has brought with it spurious standards, which increase the costs. Does anyone really want, or need, wall--to--wall carpeting, or streamlined kitchen cabinets, or plate glass picture windows? These very expensive items have become necessities, under conditions of mass production, because they are the only ways that mass production can make up for the pitiful sterility of mass housing. In a simpler house, which you have made yourself, you just do not need these gimmicks -- because it fits you, and you love its individual character. And because it does not need the gimmicks, it costs less per square foot.

But above all, mass--produced housing fails entirely to change the cost of houses, to any significant degree, because like all our other current forms of housing, it is based on the mortgage system.

In a simple society, people do not borrow money to make their houses: they build what they can afford. When they are young, they have a small hut; gradually, as they grow older, and have children, they are able to make their house larger to keep pace with their needs.

But mass production changes that. Since a house created by mass production is, inevitably, a commodity, an object -- you have to buy it as a package -- and to buy it as a package, you have to borrow money. But the borrowed money costs far more than any conceivable savings which the machinery of mass production can create.

The cost of a mortgage is higher, far higher, than any other cost. A mortgage, spread over twenty--five or thirty years, almost trebles the cost of the house. Two--thirds of the money which a buyer, or a renter, pays for housing, goes in the form of interest to the banks. No solution to the housing problem, which accepts the mortgage system, can possibly make any serious contribution to the price of housing, nor to the housing shortage, and that is why, at bottom, mass--produced housing fails utterly to solve the housing problem.

So long as we view houses as commodities, which can be bought and sold like cars, the processes which will then, inevitably, govern ownership, financing, building, and selling of houses, will make it quite impossible to solve the housing problem.

Let us begin by understanding the nature of housing as a commodity.

It hinges on the fact that people who live in houses do not really own them, in any significant sense; it hinges, in short, on the fact, that the idea of ownership, as it exists in modern society, is different from rental only in a rather trivial legal and financial sense. True ownership cannot exist so long as the house is seen as a commodity.

To begin with, there is a gross unfairness in the distinction between renters and owners. This distinction depends, in many cases, on the accident, that some people happen to be able to afford a down payment, and some don't. Beyond that, both renters and owners pay comparable monthly rents.

But the owners have control over their land, and build up equity; the renters have no control, and after twenty years, they still have no equity, or money, built up.

But even those people who are lucky enough to call themselves “owners”, are not owners in any very significant sense. The housing market that we know does not allow people to design and participate in the construction of their houses; they are built for them and, except in unusual cases, have no input at all. In addition to this, even the ability of people to by their own houses is being eroded. Costs of material and labor, increasing at rapid rate, are compounded by the cost of money which, in the long run, dwarfs the construction cost of the house. Under typical mortgage terms, a $30,000 house will cost as much as $80,000 by the time it is completely amortized.

In short, about two--thirds of the total money spent on housing in any one month, now goes the banks (either directly, in the form of mortgages; or indirectly in the form of rents, which help to pay off mortgages). This means that less than one--third of the money spent on housing, in any one month, actually goes towards the task of improving the housing, or improving the environment. And, of course, when the owner decides to sell his house, he finds that most of his investment is lost to him. He can only get back about one--third of what he has put into it, because the other two--thirds has gone to the bank.

Thus, the critical advantage of ownership, stemming from deep personal involvement with one's dwelling and living environment, are wasting away. A person finds himself buying a house that someone else designed and built. He has to have a lot of money to buy it in the first place. He gets rather little of his monthly payments back, when he decides to move. And, for all that, in any important psychological sense, the house is hardly his. It looks just like a hundred other houses, down the road. The space outside, the street, is not in his control -- it is a public wasteland, looked after by some impersonal agency.

We see, then, that the heart of the “housing problem” lies in the mortgage system -- or, if you will, in that interaction between houses and money, which treats a house as a commodity. People are persuaded that they must borrow money, huge sums of money, to get this house which someone else has built. Since they have to borrow so much money, most of their own money flows out of their packets in the form of interest, instead of flowing towards the land and houses themselves -- where it could actually help to make the houses better: so, by accepting the idea that he must have a house what someone else built, and must borrow money to get it, the house owner also condemns the house itself, to receive one--third of the resources -- in labor, care and materials -- which it ought to get -- so obviously the houses themselves get worse and worse with time.

There is no way to cut this cycle of cause and effect, except at the root. It cannot be cut by making more houses which are commodities; nor by making better houses which are commodities; nor by making cheaper houses which are commodities. It can only be cut when we stop treating houses as commodities altogether, by our refusal, our total refusal, to treat houses as commodities -- and by our consequent refusal to accept the monetary side conditions which come with the house, when it is seen as a commodity.

To solve the housing problem, we must learn to look at a house as an activity.

In this case, the life history of the house, and its relation to the people who live in it, and pass through it, is entirely different. The house is not produced at one time, and then used, unchanged, for years; it is created gradually, as a direct result of the living which is happening in it and around it. Building takes place in increments, day by day, year by year. The people who live in the house do not borrow money, ever; they spend only what they can afford. The people who live in the house are the ones who design it, as they go. They don't necessarily build it with their own hands; but they may build parts of it with their own hands, to help the builders. Each house is unique; it is the unique expression of a particular way of life, and of the particular history of all the people who have ever lived in it. Ownership of the house, is not merely a way of making money, or a form of legal control; it is a vehicle for involvement, in the process of creating a suitable, beautiful environment. Above all, to repeat it, there are no banks involved, nor mortgages, because the houses are built at a pace which makes it possible to build them without borrowing money.

It turns out that this simple change of attitude, has the power to solve the housing problem totally, because it goes to the heart of the financial system, and changes the way that money flows.

1. It can solve the housing shortage.

It can create a vast number of houses, in a very short time, and therefore alleviate the world housing shortage.

