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Publication Date

1968-06-01

Peer reviewed

ANALYSIS OF THE DESIGN PROCESS
AT TWO MODERATE-INCOME HOUSING DEVELOPMENTS

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June 1968

Working Paper No. 80

This work was carried out under grants from the U.S. Public Health Service (No. 5 01 UI 00214-02 and MH 17123-01) to the Center for Planning and Development Research, University of California, Berkeley; additional support was received from the Beatrix Farrand Fund, Department of Landscape Architecture, University of California, Berkeley.

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I. INTRODUCTION

The dynamics of the design process have in recent years become a topic for heated discussion among architects and city planners.¹ However, despite the theoretical discussion, there is a paucity of knowledge about actual design processes and few attempts to describe and analyze real-, instead of theoretical-events.² The following paper attempts to close this gap by examining the activities which led to the construction of two moderate-income housing developments in San Francisco, financed under the U.S. Housing Code, section 221/d/3. The differences between the two projects are of form, location and density, rather than the population characteristics of the tenants: St. Francis Square consists of 299 cooperatively-owned garden apartments near downtown San Francisco, while Geneva Towers comprises 570 rental apartments in two high-rise buildings at the southern edge of the city.

We must preface this paper with the admission that a study of the design process per se at these two sites was not our original intention when we began work in the Fall of 1967. Our main purpose was to study the extent to which designer-assumptions about user-needs in moderate-income housing actually coincide with real user-needs. The method we chose replicated in many respects the procedure followed by one of the authors in a previous case study.³ At first, we intended to interview the designers to find out about their views on user-needs

¹For example, Christopher Alexander, Notes on the Synthesis of Form. Cambridge: Harvard University Press, 1966. Raymond Studer, "On environmental programming," in Arena, Vol. 81, No. 902, May 1966, pp. 290-296. Sim Van Der Ryn, "Searching for a science of design: Problems and puzzles," in American Institute of Architect's Journal, Vol. XLV, No. 1, January 1966, pp. 37-42.

²The only such study we have located appeared in summary form as the final draft of this paper was being prepared. "Computers for design and a design for the computer," The Architectural Forum, Vol. 128, No. 2, March 1968, pp. 60-65.

³Clare Cooper, Some social implications of house and site plan design at Easter Hill Village: A case study. Berkeley: Center for Planning and Development Research, University of California, 1965.

and how they provided for users in their designs. But in the course of these interviews, it became apparent to us that many other people in addition to the designers are active in the design process of developments such as these: it is not only the architects' ideas about user-needs which are expressed in the end-product, but also those of the sponsor, the government lending agency, and many others. Thus, from a simple examination of "architects'-assumptions-about-user-needs," our study expanded into a consideration of the whole design process and of the many "actors" and constraints that entered into it.

II. CHRONOLOGY OF THE STUDY

Our first task was to formulate a research plan, which now stands as our point of departure. Next, we spent a good deal of time familiarizing ourselves with the two housing developments, and perusing the architectural literature to provide ourselves with a general idea of how other people perceived and reported about these projects. Then we prepared to interview those people who were operative in producing the housing, among whom we initially assumed the architects to be most important.

After considerable discussion and some consultation with a methodologist in the Sociology Department at Berkeley,¹ we translated a set of direct questions to the designers into a set of objectives for ourselves, which could in most cases be realized without the necessity of direct inquiry: we called this set of objectives our checklist. We settled on the idea of asking for a chronological account of the design process, and monitoring the ensuing conversation by probing for details or clarification that would relate to the items on our checklist. We structured the interview situations loosely and taped the entire discussion. The transcripts of the interviews stand as our basic set of source documents. We used the same checklist and the same general procedure for all interviews.

(a) Planning the Interviews

The actual items on the checklist were, of course, based upon our implicit and explicit assumptions about the nature of the

¹Shirley Starr

process into which we were inquiring, and, we realize in retrospect, upon our judgments of that process. Thus, it was our feeling that designers started out with some knowledge about what was required of a dwelling unit by its potential users, but we also made a judgment about the extent and completeness of their knowledge; we judged, in advance - from our own experience and observation of architects and how they operate and also from our own experience with, and observation of, inadequate housing - that there were serious limitations in their knowledge. A corollary to our judgment that architects are not sufficiently informed about the people for whom they design housing was that many of them seem not to express much concern about the people for whom they are designing: they become involved with the physical aspects of their work - e.g., how things look - and cut themselves off from any real awareness of the social nature of housing. Thus, the first part of our checklist dealt with the architects' awareness of the social objectives or implications of housing, the extent to which they had informed themselves in advance about the people who would eventually occupy their units, and the possible implications their knowledge might have for design solutions. In part, these items test our own hypotheses, but in part, we realize now, they elicited evidence that would support us in our own judgments. The first nine items were as follows:

Major social objectives of the design

Prior experience with 221/d/3 housing (This was perceived as an information source: had they learned by doing? Could they use their experience creatively?)

Knowledge of the financial and other constraints on the design of housing (This was intended to get at their values with regard to housing: i.e., how much effort would they make to achieve social objectives if those objectives came into conflict with financial or other constraints?)

Knowledge and perception of eventual users:

Literature read on class, ethnicity, etc.

Conversations with informed professionals

Observation of, or familiarity with, equivalent users

How information about eventual users affected design solutions

General differences in design solutions between middle-

income and luxury housing (These last two points have the

same intention - they were intended as two different approaches.

Our second major judgment of architects and the design process was that many architects tend to assume too easily and with too little

evidence that they know the social effects of given design elements; they provide various facilities or make certain design decisions on the presumption that these facilities and decisions will have particular effects on the users, but in fact they have little real evidence that things will work out as planned. Thus we wished to explore as fully as possible the reasoning behind specific design decisions, and in our minds, these decisions would be tightly bound up with the nature, number, and strength of the constraints operating upon the particular situation. We therefore enumerated as many constraints as seemed reasonably influential and tried to build into our objectives the notion of how the constraints had altered design priorities, and which of the constraints seemed most amenable to adjustment. We thus produced the second set of items for our checklist, as follows:

- Number of design solutions proposed before final acceptance by the client (The intention here was to prod their memories: if they had lost touch with the process, we hoped that enumerating various solutions might hasten their recall.)
- Social objectives of client and how these affected final solution (Here we were trying to get a feeling for the contrast or comparison between the clients' concern for people and the architects', and whose was stronger.)
- Constraints emphasized by the client; which of these was hardest to meet
- Conflicts between:
 - Client-architect
 - City officials - architect
 - Inter-architect (within the firm)
 - Landscape architect - architect
 - Builder or engineer - architect
- Satisfaction with the final design (What was the designer's perception of where he had to give in and how that affected the total value of the final product; in other words, how far off from his vision was the final product?)
- Changes architect might have made if certain constraints had been lacking (Another approach to the preceding question.)

A third major judgment we made prior to our study was closely connected with the first two, namely, that the chief reason that architects are neither sufficiently well-informed about resident-needs nor sufficiently cautious in questioning whether the design solutions they propose really will have the desired effects, is their unwillingness or inability to supply themselves with feedback information from projects they have already completed. Our third list of items therefore

dealt, chronologically, with what happened after the buildings were occupied, and was aimed at finding out whether the feedback process operated at all, and if so, which of their assumptions had to be re-evaluated and what was the nature of that re-evaluation.

Visits to the project since completion
 Housing working the way designers expected
 Since occupancy, features which have been observed to be "wrong"
 Improvements or modifications which might be valuable in the project
 Extent to which experience gained in this project will influence
 future housing design

We realized, of course, that there were several problems inherent in collecting information about a past event, the most obvious being that of accurate recall. We expected that some people would have much better memories than others for details that occurred four or five years ago, and we also expected that people would select aspects of the story and recall those actions and decisions which put them in the best light. However, many of the people whom we interviewed drew on their written files to refresh their memories; considerable probing on our part brought out a number of admissions about mistakes that had been made and how they might be avoided in the future; we obtained accounts of the same historical events from a number of sources, and thus did have a cross-checking procedure built into our method; and finally, we intend to submit our preliminary analyses to perusal by the actors, hoping to further verify the factual aspects of their testimony, and possibly to awaken further elusive memories.

Since the items on our checklist were intended to elicit discussion about the reasoning behind the final design decisions, we also had to deal with the problem of distinguishing between reasoning that allegedly had taken place at the time the decision was made, reasoning that took place as an afterthought ("It was a good thing we did that because as it turned out..."), and reasoning that took place at the time of the interview when we asked why a particular feature had been designed in a particular way. Our solution to this problem was to more or less ignore it; we concluded that, for our purposes, it was not really important to make these distinctions. We are primarily interested in what user-needs the designers, and others involved in the process, felt that the finished designed entity would fulfill, irrespective of the time at which they had perceived these needs. Presumably, those

needs which were perceived and correctly fulfilled in advance were no more important than those needs which had been perceived only by hindsight and which had or had not been fulfilled. Our main objective was to determine the designers' assumptions about user-needs, whenever those assumptions had been formed.

(b) Identifying the actors

One of the things that happened as a result of the first interview with the architects of St. Francis Square was that they kept referring us, with some heat, to many of the other people who had been involved in the physical realization of the project. These included present and former staff members of the San Francisco Redevelopment Agency (St. Francis Square was part of the Western Addition A-1 urban renewal area), and representatives of the union which had sponsored the project. We therefore immediately expanded the scope of our investigation to include a number of non-designer participants, and conducted interviews with the secretary of the union, an attorney who had represented the union during negotiations with the city, a housing expert who had been hired by the union to act as coordinator of the project, a former member of the redevelopment agency, and the builder of the project. We also spent some time with the associate in the firm of landscape architects who had been most active in the design of the Square.

Then we turned to the second project, Geneva Towers. In this case the number of people we contacted was considerably fewer, since a single entrepreneur had acted as sponsor, builder, and coordinator. Furthermore, Geneva Towers had been built on privately-owned land, so the redevelopment agency had not been involved. For this site, we interviewed the sponsor-builder, one of his associates, the architect who had designed the buildings, the landscape architect, and an FHA official who had guided the project through various phases having to do with government regulations. A list of the actual persons interviewed at both projects follows.

(c) Analyzing the interviews

Our remaining task was then to study the lengthy transcripts of the interviews and to set about analyzing them in various ways. We refrained at this stage from studying too closely the theoretical papers

St. Francis SquareGeneva TowersPromoter

San Francisco Redevelopment Agency
(Representative interviewed:
Bernard Brenner, formerly Acting
Chief Planner)

Eichler Homes
(Representatives inter-
viewed: Joseph Eichler
Edward Eichler)

Client-sponsor

International Longshore Workers
Union (ILWU)
(Representative interviewed:
Louis Goldblatt, Secretary of
the Union)

Eichler Homes
(Representative interviewed:
Joseph Eichler)

Pacific Maritime Association (PMA)
(Representative interviewed:
Richard Adams, Attorney)

Architects

Marquis and Stoller
(Representatives interviewed:
Bob Marquis
Claude Stoller
Peter Winkelstein)

Claude Oakland
(Representative interviewed:
Claude Oakland)

Landscape Architect

Lawrence Halprin and Associates
(Representative interviewed:
Don Carter)

Anthony Guzzardo and
Associates
(Representative interviewed:
Anthony Guzzardo)

Builder

Jack Baskin
(Representative interviewed:
Jack Baskin)

Eichler Homes
(Representative interviewed:
Joseph Eichler)

Financing Agency

FHA, San Francisco
Regional Office
(Representative interviewed:
Russell Davis, Chief
Architect)

Co-ordinator

Hal Dunleavy and Associates
(Representative interviewed:
Hal Dunleavy)

Present Manager

Joe Rhine

Earl Jolly

published by Alexander, Van Der Ryn, Studer, and others, because we did not wish to be influenced by their assessments of what happens in the design process. We tried to approach the material "blind", without any preconceived notions about what it would tell us, and we tried to approach it from as many different angles and viewpoints as possible. In the course of doing this, we made a number of "cuts" at the material and eventually decided that the most useful in terms of the analysis of the data were the following: the sequence of events in the design process, the roles of the actors and their influence on the final design-solution, the objectives of various sets of actors, the assumptions about human behavior that underlie the designers' choices of particular design features, and the constraints that operated upon and controlled the design process. In the final section of this paper - a reformulation of the design process - we have attempted to synthesize our understanding of that process and to draw together again these artificially separate cuts at the data.

III. SEQUENCE OF EVENTS IN THE DESIGN PROCESS

We had originally hoped, by studying the testimony of the actors and perusing their files, to describe in accurate detail the exact sequence of events in the design process at each site. However, we have had to modify this intention. The actors' memories were hazy on some of the details of timing, and the files in the first architects' office (Marquis and Stoller) turned out to be not as fruitful a source as we had hoped. The nature of their collected works on St. Francis Square was itself an interesting reflection on the design process. According to their accounts of the process, most of the basic design decisions were made during an initial six-week period of "brainstorming" sessions; none of these sessions is documented, presumably because all of the discussions took place within the firm - i.e., among the partners and associates. Later on, when working drawings were in preparation and a number of other people were involved in advising on the details of the design, records were kept which documented the decisions made at various meetings - indeed, which recorded minutiae in very great detail; but these details - for instance, of the particular brand of

floor-tiling, or the specific form of electric wiring - were of no particular interest to us since we judged that compared with the broad features of layout, access, and orientation, they would have very little effect on social behavior.

Because we were not impressed by the usefulness of this source, and since the question of being permitted access to files is a delicate one at best, we decided to depend, for the present, solely on the data gathered by interview. The description of the sequence of events which follows is therefore limited in accuracy and completeness; we hope to rectify any gross errors and fill in any major gaps by consultation with the people who provided us with the information. For the present, the sequence of events is intended to acquaint the reader with the major events that took place in connection with the planning and construction of the two projects.

(a) Sequence of events in design and construction of St. Francis Square

1. The San Francisco Redevelopment Agency designates the Western Addition Redevelopment Project Area A-1 as a blighted area needing redevelopment. This designation is first adopted by the San Francisco Board of Supervisors on August 2, 1948, and then amended and re-adopted on September 22, 1952.

2. The San Francisco Board of Supervisors approves the final Redevelopment Plan for the Western Addition in November, 1954, finding that the proposed redevelopment for predominantly medium- and high-density residential uses, with some commercial and public uses, conforms with the Land Use Section of the Master Plan of San Francisco, and with current and proposed zoning ordinances. The adopted Redevelopment Plan states that the area east of Fillmore Street (which includes the St. Francis Square site) shall be developed as Planned Unit Developments; that the three blocks to become St. Francis Square shall be zoned M-4 (medium-density residential with restrictions on height, density, setback, distance between buildings, minimum room size, amount and nature of parking provision); and that proposals for redevelopment shall be subject to design review by the Agency, and to non-discriminatory leasing or sale of dwellings.

3. Over the next five years, the Plan is slowly put into effect. By early 1959, 85-95% of the people living in A-1 are displaced, and 60-70% of the land is cleared. Agency officials establish a land sale policy which includes disposing of some of the land by negotiated bid instead of public auction. Originally intended to maintain strict control over the development of the Japanese Trade Center (another part of the Western Addition Redevelopment Project), this policy was also extended to the St. Francis Square site.

4. Agency officials establish a policy of redeveloping some of A-1 for families, for two reasons: first, considerable public and semi-public investments had already been made in facilities geared to family use, such as schools, libraries, and recreation areas, and secondly, because the proposals for Cathedral Hill, just east of the St. Francis Square site (including land sale by public auction, high-density, and lack of height limitations), virtually insured its development in semi-luxury high-rise apartments.

5. Agency policy to retain some of A-1 for families is further refined to insure that this housing is developed for moderate-income families. The Agency staff prepares a land sale brochure which stipulates that the award for the St. Francis Square site will be made to the developer who best meets the Agency criteria of architectural design and moderate rentals. Agency director Herman contacts unions and church groups, seeking a non-profit sponsor, and, if possible, a co-operative development.

6. The Board of the ILWU-PMA Pension Fund first considers the use of a Pension Fund grant to promote housing for Union members; they look into the idea of investing in a subdivision in Marin County, but subsequently decide against it.

7. The San Francisco Redevelopment Agency invites bids, in February, 1960, for 6.9 acres of land in the A-1 section of Western Addition Urban Renewal Area for the construction of garden apartments with moderate monthly charges, using 213 insurance for co-operative development. They announce that bids will be judged on the basis of architectural quality and moderate monthly rentals, not on land price. Bidders are to offer their own definitions of "moderate" rentals.

8. Trustees of the Pension Fund agree to the principle of investing in non-profit housing if it meets certain conditions: it must not compete with housing produced by profit-seeking developers, it must be housing which Union members can afford, it must be for families, and must be located in the city.

9. The Executive Committee of the ILWU agrees to put up \$2,000 to defray the costs of putting together a proposal. Pension Fund trustees agree to commit half a million dollars as front money or "seed" money for development.

10. The Union and the Pension Fund invite the submission of sketch plans from various architectural firms. They hire Hal Dunleavy to act as coordinator and economic consultant for the project. He helps them select an architect.

11. Marquis and Stoller are selected as the Union's architects. They have six weeks to produce a plan for submission to the Redevelopment Agency. They call in Lawrence Halprin Associates as consultants in landscape architecture.

12. The Redevelopment Agency receives six submissions for the development of the St. Francis Square site: included in each submission are sketch plans, models, and affidavits by builders that the plans are financially feasible within the Redevelopment Agency's cost-rent limitations. The ILWU submission by Marquis and Stoller features closing of streets, inward-turning buildings, and protected courts. In the first round, all groups except the ILWU and Eichler Homes are eliminated.

13. Newspaper articles appear about the ILWU proposal, and spokesmen from the nearby Negro community come out in favor of it. After further consideration by the Redevelopment Agency, the ILWU project is announced as the winner of the competition, on the grounds that it best meets the objectives of "moderate" rents and good design.

14. The Longshoreman's Redevelopment Corporation is formed, and formally hires Marquis and Stoller. The architects, in turn, formally hire the landscape architects and the structural, mechanical, and electrical engineers.

15. During the design development phase, Marquis and Stoller consider and discard alternative site plans and building schemes, eventually retaining the original site plan concept; they also conduct research on structural, heating, and mechanical systems.

