CHANGING LIVES:
DESIGNS FOR INTERDEPENDENT COMMUNITIES

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Our work, while a challenge to existing thought and built form, is less that of breaking new ground and much more a piece of continuous fabric, building on the work of many others. We hope that our project, by attempting to give physical expression to a set of ideas, will be a useful contribution to the ongoing effort to redirect design and construction of dwellings and their environs, better meeting all of our needs. We thank those whose ideas we've quoted and used in the development of our thesis.

We'd like, in particular, to thank the following individuals for their contributions and support: Shun Kanda, Nabeel Hamdi and Leslie Weisman for their advice and criticism; Fernando Morales and Maria Del Socorro Gutierrez of the Ministry of Housing and Human Settlements in Managua, for assistance with research; Roberto Chavez for support and advice about the Nicaraguan design and research; Brad Edigerly for the use of his research; and the many others who've offered their support and encouragement.
ABSTRACT

Household patterns have changed dramatically in recent years. Current designs for dwellings and their environments do not adequately meet the needs of the households which exist today. The changing organization of work allows for economic decentralization such as dispersed centers of work, including neighborhood-based and home-based workplaces.

These trends require a reevaluation of the current disassociation between individual and dwelling; dwelling and neighborhood; neighborhood and urban structure. The thesis posits the need for spatial reintegration, where barriers between home and work, public and private spheres are broken down, and a more interdependent community emerges.

This joint thesis includes two design explorations set in different countries, but linked by common goals and objectives and a shared program. The designs include housing, a neighborhood-based workplace, a childcare center, informal workshops and commercial space. By comparing the strategies employed in each design, the general applicability of the thesis across cultures, economic and political differences can be tested.

The thesis is broken into three major segments. The first draws on historic precedents and contemporary research to provide an analysis of the problem, and an overview of alternatives. In the second segment, common objectives are established and applied to several architectural precedents. The third presents the two location-specific design explorations and their evaluation.

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# CHANGING LIVES: DESIGNS FOR INTERDEPENDENT COMMUNITIES

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INTRODUCTION

I start to imagine
plans for a house, a park
...
A city waits at the back of my skull
eating its heart out to be born:

how design the first
city of the moon? how shall I see it
for all of us who are done
with enclosed spaces, purdah, the salon
the sweatshop loft,
the ingenuity of the cloister?

Adrienne Rich,
"The Fourth Month of the Landscape Architect" (1)
Purdah, the sweatshop, and the cloister — are enclosures of segregation: of public from private, of work from dwelling, of men's sphere from women's.

Ours is an attempt at a positive alternative to that spatial segregation. The concept of an interdependent community arises from the recognition of the wholeness of our lives — the integration of work, play, nurturance and self-sustenance, and an understanding of the essential interconnectedness between those sharing a dwelling, a neighborhood, a city or a globe.

While people's lives change significantly, ways of making place and constructing space frequently lag far behind. Few of us live as most people did forty years ago: in nuclear families of male breadwinner, female housekeeper and children. Yet the ideal of that family lives — if not in daily reality at least in many minds, including those responsible for building the environments in which we live, work and play. Dolores Hayden sums up this contradiction by saying that housing is the great missed opportunity of the last century: modern practitioners have been unable to develop more subtle definitions of public and private domains. (2)

The intent of this thesis is to explore how architectural form can better respond to two contemporary trends with potentially profound ramifications for the organization of our lives and our environment: that the form of households is changing dramatically, calling for a thorough reevaluation of the form of dwellings and their surroundings; and that the possibility of decentralization of industry gives rise to the potential of workplaces based in the neighborhood and the dwelling.

We are designing, not for a particular type of household or segment of the population, but as we think that housing and neighborhoods should be: for a cross-section of the population, inclusive of people of all races and classes. Consideration of those least served by existing housing, usually those with the least economic means, requires design within a limited economic
framework. The designs include not only dwellings, but services which enable all adults to participate in economic activity and all to be involved in domestic activity. Childcare, socialized domestic services, neighborhood workplaces and commerce all increase the choices available to the variety of households which exist today.

The goal we set for our project reflects these multiple concerns:

To explore, with cross-cultural comparison, the design of a spatially integrated urban community which:
- accommodates well today's diversity of households and recent changes in women's social roles;
- provides services and support to enhance the quality of all its inhabitants;
- fosters the development of an interdependent community life while protecting the independence and privacy of the individual, the household and the community;
- and accomplishes these within limited economic means.

Ours was intended as an integrated approach: synthesizing useful elements from many sources and a variety of approaches. It has been a circular rather than linear process: drawing from the general, establishing common ground we believed to be cross-cultural, testing our ideas in site-specific design, and returning to the general, with guidelines for future work.

The unusual characteristic of this thesis is as much in the means of addressing the problem as it is in the nature of the subject. Numerous scholars, professionals and activists share our critique and have informed our work. However, few efforts seem to have been made to give physical form to the proposals. Our intent has been to translate the reality of the social experience and statistics into images and visions for today and years to come.

A joint thesis with two design explorations afforded us the opportunity to test the general applicability of our thesis, and the shared objectives and program, across cultural, economic and political differences; and to compare the
design strategies employed, providing a broader and sounder understanding of the issues.

The two locations: Allston, a neighborhood of Boston, Massachusetts, and Managua, the capital of Nicaragua, are vastly different in culture, economic base, political structure and history. However, we believe the core of our critique is relevant to both, and the proposals we offer are potentially useful to each.

Nicaragua, for a number of reasons, seemed likely to be a responsive setting: because of the current social transformation begun with the 1979 revolution, many ideas are being reevaluated, including notions of family and community relations; housing is the third social priority, after health and education (3); and there is a commitment to providing the necessary services and support to those most in need in the society. In the US, while the current government may be interested in maintaining the mythology of the nuclear family, those groups attempting to address the needs of the majority of people living in other types of households, especially single parent families, provide an interested audience.

We hope that our readers understand that while we know more about the US, we are making a good faith effort to understand how the issues we are addressing play out in Nicaragua, as well as in the US. One benefit of this effort at comparison is the necessity of articulating ideas and experience otherwise assumed in dealing with something familiar, and learning different types of information than otherwise available about that which is unfamiliar.

The three segments of the thesis correspond to our process.

Breaking Ground represents broad-brush research into architecture, planning, geography, environmental psychology and other fields, to gain an understanding of the problem and alternatives to it. It covers our analysis of the problem we are addressing and a summary of historic alternatives, proposed and built.
Laying Foundations includes our initial design objectives and their application to several specific precedents, from which we were able to draw strategies useful in our own design explorations.

Explorations applies the above to site- and program-specific situations: developing two design explorations, which are independent but based on shared objectives and program, and evaluates them jointly.

CHAPTER NOTES 1


(2) Ibid., pp. 100-101.

CHANGING LIVES:
THE NECESSITY FOR
SPATIAL REINTEGRATION

CHANGING LIVES, CHANGING HOUSEHOLDS

Households in both the U.S. and Nicaragua, as well as in many countries around the world, have changed significantly in the past two decades and show all signs of continuing to do so. Two statistical trends most clearly reflect and impact changing household characteristics: women's increasing role in the paid labor force and the new faces of household units.

United States

By 1980, more than 50% of married women with
children, and 65% of non-married women with children were active in the labor force full or part-time. Two-worker families accounted for 39% of all American households in 1975. (1) The myth of the American family headed by a male breadwinner, and supported by a female housekeeper raising their children remains strong despite its departure from the majority of households. Between 7 and 12% of American families fit this stereotype today. (2) The great majority of households reflect a much more diverse picture of social groupings. Approximately one third of all American families are now single parent households, and 95% of these are headed by women. (3) 25% of all American households are non-family groups: either single adults, or households of unrelated individuals. (4)

In the next ten years, out of the 20 million new households expected to be formed, only 3 million will consist of a married couple with children at home. The rest will be a combination of singles, single parent households, "voluntary families" of unrelated people, couples without children and the elderly. (5)

These enormous changes result from a variety of factors. A changing economy, requiring a larger workforce and with more emphasis on the service sector has encouraged women's participation in the paid labor force, a distinct departure from the economic policy of the post-World War II period when those women who had been working in factories and offices were encouraged to do their patriotic duty by returning to the home and relinquishing jobs to the returning servicemen. Concomitantly, the "family wage" to be paid to the male breadwinner, as envisioned in that period, has proven to be insufficient for many families to survive and flourish, necessitating women's return to the labor force.

The women's movement has both opened new opportunities for women in the labor force and new expectations of life and relationships. Changing lifestyles, resulting from choice, adversity and new attitudes has had a tremendous impact: a steadily increasing divorce rate has resulted in increasing numbers of single parent families; many adults are choosing to remain single, and some single women choose to have children; some adults
choose to live in voluntary families, and in gay relationships. Taken in total, these developments are responsible for a new and diverse set of households for which we must design. One factor, however, has changed little: women do 70% of all housework and are typically the primary caretakers of children.

**Nicaragua**

In Nicaragua, as in the US, women's participation in the paid labor force has been increasing dramatically. Since the revolution of 1979, women's participation in the paid labor force has almost doubled. By 1983, most Nicaraguan women were working in the paid labor force. They accounted for 42% of the economically active population in the cities, and 49% in the countryside. Despite these figures, the majority of women remain underemployed or are employed as domestic workers. In a country relying heavily on voluntary efforts, it is significant to note that women have also become heavily involved in the political life of the country, representing a significant number of the volunteers involved in health and literacy campaigns, and neighborhood organizations.

Women head one third of all households in Latin America. (6) In Nicaragua, this figure is even more startling: the national women's organization, AMNLAE, estimates that 48% of all heads of households are single mothers. (7) This figure does not, however, define who actually lives together in a single dwelling. Because the extended family remains a support network in Nicaragua, and because there is an extreme shortage of available housing, single women raising children frequently live with members of their family: parents, siblings, or others.

There are not statistics readily available for Nicaragua which provide a break down of household composition, comparable to those provided above for the US. However, shared personal experience indicates that typical households include nuclear families in which both adults are working outside the home, whether full or part-time, and extended families in which
several adults are contributing to the family income, and some single parent households, though the number of such households and of those of single adults or groups of adults is limited by the lack of available housing.

The changes in women's economic activity reflects both women's desire to take advantage of opportunities provided by the social transformation begun by the revolution, and the economic necessity of women's contribution to production. Government policy is designed to encourage and increase women's participation in the labor force, both as a right and as an important element in increasing the overall gross national product. The ongoing war increases this need, since so many men are mobilized in the national army.

Several reasons are advanced as possible explanations for the extremely high number of single parent families in Nicaragua. Historically, men have commonly abandoned women and children. As a result of the war, both during the insurrectionary period in the 1970's and in the contra war since, many men have been killed, leaving wives and children, mothers, or other dependents without financial support; many more families are temporarily disrupted by the mobilization required by the war; and the
The widespread existence of extended families as primary households is both a result of economic necessity and a strong sense of interdependence. Among working class people and peasants, the great bulk of Nicaraguans, the extended family is the primary social and psychological support system in the face of economic or other need; community obligations come secondary to familial ones, and the community is a secondary resource to be tapped, after the extended family. (9)

A 1982 law states that women and men have equal rights and responsibilities for raising children and doing household chores. While reality is, of course, slow to catch up to legislation, it indicates a recognition in the society of the need for fundamental changes in the ways that households have been structured.

The specific situations differ between the two countries, reflecting, in part, the differences between a highly industrialized society and one which is developing. However, there are parallel changes in social conditions, such as the entry of women into the paid labor force, the resulting need to restructure domestic labor, and the secondary impacts of such changes. The changes occurring in both countries creates a need for a variety of housing types as well as social supports such as daycare centers, variable work settings, etc.

Karen Franck, in describing the gap between the types of households common today, and the housing available to shelter them, is as pertinent to Nicaragua today as to the US:

"Currently in the USA enactment of alternatives — the creation of new types of households and changing expectations of appropriate activities and relationships for men and women, young and old — is far out-distancing the design and construction of buildings and spaces that can support those alternatives." (10)
THE DISASSOCIATED URBAN STRUCTURE — A FEMINIST CRITIQUE

"The most striking aspects of modern US city spatial structure are the significant spatial segregation of residence from the capitalist workplace, the increasing low-density settlement and the predominant single-family form of residential housing." (11)

The above quote by Ann Markusen, defines three levels on which the disassociation between the "public sphere" of work and commerce, and the "private sphere" of home occurs: the urban, the neighborhood and the dwelling. While the three have different faces in the US and in Nicaragua, they are useful in describing spatial segregation and its attendant limitations in both countries.

Urban Level

In the US, the segregation of dwelling from workplace is most extremely illustrated in the predominance of the suburban "bedroom community." Far from the activity and tensions of the city center, it is also far from the services, livelihood, recreation and, frequently, the transportation important both to survival and to pleasure in urban life. Even in urban settings such as apartment buildings and public housing projects, both of which have increased density of residential space, the separation of the "public" and "private" realms holds firm. Production — the workplace, and consumption — the home, are thus territorially separated.