2. It can solve the sterility of mass housing.

People can create housing which is adapted to their needs, under conditions where each family will have a unique house whose plan and functions are unique to them -- though in construction and materials they are the same as all the neighbors' houses. The process overcomes the sterility of mass--produced housing, by increasing the labor content, human craftsmanship, and workmanship in each individual house, without requiring unfeasibly high labor costs. The land between the houses, is itself also controlled by the house owners, and is therefore as rich and beautiful as the houses themselves: there is no uncared for public wasteland outside the houses.

3. It can solve the high price of housing.

It does not make heavy financial demands on its participants, and allows everyone to own his house, without any need for down payments. It allows everyone to build up equity, as he pays money into his house. Each person can get back 100% of the amount he has put into it, when he sells it, instead of the one--third which he gets back when his house is mortgaged to a bank. All the money which people spend on housing, every month, goes to improve the houses -- instead of the one--third which now goes into houses, because the banks take two--thirds -- so the environment has three times as much money flowing into its improvement as it does today.

It is, of course, true, that houses were built under these conditions, by people all over the world, for all the thousands of years which preceded the industrial revolution -- in short, for most of human history. In fact, the very richest members of society now struggle to buy up the few remaining thatched cottages, redwood log cabins, Georgian town houses, Greek Island houses, Elizabethan farmhouses -- because they recognize, intuitively, that these buildings, built by the very process under discussion, are the only ones which really satisfy the needs of the human soul -- and they are therefore prepared to pay vast sums of money for them.

The grassroots housing process, which we now present in this proposal, will create houses as beautiful, as organic, as uniquely personal, as these traditional houses. and, as we shall show, it can produce them fast enough, and cheaply enough, to solve the housing problem. It is feasible in terms of money, and feasible in terms of labor. In short, it is immediately practical today.

3. THE PROJECT PROPOSAL

Our solution to the housing problem, hinges on the creation of two new legal entities, both non--profit corporations, which we call the cluster and the builder, on the existence of a sponsor for their activities, and on a system called the pattern language, which provides the medium of communication between the cluster and the builder.

The sponsor may be any organization which has an interest in the provision of housing, and which has land that it can put in trust for the purpose of housing. It may be a group of private citizens, a local government, a private industry, an institution like a university, or a non--profit foundation. This report is addressed, principally, to potential sponsors, or to individuals or institutions who are considering the possibility that they might decide to become sponsors.

The cluster is a group of ten or twelve families, legally constituted as a non--profit corporation. The families will design their own houses, and help to build them if they want to; and together they will design and build the common areas between the houses. The houses will grow rather slowly -- it will

take at least five years for a house to reach its full size; but the houses will be made in such a way that people can live in them from the very beginning. In return for monthly payments, and without a down payment, the families will own their houses, and will be able to sell them, when they leave, for 90% of the payments which they have made.

The builder is a non--profit foundation, which helps the group of families design the public land between the houses, supervises all construction on the site, provides instruction for those families who wish to build for themselves, controls the monthly payments from the families, handles the seed money needed to start other similar clusters, and in later years, as the cluster reaches maturity, helps the families and the cluster diagnose those deficiencies in their surroundings which need to be repaired by new construction.

The pattern language is the instrument which makes it possible for members of the cluster to design their own houses, and for the builder to help them take their rudimentary sketches and make a building out of them. It is a system of instructions based on the most fundamental psychological necessities of buildings, which gives the individuals who use it unexpected creative power. We shall not describe it in this report, since it has been fully described in other publications, and its past applications are described in Appendix 7.

However, it is essential to understand that this pattern language is the instrument which gives the members of the cluster the power to design their houses for themselves, and the medium through which they can communicate their ideas to the builder. Without this instrument, the productive interaction of the cluster and the builder which we describe on the following pages, could not be accomplished.

Within the framework of the pattern language, and with the backing of a sponsor, the builder and the cluster, can as we shall now see, create conditions under which ordinary families can house themselves. We first go into detail about the activities of the cluster; then examine the overall flow of money, to see the feasibility of the project from year to year; then examine the growth rate of the clusters, as one cluster begins seeding others, in later years; then describe the activities of the builder in detail; and finally explain the sponsor's contribution.

A. The Cluster.

The cluster is, in essence, a group of a dozen families, legally constituted as a non--profit corporation. For the first fifteen years of the cluster's life, the members of the cluster, the builder, and the sponsor are financially and legally interdependent. During this period the title to the land is held in trust. At the end of fifteen years, the contracts are complete; the title of the land is transferred from the trust to the cluster itself: and the cluster becomes fully independent (For the life history of the cluster, see Appendix 1, for the legal structure, see Appendix 2).

Physically, a cluster will contain about twelve houses, on about an acre of land. Neither the density nor the size are absolutely critical. A similar cluster might be built at twice the density or half the density, for twice as many houses, or half as many, or even less. However, we consider a cluster of about a dozen houses as a basic unit, because it is an entity large enough to maintain itself as an identifiable social group, yet small enough to be able to maintain communication on a personal basis. A dozen families can sit around a table and discuss and resolve their own affairs and problems fairly easily. More cannot.

We shall now describe the principle features of a cluster:

Design

The member families of the cluster together decide the overall communal layout, each family will design their own house to suit their own needs. They will be able to do this with the help of pattern language: an instrument provided by the builder; and the builder will help them and guide them wherever necessary, as they make their designs. Although each house will have its own unique plan, all the houses will be built in similar materials -- which are not modular panels, or factory components, but

materials like wood and plaster, that allow each detail of each house to take its own shape, according to its position in the house.

Materials

Materials are free. As a member of the cluster, each family may use as much material as they need to build their house, to maintain it, to decorate it, or to build communal buildings, fences, seats, swimming pool, workshop between the houses.

