DESIGNING FOR APARTMENT ACCESS

by

John D. T. Graham

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Signature of Author

Department of Architecture
April 10, 1980

Certified by

Shun Kanda, Associate Professor
of Architecture
Thesis Supervisor

Accepted by

Maurice Smith, Chairman
Departmental Committee for Graduate Students
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ABSTRACT

Although social conflicts in corridor housing have long been acknowledged, few useful alternatives have been developed. The corridor remains a standard of apartment design. As a catalyst to the development of new alternatives, this thesis examines the corridor in detail, and determines some basic principles for the design of more socially coherent access space in apartment housing.

The first section of the thesis isolates twelve major problems of corridor living. It then discusses their effect on the social and spatial qualities of the apartment environment. And in response to these problems, it derives principles for the redesign of this environment through an examination of other forms of housing in which access from the street to the front door is more direct and more coherent.

In the second section, these principles are applied to the analysis and redesign of one of the few existing alternatives to the internal corridor in
apartment housing: the outside access gallery. In this analysis, a group of the more important gallery access projects is examined to determine how well they each fulfill the twelve principles isolated in the first section. Where these principles remain unfulfilled, alternatives are proposed and illustrated. Together, these principles sketch out a larger design project which attempts to fulfill all of the proposed principles.

Thesis Supervisor: Shun Kanda
Title: Associate Professor of Architecture.
On Corridors
Some years ago, when studying le Corbusier's innovative apartment building at Marseille, I was intrigued to discover that among the thousands of published pictures, I could find only one that showed the corridor. Now this was interesting for two reasons: first, it suggested that the corridors didn't really exist, or rather, that they were non-places—that residents would go from their apartments to the ground without going through anything to speak of. And second, it suggested that it didn't really matter how they got outside, and that the corridor was adequate even though no-one found it worth taking a picture of for the record.

This seemed somewhat strange in a building that was so obviously trying to be a "community" of people. For it suggested that the very thing that connected them to each other and to the community was somehow insignificant.

This led me to a second discovery: that it was difficult to find a picture of any corridor in any building published in the architectural press. From this I could only conclude that the profession wasn't really interested in how people went to and from their apartments. But this seemed somewhat incongruous with the way in which this same profession spoke of the residential streets of far-away hill towns. For while it lathered so much praise on the pedestrian places that connected the hill town houses, it seemed to ignore the same places that connected North American apartments to each other.
Having lived, now, for several years on the sort of corridor that the profession doesn't want to talk about, it seems time to say something. These corridors are not the best of places. And they contribute little to any sense of community among the people who live along them.

In our building, just going outside is a strange experience. We open our door to go out, but we don't go out, we go in. We go into a windowless place as narrow as a bathroom, with less of a view of the outside world than we had from our apartment. We can't even see the "outside" of the apartment from where we stand. The door is there with our name and number on it, but the rest of the wall between us and our home is anonymous.

Going down the hall, we stop in front of the elevator where we press a button and wait—not knowing when the elevator will come or what will be inside it when it gets here. When it comes, we get in. But now we are in a really strange place—a windowless room with handleless doors that is smaller than a bathroom. In this room, we stand with strangers in awkward silence, glancing around at each other, or staring at the illuminated floor numbers above the door, waiting for the trip to end. Then the doors open and we look out and think: right floor?, and step out into the lobby, then walk through the doors, and we're out.

Looking back, we wonder, where is our place? We can't see it if we look back the way we have just come. We must look up the face of the building to where we think it might be, and find some familiar thing in a window, or count up the right number of floors, and there it is (?): home.
This is a strange way to get to the street—to walk through a long snake of space suspended above the ground, cut off from life outside. And yet it is the way almost every elevated apartment, from low-cost to luxury is built. It is so "commonplace", and yet to some of us who have lived in other types of houses, it gives a strange feeling of being only vaguely connected with the world.

In this it seems that a large and essential piece of the more conventional housing world is missing: the place where inside turns to outside, where private turns to public, where the house meets the street, and where the individual meets the community. It is the part that the world sees, that children draw, and that owners decorate. In other words it's the front.

For some, it seems, this is not a major loss; many affluent people choose to live this way. But for some of those who cannot easily choose to live otherwise, these "faceless" apartments are a constant frustration. One British housing study suggests a plausible reason:

"To reach one's own floor, to step out on to a long, empty corridor or a small, empty landing, to be faced with closed doors and to have this happen time after time can give an impression of being alone in an unfriendly world."

But it is not just when people come and go from their apartments that they feel this frustrating isolation. For when they are in their apartments, they also have no sense of an immediate social
world. They have no "front porch", no garden, no front on a street, so they can't sit out and watch the world go by. They often have no real windows to the corridor, so they can't see people coming or going. And they rarely have any way of expressing their personal identities in a meaningful way to the outside world, so they often feel cut off from the people around them.

Few other forms of housing have so utterly frustrated social contact between neighbors. In suburban or row housing, for example, it is difficult to imagine how a person could go for several months without seeing any sign of his next door neighbor. Yet this is not at all uncommon for a person who lives on a corridor. It is indeed possible (we have experienced it ourselves) that a person could live for years in an apartment without ever meeting the people who live above or below him.

It has often been said that people who don't enjoy living this way should move. But where? There are often few other options in apartment housing, especially at urban densities. The corridor has so long been accepted as a "necessary" economy in apartment housing that few other alternatives have been developed.

New alternatives are clearly needed, but they will not likely come without a clearer understanding of the problems of corridor living. This is the purpose of this paper: to clarify these problems, and to look at some of the ways they can be resolved.
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Part 1: Problems and Principles
This paper is divided into two sections. The first section identifies the problem. Elevator, stairwell, and corridor access is compared with ground level access to demonstrate the social limitations of the more common forms of apartment access. Each of these limitations is isolated and defined as a particular "conflict" between an existing form and a potential but frustrated use. Then through an analysis of solutions in ground level access buildings, a principle for solving each conflict is derived.

The principles are derived by a method of analysis based on Christopher Alexander's "pattern" principle. In this method, a particular problem is observed in an existing housing prototype, its probable causes are then projected, and solutions for the problems are examined in other building types. From the better solutions, the underlying principles are then deduced and expressed as "design criteria." Combined, the many different criteria for solving the many specific problems make up a guideline both for assessing existing projects, and for the design of new ones.

Unlike Alexander's "Language", this paper does not intend to imply any universality in its design criteria. At most, it asserts their general relevance to lower and middle class urban housing in Northwestern Europe, Canada, and the United States. It is assumed that the application of these criteria to any particular building situation will require further interpretation, to account both for variations of context and for the vaguaries of personal taste.
Problem: Disconnection from the Outside

Residents of upper floor apartments are often cut off from outside social life by the very access system that is supposed to connect them with it.

Discussion:

When an elevator-and-corridor system stands between the door of the apartment and the ground, the connection between the two cannot be direct. To go out, one must go "in", then down, and finally out. So a special and conscious effort must be made just to step outside.

Numerous studies have found that in such buildings, residents tend not to go out as much as their counterparts in rowhouses, and thus tend to make fewer casual social contacts. Dr. D. Cappons, in his article on "Mental Health and the High Rise", observes that

There is higher passivity in buildings where such barriers as elevators and corridors require a time lapse and an effort in negotiating the vertical journey.

Christopher Alexander reiterates this observation:

Home life is split away from casual street life...The decision to go out for some public life becomes formal and awkward; and unless
there is some specific task which brings people out in the world, the tendency is to stay home, alone.

In the single-family rowhouse, where there are no elevators or corridors, there is no such problem. In only a few steps, residents can be outside. Thus they have a whole range of immediate social options that the resident of the elevated apartment rarely has. They may watch people or activities on the ground from their doors or windows, they may go out to watch from their porches or stoops (in housecoats, perhaps, or while keeping an eye on something on the
stove), or they may go out of their house more formally to take part.

The apartment resident, on the contrary, must make a number of conscious decisions before going out. First, he must decide whether he is wearing appropriate clothes, both for the weather and for the public view (since a housecoat and slippers might not be appropriate for the front lobby of the building.) Second, he must decide if the thing he wants to go down to see will be there by the time he gets down to the ground. And thirdly, he must decide whether going out is worth the trouble—especially when young children must also be considered as well.
It is thus not surprising that apartment residents—especially the less mobile—have been found to feel more "isolated" than their counterparts in single-family rowhouses. For while they live almost as close in a physical sense to outside activity, they cannot as easily or as directly get to it.

**Principle:**

If residents of upper floor apartments are to have casual contact with social life outside, their path to the outside world must be direct—not broken up by corridors, stairwells or elevators.
Problem: Dimension and Location

In their common form, corridors and stairwells are among the narrowest and least hospitable places in the apartment environment. And yet they are often the only places that residents can meet and talk with each other on a casual basis.

Discussion:

Because access space is commonly considered "secondary" or "service" space, it more often takes its form from factors of cost and code restrictions than from the requirements of social use. Thus it is usually given the most minimal possible dimensions, and relegated to the least desirable parts of the apartment environment--where no-one and nothing would otherwise want to be. As a result it is often useless for any sort of social activity; even passing another person is often uncomfortable.