Segregation of the "public" and "private" spheres corresponds directly to the current division of labor between women and men. Such segregation into distinct male and female spheres of work and influence has not always existed. Before the Industrial Revolution, women were involved in the production of goods and services, and domestic labor was integral to the productive activity of the family. When the family itself was the basic unit of economic production, there was no split between home and work. Women participated in labor outside the home such as cottage industries, agricultural work, the textile
industry etc. Childcare, rather than a separate activity, was carried on at work, and frequently shared among many members of the family. However, industrialization fundamentally altered women's relationship to work and home. When, in the 19th century, men's work shifted to the factory, an ideology developed of women's natural domesticity. The family and home began to be viewed as refuge — the personal world that afforded protection from the anonymity and alienation of the industrialized society. It was, however, a refuge for men only.

In Nicaragua, the ideology parallels that of the US, but the spatial structure does not completely. The public and private spheres defined as distinctly men's and women's arenas do exist. Women are considered primarily responsible for the work in the home, and the reproduction of labor (housework, childcare, nurturance of other family members). The urban structure, however, is not that of rigidly segregated zones for residential, commercial and industrial activities. As in the US, heavy industry, which is limited, is located away from residential areas. However, the
typical neighborhoods of Nicaragua's cities consist of a mix of dwellings, small shops and workshops, offices, and public services.

The exceptions to this model are to be found in the middle and upper class residential areas which closely imitate the US suburban model: residential areas are separated from any public facilities whether commercial, service or industry, and the landscape is dominated by detached, single family dwellings with privatized exterior space. In Nicaragua, as in much of Latin America, "productive labor" is not fully removed from the dwellings of common people: animals are raised, gardens tended, household goods manufactured in the home and, frequently, informal income is earned. (12)

Because of the earthquake of 1972, Managua's urban form is unusually segregated for Nicaragua: the rebuilding of the city before the 1979 revolution occurred solely on the periphery of the original city, leaving the center city a desert of concrete building skeletons and weeds. The neighborhoods that developed in a ring around it are disassociated from each other, a long distance from work, recreation, markets and services, and probably less integrated in terms of use than would otherwise be the case. (13)

The separation of the public and private spheres reinforces women's roles as household workers and as members of a secondary, rather than primary, labor force. As a result, women raising children without men, and two parent families are ill-served by the segregation. Further, the distance results in wasted labor time in commuting and in doing domestic tasks, difficulty in pursuing a variety of employment options, and difficulty in obtaining necessary services and recreational activities. Susan Saegert notes that women, more than men, are affected by accessibility to sources of satisfaction in the socio-physical environment, and that the accessibility of pursuits other than domestic tasks is a major factor in women's ability to combine domestic tasks with others. (14)

A remarkable feature of the urban structures of both the US and Nicaragua, is that the cities
have a disproportionate share of women, especially those who are elderly or are solely responsible for their families. The spatial characteristics differ — in the US the comparison is made between the suburb and the central city, in Nicaragua, between rural and urban areas. However, the situations are rather similar. Statistics given are based on US data, but generally reflect the Nicaraguan circumstance as well.

US figures for the 1977 distribution of female-headed households in the US show that twice as many are located in the central city as in the suburbs: 20.7% of female headed households were in the city, 10.9% were located in the suburbs. (15) One of three central city households was maintained by a person living alone or with non-relatives, as compared with one in five in the suburbs. Women in Nicaragua have migrated to urban centers at a higher rate than have men. (16)

There are several reasons for women's concentration in the central city. First the greater availability of work and a variety of work options. In the US, until 1977, the more urban the environment, the more likely women would be in the paid labor force. Since that time, more women in the suburbs have been working. However, women's median income in the central city is higher than that of the suburbs or non-metropolitan areas. In Nicaragua, as well, women have greater opportunities for work in the city. Though now changing, historically women in the countryside have had precious few work opportunities, especially if they were alone; but in the city, the number and variety of jobs is far greater. (17)

Secondly, women have less overall income than men: in the US, in 1983, employed women could expect to earn 69 cents to every dollar earned by men working in similar jobs. Though this reflects an increase in actual income since 1959, women's "effective income per hour of work," (a figure which reflects a person's ability to get goods, services and leisure time) has not improved. (18) Because women typically have a lower income, they have greater difficulty than men in finding affordable housing and essential services — keeping many in the central city where the chances of
finding housing and services are greater. In both countries, the greater density of services and support available in the city is especially attractive to women raising children on their own.

Finally, fewer women than men have cars. In the US, women are 50% more likely than men to use intracity mass transit, which is generally more available in the central city than in the suburbs. As a result of their need to perform a variety of domestic responsibilities in numerous locations, women rely heavily on public transportation, because it increases their ability to fulfill domestic responsibilities and improves their mobility.

Women's disproportionate representation in the city may well be seen as an individual response to the spatial segregation herein described. Women choose cities because they provide the greatest employment opportunities, best accommodate their various service needs, and provide public transit, making childrearing easier.
Neighborhood Level

The location of residential neighborhoods vis-à-vis industry, commerce, services and recreation as well as the organization of the neighborhood itself reflects an ideology and a system of social relations. As Karen Franck points out,

"...the designed environment supports a particular age and gender system by creating physical arrangements that encourage, or discourage, differential assignment of activities, attitudes and relationships according to gender and age." (19)

In the US, the residential neighborhood, as described earlier, is typically isolated from the functions of productive labor, commercial enterprise, services, and educational and recreational activities. In Nicaragua, Managua's newer upper and middle class neighborhoods follow this US model of segregation of functions and privatization of space, sharing the attendant problems.

Suburban residential areas are typically very low density, comprised of single family dwellings on individually owned lots, with no shared or public facilities within walking distance. Spread out in this fashion, they are inefficient for social reproduction. They require a car to perform domestic tasks, commute to work or engage in any other pursuits, require a parent to chauffeur children to recreational, educational and other activities, and isolate neighbors from each other with few physical features which could draw people together.

At least in the US, zoning laws reinforce spatial segregation in a variety of ways: residential zones do not allow for facilities such as childcare centers, laundries, or other small commercial enterprises; joint facilities cannot cross the private boundaries of property lines; and in many cities, more than three unrelated people cannot cohabit a dwelling.

The segregation of functions is particularly problematic for parents who are simultaneously raising children and working in the labor force.
The difficulty it creates in performing basic household tasks such as shopping not only wastes time, but actually decreases the likelihood of domestic tasks being shared among household members. The lack of shared or local facilities to support domestic work within the neighborhood prevents the possibility of sharing domestic tasks between households. Because women tend to have a more locally determined existence than men as a result of their domestic responsibilities, their more limited economic means, and their limited access to transportation, access to resources and supports within the neighborhood is particularly important to them. Further, according to Susan Saegert, the degree of sharing of domestic tasks is a major factor affecting women's ability to combine domestic with other activities. (20)

While the circumstances described above reflect some residential areas in Nicaragua, it is not the norm. Typically, urban neighborhoods in Nicaragua, especially outside of Managua, where the traditional urban structure is intact, are high density, attached buildings, housing a mix of functions such as dwellings, small shops and workshops, and neighborhood restaurants. In the US, center-city neighborhoods also provide greater access to services and commerce than do the suburbs, and some ethnically homogenous communities are quite similar to the Nicaraguan urban structure.

This mixed-use model allows for many of the errands associated with domestic work to be done quickly and without need for transportation. It also encourages an interdependent community within a neighborhood by bringing a great deal of daily activity to the street and local gathering points, which are used as extensions of private living space. In turn, this has the potential of increasing sharing of domestic tasks between family members and between households. However, the Spanish colonial closed block system typical of Nicaragua also represents extreme privatization of space: the entire block is claimed by individual dwellings, leaving nothing for communal or public facilities; and exterior living space is completely enclosed within the walls of the house.
**Dwelling Level**

In both the United States and Nicaragua, the emphasis is on private dwellings, but the households who live within them differ. Since World War II, US housing has been built for the now mythological American nuclear family: the male bread-winner, female housekeeper and 2.5 children. Whether the most common detached suburban houses, apartment buildings, or public housing projects, the image of the family who inhabit the housing has remained consistent. And the emphasis has been on privatization of social relations, material goods, and space itself.

There are, however, other models in the old housing stock of the US. The 19th century triple decker, duplex, and rowhouse in eastern cities all allowed for extended families to inhabit the same building, with some separation of living space for each grouping within the larger family. This notion was nowhere to be found in new buildings. These housing forms, with their greater density and greater flexibility of use, could serve a variety of household groupings and interrelationships. But they were, for the most part, discarded in the post war enthusiasm for the single family detached dwelling.

In Nicaragua, the old housing stock of the cities is primarily Spanish colonial, organized around private courtyards, or set back from the street edge with a large living and entry porch. While also emphasizing privatization within the dwelling, this housing form sheltered extended families and large nuclear families equally well. The form of such courtyard houses represents the possibility today of varied living arrangements from extended families to multiple households sharing the courtyard space.

However, because Managua has been twice destroyed by earthquakes, first in the 1930's and again in 1972, few of the old buildings still stand. Since that time much of what has been built has been detached single family housing, though in working class neighborhoods some of the old fabric has been rebuilt. After the Sandinista Revolution in 1979, a national ministry of housing (MINVAH) was set up to meet the enormous need for
housing. The urban projects done by MINVAH tend to be single family detached dwellings, though there are a few duplexes. MINVAH's housing guidelines set an average household of six persons, presumably based on an assumption of four children per nuclear family. Unfortunately, the housing plans don't seem to reflect the Nicaraguan reality of the many extended and single parent families, or other households outside the stereotyped nuclear family.

In both countries, a narrow and inaccurate image of households is determining the form of housing to be developed, and the form and organization of dwellings does not adequately reflect the reality of households' diversity.

The dwelling itself is divided into women's and men's areas: "her" kitchen; "his" study or workshop, to name the most obvious examples of the sexual division of the domestic environment. The critical difference, however, in the domestic sphere, is that though it is considered women's domain, her turf is not her own: the domestic environment is actually claimed by all household members. There is no clearly delineated space which she can say is her own and to which she can get away. The kitchen, available to everyone as a place of relaxation and socializing, is considered the center of the woman's domestic work; in being so indentified it decreases the likelihood of sharing of domestic tasks between household members.
The singularity of spaces and the functions they serve, typical in the US, though not in Nicaragua, also decreases the dwelling's usefulness to a variety of households: dining rooms, bedrooms and other spaces need to be more flexibly designed, less rigidly defined.

The Reasons for Disassociation

Why are cities organized as they are? Ann Markusen and others posit the intertwined interests of a capitalist economic order and the patriarchal form of household organization as the causal conditions responsible for contemporary urban structure. Markusen says:

"...the dominance of the single family detached dwelling, its separation from the workplace, and its decentralized urban location are as much the products of the patriarchal organization of household production as of the capitalist organization of wage work." (21)

While the nature of the capitalist economic structure of the US and Nicaragua were and are obviously quite different, the former one of the major industrialized nations of the world, and the later, until 1979, based on the dependent capitalist relations of a neo-colonial situation under the control of the US, certain factors of the urban structure were, in the past, parallel. The attitude toward organization of land and housing as commodities rather than as social rights makes the decentralized, privatized family dwelling profitable for many. The patterns of homeownership, real estate construction and permanency of physical structures reinforce a particular urban structure and capitalist social relations. In Nicaragua, social policy has now diverged from these patterns, but changes in the urban structure will take far longer.

Race and class differences in a society necessitate different conditions and environments for raising children to fit their future roles, and for expressing different levels of social status. As a result, the private sphere is further dispersed as residential areas are
segregated by race and class through red-lining and other policies.

Nicaragua and the US share a history of patriarchal relations between men and women, despite the particulars of each culture and its traditions. In Nicaragua, while the family is identified as a blending of the patriarchal model arising from the colonial tradition, and the matriarchal model arising from the indigenous heritage, a Nicaraguan, J.G. Moncada indicated in his 1977 study, *Matriarchy-Patriarchy*, that male domination holds sway in the family despite all. (22)

Those elements of the urban structure which arise from a patriarchal ordering exist in both countries, most clearly illustrated in the separation of the public and private spheres, paralleling the spheres of men's and women's domains. The streets and public space, in fact, public life itself, is men's territory. Women frequently feel out of place, sometimes unwelcome, and often unsafe in public places if unaccompanied by men. Men further benefit from the separation because it bolsters their dominance within the family unit. While the dwelling is considered the woman's domain, its location is frequently determined by the man's journey to work, rather than that of the woman or her journey to perform the domestic tasks assigned her. And the activities and organization of the household are, in a patriarchal situation, dominated by the man's desires and needs, to the exclusion of the woman's. As Moncada pointed out in his study of Nicaraguan families, fathers in working class families usually have control over decisions regarding having children, their behavior or a move to another house. He points out that in middle and upper class families, where women are more likely to be economically dependent on men, the role of the father is even stronger. (23)

If spatial disassociation results from both a capitalist economic order and patriarchal organization, nothing short of eradication of both will allow for true spatial integration.
THE NEED FOR SPATIAL REINTEGRATION

Dolores Hayden describes spatial reintegration as:

"... a new neighborhood strategy connecting nurturing and paid work in one space, connecting private housing units to collective services, and promoting economic development for all citizens..." (24)

While some of the issues described below, such as socialization of domestic work, provision of neighborhood services, development of childcare facilities, etc. are social rather than physical in nature, they give rise to two specifically architectural components of spatial reintegration: new concepts of neighborhood design and new types of housing. Our thesis focuses on these two components, and the relationship between them.

