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Lowest cost housing: A modest proposal

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LOWEST COST HOUSING
A MODEST PROPOSAL
by
STEVE MAYMAN

A THESIS SUBMITTED
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE
MASTER OF ARCHITECTURE

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ABSTRACT

Homelessness a problem of unacceptable proportion in the United States. The American housing standard has risen over the years to the point that the poorest of the poor can no longer afford to rent the cheapest housing that our building codes allow us to build. Modifying this minimum standard would make it possible to profitably build housing that is affordable to even the poorest among us. A sensitive design under these modified codes could provide a secure, flexible, and minimally sufficient home in as little as 42 square feet. The extremely low cost of such a dwelling would offer formerly homeless individuals autonomy, privacy, and dignity in a relatively safe and stable community.
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HOMELESSNESS
[the site]
No problem is so big or complicated that it can't be run away from.

-Linus
Homelessness is the invention of a paleolithic couple who finally moved in out of the rain. By inventing the home they had invented homelessness: some had shelter - the rest did not. That has been the situation ever since. Homelessness is taken for granted in the third world and tolerated in industrialized countries. The number of homeless people in America exploded in the 1980s. Homelessness became not only a human tragedy but an issue and a cause. Many disciplines have applied their varied knowledge and expertise to improve the conditions of the homeless. This exercise is undertaken to explore the extent to which design can address the problems of homelessness.

**Homelessness in the World**

It is instructive to put our current homelessness problem in perspective by comparing it to homelessness in other parts of the world and at other moments in history. The rapid rise in homelessness experienced in the eighties is not unique to the United States. The countries of Western Europe have suffered similar increases in their homeless populations. As early as 1985 England was estimated to have 100,000 homeless; West Germany 400,000; and France 600,000.\(^1\) Several countries had per capita rates exceeding those in America. The worldwide recession of the early eighties as well as rising housing costs have contributed to the homelessness problem across the industrialized world.

The problems of homelessness experiences in the third world are of another order of magnitude. One billion of the world's people live in absolute poverty. Their shelters are extremely inadequate and they often live in unhealthy conditions.\(^2\) 40 million of these people are literally homeless. The vast majority of this number are in third world
countries. The lack of housing in the third world is as shocking to western eyes as the dreadful condition of much of the housing that does exist. As appalling as the third world problem is, it is at least understandable. Third world countries do not have the resources to cope with their housing problems. In America we do.

**Homelessness in America**

How many homeless people are there in America? Estimates range from 250,000 (a widely criticized study conducted by the department of Housing and Urban Development) to 3,000,000 (a less scientific and probably inflated figure offered by the Community on Creative Non-Violence). A reasonable figure seems to be about 500,000.

*Is 500,000 homeless an acceptable number?*

It is extremely difficult to count the homeless accurately because the homeless population is continually in a state of flux, because homeless people are often difficult to identify and locate, and because of disagreement over what constitutes homelessness. In lieu of actual counts we have relied upon estimates to number the homeless population. These estimates vary widely due to political biases and the different definitions of homelessness which are used.

Many think of "street people" when imagining the homeless. Street people, however, are only a small part of the homeless population. The National Coalition for the Homeless defines a homeless person as anyone "whose primary nighttime residence is a public or private shelter, an emergency lodging house, a commercial hotel or motel, or any other
public space."\(^5\) This is a convenient and generally accepted definition, and may be used whenever "the homeless" are mentioned by the author.

It should be noted that this is not always the same group referred to by others as homeless. This definition does not include those "doubled up" - those who have lost their homes and moved in temporarily with relatives or friends; nor does it include those who cannot afford their rent or mortgage payments and may be legally evicted at any time. Many consider doubled up persons homeless; fewer consider evictables homeless.

How long someone must satisfy a definition of homelessness before we count them as homeless is another question. If they do not have shelter for just one night in a year's time do we count them among America's homeless? Do they need to be homeless for say, 30 days a year before they "count"? It is conceivable that 3,000,000 Americans were homeless for one night last year while it is equally conceivable that, on a given night, only 250,000 people had been homeless for 30 days or more. Beware of the numbers game. The most meaningful number used to describe the number of homeless seems to be the number of people that fit our description on a given night; and that is what our estimate of 500,000 refers to.

*Home* is a place where, when you have to go there, They have to let you in. I should have called it Something you somehow haven't to deserve.

*Robert Frost*

Although it is easy to sympathize with a homeless *individual* Americans have historically shown little sympathy for the *homeless*. In colonial
days destitute people were "warned out" of town for fear that their numbers would overwhelm town relief rolls. This practice continued through the civil war after which there was a considerable increase in homelessness and transiency. Homelessness was institutionalized at the end of the 19th century with the growth of "skid row" areas in many American cities. Skid row originally referred to a road in Seattle down which timber was skid into the bay. This chance metaphor for the downward plunge of the souls of those living along the road came to identify such areas everywhere. These neighborhoods were typically occupied by unattached transient laborers who supplied seasonal muscle power to local industries.

Skid row areas grew until the 1920s when technological changes such as the proliferation of heavy machinery greatly reduced the demand for unskilled labor. The homeless transient slowly disappeared as an important component of the labor supply.

With the onset of the Great Depression in the 1930s the number of homeless again jumped dramatically. In 1933 125,000 people were housed in Federal Emergency Relief Administration transient camps. Estimates of the homeless population ranged from 200,000 to 1.5 million.\(^6\) Note that this is roughly the same number of homeless people per capita as today. It has been theorized that transients were slowly replaced by a new permanently unemployed class of homeless persons at this time.\(^7\)

World War II greatly reduced the number of homeless in the United States by absorbing them into war industries and the armed forces. The continued growth of the postwar economy kept the number of unemployed and homeless low. With few young people joining the skid
row population the average age of the homeless person rose. By the mid 1950s skid rows were populated primarily by older, often alcoholic men.\textsuperscript{8} It was predicted that the increasing age and declining health of its residents would cause skid row to, quite literally, die out.

Most of the skid row residents at this time were not actually without shelter. About eighty percent lived in cubicles in residential hotels. These 35 sq. ft. windowless rooms could hardly be considered a home but they were warm and dry. Most of the remainder of the homeless population lived in inexpensive single room occupancy hotels (SROs). A count of Philadelphia's 2000 "homeless" in 1960 revealed that only 64 of these people actually slept in the streets.\textsuperscript{9}

By the mid 1970s the skid rows had nearly disappeared and many of the cubicle and single room occupancy hotels had gone with them. Others had been demolished to make room for urban renewal. Up to this point the portrait of the homeless man had been painted in three common pigments: extreme poverty as a result of unemployment and low wages; disability including old age, alcoholism, or physical or mental illness; and disaffiliation from family and friends. The hue was soon to change.

The Homeless

The stereotypical homeless person is a filthy and somewhat crazy person that begs, sifts through garbage cans, and sleeps on cardboard boxes or steam grates. Although they are the most visible and memorable segment of the homeless population these people are actually atypical of the homeless population at large.
It is as difficult to obtain definitive demographic information on the homeless as it is to count them. In spite of such problems recent studies have been in remarkable agreement over the general composition of the homeless population in America. The typical homeless person is a 34 year old white male. He is a high school graduate and is either employed or is actively seeking employment. He has lived in his current city of residence for several years and has been homeless for about sixty days. He may have a disability such as alcohol or drug abuse, mental or physical illness, or physical handicap.

*If someone had asked me a year ago who are the homeless, I would not have known what to reply. Now I know the answer. They are people like myself.*

-Richard Lazarus, Homeless.

While the homeless of the preceding decades were mostly older, alcoholic, white men the new homeless are an increasingly diverse group. Women, children, minority groups, and those with stable employment histories are now likely to be found in a community's homeless population.

Researchers have attempted to categorize the homeless to facilitate the planning of shelter and service programs. A study of homeless persons in Ohio attempted to classify them along a continuum of shelter arrangements from none (cardboard boxes and park beaches) to short term low rate hotels. The study found such classification nearly impossible because the homeless switched categories so often. They did, however, find that many homeless could be classified in terms of their usual sleeping arrangements.
Three types of homeless persons were suggested by the Ohio field work. They were classified as street people, those who slept in the open or in public spaces; shelter people, those who slept in free emergency shelters; and resource people, those who had recently stayed with family friends, or in low cost hotels or flophouses. Resource people were younger and had been homeless for a shorter time than members of other groups. Street people were more likely to show psychiatric problems and inappropriate affect, appearance, and behavior than the other groups. 14% of the 979 homeless interviewed in Ohio were classified as street people, 57% as shelter people, and 24% as resource people.\textsuperscript{11}

A study of homeless people admitted to a Philadelphia shelter similarly classified people as street people if they had regularly lived on the streets for at least a month; as episodic homeless if they were sometimes domiciled and had been homeless for less than a month; and as other homeless people who were experiencing acute situational crises. The study of 193 individuals classified 43% as street people, 32% as episodic homeless, and 13% in situational crises.

Street people tended to be white, 40 or older, and suffering from a variety of physical and mental health problems. Episodic homeless were generally under 40 and more often black. The situationally homeless were a diverse group with poverty as the common denominator. They had experienced crises such as being left homeless by fire, ejection from their boarding house, or release from a hospital after a long illness with no money and no home to return to.\textsuperscript{12}

HUD did a survey attempting to classify homeless residents based upon the etiology of their situation. They asserted that 40%-50%
of the homeless suffered from *chronic disabilities* including substance abuse, handicap, physical or mental illness, or a combination of the above. They attributed *adverse economic conditions* of the recent past as the cause of homelessness among the new poor who comprise 35%-40% of the homeless population. The final 15%-20% of the homeless, it was supposed, fell into their situation due to a *personal crisis* such as a divorce, domestic violence, being released from jail or a hospital, or health related problems.\textsuperscript{13}

A final study divided the homeless into theoretical categories that would facilitate their treatment, but did not attempt to determine what percentage of the homeless population was in each category. The proposed categories were the *chronically mentally ill*; the *street people*; and the *situationally distressed*, also referred to as the new poor or new homeless.\textsuperscript{14} A look at other research done on these subgroups is useful in coming to grips with some of our stereotypes of the homeless.

We are all familiar with the elderly woman clad in layers of tattered clothing gesturing wildly and muttering at passers by. The sight of a
young man in a fetal position on the pavement nearby who remains mute while communicating with only himself in a system of bizarre hand signals has become an increasingly common sight in the American city as well. We have become so familiar with these images that the public's view if the homeless has changed from "the drunk" to "the crazy."  

*Why should anyone be interested in some old man who was a failure?*

- *Ernest Hemingway*

The Ohio study found that 30.8% of the homeless interviewed were psychiatrically impaired at the time of the interview. A New York study based on the self reports of 8000 users of public shelters found that 25% had current or past psychiatric problems. Many other studies support this data, and there is general agreement that 25%-50% of the homeless have psychiatric problems.

Whether psychiatric problems are more often a cause or a result of homelessness has been the subject of much debate. Deinstitutionalization is cited as one reason for the increase of the number of mentally ill on the street. Between 1955 and 1981 the number of people in public psychiatric hospitals dropped from 559,000 to 122,000. Architects of the deinstitutionalization plan intended to shift the patients into less restrictive and less expensive care. They assumed that the dollars funding these people in the hospitals would follow them into the community mental health system.

Although well meaning the plan did not work. Upon discharge from the hospitals many of these psychologically impaired people found that they had been cut off from funding and many did not have the skills
to make it on their own. Author Susan Sheehan documented the predicament of Sylvia Frumkin, a middle-aged schizophrenic woman subjected to revolving door institutionalization policies. Ms. Frumkin's query "Is there no place for me?" represents the emotion of those that feel abandoned by state hospital systems and their communities. Tragically, a large number of these people ended up on the streets.

Some argue that homelessness is the cause of most of the mental health problems which manifest themselves in the streets. They argue that the intense pressure and seeming hopelessness of life without a home quickly break even the strongest people, and that many forced into homelessness succumb to psychological disorders in a relatively short period of time. Jonathan Kozol's book Rachel and Her Children illustrates this tragic process.

Alcoholism among the homeless was widely studied in the past, but less is known about the drinking habits of today's homeless population. Most recent work indicates that 29%-40% of the homeless population is alcoholic. Again, the chicken or egg question is raised.
James Wright, in a paper prepared for the National Institute of Alcohol Abuse, observed that "Many homeless people who drink do so for good reason..."21 The reasons cited include chronic physical pain, relief from psychic pain, and a means by which to gain distance from society.

Homeless women and families are a growing component of the new homeless population. The homeless woman was almost unheard of thirty years ago. There were so few women among the homeless that many researchers studying skid rows at the time did not even mention them. That situation is changing rapidly. Today, by most estimates, women make up 20%-25% of the adult homeless population.22 The reason for their increased number is not clear. The growing perception of women as strong and self-reliant individuals may be a factor as family and friends see it as less necessary to take them in.

Women are often forced into homelessness by crises such as domestic abuse, desertion, eviction, or divorce. Recent no-fault divorce laws passed in 48 states mean that it is no longer assumed that the wife and children will get the house. Often the house is sold so that the proceeds can be evenly split. The net result of such a divorce is that, on average, the women suffer a 73% drop in their standard of living.23 In the worst cases the women end up with the children but without income or shelter.

The disoriented bag lady presents a troubling but familiar image; the vignette of the homeless mother is less familiar but equally distressing. Homeless families are a growing component of the "invisible homeless" population. At least 20% of America's homeless are families.24 90% of these families are headed by single mothers.25 Of the 28,000 homeless people in emergency shelters in New York city 18,000 of
them are there as families. In 1970 approximately 20% of the city's children lived in poverty. By 1980 their number had increased to 33%, and by 1982 over 40% of New York city's children were poor.

The homeless are often viewed in terms of their problems and what they do not have. There is a brighter side of the coin. The homeless population is well educated and the majority are part of the work force. A study of the homeless in Los Angeles found that 64% of the homeless had graduated from high school (compared with 70% of the population at large in Los Angeles County) and that 38% had at least some post-secondary education. Nationwide about 70% of the homeless are either employed or actively looking for work. As many as 97% of the homeless are members of the work force in states such as Utah.

Three quarters of the homeless have some form of regular income. The sources of this income are, in declining order: employment; general assistance grants; social security; blood banks; and veteran's benefits. Many of those now unemployed had stable work histories before a lay-off
caused them to lose their jobs and eventually their homes as well. The relative youth of the new homeless is an asset in terms of their employability once they have stabilized their situation.