The "double-loaded" corridor, for example, occupies the unuseable inner core of a building. Surrounded by apartments, it is often completely cut off from the outside world. Having no sunlight and no view, nothing changes from day to night and from season to season. So it is a static environment--an environment almost unparalleled in either the inside or the outside social world. In the apartment, in fact, it is quite unacceptable to cut off the light and the view of the social rooms. Only bathrooms, storage rooms, and kitchens are considered unimpor-
tant enough in a social sense to be put out of sight of the outside world. Yet the corridor--the biggest and most public part of each apartment floor--is routinely and unquestioningly placed where it can have no contact with the outside.

In addition to lacking light and view, corridors often lack sufficient dimension to be useable as social space. Usually only five or six feet wide, they are so narrow that residents cannot stop and sit or talk without blocking the passageway. And when residents do stop, the narrow width of the corridor makes it necessary for them to stand facing one another down the hallway--a rigid and often uncomfortable position that has little relation to the more concentric groupings that occur in more generous social spaces.
Even the commonest residential sidewalk belies the utter poverty of the corridor environment. For while the sidewalk is often no wider than the corridor, its very openness to the sky, to the road, to the view and to the private yards gives it a larger sense of dimension in both physical and social terms. Thus it offers a place to walk, to stand, to talk, to play, to watch, and simply to be; by comparison, the corridor offers almost nothing.

What is missing, then, in the corridor environment is a social place in which one might as easily stop and look around as pass by. Implicit in this are three major requirements: that the access area be wide enough in certain areas for people to stop and talk or sit comfortably, without blocking
traffic; that it be located in a reasonably desirable place so that residents will gain something by using it; and that it be directly connected to the outside world, particularly in terms of light and view.

**Principle:**

If social activities are to occur comfortably in the access spaces of upper floor apartments, these spaces must be given a positive social form. They must not be cut off from view of the outside world; they must not be relegated to the undesirable parts of the building; and they must be given the dimensions of social space, not merely access space.
Problem: Height

When people live so high above the ground that they cannot easily see, hear, or walk up or down to take part in outside life, they lose many opportunities for social contact.

Discussion:

The connection to outside life cannot easily be maintained when apartments are more than a few stories above the ground. For at these heights, walking up and down on a regular basis becomes uncomfortable even for "normal" healthy people, so much of the casual pedestrian life that occurs in lower forms of housing is lost, or at least, lost to the elevator. And at this height, it seems to become difficult for many people to see or hear enough of the activity on the ground to feel intimately involved. As Alexander puts it,

the visual detail is lost; people speak of the scene below as if it were a game, from which they are completely detached. The connection to the ground becomes tenuous.

Alexander argues that the height at which this happens is somewhere around four floors:

"At three or four floors, one can still walk comfortably down to the street, and from a window you can still feel part of the street scene: one can see details in the street--the people, their faces, foliage, shops. Above four stories, the connections break down."
While this makes general sense, such a specific limit cannot reasonably be assumed. For this limit must vary from person to person. A young professional, for example, might have little desire to be always involved in the "life of the street", and so feel more comfortably connected at a distance of more than four stories. And yet a working class housewife, in the same apartment, might easily feel isolated from the world if the life of the street is her major source of social contact.

So the height at which people feel "cut-off" from life cannot be defined. Nor it seems can a "cut-off" point be defined in terms of the height at which people stop using stairways and start using elevators on a regular basis. For this depends on at least as many variables--age, health, time of day, context, the load being carried, the reason for going upstairs, the urgency to get there, and the perception of the distance between the ground and
This last variable—the perception of height—is perhaps the most important. For it seems that people stop using stairways when the perceived height reaches a certain point, regardless of the actual height. At M.I.T., for example, some users of a particular stairway were asked how many floors they walk up on a regular basis, and at what point they begin to use the elevator instead. Then they were asked how many floors they would walk up in an apartment building. In almost every case, the answers were the same, despite the fact that the floor to floor height of the M.I.T. building is almost double that of the common residential building.

If it is the perceived height rather than actual height that determines how far a person will climb on a regular basis, then it is the perceived height that must be considered in design if the use of stairways is to be encouraged. While the preceeding
example would seem to suggest that perceived height is related to the number of stories, no particular number can reasonably be assumed, for as the next section will suggest, the perception of number of storys is not constant but varies with stairway form.

**Principle:**

If upper floor apartments are to be significantly connected with life on the ground, their entrance level must not be built above the height at which residents begin to be unable to normally see, hear and walk down to take part in social activity (and walk back up again.) Three or four floors has been suggested as a maximum, but this height may vary greatly according to context and the needs of specific residents.
Problem: Enclosed Stairs and Elevators

When stairways and elevators are enclosed in shafts and removed from view of the social spaces they serve, all sense of social life between apartment floors is lost.

Discussion:

In return for convenience, most of the social virtues of multi-story housing have been lost to the elevator service core. Apartments that were once connected to each other and to life on the ground by open communal stairways have become all but entirely cut off. And the communal life which once filtered down these open stairways has been funneled into elevators and stairwells out of public view.

In the elevator, there is nothing like communal life. Talking and walking stop, and strangers stand in awkward silence staring at the floor, or glancing around at each other, waiting for the trip to end. Little more could be expected. As a windowless room with handleless doors, the elevator is the strangest and most uncomfortable room in modern housing. Ironically, it is both the biggest, most public part of a building, and yet it is smaller than a bathroom; and it connects each floor to every other and to the ground, and yet it isolates them utterly.

In the stairwell, social life is even more uncomfortable. People must brush past each other in the narrow con-
fines of the shaft, or confront each other suddenly at blind landings. The stair, in fact, is perhaps the most abused element of modern multi-story housing. Reduced by the elevator to a secondary function, it has lost almost everything that could help it provide for social life and a connection between upper floor apartments and the ground. It has lost its view of the ground; it has lost its view of the apartments it passes on the way down; it has lost its communal dimensions; and it has lost its sense of communal purpose, and become more like a back alley than a front street.

Portman's Hyatt hotels bear striking witness to the importance of open vertical movement in connecting people on upper levels with public life on the ground. The glass elevators unify the tremendous vertical spaces. Their movement replaces pedestrian movement.
And their transparency allows passengers to see and be seen by people on the ground.

In the more restricted spaces of turn-of-the-century rowhouses, a more condensed version of the open elevator appeared in the middle of the large communal stairways. Because these elevators were caged and thus visible, they maintained a strong connection between upper floors and the ground, even when they filled the whole of the open vertical space. One recent television commercial has capitalized on this connection quite obviously.

The use of open elevators and stairways has been curtailed in residential buildings by fire codes. Vertical indoor spaces may no longer be open more than a couple of floors without the addition of costly fire prevention
equipment. So the potential for open elevators does not seem promising. They could (and have been) used externally, but at costs prohibitive in all but luxury housing. A far better alternative would thus be to limit the height of buildings so that elevators are only necessary as a secondary means of access.

**Principle:**

If elevators and stairways are to maintain a strong sense of connection between residents of upper floor apartments and the communal life below, they must be open and visible from the social spaces they serve. Where this cannot be done with elevators feasibly, the access levels of upper apartments should be limited to a height reachable by stairway access.
Problem: Vertical Stairways

Stairways that run "vertically" for more than a floor begin to cut upper floor apartments off from life at ground level.

Discussion:

Going up or down a vertical stairway is rarely pleasant for more than a floor or two. Going up, it becomes a climb rather than a walk, and going down it becomes repetitive. Either way it becomes a chore. Because these stairs double back on themselves, they don't seem to get anywhere. And because the ends of these stairways cannot be seen when going up or down, they tend to feel more distant than they are. As a result, these stairways seem to emphasize the separation of upper floors from the ground, rather than connection.

Evidence of this separation can be found in a comparison of different stairway types in similar buildings, such as the dormitories on the M.I.T. campus. In buildings with stacked stairways, residents above the second or third floor often use the elevator to get up and down, with or without heavy loads. Yet in Baker House, where a linear stairway—more horizontal than vertical runs the full height of the six floor building, residents even on the top floor rarely use the elevator except when carrying loads. Although other factors are involved in this difference
of function of the stairways, their horizontality is certainly an important factor; residents speak of the Baker House stairs as "easy to use"—and this is also the impression of the casual observer.

The difference between these stair types has been described in several ways. Maurice Smith at M.I.T. has described it as a difference between continuous and discontinuous movement. The "horizontal" stair, in his view, is continuous because it is analogous to a path in the landscape, which functions to connect people and things on different levels,
both visually and physically. Obvious examples of this are the streets of hill towns, which provide for pedestrian traffic connecting public places at different levels. In buildings there are also many obvious examples such as the lobby of the Paris Opera, Scharoun's Berlin Philharmonic Hall, and countless other public buildings, palaces, and churches across Europe and North America, where a sense of direct continuity between one social place and another is a functional necessity. Rarely in fact, can a vertical stairway be found as a major form of access in such buildings, (at least until this century), simply because of the need for continuity.
The vertical, or stacked stair, on the contrary, has been described as "discontinuous." It breaks from the ground, so the pedestrian must "climb" it rather than walk up in the landscape sense. This stairway thus functions to disconnect people on upper floors from the ground.