Several factors give rise to the need for spatial reintegration. As described in the previous sections, households today have changed significantly: many differ markedly from the family for which most dwellings were and are designed. Today's diverse households demand new and diverse types of housing and a different urban structure.

Secondly, women's burgeoning entry into the labor force, an apparently permanent shift, has resulted in a need to reorganize both reproductive labor (domestic work) and productive labor (the paid labor force). Dolores Hayden describes well the interrelationship between these two. She argues that women cannot improve their status in the home without a new economic position and cannot change their status in the workplace unless their domestic responsibilities are altered. (25) New definitions of and relationships between home and work, nurturing and paid employment must be developed. Hayden states:

[We need] "a new paradigm of the home, the neighborhood and the city, to begin to describe the physical, social and economic design of a human settlement that would support, rather than restrict, the activities of employed women and their families." (26)
In the productive sector, employment opportunities need to take into account people's responsibilities vis-à-vis child-rearing, housework and nurturance. In the domestic sector, some elements of reproductive work can and must be socialized, and the physical and social isolation of the domestic environment must be broken down both for those who choose to raise children full-time and for others such as the elderly who spend a great deal of time in their homes. One of the most pressing issues for women's involvement in the labor force and for economizing on household production is that of socialized childcare.

Thirdly, the possibility exists of decentralization of productive labor. In the US, as a result of microcomputers, telecommunications and other technological developments, some industries are moving toward decentralized locations for their workplaces. Some provide the opportunity for employees to do the bulk of work at home, and both industry and the service sector have spread their operations throughout metropolitan areas, no longer needing a single industrial zone, or the single financial district common in the past. In Nicaragua, production has traditionally been decentralized because it's not a heavily industrialized economy. Because of that fact and because of the current mixed economy with state planning, Nicaragua has now a choice about the type of economic development to pursue, and the form of spatial structure to be developed to support it. According to planner Eduardo Lozano,

"...employment generation will not follow the path of exclusive capitalist industrial development due to the scarcity of capital and markets for large firms, as well as the reluctance of local entrepreneurs to invest locally. The options open for industrial development clustered in two scales: large state or cooperative enterprises and small industries or workshops where the owners perform technical roles." (27)

Decentralization of productive labor also raises the possibility of decentralized control over production and less hierarchical relationships in the workplace. It does not necessarily mean working in isolation in one's
home, which may not be a desirable situation for many people. There are other possibilities: neighborhood based industry and commerce; shared locations for people working for different employers, etc.

A number of critics recognize the importance of spatial reintegration. Eduardo Lozano states:

"The city should provide the setting for such industrial development. It should also be a place where recreation is found nearby, where community facilities are designed to stress provision of education and health services, where neighborhood communities are encouraged, and where low and intermediate technology is put to its best use." (28)

According to Karen Franck and other critics, the best social and spatial arrangements for women with children, married or not, employed or not, are high-density, mixed-use communities including other families, singles and mixed age groups. These neighborhoods should include commercial, educational and other facilities and services close to dwellings and to workplaces, as well as to mass transportation. They should include as well shared outdoor space and cooperative recreational and homemaking opportunities. (29)

Marion Fox describes the land use changes necessary: integration of residence and workplaces in close proximity; the easing of restrictions on home-based occupations which have been confined to a few professions; the integration of residential and commercial facilities; the provision of childcare centers in residential zones proximate to workplaces so that parents can see their children during the day; the integration of workplaces and community facilities; and greater density both of residences and of workplaces. (30)

In some countries this need is already recognized. In Denmark, the government refuses to build housing developments without communal facilities. In Cuba housing is seen as integrally linked to broader development:
"Housing, for us, also means schools, day care, technical schools, and universities, industries, dams, cattle ranches, highways, bridges, movie theaters, stadiums, and parks...." (31)

And in Nicaragua, MINVAH policy states that priority is given to those projects and programs which reinforce community support and interaction, such as apartment units and individual units with communal social and recreational areas.

As households change, so must communities. In the US, support previously expected from within the nuclear family must be provided in other ways to accommodate those who are not living in such a household, and can't be provided for by the nuclear family. The physical and social needs of elderly people, unrelated single adults, and single parent families must be accommodated, in the neighborhood and in the overall urban structure.

The design of dwellings must also change to better meet the needs of today's households. Such changes could include redefining the relationship between private space and public to increase the possibility of sharing between dwellings. Designs could allow for shared kitchens, dining rooms and other spaces between two or more private dwellings, sharing of facilities such as laundries and gathering space among several neighbors, clustering of houses around a shared children's play area to facilitate sharing of childrearing responsibilities among neighbors. However, shared
space may not be enough to facilitate an interdependent community. Sharing of daily necessities and economic support provides a stronger base for community, and may be the choice for some.

With increased communality or sharing should come increased access to privacy. Regardless of how small a dwelling, consideration must be given to providing space for each individual. In particular, given the long history of women's identification with the kitchen, it is important that women have some private space outside the kitchen. A "room of one's own," so eloquently described by Virginia Woolf, must be supported in the establishment of territory within a dwelling. Not necessarily a room, nor permanent, such space can be accommodated through flexibility in a dwelling.

Increased flexibility of space is essential for several reasons. Dwelling space should accommodate changing household size, members' ages, and changing needs over time. The specialized and so-called efficient use of space inherent in the traditional US home should give way to increased multiplicity of use.

Finally, the design of dwellings should encourage shared responsibility for housework, making easily accessible the means of accomplishing all domestic tasks.

The solution to the problem addressed is not simply urbanization, nor are we proposing that everyone should move to center city neighborhoods. As part of an overall strategy for spatial reintegration, it is necessary to restructure the spatial configuration of that environment in which many people live — suburbia.

The strategy of spatial reintegration provides support for an interdependent community, encourages small scale and decentralized industry, and promotes a new notion of the relationship between individual and household, dwelling and neighborhood, neighborhood and urban structure. It can be accomplished only through a reordering of social and economic policy and the eradication of male domination. It requires a comprehensive program of architectural, planning, social and economic changes.
CHAPTER NOTES 2


(7) Central American Historical Institute, Update, v. 4, #33, October 29, 1985.


(13) See Chapter Notes 6, #1.


(17) Ibid.

(18) Victor Fuchs, Boston Globe, April 18, 1986.


(22) Central America Historical Institute, "The Nicaraguan Family in a Time of Transition," Envío, v. 3, #34, April, 1984, p. 1c.

(23) Ibid.


(26) Ibid. p. 171.


(28) Ibid. p. 21.


(31) "Construciones," Revolution en el '72, Comision de Orientación Revolucionario del Partido Comunista de Cuba y el Sector de Construcción.
CHAPTER THREE

A HISTORY OF ALTERNATIVES:
CHALLENGES TO THE SEGREGATION OF WORK & HOME

INTRODUCTION

While spatial reintegration as a social policy would be new, there are examples, both proposed and built from the 19th and 20th centuries which are illustrative, serving as helpful references. There is a continuous thread through history of built works that share similar concerns about the relationships between public and private spheres, and about socialized labor and services; they are works that seek to support the diversity and flux of human life.
All the examples selected challenge the spatial disintegration that comes from increasing industrialization. In addition, the projects we've chosen to discuss were selected for the following reasons: they all have out of the ordinary relationships between private and public space; they have spatially integrated multiple functions including housing and workplace; most assume the need to socialize domestic labor, and to make possible women's integration into the paid labor force.

The Materialist Feminists were part of a vital, much debated tradition that lasted six decades from 1870 to 1930. The materialist feminists challenged the physical separation of household space from public space and the economic separation of the domestic economy from the political economy. They built upon women's traditional skills of nurturing and networking. Starting in 1868, Melusina Fay Peirce challenged women to overcome their domestic isolation, alienation and economic dependency. She demanded economic remuneration for women's unpaid household labor and spatial redesign of neighborhoods by building housewives' cooperatives and by creating new building typologies that included kitchenless houses, day-care space, public kitchens, and community dining clubs. Peirce advocated that several dozen households unite to form neighborhood workplaces that were technically well equipped producers' cooperatives, performing the tasks of cooking and clothes laundering. These cooperatives would be located in a series of open
courtyards, set apart from the kitchenless houses.

Following Melusina Fay Peirce, Charlotte Perkins Gilman tried to reach a new constituency of professional: married women with children. She rejected the notion of a producers' cooperative and instead proposed apartment hotels with commercial services. She designed private, two room suites without kitchens which had access to collective, dining facilities, libraries, lecture halls and playrooms.

While the materialist feminists challenged the seclusion and alienation of the home and proposed to bring the public sphere into the domestic sphere, Jane Addams, beginning in 1889, stressed bringing the sense of homeplace into the city domain. While her sisters, focused their attention on the need for upper and middle class women to pursue careers and self-fulfillment, she established Hull House, a settlement house in Chicago, that brought together people from a broad range of economic and ethnic backgrounds, namely Chicago's immigrant population. In the design of Hull House, Jane Addams provided gardens, meeting

rooms, educational classes, and child care for single parents; in addition, she built Chicago's first urban playground.

THE RUSSIAN REVOLUTION: INVOLVE WOMEN IN SOCIAL PRODUCTION

Vladimir Lenin wrote with considerable gusto, in his book, The Great Initiative:

"Are we devoting enough attention to the germs of communism that already exist in this area [of the liberation of women]? No and again no. Public dining halls, creches, kindergartens, these are exemplary instances of these germs, these are those simple, everyday means, free of all bombast, grandiloquence and pompous solemnity which, however, are truly such that they can liberate women, truly that they can decrease and do away with her inequality vis a vis men in regard to her role in social production and public life."(1)
The intent of involving women in industrial production was part of an overall social program of the Bolsheviks, the dominant force within the revolution. They envisioned entire cities distinctively socialist in nature, integrated dwellings, workplaces, recreational facilities and social services, where housing projects were intended to be synthetic complexes of total communal living rather than an aggregation of self-contained private apartments.

In the early twenties, governmental agencies launched architectural competitions and researched housing prototypes. The resulting designs had an international impact on most housing. An example of one such design was "Type F", proposed by the Building Committee of the Economic Council and characterized by a corridor serving two stories that ran continuously along a very long housing block. This corridor connected the dwelling block to the community center, with its kitchens, canteens, reading halls, recreation facilities and children's playrooms. The apartment units included living, kitchen and dining spaces that
were 1-1/2 stories high with lower sleeping nooks that allowed space for the corridor.

Due to material shortages, few of the proposed projects were built and even fewer were built as intended. By stressing the socialization of all labor, most collective housing schemes removed all cooking, eating and childcare from individual homeplaces. Minimal one person privacies with folding beds, tables and chairs were typical.

One of the social architects of the time, El Lissitzky wrote:
"In the future it will be necessary on one hand to establish a balance between intimate and individualistic demands for housing, and on the other to take full account of the general social condition. Thus, for example, cooking should be transferred from private single kitchens into the communal cooking laboratory; the main meal should be consumed in public eating establishments; and the rearing of children should become the responsibility of the kindergarten or the school. In this way all the spaces essential to the individual's intimate life can be defined and isolated from the sum total of the overall housing shortage, in terms of both present and future needs. Conversely, communal facilities should become ever more flexible in size and design.(2)

SWEDEN: COLLECTIVE HOUSES AND SERVICE BLOCKS

During to the 1930's, the development of collective housing units and service blocks came to the fore in Sweden. This phenomena actually started in 1907 in an attempt to resolve "the servant problem." Since then, 15-20 blocks serving middle class citizens have been built in recognition of the need for the integration of housing and workplace, in order to overcome the physical separation of paid jobs and parenting responsibilities.

In 1935, the Swedish architect Sven Markelius collaborated with Nobel Peace Laureate and feminist Alva Myrdal to build among others, an
apartment complex in Stockholm that included 57 small apartments that could also serve as workplaces or studios. The apartments were typically one L-shaped room with dividing screens, a kitchenette and a bath. The first floor included a 24-hour child care center, dormitories for older children, and a restaurant. Dumbwaiters carried food up to individual apartments.

In 1945, Life magazine enthusiastically recommended this model for post-war America, in order that women might continue their role in the labor force. (3)

VANPORT CITY: WARTIME INGENUITY

The rise and rapid demise of Vanport City, Oregon can attest to the impact World War II and its aftermath had on American house form and their design. Vanport City was an entirely new town of 40,000, designed and built within 10 months in 1943 with federal monies for the shipbuilding magnate, Henry J. Kaiser. For our purposes, what is most distinctive about this project was that it
was built to meet the needs of the wartime labor force: single parent families, single people and non-familial households, all from diverse racial and economic groups.

At Vanport City, expediency was the word, both to enable design and construction of a city within a record 10 months and to expedite spatial solutions which enabled women to be as productive as possible while also raising a family. Public transportation was a key component of the design. Location of the child care center "on a straight line" to the job site was also considered a must, as was the provision of cooked food services at the child care center so that parents could pickup their kids and their casseroles on their way home from work. It is also interesting to note that the program included a child care center with visual connection to the shipyard.