16. During the working drawings phase, the preliminary design is re-worked to meet City and FHA codes and requirements, and negotiations are carried on for street closures. A cost-control system is instituted; the sponsor hires a builder who monitors each week's progress to insure that costs remain at the level required by the sponsor.

17. Despite efforts at cost control, builder's first estimate on the total job is too high to meet the sponsor's rent objective, although it still meets FHA rent requirements.

18. The project is sent out for bids to other builders; the lowest bid exceeds architect's and former builder's estimates by half a million dollars. The Pension Fund Trustees, in July, 1961, seriously consider withdrawal, but don't wish to forfeit their \$100,000 deposit on the land. The co-ordinator still feels that costs can be lowered and persuades trustees to wait.

19. Trustees call in a new builder, Jack Baskin, in September, 1961. Baskin suggests numerous changes to bring down costs, including the elimination of a district heating system, interior stairwells constructed of steel and concrete, and a floating floor system of sound control. He also makes many changes in specifications and exterior details. Working drawings are re-designed.

20. 221/d/3 legislation is passed by Congress during the preparation of the new working drawings. The FHA loan application is switched from 213 to 221/d/3.

21. Sponsor asks Dunleavy to do consumer preference studies in housing to ensure that project will sell. Dunleavy conducts studies; recommends carpeting the 2nd and 3rd floor apartments for soundproofing purposes, and providing a 2nd bathroom in the 3-bedroom units, and sponsor agrees. Dunleavy also recommends other features (a larger kitchen, more storage in the apartment, central dead-storage, sales office) which can not be provided within the cost limitations.

22. The sponsor and some people in the neighborhood contribute money to pay for the rehabilitation of the YMCA building on the site.

23. The architects persuade the sponsor to hire a project inspector (clerk of the works) to supervise on site during the construction phase. The first manager of the co-op organization - Revels Cayton - is hired at this time to begin work on a sales program and to establish good relations with people in the neighborhood.

24. Construction begins in September, 1962.

25. The first units are completed in July, 1963, and landscaping is begun.

26. The first units are occupied. Early residents complain about poor drainage on their outdoor balconies, and a conflict arises over who should pay for repairs. The conflict is resolved through the courts.

27. All units occupied. Voluntary work begins by tenants on modifications to the landscaping and facilities (for example, garbage areas and drying yards are removed from the center of two courts, a resident who is an architect designs new play equipment, etc.).¹

(b) Sequence of events in design and construction of Geneva Towers

1. Eichler Homes, Inc. buys land in Visitacion Valley which is primarily used for plant nurseries and greenhouses. Joseph Eichler contracts with Claude Oakland, architect, and Royston, Hanamoto and Mays, landscape architects, to produce a site plan for development of the land.

2. Designers make preliminary sketch plans of streets and building arrangements; the sponsor instructs them to provide row-housing on most of the site and high-rise buildings in one section; this will increase the overall density and allow the sponsor to re-coup the high cost of the land. However, zoning in Visitacion Valley does not permit mixed densities.

3. The designers and the sponsor approach the City Planning Department for permission to use Planned Unit Development zoning, which allows for a mixture of densities. The City Planning Department staff approves the idea, and offers suggestions about street layout (no streets exist on the site).

4. The preliminary site-plan is completed, showing 221 row houses and four 12-storey buildings in the northeast corner of the site.

¹For details of design changes made after occupancy, see Appendix B.

The plan is presented to the City Planning Commission. Commissioner Rockrise suggests that the high-rise buildings should be in the center of the site, not in the corner. Designers argue that high traffic-generating buildings should be near the busiest intersection on the site (which happens to be at its edge), so that their traffic will feed into busy streets and not interfere with quiet, non-through streets lined with row houses. The Commission approves the plan.

5. The City Planning Commission calls for a public hearing, at which the owner of a commercial plant-nursery across the street from the proposed high-rise buildings objects that the shadows cast by the new buildings over his greenhouses will ruin his business. The Commission instructs Eichler Homes to re-position the high-rise buildings.

6. The designers change the site-plan for the northeast corner from four 12-storey buildings to two 19-storey slab buildings at right angles to each other. The designers study the shadows cast at different times of the year, and locate the building which faces the greenhouses so that the shadows will not cause a problem. The sponsor has no great objection to making this change as the two buildings now proposed will be more economical to construct than four.

7. Local home-owners begin to object to the new development, particularly to the high-rise buildings. It is probable that the real reason for the objections is the Eichler Homes is well-known for non-discriminatory sales, and the home-owners are afraid of a Negro invasion of the neighborhood. The City Planning Commission approves project despite objections.

8. The sponsor instructs the designers to complete work on the row-houses first so that they can be constructed as soon as possible. He hopes to use the income from the sale of the row houses to finance the more complex, costly job of designing and constructing high-rise buildings.

9. Section 221(d)(3) of the U.S. Housing Act is passed by Congress. Eichler submits a feasibility report to the local FHA office to apply for financing of the high-rise buildings under this new section. He maintains he cannot build high-rise apartments at moderate rentals under conventional 5 1/3% interest rates, but could do so under the lower rates offered by FHA.

10. FHA rejects the application, claiming that high-rise buildings cannot be built with 221(d)(3) financing, that Visitation Valley is not a suitable location for high-rise buildings, and that Eichler's cost estimates are inaccurate and rents could not achieve 221(d)(3) limitations.

11. Eichler spends over a year trying to persuade the FHA of the feasibility of his proposal. He argues that the FHA rent scale should be updated to match more recent cost-of-living index figures, and that his proposal would be feasible in the context of current data. Eichler goes to Washington several times to plead case with FHA officials.

12. The sponsor has a disagreement with the landscape architects, terminates their contract, and hires Anthony Guzzardo. Guzzardo starts re-working the site plan at the base of the high-rise buildings.

13. Personnel and policy changes in FHA in Washington. Eichler is suddenly called to a meeting in San Francisco at which a top FHA official is present and he is given the go-ahead on 221/d/3 financing for Geneva Towers.

14. The designers begin to modify the plan to conform with FHA regulations. They see no reason to down-grade quality because the buildings are now intended for moderate-income people; they refuse an FHA request to cut out interior extras (shower heads, extra cabinet work) to reduce costs, but do make some concessions such as eliminating vanities in bathrooms, and introducing more durable surfaces in exterior areas (e.g., concrete planters instead of wood).

15. Period of frequent meetings between the sponsor, the architect, and FHA officials, as working drawings proceed. The sponsor agrees to cut out studios and 1-bedroom apartments from the original design so the housing will accommodate more families. A proposal for a swimming pool on the site is dropped, because of cost and because the weather is unsuitable.

16. The sponsor instructs the designer to include certain communal features in buildings, notably social rooms, a day nursery, and laundry rooms; studies on length and facade treatment of building proceed.

17. As plans develop, it becomes clear that costs may exceed FHA regulations, and cutbacks are needed. The landscape architect is told to cut out certain details from the site-plan. He investigates the possibility that older children might use the play facilities of the local schools and a nearby Public Housing project, and proposes not to include such facilities on site. The FHA urges him not to provide play facilities for younger children either, as these are already provided in the row housing adjoining the site.

18. FHA opposes a proposal for balconies in each unit, but the designer insists that they can be provided for not much greater cost than windows, and will reduce maintenance costs (since tenants can do their own window-cleaning). FHA agrees to balconies.

19. Swedish construction firm invites the sponsor and the architect to go to Sweden to view a new slip-forming concrete construction technique. They become convinced that this technique will reduce construction costs. The structural engineer modifies the plans.

20. FHA approves the final drawings and construction starts on the first high-rise building. The landscape architect oversees the installation of an automatic irrigation system and the first plantings by a landscape contractor.

21. The first building is completed and occupied, but children start to vandalize the landscaping in the unfinished area between the buildings; landscape architect reassesses problem of accommodating needs of children on site; puts in change order to contractor to substitute grass (usable for play) for ice plant (purely decorative) in mounded areas around central lawn.

22. Sponsor privately suggests to member of Public Housing Authority that Geneva Towers might be considered for use under new rent-supplement program. This suggestion appears in a newspaper, and is followed by an angry meeting of local homeowners. The idea is dropped.

23. Sponsor finds himself in financial difficulties, sells buildings and site to new developer who fails to pay landscape contractor. The latter pulls out, leaving landscaping half finished. Landscape architect makes no further changes in plans; has trouble collecting his own fees and has no contractor to do the work.

24. Hiatus in landscaping completion; existing planted areas are severely damaged by children of new residents; site becomes "a mudhole", children destroy concrete play sculpture, start fire in storage room, write on exterior walls.

25. New owner begins completion of landscaping to get final approval on site from FHA; makes some alterations to original site plan; damaged trees not replaced; new landscape contractor covers existing irrigation system, ignores landscape architect's earlier change orders, alters design around main entrance.

26. Second owners go into receivership; property is bought by Federated Mortgage of Los Angeles; Northern California Property Management Company are retained to manage property. (1966)

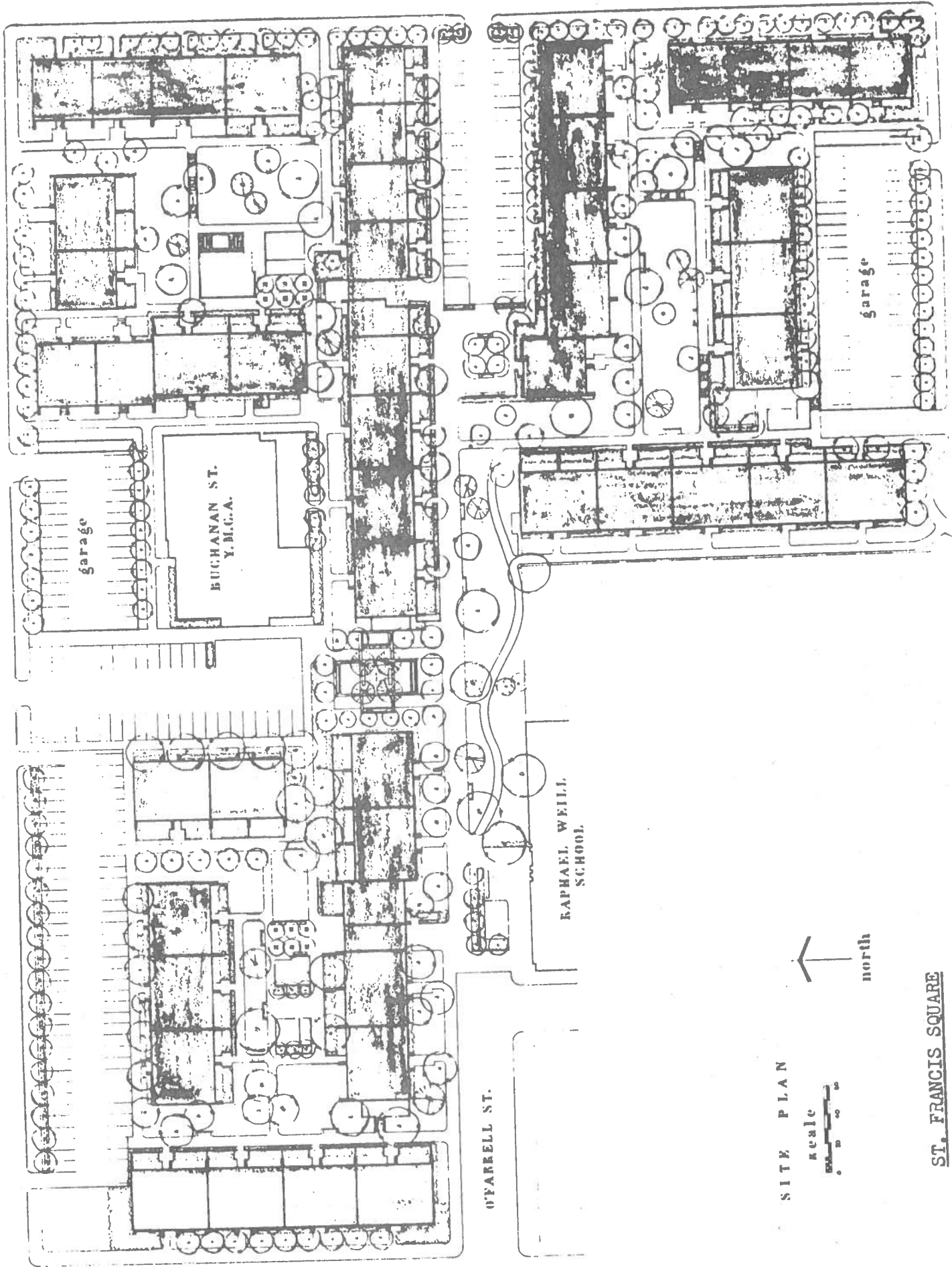
27. Vandals rip out street trees around site which are not replaced; plantings on site continue to be damaged; lawn area between buildings so over-used for play that it becomes a dirt surface (early 1967).

28. Management has lawn area - now dirt - covered with asphalt for ease of maintenance (late 1967); installs basketball hoops and climbing equipment.

29. Management employs new maintenance staff (early 1968); start to replace damaged trees and landscaped areas.

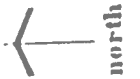
GEARY BLVD.

LAGUNA ST.

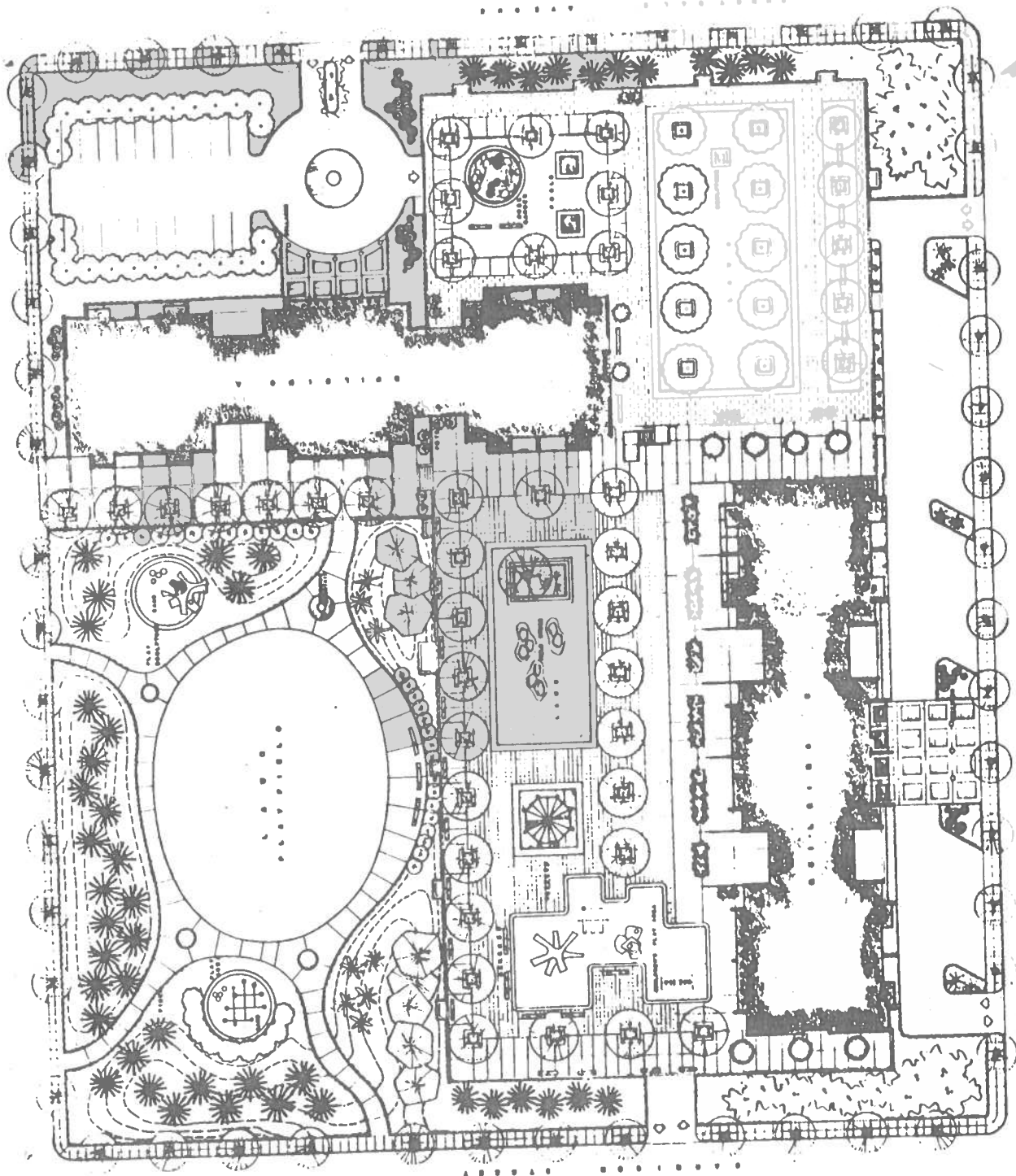


SITE PLAN

scale



ST. FRANCIS SQUARE



1" = 100'

GENEVA TOWERS

ERLIER HOMES, INC.
SANTA ANITA, CALIFORNIA

VISITACION VALLEY
HIGH RISE APARTMENT DEVELOPMENT
SANTA ANITA, CALIFORNIA

CLAUDE OAKLAND
ARCHITECTS
SAN FRANCISCO, CALIFORNIA

ARTHUR E. GUZZARDO
LANDSCAPE ARCHITECT
SAN FRANCISCO, CALIFORNIA

IV. THE ROLE OF THE ACTORS AND THEIR RELATIVE DOMINANCE IN THE DESIGN PROCESS

We have now introduced the basic ingredients of the design processes at both sites: the actors and the events. It is clear that many people other than the designers were actively involved in the design process, and that many actors other than the designers exerted considerable influence on the final design before the designers - i.e., the architects and landscape architects - were even brought into the process. We would now like to discuss the basic ingredients in terms of their relation to one another - that is, to answer the question, what was the relative influence of each actor in the sequence of events?

