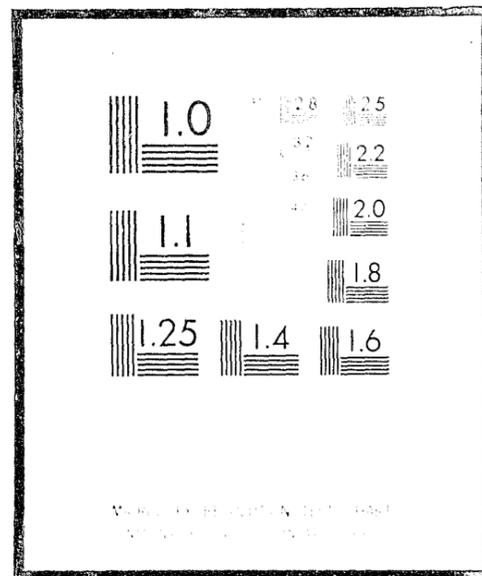


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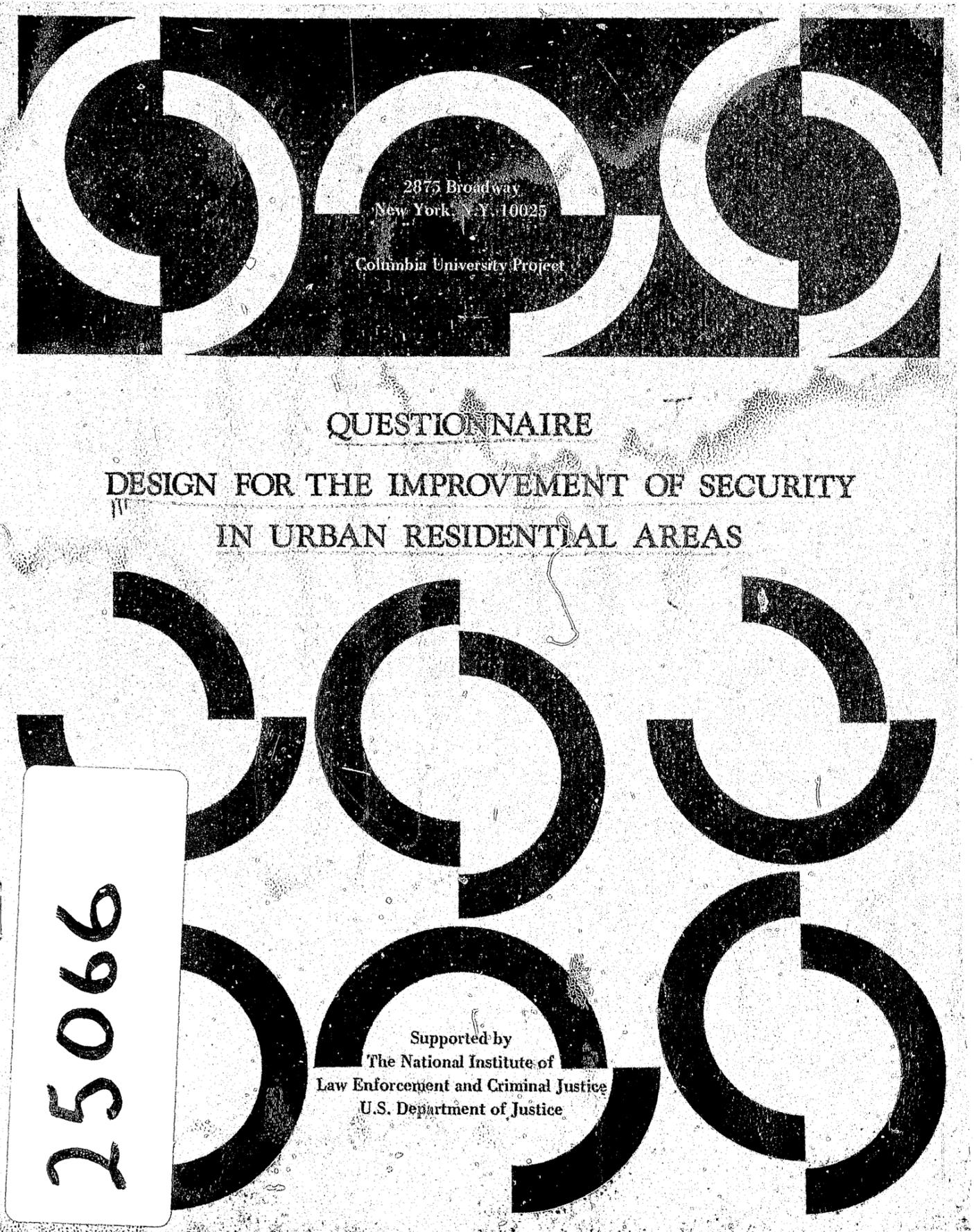
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U.S. DEPARTMENT OF JUSTICE
LAW ENFORCEMENT ASSISTANCE ADMINISTRATION
NATIONAL CRIMINAL JUSTICE REFERENCE SERVICE
WASHINGTON, D.C. 20531

Date filmed

6/16/76



Introduction

The purpose of this questionnaire is to introduce you to a Columbia University project on DESIGN FOR THE IMPROVEMENT OF SECURITY IN URBAN RESIDENTIAL AREAS, and to ask you to assist us in our gathering of material and the preparation of a monograph which will review current thinking on the subject and cite projects which embody similar hypotheses.

The project is endeavoring to determine whether the physical design of residential complexes and their disposition in the urban setting significantly affects the frequency of crime and vandalism; whether through the grouping and positioning of units, the placement of paths, windows, stairwells, doors and elevators one can evoke behavior and attitudes which lead to more productively functioning environments and lessen the fear and paranoia which presently pervades the urban scene.