**Principle:**

If stairways are to provide a direct connection between people on upper floors and life on the ground, these stairways must themselves be ground-like, like the stepped streets of hilltown villages.
Problem: Children's Play

Stairwells and elevators make it difficult for parents to supervise their children's outside play from within the apartment. Thus either the child must stay inside with the parent or the parent must go out with the child if supervision is to be maintained. In either case the child's need to grow independent may be stifled.

Discussion:

Going out alone to play has been considered an important part of a child's growth to independence. But this can only happen if the child and the parent can feel a protective connection at every point of the path from the home to the outside world. Elevators and stairwells tend to break this connection, by making it difficult or impossible for parents to see their children as they go outside and as they play. As a result, parents in such apartments have tended to keep their children inside more and longer than those in lower apartments. In one such comparison, Jean Morville observes:

Children from the elevated blocks start playing out of doors on their own at a later age than children in low blocks. Only 2% of the children aged two to three years in the elevated blocks play out of doors on their own, while 27% of the children in low blocks do this.
The consequence of this lack of outdoor play, as many studies have argued, is that children in elevated blocks make fewer of the social contacts considered essential for mental health in later years. Morville's study supports this argument.

Young children in the high blocks have fewer contacts with playmates than those in the low blocks. Among children aged one, two and three years, 86% from the low blocks have daily contact with playmates; this applies to only 29% from the high blocks.

In contrast to the child in the apartment environment, the child in a single-family house can easily play outside his home within supervisory distance of a parent inside. He often has contact with other neighbourhood children his own
age who live close by, whom he meets by bicycling on the sidewalk or hearing them in an adjacent yard.

Clearly some equivalent is necessary in the apartment environment if children's play is to be promoted. And yet this environment has inherent limitations. To quote Clare Cooper's study on highrise housing,

Young children in a high-rise building cannot play outside adjacent to their home except on the private balcony or adjacent access corridor or balcony. These are generally unsuitable because: (a) the parents fear the child may climb up to look out—and fall off a balcony; (b) neighbours—and especially those without children—react negatively to children playing in the access corridors, foyer of stairways and the noise that they cause...(d)neither balcony nor
corridor allows children sufficient space or freedom to do what pleases them most—climb, run, play with wheeled vehicles, dig and manipulate the environment. However, these are the only semi-private areas that are close enough to the unit for a parent doing other chores inside to supervise.

Principle:

The path from the apartment to the world of play on the ground must be directly and casually observable from the inside of the home, especially from rooms in which parents spend the most daytime. This path must offer a continuously expanding realm for the child to master independently. And it must offer the child enough of the variety of interesting and manipulable stuff to make play and social contact meaningful.
Problem  Defensibility

Corridors and stairwells are rarely designed to be overseen by residents inside their apartments. Thus the security of these spaces cannot easily be maintained by the residents themselves.

Discussion:

This point is the thrust of the many studies done on the "defensibility" of access space. As Oscar Newman points out, the crime rates in the unseen access spaces are disproportionately high:

"One of the areas of high-rise buildings devoid of both visual and auditory surveillance opportunities is the fire stair system. Because of changes in fire code regulations, fire stairs in elevator buildings must be enclosed in fireproof wells.... The stairwells are commonly constructed of concrete, with access provided through heavy, fireproof steel doors in which the only opening is a one-foot-square area of wired glass. This arrangement effectively precludes the possibility of casual monitoring of activity in the stairwells. Consequently, most residents rarely make use of the stairwell for entry and exit, thereby increasing its isolation. A disproportionate amount of crime has been found to occur on these stairs."

But this indefensibility is not limited to the unused and isolated parts of the access system, for as Clare Cooper Marcus suggests,
"when the elevator doors are closed, when the doors onto a long internal corridor are closed...a crime could happen and no one in the adjacent dwellings would know."

Peep-holes, for example, are supposed to provide a view of the corridor from the apartment. But unless residents hear suspicious noises in the corridor, they rarely go to the peep-hole to look out. And since the entry areas where these peep-holes are located are usually as far as possible from the living areas of the apartment, for the sake of acoustic privacy, many suspicious noises go unnoticed. To anyone who has lived in a corridor apartment, this is obvious, since of the many people who might pass through the corridor in a single day, the resident in the privacy of the apartment
might normally be aware of only one or two. The rest go undetected.

Evidence of this problem is not only the crime and vandalism but also the number of security systems designed to prevent it from happening—remote control locks, intercoms, door men, alarm systems and peepholes. But as Newman suggests, these systems are no substitute for clear visibility and direct personal responsibility over the space that connects the apartment to the public world.

As Newman points out, the problems of crime and vandalism that often result from this isolation are rarely present in housing types where residents have a clear and casual view of the areas outside their homes. Although these residents might not actually
notice every passer-by, the fact that they could very easily do so seems to be a significant deterrent to crime. Where this visibility is combined with a direct and personal responsibility (or control) over the spaces observed, defensibility seems to be increased, since the mere presence of a stranger gives the resident grounds to question his or her presence.

**Principle:**

If residents are to have a sense of control over the access spaces that connect their apartments to the larger public world, these spaces must be clearly and easily visible from their apartments. No spaces should be hidden entirely from view.
Problem: Visibility

Most of the social contacts that could occur between apartment residents are thwarted by a lack of visibility. The activities that often lead to this contact--comings and goings of neighbors--go unnoticed when apartments have only peep holes to connect them with the corridor or stairway.

Discussion:

It is an obvious point perhaps, but a critical one. For as many observers have argued, it can mean the difference between living in a "neighborhood" and living in isolation. This is apparent in the striking contrast in the way people casually "visit" in corridor apartments and rowhouses. In the rowhouse, the bored housewife has only to glance out of the window a few times to see a neighbor in the garden next door or a friend walking past in the street. A step into her own back or front garden guarantees conversation for a few minutes at least.

But in corridor access apartments, unless the house wife happens to "bump into" a neighbor while going out or coming in, contact can not be so casual. She must decide to seek out a particular person, approach a closed door, ring a doorbell, and gain formal admittance. If she does not decide to do this, she may not see the neighbor for months.

Our own experience bears this out. Of the ten couples
living on our floor, we have seen only one in the past week, and only three in the past month. Some we have not seen for six months, although they live not more than forty feet away down a blank corridor.

This feeling of isolation is expressed by many residents of corridor apartments in studies of lower income housing projects. One person, for example, explains that "you can't see or hear anything once you're in the back of this building. That's why I'm nearly always out, because it's so depressing being on your own."

To overcome this problem, apartment residents are
forced to make a conscious, overt effort to make the world outside more visible. Like the resident quoted, they may go out of their apartment, or they may watch through their peep-hole when they hear noises in the hallway, or they can leave their doors open so that they can see or be seen by neighbors passing by. None of these awkward alternatives seem to adequately replace the clear and casual view from the single-family house to the street through an appropriately placed window.

It is obvious that many people who live in apartments on corridors do not want to see their neighbors, for any number of reasons: they may prefer to make social
contacts elsewhere; they may want anonymity; or they may simply want complete privacy from those who live "too close to them for comfort." But for these people, there is no shortage of housing types. It is rather the opposite, need that is not yet adequately fulfilled.

**Principle:**

If apartment residents are to have as much social contact with neighbors as they desire, they must be easily able to look out over the places where these neighbors pass during the day.
Problem: Privacy

In the tight spaces of the apartment environment, the need for privacy often conflicts with the desire to look out of the apartment over the places where neighbors pass during the day.

Discussion:

Without windows to the public passageways outside, no casual view from the apartment could be provided. Yet in the common form of corridor building, any such window would almost certainly result in an invasion of privacy unless it was kept heavily curtained. For in the tight corridor spaces, strangers and neighbors alike could pass within inches of any window at any time of the day. This problem is apparent in many gallery access projects where windows face the gallery. Curtains are usually kept permanently in place, and often, when curtains do not provide enough privacy, the windows are papered over.

In view of the difficulty of maintaining privacy when windows are used, it is not surprising that most apartment buildings have solid walls between corridor and apartment. But if visibility is to be provided as well as privacy, then an alternative solution must be found.

One solution is to use screens of some kind to prevent any direct view into the home. The wood lattices that can be found over the windows of traditional urban houses in Japan are an obvious example. Because
of the close spacing of the slats, people outside in the street cannot see into the houses as they approach them, but people inside can easily see out. Only when the pedestrian comes right up to the window can he see in as easily as those inside can see out, and in the normal course of pedestrian events, this does not often happen; and when it does, it is a clear violation of "pedestrian ethics." This same screen, however, might not work as well in the internal access corridors of an apartment building where there is often so little else to interest the pedestrian that the view into the apartment would be almost automatic.