And the system of materials, provided by the builder, is so designed to make construction very simple indeed: so simple that an average family can easily build their own house if they want to, or make additions, or build structures in the land between the houses.

Growth

The houses will be built gradually, over a period of several years. This makes sure that each part of every house is firmly rooted in people's experience and needs -- since each piece that gets built is always a direct expression of some actual living need. A typical young family might build 350 square feet the first year; then live in that, and build 150 square feet per year, for four or five years, until the house has 1000 square feet; then build even slower, reaching a final house, ten or twelve years later, of 1500 or 1600 square feet. The slowness of construction is essential to the bootstrap housing process: it is this one fact which makes it possible to keep clear of the mortgage process, and the high cost of money (see Appendix 3 for the explanation of the rate of construction, and Appendix 4 for the age of families which are able to live under these conditions, and Appendix 5 for the interim accommodation in the first few months).

Payments

Each family will be obliged to pay a monthly payment, or rent, to the cluster as a whole. The amount of this payment will be based on the area of the house which they have built, so that a family with a small house will pay less rent than a family with a large house. In addition, the rent per square foot is high in the first year, and then goes down slowly with time -- so that a family which wants to build a very large house at the beginning, will pay very dearly for it; a family which is willing to build the same house more slowly will pay less. It is this mechanism which regulates the rate at which materials are consumed (see Appendices 10 and 11).

The monthly payment does not include the price of labor. It includes the price of materials, the price of the land, the services of the builder in the process of design, the builder's supervision of construction and lessons and instruction, where families decide to build for themselves. Ninety per cent of these monthly payments will be to the owner at the time a house is sold.

Construction

The families may either have their houses built for them, by labor under the supervision of the builder, or they may build their houses for themselves.

If they do not want to build for themselves, or want to contribute only part of the labor, they must pay for the extra labor themselves. But the simplicity of the materials makes it possible to hire very unskilled labor -- high--school students during summer vacations -- for example, at low wages.

If they do want to build for themselves, at least in part, the amount of labor involved is small enough so that a family can easily manage to do it at weekends, at the same time that they hold a full--time job on weekdays (Appendix 6). The builder will teach people how to build, and will help them when they get started. He will also be building a workshop for communal use within the cluster, so that people can watch him build for himself, alongside their own efforts. The materials are designed in such a way that any family can, if they want to, build the whole house for themselves.

Communal land and buildings

The street in an ordinary town is owned by the city, and is therefore not the property or the concern of the families who live on it. In the cluster, on the contrary, the land between the houses belongs to the people who live in the houses. It is their right and their obligation, to one another, to design this land to suit their needs, and to build whatever they want: paths, fences, trees and flowers, seats, workshops, playground...

Once again, the materials for all this work are free. And, once again, the actual labor needed to build these things must be contributed by the families themselves. Typically, they will probably start spending more time on the communal land, once they have the rudimentary shell of their own houses at least partly finished.

The physical appearance of the cluster

Although each cluster will be unique in its physical layout, it will typically consist of single family houses, grouped together, sharing some common land, about 25 percent of the site, the common land touching all the houses it serves.

Imagine the common land partly enclosed, but opening into a public outdoor room where informal gatherings happen; activity pockets around the public outdoor room; children's play area and areas reserved for sports, perhaps a pool; parts of the site where there exist trees or greenery, left intact in order to preserve the natural beauties of the site.

Imagine, low houses, at most three stories high, with half--hidden gardens or beautiful courtyards; open stairs leading to upper stories, houses which are flooded with sunlight; some houses with terraces overlooking the activity in the street, some with small gardens for growing vegetables, some with openings which make the outside, part of the inside of the house, some with a low wall where people can sit and enjoy the life around.

Plans of a typical cluster, designed by twelve families, over an eight--year period, and the plans of a single house, are shown (on pages 14a and 14b).

Above all, as in this example, every cluster of houses will have a balance of order and disorder which is rather unfamiliar in today's housing. Most housing we are familiar with is either totally homogeneous -- with standard plans, standard arrangements repeated identically along a street, or totally disparate with every house designed by a different person, a different architect, a different style, different materials.

The housing in a cluster, built by the process we are describing here, will be different in plan and shape and detail: yet all the houses will all be built in the same materials; and they will all have common features. Like the houses of a traditional town, they will be related and connected in a way which makes it clear that although each is individual and unique, they are together also pieces of a larger whole.

Diagnosis and repair

In ordinary housing developments, the architect and builder leave as soon as they have finished their work. They do not stay around to guarantee their work, nor to look after the environment as it evolves. In a cluster this is quite different. The builder undertakes a fifteen--year commitment to be there; he is also a member of the cluster himself, and has a personal interest in making it beautiful because he is going to be there.

A healthy environment requires not only that construction of the cluster be gradual, but also that the houses and public land between them always remain in a continual state of construction and repair. In this way, the environment can be constantly improved and modified according to people's experience of how it works for them.

This process requires a continual diagnosis of the existing space -- indoor and outdoor -- so that all new building, however modest, will repair the defects revealed by the diagnosis and ensure the gradual improvement of the environment.

The builder will spend about one month every year showing people how to make a diagnosis of all those things in the cluster which are not as beautifully organized as they could be; a seat in a wrong place, a corner where nothing grows, a window which needs to be enlarged to make a room sunnier, a good place to build an extra room; a way to mark an entrance clearly; a way to protect someone's garden from nearby noise. In this way, most of the construction activity of later years will not only be making houses larger or more useful and beautiful; it will also be helping to repair the small mistakes of the past or those things that have stopped working well.

Ownership

The member families do not own their houses in the conventional sense (Appendix 2). What they own, instead, is a share in the cluster corporation, which entitles them to the sole use of that part of the land where their own house is; allows them to design their own house, modify it, alter it, in any way they want; and gives them control and use of all the public land between the houses. In all these respects, their ownership is very much the same, as ordinary ownership, except that their control of public land is greater. But the conditions under which they are allowed to sell their houses are quite different.