The project is being funded by the National Institute of Law Enforcement and Criminal Justice of the U.S. Department of Justice. It is an interdisciplinary study involving architects, planners, psychologists, and sociologists. The project is being directed by Oscar Newman of the School of Architecture at Columbia University in New York in association with George Rand of the Psychology Department at Teachers College.

The first phase of the project involves an initial review of similar on-going work; a discussion of projects both completed and contemplated which incorporate similar design objectives; and a review of current parallel investigations of both a theoretical and statistical nature. To this end the enclosed questionnaire is being distributed to housing authorities, planning agencies, architects, developers, police departments and academic investigators around the country.

The second phase of the project will involve the incorporation of study hypotheses into actual modifications to the physical plant of various housing projects, to test their effectiveness. These physical modifications will be undertaken within the framework of a series of pre- and post-test studies involving controlled interviews, surveys, and statistical measurement.

We ask that you assist us in assembling current data by informing us of any work being done along the lines described; by sending us any plans or descriptions of existing or anticipated structures you think would be of interest; by referring us to other architects/researchers engaged in related work; or calling attention to relevant literature or statistical data.

In the following text you will find an elaboration of: (1) problem definition, (2) project structure and methodology, (3) application of project conclusions, and (4) concept of "defensible space."

Problem Definition

Urban residential areas are experiencing similar problems throughout the country. Whether they are publically assisted or privately financed, housing complexes face a withering of available funds for maintenance and repairs; crimes against persons and property are increasing while added security personnel in public housing is difficult to obtain from overextended city and Housing Authority budgets.

The combination of crime, vandalism, and natural decline of facilities has led to expressions of fear on the part of residents, accompanied by a willingness to accept extreme forms of control and surveillance of those spaces, interior zones of buildings, courtyards, grounds, and neighboring streets, which act as magnets for criminal activity. The situation is sufficiently grave that a number of communities have asked that extensive electronic surveillance by police and public authorities be initiated even though this could lead to a serious invasion of privacy and detract heavily from the quality of their living environment.

An alternative strategy for dealing with the crisis is to approach the problem as one of a breakdown in the social and spatial organization of residential environments (versus a breakdown in security) and from there attempt to articulate means of restoring the lost equilibrium through innovative design procedures.

Fundamentally, our proposed innovations have a common goal: to find means by which residents can themselves assume responsibility for insuring a safe, productively-useful and well-maintained living environment.

Some of the proposed modifications to existing housing stock involve the re-ordering of overshaed corridors and buildings into smaller and more identifiable components and groupings. Past experience indicates that a small grouping of families sharing a well-defined territory adjacent to their living units will take initiative in assuring its maintenance, and safe, productive use. This "territorial concern" in assuming responsibility for the care and security of an area has extended, in practice, beyond an apartment corridor to the lobby, elevator, grounds and street adjoining a building serving as many as 100 families.

Physical modifications we will be attempting, which past experience has shown relate to the improvement of security, include:

—Improving the visual surveillance capability of residents through: modification of windows and other openings, the re-positioning of paths and provision of supplemental lighting, the re-design of lobbies, halls, and elevators.

—Improving the clarity of building-plan to simplify surveillance and reduce ease with which criminals can evade pursuit. In short, to make criminal intent more conspicuous before it is converted to behavior.

—Increasing activity on the ground level and along public corridors to provide added opportunities for self-policing by residents.

—Adding to the control of penetrability of building interiors through buzzer reply systems, electronic and television devices which provide added information to residents concerning the momentary status of halls, stairwells, lobbies, and grounds.

—Coupling the subdivision of large anonymous groupings with programs for altering the nature of "governance" of housing projects through monetary incentives for self-maintenance and auto-policing of living environments.

In all these instances, the mechanism occasioning changes in safety or upkeep is "self-help"; we propose to capitalize on the natural *productive impulses of residents* rather than to surrender responsibility for these vital and shared social responsibilities to an area of formal authority (e.g. Police, Housing Authority, or other governmental agencies).

Study Methodology

Our speculations concerning "defensible space" have evolved significantly over the past year of work. It is clear that mere grouping of units or buildings, or for that matter any physical design, will not in itself make residential environments into the productive life-setting we would like them to become. And yet it is clear that we know all too little about "human territorial" behavior and the manner in which people adapt to existing residential structures—little enough certainly, to build new structures with the confidence that they will work, based on existing knowledge.

It is for this reason that our whole undertaking is couched in the terms of research-in-action. The general method of testing hypotheses on the relation of physical design to safety, security and the social viability of residential settings will involve:

- 1). Initial collection of baseline data on a residential environment selected for study. These data involve a wide range of inputs:
 - a). behavior survey of use of facilities.
 - b). survey of physical traces and cues as to use.
 - c). demographic analyses of crime, maintenance costs, etc.
 - d). participant observation.
 - e). attitude analyses.
 - f). measures of perceived qualities of environment by residents.
- 2). Development of design recommendations in accord with "defensible space" theory.
- 3). Construction of innovative modifications.
- 4). Post-testing at various times following construction, using the range of tests described under (1) above.
- 5). Analysis of comparative costs of alternate proposals and identification of guidelines derived from data.

Application of Study Conclusions

We anticipate the benefits of our program of work to lie:

1. In the dissemination of data to the private sector in the form of suggested design innovations to ensure the social viability of residential environments and improve their security.
2. In the specification of design guidelines that might be adopted by housing agencies in assigning funds for publicly assisted housing.
3. In the extension of these principles to other urban settings, e.g. business areas, institutional sectors and transportation centers and facilities.