**Causes of Homelessness**

What are the causes of homelessness? Many conservatives blame the homeless for their own predicament. Thomas Main, a hero of the Reagan and Koch administrations, has been a leading proponent of this point of view. Main divides the homeless population into three types of people: "former mental patients and other mentally ill"; "Alcohol and drug abusers"; and "Economic only" cases who suffer no disabilities but find the shelters "attractive."

Solving the homeless problem to Main is finding a way of "Deterring higher functioning clients from using the shelters as anything but a last resort." This camp refuses to throw a lifeline to the drowning homeless because 1) it may be their own fault that the fell into the water and 2) it will deter them from falling in again.

Another point of view is "articulated" by Leo Srole of the more liberal Community Service Society of New York. Srole categorizes the homeless as "The 'fall out' rejects of a highly competitive, cornucopian socioeconomic system that cannot mobilize the fiscal wherewithal and organizational talents for quasi-family care of it's casualties." While these statements are extreme they represent two ways of thinking about the causes of homelessness. You can blame the individual or blame the society of which he is a product.

Placing blame is not important, but understanding how homelessness has developed is critical to attempting a solution. The
divisions of individual and institutional causes will prove a useful organizational tool in studying the factors which contribute to homelessness.

The causes of homelessness which Main attributes to the individual do play a role in the problem but are often the immediate causes rather than the underlying issues. Only one in one hundred alcoholics is homeless and less than one in ten persons with serious mental health problems is on the street. Clearly alcohol and mental health problems are not in themselves enough to cause homelessness. The number of homeless people has doubled every three years since 1980. The number of alcoholics and mentally ill have not.

Main's implication that a large number of the homeless are homeless by choice is absurd. Studies have shown that only five to six percent of the homeless are homeless by choice. It is extremely unlikely that those who are homeless by choice would be users of shelters anyhow. Furthermore research has shown that the policy of deterring the use of free shelters by making them "less attractive" has no effect on demand for such shelter.

*A tough lesson in life is that not everyone wishes you well.*

- Dan Rather

The afore mentioned policy of deterrence is not a hypothetical proposal but rather the Koch administration's actual policy. "Koch administration officials admit that their goal is to provide bare-boned shelter and that to offer more would make the homeless, the majority of whom are children, 'too comfortable to seek permanent housing'." This logic has placed
families in welfare hotels where they are stripped of their dignity and condemned to a life of poverty and dependency.

Not only is deterrence cruel and unnecessary but, it turns out, counterproductive as well. The loss of autonomy, stigma, and bureaucracy were deterrent enough to keep all but the truly desperate away from shelters already. Keeping the conditions of the shelters almost unbearable had the effect of imparting a feeling of hopelessness on the residents which, on average, doubled the length of time that it took to get out of the shelter system compared with much less expensive but cleaner and better run private shelters.

It is clear that policy decisions are based upon perceived causes of homelessness. It is reasonable to state that it is a combination of institutional factors and individual traits lead to homelessness. Furthermore it is apparent that institutional factors determine the seriousness of the homelessness problem at a given time while personal traits determine the texture of it. Institutional factors determine how many homeless people there will be; individual traits determine who they are.

The cause of homelessness is deceptively simple: people can not afford housing. Is the problem poverty or the lack of inexpensive housing? The answer is both; but the lack of affordable housing seems to be the critical factor in our current homelessness crisis. "The scarcity of low-income housing appears to be the main cause of homelessness. Poor people simply cannot afford (the) majority of housing available in the United States." concludes a 1985 Congressional study. There are fewer poor people than at other points in our history, but these people
are having a much harder time finding housing that they can afford. Robert Hayes, Founder of the National Coalition for the Homeless, claims that "There are three root causes of homelessness in America: lack of housing, lack of housing, and lack of housing."\textsuperscript{39}

\textit{The search for shelter has become a Darwinian struggle for housing, in which the weak are losing. And the weakest are falling through society's safety nets onto the street.}\textsuperscript{40}

Although housing seems to be the most critical problem economic conditions have set the stage for these problems. America's consistently high rate of structural unemployment and falling wages were found by Congress to be the principle cause of the increase in the number of poor.\textsuperscript{41} The number of poor Americans has increased by seven million since 1979.\textsuperscript{42} The poverty line, defined as the minimum income needed for subsistence, is $11,400 for a family of four.

Not only did unemployment increase with the recession in the early eighties, but the average duration of unemployment increased too. In 1979 460,000 people were unemployed for over six months; by 1986 this figure had increased to 1.2 million.\textsuperscript{43}

Low wages for those employed contributed to homelessness as well. Of the eight million new jobs created between 1979 and 1984 more than half paid less than $7,000 per year, or less than 61\% of a family's minimum subsistence income. The minimum wage, $3.35 per hour, has not been raised since 1981. Over this period it's real value has fallen 25\% in the face of a 33\% rise in the cost of living.\textsuperscript{44} A father working full
time at minimum wage would earn only $6,600 a year - only 59% of a poverty level income.

_The Constitution provides for every accidental contingency except for a vacancy in the skull of the President._

_-A Senator from Ohio_

Cutbacks in entitlement programs in the Reagan era contributed substantially to homelessness. Federally funded programs to aid the poor were favorite targets of Reagan administration budget cuts. The result sometimes manifested itself in a choice between food and rent confronting the extremely poor.

The primary federal assistance program for poor families is Aid to Families with Dependent Children (AFDC). There has been a $3.6 billion cut in AFDC funds since 1981 with 440,000 families being dropped from the average monthly caseload. The food stamp program has faced drastic cuts too. $6.8 billion has been cut from the food stamp program since 1982 reducing benefits to twenty million families. In 1980 68% of the population living in poverty received food stamps; by 1985 that number had fallen to 60%. Today there is not a single state in which the combined value of AFDC and food stamp benefits reaches the poverty line.45

Social security is the primary assistance for the elderly. In 1981 the Social Security Administration sought to reduce their expenditures by reviewing the cases of those receiving disability benefits. By 1985 they had dropped 491,300 recipients from the rolls. Eventually this review process was ruled illegal but only 200,000 of the elderly and
disabled who had been cut off were able to have their benefits restored. Some who lost income during this period wound up on the streets.46

There are many links between unemployment, poverty, and homelessness. It is difficult for the homeless to find jobs when they do not have a permanent address. Many single parents cannot work because they have no resources for day care and have trouble enrolling their kids in school without a permanent address. Even receiving entitlement benefits can be difficult without a permanent address. Without stable housing it is very difficult to break the cycle of homelessness.

The Federal Housing Act of 1949 sought "a decent home and suitable living arrangement for every American family." By 1968 the goal had still not been realized so a bill was passed to create 26 million units of low-income housing over a ten year period.47 By 1978 only 2.7 million units had been created and it had become clear that the battle was being lost.48 The creation of new units was losing ground to the destruction of
old ones. Each year thousands of units were lost to conversion, gentrification, abandonment, demolition, and arson. Between 1973 and 1983 2.2 million units of low-income housing were permanently lost.49 There has been a net loss of another 1.2 million units in the last decade and it has been estimated that we are currently losing units at the accelerated rate of about 300,000 units per year.50

*If we don't change our direction, we'll end up where we're headed.*

*Sachel Paige*

The Reagan administration dealt the death blow to any hopes of suitable housing for every American family. In 1980 the Department of Housing and Urban Development was allocated 35.7 billion dollars to fund federally assisted housing. The allocation was cut back to 18.9 billion by 1982 and cut again each year through 1988. In 1988 only 7 billion dollars were allocated; a reduction of 81% from the 1980 level.51 (Note that over this same period housing subsidies to the wealthy and middle class in the form of mortgage interest tax credits rose to some 44 billion dollars per year)52 Low-income housing construction virtually stopped, save for some housing for the elderly and housing commitments made before the Reagan era.

It is interesting to note that between 1980 and 1988 housing subsidies to the rich and middle class in the form of mortgage interest tax credits rose to $44 billion.53 Perhaps Voltaire's observation that the art of government is to take as much money from one class of citizens so that it might be given to the other is still valid today.
On top of this the administration has done nothing to prevent the expiration of the next round of 15 year contracts made with private owners of subsidized housing under the section 236 program. This program offered developers low cost loans and tax breaks if they agreed to lease to low-income occupants for a period of 15 years. If these contracts are not extended with further incentives the owners will be free to sell their buildings, convert the units to luxury condominiums, or to tear them down. The General Accounting Office predicts that 900,000 units will be lost by 1995 and another 800,000 in the following five years if contracts are not renewed.54

As the low-income housing market contracts the vacancy rate in public housing units shrinks with it. The vacancy rate for the 1.4 million public housing units built over the past 50 years is at an all time low of 3% compared with 15% twenty years ago. The waiting lists for public housing are effectively endless: 20 years in Miami; 18 years in New York. Some cities have stopped taking applicants.55
Under the Reagan administration the country is actually losing public housing; some 70,000 units are being abandoned each year according to HUD estimates. Many of the remaining units are in dire need of repair. The cost to make such repairs, according to HUD, would exceed $21.4 billion.\textsuperscript{56}

The low-income housing crisis is not restricted to public housing. Single Room Occupancy hotels (SROs) have also been disappearing at an alarming rate. These inexpensive residential hotels are often the housing of last resort of the urban poor. During the 1970s and 1980s the SROs became an endangered species. New York lost 87% of its SROs in the seventies.\textsuperscript{57} Between 1970 and 1982 the United States lost 1.1 million SRO units; nearly half our stock.\textsuperscript{58} Many cite the loss of SRO units as the single leading phenomenon putting people on the street in the last twenty years.

Charles Hoch and Robert A. Slayton argue that "the loss of SRO hotels was the major reason why the single poor became visible street people in big cities...Poverty is a necessary but not sufficient condition to account for homelessness. It is the lack of cheap SRO-type housing that turns urban poverty into homelessness."\textsuperscript{59} Peter Rossi notes that "Marginal housing (SROs and cubicle hotels) has largely been eliminated, but the marginal segment of the poor has not."\textsuperscript{60}

The recent decline in low-cost housing has been precipitous. Census Bureau data indicates that the number of units affordable by those below the poverty level dropped by an average of thirty percent in the twelve largest cities between 1978 and 1983. The loss was even higher in cities with acute homelessness such as Washington, D.C. which lost 40% of it's lowest cost housing.\textsuperscript{61} In the face of increasing
poverty the loss of low-cost housing stock could turn the poor into the homeless in unprecedented numbers.

**What is Being Done About Homelessness**

Most of the things done on behalf of the homeless amount to treating symptoms rather than the problem itself. The vast majority of the resources provided by benevolent groups and the public sector goes towards emergency food and shelter programs. While these stop-gap measures often mitigate the pain of the homeless they do little to break the cycle of homelessness. Instead they foster a dependence upon the charity system that can be as hopeless and difficult to break away from as homelessness itself.

The provision of housing for the homeless is a three-tier system consisting of emergency, transitional, and long term shelter. Ideally, the system works like this: Emergency shelter is provided as a means of getting people off the street quickly. Emergency shelters seldom offer privacy or amenities so a person is moved out of the emergency shelter into transitional housing within a few days. During this time their individual needs are assessed so that they can be placed into an appropriate transitional situation.

Transitional housing consists of more acceptable housing in the form of apartments, residential hotels, and other group or single family dwellings. Transitional housing is provided for a period long enough for the homeless person to stabilize his life and get back on his feet again. During this time the homeless person would work with support agencies providing income support, health care, mental health services, career counseling, job training, and life skills training. Ideally this process
takes from three to six months but one year is a more realistic time frame. The goal is to bring the person to their highest sustainable level of functioning. At this point their situation is assessed again and they move to permanent housing.

The higher functioning people are able to reenter the market system on their own at this point after having found employment. Those unable to provide for themselves depend upon entitlement programs such as SSI, AFDC, General assistance, and food stamps for income. They are now, however, receiving all the benefits that they are entitled to after being helped to secure these benefits during the transition phase. They are in the position to assess the permanent housing options available to them at this point.

The three-tier plan suggests a comprehensive and integrated housing strategy to address the needs of the homeless. Unfortunately, the implementation of this plan in the context of grave budget cutbacks has been marked by fragmentation and insufficiency instead.

Demand for both shelter and services far outpaces supply. There has been little federal or state funding for providing shelter to the homeless. The lion's share of the provision of shelter and services has been left up to non-profit charities. Religious organizations operate about 40% of all shelters with nonreligious groups running the rest. In 1984 less than 10% of all shelters were run by public sector agencies; almost all of them in New York City. Although the public sector seldom operates the shelters it does contribute to their funding. In 1983 state, federal and local governments provided grants accounting for 37% of shelter operating costs nationwide.
Although the responsibility for accommodating the homeless is placed primarily on local governments many localities do nothing or provide only emergency shelter. Short-term emergency shelters often appear to be city governments to be the cheapest solution in the short run. Evidence suggests, however, that breaking the cycle of homelessness through the development of "comprehensive and coordinated programs" may prove to be less expensive in the long run.\textsuperscript{64}

\textit{If it is illegal, and is, and ought to be illegal, to litter the streets, frankly it ought to be illegal for people who must survive in panhandling among other things to sleep in the streets. Therefore, there is a simple matter of public order and hygiene in getting these people somewhere else. Not arrest them, but move them off somewhere they are simply out of sight...}

\textit{-Columnist George Will on ABC's "Nightline"}\textsuperscript{65}

Some see emergency shelters as a short term solution, but many do not see them as a solution at all. The facilities are often run down and
located in marginal buildings and decayed neighborhoods. There is
dseldom a sense of security much less permanence or privacy in these
shelters; bathroom facilities are often inadequate and showers may not
be available at all. Many shelters operate in gross violation of building
codes.