Resale conditions

We consider it absolutely essential that the process of resale creates no conditions, whatsoever, which encourage people to build speculatively - that is, for other people's needs, instead of for their own. When people try to anticipate other people's need, or try to build a place they think other people will like -- they build arbitrary fantasies, which have no roots in real life -- and, the general situation created by this type of incentive -- most vividly present in bank--controlled housing, which is all based on the “possibility of resale”, is that the houses become impersonal, sterile, and artificial.

In order to remove this incentive, altogether, we have made the resale price independent of the house design entirely -- in the hope that the more people see their homes as permanent life--long possessions, and not as cashable commodities, the more they will create environments which are genuinely adapted to their wants, and needs and comforts -- and the greater the chance that the houses so produced will be human, and personal, and whole.

Specifically, the families may sell their share at any time. At the time of sale they will get back approximately 90% of the rent they have paid over the years. The rents are calculated so that if the house has been built with reasonable care, it will command this price on the market. (see Appendix 14, for details).

The family's own cash investment

Finally, it is important to recognize that, from a monetary point of view, the cluster gives each family a tremendous bargain.

The following table compares grassroots housing, mortgaged ownership and rent or public housing. In all three cases, families make roughly similar monthly payments. But the total spent in one lifetime, the percentage which the family can retrieve from re--sale, and the length of time for which they have to pay the monthly payments, are entirely different.

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COMPARISON OF GRASSROOTS HOUSING, MORTGAGED OWNERSHIP, AND RENT FOR PUBLIC HOUSING

	GRASSROOTS	MORTGAGED OWNERSHIP	RENT FOR PUBLIC HOUSING
FAMILY PAYS FOR	15 YEARS	30 YEARS	LIFE
TOTAL MONEY SPENT	$30,,000 PLUS LABOR WORTH ABOUT $10,,000	$80,,000	$80,,000
CAN RETRIEVE	90%	30%	0%

It is obvious from what has been said earlier that the grassroots housing process gives people a better way to live; and a chance to make a much better world for themselves, than ordinary housing does. What is remarkable is that it is also cheaper. It gives them far more, for far less money, than they can get with any current form of ownership or public housing.

B. The flow of money

The backbone of the grassroots housing process lies in the unconventional way that the money flows. We shall now show how the limited flow of money created by the families' monthly payments, can pay for the land, materials, the builder's labor, and the seed money needed to start other clusters in later years.

To do so, we shall lay out the accounts of a typical house within a cluster, to show the course of its financial position during its first fifteen years. See table on p... The accounts for a cluster are the same, multiplied across the board by twelve, if there are twelve houses.

The assumptions behind our figures are as follows:

1. The family builds 360 square feet the first year, 160 sq. ft. per year for the next four years, then 75 sq. ft./year for the next ten years. We have shown in Appendix 3 that these figures represent a feasible rate of growth for a young family. Of course, the figures are averages. In practice, each house will follow a different sequence of construction.

2. The rents fluctuate in two ways. First, the rent is calculated on the basis of the total area of the house at any given moment in its history. The larger the house, the more rent is paid. Second, the rent per square foot decreases with time. This reflects the fact that the cluster cannot afford unlimited materials at the beginning of its life, so the rate per square foot is high in the first year, and gradually goes down to a figure well below the current average later in the life of the cluster. The detailed explanation of acceptable rents, from existing payments is given in Appendix 10.

3. This fluctuating rent schedule, makes it possible for people to take part, regardless of their income level, and makes it possible for rich and poor to live together, in the same cluster. Middle income families will have rents like those shown in the table. Poor families can either reduce the rate at which they build their houses (as shown in Appendix 12), or they can be subsidized by public housing programs, as we have explained in chapter four.

4. Materials consumed cost about $10 per square foot of finished construction. This includes 10% for communal building and improvements.

5. The builder's fees are high in the first year, when he spends full time with the families, designing and building; and then decrease with time. The explanation of the builder's fees is given in Appendix 8.

6. There is a fixed annual cost for land purchase; and, after the tenth year, an additional fixed annual cost for maintenance. (The basis for land purchase is given in Appendix 13).

7. In the first year of its life, the revenue is $2500 less than the expenses. To offset this initial deficit, the house consumes $2500 of seed money created, and donated to it, by some other cluster.

8. The house pays for this gift, by itself creating seed money and giving it to five other houses, in other, still newer clusters, during the first fifteen years. To this end, the balance of revenues minus expenses which remain at the end of each year, is set aside for seed money. When the seed money reaches $2500, a new cluster gets started and the balance goes back to zero. As we see, the cluster gets started and the balance goes back to zero. As we see, the cluster starts new clusters in the seventh, ninth, eleventh, thirteenth and fifteenth years.

9. The sale of houses does not figure in the accounts, since we have deliberately set up re--sale conditions so that they do not interact with the accounts: whenever a house is sold, the new owner takes over the payments, just where they are, and pays the seller -- so that there is no net gain or loss to the cluster (Appendix 14).