This past year has witnessed efforts by government, in partnership with large corporations to apply large-scale technological and financial methods to the mass-production of housing. One danger is all too clear: in our concern for coming to grips with the problems of providing mass-housing we may be moving into a period where technological and economic acumen in the construction and provision of buildings have become ends in themselves. A parallel empirical and theoretical breakthrough is necessary in defining the social and psychological constraints with which these new forms will have to reckon. It is our hope that this initial collection of data and our corresponding testing of hypotheses over the next three years will be able to tell us whether productive social energies can be harnessed through design and made to work more effectively.

As the pressure for crime-control increases, there may be a tendency to want to trade-off cherished freedoms in the hope that police, and other authorities can better perform the task of insuring security with more personnel, added patrols, television, electronic, mechanical and acoustic sensors. Our philosophical bent rejects out-of-hand the idea that this regressive, introverted tendency is a viable answer to the crisis of our cities.

Defensible Space: Mechanisms for Improving Security in Residential Environments

For purposes of providing illustrative examples as a guide, we have broken down the concept of "defensibility" into separate mechanisms.

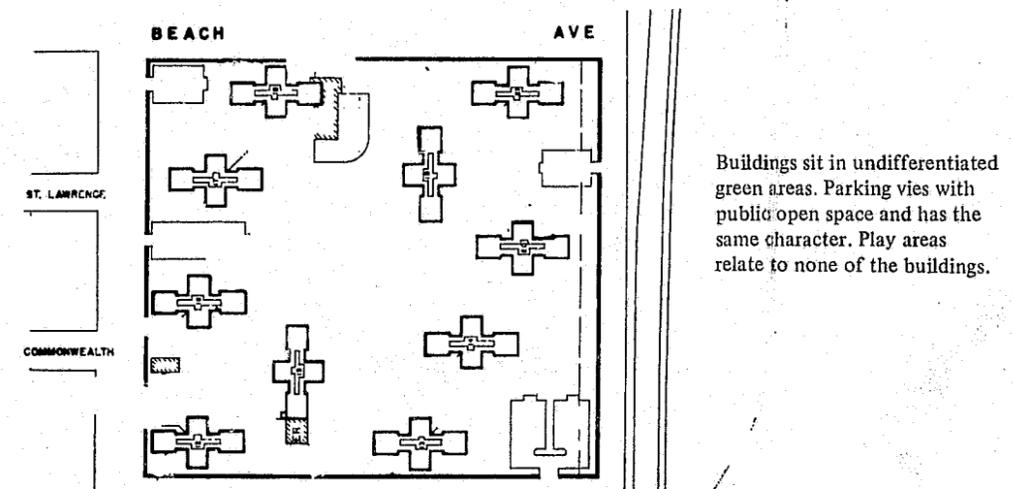
- A. Definition of Areas of Influence
- B. Improvement in Surveillance Opportunities
- C. Modifications to Project Governance
- D. Control of Penetrability

A. Definition of Areas of Influence

1. Project Grounds

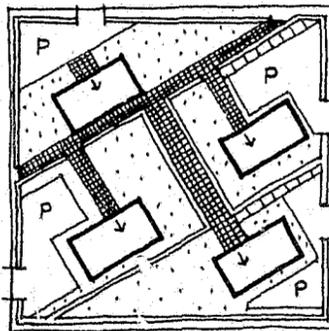
The grounds of many housing projects are often perceived as public park or as an extension of public streets. This is sometimes due to the open arrangement of buildings and often to the fact that spaces inside and outside of buildings are left ambiguous: they do not convey a clear sense of their use or the groups they are intended to serve. In most projects, public areas--grounds, lobbies, stairs and hallways--are only slightly defined. There are few real or symbolic elements which separate semi-private spaces from public areas. The only defining element is usually the final door to each unit.

The traditional pattern of site plan development for public housing commonly includes a green area which is undifferentiated and surrounds all the buildings. Play courts, where they are provided, will occasionally be fenced off from the surrounding green, although they are seldom tied to any one building.

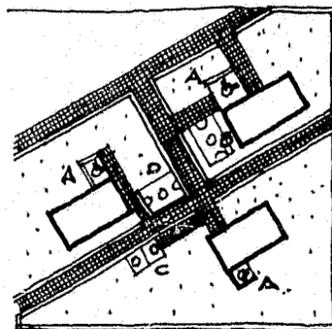


One may hypothesize that the problems relating to site use and maintenance--vandalism, the neglect of provided play areas, the need for continuous surveillance by mothers--stem in large part from a lack of differentiation.

It is our hypothesis, therefore, that existing grounds would function more productively if subdivided, differentiated in use, and tied to specific buildings in the estate. The definition of areas would be achieved by employing both real and symbolic barriers: fences, walls, planting, changes in level. Entry into each building from the street or parking area would be through these newly defined grounds.



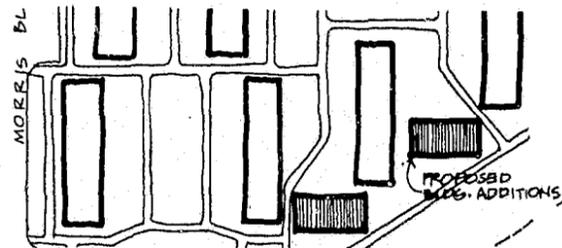
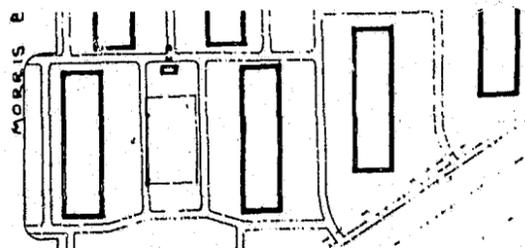
Subdivision of grounds to create defined territory for each apartment building.