*I saw Mr. Water Bug under my mother's bed. Mr
Rat be livin' with us too.
Mr. Rat came in my baby sister's crib and bit her.
Nobody felt sorry for my sister.*

-Raisin, six year old shelter resident

Conditions became so bad in New York shelters that residents rated
prisons *superior* to shelters in safety, cleanliness, and food quality. The
only area in which the residents saw the shelters as superior was
personal freedom.66

One notorious shelter is the Fort Washington Shelter in New York
City. It has been described as a place "where chaos prevailed...900 men
slept on iron cots set in rows on a single drill floor, with the
hallucinations and bizarre behaviors of the mentally disturbed among
them hardly quelled by the seven to 12 staff members on a shift."67

The Atlantic Avenue Armory sleeps 700 people in one room:
"Crack here is devastating." said Leroy McCoy, a 28 year old resident. "If
you don't know how to fight, you can't make it here. We've got nothing
here but hardened criminals."68 The drug problem became so severe
that the shelter opened a "drug free dorm" in a small room on the second
floor for residents that were trying to break addictions.69
Other cities face similar problems: Flora Koppel, Director of crisis and community services at Traveler's Aid in Chicago reports that in many Chicago shelters "You have to shower with other people if you get to shower at all. You may sleep next to someone who is mentally ill, and you're not." Many homeless find these conditions unacceptable. She concludes that "Some people...want to be on their own even if they know that the consequence could be freezing to death." 70 Some cities, such as San Francisco offer shelter in subsidized hotels for the homeless. They often have their own problems. Tony Bentley, a homeless bicycle messenger, stood in a long line to get such a room but, he recounts, "when I finally got the room I found roaches and ticks in the bed. It was so seedy, I'd rather sleep on the waterfront." 71

The shelters in Houston are not this bad, but few of the homeless that I work with use them. A man huddled in blankets under an overpass seems quite incoherent, but he is absolutely clear about one thing: he will not go near a place that denies human dignity and requires him to sleep holding on to his shoes. Comments such as "The streets
may be colder but they are a whole lot safer." are common. Many area shelters are relatively clean and well run, but no Houston shelter offers even elemental privacy and just a few provide any sense of safety.

Shelters are typically populated by the weakest of the weak, the mentally ill, ex-convicts who prey on the above, and families. Once in a shelter it is often very difficult to "move up" into transitional or permanent housing. In many cases the emergency shelters become, by default, permanent housing. For this reason many shelters limit the number of nights a person can use them. Some shelters allow five nights a month, some every other night, and some 60 days. The average is about two weeks. If the person's stay at a shelter is limited he may well end up on the street again when his "privilege" run out.

There are very few transitional housing programs at the present time. The lack of adequate emergency shelters is a more visible and immediate problem to the public. Until the emergency shelter situation is brought under control both public and private sector agencies will be pressed to devote the vast majority of their resources to improving the
emergency shelter system. This is unfortunate indeed since, as explained earlier, the homeless often have little hope of leaving the emergency shelter system once they enter it.

Transitional shelters are often referred to as "special needs" shelters because most serve only specific populations such as families with children, single mothers, the mentally ill, or those with drug and alcohol dependencies. Few transitional shelters for the general homeless population exist at all.

Most of the transitional shelters that have been opened have been extremely successful. Seattle's nonprofit Emergency Housing Services program operates 35 emergency housing apartments (1-5 weeks) and 10 interim housing apartments (1-4 months) for homeless families. The program helps families break the cycle of homelessness by providing free transitional housing and loans of up to $500 (at no interest for eighteen months) to help cover moving costs, security deposits, and the first month's rent when client's set up their own apartments upon leaving the shelter. Of 90 loans made the default rate was only five to ten percent.73

Another transitional program for homeless families in was established through HUD's "Homes for the Homeless" program. HUD leases foreclosed FHA homes to nonprofit agencies for $1 per year if they agree to refurbish the homes and use them to house the homeless. The Metropolitan Inter-Faith Association rehabilitated ten such houses at a cost of about $5000 each and furnished them with items donated to the churches. Families stay in the houses free of charge for a pre-negotiated period (averaging two months) during which time they receive job and personal counseling as well as referrals to other community service
organizations and assistance in locating permanent housing. The program assisted over fifty families in its first year but had to turn just as many away.74

An innovative program in California takes advantage of a housing camp for migrant laborers. The state owned camp houses farm workers during the growing season but would close down as the workers moved on in the winter. Now the Emergency Housing Consortium of Santa Clara County, uses the camp apartments to house homeless families in the cold winter months.75

The HELP I family housing center in Brooklyn is another innovative program. The state of New York joined forces with a private developer, a non-profit service provider, and the city to build and operate 200 flexible two room units each with a private bath and cooking facilities. The state provided tax-exempt financing; the city provided a cleared site; the developer was responsible for the design and construction of the project; and the non-profit agency will run the facility. The project provides a superior environment to the typical shelters and welfare hotels of New York and does so at a significantly lower cost.76

Los Angeles' "Transition House" is among the few programs that offer transitional housing to the general homeless population. Transition House houses 130 men and women. Most of the beds are in dormitories, but there are some group and individual rooms that are awarded to residents as they successfully work through the transition process. A team of counselors work with the residents providing all types of counseling as well as job training programs. The average stay at Transition house has been about two months for the 2000 people that
have been housed since the shelter opened. Transition House also
developed 17 "move-on" units outside of skid-row to house those that
successfully complete the program.77 While the number of move-on
units is obviously insufficient they are nonetheless a valuable and far-
sighted addition to an excellent comprehensive program.

Comprehensive programs such as Transition House are extremely
rare. The tremendous cost of such programs is beyond the means of
charitable organizations. Public outcry over the location and expense of
such programs makes them politically untenable to city governments in
most instances. For these reasons organizations are sometimes
established which work in conjunction with emergency shelters to
provide support services. The Service and Emergency Aid Resource
Center for the Homeless (SEARCH) in Houston is one such organization.

SEARCH is a day shelter which provides numerous services to the
homeless population when emergency shelters close for the day. The
shelter operates from 9:30 to 2:30 on a first come first served basis and
has space for 120 clients. Clients can wash their clothes, take a shower,
make free phone calls, eat a hot lunch, or just hang out and talk, rest, or
play cards or dominoes.

The center hosts many community service providers such as a
health screening team, a mental health team, county social workers, and
personal and employment counselors. SEARCH provides a mail service
for its clients, an I.D. acquisition program, and a "gold card" acquisition
program. Gold cards are issued by the hospital district and entitle the
bearer to free medical and dental care. The center has recently started a
comprehensive job training program with funding from the Job Training
Response to SEARCH has been so overwhelming that clients are no longer allowed to use the center on consecutive days.

Long term housing for the homeless has typically taken three forms. Public housing projects, market housing subsidized by federally funded "Section 8" housing vouchers, and single room occupancy hotels. Public housing and the voucher program serve welfare families, the disabled and the elderly while unattached adults must typically seek long term shelter at the SROs.

Public housing projects are apartment buildings or complexes built by local and state governments and usually subsidized by the federal government. These projects then rent units to the poor at sub market rates. "Section 8" is a rent subsidy program started by HUD in 1974. Under section 8 a family acquires a voucher which provides payments equal to the difference between the fair market rent and the amount affordable by the family (30% of gross income). Although these two programs seem quite different they are both essentially rent subsidy programs. The difference is that the public housing projects are publicly owned and operated while the section 8 vouchers subsidize privately owned units.

Both programs have their problems. Public housing projects have run into problems with the homogeneity of their populations. They are made up almost entirely of welfare families. This leads to an institutionalized situation in which the entire population may feel trapped by its own poverty. Often a community wide feeling of hopelessness develops. To make matters worse the projects are often poorly managed and maintained leading to dangerous and decayed
physical and social environments. Success stories in the projects are few and some residents see little hope of ever moving out.

The section 8 program was designed to avoid the problem of institutionalization by allowing recipients to choose their own housing in buildings with tenants from a range of socio-economic backgrounds. A great idea in principle the program has largely failed in practice. Problems have included a lack of market housing that meets the requirements of the program, inadequate funding, and the unwillingness of many landlords to accept the vouchers due to problems with section 8 tenants.

Both of these programs are in need of significant reassessment. While many improvements can be made to the programs nothing can change the fact that both programs are tremendously expensive or that their effectiveness is directly proportional to the amount of money that we are willing to spend on them. In light of our current budget deficits and with a recession on the horizon it is clear that funding to these programs will not increase significantly in the near future.

Single room occupancy hotels are often owned and operated by the private sector. The inexpensive rooms are often affordable to the poor even without subsidy. Since no public funding is needed for SRO operation many see SROs as the only viable candidate to replenish the ebbing supply of affordable housing. It is advantageous to examine SROs in greater detail.

Single room occupancy hotels evolved from the boarding and rooming houses of the nineteenth century. These inexpensive hotels dominated the skid-row areas of most American cities. A typical room is
quite small (about 80 sq. ft.) and without plumbing or cooking facilities. Common showers and toilets are located on each floor and most hotels have common cooking facilities or a common living room as well. SROs are much like college dormitories, except that rooms can be rented by the night, the week, or the month.

One step below SROs were the "cubicle hotels." In the 1890s the "rooms" in these hotels were quite minimal: "The head-high partition enclosed a space just large enough to hold a cot and a chair and allow a man room to pull off his clothes." Even less expensive beds were available in large rooms full of cots and lockers. Below this "The locker for the sleeper's clothes disappears. There is no longer need of it. The tramp limit is reached, and there is nothing to lock up save, on general principles, the lodger." By 1958 little had changed: "The cubicles they rented for $0.50 to $0.90 a night hardly fit any definition of home. They...were partitioned-off spaces in former factory lofts, typically measuring five feet by seven, that could hold a cot and little more. Light was minimal: each
cubicle was lit by a dim bulb. The partitions did not extend to the ceiling or to the floor, and wire mesh filled the gaps to provide security and ventilation.\textsuperscript{80}

SROs and cubicle hotels were often extremely run-down and sometimes infested with mice, rats, roaches and lice. The hotels became associated with bums and urban blight, and came to be considered eyesores and health hazards. Few, except the inhabitants, shed tears as most of these hotels were razed in urban renewal programs in the 1960s and 1970s. By 1982 the nation's supply of SROs had been cut in half and it has continued to dwindle since then.\textsuperscript{81} Some cities with large homeless populations, such as Chicago and New York, lost 80% to 90% of their SRO stock.\textsuperscript{82} It was not until the 1980s that the value of the single room occupancy hotel was again recognized.

In 1989 Charles Hoch and Robert Slayton published an extensive study of the role that SROs played in the skid-row community. Their findings startled many. They found that SROs were not the cause of the problems facing the urban poor but rather a significant component of the
solution. They argue that single room occupancy hotels were community institutions that enabled the urban poor to maintain their autonomy and avoid dependence on welfare or charity institutions. Furthermore they found that most SRO residents were happy with their living arrangements: 44% were very satisfied and another 48% reported that they were somewhat satisfied. Residents reported that they valued the location, affordability, and social benefits including relationships with other tenants, management, security, and privacy.83

The shared facilities of the SROs may not be ideal but they do lead to a strong sense of community that residents often report as being the best thing about life in an SRO. One woman explained: "The people living here are very nice. They're pleasant, and if something goes wrong, they help." Another man said: "I feel safe here...we are like one happy family." And a blind resident said: "I know everyone here and they take care of me. I can't get around too well by myself but someone is always stopping by to take me out for a walk or for some coffee." Others prefer privacy: "Nobody bothers me and I don't bother nobody. That's it!"
Another resident explained: "I like the privacy here but it's nice to go to the TV room to chat sometimes too." Clearly SROs are highly valued by the urban poor.

Unfortunately there are many disincentives to developers or non-profit agencies who wish to add to the stock of SROs through either renovation or new construction. Building code revisions in the 1950s made the single room occupancy hotel virtually illegal. Now, if an SRO is renovated it must be brought up to the standards of the new code.

In Chicago the passage of the new building code meant that 69% of the existing SROs no longer met plumbing requirements; 87% no longer met sprinkler requirements; and 55% lacked enclosed stairways. The cost of rehabilitation became prohibitive if one or more of these systems had to be replaced. On the west coast structural upgrades necessitated by new seismic codes are often enough to make renovation impossible.

Building codes can add unnecessary expense and delay to new projects as well. Codes specify such things as the minimum size of sinks, the number of electrical outlets that a room must have and even that every closet must have a light bulb. Such expenses often prevent developers from building profitable low-cost housing. George McDonald, President of the Doe Foundation, an advocacy group for the homeless, speculates that the private sector would gladly build housing for the single poor: "All the city has to do is get out of the way."

Zoning requirements can also work against affordable housing. Requirements (that lots be larger than necessary, that extensive parking facilities be provided, etc.) and other controls tend to raise the cost of housing and direct new construction toward the high end of the market. Some zoning, called "exclusionary zoning" is aimed specifically at keeping
certain populations out of a neighborhood. Exclusionary zoning can take the form of minimum unit area requirements, maximum numbers of unrelated tenants allowed, and prohibitions on certain types of housing.

Progress is being made in remedying some of these problems. Cities such as New York, Chicago, Boston, Los Angeles, San Francisco, Portland and Seattle have rewritten codes specifically to make rehabilitation of SROs easier.\textsuperscript{88} Less progress has been made in changing the codes to encourage new construction. Instead ordinances called "inclusionary zoning" or "linkage" have been used to force developers to provide low-income housing as part of every residential development.

The model for inclusionary zoning was written by the California Department of Housing and Community Development and reads: "The housing shortage for persons of low- and moderate-income households is detrimental to the public health, safety, and welfare, since low- and moderate-income households are forced to live in unsafe, unsanitary, overcrowded housing, and/or housing that they cannot afford. Thus, in the name of the public interest, inclusionary programs promote the development of community housing that would not otherwise be built."\textsuperscript{89} Linkage has proven to be an effective way to encourage the private sector to provide low-income housing; but only at great expense to the developer. It is conceivable that this extra expense would, in some cases, make the entire development economically unfeasible.

In San Diego the private sector has taken the initiative and found what appears to be an even better solution. A developer, Bud Fischer, worked with architect Rob Quigley and the city of San Diego's senior planner Judy Lenthall to build a for-profit SRO hotel. The project began
when Fischer, who had developed several upscale properties in San Diego's Gaslamp district, wondered if he could profitably build housing for the extremely poor who still frequented the streets in this gentrifying section of town.

Fischer hired Quigley, one of San Diego's best architects, to study the problem. It appeared at first that costs associated with building code and zoning compliance would make development impossible. Fischer then contacted Lenthall to see if, with the cooperation of the city, any of these barriers could be removed. Lenthall realized the great value of such a project to the city, and, in her words "We had to give to get." She realized that if codes were modified in such a way that developers could profit from building SROs, then Adam Smith's "invisible hand" would quickly reach down and sprinkle low-income housing all over San Diego at no cost to the city. But, she said, "We couldn't ask private developers to build a 20th-century animal with 19th-century rules." It proved extremely difficult to change existing building codes, so the team adopted a strategy of creatively interpreting existing codes and
of flexibly classifying of SROs while still meeting the spirit of the codes. Often "equivalency" measures were adopted. The city accepted a sprinkler system in place of two hour fire-rated doors and partition walls and reduced the necessary number of fire escapes. They also eliminated parking requirements and reduced sewer hook-up fees to reflect the actual impact of the development on these systems. These "adjustments" to the codes lowered costs enough to make the project viable without public sector grants; something almost unheard of in low-income housing.