A more dependable alternative might be to use a slight level change to raise the windows of private apartments
up away from eye level of people outside. This would not only provide a direct visual barrier, but would also provide a psychological barrier, by conveying a message of privacy to people outside. The rowhouses of Amsterdam, for example, a change in level of only three to six steps makes it possible for people to have large living room windows facing the street without a loss of privacy. Since this level change is not enough to prevent a person from looking in, but only to make it difficult, the psychological factor seems significant.

Precise requirements for privacy can not, of course, be specified. As one British study points out, the need for privacy varies significantly according to context, age, personality, income, and time of day,
to mention only a few variables. The only constant determined by this study was the need to have enough privacy to look out of the apartment to the public world without people outside being able to see back in.

**Principle:**

Windows must provide a view of the social world outside without compromising the privacy of interior rooms. Thus a visual barrier such as a level change and a screen must be provided, when social spaces are close to apartment windows.
Problem: Personal Space

When residents have no personal space beyond their front door, they often lose many opportunities to step out into the social world.

Discussion:

Most apartments have no personal space outside in the public world—merely a door on a hall. Thus they offer little reason to just "step outside." For without this space, there is nowhere to go without a formal reason for going out; nothing to water or to fix or to inspect; nowhere to sit; and so on. Because of this the many social contacts to be made while just being out when others pass by are lost.

Study after study in lower-income housing have shown the importance of these casual social contacts on the making of neighborhood friends. Clare Cooper, in a study of projects in California offers the following reason:

It seems that people are more relaxed and willing to make an initial contact with others when they are on their own home territory...Where there is an abrupt break between the totally private space of the apartment and the totally public space of the...anonymous corridor or sidewalk, people immediately put on a "public face," and it seems to be less easy for them to make contact with others.
Although Cooper then goes on to suggest that "the key to fostering relaxed meetings between people" is the provision of small shared semi-private spaces, a Canadian study suggests that more personal space is required; the vast majority of all social contacts made in the projects it studied were made while residents were outside doing something in their own space when neighbors happened to be nearby.

In traditional street-related housing, this sort of personal space has long served a social function. The front porch or stoop, in particular,
offered a place to stand or sit or watch the world go by; and it offered a place to step out to talk to a person without making it necessary to leave the house entirely. It was a place that was neither public nor private—an inbetween or transitional place that made each function more comfortably with the other. And it helped to provide a fuller range of possible activities and privacies.

Without this space, the apartment resident loses the opportunity to be out in front of his home for "no apparent reason." In addition, he often loses
the opportunity to leave personal things (such as tricycles, cribs, chairs, plants, doormats and so on) outside the front door for any length of time. Instead he must bring them into the apartment to avoid blocking traffic or offending neighbors.

**Principle:**

If apartment environments are to support the casual social activities that have always taken place on stoops and porches, some personal space must be provided for each apartment at the front door.
Problem: Claiming Personal Space

When no clear distinction is made between personal and communal space, it becomes difficult for people to claim and use their personal space in a comfortable way.

Discussion:

Rarely in any apartment building have the spaces immediately adjoining entrances to units been marked off as personal. Instead they have been made to serve only as an extension of the corridor or landing up to the private door. As a result, little personal claim is ever made of this territory; so it remains anonymous or impersonal, and can not serve its function as a buffer or extension for the private apartment.

The problem has not been well documented in the apartment environment since few projects have provided enough space to be of use to the apartment to claim. But in other forms of housing, the problem has surfaced. As Clare Cooper observes of a low-rise project:

The small patch of grass which on the plan is designated a "frontyard", in fact melts imperceptibly into the common open space of the sidewalk or courtyard...With no distinction between private yards and public space, it is difficult for a resident to determine who has and who has not the right to use the space.
So unless the resident aggressively "stakes out" this space on his or her own, it tends to be lost to the public world. This loss is especially significant in the apartment environment where space is already tight.

At the center of this point is the age-old adage "good fences make good neighbors." By defining the boundaries between personal space and the rest of the world, a sort of communal agreement is codified, which helps the individual and the community to function more easily together.
In this way, the boundaries do more than simply define the limits of personal property. They express in addition a participation of the individual in a larger social structure (regardless of whether this participation is active or merely symbolic). Beyond this the boundaries provide a framework for social activity between residents, by conveying a sense of the social identity or aspirations of the resident, through the various symbols, ornaments and other elements which make up the boundary. A high wall, for example, or a formally marked out garden, would seem to convey a much more private relation between
home and street than a sitting porch exposed to the public view. Likewise, a roadside bench or sitting place provided as part of a resident's boundary marker would seem to convey a much greater desire for neighbourly community than a spike-topped wrought iron fence.

**Principle:**

If personal space on the "front" of the apartment is to serve its personal function, it must be clearly distinguished from the more public spaces it adjoins.
Problem: Identity

Most apartment residents are denied the opportunity to express their identity on the front of their home. Beyond their share in the collective identity of the building, they must often live anonymously.

Discussion:

Unlike houses with facades and front gardens, most apartments are rarely able to express any personal identity to the public world. The hallways into which their front doors open are designed to belong to the building and not to the residents. This is reflected in the uniformity of the wall surfaces and the lack of distinction of individual apartments except at doorways. As a result, residents are prevented from putting much of a mark on the entry to their home. Nor can they make much of a mark on the opposite side of their apartments, since this is usually the building facade. If legal covenants don't prevent them from doing things that would "disrupt the architectural integrity" of the building (which usually means anything), then the sheer size of the apartment building makes it difficult for them to make changes that are meaningful or visible to the outside world.

Critics such as John Habraken suggest that the denial of such personal expression frustrates a basic need in dwelling. It is this need, or at least the desire, that is so clearly expressed in the personalized facades of suburban houses.
Although many designers seem to consider this "personalisation" superficial, and thus expendable (since it is usually done with mass-produced ornaments, in mass produced styles), the mere fact that so many residents do it suggests some considerable value, even as a symbol of a desire to conform to accepted styles.

A study of user preference by Franklin Becker has suggested the importance of identity in the apartment environment. Taking a number of lay people, he had each draw an ideal "facade" for an apartment of a certain dimension. Then he asked each individually to choose a position for this facade on a grid representing a common apartment building. In every case, the place chosen was the "most unique" part of the
building—at an edge, often either at the top or bottom. This suggests that in the common anonymous apartment, a real desire for self-expression goes unfulfilled for those residents who do not choose specifically to live anonymously.

In order to make this expression possible and meaningful in apartment buildings, some major problems must be overcome. First, since the "fronts" of apartments are rarely visible to the public world, but are rather turned inwards to an invisible access space, the expression of personal identity could hardly be meaningful in the present apartment form. Second, apartment buildings are often so big that individual
Apartments become insignificant or indistinct. And third, apartments are rarely given any distinct personal territory for expression to take place in.

**Principle:**

If residents are to be able to express their identities to the public world, their apartments must be given the potential for self-expression. Personal territory must be provided at the "front door" of the apartment; this territory must be visible from the larger public world; and it must be discernable as a significant part of the environment as a whole.
Part 2: Precedents and Alternatives
In the first part of this paper, twelve major problems of corridor access apartments were isolated. Through a discussion of alternatives in single family housing, principles for solving these problems were proposed. This second section looks for ways in which these principles can be applied both to the design of new prototypes and to the redesign of some that already exist. It seeks to show that these principles are buildable in modern apartment housing, and that by taking them into consideration in future design, we may develop more humane and coherent housing forms.

The focus of this section is an analysis of one particular building type supposedly designed to relieve the social isolation of internal access: the outside access "gallery." In this analysis, some of the more important projects of the past are examined to determine how well they fulfill each of the various principles discussed in the previous section.

Implicit in this analysis are three hypotheses: that no existing project has adequately solved the many conflicts or fulfilled the many principles; that these principles have not been fulfilled because they have not been adequately defined or understood; and that the resolution of these conflicts in future gallery access projects will lead to more useful and socially coherent apartment housing.

By bringing access to the outside of apartment buildings, many early proponents of the access gallery felt that the equivalent of "street life" could be brought to upper floor apartments. But only a few projects
have begun to approach this goal; the majority have been only marginally better than corridor buildings, and many have been considered unsatisfactory or even hostile.

As a result of these repeated failures, the access gallery prototype seems to have fallen from favour with designers and housing officials. But it is questionable whether the prototype has been justly dismissed; for as this section of the paper will assert, its potential remains essentially untested, and its inherent problems not well understood.

This may be in part the result of the way the access gallery has been developed. Until recent years, most gallery projects had been built in isolation—in different countries, on different scales, at different times and in different contexts. So comparison has been difficult, and information scarce or scattered. Thus each time such a building has been designed, the same problems have had to be rediscovered, and solutions reinvented. In this process, little understanding seems to have accumulated over time, for most recent projects are no better—even worse—than some designed more than sixty years ago.