(a) St. Francis Square

The relative dominance of various actors in the design process at St. Francis Square varied considerably over time. At the outset,

the Redevelopment Agency was the chief actor, and had been for many years before any of the other actors entered the scene; through the medium of the Redevelopment Plan, the Agency laid down certain design and financial requirements for the development of the site.¹ When the land was offered for bid, the sponsor took the leading role, since it was he who made the decision to compete for the land in the Western Addition, and he who selected the architects. During the next phase, it was chiefly the architects who were the dominant actors, for at this stage they produced a preliminary site-plan to present to the Redevelopment Agency. Apart from the fact that the housing had to be capable of construction cheaply enough to be rented at the rates set by the sponsor (which in turn had been required of him by the FHA), the architects were given a free rein on a general site plan. Their influence was indeed important at this point, and as it later turned out, their chief concern at this stage was not with keeping the costs down but with the production of an attractive, unique site-plan, capable of providing for the needs of families with small children who might otherwise choose to live in the suburbs. Of course they assured the Agency that their plan could be realized within the given cost limitations, but their real concerns were with the design - e.g., the arrangement of closed streets, peripheral parking, quiet interior courts, pedestrian access to the school and so on. The landscape architects had some influence at this stage as well, since they supported the architects in all their design decisions. Once the schematic design and accompanying models were complete, the Redevelopment Agency again entered the spotlight by reviewing the submissions and making the award. From that point on, the Agency withdrew to an overseeing position.

The designers continued to dominate the proceedings during the design development phase and the production of working drawings. Indeed, they must have had considerable influence over the first builder, since the builder was unable to constrain them to meet cost requirements, as became clear when the project went out for bid. When the bids far exceeded the architects' original estimates, the sponsor moved in again to dominate the scene, both personally, and through his

¹See Appendix A for complete list.

consultant-coordinator who was experienced in the field of public and other government-sponsored housing. The coordinator, as a spokesman for the sponsor, insisted upon certain cost-cutting measures, undertook small-scale surveys of consumer preference in housing, negotiated with the financing agency (FHA), and generally coordinated various decisions. The architects, who were now working on the details and specifications of the design, were under constant pressure from the sponsor, via his coordinator, to cut down on costs.

Finally, the second builder entered the scene, and became a very important actor, possibly more important than the sponsor and his coordinator, and certainly, at this stage, more influential on the design-process than the architects. His knowledge of construction and specification costs was probably greater than anyone else's, with the result that he pressed for certain changes in the details of the design. It was at this point that the greatest struggle for influence over the design process took place: the architects felt that the design decisions were theirs to make, and the builder felt that his superior knowledge of costs should take precedence. The architects were at a disadvantage in this struggle, since cost-cutting had become the most crucial aspect of the design process at this point, and the builder had the coordinator and the sponsor solidly behind him. As a result, many of the compromises were made in favor of economy and at the expense of what we might call esthetics, the use of first-class materials and painstaking workmanship that the architects tried - and failed - to promote.

The builder thus had his day during the re-design of the working drawings, but took a back seat to the architects again when construction began and a conflict arose over whether to hire a clerk of the works - a construction supervisor who represents the client on the building site and supersedes both the building contractors and the foremen of the workers. The architects insisted upon the hiring of such a man, over the protests of the builder, who felt it was a waste of money and was certain his sub-contractors could handle whatever construction problems might come up; this time the sponsor backed the architects, and a clerk of the works was hired. The architects regained dominance in another area as well, when the coordinator, at the request of the

sponsor, suggested certain interior features on the basis of some consumer preference studies he had conducted; at this point, the architects neatly turned the tables, and claimed that few of these features were possible within the stringent cost limitations set by the builder. Thus, at the crucial stage of the final decision-making before construction, the architects, who had long been overridden by the builder and the sponsor, exerted a major influence on the design once again.

It seems, at first thought, as if the design process should reach its final conclusion once construction has been completed and the buildings have been occupied. But at St. Francis Square, at least, that was emphatically not so. A new set of actors entered into the design process after the sponsor withdrew and the architects began working on other projects; these were the residents. Because of the cooperative form of the housing, the residents at St. Francis Square organized themselves early into a representative governing board and into various committees to handle the ordinary business of the cooperative and to deal with and remedy dissatisfactions among the tenants. It immediately became clear that the residents did not respond to some of the elements of the housing as planned; once they had used some of the facilities, they began to see a number of other alternatives, and through the medium of the Architectural Review Committee and the money set aside for maintenance and repair, they began to alter many of the features of the project, particularly in the outdoor spaces. Thus the design process does not cease when professional designers leave the scene; the residents then become the chief actors for it is they who, at this stage, have most stake in the outcome.

(b) Geneva Towers

In the design process at Geneva Towers, it was the sponsor who played a dominating role almost all the way through. It was he who bought the land on which the buildings would eventually be constructed, selected the architect and landscape architects, and laid down the basic elements of the site plan - a mixture of medium priced row housing and luxury apartments in high-rise buildings. These two decisions - to buy the land and to develop it with a mixture of housing types - set the process in motion. The architect, with consultation from the landscape

architects, then became the major force in the process, by originating a tentative site plan for the arrangement of the row housing and the high-rise buildings and their associated facilities and circulation patterns. Thereafter, a number of minor actors entered the scene and had a brief influence upon the design process: the staffs of the San Francisco City Planning and Public Works Departments who advised on the street layout; the City Planning Commission who officially approved the site plan; and a local nurseryman, who objected to the size and positioning of the high-rise buildings, and who carried enough weight that the designers had to consolidate the high-rise units into two buildings instead of four, and to position them differently on the site.

With the passing of 221/d/3 legislation, local FHA officials were cast in leading roles. Under their influence, the design process was almost brought to a complete halt, since they persistently opposed the sponsor's applications to consider Geneva Towers for financing under the new moderate-income housing law. Although the architect kept at the task of producing working drawings, he had very little influence over the ultimate design, since the major concern at this point was for the sponsor to get some assured means of financing. While the FHA held all the cards in the game of financing the project, the sponsor managed to assert his influence over the design by terminating the agreement with the firm of landscape architects he had used up to that point and hiring a new one. The second firm, thereafter, had even less power than usually accorded to a landscape architect: they had to work with the plans left over from the first firm, at least for the town-house part of the development. Furthermore, since FHA financing had not yet been approved, the new landscape architect developed plans for the outdoor spaces on the premise that the high-rise apartments would be luxury-priced.

Eventually the FHA gave the sponsor the go-ahead, with assurance of 221/d/3 financing. From this point on, the FHA and the sponsor alternately dominated the design process, calling for revisions in the working drawings, while the architect played a somewhat subordinate role, fulfilling their directives. Then, as the working drawings neared completion, the sponsor stepped into the process in his role as the

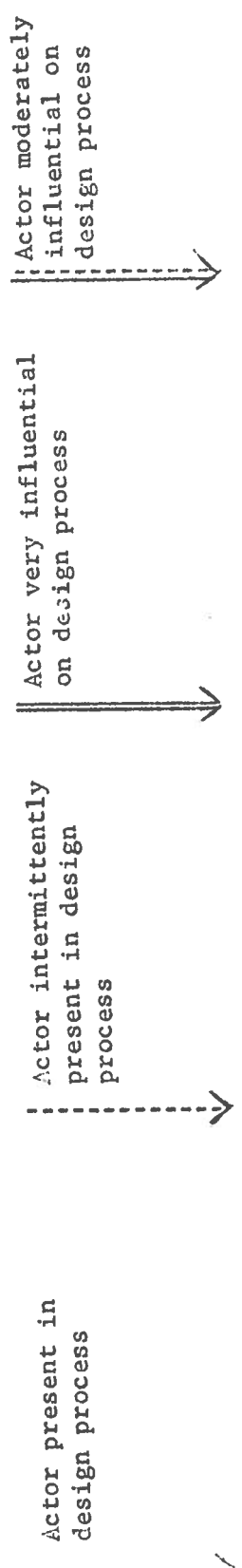
builder, and again considerably influenced the process by insisting upon a new concrete construction technique; this decision necessitated the re-design of certain construction details.

The sponsor continued to dominate the process, until the first building was occupied and the children of the residents started to tear up the landscaping that was partially completed, and to vandalize the exterior walls of the building. In financial difficulties, the sponsor, toyed with the idea of leasing or selling the building to the Public Housing Authority but was soundly defeated in this plan by the Visitacion Valley Homeowners Association who raised such a storm of protest that the idea was dropped.

The final decision of the sponsor to sell the buildings to a new owner was his last act of dominance over the process, for as a result of this act, the designers no longer retained any official influence over the building and land around it, and the landscape contractor who claimed he had not been paid, pulled off the job. The landscaping was left half finished and the children from both the first and the second building - which had now been completed and occupied - continued to vandalize what had been provided. Eventually the second owner sold out to a third who instituted through the management company that oversees the building, a program of landscape restoration and improvement. The present owners and the management have thus become the dominant actors at the present time, with the residents - through a Tenants Association - retaining some influence, though not so great as the residents in the St. Francis Square co-op.

A diagram of the preceding discussion will be found on pp. 21-24 for St. Francis Square and pp. 25-29 for Geneva Towers.

DIAGRAM OF SEQUENCE OF EVENTS AND INFLUENCE OF ACTORS ON DESIGN PROCESS AT ST. FRANCIS SQUARE



EVENTS

- Western Addition Redevelopment Area designated blighted (1948)
- Tentative Redevelopment Plan approved (1952)
- Final Redevelopment Plan approved: St. Francis Square site designated medium-density residential (1954)

ACTORS

- Residents
- Manager
- Clerk of works
- 2nd builder
- 1st builder
- City agency officials
- Vested interests in streets
- FHA officials
- Landscape architects
- Architects
- Co-ordinator
- Sponsor
- Redevelopment Agency

Residents

Manager

Clerk of works

2nd builder

1st builder

City agency
officialsVested interests
in streetsACTORS

FHA officials

Landscape
architects

Architects

Co-ordinator

Sponsor

Redevelopment
Agency

Design development phase:
architects review alter-
native plans and struc-
tural methods; co-ordin-
ator begins negotiations
for '213 financing with
FHA.

Architects negotiate with
vested interests in streets
for permission to close
certain streets; agreement
finally reached but must
leave former street
alignments free of
buildings.

Working drawings phase:
weekly cost-control meet-
ings between designers,
sponsor, co-ordinator,
builder; negotiations
with City agencies re
building and fire code
requirements; changes in
specifications to reduce
costs.

EVENTS

Residents

Manager

Clerk of works

2nd builder

1st builder

City agency
officialsVested interests
in streets

FHA officials

ACTORSLandscape
architects

Architects

Co-ordinator

Sponsor

Redevelopment
AgencyEVENTS

Builder makes estimates on job; bid is too high; sponsor puts job out to bid; bids still too high to meet sponsor's moderate-rent objectives.

Sponsor considers withdrawing from scheme, instructs co-ordinator to negotiate with Agency to get deposit back on land; by "arrangement" with co-ordinator, Agency refuses (July 1961).

Sponsor brings in 2nd builder: he suggests many changes in construction techniques and specifications to architects; re-design of working drawings.

221/d/2 legislation comes into existence; co-ordinator negotiates for switch of loan application from 213.

Changes in design to ensure acceptability under 221/d/2 financing.

ACTORS

Residents

Manager

Clerk of works

2nd builder

1st builder

City agency
officialsVested interests
in streets

FHA officials

Landscape
architects

Architects

Co-ordinator

Sponsor

Redevelopment
Agency

Co-ordinator, at request of sponsor, carries out consumer preference studies in housing.

Architects persuade sponsor to hire clerk of works; construction phase begins (Sept. 1962).

1st manager hired; sets up sales/promotional campaign; does public relations for project in surrounding neighborhoods (March 1963).

1st units occupied; all units sold; landscaping starts (September 1963).

All Units completed and occupied; landscaping work continues (Fall 1964).

Co-op organization of tenants formed; sponsor hands over ownership.

Work parties of tenants make modifications to landscaping.

DIAGRAM OF SEQUENCE OF EVENTS AND INFLUENCE OF ACTORS ON DESIGN PROCESS AT GENEVA TOWERS

EVENTS

ACTORS

3rd owners

2nd landscape contractors

Management company

2nd owner

Visitacion Valley Homeowners Assoc.

Residents

1st landscape contractor

Sponsor in role as builder

2nd landscape architect

FH/ officials

Nurseryman with land adjacent to site

City Planning Commission

City agency officials

1st landscape architect

Architect

Sponsor in role as developer

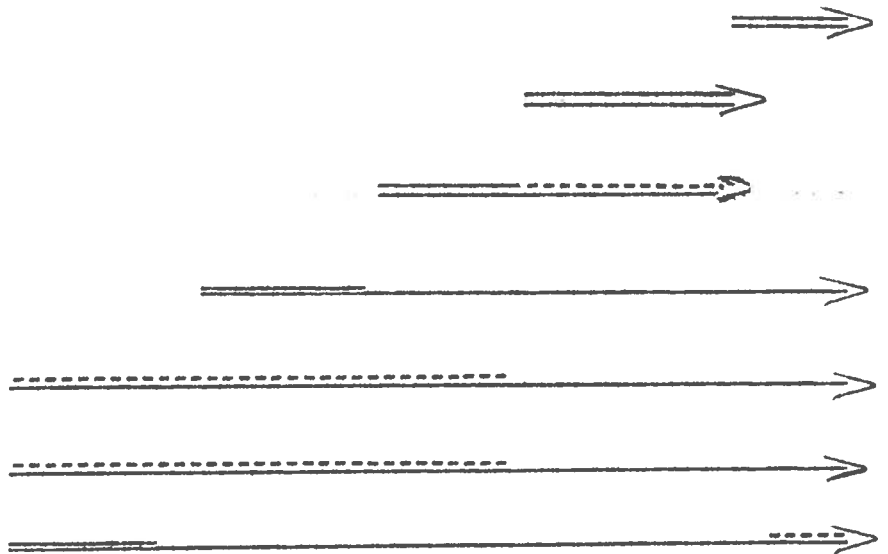
Sponsor buys land, hires architect and landscape architects; instructs them to produce site plans for row houses and high-rise buildings.

City Planning Dept. gives permission to use Planned Unit Development zoning; advise on street layout.

Preliminary site-plan completed; received enthusiastically by City Planning Commission.

Local businessman objects to plan at public hearing; designers alter number and arrangement of buildings; plan approved by City Planning Commission.

221/d/3 legislation is passed; sponsor begins negotiations with FHA



ACTORS

3rd owners

2nd landscape
contractorsManagement
company

2nd owner

Visitacion Valley
Homeowners Assoc.

Residents

1st landscape
contractorSponsor in role
as builder2nd landscape
architect

FHA officials

Nurseryman with land
adjacent to siteCity Planning
CommissionCity agency
officials1st landscape
architect

Architect

Sponsor in role
as developer

FHA rejects sponsor's application for funding; sponsor spends over a year trying to persuade them of its feasibility; designers proceed with work as if project intended for high income renters.

Sponsor in disagreement with landscape architect's firm; makes contract with second firm

FHA change policy and give Eichler go-ahead on 221/d/3 funding; designers start to modify plans to conform to FHA regulations

Frequent meetings with FHA officials; plan modified to cut out smaller sized units, swimming pool, but sponsor and designer refuse to cut out quality interior finishes

EVENTS

ACTORS

3rd owners

2nd landscape
contractorsManagement
company

2nd owner

Visitacion Valley
Homeowners Assoc.

Residents

1st landscape
contractorSponsor in role
as builder2nd landscape
architect

FHA officials

Nurseryman with land
adjacent to siteCity Planning
CommissionCity agency
officials1st landscape
architect

Architect

Sponsor in role
as developer

FHA urges landscape architects not to duplicate play facilities in adjacent areas: Sponsor instructs architect to incorporate communal laundries, social rooms and day nursery into scheme.

Sponsor and designer are persuaded to use new construction technique; modify plans accordingly

Final working drawings approved, construction starts on first building; contractor starts on landscaping

First building completed and occupied; children of residents start to vandalize landscaping

EVENTS

ACTORS

3rd owner

2nd landscape
contractorManagement
company

2nd owner

Visitation Valley
Homeowners Assoc.

Residents

1st landscape
contractorSponsor in role
as builder2nd landscape
architect

FHA officials

Nurseryman with land
adjacent to siteCity Planning
CommissionCity agency
officials1st landscape
architect

Architect

Sponsor in role
as developerEVENTS

Strong protest from local homeowners against tentative proposal to offer Towers to Public Housing Authority; sponsor drops idea

Second building completed

Sponsor in financial difficulties, sells building; landscape contractor pulls out; site continues to be vandalized

New owner begins completion of landscaping; new contractor starts work and alters original plans

Second owner sells out to third owner; landscape work in abeyance

Street trees are destroyed; central play space (lawn) so over used that becomes expanse of dirt

3rd owners



2nd landscape
contractors

Management
company



2nd owner

Visitacion Valley
Homeowners Assoc.

Residents



1st landscape
contractor

Sponsor in role
as builder

2nd landscape
architect

FHA officials

ACTORS

Nurseryman with land
adjacent to site

City Planning
Commission

City agency
officials

1st landscape
architect

Architect

Sponsor in role
as developer

EVENTS

Management covers former lawn
with asphalt, puts in play
equipment; start to replace
damaged landscaped areas

V. DIFFERENCES BETWEEN THE DESIGN PROCESSES AT THE TWO SITES

It became clear to us, as we described the relative dominance of the actors in their relation to the events that made up the design process at each site, that the character of the process differed considerably between the sites. In the case of Geneva Towers, the sponsor-developer dictated a number of requirements: high-rise buildings, the use of slip-form construction, family-sized units, and the provision of a nursery and common laundry and social rooms. Both the sponsor and the architect testified that the architect's particular forte was in the

design of apartment interiors (the arrangement of rooms, colors, materials, detailing) and we are left with the impression that this particular architect's style consists of designing from the inside outwards. Once the general form of the building had been suggested by the sponsor, it became the architect's job to fit inside it as many family-sized units as possible. Compared with the emphasis on interior detail, the relationship of the buildings to each other, to the land on which they stand, and to the neighborhood in which they are situated, seem to have received relatively little attention.

From his testimony to us, it would seem that the landscape architect had more specific objectives in his design than did the architect; for example, he wanted to avoid an institutional image and to provide a foil to the buildings through the use of generous planting and lawn areas. Neither the architect nor the sponsor seemed to have very much concern for what happened outside the two buildings; indeed, the sponsor stated to us he felt the site was too large and he had wished he could have deeded some of it to the City for them to upkeep as a park. We felt that the architect and sponsor, who had long worked together and had recently completed a successful high-rise building for high-income single people and families without children, had perhaps failed to make an adaptation in their thinking when faced with providing moderate-income family housing; indeed, both of them mentioned that they had probably thought too little about how children were to be accommodated on the site, and what problems might ensue from raising children in a high-rise building.