A—tot lots
B, C, D—handball courts
basketball courts

Where each apartment building would probably have its own assigned sand box and slide for tots, play facilities for older children such as basketball and handball courts would be allocated for all buildings in the project. These, however, would be located on the grounds of particular buildings rather than in undefined space designated for the use of the entire project.

Woodhill Estates in Cleveland presently suffers from being wide open to all passersby. Neighboring teenagers treat the grounds of the estate very much as they do the public streets with the result that the residents are easily victimized. Buildings are commonly vandalized, and the grounds of the estates have at times become the battleground for settling outside neighborhood feuds.



Available space in various locations on the border of the estate could accommodate additional units. These new units could be positioned so as to face

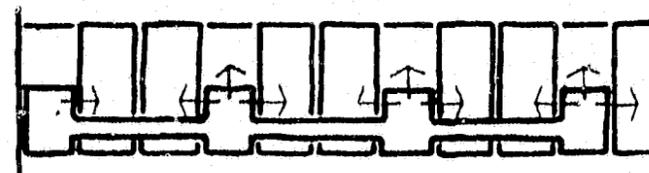
the sidewalk of the boundary streets and seal off interior areas of the project. Such an action could also serve to make the streets themselves safer: by placing activity areas on the streets and so providing additional surveillance.

2. Apartment Building Interiors

In the Pruitt-Igoe housing complex in St. Louis there are certain interior public areas which are surprisingly well maintained in contrast to the prevailing condition of abuse and accompanying deterioration of facilities. In those corridor areas entirely unrelated to dwelling unit entries, overhead lights, radiators and windows have been found to be either broken or stolen. These are the areas, too, which are littered and soiled. However, those portions of the corridor system which are sub-divided and related by juxtaposition to apartment entrances are generally well maintained and free of vandalism. The chance physical arrangement



corridors unrelated to apartment entries and designated for children's play



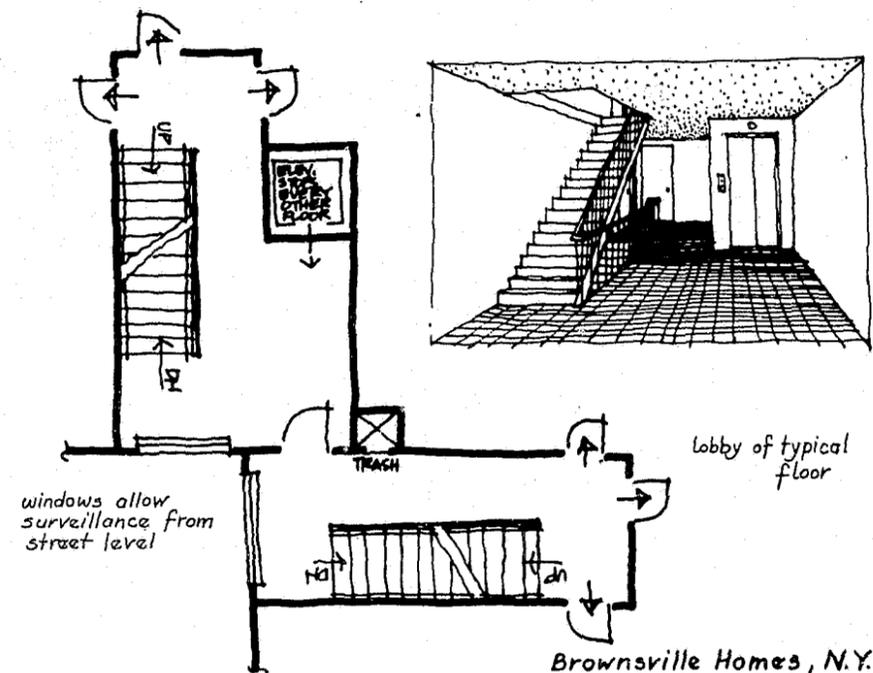
corridor nodes serving clusters of three apartments actually used for play

Alternate Floor Plans of Apartment Block in Pruitt-Igoe

of these areas has served to carve out a semi-private zone from the corridor. The door through which one gains entry to this shared corridor space is largely a symbolic barrier: it is unlocked and serves to inhibit rather than totally restrict entrance. A raised voice in this defined space (versus the non semi-private corridor adjacent to the elevator) brings response by residents who peer through peep-holes or open the door a crack on the chain to investigate. Children are also permitted to play in these zoned spaces while their mothers will not permit them to use the more public corridor area which was, in fact, designed expressly for children's play.

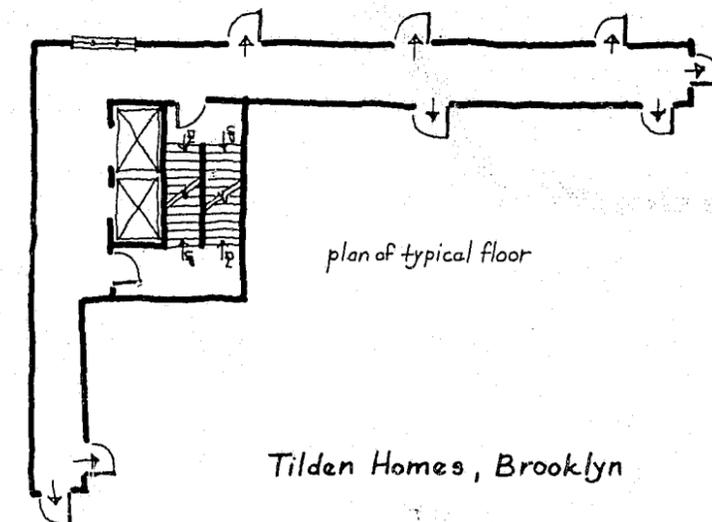
A more comprehensive example of accidental design resulting in a well defined semi-private area is provided by Brownsville Homes in Brooklyn. The building is serviced by an elevator which stops at every other floor. Access to floors above or below a stop is by way of a free-standing stair. This has resulted in the creation of a semi-private zone defined by the residents' use of the stairs on a continual basis all day long.