In an attempt to alleviate this recurrent problem, the following chapter reviews some of the more important precedents. It tries to clarify the problems these projects have created, ignored and attempted to solve. And it examines a range of alternative solutions to each of the many conflicts isolated in the earlier part of this paper.
**Principle: Outside connection**

If residents of upper floor apartments are to have casual contact with social life outside, their path to the outside world must be direct—not broken up by corridors, stairwells or elevators.

**Observations:**

In principle, the access gallery prototype would seem to fulfill this requirement quite easily—each apartment having direct access to an outside gallery. But in practice, access galleries have rarely provided the sort of outside space that would make this direct connection meaningful. Although supposedly modelled after sidewalks or narrow village streets, most of these galleries are little more than corridors exposed on one side to the weather. Robinhood Gardens is a typical example. The galleries, being enclosed overhead by upper floors, are dark and tunnel-like. And being exposed on the side to daylight, they are lit more like interior rooms than outside places. Without natural overhead light, the galleries can be used for only the most minimal of outdoor activities, such as walking back and forth from the apartments to the elevator. Doorways remain in constant shadow, as do the faces of pedestrians. People cannot comfortably "sit out" except in the best of weather, because of the lack of sunshine. Little in the way of potted plants can be grown in the shaded areas by the doorways, so the galleries remain somewhat barren. And the view out to the galleries is made uncomfortable by the pedestrians outside who pass by as mere silhouettes.
Darbourne's Lillington Estate makes a limited improvement on the covered access gallery. By leaving the outer edge of the gallery open to the sky above, plants can be grown and people can sit in the sun. But even with this improvement, the galleries are not much good as outside space. Since they remain mostly covered by upper floors, their inner edges are still dark, and the galleries remain tunnel-like. And since the outer edges are taken up almost entirely by the planting boxes, little useful outside space is left over for any activity. As a result, not much more than coming and going takes place. Few of the gardens appear privately maintained; few personal possessions can be found outside apartments;
and few people can be seen sitting out or talking to each other, even in the best of weather.

In the Townland project, and at Davis-Brody's Bronx housing project these shading problems are decreased by covering the galleries at two or three floor intervals, instead of closely overhead. Thus while they remain covered, they get skylight from a high angle which eliminates the constant shadow and tunnel-like enclosure of the other access galleries. As the Townland sketch suggests, this greater openness and better balance gives the galleries a more comfortable outside feeling, which might lead to greater usefulness as social, personal, and play space.
Alternative:

In Brinkman's Spangen housing and in van der Werf's Papendrecht project, the problem of shading is solved entirely, by exposing the galleries completely to the sky above. This provides excellent conditions for many of the personal and social activities that residents appear to want to do outside the house: they can sit, talk, garden in window boxes, decorate, sunbathe (given the right orientation), sweep, watch people and so on, in spaces that are comfortably "outside." In less benign climates, a partial cover of translucent plastic such as Erskine has used at Byker, could protect pedestrians without cutting off overhead light.


Principle: Dimension

If social activities are to occur comfortably in the access spaces of upper floor apartments, these spaces must be given...the dimensions of social space.

Observations:

Because access galleries have commonly been treated as mere corridors exposed to the air, they have only rarely been given sufficient dimension to be useful for social activities of even the most minimal sort. Some architects, in fact, have tried to justify the narrow dimensions with the argument that by pressing pedestrians closer to private apartments, more social contacts will be made as people bump into each other. Since this closeness is unacceptable in most other forms of western housing, their argument seems to be little more than a "post facto" rationalisation.

The Byker Wall project by Ralph Erskine is an example of a gallery access building designed around this concept. Barely five feet wide, it forces pedestrians to brush past apartments and other people regardless of their desire for social contact. And it makes it difficult for those who want to sustain contact to do so without either blocking the access way or standing strung out along the edge. It even forces people who are walking together to walk single-file past even the slightest obstructions. Since these obstructions naturally occur at the inner edge of the gallery, this forces people out to the exposed edge
of the gallery, which for many people is the least comfortable spot to be.

The much wider gallery of the Spangen Quarter housing project appears to be significantly more conducive to social activity. Almost ten feet wide, it allows people to sit facing each other across the gallery without blocking the path entirely. This makes it possible for people to choose seating configurations that are appropriate to social situation at hand. It also allows
children to play or leave toys out without getting in the way of passers by.

Despite its more generous dimensions, the Spangen gallery still does not seem to have "optimal" social dimensions. Being uniform in width, there is no distinction between path space and sitting or social space. Thus no particular places seem specifically designed for social activity.
Alternative:

A more appropriate design might be to provide extra space at crucial points in the path where social activity is most intense—near collective entrances, at vertical access points and so on.
Principle: Location

If social activities are to occur comfortably in the access spaces of upper floor apartments, these spaces must be given a positive social form. They must not be cut off from the outside world; and they must not be relegated to the undesirable parts of the building.

Observations:

Very few access galleries have been placed in positive social space. At Robin Hood Gardens, for example, the galleries face away from the communal green, and look out, instead, over parking lots and a nearby freeway. In addition the galleries themselves have a negative shape: being bent around a slab block building, they make it impossible for a pedestrian on one end of the gallery to see what is happening at the other end. This is perhaps the most extreme case of negative space in gallery access.

More common is the gallery that simply parallels a street, up above the ground. It has the advantage of being part of the "volume" of the street space, but it is not much better in a social sense, because it cannot easily be connected with the life of the street. People on the gallery must look straight down to speak with people on the sidewalk; which seems to result in some considerable discomfort.

At the Spangen Quarter, this problem is resolved by relating the gallery to a common courtyard. People
in this courtyard may look up to the gallery at only a slight angle to see or speak with an upper level resident. In addition, because of the communal nature of the courtyard, there is an in-built functional connection between upper units and life on the ground.

There are, however, two major drawbacks to this sort of scheme. First, it confuses front and back; the back yards of lower units are directly below the front doors of upper units. This has been noted as a problem by residents of similar projects in Britain. And second, by turning all communal activities and entrance areas inward to the central court, the street is robbed of
its communal life, and so becomes a gutter for automobiles.

In the Papendrecht project, the same positive connection between gallery and court is achieved without robbing the street of its life. This is done by replacing the normal urban block structure with a new "courtyard tissue" which leaves some front entrances and some back yards on the street, while turning the majority inwards to entrance courts and backyard courts. This is not entirely successful, however, since the street loses its coherence, becoming alternately public and semi-private, as it passes front doors and then back yards.
**Alternative:**

These problems might be easily solved in future projects by turning the entrance court out towards the street, maintaining the privacy of the back yard area without forcing the gallery out to the edge of the street. This alternative would demand more than a minimal amount of space on the "front", but would result in a coherent (even though atypical) street edge.
**Principle: Height**

If upper floor apartments are to be significantly connected with life on the ground, their entrance level must not be built above the height at which residents begin to be unable to normally see, hear and walk down to take part in social activity (and walk back up again.)

**Observations:**

Many of the gallery access projects in the past three decades have been in mid- to high-rise form. Thus only their lowest access levels have been close enough to the ground for residents to feel much of a direct connection. Residents on high galleries have often spoken of their sense of disconnectedness from the ground in terms of the problems of isolation, and the difficulty of getting up and down—complaints common to most forms of high-rise living. But they also speak of this disconnectedness in terms that are unique to the access gallery form: the sense of over-exposure to the weather. By expressing this feeling they imply that the gallery is not really part of the normal world on the ground, where weather is to be expected; it is rather still a part of a building—a part that is usually not well enough protected. Although the higher wind speeds at higher altitudes might have something to do with this feeling, it seems to result more directly from the loss of ground related references. At more than four stories, pedestrians on galleries begin to look over mature trees, and over the roof tops of low-rise buildings.
As these are lost below, the strongest references become the distant view and the weather. Because the weather is more immediate, its effect seems to become more pronounced.

Residents of low galleries, on the contrary, seem to think it more "natural" that they should have to put up their umbrellas or do up their coats when they go out on the gallery in heavy weather. Being down near the ground, they seem to expect to have the same exposure to the weather as they do to the other elements of the ground-related world—the people, trees, buildings, sounds and so on.

Of the gallery access projects examined in this study, only "Spangen" and "Papendrecht" are low enough to feel connected to the world on the ground. At a
height of only two flights, their galleries feel intimately involved with the activity below. They can be casually reached on foot, even with groceries, children, and the other things that in higher buildings would be lost to the elevator. In addition, residents on the galleries can easily speak with others on the ground.

At only two stories up, these galleries seem to be well within the limits of direct connection to the ground. Darbourne's Lillington Estate galleries, however, seem to be reaching these limits on the fourth floor. They are still well below the rooftops of neighboring townhouses, but they are high enough to make walking up from the ground tiring for many residents, and so the elevators are used on a regular basis.
Alternative:

A height of two or three floors thus seems to be a reasonable general limit for access galleries serving a population of healthy young and middle-aged residents. But it is expected that this limit might vary in building forms that are different from those studied.
**Principle:**

If elevators and stairways are to maintain a strong sense of connection between residents of upper floor apartments and the communal life below, they must be open and visible from the social spaces they serve. Where this cannot be done with elevators feasibly, the access levels of upper apartments should be limited to a height reachable by stairway access.