In sum, the chief aim at Geneva Towers was to provide as many quality, moderate-income family units as possible on the site, and the dominant actor in the process of providing these was the sponsor-developer-builder.

At St. Francis Square a number of decisions regarding the use of the land and the types of buildings had already been made by the

Redevelopment Agency before the sponsor-developer bought the land. The sponsor was particularly anxious to meet his own - and the Redevelopment Agency's - chief aim - that is, to provide family housing at a moderate density and at moderate rentals. Having selected a firm of architects who were confident that they could meet these aims, the sponsor then "withdrew" from the design process as it entered its preliminary sketch plan phase. Unlike the sponsor at Geneva Towers who had a long history of experience in the housing field, the sponsor here had never been involved in promoting housing before, and perhaps for this reason, did not suggest any particular end-product that he wanted the designers to produce. Our feeling was that they were left alone for an initial brainstorming period, after which they came up with a preliminary site-plan showing the approximate arrangement of buildings, open space, parking areas, closed streets, and entrances. Only later, after the Redevelopment Agency had chosen the ILWU-Marquis and Stoller team, did they become involved with apartment interiors. Thus, the design process took almost a reverse form of that at Geneva Towers, with the process here working from the outside in.

In this case, the sponsor was not aiming to get as many units as possible on the site - indeed, the density finally arrived at was actually lower than the Agency's recommended maximum. He was aiming to provide the residents with an attractive, well-designed total environment. In fact, limited though his budget was, he insisted on certain cuts being made on apartment interiors in order to provide superior landscaping for the enjoyment and use of residents. In sum, we would say that the chief aim at St. Francis Square was to provide an attractive environment, and that the power in the process was shared: the actors who most influenced the process of providing this environment were the sponsor and the architects.

As a last note, we would like to add that a major aim of the sponsors at both sites was similar - that is, to build moderately-rented family housing; but there was an important difference in emphasis. At Geneva Towers, this objective seems to have been a means to an end, the end being the securing of 221/d/3 financing; at St. Francis Square, this objective seems to have been an end in itself. It remains to be

seen from the next phase of our study whether this difference in emphasis had any ultimate effect on the users of the housing - the middle-income families that 221/d/3 housing legislation was set up to accommodate.

VI. SPONSOR OBJECTIVES

Our analysis of the design processes at the two sites has indicated quite clearly, we feel, that the sponsor of the housing - the man with the money, so to speak - exerts considerable influence over the design, in some cases perhaps more than the professional designer. In order to lend further credence to this notion, we extracted from the interview testimony an array of specific objectives attributed to the sponsor at each site, and attempted to match them with physical and non-physical elements of the housing which promoted the realization of these objectives, directly or indirectly. To further broaden our perspectives on the consideration of sponsor objectives, we also listed those events or circumstances which were not planned by the sponsor or any of the other actors, but which facilitated the realization of the sponsors' objectives in various ways; we call these "facilitating factors." The following pages present this material in tabular form.

(a) SPONSOR OBJECTIVES AT ST. FRANCIS SQUARE

OBJECTIVE

1. To combat the trend of middle-income families leaving the city by providing housing in a "suburban" setting within the city.

PHYSICAL TRANSLATION

Attractive, family-sized units in walk-up - not high-rise - buildings.
Each unit has private open space (i.e. a deck or fenced patio).
Aural privacy assured by sound-proofing techniques (wall and floor construction, carpeting).
Visual privacy assured through "barrier" effects of patios and decks placed between public open space and living areas of dwelling units.
Sheltered, protected atmosphere through arrangement of buildings facing inwards onto open space, and "turning their backs" on surrounding city and traffic.
Outlook from living units onto green park-like environment.

NON-PHYSICAL TRANSLATION

Monthly charges low enough for moderate-income families to afford.
Provision of ownership opportunity through co-operative arrangement.
Families with small children welcomed.
No discrimination in sales on basis of race, creed, national origin, etc.

FACILITATING FACTORS

A dearth of housing in this quality and price range in San Francisco.
Redevelopment Plan encouraged moderate-density, middle-income development.
Location offers rapid auto-access for commuters to all parts of city.
Redevelopment Agency and FHA both wanted to see project built; political pressure to get it finished.

OBJECTIVE

2. Monthly charges that Union members (or their equivalents) could afford.

PHYSICAL TRANSLATION

Economies in construction costs; cheapest, standard construction techniques done well.

Providing for parking in communal structures on periphery to permit savings in construction costs of living units.

Economies in specifications.

Use of low-maintenance materials, fittings and finishes.

NON-PHYSICAL TRANSLATION

Non-profit making venture.

Securing of low-interest federal loan.

Making negotiated contract (not bids) with builder.

Use of cost-control system during working drawings phase.

FACILITATING FACTORS

Section 221/d/3 of the Housing Act was passed just in time for sponsor to take advantage of its low-interest loans.

Sponsors happened to know knowledgeable consultant with experience in field of federally-aided housing, and were able to hire him.

Sponsors happened to know a builder, knowledgeable in cost-cutting techniques, and were able to hire him.

OBJECTIVE

3. Racial integration.

PHYSICAL TRANSLATION

Accent on pedestrian circulation with opportunities for casual encounters; safe pedestrian access to school.

Visual access from living areas of dwelling units into public open spaces; visual contact opportunities.

Negro-Japanese dominated YMCA incorporated into project.

Communal play areas in each of three courts.

Higher quality than most comparably priced housing in city, to attract whites.

NON-PHYSICAL TRANSLATION

Discussions with Negro and Japanese communities before submittal to Redevelopment Agency to enlist their support.

1st resident manager and chief of sales staff was a Negro.

Sales brochure emphasized, through words and pictures, goal of racial integration.

Techniques of advertising varied to bring project to attention of different groups (newspaper ads for whites, word of mouth for Negroes).

Active program of "selling" project to receptive white groups (e.g. Unitarians, labor unions to encourage white buyers and bring about racial balance; encouraging Negroes to buy would be easier because few choices were available to them.

Tenants were assigned to apartments by management to avoid racial pockets.

Tacit agreement on quota of Negro residents with Negro community; agreement encouraged by City.

Co-op organization necessitates frequent meetings, policy sessions, work groups, etc.

FACILITATING FACTORS

Project built at time of strong nation-wide feeling regarding racial integration of housing.

Located mid-way between Negro area and white luxury housing, and close to traditional Japanese section of city.

Members of Negro community spoke publicly in favor of project.

Grade school which would serve project (Raphael Veill) was already racially integrated.

Whole community within attendance area boundary of same school.

OBJECTIVE

4. High standards of liveability and amenity - to attract residents and to reflect on prestige of sponsor.

PHYSICAL TRANSLATION

Maximizing open space through closing streets and creating superblock.

Creating quiet and safe neighborhood through elimination of auto traffic.

Emphasis on facilities and site lay-out for pedestrians and small children (walkways, plaza, lawns, play areas, benches etc.); landscaping for use (walking, sitting, playing) not just for looking at.

Grade school tied to community through safe pedestrian access.

High standards of exterior design and landscaping; skimping on interiors to provide "rich environment"; use of semi-mature trees so that desired effect was achieved almost from the beginning.

Selection of durable, hard-wearing materials, finishes and ground cover.

Addition of high quality extras in interiors e.g. fitted carpets.

Sturdily designed street furniture and play equipment.

Visual access into common areas for social control over vandalism etc.

NON-PHYSICAL TRANSLATION

Large reserve fund kept by co-op for maintenance and replacements.

Full-time maintenance crew employed and paid out of residents' monthly payments.

Full-time manager in residence; urges high standards of upkeep through meetings and community newspaper.

Residents are part owners through co-op and have stake in good upkeep to protect investment.

FACILITATING FACTORS

Redevelopment Agency came out strongly from beginning for high standards of design and liveability.

One of designers had lived in co-op and knew from experience the good effects on property maintenance of co-op ownership.

(b) SPONSOR OBJECTIVES AT GENEVA TOWERS

<u>OBJECTIVE</u>	<u>PHYSICAL TRANSLATION</u>	<u>NON-PHYSICAL TRANSLATION</u>	<u>FACILITATING FACTORS</u>
1. To re-coup high cost of land at Visitacion Valley.	NE corner of site developed in high-rise; 570 units provided in 2 19-storey buildings. Remainder of site was developed in 2-storey row houses.	Timing of development arranged so that design, construction and sale of row houses would precede and help finance high-rise buildings.	Planned Unit Development zoning ordinance in existence in San Francisco. City Planning Department welcomed sponsor's proposal for PUD with mixed densities on Visitacion Valley site. City Planning and Public Works Departments assisted designers in suggesting street layouts.

OBJECTIVE

2. To provide housing for families in the city.

PHYSICAL TRANSLATION

Quality rental apartments in high density project near to downtown and employment areas.

Provided only 2 and 3-bedroom units (i.e. for families).

Compensated for lack of a yard by providing some private open space in form of balcony, and large landscaped public area at base of buildings.

Made up for relative lack of space within apartments by providing:

- communal social rooms with kitchen and toilets
- day-nursery for children
- laundry rooms on each floor

Made up for relative lack of space for children's play by providing:

- a large lawn (free play, family groups etc.)
- two tot-lots
- hard surface areas with planters that might be used for imaginative games
- benches that doubled as climbing apparatus

NON-PHYSICAL TRANSLATION

Sales program of "persuasion" to combat expected resistance to high-rise family living; emphasized "family" aspects in newspaper advertisements; salesmen emphasised positive aspects of high-rise living.

Management has policy of:

- welcoming families with children
- non-discrimination
- no racial quotas
- permitting tenants to keep household pets

Security guards employed by management to patrol building and parking lots.

Sponsor wanted to include program to teach tenants how to live in - and use - high-rise building, but didn't accomplish this since had to sell building before completion.

Full-time resident manager in each building has personal contact with families, discusses problems of upkeep and maintenance.

Management promotes social gatherings for teenagers, and employs recreation assistant during summer vacation.

FACILITATING FACTORS

Project located in family residential neighborhood; stores and schools within walking distance.

Dearth of family rental housing for moderate income groups in San Francisco.

Dearth of housing open to racial minorities.

OBJECTIVE

1. To secure FHA financing under section 221/d/3 of the Housing Act.

PHYSICAL TRANSLATION

Modification of original proposal from high-income to moderate-income rentals in order to meet FHA requirements (e.g. cut out lavish entrance foyer, swimming pool, vanities in bathrooms etc.).

Change from original proposal for 4 12-storey buildings to 2 19-storey buildings since latter cheaper to construct (i.e. only two sets of elevators instead of four).

Studios and 1-bedroom units eliminated from design so that all units would be for families; building with nearly all one size of unit (i.e. 3-bedroom) also cheaper to construct than one with great mixture of unit sizes.

Use of slip-forming construction technique cheaper than methods previously used by sponsor.

Construction and finishing of outdoor and indoor public spaces so as to keep maintenance costs down.

Providing finishes, floor coverings and equipment within apartments to withstand hard wear and thus reduce maintenance and replacement costs.

Providing only moderate sized rooms so as many units as possible could be fitted into building.

NON-PHYSICAL TRANSLATION

Design and construction drawings were modifications of existing high-rise buildings developed by Eichler Homes; saved money by building on experience, exploiting business links already forged with manufacturers of components (e.g. balcony railings, sliding glass doors etc.).

FACILITATING FACTORS

Swedish firm invited sponsor and architect to view new construction techniques just at time working drawings were being finalized; were impressed with savings through using this method, adopted it, and modified drawings.

VII. DESIGN FEATURES AND DESIGNER ASSUMPTIONS ABOUT USER-BEHAVIOR

As we have indicated, our original intention was to analyze the objectives of the designers - the architects, in particular - in relation to their perceptions of user-needs. We had envisioned a neat list of explicit assumptions expressed by the designers about what people want and need in housing and how the designers provided it. But this reflected a naive assumption on our part about how designers think and proceed in their work. We found the process was not as simple as matching stated objectives about user-behavior with the actual design features; many of the physical solutions were, we felt, intuitively arrived at - "This seems like a good idea..." - without any explicit reasoning behind them. In lieu of explicit reasoning, however, we recognized there were a whole host of implicit assumptions about user-needs, user-preferences, and probable user-behavior, some of which the architects expressed, but many of which remained unstated.

We therefore decided to reverse our procedure, that is, to start with the major physical features of the design, then to identify the functional consequences of each feature, and finally to indicate the kinds of assumptions about behavior, implicit and explicit, that seemed to underlie the choice of each physical alternative. We limited ourselves to assumptions about user-behavior rather than user-preferences or needs, since it was clear from the outset that architects believe that they provide only those features that people will prefer. In the table that follows, the first column describes the basic elements of building arrangement, site layout, building design and facilities provision which the architects felt were fundamental to their final plan; the second column lists all the functional consequences that necessarily follow from the adoption of each element; and the third column contains a list of assumptions about how users would presumably behave in the setting the architects were preparing for them. These assumptions about behavior are crucial to our study, since they put into words what the design says physically about what people want and how they will behave - or how they ought to behave. Having constructed this list of assumptions about behavior, our next task is to devise questions to test the accuracy of these statements; we hope to go directly to the present users of the housing and find out, by conversation and observation, whether in fact they do behave that way and whether they prefer to behave that way. The generation of questions, interviews and systematic observation will constitute Phase 2 of this study.

Before each of the tables that follows appears a short textual account of what seems to have been the reasoning behind each of the basic design features we have identified; this reasoning comes from the designers' and sponsors' testimony.

(a) Reasoning behind the design features at St. Francis Square

After many careful readings of the designers' testimony about St. Francis Square, we have attempted to summarize the main points of their reasoning - explicit and implicit - for including certain major features in the design.

In sequence, probably the first major decision was that the three-block area be developed in low-rise, or garden apartment buildings,

for this had been laid down as a requirement by the Redevelopment Agency in their land sale brochure. No requirements were laid down as to the arrangement of buildings on the site, though the Redevelopment Agency had suggested that they would look favorably on a site-plan that proposed certain street closings and re-assembly of the land into larger units.

The first basic decision of the designers was to close all the streets passing through the 3-block area, thus creating one large superblock. The requirement by the utility companies that buildings could not be placed over former streets, forced the designers to incorporate the former street alignments into their plan as open walkways, spaces between buildings, and parking lots; thus, these former alignments are still discernible in the site-plan and form the major open space axes of the design.

The decision to close the streets was crucial to the plan in that it permitted certain other design-features to follow; for instance, it determined that parking and servicing should be relegated to the periphery of the site, and that the accent within the site would be on pedestrian movement.

A major feature of the site which could be thought of either as an asset in terms of rapid access to downtown, or a detriment in terms of traffic noise, the major artery of Geary Boulevard, which runs down one side the three-block area. A setback of at least 10 feet from this street was laid down in the Redevelopment Plan, but the designers decided that a more adequate barrier effect could be obtained by turning the buildings around with their backs facing onto Geary, and their fronts facing onto the interior of the superblock. It had been determined that the individual dwelling units would run through the building, with access by interior stairs, so the design was further clarified by placing the sleeping rooms facing out, and the living rooms facing onto the interior of the block. The design was further refined when it was decided that the turning-inward of the buildings had certain other advantages besides screening living rooms from the traffic noise on Geary, the most notable of which were the social and aesthetic benefits of facing living units onto traffic-free areas (ease of child care,

pleasant outlook etc.); consequently it was determined to face all the units onto the interior spaces, regardless of whether their 'backs' faced onto busy traffic streets or not.

Another consequence of turning the units inwards was the decision to provide each unit with some private open space (patio or balcony) which would be entered via the living room and would therefore also face onto the interior public space.

The decision regarding the arrangement of the buildings on the site was one that was virtually forced upon the designers by a number of outside constraints. We have already mentioned the fact that the utility companies' requirements of access to their pipes and wires precluded the construction of buildings over the former streets; added to this was a Fire Department regulation that stipulated that there be a fire access passage of at least 16' in width between buildings which faced onto, or abutted, the former streets so that fire vehicles might have unrestricted access to the interior spaces. With these constraints in operation, there was not much choice but to arrange the buildings into three sub-units, roughly paralleling the shape of the three former city blocks. The next logical step was to design each of the three semi-enclosed courts as usable and attractive public areas, and to plan for the provision of play and service facilities within easy access of all the units facing onto them. It was determined to place the play space and the service facilities (drying yard and fenced garbage can area) in the center of each court, so that they were easily accessible (particularly the garbage area), and easily visible (particularly the drying yard and play space) from all the units they served. In one court, the topography precluded the provision of these in the center of the court without the costly addition of retaining walls, so here an exception was made and they were placed in one corner.

With the decision made that the living units should all face onto interior courts, the sponsor and designers decided that extra attention should be paid to the landscaping even at the expense of the architecture, for they felt that the environment in which the dwellings were placed (the open spaces, outlooks, public areas, etc.) were just as important - if not more so - in creating a pleasing residential

neighborhood as were the buildings themselves. In fact the sponsor instructed the designers to be lavish with the landscaping, even to the use of expensive semi-mature trees, and if necessary to cut out some of the niceties of building design in order to release some of the budget for this purpose. This decision, to spend time and money making the best possible environment out of the open areas rather than leave them as left-over voids between the buildings, was probably one of the most important ones in the whole design process, and one from which the sponsor and designers never wavered, even when finances got tight.

As stated earlier, the decision to close the streets required that the parking of residents and guests' cars would have to take place on the periphery of the site. Cars could have been accommodated at grade underneath the buildings, but the designers rejected this solution for two reasons. First, the sponsor wanted as many units as possible in the low-rise buildings, and eliminating parking from within the building meant that ground level apartments could be provided, with the added attraction of having access to a patio or garden directly from the apartment. Second, city Fire Department regulations required costly safety additions in the construction of a building where cars were parked within a wood frame structure; since the sponsor's chief directive to the designers was to keep construction costs to a minimum, they decided to remove the cars from the living structures entirely. Parking was therefore to be in common lots on the periphery of the site, and the decision to provide this in partly covered rather than in wholly open lots, was forced upon the designers by the Redevelopment Plan requirement that two-thirds of resident parking should be under cover. The designers persuaded the Agency to modify this requirement somewhat, so that eventually about half the cars were accommodated under cover in parking structures, and 3 open parking lots were provided as well. The designers were in turn "assisted" in their design of the 2-level structures by the natural fall of the land which permitted entrances to be provided to each level at grade, thus eliminating the need for a ramp approach to the upper level.