The result of this development effort was the Baltic Inn, the first SRO built in the United States in fifty years. The funky contemporary building with Mediterranean colors, brightly colored tile accents, and even a neon sculpture on the roof fits few people's image of low-income housing. That does not bother any of the residents: "I was homeless before I came here...You can walk right in off the street and get a room that you can afford. Gratitude is what I feel for this place and the people that built it. I just don't know where I would have gone if these SROs weren't available." said one woman; another man agreed: "This is a place that I can take pride in. It is home to me."92

The development team was equally as pleased with the results. The city got low-income housing at almost no cost and the developer got a highly profitable development. The Inn has been almost completely full for the past three years and has shown a higher profit margin than many high-end developments.93 It has proved so profitable that the developer has already built a second SRO. Other developers were quick to jump on the band wagon. As of this publication there were 12 new SROs either finished or under construction in San Diego. Ironically, the federal
government has stepped in with new Savings and Loan regulations which make funding for future development of such speculative hotels nearly impossible to obtain.94

The city was so pleased with the results that they passed an SRO ordinance which codified many of the reinterpretations and equivalency measures and opened the door to the large scale SRO development witnessed in the last few years. The city even went a step farther and established a "living unit" ordinance which established new rules for housing units (coined "living units") that are a cross between SRO rooms and efficiency apartments.

The San Diego model has been universally lauded by housing advocates, but a great deal of patience and skill is required to cut through the boundless red tape threatening to strangle any such endeavor. Other innovative organizations have tried more direct approaches to supply long term low-income housing. Habitat for humanity is one such organization.

Habitat is a grass roots organization based on a self-help philosophy. It is an international network of church-based groups with 240 affiliates in the United States. The goal is to build single-family houses which are sold at no profit. Volunteers work together with the future homeowners to build the houses; the homeowners put up "sweat equity" and are given interest free loans from the organization. Each affiliate builds between one and twenty houses per year.95 Self-help programs have proven tremendously successful in the third world and should play an increasingly important role in addressing America's housing problems in the coming years.
Other attempts to provide housing to those who most need it have been more direct and desperate. Donald MacDonald, a San Francisco architect, built what he called "city sleepers" for the street people living near his office. These "sleepers" were essentially 4' x 8' x 4' weatherproof plywood boxes which a homeless person could crawl into for at least minimal shelter from the weather. The boxes could be padlocked during the day providing secure storage for the tenant's belongings.

MacDonald was sued by the city to remove the city sleepers. He stalled for eight months by taking the suit to the state Supreme Court, but eventually lost and was forced to evict the residents and remove the shelters. "I had to throw this woman and her child into the street with all their possessions. It was awful. Here I am trying to move them off the lot, and the kid's crying, and I mean it was terrible." MacDonald continues: "What you really learn as an architect from this is how important privacy and a lockable space is. Usually in homeless shelters, the people in charge watch the homeless who sleep there. They do a body search before they let them in, and take away their dignity, the only thing they have left."

Atlanta's "Mad Housers" are perhaps the best known group of clandestine shelter providers. This eclectic group sprung from the Georgia Tech School of Architecture and secretly erected small shacks for the homeless in secluded vacant lots. The sites for these shelters were carefully selected from lots known to be inhabited by the homeless. The shacks themselves varied in size and plan but were usually based on the 4' x 8' module with a typical unit being 8' x 12'. They were built from salvaged plywood and other materials and had visqueen windows. The cost of the units ranged from $40 to $200.
The people who took possession of these "houses" appreciated them tremendously, although they often made major modifications once the Mad Housers had left. Many of the original shelters were torn down by the city, but subsequent publicity made it difficult for the city to overtly destroy later units. More than fifty shelters were built over the course of two years and although the sheds certainly improved the situation of their inhabitants, the national attention they focused on the plight of the homeless might have been of even greater value.

Clearly the "innovative" approaches discussed above are acts of desperation. This desperation is evidence that the struggle to provide long term housing to America's poor is one that is being lost on many fronts.

**A Change of Agenda**

The Housing Act of 1949 established a housing agenda for the postwar period. It prescribed: "The realization as soon as possible of the goal of a decent home and suitable living environment for every American
family...to eliminate substandard and other inadequate housing through the clearance of slums and other blighted areas...to provide adequate housing for families with incomes so low that they are not being decently housed."

"A decent home and suitable living environment for every American family." 100

- The Housing Act of 1949

By 1969 little progress toward these goals had been made. The pledge of the Housing Act of 1949 was renewed by congress that year as a protest against the widening gap between the housing found in decaying urban neighborhoods and that found in exclusive, wealthy suburbs. 101

"A decent home and suitable living environment for every American family." 102

- The Housing Act of 1969

By 1989 there seemed little use in renewing this promise. The housing gap had continued to widen and the situation of the homeless threatened to make a mockery of any statement pertaining to a suitable living environment.

"Mr. Logic tells me it ain't never going to happen."

- The Violent Femmes c. 1989

Instead, the Housing Act of 1989 transformed the defeated agenda of 1949 into one of urban triage: "Any allocation of assistance...shall be made to the smallest practicable area...through a competitive process designed to serve areas with greater needs." 103 The act also established the National Commission on Severely Distressed Public Housing to
"Eliminate by the year 2000 unfit living conditions in public housing projects determined by the commission to be the most severely distressed." The 1989 act was one of damage control under which only the truly desperate would get assistance.

Where We Went Wrong

1949 was a time of economic prosperity and general optimism. The goals established in the housing act were not unrealistic ones. It was assumed that the wealth created as war industries converted to the production of consumer goods, including housing, would lead to a general improvement of conditions in American communities. The intent of the housing act was to encourage large-scale production of desirable housing, and to make sure that the poor would not miss out on the coming improvements in the housing stock.

The Housing Act of 1949 mandated "The development...of housing of sound standards of design, construction, liveability, and size for adequate family life; and government assistance...to provide adequate housing for urban and rural nonfarm families with incomes so low that they are not being decently housed in new or existing housing."

The plan was to be implemented through a two pronged attack: the first prong was the use of building codes to set forth (and continually redefine) the minimum acceptable housing standards; the second prong was a subsidy program to make sure that those who could not afford this minimally acceptable "standard" housing would not be excluded from the housing market. The building codes were given teeth through a system of building inspection and money was appropriated for the subsidy program. Things were off to a good start.
This program, like the program to deinstitutionalize the mentally ill, was as well meaning as it was ill fated. It looked good on paper, but ended up hurting precisely those that it was trying to help. Again, the (grossly simplified) reason was inadequate funding.

In the prosperity following WWII there was plenty of subsidy money and relatively few people needing it. Unfortunately each time the economic picture darkened the funding for such programs dried up and the number needing subsidy increased. After several such cycles the demand for subsidy was many times greater than the money available.

Enforcement of the building codes also proved problematic. It was relatively easy to make sure that new construction met the codes but much more difficult to inspect older buildings. When violations were found it was difficult to force a landlord to make improvements and repairs in older buildings. Furthermore, many codes had "grandfather clauses" which meant that existing buildings were exempted from new code requirements until these buildings were substantially remodeled.

In light of the grossly inadequate subsidies to the poor these enforcement problems turned out to be the proverbial blessing in disguise. If not for "substandard" housing units that did not meet with codes the poor would have had no place to live at all.

**The Line**

The Housing Act of 1949 established a line of acceptability below which no housing was to fall. The act acknowledged that some could not afford housing of this quality and mandated rent subsidies to bring the poor up to this new "standard housing" line. This two step process was to
provide every American family with the "decent home and suitable living environment" to which it was entitled.

As we have seen, this system failed. The codes were effective in bringing most housing up to the standard, but subsidy programs failed to make this standard of housing affordable to all. Today many people cannot afford standard housing as defined by our building codes. These codes have prohibited the provision of inexpensive housing while subsidies have failed to make standard housing affordable to the poor. The net effect, as has been demonstrated, is that the poorest among us are locked out of the housing market. They are trapped below this contrived standard housing line and sentenced to a life on the street.

**What We Must Do Now**

We can confront this crisis in one of two ways: 1) We can greatly increase spending on housing subsidy programs (bringing the people up to the line); or 2) We can relax or eliminate housing codes which prevent the provision of less expensive forms of housing (bringing the line down to the people).

*The measure of any society is the way in which it treats its poor.*

-Dr. Samuel Johnson

Clearly the preferable choice is to adequately fund our housing subsidy programs. The cost of such programs is a relative bargain. A clean, well run, privately operated shelter with private rooms costs only $450 a month per bed.\(^\text{106}\) Transitional housing including the provision of full counseling services costs less than $2,500 a month\(^\text{107}\); and long term
housing in the form of single room occupancy units can be provided for $300 a month.\textsuperscript{108} Compare this to a cost of $16,500 per month for a bed in a state mental hospital or $8,800 per month for a jail cell.\textsuperscript{109} American society is unique in that we are unwilling to spend $300 a month to provide warm, safe shelter to our 500,000 homeless but quite willing to pay 25 times this amount to shelter our convicted felons.

It has been argued that minimal housing is a constitutional right: that housing is necessary for the pursuit of happiness and therefore guaranteed by the United States Constitution. This view has not been upheld by the Supreme Court but some states, such as New York, do include housing as a right in their state constitutions. Whether or not housing is a legal right should be a moot point. It is clearly a human right so the homeless are entitled to shelter.

Most homeless people face the same economic struggle as the rest of us but, for a variety of reasons, end up at the bottom of the pile. Many of the homeless have no more control over the events that lead to their homelessness than do victims of earthquakes, tornados, or floods. They do not succumb to the streets without a fight.

\textit{Humanitarianism is a manifestation of stupidity and cowardess.}

-Adolph Hitler

Homeless is a national emergency. If 500,000 people were left homeless by an earthquake enough emergency relief would flow to the area to mitigate the suffering. We have the ability to organize such a relief effort for the homeless. The president should declare homelessness a national emergency as a first step in such an effort.
Arguably, most of the homeless do deserve our help. The rest we should help anyhow. That somebody "deserves" to be on the street is no excuse to refuse them assistance in a compassionate society.

At the present time substantial subsidy programs for the homeless are out of the question. The American people, through our elected representatives, have clearly indicated that we do not wish to spend our money on the homeless. The legislators themselves find it difficult to take the lead in advocating such policies while facing huge budget deficits and a coming recession.

It is imperative that we advocate the change of morally bankrupt spending policies. Such change will be slow in coming. When we do increase spending on the homeless it will be bed by bed. It is inconceivable that we will ever be willing to spend enough to put every American individual into housing that fits today's standard as defined by our building codes.

The only viable option we are left with is to relax building codes. Unfortunately this course of action is an admission that the goals of the Housing Act of 1949 have been defeated and is a step backward in the fight for an equitable housing policy.

Nonetheless, it is time to admit defeat for we are clearly defeated. To do anything else would not only be irresponsible but would prevent us from getting on with the business of reparation and cause needless suffering to another generation of the extremely poor among us.

Many have argued quite eloquently against lowering the standards for low-income housing. F. Stevens Redburn and Terry Buss, in their book *Responding to America's Homeless*, have listed this strategy under
the heading Bad Ideas. "That government should sanction the creation of cheap substandard housing for the homeless, would break precedent with the long-held goal of bringing all U.S. housing to one minimum standard...if implemented, (this) might do more harm than good."\textsuperscript{110}

Peter Marcuse, professor of urban planning at Columbia, argues that "The buildings we propose for the homeless should sustain the criteria expected in all our work. If we deliberately lower our standards for the homeless and develop housing types suitable only for them, we will only intensify the stigma they bear."\textsuperscript{111}

These arguments for maintaining housing standards are based upon hope: hope that funding will come. The skeptic would claim that hope is merely disappointment deferred. Nietzsche said that "Hope is the worst of all evils, because it prolongs men's torments. The realist simply declares that it is time for action.

We cling to hopeful idea(1)ls so that we may feel good about ourselves, but do so at the expense of those we claim to help. It is time to confront our collective lack of compassion without fear of what we will see. We are understandably afraid to let the market determine the quality of housing that the poorest among us can afford. We are afraid of what we will see. It will not be a pretty sight, but it will be preferable to the sight of a 56 year old mother of four that has frozen to death overnight in a cardboard box in central park.

Building codes were instituted to serve the public interest. In the case of affordable housing they clearly do not. Michael S. Carliner, chief of Economics and Housing Policy at the National Association of Builders, points out that "While public and subsidized housing is hardly luxurious,
those standards often go beyond fundamental health and safety considerations and reflect middle-class concepts of what is necessary for a housing unit."\textsuperscript{112} Mary Comerio, of the Center for Environmental Change, adds that "We have developed a housing standard that is beyond the reach of affordable housing in any way, shape, or form."\textsuperscript{113}

Clearly there is a critical shortage of affordable housing. Evidence of this shortage is abundant. The Section 8 program mentioned earlier is one persuasive example. Under the program voucher recipients are required to find housing that meets certain quality standards and that rents within "fair market rent" guidelines. In 1985, due to a lack of federal funds, only 22.5\% of eligible families were issued subsidy vouchers.\textsuperscript{114} These families had been on long waiting lists in order to receive these vouchers. In spite of the value of these vouchers the majority of the families were unable to find housing within the two month time limit and were forced to forego benefits.\textsuperscript{115}

Often the income of poor families is so low that the rents they can afford to pay are not even enough to cover the operating expenses of the units in which they live, much less the payments on loans required to finance new construction or profits for builders and landlords. As a result low-income tenants are forced to wait for "trickle-down" housing as higher rent properties fall into decay becoming delapidated and unsanitary but more affordable.

Recently gentrification, or the renovation of older neighborhoods for luxury housing, has severely cut into the supply of trickle-down housing in two ways. First, gentrification leads to fewer new housing starts and therefore fewer properties to decay; and second, decaying
buildings are being gobbled up by the wealthy just as they are about to trickle-down to the lower income groups.