**Observations:**

Few gallery access projects have used open stairways; the stairwell has apparently been considered adequate by most designers. And yet a casual observation of several such projects suggests that these have not often been successful. At Robin Hood Gardens, the Lillington Estate, and the Spangen Quarter, these stairwells have been heavily vandalized, because they are away from public scrutiny; they are generally dirty, because residents have no jurisdiction over them; they are uncomfortable to use because they are narrow and have blind corners; and they provide no sense of connection between the outside space of the galleries and the communal open spaces on the ground, simply because residents must go into the shaft to get from outside on the galleries to outside on the ground. As a result, these stairwells add nothing to the social environment of the projects. Residents seem to avoid them whenever possible, using the elevators, even for trips of only two floors.
The elevators in these projects are little better. Although more convenient than climbing the stairs, they are generally even darker, narrower and dirtier than the stairwells. Not surprisingly, elevators of this type have been found to be the source of greatest resident complaint in numerous subsidized housing studies in Britain.

Open elevators have not yet been used to service outside access galleries. At most, the shafts of enclosed elevators have been moved out of the building core to the open edge to "express" in a symbolic way, their vertical movement.

This seems to help people to located the elevator from a distance, but does little to replaces the pedestrian movement lost to the elevator shaft. At Habitat, for example, where the elevators are "boldly"
expressed, the project is utterly static above the ground, in every sense but the architectural.

In contrast, the open elevators which serve the inside access galleries of the Bradbury building in Los Angeles or in Portman's Hyatt hotels, are vibrant with a sense of the social life of the buildings as a whole.

**Alternative:**

Where open stairs have been used instead, the connection between galleries and the ground has usually been much more comfortable. In the Papendrecht project, where the major stairways are out in the open—exposed in an almost ceremonial way—residents of upper floor apartments are intimately connected to the ground. They can leave their homes and go
directly out without having to go back into the building just to get down to the ground. They can see everything in front of them as they go up or down, instead of being cut off by blind corners. They can watch and take part in the social activities on the ground as they go down the stairs.
**Principle:**

If stairways are to provide a direct connection between people on upper floors and life on the ground, these stairways must themselves be ground-like—more horizontal than vertical—in the manner, perhaps of the stepped streets of hilltowns.

**Observations:**

Almost every gallery access project built to this date has relied on vertical stairways and elevators for pedestrian access. Although this is supposedly the result of the need for "economy" (since stacking stairways solves space and construction problems of other more generous stairs), it seems to result as much from a design aesthetic in which the striking, slender form of the stairwell is used to "express" movement, or "balance" the dominant horizontal composition of the gallery elements. Robin Hood Gardens is a clear example of this, where the stair and elevator shafts have been combined in a service "element" and removed from the volume of the building, despite the fact that by this placement, it is also removed from the major living areas and social spaces it serves. It is thus reduced to a mere compositional "variable."

The consequence of this dependence on vertical stairs has been the disruption of the pedestrian path to the
ground; elevators have often become the major form of access even for climbs of only a floor or two.

In the few projects where ramps or "horizontal" stairways have been provided, a dramatic change in the sense of connection with the ground can be felt. At Lambeth North, for example, the ramp up to the
first gallery level, two floors above the ground, is direct and easy to use; the supplementary stairwell in the same project seems to require one to climb twice as far to reach the same level. And at Papendrecht, where open stairways run from the gallery to the ground unbroken, the sense of connection between the two is direct and strong.
Alternative:

The "horizontal" stairway has yet to be used in projects where the gallery level is more than two floors from the ground. It would seem that its real benefit would be achieved in projects where gallery height is greater, and the sense of connection to the ground more important.
Principle: Children's Play

The path from the apartment to the world of play on the ground must be directly and casually observable from the inside of the home, especially from rooms in which parents spend the most daytime. This path must offer a continuously expanding realm for the child to master independently. And it must offer the child enough of the variety of interesting and manipulable stuff to make play and social contact diverse and meaningful.

Observations:

Since most gallery access projects have had enclosed stairwells and elevators, the path to the ground has rarely been open enough to allow parents to watch from the apartment as their children go down to play. Thus to play outside unaccompanied, these children must either go down to the ground on their own, or they must play on the gallery. But the limited dimensions of the common gallery and the limited number of activities that can happen on it make it a rather uninteresting play area, especially if it is also dark due to other floors covering it above. As a result, children often seem to get into "trouble". At the Lillington Estate, for example, one resident observed that the most exciting thing for her children to do on the gallery was to throw dirt from the planting boxes down onto pedestrians below. At numerous other projects, bicycle riding, baseball playing and similarly unsuited activities have been observed. And
noise has been cited as a chronic problem. This is not, perhaps, the result of any failure on the part of the designers of these projects to anticipate the need for children's play; the design sketches of the Pruitt-Igoe project depict children busy at play on the galleries. It is more the result of a failure to anticipate the real requirements for children's play in terms of space and activities. Every project seems to have been depicted in its designs as being filled with children busily playing, but none show the range of activities that children above toddling age normally engage in. None of the drawings show wild, messy, noisy play, simply because there is never any room for them. Safdie, in his description of
the galleries of Habitat, for example, talks about children being able to meet other children on them, and to see down from them through three inch slots, as if these few amenities were to make up for all the vital activities of ground play that are obviously and necessarily missing.

Clare Cooper Marcus has proposed perhaps the most useful alternative to the present gallery access design for children's play, including greater space, more small, vital activities. But this is only making the best of a bad situation. For it does not address the problem of access to the ground, where the real excitement is to be found.
Alternative:

A more appropriate alternative is offered by the Papendrecht project, where the combination of low height and open stairways makes it possible for children to go down to the ground to play without going out of sight of their parents.
**Principle: Defensibility**

If residents are to have a sense of control over the access spaces that connect their apartments to the larger public world, these spaces must be clearly and easily visible from their apartments. No spaces should be hidden entirely from view.

**Observations:**

Although galleries themselves tend not to produce major problems of indefensibility (since windows allow residents to monitor these spaces), the exterior stairways and elevators that service these galleries have often been cited as trouble spots. Being outside, they are usually open to anyone who wants to use them. And being enclosed in shafts, they provide a secure and invisible "hide-out" for vandals and muggers, among others. Evidence of this can be seen in almost any large-scale project: the greatest concentration of graffiti, debris and damage is almost uniformly to be found in stairwells and elevators.

Robin Hood Gardens is an obvious example. Whereas the project is generally quite well kept, the stairwells are covered with spray-painted threats from various local gangs. Remnants of windows litter various corners. Doors have been ripped off their hinges. Likewise the elevator has been painted and urinated in.

At the Lillington Estate, the same problem can be
(recessed stair and elevator at Lillington)

found, but here it extends up to the gallery levels because of the dark crevices and obscure corners that are left by the gallery as it makes its way around a highly articulated building mass.

Solutions to these problems have been found in only a few of the many gallery access projects built to date. At Habitat, the bottom level of the elevator and stairwell shafts have been enclosed in a lobby.
area, to which a key is required for entry. In addition, doormen/guards are located in these areas to turn away people who would otherwise slip in when the door is left open by residents. In this project, the doorman is clearly more important than the door, for he makes up for the visibility lost by the residents themselves. In other projects where lobbies go unmanned, the problem of children propping doors open (observed by Newman) is unresolvable.
Alternative:

A simpler and more direct alternative is to avoid enclosing stairs and elevators, and to avoid creating any dark crevices in the gallery area. The Papendrecht project exemplifies this alternative. By having a wide-open gallery, clearly visible from almost any apartment around it, and by exposing the stairways in the middle of the entry courtyards, no spaces are left unobserved.
**Principle: Visibility**

If apartment residents are to have as much social contact with neighbors as they desire, they must be easily able to look out over the places where these neighbors pass during the day.

**Observations:**

Although most gallery access apartments have had windows overlooking the gallery, few of these windows have provided the sort of comfortable, casual view that this principle requires. Part of the problem is the lack of privacy of windows at gallery level; to maintain privacy, the view into the apartment must be blocked at the expense of the view out. But the problem is also due to the inappropriate way the windows are usually placed. Robin Hood Gardens is a typical example. The windows are placed so they face across the gallery, making it impossible for residents to see what is happening on the gallery unless it happens directly in front of them. Not only is this often uncomfortable—since pedestrians suddenly appear only feet away from the window—but it is also somewhat frustrating to casual social contact, since people inside cannot watch as pedestrians approach, and so cannot decide, before they arrive whether to make contact or avoid it. Instead they must make a hasty decision the moment the pedestrians pass by; and if they want to go out to meet them, they must catch them after they have already passed.
At Papendrecht, this problem is partly resolved by a change in the form of the gallery. Since it runs around a tight courtyard, it is never out of sight of any window for more than a short distance.