In the table that follows, we have listed what seem to us to be the main design features of St. Francis Square in the same order we

have discussed them above. Beside each feature is a column listing what seem to be some of the major functional consequences of using that particular design feature, and some of the assumptions about resident-behavior which follow from those consequences.

(b) DESIGN FEATURES AT ST. FRANCIS SQUARE AND ASSUMPTIONS ABOUT BEHAVIOR

<u>DESIGN FEATURE</u>	<u>FUNCTIONAL CONSEQUENCES</u>	<u>ASSUMPTIONS ABOUT BEHAVIOR</u>
1. Low rise buildings	Moderate density of persons per acre Total number of people housed in 3-block area is relatively small Small building masses not dominant in the local scene	Some moderate-income families will choose to live at moderate densities as long as the rents are low enough. People will feel comfortable and secure in a neighborhood where it is possible for them, eventually, to recognize most of the other residents. People will be more likely to make extensive use of public facilities and open space when they are not overcrowded. Residents will not perceive small building masses as being "institutional" Low building masses are a relief to the visual pattern of downtown San Francisco and will be perceived by the residents as being more "suburban" than the rest of the city. Low building masses in this location will not be perceived as being very different from the general mass of building around and will not be used as an orientation focus. Residents can get from the outdoors to their apartment relatively quickly and easily, which is a convenience for those carrying parcels, emptying garbage, intervening in children's quarrels / accidents in the open space etc. The six families which share each public hallway and stairwell will have frequent casual encounters while entering and leaving their apartments, collecting the mail, etc. Mothers of small children will permit them to play outside alone within view of the apartment. Residents will see their neighbors coming and going in the courts and soon learn to recognize them. Residents may interact casually with their neighbors through waving or brief conversations from their balconies. Residents will soon be able to recognize strangers walking through the courts.

DESIGN FEATURE

FUNCTIONAL CONSEQUENCES

2. No through streets

No traffic passing through site

Three blocks tied together as superbblock

Necessitates considerable pedestrian movement

ASSUMPTIONS ABOUT BEHAVIOR

Non-residents of St. Francis Square will be less likely to come into the public areas, use the common facilities, etc. than if they could drive into/through the site.

Mothers of small children will permit them to play outdoors alone, visit friends nearby, walk to school alone, etc. because there are no traffic hazards.

Residents will circulate through the entire superbblock area, feeling that they "belong" to the whole development

Children will have considerable mobility, access to large numbers of potential playmates, different play areas, etc.

Residents will do more walking than they would on an ordinary city block and will see or meet each other very frequently.

DESIGN FEATURE

3. Buildings all turned inwards

FUNCTIONAL CONSEQUENCES

All the living rooms look out onto an interior public open space

All the patios and balconies face onto an interior public open space

All the bedrooms look out onto streets or parking lots

The parking areas are separated from the living rooms and kitchens by the full length of the apartment

ASSUMPTIONS ABOUT BEHAVIOR

Residents will enjoy being able to see a large number of neighboring apartments from their living room and will feel a sense of community with all the families in those units.

Having another living unit face one's own across an interior open space will not seem like an undue invasion of family privacy.

Noise from persons/children using the interior open space will not seem like an undue invasion of aural privacy in the living unit.

Residents will feel safe walking through the interior spaces at night because the living rooms of many apartments look out onto that space.

Residents will use the patios and balconies as points from which to watch the action in the interior open spaces.

Residents will take care of the public open space in their court - and encourage their children to do so - because it forms part of the view from their balconies.

Adults can work in/use their private open space while keeping an eye on their children playing in the interior court

Residents will enjoy improving the look of their balconies (through use of plants, creepers, ornaments etc.) because they are in full view of all the other residents in the court.

Residents will not be disturbed at night by sounds and lights from cars being parked.

Most people do not care about having an attractive view from their bedroom windows.

Activities in the day-time living areas of the apartment will be uninterrupted by the noise or fumes of traffic.

DESIGN FEATURE

4. Fenced patio or balcony attached to each unit

FUNCTIONAL CONSEQUENCES

Every family has access to a private area, however small, which is in the open air

The living room of the apartment looks out onto the patio or balcony

Patios place some of the available ground area into private maintenance

The living rooms of ground floor units are separated from activities/noise etc. in the public open space by means of a small patio surrounded by 4' high slatted redwood fencing

Access to most of the patios is from the living room of the apartment only

ASSUMPTIONS ABOUT BEHAVIOR

There are activities which moderate-income families wish to undertake in the open air which they cannot undertake inside their apartments.

There are activities which have to be carried out in private open space which could not be carried out in public areas.

A balcony or patio opening off the living room seems to increase the size of that room.

A mother sitting in/working in the living room can keep an eye on a small child at play in the patio or on the balcony
Plants or decorations added outside on the balcony or in the patio can be enjoyed while residents are inside their apartments.

Families with patios will enjoy maintaining them themselves
Residents will prefer that some families have access to private patios rather than the public open areas being increased in size.

Residents in ground floor units desire to have their living space separated by distance and fencing from the public open areas.

4' high slatted redwood fences are a sufficient barrier to prevent passers by looking into the private patios.

Mothers of small children will not object to them entering the apartment via the living room after they have been playing in the patio.

Children or adults will not want to enter the public areas directly from their patios.

DESIGN FEATURE

FUNCTIONAL CONSEQUENCES

The balconies project from the facade of the building and have horizontal slatted wood walls at either end

The front of the deck is bounded by a 3' high vertical wooden railing

ASSUMPTIONS ABOUT BEHAVIOR

Residents will be glad to have a balcony attached to their living space when, in the projecting design, it does not take away from the square footage of their interior space.

Slatted wood end walls provide sufficient privacy from overlooking from the adjacent balcony that residents will not be deterred from sitting out etc.

Slatted wood end walls provide sufficient protection from the weather to enable residents to use their balconies for sitting out.

Children playing on the balcony will be able to see through the railing at what is going on below and will not be tempted to climb over it.

Residents will appreciate the wooden end walls and railing since they will easily be able to hang planter boxes, ornaments etc. from them and lend individuality to their dwelling units.

The fact that people in the balcony above can look down into their patio will not deter ground level residents from using their private open space.

Children using the balcony will not push objects through or under the railings and cause annoyance or danger to the residents using their patios beneath,

DESIGN FEATURE

3. Buildings are positioned in rectangular arrangements around three separate interior courts

FUNCTIONAL CONSEQUENCES

Three, visually distinct sub-communities are created within the overall superblock arrangement

Buildings screen the interior courts from wind and onlookers

ASSUMPTIONS ABOUT BEHAVIOR

Residents will recognize their court as being a visually distinct sub-section of the development and will identify with the group of families which live in it.

Residents living in a development housing c.300 families feel the need to belong to/identify with a subgroup smaller than the whole.

Residents will use the courts for sitting out, walking etc. because the building masses will protect them from wind, traffic sounds, and the scrutiny of passers by.

Passers by on the peripheral streets will not be able to see into the inner courts and will not therefore be tempted to wander in and use them.

<u>DESIGN FEATURE</u>	<u>FUNCTIONAL CONSEQUENCES</u>	<u>ASSUMPTIONS ABOUT BEHAVIOR</u>
6. Service and play facilities are provided in each court	Each 100 families has its own set of service and play facilities	Each of the facilities provided can reasonably be shared by about a hundred families. Resident's identification with individual courts will be increased by having a separate set of common facilities.
	The distance any resident must walk from his dwelling to a laundry room, drying yard or play area is relatively short	Residents will adjust to the inconvenience of carrying laundry outside because the distances they have to walk are relatively short. Residents will use the laundry room nearest their apartment and this will decrease the possibility of overcrowding at any one laundry room,
	Service and play facilities are visible from every apartment (in courts 1 and 2)	Small children will tend to use the play area in their own court because it is within view of their own home. Residents will use the common drying yards since they are within view of all the apartments.
	Service and play facilities in court three are not within view of all the apartments	Families living in court 3 will not mind their small children playing outside alone, even if they cannot see them from their apartment. Families living in court 3 will use the drying yard even though most of them cannot keep an eye on it from their apartments.

DESIGN FEATURE

7. There is generous landscaping throughout the super-block.

FUNCTIONAL CONSEQUENCES

The landscaping creates a pleasing visual impression

Landscaping contrasts strikingly with the built-up nature of the surrounding neighborhoods

Most of the surface area of the public open spaces is in grass

Semi-mature trees were used rather than small, immature ones

Landscaping lends visual continuity to the three-block area

ASSUMPTIONS ABOUT BEHAVIOR

Residents will make considerable use of the outdoor spaces because they are visually attractive.

Residents will be concerned about high standards of maintenance and will do their best to deter vandalism etc.

Residents will feel a sense of uniqueness about their homes because they are located in an environment which is different from its surroundings.

Grass areas are popular for children's play and will be extensively used.

Grass areas will also be used for informal adult sitting and socializing.

There is more need for grass surfaces than for hard surfaces in a moderate density, family neighborhood.

In a neighborhood where there are many children, semi-mature trees will have a better chance of survival than immature ones.

Residents in a new neighborhood will prefer it if the eventual landscaping effects envisioned by the designer are there almost from the beginning.

Most residents will prefer to see a number of attractive trees from their apartments rather than have certain other interior amenities instead.

Residents will perceive the landscaping that is present in, and connects, the three separate courts and will think of them as forming one single community.

DESIGN FEATURE

3. Common parking areas are provided on the periphery of the site

FUNCTIONAL CONSEQUENCES

Cars are not visible from the windows of most apartments

Pedestrian pathways are provided between the parking lots and the dwelling units.

The ground level of every building can be used for dwellings rather than garages

The play areas are separated from the parking areas and access roads by the buildings

The sidewalks on the peripheral streets are uninterrupted by frequent breaks in the curb leading to private garages

ASSUMPTIONS ABOUT BEHAVIOR

Most people do not want to be able to see their parked automobiles from their apartments.

Cars parked in a common lot not within view of most apartments will not be subject to vandalism or theft.

There will be considerable pedestrian traffic between parking lots and the buildings.

The entrance to each building which is most used will be the one nearest to the parking lot.

Residents will adjust to the possible inconvenience of having to walk some distance from their apartments to their cars.

Some residents will appreciate the possibility of having an apartment at ground level with access into a private patio.

Most residents will appreciate the fact that they are not disturbed by the noise or fumes of cars driving under the buildings.

Mothers will permit their children to play outside when there are no traffic hazards or temptations to play among parked cars.

Guests of residents will find ample parking provision along peripheral streets.

(c) Reasoning behind the design features used at Geneva Towers

The decision to use high-rise buildings at Geneva Towers arose from the fact that the sponsor needed to re-coup the high cost of the land in a short time; he planned to build row houses on three-quarters of the site, and high-rise buildings on the fourth quarter - the revenue from the sale of the houses being used to partially finance the design and construction of the high-rise buildings. The high-rise buildings would then increase the overall density on the total site and increase the financial return to the sponsor in the form of rents.

The early versions of the site plan envisioned four point block buildings on the site where Geneva Towers now stands. Due to the protests of a local nurseryman who maintained that the buildings would put his greenhouses in shade for half the day and ruin his business, the sponsor instructed the architect to modify the design, and the result was a switch to two slab buildings, so arranged on the site that their shadows did not affect the greenhouses. Shifting the same number of units from four point blocks into two slabs resulted in two large building masses, and in an attempt to tone down the long straight lines of the facades, the architect introduced tri-partite divisions. He felt that the building mass, as originally conceived, would be somewhat oppressive and that the tri-partite division would make it seem like three connected towers rather than one long building. In order to fit the number of units required by the sponsor into two buildings, the architect was forced to use a double-loaded corridor form of access, the width of the slab being equivalent to two apartments plus the corridor. The result of this was that only half the dwelling units could face onto the open space between the buildings.

The length of the slab building was determined by two factors: one, the sponsor did not want there to be more than two fire stairs in each building (one at either end) since these were expensive construction items; and two, the City Fire regulations stated that no unit should

be more than 20' from the nearest fire stair. Thus, the building's length had to be in the region of 160', plus the length of a bank of three elevators placed centrally in the building.

The decision to place the buildings at right angles to each other rather than, for instance, parallel, was determined largely by the need to avoid having one building blocking the views of the other. With the buildings placed at right angles to each other, toward the edges of the site, the only place for the public open space needed for play and outdoor recreation was obviously in the angle between them. The effect of this was that the space was strongly bounded on two sides - by the buildings themselves - but was not bounded at all on the other two sides where streets formed the edges of the site. To off-set this lack of a strong boundary, the landscape architect introduced mounded areas planted with semi-mature pine trees on the two sides closest to the streets, as an attempt to delimit the open space, to prevent children from running out onto the streets, and to offer some protection from the wind. In the open space itself, the landscape architect introduced generous planting and a large lawn area in an attempt to avoid a possible institutional look created by the large building masses, and also to provide a pleasantly designed green area for residents in apartments above to look down on. Play equipment was installed in two defined areas, at either end of the large oval lawn, and within view of all the apartments which look out over the open space. The decision not to include play areas for older children (i.e., full-sized equipment areas, basketball courts etc.) was made at the urging of the FHA, who suggested that older children in the Towers would be able to use sports and play areas in nearby parks and public housing projects. It was felt too that the smaller children could also use the tot-lots in the row houses section of the site, and that therefore the provisions for them in the Towers open space need not be over-generous.

With a total of almost 600 families to be housed on this site, the problem of parking was an important aspect of the design that had to be solved. Parking at grade on open lots would obviously be enormously wasteful of land, apart from being unpleasing in aesthetic terms. Since considerable excavation work had to be done to lay the foundations

for the two high-rise buildings, it was determined to provide for parking in two, ~~a~~-level, quasi-underground structures, and to use the tops of these structures for landscaped public open space for the residents. One of these structures is placed in the angle between the two buildings, its roof forming a raised landscaped plaza, and one level of the garage itself forming an all-weather passage-way between the two buildings. The other structure is located in front of Building B, its roof forming another raised plaza, at a slightly lower level than the first, with part of it used as outdoor play space for the day-nursery. This plaza also forms a 'barrier' between the edge of Building B and the potentially noisy activities on the open lawn area.

Within the buildings themselves, provision of only two- and three-bedroom apartments was a requirement for FHA financing, since the development was to house only families. The decision to provide each family with some private open space in the form of a balcony was made jointly by the sponsor and the architect, for they had successfully provided balconies in a previous building on which they had collaborated, and they felt they could include them without any increase in construction costs. In addition, the sponsor agreed that balconies resulted in considerable savings in subsequent maintenance costs (i.e., window cleaning), and that the presence of balconies allayed people's fears about living at some height above the ground, as well as providing families with a pleasant area in the open air that was private. The balconies were initially opposed by the FHA, who felt that they were an unnecessary and costly extra, but eventually they were convinced they could be provided with little increase in cost. The decision to provide recessed rather than projecting balconies had to do with previous experience of the sponsor and architect in providing similar balconies in another building.

Since front doors opposite the elevators would be somewhat lacking in privacy, and since the sponsor wanted a laundry room to be provided on every floor of the building, the decision was made to locate the laundry room opposite the elevators in the center of the building, easily accessible from all the apartments on the floor it was to serve.

The fact that the buildings were slabs rather than point blocks meant that there was a considerable area of ground floor space at the

base of the building that had either to be used for apartments (and some provision made for screening for privacy) or it had to be used for public rooms and communal facilities. Since the laundry rooms were to be provided on every floor, this particular communal use had already been taken care of. There remained the need for parking space, office space for the management, a meeting hall for social events, tenants' group meetings etc., and space for a day-nursery with adjacent open-air play space; the decision to include these latter two uses came from the sponsor who had successfully provided such facilities in his suburban developments of single-family and row houses, and felt that they would especially be needed here because of the limited space within the apartments, and because of the special needs of working mothers in moderate-income families. These then were provided at ground level, adjacent to the entrance foyers in each building, where space also had to be provided for mail boxes, notice boards, public telephones, vending machines, and waiting space for the elevators. These uses did not take up all of the ground level area of the buildings, and the remainder was utilized for parking in Building A and for apartments in Building E. The latter open onto small patios providing a barrier between the living room of the unit and the users of the public space outside.

(d) DESIGN FEATURES AT GENEVA TOWERS AND ASSUMPTIONS ABOUT BEHAVIOR

<u>DESIGN FEATURE</u>	<u>FUNCTIONAL CONSEQUENCES</u>	<u>ASSUMPTIONS ABOUT BEHAVIOR</u>
1. High-rise buildings	High density of persons per acre	Some moderate-income families will choose to live at high density as long as the rents are low enough
	Low building coverage and high open space coverage of site	The open space around the building is easily accessible to large numbers of people. Most families will not mind sharing the open space with many other families.
	Large building masses dominant in local scene	Buildings will be used as landmarks or orientation foci in community by both residents and neighbors alike. Residents in the surrounding neighborhood will not perceive high-rise residents as being any different from themselves. Residents will not perceive large building masses as being "institutional".
	Elevator access is necessary to all but a few apartments	Residents will not find it irksome occasionally to have to wait for the elevator. There will not be items which residents may want to take to their dwellings which do not fit into the elevator. Children will be able to - and be permitted to - operate the elevators and go to the entrance hall or outdoor areas without being accompanied by an adult.
	Access to all units is via public interior spaces (hall, elevator, corridor)	Most residents will enjoy the encounters with neighbors which take place in public interior areas. Residents will perceive of public access spaces as being extensions of their dwelling and will behave in them, and take care of them accordingly.
	Most units have common partitions with four other units	Most families will not find living in close proximity to several other families to be a hardship, or to limit their behavior

DESIGN FEATURE

FUNCTIONAL CONSEQUENCES

Most dwellings are at a higher elevation than those in the surrounding neighborhood.

Many families live above reasonable recognition and calling distance from the ground.

ASSUMPTIONS ABOUT BEHAVIOR

Residents will enjoy the possibility of extensive views over the city.