Code requirements are to blame for directly increasing the costs of low-income housing as documented earlier. These codes are also to blame for indirectly forcing up the prices of all low-income properties. Property owners can charge inflated rents for cramped, rat infested firetraps because building codes prevent developers from entering the market at the comparatively low rent levels charged by these landlords. It is impossible to build a unit up to code at a price that can compete, so developers must provide nothing at all.

City Hall enforces the slumlord's monopoly.

A lesson that can be learned from San Diego is that if codes are relaxed the private sector can provide cost-competitive housing that is superior to what is being offered through the trickle-down market. The mere existence of such improved housing forces the entire trickle-down market to lower their prices in order to compete. Building codes, which represent barriers to entry into the affordable housing market, unwittingly have the effect of enforcing the slumlord's monopoly on affordable housing.

We live in a safety conscious (litigious) society in which we try to insure against any possible injury, health hazard, or loss of life; even those that might result from extremely rare circumstances. As a result we have very few building-related catastrophes such as collapses or major fires. This happens, however, only at great monetary cost. These
costs are acceptable to most of our population, but the poorest among us might prefer to pay less at the expense of greater daily risk. Similarly, many of the very poor are willing to live in more modest housing than we might consider acceptable. Who are we to judge what is acceptable to them?

Michael Carliner sums this up well: "Building codes have inhibited the construction and rehabilitation of low-income housing...While these codes ostensibly protect poor people, they effectively rank homelessness as preferable to substandard housing." By enforcing building codes we prevent the construction of very inexpensive housing. While these codes ostensibly protect poor people the are in effect saying "You must not live in substandard housing - you are better off in the street." The saga of modern shantytowns illustrates this point.

Shantytowns are reminiscent of the so called "Hoovervilles" which sprang up during the depression in the 1930s. The most famous shantytowns of the 1980s were in Los Angeles. Although small shantytowns had existed in L.A. and other cities for years the first to gain national attention was situated in a vacant lot in skid row and came to be known as Justiceville.

Justiceville consisted of improvised plywood and cardboard shacks erected by about 60 formerly homeless settlers, most of which were Black and Hispanic. Although it began as a modest attempt at protection from the elements Justiceville quickly became more than that. It became, in the words of Richard Ropers, a "real community, with a division of labor and a sense of sharing, caring, and solidarity...an attempt by the homeless to provide themselves with the shelter, community, and dignity denied them by their social system."
After about two months of existence the Health Department condemned Justiceville citing unsanitary conditions pertaining to human waste disposal. Four private sanitation companies came to the rescue and donated port-a-johns to the community, but two weeks later Justiceville was razed to the ground by bulldozers. The city cited six more health violations.

Justiceville is only one of many such settlements which became popular in cities with fair climates. These settlements were preferred by many urban homeless to vermin-infested and unsafe shelters and welfare hotels. Rachel was a resident of one such settlement.

My name is Rachel and I am 37 years old. I was born in Pasadena and raised in L.A. I graduated from Garfield High School.

I've been living on Towne Ave. for three months with my husband. We had constructed a wooden "house," that was pretty stable and met our needs. I had plates and all the necessities. We had a mattress, blankets and sleeping bags. We had pots and pans, clothing and personal items.

Wednesday morning I got up, got dressed, went to the potty and went back and told David to bet up and not forget to do his exercises. I told him not to forget to read the bible, too. I was going to sleep a little more before getting ready for the day.

David poked his head in the house and said, "Hon, they're gonna sweep." I said "Damn" and looked out and started to cry. I knew they were gonna take my house. That house meant a lot to me.

I took off the coverings of the house, rolled up the blankets, and tried to get parts of the house pulled out and ready to take away. Then I tried to help other people in our community.

I tried to help people with their carts, to get the baskets up onto the sidewalk to load up the carts.

Our kitchen was all set up. I helped grab a bag of onions. Everything went into the streets—rice, salt and pepper, noodles, utensils, storage cabinets, glassware, stone
containers, some now frills we'd just gotten and a lot of donations of clothing. I just stood and watched.

A woman who regularly comes down to give us donations, came right in the middle of it, to leave some things for us. We told her not to leave things because all the things were being dumped out.

County workers, probably G.R. work project people, came down and put everything, everything in the gutters.

We all have hopes and dreams. I do. When I saw them throwing away pieces of wood that were once my house, I felt like my hopes and dreams were there in the gutter. David had built that house. It meant a lot to me. It's just very personal. Now that house is gone.\textsuperscript{118}

As a citizen the designer must fight for more humane and equitable housing conditions for all. As a designer the citizen must design the most dignified and comfortable housing possible within the suffocating spatial and monetary constraints that reality has imposed.
SHELTER

[the response]
If you do not wish to be criticized say nothing, 
do nothing, be nothing.

-Confucius
**Sober Design**

This design exploration re-examines what we have come to accept as minimally sufficient housing. The goal is to provide a truly affordable alternative to the street. The response addresses the everyday living conditions of the homeless head on rather than retreating into a hollow ar(t)itectural exercise predicated upon a romanticized notion of homelessness.

A rigorous and self-critical methodology has been adopted. The process starts with the testing of even the most basic assumptions. The dimensions and budget of the unit are not programmatic givens - they too will be evaluated. The challenge is to build the smallest and least expensive unit that adequately meets predetermined performance criteria: to forge "livability" out of minimal space and money.

**Performance Criteria**

The performance criteria were developed through interviews with homeless people and shelter operators; by referring to building codes and standards manuals; and through experimentation and the use of common sense. Criteria were established in the areas of utility, production, and psychosocial needs.

The standards pertaining to how the structures will be used are the most extensive. The units are to be useful to all three tiers of the shelter system. They should be adaptable to existing public and private emergency shelters as well as new for-profit shelters that could be built in warehouses by private sector developers. They should function as transitional housing in shelters that cannot afford more expensive private apartments. And they should be appropriate as modest rooms for
the poorest of the homeless in SRO-type hotels that might offer a variety of rooms to accommodate the changing budgets of its permanent residents.

The prototype should be appropriate to any climate and any cultural situation in the United States. It should accommodate the most basic domestic activities including sleeping, changing clothes, reading and writing at a desk, conversing with a guest, and watching television. Ample storage of clothes, toiletries, books, and memorabilia should also be accommodated.

The rooms should be soundproof enough to make conversation in an adjoining room unintelligible. They should be provided with adjustable ventilation systems capable of at least five air changes per hour, and they should have enough appropriately placed electrical outlets to make extension chords and outlet splitters unnecessary.

Surfaces should be damp-sponge washable. Walls should handle pins and nails without being damaged structurally or aesthetically. Exposed edges should resist denting, chipping and splintering and all visible surfaces should be accessible for cleaning.

Materials should be sound absorbing and fire resistant when possible, and must be non-toxic by ingestion, absorption, or inhalation of byproducts of combustion. Materials and surfaces must not cause any form of irritation or reaction to those with common allergies.

Furniture must be extremely durable and should not creak. It must also be repairable and refinishable when damage occurs.

Units built by non-profit and charitable groups must have a ten year life span. They should have a fire detector in every room and a one hour fire rating throughout.
Pre-fabricated units for use in for-profit developments must have a twenty year life span. They must have smoke detectors and sprinklers in every room, but require only a twenty minute fire rating. Both versions should conform to existing codes as closely as possible.

The production criteria are also fairly extensive. Materials are to be relatively inexpensive and obtainable from local sources. The production process should be adaptable to both hi-tech prefabication (useful to organizations or companies with significant capital) and low-tech do-it-yourself systems (for benevolent groups with very little capital but access to volunteer labor).

Production should be quick and easy. There should be minimal cutting of standard sized materials, no cutting of masonry materials, a minimal amount of labor intensive finishing, and provision for the accommodation of inexact fits.

The primary components of the units must be modular in nature and should accommodate prefabrication and automated manufacture. These components must be small enough to fit through standard doors in existing structures. Ideally the unit would be portable yet feel permanent.

Opportunities for non-sequential construction are desirable, and the final assembly of the unit must be possible in very limited space and from the inside of each housing unit since access from the outside will not always be available.

The professionally built prototype should require a minimal number of contractors and the total price (materials plus labor) should be near the component minimums. The do-it-yourself prototype should be buildable with common portable and rentable tools, should have a
simple construction process, and may be relatively labor-intensive. Material costs should be minimized in the do-it-yourself prototype.

Both models should be capable of disassembly and relocation should the need arise, but must not be able to be disassembled from the outside. (If this were the case the units could be broken into by being taken apart)

The units must provide the basic elements of a home: safety, privacy, a feeling of belonging, uniqueness, and symbolic meaning. Other psycho-social criteria include the provision of an interesting and variable environment in terms of textures, lighting conditions, spatial order, and connections with the "outside".

How Small Is Small?

The first step in the design process was to determine the optimal size for the unit. It was clear that at least one dimension would have to be sufficient to allow the resident to sleep comfortably - roughly the length of a bed. More radical sleeping configurations (such as the hanging sleeping bags in spacecraft) fail to meet psycho-social needs and acceptable standards of comfort and were rejected.

A standard single bed measures 6'-6" by 3'-3". To determine whether either of these dimensions could be reduced I relied upon personal experimentation and anthropometric data. I lay down on sheets of cardboard of various sizes and discovered that I could "sleep" comfortably on a bed only 7" wider than my shoulders but that I needed a bed 4" longer than my body to provide the same level of comfort.

It is customary in ergonomic design to accommodate the "95th percentile person"; the other five percent simply have to suffer a little. I
have accepted this practice for two reasons. The first is that it is impractical to please everyone. The second is that the "extreme" people are accustomed to these standards and have developed techniques to cope with them.

Anthropometric data indicates that the 95th percentile male is only 6'1" tall and has shoulders 20" wide. Combining this data with my experiments I found that the minimum bed size is 6'5" long and 2'3" wide. I was not quick to adopt this as the optimal bed size. There are other considerations that must be made.

Beds often accommodate activities besides sleeping. The most common of these are reading, watching TV, and sexual activity. It is also common to rest objects such as pillows, books, stuffed animals, pets, or a box of Kleenex on the bed. Extra bed width is necessary to accommodate these uses. Extra length might be desirable in some cases but is not necessary.

Standard size bedding is another concern. The extra hassle and expense of obtaining custom size sheets, blankets and mattresses would
likely negate any economies resulting from sub-standard sized beds. This combination of factors lead me to determine that the standard single bed was the best choice in terms of both economy and utility.

The room must be 6'-6" long and at least 3'-3" wide just to accommodate the bed or sleeping area. It would be possible to limit the room to these dimensions, but this envelope was rejected because it would be claustrophobic, fail to provide sufficient storage space, and require too much overlapping of use. Additional space would be necessary.

**Spatial Configuration**

Before deciding how much additional space was necessary it seemed prudent to determine the basic spatial configuration of the room. This was done through a brainstorming process followed by the analysis and subsequent combination of the ideas produced.

It quickly became apparent that the three critical components of the space were the bed, a desk surface, and accessible storage space. The quick sketches in figures 3 through 9 are examples of this brainstorming. Many concentrate on the resolution of just one or two of the problems.

Sketch A (Figure 3) depicts a loft bed common to college dormitory rooms. This configuration works very well in dorms since it condenses a bed, a desk, and lots of storage into a very small space. This scheme was rejected in spite of its efficiency. The large structure overwhels the tiny room, and climbing into a loft bed would be extremely difficult for handicapped and elderly residents.
The futon scheme, sketch B, is quite efficient but has several drawbacks. The bed sits directly on the floor making it difficult to use; it must be folded up (as shown) every day in order to provide sufficient floor space for other activities, and it fails to provide sufficient storage.

Scheme C is a simple but solid plan. The bed can be used for both sleeping and sitting; there is a small but serviceable desk, and there is considerable storage space built in under the bed. On the other hand the space is awkward and more storage would be desirable.

The "Murphy" solution is a tribute to two Murphys: one a bed manufacturer; the other a philosopher. This strategy seemed to have great potential. It afforded considerable open floor area when the bed and desk were folded up and provided the opportunity for very interesting architectural pieces. The most obvious difficulties with the Murphy scheme were potential maintenance problems and the need to put the bed and desk away when not in use.

Sketches E and F are variations on scheme C. Both include irregularly shaped beds and desks that run the length of the wall
perpendicular to the bed. Scheme E introduced curvilinear lines to soften the cell-like aspect of scheme C. One might tire of these forms quickly.

Drawing F shows a simplified version of scheme E. It utilized a "mummy" shaped bed similar to the shape of high-quality sleeping bags and a similarly shaped desk surface. This scheme showed potential in that it too began to subvert the feeling of being in a cell and it minimized the areas of the bed and desk to maximize the residual floor area. The drawback to this scheme is the non-standard bed.

Finally, sketch G is an elaboration on plan F. New elements include a rolling bed that allows the resident to store things behind the built-ins or to simply with the bed pulled out from the wall for a change now and then. It also features trapezoidal shelves that create an undulating spatial configuration at the end of the room as they change shape from top to bottom. The shelving idea was jettisoned immediately but the idea of a moveable bed seemed extremely attractive.
A spatial arrangement similar to sketch F was chosen. For reasons described above a standard single bed was substituted for the mummy bed. The trapezoidal desk surface seemed unnecessarily contrived and was now conceived of as a rectangular piece as well. This configuration was chosen over the Murphy solution for reason that will be explained later in the text.

**Now How Small?**

Having determined the basic spatial configuration it was now possible to decide upon an appropriate width for the room. This dimension would be the width of the bed plus a yet to be determined expanse of floor area. The anthropometric manuals stated that 18" is required to pass a bed, that 31" is required to dress, and that 39" is required to open a drawer backing up to a wall. Personal experimentation showed that these figures were extremely generous. I found it easy to dress in only 24" if I oriented my body parallel to the walls and I found that 30" was plenty in
which to use a drawer, especially if I stepped to the side as the drawer was opened.

Accepting 30" as the minimum bed width (if one were willing to accept a non-standard bed size) and another 30" as the minimum floor width it would theoretically be possible to inhabit a room only five feet wide. Since I had already determined that a standard bed size was preferable the minimum width became 5' - 9".

I discovered, however, that a fairly tall person could touch opposite walls simultaneously at this width. To avoid psychological repercussions such as the feeling that the walls were closing in I opted for a slightly wider space. A width of six feet seemed ample in terms of all of the above criteria. This dimension was adopted as the tentative room width.

**Storage Concerns**

With the spatial configuration resolved the next pressing concern of utility was the provision of ample storage space. The proposed drawers and shelves under the bed were a good start but after some
experimentation I determined that more, and more convenient space would be necessary. Another brainstorming session provided some interesting storage ideas.