Landings and halls at Brownsville were found to be actively used by children and adults as informal gathering and play areas. Their presence has provided a natural mechanism for the surveillance of the interior area and the screening of strangers. The open stair-well also allows noises at one level to be monitored at other levels--breaking the floor-to-floor seal that normally exists in apartment towers. The open relation of the stairwell to the entrance lobby further allows some auditory monitoring of lobby activity by residents on other floors.



In preliminary tests residents in Brownsville Homes have been found to be very conscious of noises and activity taking place in the stair halls. Because their children play and gather in stairwells and halls, adults seem to be unconsciously alert for loud noises or even interruptions of the din of children at play. A sudden silence in the stair hall was found to bring mothers to the door as readily as a loud yell or crash. The residents of Brownsville Homes seem to have adopted the stairs, landing areas and halls as extensions of their dwelling units and are concerned for their upkeep and in ensuring that they remain safe for the informal uses they put them to. In addition, or perhaps by extension, the area immediately in front of the entrance lobby to the apartment building has been adopted as an outdoor play and sitting area. Maintenance costs due to vandalism are appreciably lower in Brownsville Homes than in adjoining projects, as are crime and move-out rates.

Tilden Houses a public housing project located immediately across the street from Brownsville Homes, provides a study in contrast. The elevator waiting-area is unrelated to adjacent apartment units. The fire stairs are sealed off from the



corridor As a result, there is no audio or visual connection between levels and no opportunity for the casual surveillance of stair activity. Children seldom play in the interior halls of this building and residents do not easily respond to noises in the corridors. The maintenance costs, vandalism and crime rates in Tilden Houses are appreciably higher per capita than in neighboring Brownsville Homes.

B. IMPROVEMENT IN SURVEILLANCE OPPORTUNITIES

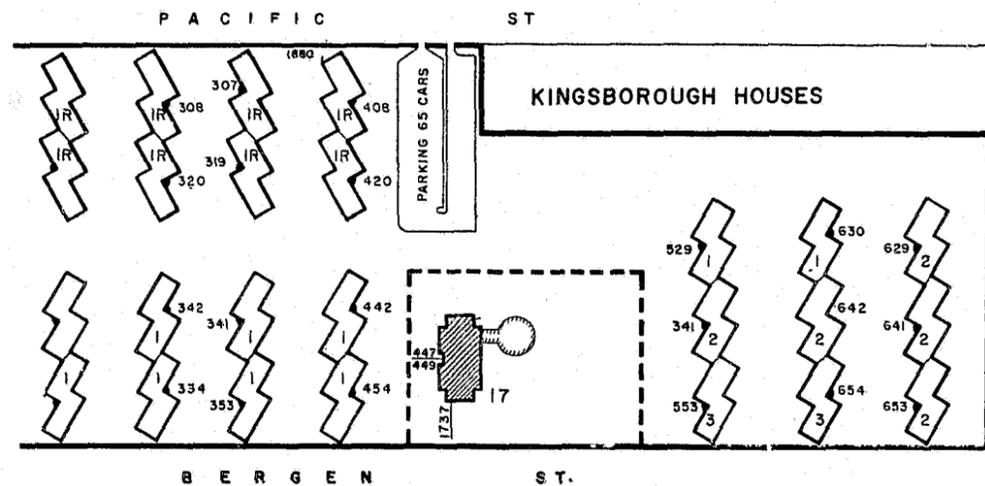
This category speaks to modifications to the grounds and physical plant of housing estates, to facilitate the visual and auditory monitoring of activities taking place within them.

The ability to see and be seen, hear and be heard, can be an important contributant to safety, security and general feelings of well-being of residents. Similarly, the surveillance capacity built into path systems--that is, the ability to see along the route to one's destination in an unrestricted fashion--can have a demonstrable effect in reducing irrational fears and anxieties in inhabitants. This can, in turn, lead to more frequent use of the public paths and so improve security by providing the safety that comes with more intensive use.

1. Positioning Areas of Activity (Medium Density Projects)

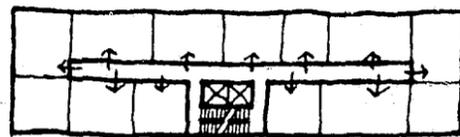
Many housing projects have been intentionally designed to look inward on themselves, with the result that residents cannot view bordering streets. In medium-density, row-type housing projects, buildings usually meet adjacent

streets only on end, with their entrances and windows facing the interior of the project. As a result, these bordering streets have proven unsafe to walk along—for both project residents and the surrounding inhabitants.



For project residents who must use these streets as the only access routes to their homes, the night-time run between the bus-stop and the project interior takes on harrowing proportions. Many project residents choose to remain at home rather than use these streets in the evening, further adding to the lack of surveillance and feelings of insecurity.