With the return of the veterans after the war, American women were supposed to shuffle back into their houses. Vanport City was dismantled, federal subsidies, including FHA and VA loans for returning GI's were pumped into suburban developments with single family detached houses as the norm and the Levittown tract housing development as the prototype.

"Kaiserville," our first war city, is complete today because a pioneering industrialist insisted that war housing -- complete with all necessary public services -- is an integral part of war production," read the caption under this photo in a 1943 issue of Architectural Forum.
CUBA HOUSING AS A SERVICE

In Cuba, since a social revolution in 1959, national housing policies have been established which include tenant participation in the process of construction and the steady technical evolution of construction methods from artisanal to more technologically advanced systems. Their policy is characterized by the shift from private dwelling ownership to housing as a social right, and the integration of housing with social services. These policies, combined with the quest for community oriented living, have prompted the elimination of individual dwelling typologies. Instead, larger apartment houses with access to services are built. Each tenant has private control of her/his own dwelling without the threat of eviction or the possibility of speculative profit.

Alamar, a massive building project for 130,000 people at Havana's periphery, is a complete urban sector with food and textile factories, offices, schools and services in addition to housing. One of the goals of the project is to provide employment and day-care in residential areas to better enable the integration of women in production and public life.

At Alamar, a typical housing block is used repeatedly across a uniform grid, broken by collective facilities. Plans for future development are attempting to alleviate the rigidity of the blocks by creating a hierarchy of green spaces, and introducing a range of building types in a linear spine that connects different residential sectors.

Alamar, located outside of Havana, Cuba.
ITALY: COMPUTERIZED ARTISAN VILLAGES

Recently, in northeastern and central Italy, the advance of electronic technologies has given rise to spatially integrated manufacturing/residential districts. Among the regional planning goals were the revitalization of the economy by moving to smaller, specialized and computerized technologies, and the revitalization of outlying urban areas. The first so-called artisan village was built in Modena in 1956 utilizing small scale, high-technology manufacturing enterprises in mixed-use neighborhoods. Loans were provided to unemployed factory workers in Modena to setup shops of 5-50 workers each. Prefabricated concrete workshops line the streets; bars and small stores occupy corner lots. Along major roads, apartments are located above the shops. Since then, other developments in Modena, and in other cities have been built through the support of regional planning policies, municipal investments and artisan organizations. In Modena, special attempts have been made to link these artisan villages, warehouses, and truck depots with truck

Above: Artigianauto, Commune di Modena
This dwelling/workplace combination adheres to the simple diagram of commerce and workshops on the ground level with housing and terraces above. Sited to attract trade from a major road, this is a one stop auto service center with six specialized shops, adjacent to a residential neighborhood.

Below: Madonnina, Commune di Modena
This complex includes textile industries integrated with offices and housing.
loops than circle the historic core. Bologna adopted a master plan that infuses such developments into its suburban and outlying industrial areas, infilling and reclaiming underused railyards, developing a series of neighborhood spines that contain services, shops and workplaces and creating a series of neighborhood cores.

What's especially distinctive about this development is the spatial interdependence of complementary production units and the networking of these enterprises which allows complex manufacturing tasks to occur. This economic feasibility of decentralized workplaces allows for, and is further enhanced by, spatial integration of working and living.

CONCLUSION

We need to learn and build from these precedents and glean from their pertinent elements appropriate for contemporary solutions. For example, the Italian artisan villages help to address one of the important aspects of our thesis: the spatial reintegration of living and working and housing solutions appropriate for the 1980's and beyond. However, they may not fully address the needs of intergenerational living or the particular needs of working women. Likewise, the Swedish service blocks or collective houses do not accommodate a wide range of household types due to the size limitations of the dwelling units, although they consciously attempt to provide for working parents and their children.

Cuban housing policies are certainly notable in their challenge to spatial disassociation, especially at the urban scale, by trying to combine work, living, day-care and other social services, and by trying to provide for every population group. However, social and spatial policies, unless accompanied by the eradication of patriarchal relations, fall short of the mark, as in the case of Alamar, where woman working in neighborhood textile factories work at low wages and in largely sex-segregated workplaces.
The materialist feminists, by not reckoning with the differences in class privilege, contradict their spatial proposals. Gilman's apartment hotels, for example, serve middle class professional women at the expense of their working class counterparts who perform the commercialized domestic services. It can also be argued that the materialist feminists and the Bolsheviks, by stressing the socialization of domestic labor, left out the more intangible qualities we usually associate with the dwelling, such as nurturance and the hearth.

Critical issues such as the dialectics between personal space and social space are difficult to resolve. A balance must be sought which shifts with diverse populations. Many of the projects we summarize are didactic and therefore propose a singular lifestyle. The Swedish collective houses, on the other hand, provide a range of choices for food preparation and eating: private kitchens, takeout food service and collective dining facilities, which gives a broader range of possibilities for social gathering and nurturance. Choice and flexibility are key elements in the design of spatially integrated environments.

Notes:


LAYING A FOUNDATION
ESTABLISHING DESIGN OBJECTIVES

The following shared goal sets a direction for our design work and provides parameters for the overall development of our thesis. The objectives which expand upon it arise from the coalescence of our research in a variety of fields including architecture, planning, environmental psychology and urban geography; the historic precedents summarized in the preceding chapter; and a review of contemporary precedents, presented in the following chapter.
The objectives were intended to carry through as a consistent element in our project: informing our own design work, guiding our analysis of chosen precedents, and forming the basis for an evaluation of our own designs. As they inform our work, so are they transformed and refined by it: they have been through several phases of development during our work.

PROJECT GOAL

To explore, with cross cultural comparison, the design of a spatially integrated urban community which:

a) accommodates well today's diversity of households and recent changes in women's social role;

b) provides services and support to enhance the quality of life of all its inhabitants;

c) fosters the development of an interdependent community life while protecting the independence and privacy of the individual, the household and the community;

d) and accomplishes these within limited economic means.

OBJECTIVES:

1. The project should accommodate a diversity of inhabitants from children to the elderly, of different races and cultural groups, having a variety of lifestyles; it should utilize such diversity to the benefit of the community, ameliorating potential conflicts of needs.

2. The project should provide a range of public to private spaces which:
   - encourages interaction among inhabitants but does not require it;
   - allows for shared spaces, communal facilities and support services yet minimizes institutionalization;
   - seeks a direct correlation between increasing shared space and the need for increasingly well-defined private space.
3. The project should support the equal involvement of all people, regardless of gender, in domestic activity and enable all adults' participation in income-earning activity.

4. The project as a whole should have a readable coherence, relating in both form and use to the larger neighborhood context yet allowing enough difference for each household to express its own identity and sense of homeplace.

5. The project should encourage inhabitants' initiatives at all levels and over time, including multiplicity of use and flexibility of space.

6. The project should be able to be accomplished with minimal economic means.

Inherent within both the project goal and the design objectives we established is the need to ease apart the boundaries between private and public, and a growing understanding on our part that the very definitions of public and private are multiple and layered. We identified a series of interrelated levels on which all of the objectives need to operate.

**LEVELS**

**Individual:** a person living alone or in a larger household.

**Basic "Family":** the smallest self-identified grouping, ie a parent and her/his children or a couple, regardless of whether they live with others.

**Household:** Those who share cooking and eating facilities, regardless of blood relations.

**Household Grouping:** Either two or more households sharing living space and/or outdoor space, or a cluster of several households who share some communal facility or space.
Community: the total group of inhabitants of the site.

Neighborhood: the larger urban context in which each of our sites is located.

As shown in the accompanying diagram, each level has its own integrity and need for independence, and each requires interdependence with others; it is in the relationship between each level and the next up the scale that issues of the "public/private" connection enter. We need to build both the separation and the interconnection between the various levels. The accompanying matrix represents the relationship between each level and objective, and can be used as an evaluation tool.
### Objectives

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<th>2 Shared Space Communal Facil.</th>
<th>3 Equal Involvement</th>
<th>4 Coherence, Indiv. Identity</th>
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In Chapter Three we focused on precedents which addressed the issues of our thesis, but which tended to be quite broad in their focus. In fact, many were of a social or planning nature, rather than specifically architectural. In this chapter we've used our objectives to study five contemporary architectural projects which are related to the issues of our thesis, in form or in use, and from which we thought we could draw some lessons. They provided a range of strategies possible to meet the objectives we've set.

We chose the five particular projects for different reasons, some for their formal...
reference, others because of similarities in program. Each had special characteristics which drew us. Three of the five were designed for a particular population, and therefore didn't deal with the range and diversity of needs which is inherent in the problem we've chosen to address, but dealt with some aspect of the issues in our project. While quite different, all of the five have some common attributes: each represents an uncommon attention to the relationship between individual and household, household and community, and all are concerned about creating a positive interchange between public and private spaces.

CAPTAIN CLARENCE ELDREDGE HOUSE
Hyannis, Massachusetts
Architect: Barry Korobkin
1981

Designed as congregate housing for elderly people who are able-bodied and can care for themselves, this project included renovation of an existing home and a large addition.*

FIONA HOUSE, NINA WEST HOMES
London, England
Architect: Sylvester Bone
1972

An infill project in an old London neighborhood, this 12 apartment project was specifically designed for single mothers and their children. Organized by Nina West, herself a divorced mother who determined to assist other women in a difficult transition to economic independence,
the project includes a day care center in the rear of the site open to the surrounding neighborhood, and is intended to link residents with existing neighborhood employment possibilities.

HUBERTUS HOUSE
Amsterdam, Netherlands
Architect: Aldo Van Eyck
1980

Set in Amsterdam's Plantage Middenlaan, Hubertus House is transitional housing for single parents and their children. Intended to provide a supportive physical environment that was both open and protective at the same time, the two buildings form a courtyard, with the mothers' residence as the street and the children's wing to the back, and common dining and facilities at their juncture.

LEWIS COURTS
Sierra Madre, California
Architect: Irving Gill
1910

Designing for low income families, Gill wanted to demonstrate the feasibility of constructing quality dwellings within strict economic
constraints. Each two bedroom unit had a private
garden, and they were carefully sited around a
large courtyard to receive maximal light and air.

TYNGGARDEN
near Copenhagen, Denmark
Architects: Tegnestuen Vandkunsten, Svend Algran,
et al.
1978

A housing development set in a rural farming
area outside Copenhagen, this project focuses on
the provision of communal facilities and support
to enhance the lives of the approximately 75
households who live there. The community as a
whole shares a meeting house with a cafe and
services. Clusters of 12-15 households share
communal space, laundry facilities, optional
kitchen and living space, outdoor play area and
mailboxes.

ANALYSIS OF PRECEDENTS

Our analysis focuses on the design
strategies employed by each of the projects which
meet the design objectives we've defined. These
are not necessarily the objectives of the
designers, and we don't intend this to be a
comprehensive analysis of each project. Instead,
we are focusing only on those aspects of each
project which we think address our objectives, and
not on criticisms of the designs, nor on the many
other elements of each design.
Objective 1.

The project should accommodate a diversity of inhabitants from children to the elderly, of different races and cultural groups, having a variety of lifestyles; and should utilize the diversity to the benefit of the community, ameliorating potential conflicts of needs.

Strategy: Tynggarden — Five Dwelling Types

This project provides each household a choice between five basic types of dwellings which vary according to size, how open or separated the interior spaces are, the relationship between interior spaces, whether the dwelling includes one or two levels, whether its entry is at the ground or on the second story, and what the claimed exterior space is. The relationship between entry, bathroom and cooking area is essentially the same in all. The five dwelling types are deployed around the site in a variety of adjacency relationships both horizontal and vertical, frequently with flexible supplementary spaces as connectors.
Objective 2.

The project should provide a range of public to private spaces which:
- encourages interaction among inhabitants but does not require it;
- allows for spared spaces, communal facilities and support services yet minimizes institutionalization;
- seeks a direct correlation between increasing shares space and the need for increasingly well-defined private space.

Strategy 2A:

Tynggarden — Clustering Around Shared Space

Residents share a community-wide meeting house. The development is organized into a series of six clusters of between 12 and 15 households, each of which is gathered around a shared building and open space. The residents gave up 10% of their private space allocation to gain the shared buildings, which each include a kitchen, laundry, gathering space and, outdoors, a set of mailboxes. There are three different types of clusters, offering a variety of relationships between neighbors and between each household and the outdoors.

Site Plan: (A) 3-sided courtyard with a vehicle spur ending in a parking area adjacent to the shared building and the outdoor play space; (B) Open cluster through which the main street of the community passes, but which still has a separate pedestrian path, grouped parking and outdoor play space. Some dwellings are cut off from the others by the street; (C) Linear grouping along a dead end street with the shared building and parking at the end, opening out to the expansive fields beyond.
Strategy 2B:
Transitional Spaces Between Public and Private

Eldridge House — Buffer Zone Between Public and Private

The thematic entry off the shared path in the Eldridge House is a 3' by 13' setback shared by two dwellings, and marked by a column at its center. It is connected to each resident's small kitchen by a Dutch door and an adjacent double hung window. Together these form a buffer zone between the more public territory of the path and the more private territory of the bed/sitting room. It allows residents to move their living space out into the periphery of the community space, and to express their individuality at their "front door."
Lewis Courts - Household Extends to Community Space

Each household space extends to a privately claimed outdoor space adjacent to the more public community zone. Each dwelling has its more porous face surrounding a private garden which then extends to the meeting of the common path, a few feet below.