10. In its fifteenth year, the cluster becomes independent.

FIFTEEN YEAR TABLE OF ACCOUNTS FOR ONE HOUSE

YEAR	NEW AREA (sf)	TOTAL AREA (sf)	RENT/SF (cents/sf/month)	TOTAL MONTHLY RENT	TOTAL ANNUAL PAYMENT
YEAR 1	360	360	$.60	$216	$2520 + $2500 SEED MONEY
YEAR 2	160	520	$.40	$208	$2500
YEAR 3	160	680	$.30	$204	$2450
YEAR 4	160	840	$.25	$210	$2520
YEAR 5	160	1000	$.20	$200	$2400
YEAR 6	75	1075	$.19	$204	$2450
YEAR 7	75	1150	$.18	$204	$2450
YEAR 8	75	1225	$.17	$208	$2500
YEAR 9	75	1300	$.16	$208	$2500
YEAR 10	75	1375	$.15	$206	$2480
YEAR 11	75	1450	$.14	$203	$2440
YEAR 12	75	1525	$.13	$198	$2380
YEAR 13	75	1600	$.12	$192	$2300
YEAR 14	0	1600	$.11	$176	$2110
YEAR 15	0	1600	$.0	$0	$0

YEAR 22	5	22
YEAR 23	3	25
YEAR 24	4	29
YEAR 25	6	35
YEAR 26	3	38
YEAR 27	10	48
YEAR 28	3	51
YEAR 29	15	66
YEAR 30	5	71
YEAR 31	18	89
YEAR 32	10	99
YEAR 33	19	118
YEAR 34	20	138

YEAR 35	19	157
YEAR 36	35	192
YEAR 37	20	212
YEAR 38	52	264
YEAR 39	25	289
YEAR 40	68	357
YEAR 41	41	398
YEAR 42	81	479
YEAR 43	73	552
YEAR 44	91	643
YEAR 45	122	765
YEAR 46	101	866
YEAR 47	188	1054
YEAR 48	124	1178
YEAR 49	256	1434
YEAR 50	178	1612

FIFTEEN YEAR TABLE OF CONSTRUCTION EXPENSES AND NEW SEED MONEY GENERATED BY ONE HOUSE

ALL AMOUNTS IN 1973 DOLLARS

YEAR	MATERIAL COSTS	BUILDERS FEES	LAND & MAINTENANCE	TOTAL ANNUAL EXPENSES	SET ASIDE FOR SEED MONEY	GROWING BALANCE	NEW STARTS EACH TIME SEED MONEY BALANCE GENERATES $2500
YEAR 1	3600	1330	160	5090	0	0	
YEAR 2	1600	500	130	2230	270	270	
YEAR 3	1600	500	130	2230	220	490	
YEAR 4	1600	500	130	2230	290	780,	
YEAR 5	1600	500	130	2230	170	950	
YEAR 6	750	300	130	1180	1270	2220	
YEAR 7	750	300	130	1180	1270	990	NEW START
YEAR 8	750	300	130	1180	1320	2310	
YEAR 9	750	300	130	1180	1320	1130	NEW START
YEAR 10	750	300	330	1380	1100	2230	
YEAR 11	750	300	330	1380	1060	790	NEW START
YEAR 12	750	300	330	1380	1000	1790	
YEAR 13	750	300	330	1380	920	210	NEW START
YEAR 14	0	300	330	630	1480	1690	
YEAR 15	0	200	910	1110	810	0	NEW START

C. The rate of growth

The project which we are proposing here, is important mainly because it provides an entirely new solution to the housing problem. As we shall now see, it is perfectly conceivable that a country which starts a number of projects of this kind, can hope to see as much as one--half of its entire supply of housing being built by these techniques, within thirty years -- without any further input from the economy. In short, we believe that one of the most important features of the grassroots housing process is its very rapid growth rate.

The system, in short, has an enormous capacity to spread, purely on the basis of its rate of growth in detail. We know, from the cash flow for one cluster, that a cluster will generate seed money for new clusters in its seventh, ninth, eleventh, thirteenth and fifteenth years. Since each new cluster which is seeded, itself seeds the other new clusters which in turn seed yet other clusters, we may plot the growth of clusters as shown in the following table:

The system has a growth rate about 16%. By the end of thirty years, one cluster will have generated a total of 70 clusters, and the process will steadily be generating about 13 new clusters per year. By the end of fifty years, the same one cluster will have generated a cumulative total of 1600 new clusters, and the process will steadily be generating 210 clusters per year. In short, $30,000 invested as seed money today, will, by the end of fifty years, have generated a total of 20,000 houses, and a steady flow of 2500 houses per year.

Perhaps the most interesting way to understand the power of the growth rate, is to consider the housing problem in a typical city with a population of one million people. As a reasonable figure for growth and replacement, we may assume that a city of this size will need about 7000 new houses per year. We may ask how much this city would have to invest today, in the grass--roots housing process, in order to be able to generate half its annual housing need, or 3500 houses, or 300 clusters per year.

To start a process which will be generating 300 clusters per year in thirty years, it would be necessary to start 22 clusters now; in order to start a process which will be generating 300 clusters per year fifty years from now, it would be necessary to start 1--1/2 clusters now.

In short, a city of one million people can take care of half its annual housing needs within 50 years by investing $45,000 today.

If we ask the same question for whole countries, we shall see that the required investments are still remarkably low. For example:

INVESTMENT NEEDED IN MILLIONS OF DOLLARS TO SOLVE THE HOUSING PROBLEM IN DIFFERENT COUNTRIES

COUNTRY	POPULATION	INVESTMENT NEEDED FOR SOLUTION IN 50 YEARS	INVESTMENT NEEDED FOR SOLUTION IN 30 YEARS
USA	200 million	$9 million	$140 million
PERU	12 million	$0.1 million	$1.7 million
TURKEY	35 million	$0.8 million	$12 million
SWEDEN	8 million	$0.3 million	$5.6 million
EGYPT	30 million	$0.45 million	$7 million
INDIA	540 million	$5 million	$77 million

These figures are based on very rough estimates of annual housing need, and very rough estimates of local construction cost. But it is the order of magnitude which is important.