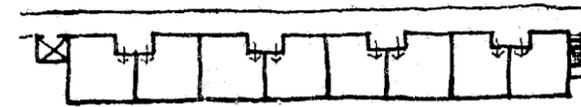
2. Positioning Areas of Activity (High-rise Projects)



typical double-loaded corridor apartment building

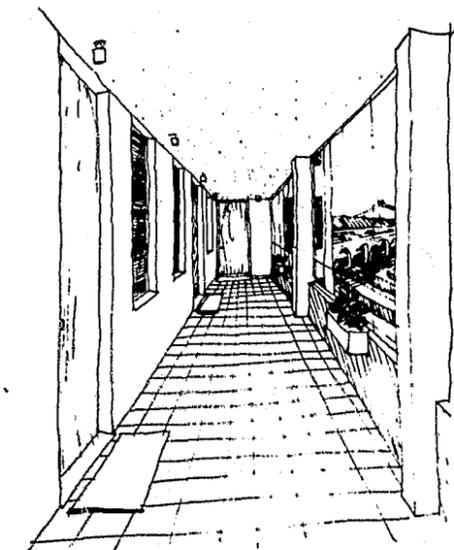
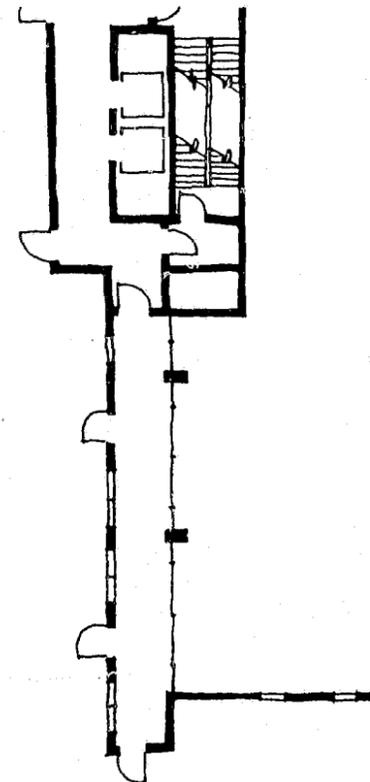
The interior hallways of high-rise apartment projects which are double-loaded are particularly devoid of surveillance opportunity. In addition, the corridors are usually territorily undefined, and common household noises prevent auditory monitoring. Although these corridors are public in nature, they have none of the attributes of public space; i.e., they are not heavily trafficked, they are not under continuous casual surveillance, and they are not easily patrolled by authorities.

In warmer climates, Washington and Miami, it is common to only single-load apartment corridors and keep them open to the air.



single-loaded apartment typical of southern climates

Taking advantage of an opportunity to provide apartments with cross-ventilation, architects have placed additional windows in the corridor-walls. This has resulted in the happy accident of providing a natural means for surveying the corridor from the apartment. At night, light from the apartment windows spills out onto the corridor walk, supplementing the psychological feelings of being at once observed and within ear-shot.



Windows in the corridors provide surveillance opportunities from apartments.

Faculty Housing - Columbia University

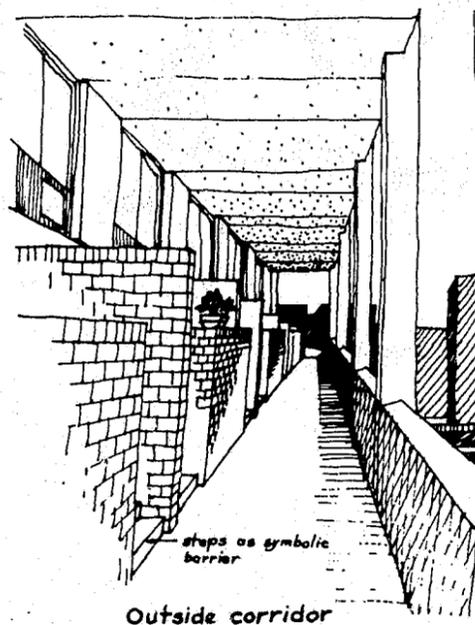
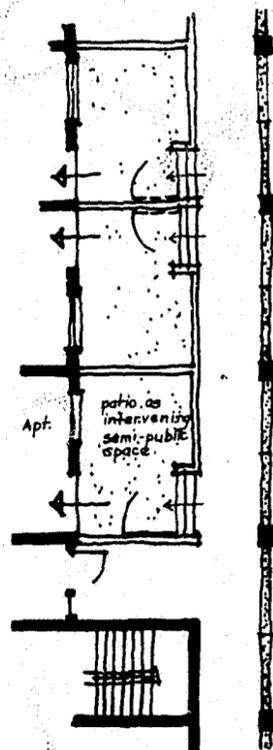
The architects of the Columbia University's Faculty Housing Project in New York have attempted to apply this apartment prototype to a northern climate and so have had to add windows to the outer wall of the corridor. For the rest, the project is as satisfactory a solution as the Southern examples.

single-loaded corridors allow surveillance from the ground



Faculty Housing, Columbia

A further advantage of the single loaded corridor system is that it allows surveillance of hallway activities from the ground and from adjoining apartment buildings. Formal surveillance by security personnel is, of course, also simplified and their effectiveness multiplied.