The first idea was built-in overhead shelving. It would provide a large volume of storage area, somewhat private storage, and a variety of storage space shapes. The drawbacks were that it was difficult to reach without standing on something; it would look barren if empty (which might embarrass a resident without many possessions); it would be inflexible; and it would be expensive to build.

A hanging loft would solve many of these problems. It would provide hidden storage, would be inexpensive to build, and it too would provide a large volume of storage. The problems were that it was even more difficult to access than the overhead built-ins; that it lowered the apparent ceiling height; and that it would be difficult to store large objects on.

Storage under the floor was attractive in that it would provide a huge amount of accessible storage without the need for boxes. This
storage would be out of sight and the door hatches could articulate the floor. Drawbacks were that it would be difficult and expensive to build, that the resident might need to move furniture around to access compartments, that the structure might creak, that panels could easily become warped or misaligned, and that liquid spills could be problematic.

The oversize picture rail was an adaptation of an old Shaker motif. Shaker design became a major influence on the project when I discovered their austere but earnest aesthetic. The picture rail was great for nick-knacks and had a very homey feel, but it simply did not provide enough space.

An adaptation of the picture rail scheme is pictured in figure 15. It is simple, flexible, and provides considerable storage. It is also ugly and difficult to reach as drawn. It requires a very high ceiling and cannot be adjusted along the vertical axis.

The wood lattice might have pleased an interior decorator but was not a very practical solution. Access was a problem, even if the middle
were left open. It would also be hard to paint and objects suspended above the resident would be both unnerving and unattractive.

A simpler version of the wood lattice is the cable net loft. It would be easy and inexpensive to build, structurally sound, and relatively interesting spatially. Unfortunately it would share many of the problems described above and would sag as well.

The drop-down peaked roof scheme (next page) was a bad idea.

The "barbs and bags" idea pictured in figure 19 had many obvious flaws, yet it was somehow quite endearing and lingered in the back of my head for some time.

Another Shaker inspired idea was the giant pegboard. It seemed ideal in many ways: it was capable of providing extremely flexible storage space; it had the potentially to be both attractive and interesting; it was easy to modify; and it could provide easily accessible areas if it crossed below the level of the door. Potential problems were to find a way to build such a thing without incurring the expense involved in a difficult
construction methodology, and to find a way to paint it without clogging the peg holes.

The pegboard seemed to be the most promising storage solution followed by the modified picture rail scheme. At this point I departed for the wood shop to see if an easy way to build and paint the pegboard could be found.

My first notion was to insert 1-1/4" dowels into 1-1/4" holes drilled into inexpensive particle board. I bought dowel stock and a 1-1/4" boring bit and went to work. I discovered that this method did not work because the 1-1/4" dowel did not fit into the 1-1/4" hole. Sanding the dowel down to fit the hole proved much too time consuming to be practical. A method for adjusting the hole size to the peg would be necessary.

It turned out that adjustable boring bits existed. I found that the adjustable bit would consistently drill a hole into which the dowel would
fit quite snugly. The particleboard chipped and deformed easily, but by substituting plywood the problem was solved.

I then discovered that if the pegboard was painted with a roller it was actually difficult to get paint into the holes. If paint did manage to enter the hole it did not significantly constrict the peg when inserted. I had gained confidence in the feasibility of the pegboard, and was now convinced that my storage problem had been solved.

How Cheap is Cheap?

One task of this exploration was to determine an appropriate cost for the unit to be produced. Since there was no budget the task was a matter of balancing price with quality. This was true of both construction methods and materials. For construction the process was simply a matter of deciding whether the operation in question was worth the time it took to do it.

Choosing materials was more difficult. I quickly learned that there were so many different materials covering such a wide range of prices
and qualities that it was going to be tremendously difficult to compare them. I devised a rating system to get the process started. All materials which seemed applicable to the project were rated on the basis of cost, durability, ease of maintenance, appearance, safety, sound absorption, and whether they bore an institutional stigma.

Each material was rated on a scale of one to four in the categories above. A weighted cumulative score was then computed by adding the scores in each category to twice the durability and attractiveness scores and to three times the cost score of each item. The materials with the top scores were considered further and the rest were discarded.

The categories of material that were rated were wall systems, flooring, ceiling systems, base zone materials, and glazing. Fifteen wall system materials were considered with sheet rock, particle board, wafer board, asphalt board, 2x4 plank, and gridded Homosote all receiving acceptable scores. Seven floor materials were rated with carpet, ropecard, and resilient tile making the grade. Five ceiling materials were ranked with sheet rock and corrugated metal coming out on top. Carpet and wafer board proved the best of seven base zone materials and glass brick and plexiglass rated highest in the glazing category.

The choices of materials were to me made from the short list depending upon circumstance as the design developed. New considerations would certainly come up that would tip the scales in favor of one material or another.
Psychosocial Needs

Research into the psychosocial needs of the residents began with interviews of shelter operators and clients. Three concerns were voiced by almost every individual interviewed. They were, in order of importance: personal safety from aggressors; security for belongings; and issues of privacy and/or community.

The work of psychologist Abraham Maslow affirms the interview findings. Maslow proposed a "hierarchy of needs" which order people's lives. The highest priority in the hierarchy is the attainment of physiological requirements such as food and water. Next comes the need for safety which entails shelter and security from attack. Then, in order, the need for belonging, esteem, actualization, and finally cognitive/aesthetic growth.

Maslow's theory explains many choices made by homeless individuals and helps the designer determine and prioritize the needs of the homeless. The theory accurately predicts that a homeless individual will choose food over shelter. It also predicts a phenomenon described by Lee Rainwater: "At the cost of perhaps increased isolation, lower class people sometimes place a great deal of value on privacy and on living a quiet life behind the locked doors of their apartments...Once the home can be seen as a relatively safe place, lower class men and women express a desire to push out the boundaries of safety further into the larger world." 120

Almost all emergency shelters provide for the most pressing needs in Maslow's hierarchy: food and water. By definition they provide shelter; but many inadequately provide for the safety of their residents.
Actual and perceived safety of shelter residents is closely tied to the issues of territoriality, privacy, and personal space.

Personal space is described as an area around a person into which intruders may not come. It is often likened to a "space bubble" which surrounds a person's body. Encroachment into this personal space results in anxiety and sometimes an overt reaction on the part of the victim. People attempt to maintain their personal space through the use of body language, physical barriers, and territoriality.

Territoriality is a means of boundary regulation that involves demarcating a place or object and communicating that it is owned by a person or group. It usually involves a psychological identification with a place and possessiveness reflected by the arrangement of objects within the area.

These techniques enable people to secure what they consider "defensible space." Defensible space is an environment that is under the control of the inhabitant. Defensible space is crucial to security.

Oscar Neuman, an urban designer, identified several factors essential to a defensible space. They include a clear hierarchical definition of territories, from public to semipublic to semiprivate to private, and the positioning of doors and windows to provide surveillance opportunities over entrances and open areas. Large dormitory shelters seldom provide defensible space.

Shelters often do not provide privacy for clients either. Jeffery Fisher, Paul Bell, and Andrew Baum write that "One of the most important aspects of the design of interior space is the amount of privacy it provides." Failure to afford individuals sufficient privacy can lead to extreme stress and antisocial behavior. One example of this was the
fighting between crew members aboard the aircraft carrier Kitty Hawk. 46 sailors were involved in one brawl alone and several were hurt seriously enough to be flown to an onshore hospital. Although ships are usually the epitome of discipline it was found that tensions may have been caused or aggravated by the lack of sufficient privacy on the ship.\textsuperscript{123}

Too little privacy can lead to feelings of crowding that can cause similar problems. Crowding should be distinguished from high population density. Density refers to the number of people in an area while crowding is associated with a feeling of having little control over the environment. Crowding has been causally linked to antisocial behavior while high population densities have not.\textsuperscript{124}

Sensory overloading similar to that caused by crowding can be caused by the environment itself when inhabitants are unable to modify it. Light, sound, color, and complex or large numbers of furnishings can contribute to sensory overload. While too much stimulation can cause sensory overload, too little stimulation is monotonous. The designer must attempt to provide a balanced set of stimuli within an environment. A review of research on the perception of space, sound, color, lighting, and furnishings will be instructive to the designer wishing to avoid these problems.

The perception of space plays an important part in the design of a small room. Fortunately, a great deal of research has been done on this subject. It has been found that square or nearly square rooms appear to be larger than long rooms of the same area although rectangular rooms are perceived as less crowded.\textsuperscript{125} Light colored floors make rooms seem larger than dark floors.\textsuperscript{126} Dark walls opposite each other appear closer
together than opposing light walls.\textsuperscript{127} Rooms with less furniture appear larger than rooms with lots of furniture.\textsuperscript{128} Rooms with bright colors, partitions, and visual distracters such as windows seem less crowded than rooms without these elements.\textsuperscript{129} Rooms containing furniture of a contrasting color to the walls appear less enclosed than rooms with the furniture color matching the walls.\textsuperscript{130} And finally, light colored rooms appeared more open and spacious but not more pleasant than darker rooms.\textsuperscript{131}

Researchers found that the intrusiveness of sounds were linked to the degree of control that others had over the intrusions they were making. For this reason noise from a radio is perceived as more obtrusive than the louder sound of passing traffic.\textsuperscript{132} Researchers also found that some people preferred noisier sleep settings.\textsuperscript{133}

Colors were found to affect mood. Red hues generate greater galvanic skin response than do green hues.\textsuperscript{134} Similarly, red was termed exciting, protective, defending, and defiant while blue was considered secure, comfortable, tender, soothing, calm, and serene. Orange was deemed distressed and upset; black despondent and powerful, purple dignified, and yellow cheerful.\textsuperscript{135} Warm tones were found to advance while cool tones receded.\textsuperscript{136} Warm tones were preferred to cool ones and light colors preferred to dark.\textsuperscript{137}

Studies have shown that natural lighting has a positive effect on mood.\textsuperscript{138} Other research indicates that fluorescent lights can cause hyperactivity in children while incandescent light can have a calming effect.\textsuperscript{139} As one might expect bright light was found more conducive to work while dim lights were likely to facilitate intimacy.\textsuperscript{140} It was also found that changing the type and configuration of the lighting can
change the perceived size and shape of a room as well as the inhabitant's response to it.\textsuperscript{141}

Finally, the overall aesthetic quality of a room has a bearing on how we behave within it. Pleasant environments have been shown to increase peoples willingness to help each other,\textsuperscript{142} and to talk to each other.\textsuperscript{143} It has even been shown that people perceive others as being more attractive if they are in a pleasant environment.\textsuperscript{144}

It is said that the best thing psychology has to offer is the observation that people are different. After reviewing the behavioral psychology above it is a worthy observation to keep in mind. By trying to create an environment that will please everyone we are guaranteed to please no one. A more intelligent strategy is to provide a variable environment which the user is free to modify to suit his or her preferences. This strategy, however, comes with its own set of problems.

While providing this variable environment the designer must still afford the inhabitants opportunities to meet the established performance criteria. Unfortunately, the provision of such opportunities does not always guarantee that they will be taken advantage of.

Psychologist James Gibson coined the term "affordance" to describe a property of an object or system that affords the object a chance to be used. A peaked roof is an affordance in that it allows a user to be sheltered from the rain if he chooses to stand under it. It also affords a symbolic reference to "home" which may be meaningful to the inhabitant.

The ability to make use of affordances depends upon the capabilities of the user. Steps do not afford opportunity to a
handicapped person and symbols do not afford opportunities to those who are not familiar with them. Many laymen do not like "high architecture" because its aesthetic affordances are beyond their level of understanding. The competence level of the user must be kept in mind when designing for a specific group.

Along these same lines people may also choose not to use an affordance even if they are capable of it. For example, if there is no overt or latent desire for interaction between people then interaction will not occur regardless of how nice a space for such interaction a designer provides.

It is essential to furnish an environment with an appropriate number of affordances within the competence level of the user. If affordances are beyond the capabilities of the user they cannot be used and in some cases may not even be perceived.

An environment with affordances that are beyond the competence level of the user is extremely restrictive and can even lead to higher rates of mental illness. On the other hand if the environment demands less competence than the user possess it will be too comfortable (read boring). The user will feel constrained and his/her abilities will atrophy. The architect must design an environment which is neither too restrictive nor overwhelming to the user.

If all of these concerns were met the result would be the perfect "machine for living in." This, however is not enough. The provision of efficient shelter is a noble goal, yet only the means to an end. Emergency shelters are forced to concentrate on meeting only the highest order needs of its clients. Unfortunately emergency shelters often become long-term shelters by default. In these cases, as in the cases of
transitional and long term housing for the homeless we must provide more than just shelter. We must provide a home.

The Home
The home has been variously described as the instrument for measuring the degree of civilization a people has attained; the place that we go to change our clothes so as to go someplace else; the ultimate result of all ambition and the end to which every enterprise and labor tends; and as an emotionally based and meaningful relationship between dwellers and their dwelling places. The concept of home is quite complex and has many aspects. An exploration of some of these aspects might help clarify what a home is.

The concept of home is deeply rooted in the link between our bodies and the world around us. The home relates to the human dimension. Primitive cultures often use the home as a literal metaphor for the body (the microcosm) or the cosmos (the macrocosm). In Western culture the home defines the boundary between ourselves and others in much the same way as our bodies do. When the metaphorical body is burglarized or vandalized the inhabitant often feels personal contamination at a gut level, almost as if the literal body had been violated.

To paraphrase Kimberly Dovey, author of "Home and Homelessness," home is a center of security, stability, and possessed territory. It is a place of freedom where our own order can become manifest, secure from the imposition of others. Home is a place that we are familiar with, a place that we can relax.
Personal order that becomes manifest over time may look like chaos to the outsider. An executive's desk stacked with intuitively ordered piles of papers is a good example of this.

Home can be linked to patterns of experience and behavior that are not tied to a specific place. The !Kung bushmen, a nomadic tribe of the Kalahari Desert, create a new home every night with just a symbolic entry and a fire to mark the home's center. Certain rituals or possessions may have similar meanings of home to transients in our society.