All these calculations have been made, without reference to inflation. If we are willing to inflate rents, at the same rate that materials and labor costs inflate, the figures remain essentially the same. However,

for reasons explained in Appendix 15, it may not be possible to inflate rents as fast as costs -- since it may put too great a burden on the house owners. If the rents are inflated at a lower rate, then it will be necessary to accept a growth rate of 12%. This is, in the end, largely a matter of choice for the cluster projects. It is impossible to make accurate predictions about the rate of inflation -- we have therefore given some possible alternative ways of handling inflation, in Appendix 15.

D. The builder

For the first pilot projects, in any particular area, we propose that the Center for Environmental Structure serve as a builder. However, in the long run, if the process grows at the rate we predict, it will obviously be necessary for local builders to take over the building process. For this reason, we now describe the builder's functions and responsibilities in very general terms (see Appendix 8 for more detail).

First, in order to guarantee that the builder's interest in maintaining the healthy environment is in no way influenced by the profit motive, we consider it essential that every builder, like the Center for Environmental Structure, be a non--profit foundation.

Within this non--profit framework, the builder's functions and responsibilities have six parts:

1. Design. The builder will teach the families and house--owners to use the pattern language. Since it is fundamental to the project proposal, that the families be able to design their own houses, and the public land between them, well and since -- as far as we know -- the pattern language is the only viable technique so far developed, which enables users to perform these functions adequately -- it is essential, that the builder know this technique, and be able to instruct and help the users, in its practice. In some respects, this is the builder's central function (see Appendix 7 for past experience).

2. Construction. The builder takes responsibility for the purchase of materials, the permission to build, supervision of construction and organization of labor. He will also provide and supervise, the labor which the house owners need, at a price equal to, or lower than, the current market price of comparable labor. He is, in short, providing the services usually provided by the general contractor's foreman. In addition, he will train users to build their own houses, wherever they want to do so.

3. Management. Since the twelve families in a cluster will, together, make many decisions about their common land, they are acting like a local government in microcosm. This function is perfectly natural, and must in any case, come from energies and efforts of the people themselves. However, the group processes which are needed, both for reaching consensus and for encouraging distinctions, are unfamiliar ones at this particular moment in history. The builder will help the processes to become fruitful; and to this extent will function as a manager, whose task it is to ensure smooth and cooperative decision--making by the group of families.

4. Diagnosis. The process described here requires not only that construction of houses, public buildings and public land be gradual (i.e., spread out over at least five years to begin with), but also that the houses and public land between them remain in a continual state of construction, and repair, in later years, so that the environment can be improved constantly, and modified, according to people's experience of how it works for them. This process requires continual diagnosis of the existing space -- indoor, and outdoor -- so that all new construction, however modest, will always repair the defects revealed by the diagnosis, and will therefore ensure the gradual improvement of the environment.

This does not correspond to any existing service. It is perhaps analogous to medicine. It is as if the builder takes responsibility for the ongoing health of this small part of the environment, and takes, or recommends, the steps needed at every year, to maintain this health. It is helpful to think of the builder as a kind of family doctor of the environment; or perhaps like a forester who tends his trees, and maintains their health -- not wanting to influence them in any particular way -- but always checking their health, and proposing those minimum actions which must be taken to maintain its health, and to cure its sicknesses.

5. Legal. The builder is responsible for creating the non--profit corporation which will become the cluster. From his position, on the Board of Directors of the cluster, he will then administer the charter and the by--laws of the cluster (see also Appendix 2).

6. Financing. The builder is responsible for the flow of money: he takes in monthly rents, buys materials, makes payments for the land, etc. The slower, more highly differentiated flow of money in the cluster housing process is a vital part of the processes needed to make the environment whole and healthy, and its care and supervision must, for this reason, be part of the builder's task.

In addition, he is responsible for channeling seed money from cluster to cluster. It is an essential part of his function, that he provide the guarantees that the excess profits generated by a cluster, will in fact be spent on seed money for other clusters. He is able to provide this guarantee, because his own corporations, and the corporation of the cluster, are both non--profit corporations, and are therefore constrained by law to spend their excess profits on grants to other non--profit foundations. Both the sponsor, and the house owners, can be certain, therefore, that the money which they generate will actually help other families, in other places, set up similar non--profit housing corporations for themselves.

Overview of these six services. The combination of these six services, in a single profession, is unknown today. But we have come to the conclusion that it is impossible to guarantee the health and wholeness of a housing project without providing all six services, within a single framework, in the way we have described.

In the mid--twentieth century, we have come to assume that the person in society who is most concerned with the well--being and health of housing projects is the architect. And it is true that the human ideals, which are represented in the grassroots housing process, are the ideals which architects stand for.

But, we have been forced by analysis of the circumstances surrounding the present practice of architecture, to the conclusion that there is no way whatsoever, that an architect, practicing within the confines of today's professional practice, can guarantee the health of the environment -- since it depends too heavily on factors outside his control -- i.e., the flow of money, the process of construction, the design by users, and the local control of public land by users.

In short, anyone who seeks the human ideals which architects have sought in the past will do well recognize that the task of architecture can only be made practical and effective if it includes the six services which we have ascribed to the builder.

We have been able to demonstrate that a builder can perform these functions, at a normal salary rate, and can be paid for them, in the amounts that they are necessary, by the flow of money which we have described within the cluster (see Appendix 8).

It is clear, from the foregoing description, that the “builder” as we describe him here, is an entirely new kind of professional, not known at present. If the grassroots housing process grows at the rate described in the last section, it will be necessary to have a very large number of builders in the world, within a fairly short space of time. We therefore finish this section with a brief mention of the process by which new builders can be trained.

It depends, simply, on a process of apprenticeship. We propose that every cluster will have at least two apprentice builders, helping the builder, and learning from their experience (see Appendix 9 for details). We estimate that three years of this apprenticeship will be enough to qualify a person as a builder. This will generate new builders at a rate faster than the growth rate of clusters, and therefore fast enough to staff new building projects. The apprentices also help to reduce the costs.