Hubertus House — Transition Through Light

In the children's quarters of Hubertus House, the hierarchical transition between public and private space is expressed through the interaction of transparency and seclusion, through the use of light gradations. The more public edges, flooded by sun from the glazed and painted light metal frameworks, interfaces with the public paths and gathering space, while the cave-like sleeping quarters are masonry-enclosed, lit by borrowed light from the hallway above.
Strategy 2C:
Movement defines the relationship between public and private space, offering choices.

Hubertus House - Entry Stair as Intermediary Space

The entry stair in Hubertus House is an intermediary space between two more enclosed living areas. From the door, tucked into the entry recess, movement passes back and forth between the two buildings as it climbs up the stair which links them and acts as a vertical focal point. An inter-weaving of spaces between the two buildings is created on every level, providing a constant interchange between public and private, closed and open space. The brightly colored metal framework differentiates the layers and articulates depth; transparency is juxtaposed with enclosure.
Captain Eldridge House – Choice of Two Paths

On the ground floor, a series of linked common spaces on one side of the building and private dwellings on the other, are woven together by two interconnected paths, one along the public edge, the other on the dwelling edge, both lit from skylights above. The two paths allow residents the option of engaging in social interaction or proceeding directly from the entry or one of the use spaces to their private dwelling. The utility spaces, located in the central space, provide a buffer between the two paths. The more public path engages the various shared spaces, with a different relationship to each. The path along the dwelling edge encounters a repetition of basic entry nooks for each pair of dwellings.
Lewis Courts - Hierarchy of Paths

Lewis Courts establishes a hierarchical arrangement of the exterior landscape, carefully articulated in its pathway system. The threshold exchange between more public to more private pathways is sequenced through the combination of dimension, right turns, level changes, and distance. Private entries to individual households can be directly accessed from the street, bypassing the community space, or can be accessed via the more elaborate pathway system of the internal court.
Strategy 2D:
Shared Space as Extension of the Private

Captain Eldridge House

Because the dwellings are minimal in area, the community spaces within the Eldridge House work as an extension of the household level both in use and in form. The possibility of engaging in the activities associated with a dwelling, such as eating, cooking, and leisure activities, can occur in a variety of spaces within the community realm. Transition zones allow residents maximal choice at any given time. It further negates the sense of being in an institution. The use of domestic scale and furnishings throughout the community spaces further strengthens the feeling of a comfortable and home-like environment.

Activities:
(1) leisure
(2) eating
(3) meal preparation
(4) bathing and dressing
Nina West Homes: Fiona House

Two residential buildings are linked by a central, glass-enclosed core. At the ground level it serves as the common entry, off of which each building has its vertical access. What is unusual about the core is that its second level is given over to a child play area; the fact that it's slipped a half level from the dwelling levels enables visual accessibility from two dwelling levels simultaneously. This arrangement allows a parent to be involved in housework and still able to supervise her children. An interroom system linking the dwellings allows parents to watch out for each other's children while remaining in their own homes. The interior child play area is an informal complement to the childcare center located behind the residences.
Objective 3.

Objective 4.

The community as a whole should have a readable coherence, yet allow enough difference for each household to express its own identity and sense of homeplace.

Strategy:
Eldridge House — Repetition and Variation of Patterns

In the Eldridge House, order derives from a repetition of details and dimensions, while diversity is provided by varying patterns of access and enclosure. The repetition of the entry zone shared by a pair of dwellings throughout the building provides easy understanding of movement along that path, and allows residents a great deal of latitude in personal expression. They can furnish or decorate this front door area as they choose. The variety of entries and edges in the common spaces allows for different levels of interaction and relationship between those using a space and those passing it.
Objective 5.
The project should encourage inhabitants' initiatives at all levels and over time.

Strategy:
Tytgarden — Flexibility and Adaptability of Spaces

In addition to the five basic dwelling types, three different supplementary rooms were included in the original design. These could be built during initial construction, or added incrementally. They differ in size, openness and whether they are vertical or horizontal extensions. Many of those included in the initial construction are located between two basic dwelling types. Because the design allows a door in either direction, these supplementary rooms enable the space to be shared between two households, on a day-to-day basis or over the life of the building, and allow control over the space to change over time. By providing the designs to residents, the project encourages residents' initiative to change their dwellings over time.
Objective 6.

The project should be able to be accomplished with minimal economic means.

Strategy 6A:
Lewis Courts — Phased Implementation

During the first phase of construction, the north and west units were built, defining the street edge and the neighborhood face, and allowing for some enclosure of the courtyard. The areas for community use were defined by building the pergola, terracing and pathways. Later development included bungalows and garages with living space above, neither of which was in the architect's original plan.
Strategy 6B:

Lewis Courts — Standardization of Form

A standard floor plan was repeated and flipped to create a variety of street and courtyard edge conditions. The open, porous side of the unit faces the private garden, which in turn serves as a buffer to the street, collective courtyard or as an entry transition from a community path.

The strength of the precedent analysis lies in its role within our process rather than in the final product itself. Some of the precedents have much more of formal value than the points we’ve addressed, and others have little interest to us other than what we’ve presented. By analyzing and diagramming them, we were able to extract what we considered to be the precious nuggets in each, and these informed our design objectives and had a direct bearing on our design explorations.
A note of acknowledgement and appreciation is necessary here. For our review of the Captain Clarence Eldridge House, we relied heavily on the MIT M.Arch. Thesis of Brad Eigerly for the design drawings; we also drew heavily from his very thorough analysis of the project to generate our own analysis.

The group of precedents chosen provided no strategies that we were able to perceive relative to our third objective.
CHAPTER SIX

SPATIAL REQUIREMENTS AND SITE ANALYSES

INTRODUCTION

In this chapter we apply our shared goals and objectives to develop a common program and then ground them in the realities of two very different sites.

We established a common program for integrating housing, workplace, commercial uses and daycare. For comparative purposes we both chose to design for 100 adults, with the number of children varying considerably: 40 children in Allston, 150 children in Managua. This is due to the very different birth rates and typical family
sizes. We also chose sites with comparable acreage, allowing for the fact that the square footage allotments for similar use space and density would vary significantly between the two.

What follows is a description of our sites, one in Managua and one in Allston respectively, setting each of them in their city and neighborhood contexts, analyzing existing site conditions and noting design implications. The spatial requirements for each design situation, including a listing of types of spaces needed and recommended square footages, follow the site analysis.

**MANAGUA SITE ANALYSIS**

**Urban Context**

In the heart of Managua, Nicaragua’s capital city, six hundred city blocks were destroyed by a 1972 earthquake. Many of them have never been rebuilt, because under the dictates of the former ruler, Anastasio Somoza, the periphery of the city was built up rather than the old center. (1) Reversing that decision, the current Sandinista government plans to redevelop the entire city center over the next many years. The site chosen is in the midst of this deserted landscape, sitting almost half way between two of Managua’s three geological fault lines. Throughout the immediate area, the old Spanish colonial street grid is barely visible among the 5-6’ high weeds which now inhabit much of the center city. Half a mile away are two existing residential neighborhoods which survived the earthquake.

The site is bounded on the west by a recent housing development of about 1000 people and on
the north by one of the major east-west roads in the city. A short distance away is the TELCOR building, the national telephone utility. From the site, looking north over the treetops, one sees Lake Managua extending to the horizon; to the right, the National Palace and the ruins of the Cathedral. To the east a half-mile is the tallest building in Managua, the Bank of America building, its 14 stories unscathed by the earthquake, and around it other commercial and government buildings are a sign of life reemerging. Facing south, over blocks of barren landscape, the city climbs gradually then steeply up the side of Tiscapa, a now-defunct volcano which was once the southern boundary of the city. One of the most appealing aspects of the location is the ability to perceive the entire city from a single vantage point: one’s view encompasses the two key elements of the natural landscape, the lake and the volcano, which defined the old city boundaries.

The site has easy access to public transportation, since both its northern border, Dupla Norte, and nearby Avenida Bolivar, running north to south, are major bus routes. Taxis frequent the same routes. The railroad station is within a substantial walking distance.

Because the site is on the northern side of the city, it is close to a variety of workplaces. There is a small industrial belt along the lake past the train station, which is within a fairly long walk; TELCOR is very close by, a number of government agencies and private companies are along Avenida Bolivar within walking distance, and other workplaces, both industrial and commercial
are within bus communication.

There are two major parks within a short walk of the site: one a formal park by the National Palace and Cathedral ruins, the other a recreational park with small food stands, a children's library, playing fields and basketball courts. A movie theater is close by, and the site is within easy reach of two significant cultural institutions in the capital: the national Ruben Dario Theater, at the lake front, and the ruins of the Grand Hotel, now a cultural center with exhibition and performance space. And finally, the national baseball stadium, of significant interest in Nicaragua, is close by.

In Managua there are both large markets which sell everything from rice to pants to appliances and furniture and small shops, both speciality and grocery. The largest market is within a bus ride of the site, but because of the lack of contiguous urban fabric, and because the adjacent housing development is strictly residential, the immediate area lacks any of the typical neighborhood stores and workshops. Similarly, there are no schools or health clinics in the immediate surroundings, given the lack of a residential base to support such services.

Managua's urban plans (2) call for the establishment of parks and open areas along the fault lines not far from the site, superblocks of mixed residential, commercial and institutional uses in the downtown area, and an intensification of the area near the Bank of America as a central commercial and service district. Our site forms the northwest corner of one 5 by 5 block "superblock" bordered by Dupla Norte and Avenida Bolivar. It is intended to be a mixed use area overall, with housing predominating. At its center will be a plaza, ringed by district services and commercial facilities. A tree-lined street, intended as a major pedestrian way will connect this center with Avenida Bolivar to the east and a large park to the west.

Our site is planned to be predominantly residential, with some services. Dupla Norte is intended to be a hard edge with a fixed building line. The street to the west is to be continued
across Dupla Norte, becoming a significant north-south access. The southern corner of the site will have district level services and commercial uses, faced by similar uses on the adjacent corners. That edge is bordered by a tree-lined street connecting the commercial center of the superblock with the park to the west and should therefore be an active pedestrian way.

Building Typology

The San Antonio housing development, adjacent to the site, was completed in the past year by the government. It is primarily two story housing, mostly detached, with a few duplexes. At its center are six 4-story apartment buildings. The buildings are constructed of a prefabricated concrete system of columns, beams and panels. Approximately 20' by 30', they are laid out in a linear fashion along the existing streets and a series of pedestrian paths running north-south. Other buildings in the immediate area are monumental and singular, such as the national palace, the Cathedral, the TELCOR building.

View of site from San Antonio housing project; at rear, one of many concrete skeletons left standing after the 1972 earthquake.

Managua: South of our site, some of the skeletons remaining from the earthquake have been reinhabited.
Because Managua has suffered two devastating earthquakes this century, the first in 1931, which destroyed the Spanish colonial fabric, and the second in 1972, destroying the city center once again, there is little building tradition to reference. As a whole, the city has a variety of residential building types: detached suburban houses similar to those in any U.S. metropolitan area in a warm climate; houses of exposed concrete and brick or of adobe, surrounded by animals grazing and garden plots, like a bit of the countryside within the city; attached houses of the same materials forming a continuous closed street edge; and self-built houses of scrap lumber, block or brick.

Observation of buildings in other cities, however, indicates a strong vernacular building heritage very much in the Spanish colonial tradition. (3) Typically, urban blocks are closed, walled by continuous attached buildings, with most of the claimed exterior space to the inside of the block and privatized. Working class and poor urban neighborhoods are generally a mix of residential, small commercial, and industrial.
The commercial and workshop activity can be informal: an eating place, small grocery or repair shop in someone's front room, or more formalized in buildings specific to the purpose.

There are two primary urban residential building types: the courtyard house whose front room generally opens immediately onto the sidewalk and whose rooms are organized around an internal open space through which primary movement flows; and a porch house, set back from the sidewalk, with a front territory claimed by a roof overhang and sometimes low walls or a level change. In both cases, the relationship between interior living space and exterior is strong. The living space, sometimes converted to commercial use, of the front room of the courtyard house spills directly onto the sidewalk: rocking chairs, tables, even outdoor stoves populate the sidewalk.

The outdoor space of the porch house forms a buffer zone between public and private. In some cases, the roof is over the sidewalk itself, making a space claimed by both the street and the dwelling. Typical of Spanish colonial buildings,
the more public spaces tend to be toward the front of a house, the more private, such as the kitchen, toward the rear. Spaces are generally multiple purpose and used flexibly, especially in households with less income.

Nicaragua is a young country, with 40% of the population under 15 years of age. Managua is home to one third of Nicaragua’s population of 3 million people (4) and has a high growth rate due both to the birth rate and migration: women in Managua give birth to an average of 5 children, (5) and approximately 200,000 people have migrated recently to Managua to escape the war or seeking improved employment (6).

52% of Nicaraguans are economically active (7), including many youths under 15. As noted in Chapter Two, women represent 42% of the total economically active population in urban areas, and are disproportionally represented in the cities. Many Nicaraguans are involved in informal economic activity: 8.6% are cottage industry producers, another 8.6% involved in the informal commercial sector. Many of these activities take place in

or close to the dwelling, and personal experience as well as logic would indicate that women are probably a large percentage of that informal economic sector.