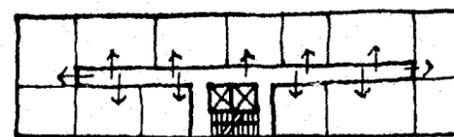


Riverbend, Manhattan

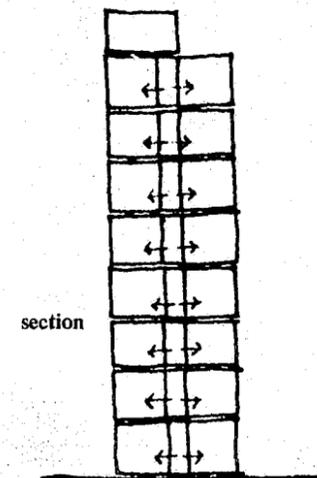
The single-loaded corridor is more costly than the typical double-loaded solution, and this is a strong inhibiting factor to its general adoption in low-income housing. Riverbend Housing in Manhattan goes some way in tempering this cost differential by providing a piggy-bank maissonette-on-maissionette solution—employing only one corridor for every two floors.

2. Improving Patrolability

The common, double-loaded corridor, high-rise apartment has proven a very difficult building for formal supervision and patrol by police, security personnel, doormen and tenant groups. Interior corridors, elevators and stair-halls are commonly sealed off from outside view, making systematic patrol a laborious undertaking.



plan



section

typical double-loaded corridor apartment building

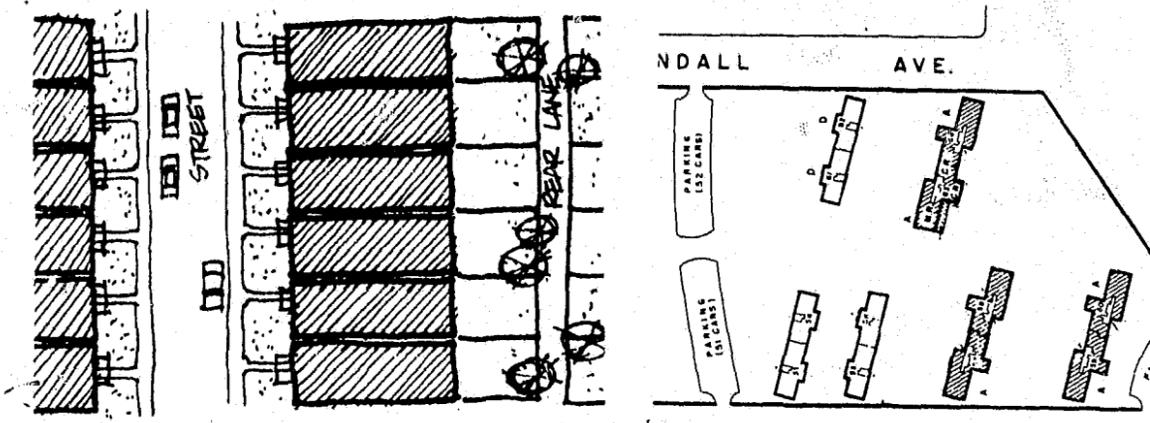
In making a single effective patrol of a housing project, police have to move from floor to floor of each building and check out each stairhall. Considering the normal fire-code requirement of two sets of stairs per apartment building, the task of patrolling is usually formidable and is seldom done with real thoroughness. Evading detection is also simplified for criminals, as they can easily switch stairwells in a scissor-stairs configuration and keep one floor above or below the patrolling officer.

surveillance of hallways from street

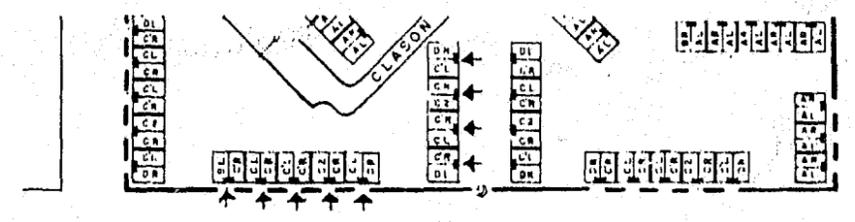


Tilden Houses

Tilden Houses illustrates a simple modification to the standard plan which has proven very effective. Windows have been placed at the end of the corridor on each floor and the fire-stair walls have had a window positioned at each landing. As a result, a patrolling officer on the street can observe much of the activity in the public, interior space of the building.



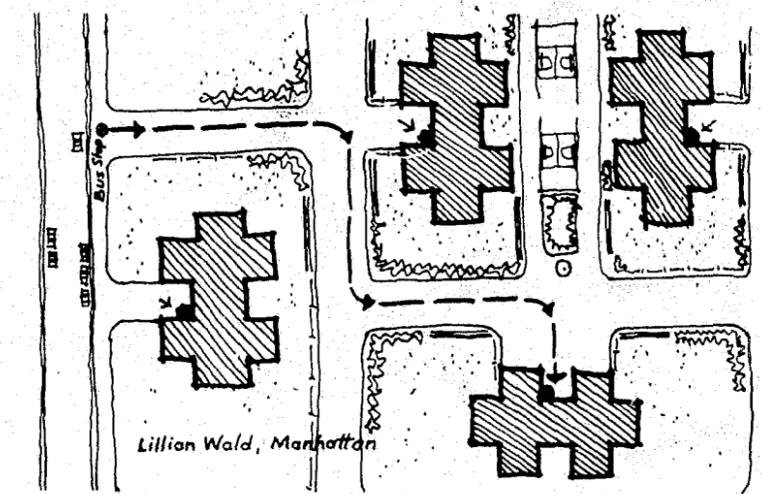
The traditional row-house street illustrated (left above) is considered by both residents and police to be superior design to the super-block configuration employed in many medium-density public housing projects (right above). The front and rear entrances of the row-house units lining the street are easily patrolled by automobile. Well lit lanes, with individual lights over entrances, allow passing police to see at a glance any peculiar activity taking place within the block. The positioning of front entrances along the street also serves to allow supervision by passersby, and the houses in turn provide them with surveillance.