At the Lillington Estate the problem is solved another way, by turning windows to face along the path. Although this has a definite potential, it is not carried through in the project, since the rooms
which look out of these windows are not the ones where residents spend much time; they are in entry halls, rather than kitchens or other living areas. At Riverbend, the problem is almost solved by drawing the apartment fronts back from the path so that more of the gallery can be seen in the normal angle of view from the apartment— but not quite: this wider view is blocked by the high walls on either side of the patio areas, making it impossible to see anywhere but in front.
Alternative:

An alternative, then, to the common gallery window that has no view of the gallery, might be any one or combination of these different solutions: to bend the gallery so that it is always in view; to draw the apartments back from gallery edge to increase the amount of gallery space visible in the normal angle of view; and to provide windows which look along the gallery rather than across it.
**Principle: Privacy**

Windows must provide a view of the social world outside without compromising the privacy of interior rooms. Thus a visual barrier such as a level change and a screen must be provided, when social spaces are close to apartment windows.

**Observations:**

Lack of privacy has been a major problem in gallery access housing. All too often, pedestrians on these galleries have had as clear a view into apartments as those inside have had a view out. This problem has largely resulted from building apartments and galleries on the same floor levels, so that those inside have had nothing of the traditional height separation from passers-by. As a consequence, privacy problems have had to be solved in other, less comfortable ways.

At one extreme are the projects that solve the problem by building a total barrier between inside and out. Where windows are required for light and ventilation, they are placed above head height. This, of course, denies the view from the apartment. At the other extreme are the projects which leave residents to solve the problem. At Robin Hood Gardens, for example, large windows facing the gallery allow passers-by to look into apartments. To cope with this most residents keep the windows heavily curtained; some, in fact, have covered the windows per-
manently with paper. Both solutions deny any casual and comfortable view from the apartment. Between these extremes are those projects which have attempted to maintain privacy both by limiting window space (so that the view into the apartment can be more easily controlled), and by providing partial screens outside the windows to disrupt the direct view in. At Byker, for example, small trellises stand beside windows to block the view as pedestrians approach. But these devices can only begin to solve the problem, for unless they entirely obscure the view out of the apartment, they cannot hope to obscure the view in from a gallery at the same floor level. Under these circumstances, privacy must in some way be sacrificed for a meaningful view from the apartment.

Among the few solutions to this problem, the level
change is perhaps the most useful. By simply raising the floor level of the apartment a few steps, the view into the apartment can be largely cut off without affecting the view out. In addition the apartment would achieve a sense of "superiority" by looking down on the path; this might tend to reduce the often-expressed feeling of residents of being victimized by pedestrians who must pass their apartments at uncomfortably close distances.

Several projects have used level changes in this way, but few, if any, have used them to advantage. At Riverbend, for example, the benefit of the level change is reduced by the setback of the apartment fronts, so that the angle of view from the path to the apartment is almost horizontal. The set-back, however, seems to make up for this loss of possible privacy.
Alternative:

A level change is clearly important, both to block the view from the gallery into the apartment, and to provide a symbolic separation between spaces which would otherwise be "too close for comfort."
Principle: Personal Space

If apartment environments are to support the casual social activities that have always taken place near the dwelling on stoops and porches, some personal space must be provided for each apartment at the front door.

Observations:

Very few gallery access projects have provided anything more outside the front door of individual apartments than the minimum space required for access. This seems to result from an economic assumption that outside space is unrentable; and it seems also to result from an attitude that outside personal space is unnecessary—that the gallery is space enough. Although these arguments seem plausible, it is difficult to understand where they come from. For in almost every other form of housing, front yards, stoops or porches are sought-after amenities, which serve a wide range of personal and social functions.

At Riverbend, one of the few projects with personal space in front of each unit, residents can sit outside on their own territory to watch people on the gallery or children in the court yard below. They can use these spaces to store bycicles or grow plants. Or they can merely look out onto them. They do not seem particularly well designed—being covered above, and thus somewhat dark—they seem to be large enough to be useful.
Riverbend

The much smaller spaces provided at Robin Hood Gardens, although much less useable, also seem to serve a crucial purpose, allowing residents to step out of their apartments without stepping directly into the pathway, and to leave cribs, or tricycles or baby carriages outside without blocking the path.
The major failing of these few projects has been that the spaces they provide--while useful--are not really comfortable or attractive. Because they are usually recessed into the volume of the buildings, they are often badly lit, and have second-rate, "enclosed" views. In addition, being made of concrete and brick, they are usually "cold" feeling, and rigid.
Alternative:

If these porch spaces are to be made more useful and desirable in future projects, they must be exposed more to the light and view; they must be made more attractive in form and materials; and they must be made large enough to allow residents to sit outside comfortably.
Principle: Claiming Personal Space

If personal space on the "front" of the apartment is to serve its personal function, it must be clearly distinguished from the more public spaces it adjoins.

Observations:

The distinction between personal and public space on access galleries is a critical problem. Since galleries are exposed on one side to a cliff-like edge, the most comfortable place for walking is in towards the inner edge. This, however, is where personal space must be to provide a coherent transition between the apartment and the path. Because the activity of the path is so much more intense than the activity of the transitional space, the path usually consumes this space unless a very strong and clear distinction is provided. This problem is most severe in the common form of project where the doorways open directly out onto the gallery space. Here such personal objects as doormats and flower pots can be seen clinging to the walls in the attempt to look like legitimate boundary markers, rather than mere intrusions into the public world. At Robin Hood Gardens, a slight improvement is made on the minimal gallery by providing small indentations for each doorway. But since these indentations are otherwise undistinguished from the gallery, they are barely useable.

Similarly, in the Townland project, no distinction is made between path and personal space in the struc-
ture of the building. But because the apartments are designed to be installed separately, residents have the opportunity to build their own walls and fences. But unless they build very high fences, they have little chance of making a strong distinction between their space and that of the path, since the two are on the same level. And if they build high fences, they almost necessarily cut off the view from their apartment to the outside world.
At the Riverbend project in New York, this problem is clearly resolved. Here there is a level change of two steps between walkway and personal space; this distinction is further reinforced by heavy low-height walls which form a clear gate. But while effective as a boundary between public and private, these walls are almost a barrier, making the gallery a sort of gutter from which all personal life is excluded.
Alternative:

A more comfortable alternative might be to use the same level change with a lighter, more penetrable, and less rigid form of boundary marker than the heavy walls. Something like an open fence along with planters, columns and a low porch roof could be used to define the edges of personal space without rigidly limiting it.
Principle: Identity

If residents are to be able to express their identities to the public world, their apartments must be given the potential for self-expression. Personal territory must be provided at the front door of the apartment; this territory must be made visible from the larger public world; and it must be discernable as a significant part of the environment as a whole.

Observations:

Little concern for the need for personal expression has been shown by designers of gallery access housing. As the illustration of the Hampstead Road project suggests, uniformity and anonymity have been dominant concerns in the search for "coherent" forms for gallery access buildings.

In addition, these projects have usually been so big and the galleries so enclosed by upper floors and railings that the decoration of any single facade can not be seen in any significant way either from the ground or from the gallery as one approaches the apartment. Robin Hood Gardens and the Lillington Estate are typical in this respect. With the apartment facades set deep into dark recesses high above the ground, nothing individual can possibly stand cut at a distance. As a result, they tend to remain anonymous despite the efforts of residents to the contrary.
An alternative to this rigid uniformity is suggested by the Townland project, in which only a minimal skeleton of structural and service elements has been fixed in the architect's design. The rest is left entirely to the discretion of individual residents, both to build and to decorate. In this way, personal expression is made not only possible but necessary. Yet while this expression could be effective at the gallery level, it would tend to become somewhat meaningless at the scale of the project as a whole. Because of the immense height and length of the illustrated prototype, the individual homes which comprise it would become lost in the vast expanse of similarly individual facades. As a result, the variation would
be perceived as a sort of uniformity, despite the intent to provide for variety.

At Papendrecht, where a similar provision for personal expression has been made, the problem of scale is handled more carefully. By limiting the height of the project to only a few stories, and by limiting the population of each gallery to only ten or twenty families, the architect has made it possible for the minute expressions of individual residents to be noticed both from the ground and from the gallery level. Unfortunately, little space has been provided outside apartments, so residents can do little more than plant windowboxes and decorate their doors and walls.
Alternative:

The scale of gallery access projects must be controlled so that individual homes can be seen as significant parts of the larger whole. Their facades must not be obscured from view in dark gallery recesses. And space must be provided in front of apartments for the purpose of personal expression.
Building Survey

So far in this section, elements of gallery access housing projects have been compared for the purpose of determining which designs best fulfill the design criteria derived in the earlier section. In the following section, the same projects are examined individually, to determine how well they each fulfill the various patterns. This study has two purposes: to clarify the accomplishments and problems of each project; and to demonstrate that no single project has fulfilled all the design criteria deemed essential in this study.
Project:

SAR Experimental housing at Papendrecht, Holland, by Franz van der Werf. (1969-74)

Description:

Units resembling rowhouses, from one to four floors high, are assembled around courtyards in an experimental urban "tissue". The buildings are divided by an outside access gallery at either the second or third floor into upper and lower units. Access to this gallery is by an open stairway in the entrance courtyard. Upper level units front directly on the gallery, at the same floor level. No separation is provided between access and apartment space.