Most families will not object to the exposure of their dwelling unit to wind and direct sunlight.

Most families will not perceive as a hardship the fact that they cannot recognize or call out to people passing by at ground level, or children playing in the open space.

DESIGN FEATURE

2. Two long slab buildings with tri-partite divisions of their facades

FUNCTIONAL CONSEQUENCES

A large number of dwelling units are provided in each building

Large areas of ground level space in the building can be put to use as communal or service space, (halls, offices, social rooms, day nursery, etc.) with direct access at grade to the outside.

The length of the building will permit certain units to be provided at ground level.

A bank of three elevators is necessary in order to serve the large number of families living at each level.

Access to each apartment is via a long double loaded corridor

The building facade is designed to give the impression of three adjacent towers

ASSUMPTIONS ABOUT BEHAVIOR

Many families will enjoy the opportunity for anonymity which living in one building with 298 other families affords.

A great many families living in one building will be able to sustain ordinary social and neighbor relations.

Residents will use the public areas and facilities provided on the ground floor regardless of what floor of the building they live on.

Families living in ground level units will not find their proximity to public open space to be an undue intrusion into their privacy.

Most residents will not mind the chance meetings with neighbors while waiting for the elevator.

People living on a double loaded corridor will come into face to face contact with many persons and will appreciate the opportunity for social encounters which this affords.

Families living in a double loaded corridor will be considerate of their neighbors and cooperate in keeping down noise and keeping up appearances.

Families living in a double loaded corridor will discipline their children not to make noise in the corridor, not to deface the walls or damage the carpets, and not to play in the corridor or leave their toys where people can trip over them.

People will choose to live in a high-rise slab building if the design of the facade is sufficiently broken up to suggest smaller units.

DESIGN FEATURE

3. Buildings oriented at right angles to each other

FUNCTIONAL CONSEQUENCES

Neither building directly blocks the view from the other.

The ground level space between the buildings is enclosed only on two of its four sides.

ASSUMPTIONS ABOUT BEHAVIOR

Most residents want unobstructed views from their dwelling units.

Most residents want privacy from overlooking when in their dwelling units or balconies.

Most residents are not concerned about the public open space near the dwelling units being enclosed.

Activities which take place in unenclosed public space are similar to those which take place in enclosed space.

The fact that the open space is not enclosed will not deter mothers of young children from permitting them to play outside alone.

Residents will not be disturbed by "outsiders" wandering into their public area and making use of it.

The scale of high-rise buildings will not seem so large if the space at the base of the buildings is unenclosed.

DESIGN FEATURE

4. Parking in covered, 2-level structures adjacent to buildings

FUNCTIONAL CONSEQUENCES

Residents are assured of parking space close to their apartments.

No parked cars are visible from any of the apartments.

A parking charge is levied, in addition to rent.

None of the parking areas are outside.

The tops of the parking structures are covered by landscaping

ASSUMPTIONS ABOUT BEHAVIOR

Most people want to park as close as possible to their dwellings.

Most people find views of parked cars to be unpleasant.

Most people do not care about being able to keep an eye on their car from the windows of their apartment.

A parking area which is not overlooked by residents will not be a temptation to possible vandals and thieves.

Most families will be prepared to pay \$10.00 extra a month in order to be able to park their cars in an official, supervised lot.

Children will not be tempted to play in a half-empty parking lot if it is covered.

There will be such great demand for usable public open space in a high-rise development that landscaped areas over parking lots will be used.

DESIGN FEATURE

5. Extensive public open space in the angle between the buildings

FUNCTIONAL CONSEQUENCES

Public open space is easily accessible from all apartments.

The main area of open space is visible from only half the apartments

ASSUMPTIONS ABOUT BEHAVIOR

People living in high-rise apartments feel the need for some "compensation" in terms of public open space for the limited interior space they have available to them in their dwelling units.

People living in high-rise apartments will use the public open space provided for them.

Families with children in high-rise buildings want some open space near to their apartments and accessible to the children without having to cross any streets.

Most residents will not be bothered by the sounds of children playing in the space between the buildings.

People with dogs will use the open space for exercising their pets.

Families with children will permit them to play outside in the public area whether or not they are visible from the apartment.

DESIGN FEATURE

3. Generous landscaping in the public open space

FUNCTIONAL CONSEQUENCES

A green environment will distinguish this development from other federally-assisted housing areas.

Semi-mature trees will act as foils to streets and building facades and take attention away from their size.

Landscaped plazas are designed for looking down on and walking through.

A large lawn area will provide the one flat grassy area in the neighborhood and will be used by residents of both Geneva Towers and Geneva Terrace.

Benches and low walls are provided in many places.

Mounded areas with ice plant and pine trees planted on them form boundaries to the open space on its unenclosed sides.

ASSUMPTIONS ABOUT BEHAVIOR

Residents will not perceive this development to be "Government housing" since its open spaces are treated differently from existing housing projects.

Most people find building facades and street depressing and will have their attention diverted by trees if they are provided.

Most residents in high-rise buildings look down at the ground close to the building and appreciate an attractive layout.

Most residents in high-rise buildings need a pleasant area in which to walk, close to their apartments.

There are outdoor activities which require a large, flat grassy area.

An outdoor activity area can be successfully shared by families from differing socio-economic background.

Adults living in high-rise apartments want attractive places in which to sit close to their homes.

Children spend some of their playing time sitting and talking, or watching others.

Residents will perceive low mounded areas as being boundaries to their open space.

Mothers of young children will not be concerned about them running out onto the street from the lawn area.

Young children will not be tempted to climb on mounded areas covered with ice plant.

DESIGN FEATURE

7. Play equipment provided for 2-6 year olds in open space between buildings

FUNCTIONAL CONSEQUENCES

Only equipment for 2-6 year olds is provided.

The play equipment is within view of only half the apartments in the two buildings.

ASSUMPTIONS ABOUT BEHAVIOR

Children of 2-6 years need play equipment to keep them amused when playing outside.

Children over 6 are permitted to walk alone to nearby areas where play equipment is provided.

Children over 6 will not use the areas provided for younger children when areas specifically for their age group are not provided.

Mothers of children under 6 will permit their children to play outside alone, whether or not the play areas is visible from their apartment.

DESIGN FEATURE

3. Mixture of 2- and 3-bedroom units

FUNCTIONAL CONSEQUENCES

Residents will tend to be families with children.

There will be more people and more activity per unit than is true in an apartment building of studios and 1-bedroom apartments.

ASSUMPTIONS ABOUT BEHAVIOR

There is a demand for moderate cost rental accommodation for families.

Families with children do not mind living in apartments.

Families with children do not encounter problems living in a high-rise building.

Families with children desire to live in dwelling units close to similar families.

Families with children do not mind living in a community where there is a dearth of single or elderly people.

Mothers of young children will not find curbing of children's noisy behavior to be an annoyance.

Members of each family will not intrude on each other's space in the apartment.

DESIGN FEATURE

9. Private open space provided in the form of recessed balconies with iron railings

FUNCTIONAL CONSEQUENCES

A proportion of the interior space of each apartment is "lost".

The living space of the dwelling looks out onto a balcony.

Sliding glass doors to the balcony comprise part of the living room exterior wall.

Balconies form hollows in building facade (because recessed), rather than projections from it.

Space is provided for certain family/individual activities which cannot be undertaken inside the apartment.

ASSUMPTIONS ABOUT BEHAVIOR

Most people will be happy to relinquish some of their interior space in order to have some private outdoor space.

Most people living in high-rise buildings have trouble adjusting to living at some height above the ground.

Looking out from the living room to a balcony diminishes the feeling of a precipitous drop and allays some of the residents' initial fears.

Residents will not find large glass expanses bothersome in terms of heat control.

Residents will not find the cleaning of glass doors an undue annoyance.

Moderate income families will not object to the expense of providing drapes for glass doors.

Most people desire the maximum of privacy from overlooking while using their private open space.

Most families will perceive recessed balconies as offering an adequate amount of privacy.

Some items can be stored or left on the balcony with reasonable protection from the weather.

The climate in this location makes the use of outdoor areas both feasible and desirable.

Moderate income families will want to use their balconies for various activities.

Mothers living in high-rise buildings will permit their children to use the balcony for outdoor play and will not be apprehensive about their safety.

Children using the balcony will not push objects through or under the railings and cause annoyance/danger to people below.

People will clean their windows from the balcony and will prefer this over paying the management to do it.

DESIGN F2/TURE.

FUNCTION/L CONSEQUENCES

10. Communal laundry rooms provided at a central point on each floor . .

Space which might have been used in the apartment for a washer and/or dryer is released for other purposes.

Personal investment in a washer/dryer is not required.

Shared laundry equipment is larger than the type of equipment that most families can afford, or can find room for.

Enough equipment is provided in each laundry room so that several persons can be doing their washing at the same time.

The laundry room is located centrally on each floor, opposite the elevators.

ASSUMPTIONS ABOUT BEHAVIOR

Most residents will prefer to do their washing in a common facility rather than take up space for the equipment in their own apartment.

Most residents will prefer not to have to invest money in a washer/dryer and to share the cost of using common equipment.

Most families will appreciate the time they save by doing their laundry in large machines, even if they do have to carry the washing a short way from their apartments.

Most residents will enjoy the opportunities for casual social contact with their neighbors which takes place in the laundry room.

Residents will use a laundry room to which they have to walk, at the most, half the length of the building.

Residents will prefer the laundry room to be located so that the entrance to it is not opposite their front doors.

The central portion of each floor where residents go to and fro to the laundry room and elevators will be perceived as being a different kind of space, permitting different kinds of behavior, than the remainder of the access corridor.

DESIGN FEATURE

11. A large meeting room with kitchen provided at ground level in Bldg. A, and a day nursery with outdoor play area at ground level in Bldg. B

FUNCTIONAL CONSEQUENCES

A room for meetings or social events is adjacent to the main entrance, offices, and elevators.

A day nursery is provided within a few minutes walk of all the apartments.

ASSUMPTIONS ABOUT BEHAVIOR

Noise from large meetings, dances etc. in a room at ground level will not disturb residents in their apartments above.

A viable tenants' organization is more likely to be formed if a physical facility is provided to house group meetings.

Residents are more likely to attend meetings if they only have to walk a short distance from their homes to the meeting place.

There is a demand for day-care facilities for small children in a moderate-income community.

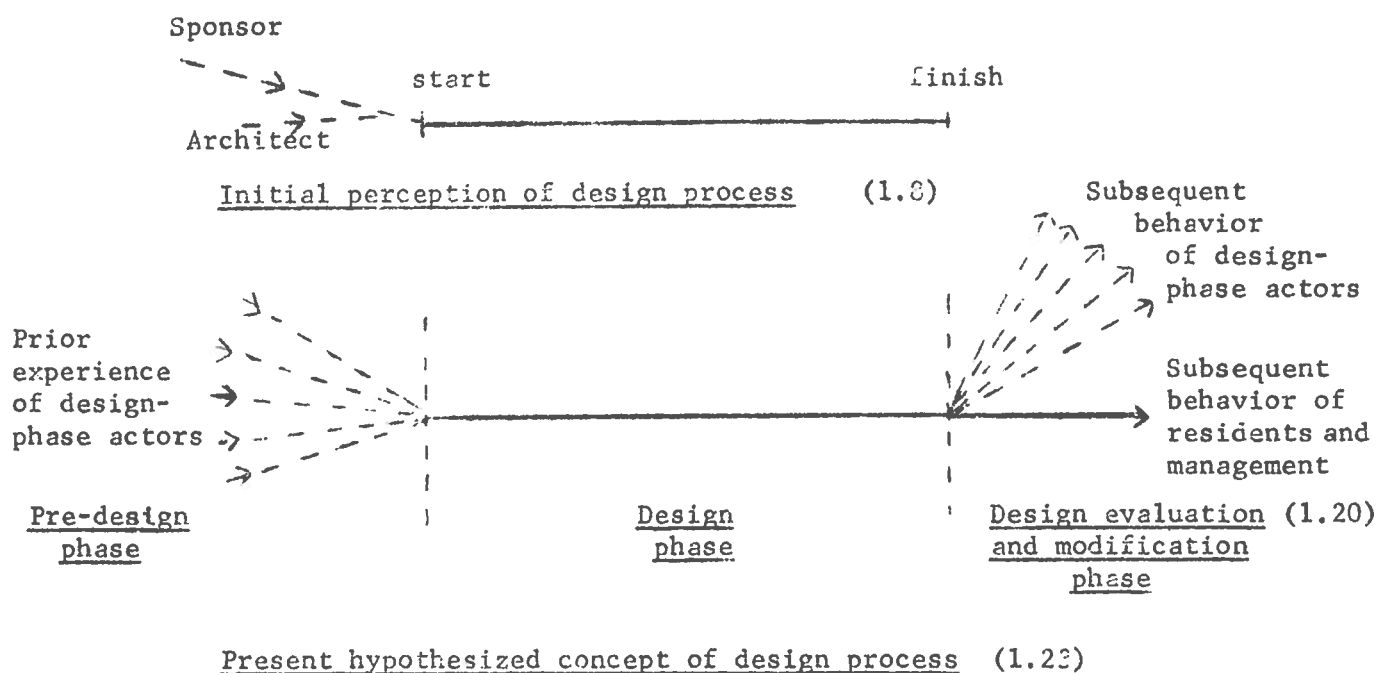
Women who have not previously been able to work will now be able to do so.

If a facility is provided within walking distance of the home, it will be more frequently used than if it is provided a drive or bus-ride away.

VIII. THE DESIGN PROCESS AS A HAPPENING IN TIME

It is tempting to look at "the design process" at a particular site as an isolated event in time with little relation to what happens before or after it. In a sense, a case study must do this in order to set its own limits, but just as we have seen above that there are many constraints "in space" which effect the design process (codes and ordinances in effect in City, existing street pattern, topography etc.), so there are also events in time which have effects on, and are affected by, that process. As we see it, these effects occur through the medium of the actors involved in the process and may be divided into two categories: those prior experiences of the actors which seem to have had a direct effect on their decisions during the design process; and the subsequent behavior of the actors which seems to be a result of experience gained during that process. Thus, if we think of the process as a behavioral event, we are concerned with how previous behaviors had a bearing on this particular event, and how in turn, it affected subsequent behavior. In the life-span of each actor, the design process on which our study is focused is of course a temporal event which is just part of a life-continuum. And we must concede that at the outset of our study we did not conceive of it as such, but rather as an isolated and bounded event; but as interviews with the actors proceeded, it became apparent to us that we had been erroneous in this viewpoint.

For the sake of clarity and brevity, we have decided to present this material in note form: first are listed those prior experiences in the lives and careers of the actors which seemingly influenced their decision-making during the design process, and second are listed those subsequent behaviors and ways of thinking which seem to have been affected by the experience gained during the design-process under scrutiny.



(a) Prior experiences of actors which affected design decisions at St. Francis Square

1. Acting Chief Planner at the San Francisco Redevelopment Agency who had studied planning in the East, had known Clarence Stein and been influenced by his theories of site planning as evidenced at Radburn, N.J., Chatham Village, Pittsburg, and Baldwin Hills, Los Angeles, strongly recommended acceptance of ILWU- Marquis and Stoller proposal because it incorporated a number of Stein's site-planning features (e.g. the superbloc, inward turning of buildings onto common open space, saving of space for play and recreation through careful arrangement of buildings).

2. Architects had had no previous experience with urban renewal and entered the design-process as naive "innocents"; their free-wheeling exploration of ideas might have been inhibited if they had entered the process with more experience.

3. One of the architects had grown up in a Union-sponsored, co-op apartment development in New York City and had personal experience of the effects of co-operative ownership on property and grounds maintenance, the curtailment of vandalism and petty crime; he strongly supported the client-sponsor's plans for co-operative ownership in this scheme.

4. Architects' previous experience had largely been in institutional buildings (e.g. schools) where they had specified expensive, hard-wearing materials and finishes; wanted to use these in this scheme until convinced by builder and sponsor that budget wouldn't permit it.

5. Client-sponsor was totally inexperienced in the housing and building field; did not attempt to influence the architects' design-decisions.

6. Client-sponsor's "innocence" in building/housing field necessitated hiring a co-ordinator (Dunleavy) which facilitated smooth running of design process and smoothing over of potential conflicts between actors.

7. Co-ordinator's prior experience with public housing and FHA financing, and personal contacts with Union officials made him a particularly effective person in liaison position.

8. Prior experience of co-ordinator with housing construction made him aware of possibility of damage and vandalism during construction, which would increase costs; consequently persuaded client-sponsor to hire Negro manager in construction phase to set up good Public Relations links with neighborhood; resulted in no losses or damage during building stage.

9. Local contractors had had no previous experience with certain construction techniques suggested by architects (e.g. floating floors) and were unwilling to try using them; certain innovative features therefore eliminated.

(b) Prior experiences of actors which affected design-decision at Geneva Towers

1. Client-sponsor had grown up in high-rise apartment building in New York City and favored this form of environment for family-living.

2. Client-sponsor had grown up in a mixed-ethnic neighborhood and was strongly in favor of integration in housing; he had a successful record of selling to all races in his suburban housing developments.

3. Client-sponsor had provided community-rooms, day nurseries etc., in his upper-middle class suburban housing developments and thought these were essential in any neighborhood, and perhaps especially so where there would be numbers of working mothers.

4. Client-sponsor had built a number of high-quality, luxury apartment blocks in San Francisco and saw no reason to reduce quality because housing intended for lower income groups.

5. Architect's previous experience in high-rise buildings had been in luxury apartment houses; saw no reason to change nature of interior or exterior community facilities because now designing for lower income group families.

6. Architect did not have a family and was not aware of the needs of children in a high-rise apartment block.

7. Landscape architect had previously worked for the Chicago Housing Authority reviewing the designs of public housing projects; he was anxious to avoid the institutional look of many projects which he had seen or reviewed.

8. Client and architect's previous joint experience in building and renting high-rise apartments had convinced them that balconies in such buildings were an important selling point, and that cost of providing them increased construction costs by only a small amount.

(c) Subsequent behavior which seems to have been influenced by design process at St. Francis Square

1. Sponsoring Union has gained in prestige from success of St. Francis Square, possibly most of all from its success as a harmoniously integrated neighborhood; has been approached by Mayor Alioto of San Francisco to use experience gained at St. Francis Square to venture further into housing in redevelopment areas.