Nicaraguan people live in a variety of different households. More common than nuclear families with one or both parents working outside the home, are extended families:

"Few homes consist only of the parents and children; much more often one finds the presence of grandparents, aunts and uncles,
and other relatives. Again, economic factors play an important role. The housing shortage and the large number of women who have to support or contribute to the support of their families are two factors that determine the presence of other adults in the home." (8)

Frequently unrelated adults live with a family, temporarily or permanently, perhaps doing domestic work, perhaps contributing rent. As already noted, the number of single parent families is quite high. According to a report by the Office of Family Protection and Counseling, the father is absent in 60% of Managua's homes, though his presence may still be felt. In these homes, the mother is economically responsible for the children, and is most influential in their upbringing. (9) In addition to family dwellings, there is a tradition in Managua of rooming houses. Prior to the earthquake of 1972, 25% of the dwellings were rooming houses. (10)

**Existing Site Conditions**

The site forms an "ell" with one double block along Dupla Norte, and a small block to its south with a street passing between them. Dupla Norte is a very wide, fast moving road, with few intersecting streets and little built to slow it down. There is little pedestrian activity along it, except for those people from the adjacent housing project, San Antonio, getting on and off buses. The street at the western edge of the site, shared with the San Antonio housing development is a
quiet secondary road, though planned to be one of the connecting streets across Dupla Norte in the future. Today it also has little pedestrian activity, though houses of the San Antonio project front on it.

The other streets bounding the site, and the one passing through it are secondary or even tertiary streets, currently with little activity, pedestrian or vehicular. There are no trees and no remarkable physical features on the site. It gradually slopes up toward the south, with an overall level change of 12'. Because there's so little built and because of the slope which is continuous from the lake's edge at the north to the volcano to the south, the site has a panoramic view of downtown Managua. Although its in an area almost uninhabited, it feels close to the heart of Managua's activity -- because much of what exists of typical city center activity occurs nearby.

Managua's climate is hot and humid, with a rainy season from May to October. It is subject, as well, to occasional cyclonic storms. The average daytime temperature is 30-33C., and at night, 21-24C.
Design Implications

Given the earthquake potential and available technology, residential buildings should probably not exceed two stories. Reportedly, many Managuan residents are afraid to live even in a two story dwelling.

Dupla Norte, as the most public edge needs to be a strong built edge and should have some public use. However, because of the traffic and the lack of pedestrian activity, it will need focal points in order to draw users. The edge should be well protected from the speed and noise of Dupla Norte.

The western edge, facing San Antonio, should have significant pedestrian activity and should be a highly interactive edge. It's important to build a connection with San Antonio both formally along this edge and through joint use of facilities provided on our site. Together they can form the heart of a neighborhood to develop over time.

The southern border, which will eventually face other commercial uses, can also utilize expected pedestrian activity and become a highly interactive edge. The southwest corner could become a small focal point for the neighborhood, tied to the major focal point of the superblock center.

The eastern edge and the street running through the site are the softer edges of the site, and should be interactive between dwellings.

The number of streets bordering the site and their width, combined with the relatively small number of cars in Managua, allow for on-street parking.

A project proposed for this area should not be dependent upon the implementation of all the urban plans proposed by MINVAH, given economic limitations and the time it will take, under the best of circumstances, to meet the projections. It therefore must have an ability to stand on its own, at least for a significant period of time.
MANAGUA SPATIAL AND PHYSICAL REQUIREMENTS

Neighborhood Level
Access provided to:

- shopping - some provided on site, some expected to be built nearby
- schools - expected to be built nearby in future
- health clinic - expected to be built in future
- public transportation
- domestic services, ie laundry facilities
- work

Community Level

Housing for 100 adults and 150 children, including outdoor space (*).......................... 32,000 sf

Retail/Commercial space, to serve community and larger neighborhood, including
service and outdoor space ................................................................. 4,500 sf

Community space for residents, to fit 100, if very crowded (can double with
another function); should accommodate neighborhood groups, adult education
and other programs, place to eat, and public telephone and mail drop.................... 1,500 sf

Workplace, accessible to neighborhood, for 20-25 people....................... 4,000 - 6,000 sf

Parking and service................................................................. 2,000 sf

Childcare center, accessible to neighborhood, for 40-50 pre-schoolers
(50 sf/child*) including: kitchen, laundry, administration and
nurse's office (could double as small health post).................................... 2,000 sf

Outdoor space (110 sf/child*)......................................................... 5,500 sf

Outdoor Space:

Gardens (30 sf/household of 6*).................................................. 1,250 sf
Child play areas and communal space (32 sf/person split between this and household grouping level*) ..................................................... 4,000 sf

Parking to occur on-street

Services, including trash collection and maintenance and storage.................. 500 sf

Bus/Taxi stop along northern edge of site

**Household Grouping Level**

Outdoor space including children's play area.......................................................... 4,000 sf

Shared domestic services ie laundry facilities (doesn't need to be enclosed)........ 1,500 sf

10 informal workshop or retail spaces, with service and outdoor space................ 8,000 sf

**Household Level**

A few basic dwelling types to accommodate the following households:

- nuclear families of 1-2 adults with 4-5 children ........................................ 120 people
- extended families of 2 or 3 generations or not all related, including 2-5 adults and 3-9 children ....................................................... 100 people
- several small households, such as single parent families, sharing a dwelling ................................................................. 25 people
- adults living without kids in groups of 2 or more ........................................ 10 people

Outdoor space for living, gardens, and child play, ........................................... 8,000 sf

**TOTAL AREA REQUIRED**

81,250 sf

**TOTAL AREA OF SITE**

94,900 sf

* Note: All figures thus marked are based on planning documents received from Nicaragua's Ministry of Housing and Human Settlements (MINVAIN)
ALLSTON SITE ANALYSIS

Urban Context:

Many Boston residents whirl by this site on their way to someplace else. Located at the point of convergence of two major traffic routes connecting Cambridge and Central Boston to points west, Union Square, Allston, is one of the sites chosen for our design explorations.
Allston is one of Boston's neighborhoods, 3-1/2 miles west of downtown. It is separated from Cambridge by the Charles River to the north and it is separated from itself by the Massachusetts Turnpike plowing through its center. Union Square then is a significant point of convergence of thoroughfares connecting Allston to other parts of the City.

The people of Allston are predominantly white and working class, with 87.7% of the population white, 4.1% Black, 6.4% Hispanic and 5.8% Asian, according to 1980 census information. In Allston, the median family income is $16,921 (10).

For our purposes notable facts concerning age are that the elderly comprise 11.2% of the total population and children comprise 10% of the population (children 15 year old and younger). The number of children is less than the national average. Also noteworthy is that 31% of the total number of households in Allston consist of people living alone, higher than the national average,
whereas female headed households are 20% of the total number of households, in keeping with current national statistics. (11)

Neighborhood Context

The Union Square site was particularly chosen for its proximate location to public transportation, schools, clinics and conventional shopping. On the south side of the site are stops for four bus lines leading to downtown Boston, Roxbury, Brookline, Cambridge and Somerville, allowing for a greater range of employment possibilities for site residents.

The Jackson-Mann Elementary School is located across the street with Brighton High School and Mt. St. Joseph's High School located 1/2 - 1 mile away. The Allston-Brighton Neighborhood Health Clinic is located two miles away on a bus route that stops in Union Square. A variety of food stores and other markets are located within a block of the site including a Spanish-American grocery, a food coop, a 24-hour convenience mart, and pharmacy.
Ringer Park, a large recreational park with baseball fields, basketball courts, child play equipment and large, open grassy fields is located three blocks away. A smaller asphalted park is only 1/2 block away from the site with swing sets and a basketball court.

The area abounds with service shops, warehouses and light industrial workplaces, especially along Brighton and Cambridge Street but also running back several blocks to the edge of
the Mass Pike. Since these warehouses and service shops are primarily located on the main thoroughfares they set the public tone. Their structures are either loadbearing concrete block or steel frame with brick infill. Set backs vary from 4 to 40 feet from the street. There is no typical building footprint.

Tucked back behind the main thoroughfares are residential areas composed of wood frame, 2-3 story buildings and an occasional four story brick apartment building. The wood frames are either single detached family houses, duplexes or tripledecker. These structures make their way out to the main Street; it is not uncommon to see a wood stick building juxtaposed against a warehouse. Adding to the array of building types are the occasional four story brick apartment buildings, located especially along the busier streets. The footprint of these buildings is usually from 3,000 to 9,000 square foot with single entries to the entire building. It is not uncommon to find retail spaces on the ground floor levels. Automobiles and trash collection claim most of their outdoor space to the side and the back. Outdoor space for the woodframe dwellings are also claimed by autos, although laundry clothlines, an occasional barbecue grill, swingset or garden find their way to the sides or the backspaces. Set backs vary from 20-30 feet and the space between dwellings is usually 15-20 feet on the sides.
Most pedestrian activity is concentrated on the main shopping strip of Harvard Street, 1/2 mile down from Union Square. Here, there is a dimensional shift, responding to the pedestrian tempo, with entries every 10 to 30 feet (compared to 40-100 feet elsewhere). Shoe shops, Woolworth’s, secondhand furniture outlets, Greek and Asian Food Marts all clamor for sidewalk attention. There is a bustle of people shopping intermixed with people hanging out and cars trying to pass through. Near Union Square pedestrian traffic is lighter, usually more directed, going to bus stops or specific retail stores.

**Existing Site Conditions**

This site was chosen for its mixed use zoning, allowing for our program of both residence and workplace. The site was also chosen for its various street edge conditions allowing for a range of interfaces with the neighborhood. Hano Street, to the east, is a local connector street to Cambridge Street. Across Hano is a three story wood frame apartment building plus a parking lot and a small one story office building. Both buildings present a wall to the street. To the north, is a cul de sac ambitiously called Clevelmont Avenue, which terminates at the site boundary. Four - 2-1/2 story detached wood frame dwellings face Clevelmont and a 12 foot tall
warehouse butts up against it. Clevemont is quiet and serves only local pedestrian and auto traffic. People occasionally cut through the site from Clevemont over to Cambridge Street. To the south, heavy traffic barrels down Cambridge Street, North Beacon Street and Brighton Avenue. Where the streets converge, the intersection is 150 feet wide limiting visual and pedestrian connections. Across the street reside service shops and two civic buildings, an elementary school and a firestation, both steel frame construction with brick veneer, 30-40 feet tall.

These two buildings send the morphology of Union Square careening into hopeless confusion. The school and the firestation might be civic buildings warranting civic stature, but they get lost in the competition. The actual landmark of Union Square is Twin Donuts, to the northwest, located at the point of convergence the three main thoroughfares. Twin Donuts is a one story turquoise moderne donut shop with prominent signage.
The bus stop shelter in front of the fire-station is where people gather, especially during the week day rush hours. Also, looking at the existing conditions map, one should note that the site has a northward facing slope of 15 feet. The existing one story band of retail stores will be torn down and for the purposes of this exercise incorporated into the new design.

The site has a highly visible public corner. It needs to reckon with a more public heavily trafficked edge as well as with a softer, quieter backside with the abutting cul de sac. Adjoining neighbors in their wood frame detached houses need to be respected and the low lying, concrete block warehouse buffered.
ALISTON SPATIAL AND PHYSICAL REQUIREMENTS

Neighborhood Level

Access provided to:

- shopping
- schools
- public transportation
- domestic services, i.e. laundry facilities
- work

Community Level

Housing for 100 adults and their children .................................................. 56,950 sf

Retail/Commercial space, to service community and larger neighborhood, including service and outdoor space .................................................. 7,000 sf

Community space for residents, to fit 100 people very crowded, can double with another function, should accommodate neighborhood groups, and other programs, plus a dining room .................................................. 600 sf

Workplace, accessible to neighborhood, for 25 people includes service .................................................. 5,000 sf

Childcare center, accessible to neighborhood, for 40 children (includes space for after school care, administrative offices, kitchen and storage)

@ 80 sf/child for interior spaces .................................................. 3,200 sf
@ 75 sf/child for exterior play space (12) .................................................. 3,000 sf
Food Service (can double with meeting space and day-care kitchen)

Outdoor Space:
gardens
child play areas and community space @ 25 sf/resident(13).........................3,500 sf
parking for 50 cars

Services:
Trash collection dumpsters
Maintenance and storage.......................................................... 500 sf

TOTAL 76,250 sf

Household Grouping Level

Domestic services i.e. laundry facilities.............................................1,500 sf
10 informal workshops at 450 each.................................................. 4,500 sf

TOTAL 6,000 sf

Household Level

A few basic dwelling types to accommodate the following households(14):

11 single parent families
(with 2 kids typical) 33 people

12 2-worker families
(with 1-3 kids typical) 30 people
<table>
<thead>
<tr>
<th>Family Type</th>
<th>Number</th>
<th>People</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 workers families with (1-3 kids typical)</td>
<td>10</td>
<td>28</td>
</tr>
<tr>
<td>19 singles including elderly and displaced homemakers living together alone or with extended families</td>
<td>19</td>
<td>19</td>
</tr>
<tr>
<td>15 couples including elderly, 1 or 2 worker couples</td>
<td>15</td>
<td>30</td>
</tr>
</tbody>
</table>

In order to establish initial square footage estimates for the dwelling types to be developed in the design explorations, the following square footage allotments have been given (15):

<table>
<thead>
<tr>
<th>Type</th>
<th>Number</th>
<th>Square Footage</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 efficiencies @ 450 sf each =</td>
<td>10</td>
<td>45,000 sf</td>
</tr>
<tr>
<td>10 1BR @ 650 sf each =</td>
<td>10</td>
<td>6,500 sf</td>
</tr>
<tr>
<td>26 2BR @ 950 sf each =</td>
<td>26</td>
<td>24,700 sf</td>
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<tr>
<td>17 3BR @ 1,250 sf each =</td>
<td>17</td>
<td>21,250 sf</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td><strong>56,950 sf</strong></td>
</tr>
</tbody>
</table>

**TOTAL AREA REQUIRED**: 82,250 sf
**TOTAL AREA OF SITE**: 84,000 sf
CHAPTER NOTES 6

(1) Under Somoza, a choice was made to develop semi-autonomous neighborhoods, both middle class and working class, in a ring around the center city. Many critics have pointed out that he and his associates received significant financial benefit from this decision through land speculation and because they owned the construction materials and equipment.