Analysis:

The Papendrecht project fulfills the proposed design criteria more successfully than any other project considered in this study. The galleries are low and open, and are intimately connected with the life of the entrance courtyards by stairways ceremonially exposed to the public view. Upper level apartments are clearly visible from the courtyards, and feel in no way subordinate to the lower units.

The project, however, has problems where the gallery meets the front of the apartment. At this point, there is no personal space to buffer the apartment from the rather narrow gallery. Nor is there any provision for a level change or visual screen to prevent passers-by from looking into private rooms at the
gallery level—an unacceptable condition in most forms of British and North American housing, but not entirely uncommon in Holland, in small villages.
Graphic Summary

fulfilled
not fulfilled
Height
Open stairs & elevators
"Horizontal" stairs
Visibility
Privacy
Defensibility
Children's play

Territory
Claiming territory
Identity
Outside connection
Location
Dimension
Project:
Spangen Quarter housing at Rotterdam, Holland, by Michiel Brinkman (1919-21).

Description:
In this project, a four story row house block is divided vertically into upper and lower units by an open access gallery at the third floor. Vertical access to the gallery is provided by enclosed stairwells and elevators at intervals of approximately ten upper level apartments. Most galleries and apartment doors are located on the inside of the block away from the public street. All doors to upper level apartments open directly onto the access gallery, at the same floor level.

Analysis:
Many of the important design criteria derived earlier in this study are fulfilled by the Spangen project. The gallery is sufficiently open, low and generous in dimension to support many casual outdoor "neighboring" activities above the ground. The gallery design is weak, however, at the critical points of connecting to the apartment and to the ground. No personal transitional space buffers the apartment from the gallery. No change in level protects the privacy of rooms at the gallery level. No outside stairway connects the galleries to the ground; instead, there are internal elevators and stairwells which, being enclosed and unobserved, have become vandalized.
The connection between the project and the larger community is similarly awkward. Because the gallery is turned inwards, along with the doors of ground floor units, the life of the project is invisible to the outside, except at the few major access gates; this makes the street side gutterlike, in sharp contrast to the active interior court.
Graphic Summary

- fulfilled
- not fulfilled
Project:

Townland prototype (unbuilt), by the Townland Marketing Group, for "Operation Breakthrough", (1971)

Description:

In a conventional slab form, galleries provide outdoor access to apartments every second or third floor of a mid- to high-rise structure. The galleries are stacked but are open above for at least two storeys. A variety of access conditions to apartments are made possible by the user-adaptable framework, but most would be entered at the same level as the gallery, either directly, or by way of small entrance alcoves. Access to the galleries is by way of external service shafts containing stairwells and elevators.

Analysis:

By giving residents the opportunity to define their own entry areas, the project offers some alleviation to the inherent privacy problems of same-level access. Otherwise, the project has typically severe highrise gallery problems of disconnection from life at ground level and over-exposure to cliff-like heights. The project, however, has a major advantage over other highrise schemes with galleries covered close overhead: being open for several stories, the Townland gallery areas are not tunnel-like or dark at their inner edge, where the critical transition between public and private must occur.
Height
Open stairs & elevators
"Horizontal" stairs
Visibility
Privacy
Defensibility
Children's play

Territory
Claiming territory
Identity
Outside connection
Location
Dimension
Project:

Riverbend housing, New York City, by Davis-Brody Architects, 1968.

Description:

This project is similar to the Townland project in that its galleries are stacked in a highrise building, with multi-story spaces open above each gallery. And like Townland, the access to these galleries is by way of enclosed, outdoor elevators and stairwells. But unlike Townland, the private apartments do not open directly out onto the galleries at the same level. Instead the units are set back behind a porch area, and raised up from the gallery by a three step level change.

Analysis:

Like most highrise gallery projects, this one has major problems in connecting upper level residents with life on the ground, due to the stairwell and elevator access barrier. But unlike many projects, it overcomes the privacy problems of same level access through the use of the slight level change. Because this level change is combined with large porch spaces, some useful personal space is achieved. The setback of the apartment fronts, however, causes several major problems. First, since the galleries are covered two floors above, only a limited amount of light gets back to the "patios" and windows. Second, the setback cuts off visibility of
the gallery and the common spaces on the ground for upper floor residents. And third, the setback makes the fronts of individual apartments difficult to see from the ground and from the gallery
Graphic Summary

fulfilled

not fulfilled
Height
Open stairs & elevators
"Horizontal" stairs
Visibility
Privacy
Defensibility
Children's play

Territory
Claiming territory
Identity
Outside connection
Location
Dimension
Project:

Lillington Estate (phase 1), Pimilico, London, by John Darbourne and Geoffrey Darke (1966-68)

Description:

Along the street edges of midrise slab-block buildings run short outside access galleries at the fourth and seventh floor levels. Access to the galleries is from "outdoor" stairs and elevators, which are enclosed in shafts and recessed into the volume of the buildings. The galleries are usually covered overhead by upper floors, except at the outer edge, where planters are exposed to the sky above. The galleries are wider than usual, but feel "tight", as they jog around dark corners and the protrusions of private entry areas and storage closets.

Analysis:

Although the galleries are richly detailed and heavily planted, they fulfill few of the essential design criteria earlier proposed. Being covered, they are dark and tunnel-like even in the best of weather. And the doorways which line the inner edge are uncomfortably obscured by shadow. The privacy of the dwellings along the galleries is maintained by an almost total barrier: windows occur only in door panels, and most of these have been papered over to prevent intrusion. The access to these galleries is similarly uncomfortable. The stairwells and elevators, being tightly enclosed, are dark and indefensible, and show the ravages of constant vandalism. Only the outer edges
of the galleries are truly positive. Here generous planters provide an unusually comfortable buffer to the exposed edge.
Graphic Summary fulfilled

not fulfilled
Height
Open stairs & elevators
"Horizontal" stairs
Visibility
Privacy
Defensibility
Children's play

Territory
Claiming territory
Identity
Outside connection
Location
Dimension
Project:


Description:

Galleries located at the fourth and seventh floor levels run along the outer edges of two bent slab buildings, which surround an open green space. The galleries are covered immediately overhead by upper floors. Access to them is by an enclosed outdoor elevator-stairwell unit at one end of each building; at other points along the galleries, similarly enclosed fire stairs provide alternative egress. Along the inner edges of these galleries are shallow recesses into which doors of private apartments open. Large low windows look out to the galleries from private rooms at the same floor level.

Analysis:

Although the intention of the architects was to provide conditions that would support social activity, the project fulfills almost none of the design criteria which this study considers crucial for such activity. The galleries are dark, and feel tunnel-like. Instead of facing the communal green in the center of the project, they face away from it, over parking lots (and in one case, over a freeway). The outer edges of the galleries are perilously unbuffered from the sheer vertical drop of between four and seven storeys. The entry recesses into which the apartment doors open provide
little useful personal or transitional space. The windows which face the galleries from the apartments are not protected from the view of passers-by, so privacy is a major problem; as a result, the windows have been kept heavily curtained and sometimes have even been papered over. In contrast,
dark, narrow and uncontrollable, and have thus suffered from extensive vandalism.

On the whole, the Robin Hood Gardens gallery environment feels genuinely hostile. Of all the projects
visited in connection with this study, in fact, this was the only one where residents would leave the gallery as soon as this writer stepped out onto it from the elevator.
Graphic Summary

fulfilled

not fulfilled
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Project:

Habitat '67, by Moshe Safdie, at Montreal, Canada, 1967.

Description:

Bridge-like galleries situated on the sixth and tenth floors of the project span between independently aggregated apartment units. The galleries are generically open above, but partially covered by a glazed protective screen. Apartments are entered by way of steps leading either up or down from the gallery. The galleries are partially enclosed by apartments around it. The exposed side looks out to the river and down to the parking court below. Access to the galleries is by way of enclosed elevators, which go from inside the base of the building to outside at the gallery levels above. Vertical outside stairwells provide alternative egress.

Analysis:

Of all the higher gallery access projects in this study, Habitat comes closest to fulfilling the proposed design criteria. The galleries are open to the sky and to the view, but are also well protected from the wind and from the clif-like heights by the glazed screen. The entrances to the apartments are clearly set off from the galleries by stairs and small porch-like spaces.

But the galleries also have major deficiencies. Access to them is through totally enclosed elevators.
which isolate upper units from the life (or consequently, the lack of life) at ground level. This rather strikingly contradicts the stepped "hilltown" form of the project as a whole, which implies that pedestrian movement filters down among the various apartment units. In addition, as a result of the placement of the galleries in the stepped form, the privacy of many apartments abutting or below the galleries is compromised—especially where an entire outdoor terrace is visible from the gallery.
Graphic Summary

fulfilled - O
not fulfilled - O


Cappon, D. "Mental Health in the Hi-Rise." Ekistics 196 (March 1972.)