2. Architects have become involved in 221/d/3 financed housing in Richmond, California, and are using experience gained in design of St. Francis Square.

3. Architects - using informal "feedback" from residents of St. Francis Square - are aware they must do certain things differently in future moderate-income housing projects, specifically: providing a more spacious kitchen with room to eat in; designing apartment interiors with more flexibility; providing more facilities for teenagers; emphasizing social importance of laundries; emphasizing overall strength of the design so that residents' attempts at giving exteriors of own units a sense of identity doesn't create a hodge-podge effect; inward-turning of a design of this sort should be emphasized even further; physical "barriers" between a project of this sort and its surroundings should be made even stronger.

4. Architects are more aware since this experience of their "ignorance" in certain areas and of the need for more research to supply them with definitive answers in such areas as: the background, ways of life, and needs of moderate-income families; the ideal number of families around a court or interior common open space; the "ideal" number of families using a common entrance or stairway; the ways in which people of different income groups use interior living space (i.e. whether they eat meals in kitchen, need a second bathroom etc.); the range and nature of people's needs for privacy; auto-ownership rates; attitudes towards parking and its relationship to dwelling unit.

5. Landscape architects have become aware of many tenant changes to exterior landscaping at St. Francis Square and have been involved in some of them; the firm is presently documenting these and the information gained will be fed into a programming study for the exterior spaces at a large housing venture at Flushing Meadows, N.Y., funded by HUD.

6. Landscape architect would do more research in future project of this kind on the following: the social importance of communal laundries; the background and needs of moderate-income families.

7. Landscape architect, if re-designing this project, would do the following things differently: make the central enclosed sitting and meeting plaza more enclosed and sheltered and less of a passageway; provide a central play area in every court (and not place one in corner, as in one of the courts); place more art work (e.g. a fountain) in open space; give less space over to parking; use space over/under parking more effectively (e.g. for storage).

8. Economic consultant/co-ordinator (Dunleavy) moved on from St. Francis Square job to be a consultant to the architects of the Acorn redevelopment project in Oakland; career as a housing consultant has become more cemented.

9. Informal 'feedback' from St. Francis Square has influenced Dunleavy's advice to the Acorn architects who at his suggestion have modified their design in the following ways: individual units have been made as close as possible like single-family houses (e.g. entrances at grade, private open space etc.); no interior corridors, and common stairways have been reduced to a minimum to reduce maintenance costs; the amount of common open space in grass has been reduced, and in concrete, increased, to reduce maintenance costs; greater proportion of private to public open space than at St. Francis Square.

10. The builder (Jack Baskin) in the next project he worked on (Marina Vista, Vallejo) became the sponsor-builder with a "captive" architect in tow to avoid the conflicts he had experienced among these three sets of actors at St. Francis Square.

11. The builder utilized 221/d/3 limited profit financing in his next project; had formerly used private financing but was impressed with the possibilities of the 221/d/3 program, although did not feel he could be as "altruistic" as Union in not making a profit.

12. The builder was influenced by the design solution at St. Francis Square in that at Marina Vista he insisted upon the following design features: turning inwards of the buildings and placing the parking on the periphery; providing an office for the sales person/manager; providing adequate storage for maintenance equipment (lawn mowers, hoses, etc.); providing dwelling units with exterior access (at grade and by means of exterior stairs) rather than by interior stairs; providing a dining area adjacent to the living room and kitchen; providing private open space for the ground level units; not providing balconies because of altercations with the client and co-op organisation at St. Francis Square over construction of these features.

13. Legal consultant to the PMA (Richard Adams) with experience gained during development of St. Francis Square has now set up his own firm specializing in the legal aspects of housing.

14. After pressure from the sponsor and his legal consultant, the FHA has changed its regulations regarding tenants having to move out of a 221/d/3 sponsored housing project after passing a certain income level; this new ruling now applies all over the U.S. to this type of housing.

15. St. Francis Square as a finished entity has set a standard of good design and livability which subsequent moderate-income housing developments in the Western Addition urban renewal area (and to a less extent, all Bay Area renewal areas) have had to "live up to".

16. For the San Francisco Redevelopment Agency - and particularly for its director, H. Justin Herman - St. Francis Square has become a symbol of what can be achieved through redevelopment, and an example of achievement to be waved in the faces of hostile detractors of the renewal process.

(d) Subsequent behavior which seems to have been influenced by the design process at Geneva Towers

1. Sponsor has had his prior opinion confirmed by experience at Geneva Towers, notably, that there should be social programs to teach people how to live in high-rise buildings.

2. Sponsor's insistence that cost-of-living index on which rents, and therefore, construction costs were judged by FHA should be up-dated more frequently to be realistic, was finally conceded to by FHA and their policy on this matter was changed.

3. Architect considers not enough thought was given to provision of play facilities, and how space would be used by children; was not surprised at vandalism which has occurred ... "there's nothing much for the kids to do there"... Presumably would give more thought to this if involved again in project of this sort.

4. Architect now designing for use of slip-forming technique in all high-rise buildings; first used at Geneva Towers.

5. Landscape architect would provide more hard-surface areas for play in future projects of this kind.

6. Landscape architect aware now that designing for project that is financed through Government lending institutions (i.e. FHA) must be more carefully thought out since design goes through strict review which doesn't occur when financing is private/conventional.

(e) Summary

As the preceding notes indicate, there appears to have been many more 'prior influences' and 'subsequent behaviors' in the case of St. Francis Square, than in the case of Geneva Towers. There are probably

a number of reasons for this; first, as we have indicated earlier, the numbers of "actors" involved in the design process was larger at St. Francis Square; second, because St. Francis Square was the first 221/d/3 housing project to be built in the Bay Area; and third, because most of the actors at St. Francis Square (the architects, the builder, the co-ordinator) have gone on into further work with 221/d/3 and therefore have been direct pay-offs from the experience they gained there. The same is not true of any of the actors at Geneva Towers.

But perhaps more importantly than any of these reasons, the development of St. Francis Square was unique, both because it was the Redevelopment Agency's first attempt to produce moderate-income housing through the renewal process, and because it was the first experience in the housing field for the sponsoring Union. The actors involved were consequently highly motivated to make this a success. Indeed, our feeling from the interviews was that most of them were determined that this should be an outstanding housing development, superior to any already built in San Francisco for this income group, and perhaps superior to any built anywhere in the country. A good deal of thought, argument and discussion went into the design process and prior experiences were drawn upon by most of the actors to back up their decisions. And, as we have stated above, most of the actors involved are now engaged in further 221/d/3 housing projects and have directly used the experience gained at St. Francis Square in their subsequent decision-making.

At Geneva Towers the story is somewhat different, both as regards prior influences and as regards subsequent decision-making. To begin with, the site at Geneva Towers was not thought of from the start as one for moderate-income family housing; indeed the first design was for luxury apartments and it was only after the sponsor-builder began to get into financial difficulties that the question of building moderate-income family housing financed through 221/d/3, was raised. Their aim was not necessarily to build an outstanding housing development, but rather to build one that would adequately meet the requirements of the FHA in order to qualify for 221/d/3 financing. Our feeling from the interviews was that relatively little

discussion went on among the various actors in the design phase, partly because there were just fewer actors whose needs had to be met, and partly because the client-sponsor-builder were one and the same man whose prior experience in the housing field had been considerable, who had a strong and forceful personality, and whose needs and wants were well understood by the architect with whom he had worked on many earlier projects.

The experience gained by the actors at Geneva Towers and "fed into" subsequent decision-making seems to have been relatively limited compared with the story at St. Francis Square. Part of the reason for this is that the client-sponsor-builder sold his interest in Eichler Homes before construction at Geneva Towers was completed and has not subsequently been engaged in high-rise housing construction. It also happened that neither of the designers involved has subsequently done any work in the moderate-income housing area and therefore any experience gained has not had an opportunity to be put to use. We also had the feeling that neither of the designers was strongly motivated to find out how Geneva Towers had worked out as a place to live, though an understandable reason for this may be that both of them lost money when the ownership of the building changed hands, and some of the landscape architect's original design was changed by the second owner without his consent. This, together with seemingly poor upkeep of many of the outdoor areas, has made them reluctant to spend time there observing how their designs worked out in reality. Perhaps the only two significant pay-offs from the experience at Geneva Towers were, one, that the slip-forming construction technique tried there for the first time by this architect is now used by him in an all high-rise building, at some saving in construction costs; and two, that FHA regulations concerning the up-dating of cost-of-living: rent ratios have been changed. As far as we could discern, there have been no other direct pay-offs from the experience gained here though presumably should any of the actors subsequently be involved in moderate-income housing, their recognition of "errors" at Geneva Towers (e.g. not enough thought given to play areas for the children) would be put to good effect.

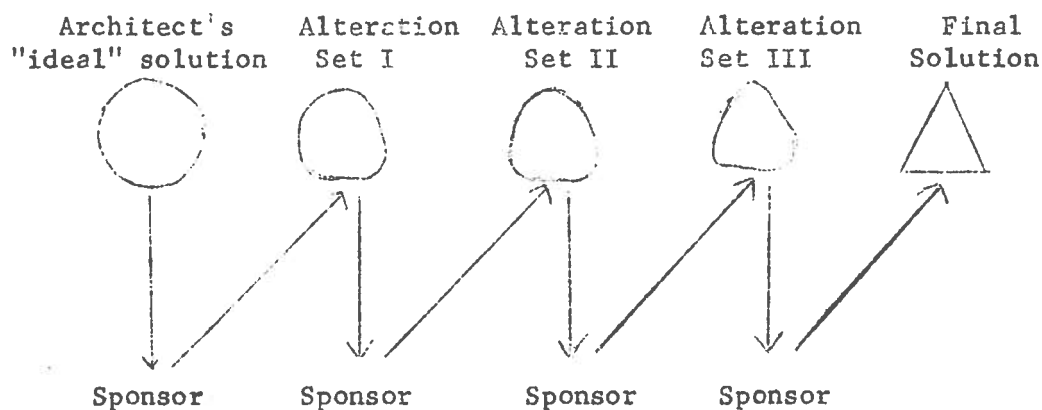
IX. CONCLUSION: A REFORMULATION OF THE DESIGN PROCESS

Our initial conception of the design process, as described in the original research proposal (October 1967), was general and did not make explicit our own working assumptions. The proposal stated, "... we begin at the beginning, with the designers of the housing. Designers make assumptions about user-goals and user-needs which have two critically important consequences: their assumptions as to goals may not match those of the subsequent residents, and their design solution for fulfilling user-needs may be wrong. We believe that both these steps may result in mistakes which are often repeated, unknowingly, by designers and developers. This repetition occurs partly because designers are not more accurately informed about user-needs and partly because they rarely return after the fact to check on how their designs worked out in reality."

Our first step, then, was to reconstruct our own uninformed version of what the design process is and how it works - that is, to describe to ourselves what we had thought, from our own observations and experience, was going on. Our view, in retrospect, was rather naive, and posited a rational, sequential process. In terms of power, we assumed that the architect was the major agent of decision. In terms of sequence, we imagined that a person with money to invest in real estate selected an available site and hired an architect or set of architects to come up with a physical picture of what the investor wanted to see built; in sum, we assumed that the investor provided the site, with all its associated physical characteristics, a budget, and some vague ideas that had to do with his taste or his notions about housing or his image of himself as a provider of housing or as a smart businessman or as a big profit-taker. The architect then digested all this and went to his drawing-board and "brainstormed" a solution which attempted to meet the desires and budget of the investor, but which also satisfied his own notions about housing, and about his image of himself as a good designer, a getter of contracts, an experienced technician, and so on. Then, presumably, the architect went back to the investor and more or less convinced or persuaded him that he knew best, that his solutions were superior not only to the vague dreamings

of the investor, but to all other architects, and that furthermore they were financially feasible - whether or not they exceeded the original budget - and that their physical realization would stand as something of a monument to both the investor and the architect. In our own minds we were positing a certain amount of conflict between the investor and the architect over some rather vaguely defined issues that had to do with the difference between, say, the businessman ethic (the investor) and the artistic temperament (the architect), or the difference between the ignorance of the investor and the expertise of the architect in technical matters - e.g., esthetics, materials, functionality; at any rate, we foresaw difficulties for the architect in getting what he wanted.

This implies that we had a prior conception of what was going on in the architect's head, which indeed we did. As we have already mentioned in another context, we assumed that architects took a rational approach to their task - that when they are confronted with the task of designing houses for people, they assume they "know" what is required of a dwelling unit by its potential users, they "know" - or at least know how to find out - what particular design features will ideally fulfill these requirements, and they know what constraints inhere in any given situation. Combining this "knowledge" with their own unique flair and talent, they create an ideal solution which they must then alter or adjust - reluctantly - to the constraints of the particular situation. Thus, the product which emerges and becomes the final design is the architect's vision of the perfect solution with the only flaws being those aspects of the design where they were constrained by the investor. The investor meanwhile, gets his satisfaction from seeing the actual physical product emerge and knowing that he has insisted that certain aspects of it conform to his particular requirements. This conception therefore implies a simple time frame: the designer's design, and alterations are made on the basis of successive feedbacks from the investor, trial solutions, unanticipated difficulties, and so on. Diagrammatically, it would look like this:



This, then, was our prior uninformed imagining of how mass housing is designed. We assumed that the major flaws in the process grew out of the failure of the architects to perceive user-needs correctly, or out of the failure of the architects to provide those design solutions which would specifically meet certain needs.

However, as a result of our inquiries, we have been encouraged to question this formulation very seriously. In terms of sequence, for example, we assumed that the design process does, in fact, begin with the designers. But we found that a great many events pre-date the activity of the designers, so that the designers actually enter into the process after it has begun.

For example, in St. Francis Square, because it was a portion of an urban renewal project, the context for the design - a specific set of requirements that had to be met - was set by the Redevelopment Agency. The investor, furthermore, had another set of extremely rigid requirements having to do with cost; only a specified amount of money was to be spent, with absolutely no leeway. Thus, the sale of the land by the Redevelopment Agency attracted the union organization, whose representatives then "shopped around" for a designer, and in fact chose the designer on the basis of whether he could fulfill their own prior

requirements and those of the agency. Similarly, in Geneva Towers, the sponsor-builder knew in advance that the only financially feasible way he could manage to buy and develop the site was to build a certain number of private dwellings and a certain number of high-rise units. Although in the Geneva Towers case the investor did not "shop around" for the architect, the context of the design process had already been set by the time the architect began his work. We have tentatively concluded, therefore, that the design process does not in fact begin with the designer; that conceptually, the architect enters the flow of events that produce actual buildings after the flow has begun.

In terms of responsibility for the final design, we assumed that a fairly simple relationship existed between the designer and the housing - that is, that the designer is chiefly responsible, due to his role and his expertise, for the final product. We were therefore implying that the architect is invested with a certain amount of power in the design situation, that in fact it is his decisions which have the most weight in the design process. Our analysis of the events which spanned the building process of these two projects suggest that this proposition may be, in fact, reversed: that of all the actors in the process, the designers had the least power, with power defined as the ability to insist upon a certain alternative. In other words, we discovered a very complex relationship between the designer and the housing, and we discovered a very large cast of characters in the production of housing, among whom the designer is relegated, if not to a bit part, at least to the ingenue.

This became clear initially in the St. Francis Square project. As we have mentioned, the local urban renewal agency provided a context for the design, and of course became the final judges of the acceptability and appropriateness of the eventual product: they became the first major actors in terms of chronology or sequence, but their power to influence and alter design decisions remained great throughout the planning stage. Secondly, in both cases we found that the sponsor - the person or organization who acquired the land and hired the designers, in fact did turn out to have a great deal of influence upon the design. In the case of St. Francis Square, the ostensible reason for the influence

was two-fold; first, the investor had an inflexible set of financial constraints, which led him to continually look for ways of reducing costs with little regard to the sacrifice in design - although admittedly many of the sacrifices were minor; and second, the most influential figure acting for the investment organization identified strongly with the people who would actually live in the housing. In the case of Geneva Towers, the reason for the investor's influence was his own considerable experience and expertise in the housing field, although in this case the greater part of his knowledge had been gained from experience with another form of housing - that is, single-family detached suburban housing - and from high-rise housing for people at a much higher income level, but he attempted to modify this experience and apply it to middle-income high density housing.

We might note here that in former expositions of the design process we tended to refer to the sponsor or the investor as the client, until we realized that calling him the client presupposes that we are perceiving him from the architect's point of view. We therefore now prefer the term investor or sponsor since this connotes the level of autonomy and independence that he actually has in the process. It may also be relevant here to point out that the role of a sponsor in relation to a designer is basically quite different under conditions of constructing a large number of units than it is under conditions of constructing a single dwelling. In the latter case, the client is the potential occupant, and presumably the satisfaction of his wishes, tastes, and needs is the primary, if not the exclusive goal of the architect; in the former case, however, the sponsor is by and large unrelated to the potential occupants and one might surmise that as a consequence he would rely more heavily upon the judgment and taste of the architect. This surmise, however, does not seem to be borne out by the facts, at least from those we have accumulated about these two housing projects. In St. Francis Square, for example, the sponsor's direct representative had a great deal of influence, and considerable force was also exerted by the coordinator, who was of course hired by the sponsor and represented him. However, the coordinator's influence on the ultimate design was not limited to his representation of the

sponsor's interests: he had his own interests and concerns with housing, and even carried out some original research studies on certain aspects of user-needs in order to support his own positions on various aspects of the design, as well as to convince the sponsor that a competitive end-product was being produced.

Another non-design participant in the design process at St. Francis Square who exerted a great deal of influence was the builder. His prominence was also connected to budget constraints and to his private relationship with the investor, and in the process of dictating various cost control measures he managed to change many details of the design. This latter kind of influence was not as prominent in Geneva Towers, since the sponsor was himself the builder: but if one can abstract the builder from the sponsor - envision him wearing only one hat at a time, so to speak - he did have a very important effect on the design because of his insistence upon using the particular kind of construction method that was employed.

Finally, an important set of actors who finally influenced design decisions in both projects were public officials at federal, state, and local levels. Since both projects received federal subsidies, both had to conform to the plethora of regulations drawn up to constrain the recipients of such funds; further, the design of both projects, as is indeed true of any attempt at residential construction, was influenced in many ways by those officials who oversee the regulatory functions of local state and city departments.