(2) Based on a personal interview with Fernando Morales, Department of Urban Planning for Managua, Ministry of Housing and Human Settlements (MINVAH), Managua, Nicaragua and MINVAH documents.

(3) Based on observations of several secondary cities in Nicaragua which I visited and photographed in January, 1986.


(6) Based on a personal interview with Amanda Lorio, Department of Research, Ministry of Agrarian Reform, Managua, Nicaragua.

(7) Central America Historical Institute, Op. Cit.

(8) Ibid.

(9) Ibid.


(12) Ibid.


(15) For the purposes of this exercise, we drew on U.S. household statistics and modified them for two notable differences: Allston's population, where children 19 years or younger comprise 24% of the total population and single householders comprise 31% of all households. U.S. Household statistics are from Hayden, noted below.


(17) 1982 HUD Standards (+20%) from John Macsai, Housing, New York: John Wiley & Sons, 1982 p. 32.
EXPLORATION THROUGH DESIGN

The two quite different sites described in the previous chapter have become the locations for our design explorations of interdependent community. In addition to the common foundation established by the objectives and program, each design responds to the specifics of the social and physical context, geography and urban form previously described.

The schematic designs which follow represent our effort to give physical form to the complex set of concerns described in Chapters Two, Three and Four.
MANAGUA
INTERDEPENDENT COMMUNITY

Site Specific Design Intentions

To develop a design which could stand on its own in the existing sparse conditions, and could fit into the urban plans for a mixed use area.

To build up the street edges of the site, as a way of initiating a new urban fabric in the area, setting precedents for building edges, building heights and relationships.

To set up an interactive relationship with the adjacent San Antonio housing development. By building next to existing housing, the intention is to establish the beginning of an urban neighborhood.

References

The Nicaraguan vernacular was a significant constant reference: the closed blocks, clearly defined private territories such as courtyards, and interactive edges such as arcades, all impacted the design. I was attracted to the designs of Geoffrey Bawa, an architect in Sri Lanka, working in a similar climate, whose buildings reflect attention to a culturally based vernacular combined with modern interpretation and materials. Finally, the courtyard edges of traditional Japanese architecture, using screens as a means of enclosing space while maintaining a strong connection between interior and exterior seemed appropriate to this climate and program.

Geoffrey Bawa's Ena de Silva House in Colombo, Sri Lanka
The ruins of the Grand Hotel, showing the use of ventilator block as a means of connecting interior and exterior space.

Granada, Nicaragua: the largely closed street facade of Spanish Colonial buildings is interrupted occasionally by a secondary system of screens.

Open air structures, such as this pavilion at the beach, are common outside of cities.
SITE PLAN

Three basic dwelling types in different clustering arrangements on site, some with supplementary, spaces, provide a variety of different possible living arrangements, and a range of privacy and interdependence.

Two layers of identity and interdependence exist between the dwelling level and the community as a whole: the immediate cluster of two, three or four dwellings which share some aspect of daily life, varying by type of dwelling; and the larger cluster of six to fourteen, jointly form a built edge at the street, surrounding a communal open space for children and socializing. Each of these larger clusters shares a gate to the path which connects them to the childcare center and neighborhood workplace; the gate establishes a joint identity to the community and increases the security of the exterior space. The layering up of privacies to community provides a basis for local congregation.
MANAGUA • INTERDEPENDENT COMMUNITY
SITE PLAN

SITE PLAN
KEY
1. CHILDCARE CENTER
2. NEIGHBORHOOD WORKPLACE
3. COMMUNAL SPACE
4. COMMUNITY GATHERING
5. DWELLING A
6. DWELLING B
7. DWELLING C — SHARED LIVING
8. PARKING AND SERVICE
9. PEDESTRIAN WAY
10. SERVICE
11. SUPPLEMENTARY SPACE
Dwelling A predominates, with the edges of low walls forming the communal open space. The secondary path into it from the central pedestrian path can be secured.

Supplementary spaces between a pair with access to both dwellings and from the street, allow a variety of interpretations. They can be used for an informal workshop or commercial space, operated by one or both dwelling occupants, or as extra living space for one or the other, or both.
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SITE PLAN - NORTHWEST
Dwelling B predominates, with several dwellings joining in a shared path which opens onto the communal space edged by childcare center.

The pedestrian path is a memory of the street which once was there. It links the south block to the rest, and is most open to the south, inviting future neighbors into the public uses of the site. The path is most closed to the public edge of Dupla Norte, visible only as a crack between two buildings, slightly hidden, to reinforce its semi-public character; it is available to those who know it or discover it. The path makes a stronger connection between the street edge and the interior of a block than is traditional in this culture, reflecting the concept of interdependence.

The community space and childcare center are located in the heart of the ell-shaped site as the focal points of community life. Because of the temporal nature of each, they double up to share entry, kitchen facilities, and space. The childcare center/community space and the neighborhood workplace are non-thematic elements in the design, establishing clear identities within an otherwise consistent pattern. Together they form the anchors of the site. Linked by the interior path, the childcare center extends a low wall toward the workplace, which opens towards it.
In this smaller block, the large cluster is formed by a combination of all the dwelling types.
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SITE PLAN — SOUTH
The built edges on the northern and southern edges of the site are the most public and formal. In particular, along Dupla Norte, the commercial space and the workplace both form a wall to protect the residential character behind from a vehicular thoroughfare, and provide a means for the public to enter the site. The housing comes to this public edge only in the second story. The commercial spaces have an arcaded expansion zone, defined by columns and a level change. Their activities can spill out here, or they can build out over time, bringing variety and individual identity to the established framework.

The ground steps up incrementally at the crack in the built wall — first to a public platform associated with the commercial space, then to the path leading to the childcare center, off of which are entries to dwellings, the first of which is visible to the street.
DWELLINGS

General

Each type of dwelling is designed in a cluster, to encourage social interaction, to provide protected play space for children, and to provide a clear definition of a shared territory adjacent to the more public one.

Both to take advantage of the climate, and to minimize expenses, outdoor living space is maximized, enclosed space minimized; shared space is mostly outdoors. In Dwellings A and B the private outdoor space is adjacent to but separated from the shared outdoor space, which is used to build reciprocities between the private dwellings, the intimate cluster and the larger cluster.

All dwelling entries face the street and have a porch to allow for social interaction and informal economic activity. The entry form is repeated, with some variation for each of the dwelling types, throughout the site: a setback from the sidewalk, with a slight level change, covered by a roof.

The definition of a household relies on an assumption of the centrality of cooking and eating in daily life: those sharing these activities, i.e., sharing a kitchen, are considered a household. Thus the kitchen is the symbolic center of the dwelling, indicative of nurturance as the life core of the household. This differs from the tradition of kitchens in Nicaragua, which are usually at the rear of the house, sometimes closed off from other living space. While the kitchen is at the rear of the house in most of the dwellings, it is at the center of household activity, adjacent and visually connected to outdoor space used for children's play, eating and socializing.

The dwelling designs set up possibilities for inhabitation but don't define spaces by singular uses. Because the dwellings are so small, and the number of inhabitants large, the designs attempt to provide inhabitants maximum flexibility and choice, immediately and over time. Spaces are intended for multiple use; living space, for example, is designed with the expectation that it will double as sleeping space.
Site Model: view from the east, showing two dwellings of Type B and the neighborhood workplace in the foreground, the childcare center and community space beyond.

Site Model: view from the northwest corner, from the rear, showing the community edge of the dwellings which wrap around to define private outdoor space at the edge of the community space. To the right, the housing on top of commercial space, to the left, Dwelling Type A.

Site Model: view from the south, looking at path through center of double blocky to the left and right, the roofs step gradually down the slope northward, and the low walls bounding each small cluster are visible.
Designed in clusters of two or three, this ell-shaped dwelling is the most private of the three types. Exterior space, only, is shared: an entry porch, laundry, rear patio, garden, and children's play area. Each dwelling is designed for five to seven people.

The entry porch and door location allows extension at the street edge of the set back dwelling; the infill on the foremost dwelling in a pair allows for a variety of relationships between street and dwelling: more open for commercial, more closed for private living space.

The interior space is left mostly unpartitioned; placement of elements in the space is intended to encourage a variety of uses: the front space can be used for gathering, sleeping, eating, informal commercial or workspace; the left side could become enclosed for private sleeping space.
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DWELLING A: GROUND FLOOR
The spaces upstairs are partitioned; one is quite large with a closet in the middle to increase the privacy of occupants on either side.

A single story at the rear, with a parapet created by the party wall, and the opening from the second story space combine to encourage second floor addition by inhabitants.

The stair is at the edge of the house, providing a connection out to terrace, and an overlook from the second floor provides visual connection between living space below and sleeping space above.
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DWELLING A: SECOND FLOOR
The edge at the terrace is permeable, using screens rather than glazing for enclosure, to maximize the interconnection between inside and out. From the kitchen, moveable panels extend the space out; from the living space, somewhat more formal, double doors open out.

Territorial definition is made by incremental level changes: up from sidewalk to entry porch to house and terrace, down to shared outdoor space and communal space.
This u-shaped dwelling shelters two households, each with its own kitchen and small living space, and sharing a larger living space which includes the stairs to the second floor. The entry porch, outdoor living space, laundry and garden are all also shared. Envisioned as a dwelling for an "extended family" — of blood relation or choice, it allows some separation of two households and a great deal of connection. It is designed to house ten to fourteen people. Because of the number of inhabitants, it is not part of an intimate cluster, but shares communal space with a number of other households.

The entry to the shared living space is foremost and most visible from the street. However, each wing has its own, less public, door facing the street, allowing entry into the private space without need of contact with the other wing. The infill at the street edge allows shared space to be used for more public purposes, if desired, such as commercial or workspace.

The two front outdoor spaces differ. The entry porch is more public and potentially interactive — a living space at street edge; the garden is privatized by a high wall surrounding it.

The interior space of each wing is left mostly unpartitioned; placement of elements in the space is intended to encourage a variety of uses: the front space can be used for gathering, sleeping, eating, informal commercial or workspace. However, built extension at the street is less likely than in Dwelling A.
DWELLING B: SECOND FLOOR

The rooms on the second floor are open between the two wings — no definition is provided for territorial claim, in order to allow them to be claimed by either, according to size of household, or jointly.

- A single story at the rear, with a parapet created by the party wall, and the opening from the second story onto it, encourage inhabitants to build additions.
Territorial definition is made by incremental level changes: up from sidewalk to entry porch to house and terrace, down to shared outdoor space and to communal space.

The stair located at the building’s edge with the terrace connects both levels to the outdoor living space.

The louvers and trellis on the rear edge protect the interior from the western sun.
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DWELLING B: SECTION
Inspired by a semi-private courtyard shared by several families in Granada with minimal privacy (see photo), this model has the greatest amount of sharing. Four dwellings located over commercial space share interior living space at the ground level, as well as outdoor living space, laundry, garden and children's play space. Intended to meet the needs of single parent households and others in need of or desiring social interconnection and support from outside the household, each dwelling is designed for four to six people.

Two entries, one shared, one more private, give a choice of interaction or no contact. The more formal entry porch off the shared living space is typical of the overall design, and gives inhabitants a street "face" for socializing with neighbors.

The shared space can be used flexibly. It is separable into two, and could be used for work or commercial purposes.

A more private gate to the side, covered by balcony and trellis, leads to the dwellings.
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DWELLING C: GROUND FLOOR (WITH COMMERCIAL)
DWELLING C: SECOND FLOOR

The stairs shared by each pair arrive at a balcony overlooking the garden, allowing supervision of children at play.

Because the sleeping spaces are on the same floor as living and kitchen space, this dwelling is more defined by partitions than the other dwelling types. Two different floor plans are provided, with the kitchen close to the entry in one, and at the shared edge of the dwelling, overlooking the balcony and garden below. In the other, the kitchen is more typically away from the entry but also away from the social life of the cluster.