3. The sponsor.

The symbiotic process in which builder and cluster together create housing, requires a sponsor. The sponsor may be a local government, a public housing authority; an institution like a university or a hospital; an industry; a foundation or other non--profit corporation; or an ad--hoc citizens group.

The sponsor has two functions; to provide the cash needed for initial seed money, for the very first cluster in any one sequence of clusters; and to provide land for new clusters. These two functions work quite differently.

1. Cash. Any one sponsor need only provide a cash lump sum of $30,000 once, to create seed money for one initial cluster. After that, that sponsor may benefit from the self--seeding nature of the housing process, to get as many housing clusters as the rate of growth will generate, as often as he is willing to provide land.

2. Land. The sponsor is not required to donate land. However, for the housing process to work, the sponsor must be willing to provide about one acre for every cluster, to put this land in trust for fifteen years, with the knowledge that after fifteen years, it will be paid for by the cluster, and then turned over to the cluster, with the guarantee provided by the cluster's charter, that the land cannot ever be bought or sold for speculation.

The price which is paid by the cluster, to the sponsor, may vary in different situations. Under some conditions sponsors may be willing to donate land free and clear, once the cluster has proved itself. In other situations, we hope the sponsor will be willing to accept a delayed payment of the original purchase price, without interest. In other situations, cluster could pay for the land in full, with interest, over fifteen years (Appendix 13). Of course, the more the land costs, the slower the consequent growth rate of the clusters. A sponsor who hopes to see a very rapid growth rate, will probably try to keep the price of the land as low as possible.

Finally, we discuss the sponsor's exit from the housing process. Few sponsors will need to stay in this housing process indefinitely. Suppose, for example, that a university sponsors a cluster for student housing. Even if they have unlimited land resources, they will not need more than a few thousand houses, even in the long run. At that stage, it would be possible to stop generating seed money for other clusters. However, in the interests of world housing, we propose, instead, that the seed money may in this case, be used in other areas, outside the original sponsor's interest or jurisdiction.

In short, the builder will agree to go on using the seed money generated by the self--seeding growth of clusters, within the area of jurisdiction of the sponsor who started it in that area, so long as the sponsor is himself willing to go on providing land. When the sponsor is unwilling or unable to provide any more land, the builder will then have the right to use the left--over seed money to start clusters in other communities.

4. GRASSROOTS HOUSING AS AN ALTERNATIVE TO PUBLIC HOUSING

Throughout our discussion, we have made it plain that the grassroots housing process can replace -- and perhaps should replace -- most of the conventional forms of housing: private ownership, rental, cooperative housing, institutional housing. We believe, in short, that any group of people in society will be better off if they get their houses by the grassroots housing process, than by any other process -- because the process makes houses that are better adapted to people's needs, more beautiful and cheaper, than any other kinds of housing.

We have not, so far, said much about public housing. Yet obviously, every public housing program faces the same difficulties as any other kind of housing, as far as money and materials are concerned. A public housing authority has a certain annual budget -- so many thousands, or millions, of dollars per year. Within this budget, they want to house as many families as they can; and to give them housing of as high a quality as they can. Since they have to build the housing, they are faced with just the same financial problems as all other house builders. The cost of money prevents them from building as many houses as they would like to -- because their budget is eaten up by interest on the mortgages they take out from the banks. And the housing they provide, if built by normal building techniques, is usually even more sterile and monotonous than other kinds of housing.

We shall now show that the bootstrap housing process can help public housing authorities to provide better housing, and house three times as many families per dollar, as they can with present methods of financing and construction. We take the economics first: and then show the additional advantages which grassroots housing has, both for the public housing authorities, and for the families they serve.

1. Economic advantages. Let us begin by describing the economics of a typical housing program. Let us consider, for the sake of example, a housing program intended to help families with an annual income of $3800. These families are able to pay one--quarter of their income for housing -- namely, $900 per year, or $75 per month.

A typical public housing program will provide such a family with an apartment of 1200 square feet. At prevailing mortgage rates this apartment will actually cost the housing authority $180 per month in mortgage payments, for thirty years. Since the family can contribute $75 per month, the actual cost to the housing authority of $105 per month, for thirty years (not including extra subsidies for taxes, insurance, and so on which are not included in our analysis).

In summary, then, under typical conditions today, a local government or public housing agency can house one family, by paying $105 per month, for thirty years. At the end of that time, the family still does not own their own house, and are therefore still a public liability.

For the sake of comparison, let us now imagine that the government decides to invest this same $105 per month, for thirty years, in the grassroots housing process.

We introduce a modified form of the grassroots process, in which the cluster grows for ten years only -- not fifteen -- at a slightly slower rate, and with rents which work out at exactly $180 per month, throughout the ten year period. (Again, based on the assumption that the family pays $75 per month, and gets a subsidy of $105). These figures are presented, in sketch form, in the following table.

GROWTH IN THE CASE OF SUBSIDY

YEAR	AREA OF HOUSE	MONTHLY RENT /SF	FAMILY PAYMENT PER MONTH	SUBSIDY PER MONTH
YEAR 1	300	$.60	$180	$105
YEAR 2	450	$.40	$180	$105
YEAR 3	600	$.30	$180	$105
YEAR 4	720	$.25	$180	$105
YEAR 5	900	$.20	$180	$105
YEAR 6	950	$.19	$180	$105
YEAR 7	1000	$.18	$180	$105
YEAR 8	1060	$.17	$180	$105
YEAR 9	1125	$.16	$180	$105
YEAR 10	1200	$.15	$180	$105

Since the houses reach the full 1200 square feet by the end of ten years, and the cluster can be completely paid for by then (with the proviso that it seeds only two new clusters, instead of five), it is possible to use the same $105 per month to support three separate houses, in a thirty--year period instead of one; and, in addition, all three families will own their own houses when they get through and will therefore no longer be a liability to the public housing program.