Under these conditions, we find it difficult to persist in our conceptualization of the production of housing as a simple design process. It appears to us more fruitful to represent the process as, perhaps, a constraint process, in which the design is only a single element. Another way of looking at the process may be as a consensus process; in order for the housing to be built, everybody has to be satisfied. But - some everybody's are more equal than others: the federal officials must be satisfied, or they won't provide the financing; the sponsor-investor has to be satisfied because it's his money; the builder has to be satisfied because he's the one who made the bid and if he goes over the bid, everybody's in trouble; the city and state

officials have to be satisfied, or they won't permit the construction, although admittedly they can be persuaded to give in on small matters and there are usually channels of appeal for unsatisfactory decisions; but the architect does not have to be satisfied. He gets his fee whether the finished product is to his liking or not; if too many changes are made which affect his esthetic sensibilities or make him anxious about his peers' reactions to the product, he can always resign and publicly denounce the effort, which happens not infrequently. In other words, what we seem to be uncovering here is a captive relationship between the architect and the sponsor, rather than an authority relationship; the architect must more or less do as he's told or get out, since he has virtually no bargaining position. The extent of his captivity must vary from project to project, depending upon the particular circumstances, personalities, and constraints involved. In St. Francis Square, for example, our impression was that the architects were relatively unhampered by sponsor-constraints in the early stages because they were perceived by him as young, intelligent, and unconventional, he himself had no background experience in the housing field and he was also interested in making a public splash, to which end innovation is a helpful ingredient. At Geneva Towers, the architect had worked with the same sponsor-builder for some years, and was seemingly well aware of his needs and preferences, and set out to fulfill them.

Postscript

The principal task in the next phase of our study, beginning April 1968, is to devise interview schedules and observation procedures with which to test the assumptions about resident behavior implicit in the design of each development. The analysis of data obtained in this phase will form the bulk of an interim report to be completed by September 1968, and a final report which will hopefully be completed by December 1968. At that time, we will no doubt shorten and summarize the main points put forth in this paper; limits of time and budget have prevented us doing so at this time. Meanwhile, we hope that this preliminary, if somewhat lengthy, account of what actually happened in the planning, design and construction phases of two large housing

developments will stimulate comment and criticism from our colleagues and from the people who kindly co-operated by agreeing to be interviewed. These comments and criticisms will be incorporated into our final research report.

APPENDICES

APPENDIX ADesign decisions which had been made before architects entered design process

<u>Decision</u>	<u>Decision-maker</u>	<u>Where stated</u>
Building coverage not to exceed 40%	San Francisco Redevelopment Agency	Redevelopment Plan for the Western Addition, Pt. 1, 1954
Setback from Geary Street (10') and other streets (5')	"	"
Distance between opposing walls of two buildings where these contain windows to be at least 60'	"	"
Minimum distance between building and rear lot line to be minimum of 20' (where wall contains living or bedroom windows) or 15' (in all other instances)	"	"
1 to 1 parking, of which two-thirds to be provided under cover	"	"
Size of parking space to be 160 sq. ft.	"	"
Minimum of 200 sq. ft. of lot area per room	"	"
Density - approx. 150 persons per acre	"	"
Building type - "multi-family structures"	"	"
Height - maximum of 40'	"	"
Rent Levels - "housing accessible to middle income families"	"	Brochure on sale of land in Western Addition, Feb. 1960
Certain street closings (O'Farrell no longer a through street, dead ends between Laguna and Octavia; Ellis dead ends at Buchanan)	"	"
Housing type - "garden apartments"	"	"
Method of financing - "...use of FHA 213 insurance for cooperative development will receive special consideration..."	"	"
Method land sale to developer - negotiation	"	"

Open space provided on site to be judged on its "...usability, adequacy, attractiveness and scale..."

"

"

Apartment sizes - "...balance in range of size of apartments suitable for family living"

"

"

Apartment design - to be characterised by both - "...quality and amenities offered"

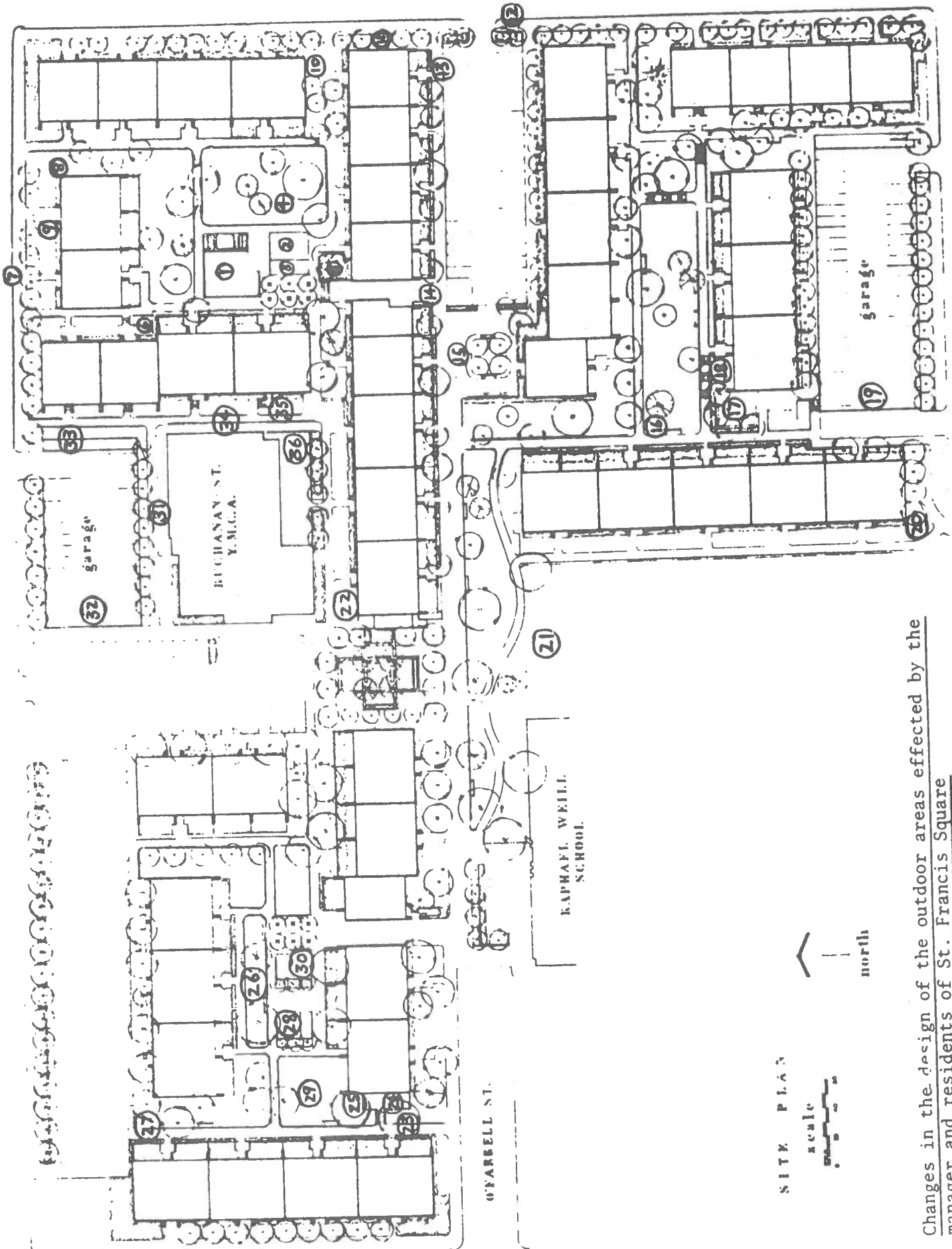
"

"

Relationship to surroundings - to be a "...contribution...to the appearance of the entire neighborhood, including relationship to surroundings, vistas, and the avoidance of monotony"

"

"



SITE PLAN

scale

north

Changes in the design of the outdoor areas effected by the
manager and residents of St. Francis Square

Changes in the design of the public outdoor areas effected by the manager and residents of St. Francis Square

1. The original play yard in Court 2 consisted of a grassed area enclosed by a low wooden fence and bollards. The only equipment in the enclosure was a tubular steel jungle gym set in one corner. Just outside the enclosure was an area of cobbles with two facing benches; between the benches was a sand box set into the ground. Because the jungle gym was not used, half of it was removed and the other half turned over and set in concrete to form a semi-circular, horizontal feature rather than a vertical feature; according to the present manager, it was then used much more frequently, both for climbing on and - when covered with a blanket or other material - as a playhouse. The grass in the enclosure soon became trampled and was replaced by vita-bark. A wooden play-sculpture comprising ladders, platforms, a slide and a playhouse underneath was designed by an architect living in the court, and built by local teenagers within the fenced play-enclosure. A see-saw formed of a long polished log was also added. The sand box was not satisfactory, first, the surface was flush with the surrounding cobbles and the sand spilled out and got tracked all over; secondly, it had no cover, and was frequently fouled by cats and dogs at night. The architect-resident designed a new sand box, enclosed by wooden sidings and with a strong wooden cover which, when raised, became an inverted V-shaped climbing structure in the middle of the box.

2. Next to the play-enclosure, in the center of Court 2, the original design provided for a garbage can area and a drying yard, both enclosed with wooden fences and roofed with an open trellis. The drying yard was rarely used, except occasionally for large items such as blankets, and children often used it for a play area, trying to swing on the lines, etc. The present manager converted it into two separate facilities: an enclosed hand-ball court, and a children's playhouse with small-scale benches and a table. The original design of the playhouse had no windows - light came through a slatted wood roof. In this form, it tended to be used by older children as a place to hide-out; window spaces have now been added and, according to the manager, it is now better used by smaller children. The hand-ball court is used frequently, according to the manager, by children of 7-10, and parents in another court have recently requested that one be provided for their children.

3. The garbage area was removed from the center of Court 2 for two reasons: it took up valuable space in the center of the court, and it attracted many children who found interesting items in the rubbish and pulled them out (along with other garbage) into the public areas to play with. The management first attempted to stop this by replacing the open entrance way with a locked door, but the children still managed to get in through the sizeable gap between the top of the walls and the slatted roof. This gap was wired in, but still the area proved to be a nuisance and an attraction to children and flies, so it was removed entirely, and replaced by an open wooden structure with a trellis roof which houses two attractive wooden tables and benches, and is bounded by sturdy wooden planter boxes. This has proved to be an attractive sitting area and a place where children sit and eat their lunches; a recent addition has been a trash can for small litter with an attractive wooden slatted cover. Garbage is now disposed

of in two solidly fenced wooden structures with locked doors, one located against the end wall of the YMCA building nearest the court, and the other against an end wall of one of the residential buildings, facing onto Laguna Street. (See 11 & 34 on plan.)

4. Two trees were blown down on the grassy hillside of Court 2 and it was decided not to replace them.

5. This area was never landscaped for some reason, and it became an eye sore as children frequently used it as a short cut. Grass was sown and a planter was placed right outside the entrance to the building to prevent people veering off across the grass as soon as they left the building.

6. Originally, at this point, there was a rather steep hill dipping down from the path towards the building. It was frequently washed out in rainy weather and was therefore replaced by a box planter along the edge of the path, which acted as a kind of retaining wall, and a more level grass area beneath it.

7. The original design provided for a cypress hedge along the edge of the property on Geary Street, both to screen out the noise and sight of the traffic on this busy road, and to provide a sense of privacy for the units which faced out onto the public sidewalk. The first manager was persuaded by the tenants that a long continuous hedge was dangerous as people would be able to lurk behind it, and consequently the trees were trimmed into rounded separate shapes. Under the present manager, the tenants have agreed that a solid, continuous hedge as a screen is preferable, and the trees are now being trimmed to create this effect.

8. This point, at the bottom of a steep slope, is badly drained, and water collects and forms a muddy area against the edge of the building; this was made worse by the fact that this building - unlike most in St. Francis Square - has only one exit, and the children would cut around the edge of the building in order to get into the court. A planter box and some bushes have been put in to prevent this short-cut route being used, and some thought is being given to converting the muddy spot into a concrete surfaced garbage can area, against the end of the building.

9. Children and others often took short-cuts along the edge of the building here, creating a worn area on the lawn; a wooden fence has been erected between the edge of the building and a free-standing garbage can enclosure to prevent this.

10. The gingko trees planted in this area are not thriving, possibly because of the soil conditions.

11. A solid wooden garbage can enclosure was added here, after the garbage can area was removed from the center of Court 2.

12. A tree was demolished at this point but cannot be replaced since the contractor evidently used this spot to dump his extra cement in and no plants will grow there.

13. In many places on the site (shown with dashed line on the accompanying plan) where the original design had dirt areas for planting flush with the walkways, dirt washed out onto the concrete and caused a maintenance problem. In all these areas, wooden edges to the planted areas have gradually been added, and have proved very successful.

14. Planter boxes were at one time placed in the underpass to add color, but since it proved an attractive area for playing in (roller skating, hanging-out, hand-ball, etc.), they were removed, and one permanent planter box was installed at the southern end of the underpass to prevent children roller skating into pedestrians just turning the corner.

15. This square area at the end of the parking lot was originally grassed and flush with the concrete sidewalk. Earth soon washed out over the concrete and people constantly used the area as a short-cut from the parking lot to their homes. This area has now been given a wooden raised edge (to prevent soil wash-out) and will soon be planted with flowers with a gravel pathway across it to accommodate pedestrians on their way from the parking lot.

16. A raised wooden planter was installed at the western end of the lawn area in Court 3 so as to prevent children using this particular section of grass for softball games. They were tending to use the same points as bases - one of them being at the western edge of the grass which became worn, with dirt constantly spilling over onto the pathway.

17. In the small play equipment area outside the laundry room, a see-saw designed by a resident architect was added; the surface material - presently sand - may soon be changed to vita-bark to distinguish it from a small sand box in the corner. The drying yard outside this laundry room is the only one of the three provided originally which still remains, and mothers in the court have recently requested that it be converted into a hand-ball court, as the yard was in Court 2.

18. A slope beside the pathway at this point was never successful as it washed out and was used as a short-cut. The first manager replaced it with a series of stepped-down planter boxes, but there has been difficulty in getting anything to grow as they are used as jumping steps by the children. The present manager intends to fence them off for c. 6 months in order to get planting in permanently.

19. The lower section of the garage was fenced in by cyclone fencing and locked gate because of numerous cases of theft and vandalism; the upper section is visible from many apartments and is seemingly less vulnerable.

20. Landscaping at this point has not been too successful as it is at the bottom end of the sprinkler system and there is not enough water pressure; the planting may be modified here.

21. When the Square first opened, this area was a grassed football field owned by Raphael Weil School and used by residents in the Square. But when an annex to the school was built in 1966, the Board of Education

decided to fence in this area and cover it with tarmac for a school yard. The residents of St. Francis Square offered to provide play equipment for a part of the area if it could be left open to the Square; but the Board of Education could not get enough reduction in fee from the contractor for leaving off this section, and consequently had the whole area hard-surfaced and fenced in. The school donated to the Square a 10' wide strip along Inca Lane which is presently being planted with cypress trees for screening.

22. Lights were added in the sitting plaza and at many other places in the Square (indicated by circles on the accompanying plan) so as to keep those areas which were used as short-cuts from the Public Housing project south of the Square to the YMCA building well lit at night. According to the manager, cases of breaking in and theft in public areas have been reduced since the installation of these lights.

23. A locked gate was added at the south-west corner of Court 1 because children returning from school used this end of the Square as a short-cut to their homes outside the Square, because outsiders were coming in at this point to use the laundry room, and because a number of derelict buildings in the vicinity (a renewal area) were being used as shelter by winos who wandered into the Square and disturbed residents.

24. A drying yard outside the laundry room was removed since it was little used; it has been replaced by an open concrete area with a wooden table and benches in the sunniest corner. In a shaded corner, a locked wooden storage shed for maintenance equipment has been added, as no such storage space was provided in the original design.

25. A steep hill slope which formed the northern edge of the sunken drying yard was constantly washing out and causing problems. The hill slope was excavated and a two-story wooden structure was put in its place; the lower story, approached from inside the former drying yard, is a tool storage area for the maintenance crew, and the upper part, approached from the court itself, is a garbage can area, removed to this point from the center of the court. Planter boxes were installed outside the garbage area.

26. A hill slope on the northern edge of Court 1 was originally covered with ice-plant which proved difficult to maintain (children trampled on it and the slope washed out). A retaining wall was added at the north-east corner and the whole slope was changed from ice-plant to grass.

27. A gate with a latch high enough to prevent small children from opening it was placed at the north-east exit from this court to prevent children running out into the parking lot.

28. The garbage area in the center of the court was removed and placed in the corner of the court (see 25 above) and in its place is a concrete-surfaced play area in which a basketball hoop has recently been added. This has proved popular for the 12-14 year olds who otherwise have no play areas in the Square.

29. A large planter box has been placed in the middle of this lawn area to prevent its being used for ball games and worn down.

30. A helix slide made of fiber glass has recently been removed at the request of the mothers in this court as its lower end was cracked; a group of court residents are currently drawing up plans to decide what to replace it with.

31. The area between the garage and the YMCA building was originally planted with broad-leaved ivy but it was never successful as it was trampled on, and the area was not on the sprinkler system and did not get enough water. It presently is plain dirt but will probably soon be planted with grass and sycamore trees.

32. A cyclone fence and locked gate were added to the lower level of the garage to prevent theft and vandalism.

33. A cyclone wire "roof" was added to cover in a gap between the upper and lower levels of the garage at its eastern end, since it was dangerous for children; a wooden fence was added to the top of the wall forming the eastern edge of the garage to prevent children climbing onto it and possibly falling onto the cyclone roof below.

34. A solid wooden structure enclosing garbage cans was placed against the end of the YMCA building.

35. An iron stairway leading into one of the buildings was never landscaped underneath and proved a favorite, semi-hidden play area which became worn and muddy; the ground surface here has been covered with concrete and left open for play.

36. A fence was added around a rectangular area at the back of the YMCA building so it could be used for the outdoor play area of a morning nursery school.

37. Garbage areas for individual buildings - outside the main entrance - have in many cases been removed and replaced by larger garbage areas at the ends of buildings; each place where one of these smaller garbage can areas has been removed is shown on the accompanying plan by an X.