In both plans, the living space is connected to the kitchen, and is open ended, with sliding doors at one end opening into a sleeping space, to maximize useable space and flexibility.
The monitor above the central living space filters light coming into each dwelling as well as providing cross-ventilation. No solid walls exceed an eight foot height, allowing ventilation throughout.

Children can be supervised if playing on the balcony or in the garden, from the kitchen and living space in one plan, and only from the living space in the other.
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DWELLING C: SECTION
The elevation shown is typical, in materials and use of architectural elements, for all dwellings. Ventilator blocks are used in masonry walls where possible; screens rather than glazing predominate for openings, especially on the second floor, where there is no access possible from outside.

In Dwelling C, monitors break the roof form, and delineate pairs of dwellings.
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DWELLING C: SOUTH ELEVATION
ALLSTON
INTERDEPENDENT COMMUNITY

Inherent to the Allston site is the duality of the hard, urban edge of Cambridge Street and the soft, quieter edge proximate to the cul de sac of Clevemont Avenue.

There are two critical foci of the site: one, the southeast corner, is the most public vantage point where the neighborhood workplace anchors the site. The other is at the heart of the site where the childcare and the community gathering spaces are situated.

At a pronounced curve where three main streets converge, the building line breaks. Through this fracture, a pedestrian path draws the public into the community gathering space.

At the hard, but penetrable urban edge of Cambridge Street, retail dominates the ground level, making the dwellings' connection to the ground tenuous. Instead, the dwellings connect to the sky, through roof and roof edge habitation. Conversely, the connection to the ground prevails in the dwellings located at the rear of the site where there is a dimensional shift downwards and roofs are gabled in response to neighboring single family dwellings.

NEIGHBORHOOD WORKPLACE

- The neighborhood workplace, located at the most visible public corner acts as an anchor to the site. In so doing, it reinforces the attempt to break down private/public boundaries on an urban level and to develop the connection between community and neighborhood. It has two entries: the public entry, at the corner and highly visible, and the internal entry from the community terrace, connecting it indirectly to the internal street as well as the community spaces.

CHILD CARE CENTER/COMMUNITY GATHERING

- Childcare, as the heart of the community, functions as community gathering space. As
such, it potentially draws the neighborhood into the site. The childcare kitchen can also be used for site dining facilities or takeout food service.

- The community terraces and public stairs connect the childcare/community gathering space with the neighborhood workplace, reinforcing the relationship of work and daily life.

**INTERNAL STREET EDGE**

- Cul de sac extends with direction change, short vista and narrow passage to signal a private road, appropriate for pedestrian traffic and child play.

- On the internal street, dwelling entries face one another, kitchens overlook it, and arrival and departure occur, the total creating a potentially active zone for child play.

- A pedestrian path moves through a fracture in the building wall at Cambridge Street, and links the public edge to the interior of the site: allow continuation of an existing pedestrian cut-through from the cul de sac, and draws the neighborhood into the site, essentially for specific purposes, such as use of the childcare center, community gathering space and workplace.

**CAMBRIDGE STREET EDGE**

- Daily life activities are placed at the street edge, promoting the integration of street life, and domestic activity. The laundry space for dwelling clusters is placed at the street edge, a full level up, to reinforce the interactive relationship.

- The repeated entry sequence gives coherence to the overall site organization; at the same time, each entry has its own reference to site location: to corners, to pedestrian paths, to street edges.
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SITE AXONOMETRIC
Cambridge Street edge is exclusive to commercial or workplace use at ground level, identifying this edge as the most public edge, interfacing with the neighborhood.

Housing placed above retail at Cambridge Street gives public identification to the housing community and serves to integrate the housing community with the neighborhood.

**BACKSIDE OF CAMBRIDGE STREET BUILDING**

The buildings along Cambridge Street have two public edges, one facing the neighborhood, the other at the back facing the community. Entries exist on both edges: one, at the street, relates to the bus stop and commercial activity. Because most residents will use public transportation, it is designed as the primary entry. The other, at the back, connects the dwellings to parking and to community terraces and gardens.

The parking area slips under a terraced platform which is connected by open stairs to both parking and dwellings. It provides play spaces and gathering spots for residents.

The ground level retail space has limited access to the outside terraces for employee use and/or special occasions, integrating residential and commercial activities.

The series of level changes of the outdoor terraces delineate collective, site-wide outdoor space, cluster-shared terraces, and individual dwelling terraces.

Extensions by dwelling inhabitants are possible by infilling private terraces and balconies. At the public edge, such extensions are bound by building and zoning codes.

The community face of the building, at the north, allows for individual expression by dwelling inhabitants in the varied pattern of terrace and balconies.

Where two adjoining dwelling clusters form an ell, shared terracing is provided on the community edge of the building.
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SECTION AT CAMBRIDGE STREET
The entry sequence for each cluster of six households is parallel to the sidewalk direction, and involves entering under a balcony, which forms a canopy overhead. The actual entry into the building is one level above the street, away from traffic and street commotion.

A shared laundry and balcony overlooking Cambridge Street are immediately adjacent to the entryway; they can be bypassed or entered, allowing a choice of more or less interaction. By placing the laundry space at a public edge, it is given an open, social face.

The repetition of the entry sequence, plus the continuous use of elements such as piers and windows lends coherence to the project.
GENERAL CHARACTERISTICS OF ALL DWELLING TYPES

- There are four basic dwelling types provided to accommodate a broad range of household types.

- The kitchen/eating space is assumed to be the primary use space, accessible to all in a dwelling, rather than tucked away from household life. It is typically located in close proximity to the front entry of the dwelling.

- The 1 BR unit as well as Types A and B have access to "negotiated" space that can either be entered from the dwelling interior or from a more public pathway. They serve a range of uses from workplaces to guestrooms.

- The minimum to be shared among individuals or households includes: common entries, laundries, storage spaces, mailboxes, "negotiated" spaces and common site-wide facilities.

- Bedrooms are light-filled and large enough to allow for 24-hour use, including children's play, socializing, and quiet daytime use.

DWELLINGS A AND B

- Types A & B are characterized by a 2-3 BR "family" dwelling with a satellite suite that shares cooking, eating, and living space, but has a separate entry and a separate bath.

- Inherent in the design of the satellite space is flexibility of use and multiple interpretation of the relationship to the adjoining household. For example, the space can be used as an in-law suite or a workshop, since the separate entry and bath make it semi-independent.

- Dwelling A, when at ground level, locates the kitchen at the street edge, facilitating surveillance of children at play.
* Dwelling A includes 3 BR at second floor level.

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DWELLING A PLAN
The satellite unit allows the inclusion of another adult in the household mix, potentially extending childcare and domestic maintenance responsibilities.

Assuming that the larger the household, the stricter public/private boundary definitions due to the amount of sharing, the dwelling entry allows a choice of accessing directly into the more open, social spaces or retreating to one's own bedroom. The kitchen, as hearth, is presumed to be a social hub, and is therefore more open and accessible, whereas the living room is out of the way and closed, to allow for quieter, more private activities.

Bed/sitting spaces are designed to be large enough to be divided into different use zones.

Type C: characterized by a 1 BR unit (see general characteristics).

**NEGOTIATED SPACE**

Interior access from two units as well as more public entry allows for flexibility of use including use as a workshop by 2-3 neighbors, or a spare bedroom. Separate bath allows for this flexibility.

At the rear of the site, on the internal street edge, the negotiated space has a garage door opening to be infilled according to use, allowing the option for a service workshop.
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Dwellings B & C Plan
2nd Level
**DWELLING D**

- Type D: is characterized by 2 large bed/sitting spaces that share entry, cooking and eating.

- The provision of two similarly-sized bed/sitting spaces, rather than one predominant master bedroom, maximizes the private realm without a hierarchy, and increases the variety of household relationships served by the dwellings. The separate baths further reinforce privacy and independence.

- The dwelling organization allows the choice, upon entering, of immediate access to bed/sitting space or access to the more public kitchen/living spaces.

**DWELLING E**

- Type E: is characterized by 2 dwellings (with 2-3 BR) that share an outdoor terrace and a sunroom.

- The shared terrace and room can be used as play space for small children, and are easily monitored by both households.

- Spaces shared between dwellings, such as the shared terrace and sunroom, are secondary, additional spaces, rather than primary living spaces, allowing the choice of contact with the other household.
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Dwellings D & E Plan
3rd Level
* Dwelling E continues up one level; for plan, see E-1, opposite hand, at this level.

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DWELLING E & E PLAN

4TH LEVEL
CONCLUSION

What have we done? We have designed a piece of city fabric; we have looked at a new way of designing a neighborhood: one that is a "landscape of twin phenomena" (1), where public and private worlds are juxtaposed in relationship to one another, where diverse people live within one community, where a stable, supportive environment is essential to support the diversity and transition of modern day lives.

Aldo Van Eyck describes this dialectic in more depth: "A good building will result when multiple meaning (intensive ambiguity) of every twin phenomena begins to replace the single one-sided false meanings of the separated halves. Meaning continually embraces further meaning."
Since the meaning of one component carries that of its complement within it (forms its reciprocal extension) leading to the meaning of the other, this dialectic relies on a fast both-and instead of a faltering either-or. It depends on a more inclusive kind of thinking." (2)

This "both-and" approach has dominated our work; it is reflected strongly in one of our major themes: that of extending the private, domestic world into the larger, public world and then bringing the public world into what is typically considered private territory.

We had to continuously consider options arising from opposing perspectives. By designing a community that included a strong sharing component of a more public nature, we had to consider how this public nature impacted private worlds. We had to bring the public in without losing the nurturing qualities associated with hearth and home.

Specifically, we extended the domestic sphere out by providing support services and day-care on a community level. Our designs also included the possibility of increased sharing of child-rearing and life maintenance responsibilities between households and within a single dwelling. The design of adjacent courtyards and shared outdoor spaces in Managua allows informal surveillance of children by neighbors. In Allston, the satellite units encourage the inclusion of an additional adult (single, grandparent, or other) in the household mix, who can participate in child-rearing and domestic duties. In both projects, laundry space is given an open, social face, integrating it with site uses such as entry or other shared living space.

Just as we extended the domestic sphere into the public, we brought work and services into the domestic arena. We placed the neighborhood workplace on the most public edges of our sites to encourage the larger public world to enter the boundaries of the site. In so doing we had to protect the community realm. This gave rise to another issue: as the connection between public and private uses intensified, the need for protection and definition of private space
increased. Both designs included pedestrian paths connecting the most public edge with the interior. These paths were intentionally ambiguous, drawing in those with a relationship to the site, for instance those using the child-care center, the workplace or the community space.

In Allston, in the larger households with more shared spaces, provisions for privacy were carefully defined. The satellite unit, with its own private entry, large bed/sitting room and its connector to the main living room and eating spaces, allowed for choice in degrees of detachment or engagement. In Managua the dwelling for two households with shared living space provided a separate, private entry for each, in addition to the shared formal entry.

In looking at the public/private dialectic, the transition between public and private becomes critical to our design. Easing the transition between the world of the street and the intimacy of the dwelling was facilitated through the entry sequence. In Managua, the typical dwelling entry was setback from the sidewalk with a slight level change to define an entry terrace shared by two or more dwellings, large enough to be a sitting area for socializing with neighbors or to become a built extension for private or public use.

In Allston, on the most heavily trafficked street, the entry for each cluster of six households is parallel to the direction of the sidewalk, marked by a bay window and entered under a balcony which forms a canopy overhead. What's especially important about this entry is that the actual point of entry is one level above the street with a shared balcony and laundry room immediately adjacent to the doorway.

A second major theme in our work has been the coalescence of diverse people sharing daily life activities, where labor and life intersect. In each design, several types of dwellings are provided to meet the wide-ranging needs arising from diverse households. The dwelling types are defined by the relationships between public and private territories, and by the range of sharing, rather than by the number of bedrooms or types of occupants.
In both, the provision of a neighborhood workplace as well as smaller workshops scattered throughout the site contribute to the integration of the diverse population.

The intent of the dwelling design was to provide multiple interpretations of spatial relationships and a variety of choices of inhabitants. Both projects have "negotiated spaces." Located between two dwelling units, they can be used as extensions of living space and/or informal workplaces. In Managua, these supplementary spaces are set back from the sidewalk to allow for privacy or for commercial extensions. In Allston, these spaces have separate entries, allowing a more public use; some have a garage door opening to provide the option of service workshops. In both designs the negotiable spaces increase the flexibility of the dwellings, allowing for life cycle as well as temporal changes.

Our process through this thesis has also reflected a dialectic: on the one hand, gathering and embracing a myriad of ideas, proposals and criticisms, on the other hand, challenging, norms and assumptions about spatial relations. Even some of the historic alternatives we chose to present had significant limitations in their synthesis of work and living, public and private space.

By addressing the need for spatial reintegration, reviewing how others have taken up the challenge and utilizing our own design explorations to deepen our understanding of the issues, we have provided a base on which to build further. We tested common objectives and a shared program against two vastly different situations. Despite significant differences in the forms, the strength of the similarities in the designs has given us a better understanding of the qualities essential to designing spatially integrated, interdependent communities.

NOTES:

(1) Aldo Van Eyck, quoted in Herman Hertzberger et. al., Aldo Van Eyck, Amsterdam, Stichting Wonen, 1982, p.43.

(2) Ibid.
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