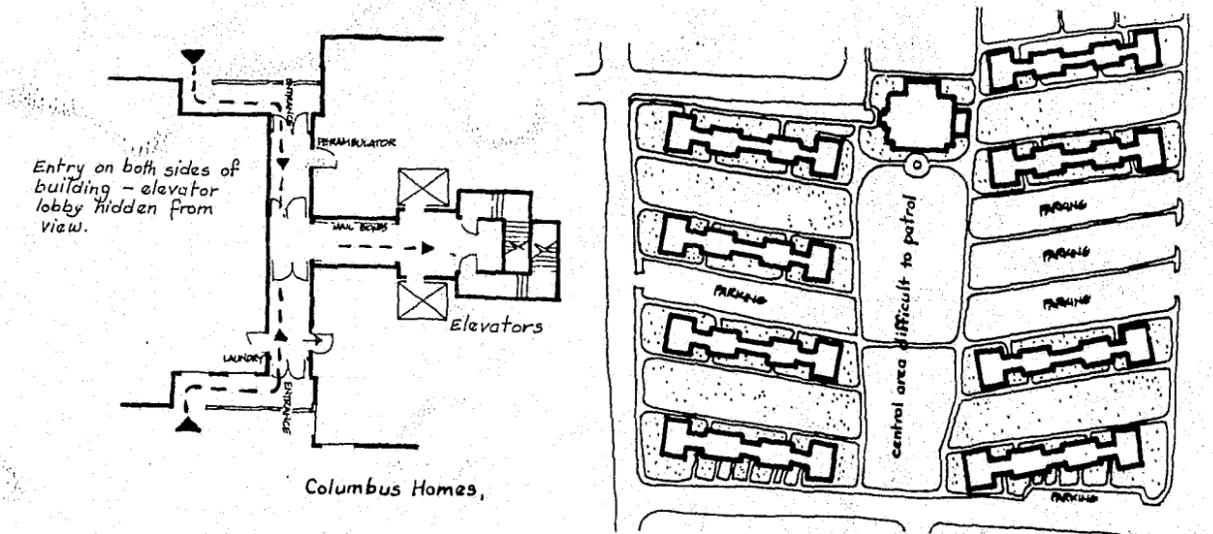
The New York City Housing Police consider buildings with entrances off the street superior to those with entrances off the interior grounds of the project.

The site-planning rationale employed in the design of large high-density housing estates was directed at freeing as much of the interior from streets as possible (illustration of Columbus Homes). Two to four block areas were commonly wedged into a single super-block with limited vehicular access to the site provided at the periphery. Formal patrol of the interior area of projects by automobile is therefore impossible. This difficulty has been overcome in New York through the use of housing police on motor scooters. However, the opportunity for the informal supervision provided by passing cars and pedestrians has been lost. Similarly, it is now impossible for city police to include the interior grounds of projects in their normal routes.

3. Facilitating the Scanning of Terrain



The scattered positioning of high-rise towers in public-housing sites has produced access-paths to buildings which require the turning of sharp corners. Residents fear what awaits them around each turn. The circuitous access route is further complicated by the practice of locating shrubbery exactly at the turn in the path.



The access path from the project grounds to apartment building interior can be an equally threatening experience. The entrance lobby of the Columbus Homes project in Newark requires a double turn to bring one to the elevator waiting area. As a result, this area cannot be observed from the outside. Residents step into the building blind with no foreknowledge of what awaits them and once inside are out of view and earshot from the grounds outside or from apartments within the building.

C. MODIFICATIONS TO PROJECT GOVERNANCE

Housing Authority management practices can have a significant impact on crime and vandalism in that they may unintentionally discourage residents from developing proprietary feelings or a sense of permanence. These practices may tend to thwart any natural concerns that might develop in inhabitants with regard to spaces outside their immediate dwelling units. Within the context of the past history and policies of public housing we are seeking initial data on the impact of management policies on tenant attitudes and behavior.

As an illustrative example, some Housing Authorities restrict the use of buildings to the interior of dwelling units only. This, they claim for the reason that children playing in hallways inevitably break things. These restrictive attitudes prevent informal lingering in corridors and lobbies and discourage a cognitive relationship from developing between tenants.

Similarly, management may inculcate in residents the attitude that an outside authority, and not themselves, is responsible for maintaining property and providing security. Policies encouraging this attitude tend to dampen the residents' sense of personal effectiveness and skill, and further, degrade the importance of self-initiated productive activities directed at ensuring a well maintained and secure living environment.

D. CONTROL OF PENETRABILITY

We have decided to delegate as last that mechanism for improving security which possibly comes first to mind: the hardening of the target area. It is also the mechanism which has been most readily and universally applied. Mechanical and electrical devices, from reinforced doors and better locks to buzzer-reply systems, closed circuit television and electronic identity cards have all been employed as the most promising and immediately beneficial panacea. Parallel with these mechanical devices is the usual demand for additional security personnel: nightwatchmen, round-the-clock doormen, reinforcements to housing authority police and city police, tenant-patrols and so on.

Mechanical and electrical hardening devices have had very mixed results. Their effectiveness appears to lie in combination with hired experienced personnel. Alone, they appear to be made easily inoperative. The reluctance on the part of tenants to forgo any convenience has been the biggest enemy of mechanical devices: tenants forget keys and so jam locks to assure themselves of easy re-entry; the shortest path between the parking lot and one's apartment may be through the fire-stair and door, so that securing them permanently becomes difficult.

With all these reservations, we would, nevertheless, be most appreciative to learn of any novel hardening devices or patrolling solutions you may have attempted, or are contemplating, which seem to hold promise.

END