The processes of appropriation and modification are central to a common home making ritual illustrated well in George Steinbeck in *Cannery Row*:

Mack knew that some type of organization was necessary...with a piece of chalk he drew five oblongs on the floor...and in each square he wrote a name. These were the simulated beds. Each man had property rights inviolable in his space. That was in the first days when Mack and the boys sat on the floor, played cards hunkered down, and slept on the hard boards...Because it sheltered them the house grew dear to them...One afternoon Hughie came in with an army cot which had a torn canvas...He spent two hours sewing up the rip with fishing line. The next day Mack puffed up the hill carrying a rusty set of springs he had found on a scrap iron dump. The apathy was broken then. The boys outdid one another in beautifying the Palace Flophouse until after a few months it was, if anything, overfurnished. There were old carpers on the floor, chairs with and without seats. Mack had a wicker chaise lounge painted bright red. There were tables, a grandfather clock without dial, face or works. The walls were whitewashed which made it almost light and airy. Pictures began to appear - mostly calendars showing improbable luscious blondes holding bottles of coca cola....A bundle of gilded cattails stood in one corner and a sheaf of peacock feathers was nailed to the wassail beside the grandfather clock.
College students move into dorm rooms and rearrange the furniture only to move it back a week later. It is the process, not the position that is important. They further personalize the room with posters and the display of other belongings.

Psychologist Carl Jung argued that self expression in built form is one way in which we develop the concept of Self. He described the construction of his own house as a "Concretization of the individuation process."149

Architect Ralph Erskine was particularly sensitive of the resident's need to individualize their homes through building and modification at his Byker housing project: "There are large areas which tenants can paint and many forms that can be modified; the architect's ad hoc use of non permanent materials on durable main structure will necessitate a continuous change...Housing is a living organism, capable of coping with continuous change and assimilating innovations. Signs of human activities should be encouraged; washing or mats hung out for airing must be anticipated and should add to the design, not destroy it."150 The overwhelming success of this project suggests that other architects would do well to approach housing with such sensitivity.

Finally, the home serves as the link between the individual and the community. "Representation of identity in the home stems from both social structure and our quest for personal identification within it. The home is both a 'statement' and a 'mirror,' developing both socially and individually, reflecting both collective ideology and authentic personal experience."151 The home grows from the personal and social circumstances of the inhabitant. The home serves as a critical link and buffer between individual and community.
Clearly there is more to a home than shelter. Maslow identified a hierarchy of human needs of which the typical emergency shelter meets only the first two. The designer must turn his attention to meeting the entire range of needs of the shelter resident.

**Design**

We now have a dimensional envelope, a basic spatial plan within that envelope, a kit of parts from which to build, and a set of psychosocial and practical performance criteria to meet. We still need a strategy to bring these things together into a unified, articulate, and functional space. We need a strategy with which to build a home.

Most pressing psychosocial needs of a home are ability to vary the environment and to make it one's own. The most pressing practical need in a small space is multiplicity of use. Together they suggest a design strategy in which nothing is fixed in place, many things serve multiple uses, and everything can be rearranged by the user. The Murphy solution described above was rejected because it met only the multiplicity of use criteria.

After exploring many options it was decided that the best design strategy was to break a typical bed up into several smaller pieces of furniture each of which had at least one other use. It was also decided that the desk, shelving, lighting, ventilation, and exterior openings should be treated similarly if possible.

At this point it was realized that the initial choice of room size would severely limit the resident's options when repositioning the furniture. The room dimensions were changed to 6'-6" by 6'-6" so that furnishings would fit in either direction. After a bit more thought and
experimentation the size was increased again to provide space at the ends of the bed so that pieces could be moved around easily. Two inches was chosen as the increment since it left us with a 6' - 8" dimension that is divisible by 16", a standard building increment.

The pieces of furniture were conceived of as sliding pieces. The fact that they had to slide along two different axes suggested that they be flat bottomed. It also suggested a material on the floor that would cause little friction. Carpeting was the obvious choice from the list of appropriate materials.

The surface to surface contact between the furniture and ground reinforced the furniture's groundedness to the earth. The furniture was connected to the earth by means of gravity, a very natural and comfortable concept. The lighting and other objects above, however, could not make this connection.

Since the objects above could not be connected to the earth below they were attached to an upper zone through suspension. They were conceived of as objects of the sky. Between upper and lower zones
is the area in which we read, write, eat, sleep, and decorate; the area of man.

Clearly articulating these three would provided a multiplicity of meaning (sky, earth, man), (head, foot, body), (storage, support, activity); a well organized and useful space; and an interesting variety of surfaces, materials, and gradations of complexity.

While these divisions were conceived of and articulated differently, it was still necessary that they become a unified and natural whole. This unification was accomplished through the dogmatically rational application of a sixteen inch square structural grid to measure the space and bind it together. All structural members and connections were to fall upon this grid.

Louis Kahn deemed ornament the celebration of joint. Our budget suggested that I do the same. Structure and joint are necessary anyhow and it makes little sense to spend money covering them up when they can be appropriated as ornament. This celebration of connection would also serve to articulate the structural grid described above.
The structure unified the envelope into a simple but rich system of surfaces and connections. This system provided a subtle variety of articulation to a system that could easily be comprehended at a glance. Pieces could become compositional elements yet the lack of hierarchy in the neutral grid allowed the envelope as a whole to read as background.

The envelope had a Platonic idealism that was in danger of taking on a pristine quality. Recalling Erskin's words and wishing to invite the inhabitant and his belongings into the space the unit was conceived of as an incomplete composition. The envelope of the structure was to be the canvas, a background for the rest of the activity. The other elements including furniture, lighting, shelving, the door, the resident, his belongings, and any other objects that were not part of the surface of the envelope were the forms of which the composition was to be composed.

My task was to begin a composition which the resident would finish. My composition was to produce a lifeless tension needing "signs of human activities" to quicken it. The objects that I provided were to contrast as much with the envelope and with each other as would any
objects the resident might bring. My elements were to be simple, comfortable, and useful. They were to have an austere earnestness that would give the set a coherence befitting a project of this type. It was hoped that the texture and heterogeneity of the composition would produce a sincere resonance between the envelope and the objects provided by designer and resident alike.

The design of the door was the result of an attempt to concentrate labor and to circumvent building codes. Design goals included the provision of adjustable ventilation, variable connection with the community, introduction of natural light if possible, and privacy when necessary. To do these things often requires special hardware or materials and presents potential maintenance problems. The door provides similar problems all by itself. These problems are multiplied when one attempts to avoid building code requirements on the use of natural light and ventilation by providing an opening to the room that measures at least half of the area of the exterior wall.
I decided to make one big problem out of many small ones by building a large door that would incorporate all of the problematic elements. This strategy allowed me to concentrate money and materials on an interesting piece that takes much of the design heat from both the interior and exterior. It also allowed the other major structural pieces to be constructed identically making them easy and inexpensive to mass produce. I hung the door on a sliding box rail to eliminate maintenance problems and to prevent the need to clear space for the door swing.

The door was to be the only source of natural light to the room whether it was open or closed. For that reason I decided to sheathe most of the door in plexiglass. To maintain privacy the surfaces of the clear plexiglass were sanded with a belt sander until they took on a translucency similar to rice paper. I found that the "grain" left by the sander was easy to control and produced a nice naturalistic effect.

In order to provide a variable amount of connection with the outside (without the door being left ajar) and to provide air circulation in conjunction with a ceiling fan I added two casement "windows" to the
door. These windows were simply 3/4" plywood veneer panels connected to the door with piano hinge. The placement of these windows and the residual field of plexiglass was somewhat arbitrary. Since there were several possible positions which seemed equally advantageous it seemed reasonable to build each door differently. This would give each unit a different face and its own distinct character.

To maintain a feeling of security the door was considerably overbuilt. Horizontal 2x4s were spaced close enough together that nobody could squeeze between them when a window was left open at night or if an intruder smashed the plexiglass.

The floor was framed for several reasons. The carpet required a flat and stable substrate; this substrate would have to be sturdy enough to be leveled with shims if the surface beneath the unit were not flat; the floor frame would serve to position the other panels and square the room as it was being assembled; and it would provide an entry threshold more similar to a home than a room.

A panellized scheme was chosen so the units could be prefabricated, transported easily, and erected quickly at the sight. This approach would also assure portability should the units need to be relocated.

A pegboard scheme similar to the one described above was chosen as the main upper zone storage system. Holes were drilled every eight inches (which of course coincided with the sixteen inch structural grid) into which pegs could be inserted. Shelving would then be set on top of short pegs while longer pegs could serve as clothing hooks. In addition to the pegs and shelving a long rod in two sections was provided which, when inserted into holes at opposite ends of the unit and joined together
with automotive hose clamps, became a bar stiff enough to hang one's clothing on with room to spare for drying towels.

A picture rail and chair rail were used to separate the three vertical zones and to cover the seams between materials. The rails also served to encircle and bound the space. The desk surface and shelving could be set directly on these mouldings if the resident so desired. The top of the mouldings housed a groove into which hangars or other hanging devices could be clipped like on a traditional picture rail.

After a great deal of thought I decided to break the bed into four pieces. The largest piece was a square module that was composed of two opposing wedges. The large bottom wedge doubles as a shelving unit. The thin, light-weight top wedge can be flipped up to form a lounge chair in conjunction with the bottom wedge and futon. Alternately, the light-weight wedge can be laid "flat" upon the other bed pieces to make an inclined bed for watching TV, reading, or just for variety.

The next bed piece is a slightly smaller square. It functions as a low table which contains shelving. A piece which is both a laundry
hamper and an all purpose bench sits next to the low table. The final piece is a long bin with a hinged lid. This piece would probably be placed behind the table and hamper. The bin could still be accessed in this position by flipping back the edge of the futon above it.

The final design hurdle was the mechanism by which the panels could be joined together from the inside. I first designed the panels to be sheathed after they were joined together. This, however, would have complicated both the construction of the panels and their assembly.

My next idea was to attach the panels at the chair rails with inset angles. This idea proved structurally unsound and looked unresolved. Another plan involved leaving "access nooks" through which the structure could be bolted together. These would be left for the resident to cover. They too were ugly and unresolved. I then considered the use of steel angles along the interior corners. The cost of the steel proved prohibitively expensive and the angles made the unit look like the inside of a foot locker.

I finally settled on 3/4" thick wood angles milled from 4x4 stock and attached to the panels with lag screws. I found that I could cut three angles from a $6.00 4x4. The angles would be installed flush with the panel surfaces and utilize reveals to articulate their presence and to absorb any inexact fits. I built a mock-up of a corner in the shop and found it to be much stronger than I expected and far sturdier than necessary.

This corner solution was necessary to keep the panels small enough to fit through standard size doors. 4x4 framing was added to the front panel for structural and visual reasons but prevents this panel from passing through a 3'-0" x 6'-8" door without some disassembly.
This disassembly process was made as simple as possible and requires the removal of only twelve screws.

In addition to designing the units themselves I worked out a system for their installation into a large open room such as a gymnasium, an armory, or a warehouse. This installation plan is documented in drawings D1.1 and D1.2 of the appendix.

The intent of the plan was to maximize the number of units that could be placed in a given space by minimizing useless circulation space; to provide small, semi-public spaces that would play the roll of living room to the units and that would provide a nucleus around which a community could form; to make shared facilities such as bathrooms and kitchens convenient to each unit; to keep the plan clear, simple, and easy to orient oneself within; and to provide a clear hierarchy of spaces from the public lobby to the semipublic hallways to the semiprivate living rooms to the private units themselves. The plan was remarkable successful in achieving each of these goals.
Construction

The construction of the unit went more smoothly than expected. Some things went faster than anticipated while others went slowly. There was only one significant disaster.

The building process was very similar to balloon-frame construction. Frames were built, sheathing was cut and attached, finishes were applied, and panels were joined. The unit took just under one hundred and fifty man-hours to build and cost $936.09. The following paragraphs break down the way this time and money was spent. Those not interested in technical details may skip ahead to where the numbers stop.

The peg board was the most pleasant surprise of the construction process. It took only 3:20 to build compared to 2:10 for the middle zone surfaces without holes. The three identical wall frames also went together very quickly, taking only 2:25 to build the set. The front frame, which was much more complex, took 3:45 to complete. It took another five hours to complete the assembly of each wall panel. The front panel took 10:30 to build not including the door.

The door took 21:30 to construct. 8:00 of this was framing, 2:00 was drilling bolt and countersink holes for the sheathing, and 11:30 was cutting and applying the sheathing. Milling of the angles and moulding went quickly but drilling the countersink holes in them went very slowly in spite of a drilling jig I set up. The milling took 6:15 while the drilling took 8:45.

The floor and ceiling went together smoothly. The floor was completed in 7:00 and the ceiling in 13:15. The wiring went well yet took 7:30. The big surprise was that painting took 15:30, about half of which
was painting the two-tone angles. The six hours spent cutting carpeting also seemed excessive. By the time the furniture was completed I had so many people helping me that it was impossible to keep an accurate record of how long it took. It was, however, completed by the group in less than 24 hours. I estimate that the furniture took about 30 man-hours to build.

The biggest material expense was for surface materials. I spent $165.35 on plywood split almost evenly between 1/4" and 3/4" sheets. I spent only $6.48 on sheet rock and about $20.00 on a single sheet of Homosote for the bulletin board. I spent $115.60 on stud lumber with about eighty percent going for 2x4s and the rest to 4x4s.

The second biggest, and most unnecessary expense was carpeting. I spent $124.54 on carpeting and padding, most of which was to carpet the walls. The furniture cost $107.94 but was money well spent. Electrical supplies totaled $98.42 but the big surprise was the $91.94 that I spent on fasteners (nuts, bolts, screws, nails, etc.).
The plexiglass cost $68.43 but it too was worth the money. Hardware, consisting primarily of the equipment for the box rail and trolley that the door hangs from amounted to $49.50; paint and stain ran $42.93, and miscellaneous items including dowels and trim cost $39.91.

I learned a great deal through the building process. The two biggest lessons were to simplify the painting and to get rid of the carpeting on the walls. The painting took far too long for two reasons: the plywood surfaces were not smooth enough to accept the paint readily (and showed so many pits that I had to spackle their surfaces and repaint); and the two-tone paint scheme on the complex angle shapes was, in hindsight, absurd. The lessons here are to spend the extra money to buy plywood with a nice surface and to simplify intrinsically slow processes like painting as much as possible.

The carpeting on the walls proved dreadfully costly in terms of both time and money. I calculated that I spent close to $150.00 to carpet the walls, much of which was on the 1/4" plywood behind the
carpeting. That seems cheap in comparison with the extra time that it took to install the plywood sheathing and carpet. The plywood sheathing behind the sheetrock was also unnecessary and will be eliminated in the future. Installing the sheathing and carpeting took at least 20 hours more than sheet rock alone would have taken.