We present the contrast in its most dramatic form in this table:

CONTRAST IN TWO DIFFERENT WAYS OF USING PUBLIC FUNDS OF $105/MONTH FOR THIRTY YEARS

	GRASSROOTS HOUSING PROCESS	CONVENTIONAL PUBLIC HOUSING
NUMBER OF FAMILIES SUPPORTED	THREE FAMILIES ARE SUPPORTED AND NO LONGER A PUBLIC LIABILITY AFTER TEN YEARS	ONLY ONE FAMILY IS SUPPORTED AND STILL REMAINS A PUBLIC LIABILITY AFTER THIRTY YEARS
STATE AFTER THIRTY YEARS	FAMILIES BECOME OWNERS, NO LONGER A PUBLIC LIABILITY	FAMILY ARE STILL RENTERS AND REMAIN A PUBLIC LIABILITY

2. Political Advantages. Housing is usually a political nightmare. The government is held responsible for one of man's most basic needs, spends large sums to satisfy that need, and not only fails to do so, but leaves behind expensive, permanent, highly visible monuments to its failure. A government neither desires nor is able to control the details of people's environments in the way that it must when it plans and builds a large housing project and fills it with people. In such a case, people feel dehumanized and alienated, and they blame the government for treating them as mere numbers; yet it is obliged to do so by the nature of current architectural practices.

By adopting the process proposed here, each different scale of environmental decisions is controlled by the group whose personal interests are most related to that scale. The individual designs and builds his house, the cluster deals with its local environment, the builder guides arrangements between clusters, and the sponsor (or government) provides land and initial financing. People have good houses to live in which they own and control, but the government is still in a position to carry out long--range planning and protect the people from the excesses of private speculation and profit.

A stigma will no longer be attached to public housing; it will be better than “private” housing.

3. Social Advantages. In a self--built housing cluster, the physical environment and the financial structure will both reinforce a sense of neighborhood identity, pride and stability. People will be motivated to stay in one place longer and be more actively concerned with the quality of their surroundings. The result will be a coherent and responsible community that is not possible under the present open--market system of housing construction.

Since the same house--building method is equally suitable for a wide range of income groups, and the land is protected from speculation by government ownership, the cost of houses will no longer divide cities into separate quarters for different classes based on income. Everyone will be able to own his house.

Differences in rents will be the result not of an arbitrary formula, as in the present public housing, but on each individual's free choice of the size and rate of growth of his own house.

4. Advantages in the fight against poverty. Perhaps most striking of all, is the effect of grassroots housing on the problem of poverty. Let us first remark that public housing, although intended to help people who are poor, usually does nothing fundamental to change their poverty. They get a subsidy, which helps to house them. But after twenty or thirty years of this condition, they are still poor.

In a grassroots housing cluster, the situation is quite different. The government pays this subsidy for ten years, and by that time the house is paid for. The families no longer have to face the burden of a monthly rent at all, and thereby effectively increase their income. In short, this kind of subsidy is a temporary kind of help, given by the government to needy families, which actually helps these families escape from the poverty syndrome. It brings the family to a position of dignity, and reduces the tax payer's burden. The difference is startling.

If public housing agencies invest their money in the grassroots housing process, then for the first time, “public housing” will be substantially superior to “private housing”; it will be less expensive, more human, more beautiful and more fully adapted to people's needs than housing on the present market. Instead spending millions on living quarters that nobody wants anyway, the government will be responsible for a housing program which is better in every way than what is presently available on the open market.

5: AFTERWORD

In summary, the overall importance of the grassroots housing process lies in the fact that it can solve, or help to solve, “the housing problem”, because it can change all three facets of the housing problem simultaneously.

First, it can help to solve the housing shortage. It has inherent self-sustaining growth, which will double the number of finished houses every 5--7 years, without any further drain on capital resources. Unlike most public housing projects, its scale is not crucial to its success; it will spread of its own accord, without additional capital inputs; and it can be adapted to all parts of the world, and to people of every economic class.

Second, it gets away entirely from the repressive ugliness of mass housing, and makes houses and neighborhoods which are beautiful, and well adapted to their inhabitants.

Third, it brings the cost of houses down to almost one--third of their present costs.

Since the grassroots housing process has these three features -- since, in fact, if our claims were correct, it seems to create an almost impossibly wonderful solution to the world housing problem -- it naturally makes us wonder: “How is it that no one is doing this right now? Why isn't it happening already?” We shall finish by explaining just what it is that has been preventing this from happening, and how it is that this process actually manages to solve the housing problem when we look beneath the surface of the arithmetic.

Recognize first of all, that the very astonishing growth, shown in this project, is in fact a phenomenon which is the normal backbone of economic development. The only reason it is so unfamiliar in the form outlined in this proposal is that it is usually creamed off by the banks. Every month Americans spend about six billion dollars ($6,000,000,000) on rent and mortgage payments for housing. Since even the rents are, for the landlord, most often mortgage payments, two-thirds of all this money goes to the banks in the form of interest. This means that of the six billion which people spend every month, only $2,000,000,000 goes into the land; $4,000,000,000 of it goes straight into the pocket of the banks, and is immediately reinvested to make money for the banks. If you stop and think about the incredible economic growth which has taken place in this country over the last hundred years, and the vast riches which have been developing here, you recognize, indeed already know, intuitively, that the paychecks of people coming home from work month after month, can create enormous wealth.

Imagine simply that the whole six billion dollars which people spend on housing every month goes into the land, and into the birthright of the people who made the money. That is essentially what this proposal does. It channels money into the land -- not just a part of it. In short, the vast, well-nigh explosive economic growth which has created such untold riches in this country, is being re-channeled so that it benefits the land and the people who live on it, instead of simply lining the pockets of the banks.