The biggest problem I ran into during construction was the slippage of the blade on the boring bit when I was drilling the peg holes. I checked the diameter of the hole with a peg after each of the first six holes, and again at hole twelve; after that I trusted the process. Unfortunately the bit began to slip after about twenty holes. By hole twenty-four it had stabilized again at a new, smaller, diameter.

The saddest part of the story is that I did not discover the problem until I tried to install the shelves the night before my final jury. Sanding the dowels to fit the smaller holes proved impossible so, with the mother of invention cackling in the background, I arrived at the now infamous square peg solution. I milled square pine stock to a size a bit larger than would fit in the holes then trimmed back the corners at a 45° angle with
the table saw. When the stock almost fit I trimmed one edge a bit more at a time until the stock squeezed tightly into the hole. It could then be sliced into pegs.

These square pegs actually functioned better than their round counterparts in true holes. They were easier to insert and remove since less surface area came into contact with the holes and, as an added bonus, they were much cheaper than the round pegs.

The only other significant problem that I encountered was that the bottom ply of the ceiling plywood detached and formed several large bubbles when it was painted. I had to lance the bubbles, glue them flat, spackle the scars, and repaint. I checked with a number of sources and all said that this is not supposed to happen. Again, I recommend the avoidance of inferior grades of lumber.

The most pleasant surprise was the ease with which the completed panels were joined. It took four of us only about twenty minutes to erect the structure. Tightening down the screws, installing the door, and making the electrical connections took me another hour or so.
Installation in a space with three sides inaccessible after coming through a 6'-8" door took about two and a half hours.

**Testing**

I had intended to live in the unit for a week to test it. The first night that I tried to sleep there I was surprised to find that it was already occupied by an architecture student who did not want to go home to sleep before a final. I let the student sleep. Upon my return the next night I encountered the same situation with a different student. The third night I put a sign on the door reserving the room. As a result of the preliminary testing by my colleagues I was able to stay in the unit for only five nights. This, however, was plenty.

I was very pleased with the space in general. It had a warm, comfortable feel and was actually very pleasant to be in. The lighting was particularly effective. The biggest problem was the lack of adequate sound proofing. The unit failed to meet the design criteria in this area quite abysmally. When I entered the unit I was transported to a very
quiet, serene, private place. Unfortunately every time I overheard a conversation as people passed by my home I was reminded of exactly where I was. I found it quite difficult to sleep in the middle of the busy architecture school during the day.

I found that everything in the unit functioned extremely well with the exception of the lounge chair. I found that if I oriented the piece to make it easy to flip the back up to convert it to the chair, the back would hit the chair rail at its side. This was a design flaw that could be corrected with more leeway space at the ends of the bed. This space would also make it easier to slide the furniture around; it fits rather tightly as it is.

The last problem that I discovered while living in the unit was that I did not rearrange the furniture unless I planned on using a configuration for at least an hour. This suggests that the multiplicity of use concept might not be as useful as I had hoped. Conversations with students that stayed in the unit supported my own findings. Most found the space very pleasant and especially conducive to sleep and study.
Few experimented much with the furniture. There were surprisingly few complaints about the noise problem. These preliminary findings suggest that it is indeed possible to inhabit extremely small spaces.

**Epilogue**

I was able to convince Mr. Fred Smith, the director of the Salvation Army's Harbor Light Shelter in Houston, to allow me to install the project in the Harbor Light for a period of three weeks to allow homeless people to test and react to the unit.

The initial response has been extremely positive. The shelter residents were quite curious about the project as I was installing it and a number helped with the assembly. Many asked what they had to do in order to stay in the unit.

One man took one look at it and said "It looks like a little prison to me." Another, Mark Johnson, asked me what I call it. I told him that I didn't have a name for it yet and asked what he would call it. He said "Port-A-Home." I kind of like that.
Frank Garner was selected by the director to be the first to stay in the unit. I met with Mr. Garner briefly and told him to make himself at home and that he was free to rearrange things if he cared to.

The next morning when I returned to the shelter to be photographed with Mr. Garner by the Houston Chronicle I was delighted to discover that he had completely rearranged the space. His arrangement was superior to the hastily arranged configuration that he had been left with.

I was not so happy to discover that a metal folding chair had materialized at Mr. Garner's desk; another indication that the furniture provided furniture is difficult or uncomfortable to use.

Mr. Smith reported that so many people asked him if they could be next in the Port-A-Home that he had to announce in chapel that the room was booked well into next year. He also asked if I would consider leaving the unit at the shelter permanently: a request I was happy to oblige.
NOTES


4 Author's figure. Near both the mean and median of published figures. A more thorough explanation of this estimate is found on page two of this text.


NOTES


18 Sylvia Frumkin is a pseudonym; but the story is based upon Susan Sheehan's *Is there No Place on Earth for Me?*, Houghton Mifflin, Boston, 1982 from Patricia A. Sullivan and Shirley P. Damrosch, "Homeless Women and Children," in *Homelessness in Contemporary Society*, p. 86.


22 Ropers, *The Invisible Homeless*, p. 36.

NOTES


26 Kozol, *Rachel and Her Children*, p. 4.

27 Ibid. p. 5.


29 Ibid.

30 Ibid.


32 Redburn and Buss, *Responding to America's Homeless*, p. 63.

33 Based upon various estimates of number of individuals with mental health problems, number of alcoholics, the representation of these groups in the homeless population, and estimates of the number of homeless. While these are admittedly rough estimates their precision is not important; their order of magnitude is enough to illustrate the point.


NOTES

36 The average length of stay in New York city's more comfortable private shelters was two months compared with four monts in public shelters. It is hypothesized that these shelters allow individuals to pull themselves together more quickly and therefore to move on more quickly. Furthermore clients of the public shelters often report feelings of hopelessness that interfere with their search for better housing and employment situations.


39 Robert Hayes, founder of the National Coalition for the Homeless, quoted in Coates, A Street is not a Home, p. 128.


41 National Coalition for the Homeless, "Homelessness in America," p. 3.

42 Ibid.

43 Ibid.

44 Ibid.

45 Ibid.

46 Ibid., p.4.


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50 Coates, *A Street is not a Home*, p. 130.

51 Greer, *The Creation of Shelter*, p. 94

52 Ibid.

53 Ibid.

54 Ibid.

55 Ibid.

56 Ibid.

57 Ropers, *Invisible Homeless*, p. 94

58 Greer, *The Creation of Shelter*, p. 128.


60 Rossi, *Without Shelter*, p. 32

61 Rossi, *Down and Out in America*, p. 182.


63 Ibid.


65 George Will on ABC's *Nightline*, as quoted in *The New Republic*, March 18, 1985
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66 Stephen Crystal and Merv Goldstein, *Chronic and Situational Dependency: Long Term Residents in a Shelter For Men*, Human Resources Administration, New York, 1982 from Rossi, *Down and Out in America*, p. 35.


72 HUD, *A Report to the Secretary* from Redburn and Buss, *Responding to America's Homeless*, p. 117.

73 Redburn and Buss, *Responding to America's Homeless*, p. 119.

74 Mary Anderson Cooper, "The Role of Religious and Nonprofit Organizations in Combating Homelessness," in *The Homeless in Contemporary Society*, p. 143.

75 Ibid., p. 144.


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79 Ibid.

80 Rossi, Down and Out in America, p. 30.

81 Greer, The Creation of Shelter, p. 93.

82 Hoch and Slayton, New Homeless and Old, p 182 and Ropers, The Invisible Homeless, p. 94.

83 Hoch and Slayton, New Homeless and Old, pp. 9-10, 157-158.

84 From personal interviews and Hoch and Slayton, New Homeless and Old, p.158.

85 Hoch and Slayton, New Homeless and Old, p. 155.

86 Greer, The Creation of Shelter, p.129.


88 Greer, The Creation of Shelter, p.129.

89 The California Department of Housing and Community Development, from Greer, The Creation of Shelter, p.104.

90 Kate Callen, SRO Hotels Go Upscale With Relaxed City Codes, The San Diego Transcript, Monday, October 17, 1988.

91 Penelope Lernov, There's Room at the Inn For the Homeless, Governing Magazine, October 1988, p. 32.

NOTES

93 Personal interview with Dennis Campbell, Vice president of Great American Savings in San Diego, who funded many of the SRO developments. While the exact returns on investment were secret Mr. Campbell called the profit margins "startling" and asked me to consider why Mr. Fischer built more SROs rather than upscale units.

94 Personal interview with Dennis Campbell.

95 Greer, *The Creation of Shelter*, p. 133.


97 Ibid.

98 Mike Connors, Master's Thesis, Georgia Tech School of Architecture, Atlanta, 1983.


100 Ibid.

101 Greer, *The Creation of Shelter*, p. 103.

102 Greer, *The Creation of Shelter*, p. 103. I was unable to confirm this statement. The Housing and Urban Development Act of 1969 (91st Congress, 1st Session, Public Law 152, December 24, 1969) amended the Housing Act of 1949. It neither restated or amended the sited passage, but did extend expiring provisions. It is possible that the author was referring to the much more sweeping Housing Act of 1968.


104 Ibid.

105 Housing Act of 1949, Section 2, Paragraph 1.
NOTES


107 Redburn and Buss, *Responding to America's Homeless*, p.131.

108 This is the approximate cost to provide the rooms in the new San Diego SROs without any form of subsidy. Actual rents charged are less due to these subsidies.

109 Redburn and Buss, *Responding to America's Homeless*, p. 131.

110 Ibid., p. 135.

111 Peter Marcuse, "Criticism or cooperation: Can Architects Reveal the Sources of Homelessness?" *CRIIT*. Spring 1988, p. 32. Cited in Greer p. 121.


113 Mary Comerio cited in Greer, *The Creation of Shelter*, p. 129.


115 Carliner, "Homelessness: A Housing Problem?", in *The Homeless in Contemporary Society*, p. 121.

116 Ibid., p. 127.


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126 C. A. Acker In Ergonomics of the Home, p. 90.


128 C. A. Acker In Ergonomics of the Home, p. 90.

129 J.A. Desor, In Environmental Psychology. p. 222.

130 Rikard Kuller, In Architecture For People, p. 93.

131 Ibid.

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145 Built Environment. p. 103.


150 Ralph Erskine in Architecture for People. p. 139.

151 Kimberly Dovey, "Home and Homelessness," p. 40.
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LOWEST INCOME HOUSING
A MODEST PROPOSAL

A THESIS submitted in partial fulfillment of the requirements for the MASTERS DEGREE.

RICE UNIVERSITY
by STEVE MAYMAN
HOUSTON, TEXAS
December, 1990

THESIS COMMITTEE:
Chairman — Alan Belfour, Dean, Rice University School of Architecture.
Readers — William Sherman, Assistant Professor, Rice University School of Architecture; Earl Hatcher, Executive Director, S.E.A.R.C.H. Homeless Project; John Jacobs, Assistant Director, S.E.A.R.C.H. Homeless Project.

PLAN AND R.C.P

6 REFLECTED CEILING PLAN

1 1/2" = 1'-0"
17 SIDE ELEVATION

1 1/2 - 1 1/2
17 SECTION
1 1/2 = 1'-0"
LOWEST INCOME HOUSING

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John Jacobs, Assistant Director, S.E.A.R.C.H. Homeless Project.

SECTIONS

5 CROSS SECTION

1 1/2' = 1'-0"

A2.2
FLOOR FRAMING PLAN

ALL STUDS 2 X 4

1 1/2" = 1'-0"
Lowest Income Housing
A Modest Proposal

A Thesis submitted in partial fulfillment of the requirements for the Masters Degree

Rice University
Steve Mayman

Houston, Texas
December, 1990

Thesis Committee:
Chairman - Alan Belfour, Dean, Rice University School of Architecture. 
Readers - William Sherman, Assistant Professor, Rice University School of Architecture; Earl Holcher, Executive Director, SEARCH Homeless Project; John Jacoba, Assistant Director, S.E.A.R.C.H. Homeless Project.

Floor and Roof Framing

6 Ceiling Framing Plan
1 1/2" = 1'-0"

A3.1
18 WALL FRAMING – TYPICAL

6 WALL

1 1/2" - 1 0"
LOWEST INCOME HOUSING

A MODEST PROPOSAL

A THESIS submitted in partial fulfillment of the requirements for the MASTERS DEGREE

RICE UNIVERSITY

by STEVE MAYMAN

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Readers — William Sherman, Assistant Professor, Rice University School of Architecture; Earl Hatcher, Executive Director, S.E.A.R.C.H. Homeless Project; John Jacoba, Assistant Director, S.E.A.R.C.H. Homeless Project.

WALL FRAMING

6 WALL FRAMING — FRONT
1 1/2" = 1'-0"

A3.2
LOWEST INCOME HOUSING

A MODEST PROPOSAL

A THESIS submitted in partial fulfillment of the requirements for the MASTERS DEGREE

RICE UNIVERSITY

by

STEVE MAYMAN

HOUSTON, TEXAS
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Professors - William Sherman, Assistant Professor, Rice University School of Architecture; Earl Hatcher, Executive Director, S.E.A.R.C.H. Homeless Project.

John Jacoba, Assistant Director, S.E.A.R.C.H. Homeless project.

DETAILS

SCALES VARY

A4.1
16 SLEEPING ROOMS
2 SUITES
1 UTILITY ROOM

This modular unit is 1750 square feet. The breakdown of the spaces is displayed at left. The configuration requires 108 square feet per person including circulation and service spaces.

10 MODULAR UNIT

4 SPACE
SLEEPING ROOMS
16 sleeping rooms; each one 8'-0" square. 569 square feet total accounting for 49.4% of the area of the module. This is 34 square feet per person of which 10 square feet are occupied by the walls themselves.

COMMON ROOMS
2 common rooms 14'-0" wide by 18'-0" long. 553 square feet total accounting for 31.4% of the area of the module. Each common room is shared by the residents of the eight sleeping rooms facing it.

UTILITY ROOM
One utility room measuring 14'-0" square. These rooms are 215 square feet and represent 12.6% of the module area. The utility room may be a bathroom, a kitchen, or a shower facility. The utility rooms are shared by the residents of the hall on which they are located.

CIRCULATION
The circulation space is the remainder. These halls are four feet wide and require only 0.7% of the area of the module. These narrow passages between the suites serve to isolate the common rooms and inhibit sound transmission.

4 SPACE DIAGRAMS
1/16" = 1'-0"